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UTAH STATE HOSPITAL

PEDIATRIC FACILITY PROGRAM

[ARCHITECTURAL PROGRAM]

07.29.2011

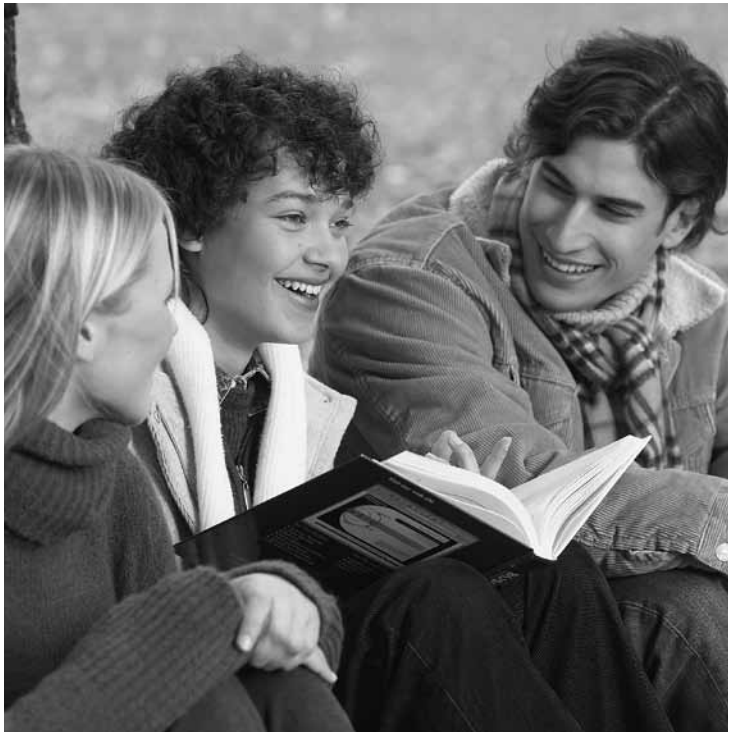

TABLE OF CONTENTS

MHTN PROJECT #2011530

ACKNOWLEDGEMENTS

THE FOLLOWING INDIVIDUALS CONTRIBUTED TO THE DEVELOPMENT OF THE UTAH STATE HOSPITAL PEDIATRIC FACILITY PROGRAM

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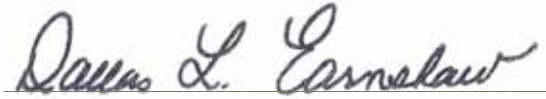
APPROVALS

WE HAVE REVIEWED THE UTAH STATE HOSPITAL PEDIATRIC FACILITY 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 to 18.

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 Pediatric Facility, which will provide 72 beds in three residential units (Boys Youth, Girls Youth and Children), along with a school and administrative and support elements needed for pediatric patients.

The facility's components are listed below, with their net and gross square foot amounts:

ID NO.	PROGRAM/SERVICE	NSF	GSF	
B CENTRAL CORE				
B100	Common Areas	1,284	1,974	
B200	Administrative / Medical Staff	780	1,235	
B300	Activity Areas	8,480	11,789	
B400	School	10,304	15,617	
C RESIDENTIAL UNIT, BOYS YOUTH (26 BEDS)				
C100	Residential Wings	8,434	13,275	
C200	Unit Shared Spaces	1,260	1,994	
C300	Unit Transition Zone	2,290	3,631	
D RESIDENTIAL UNIT, GIRLS YOUTH (26 BEDS)				
D100	Residential Wings	8,474	13,342	
D200	Unit Shared Spaces	1,260	1,994	
D300	Unit Transition Zone	2,290	3,631	
E RESIDENTIAL UNIT, CHILDREN (20 BEDS)				
E100	Residential Wings	6,904	11,056	
E200	Unit Shared Spaces	1,260	1,994	
E300	Unit Transition Zone	2,780	4,413	
TOTAL		55,800	85,946	(65% efficiency)

Site

The Pediatric Facility will be located south of Center Street, west of the new Mark I. Payne Building 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.

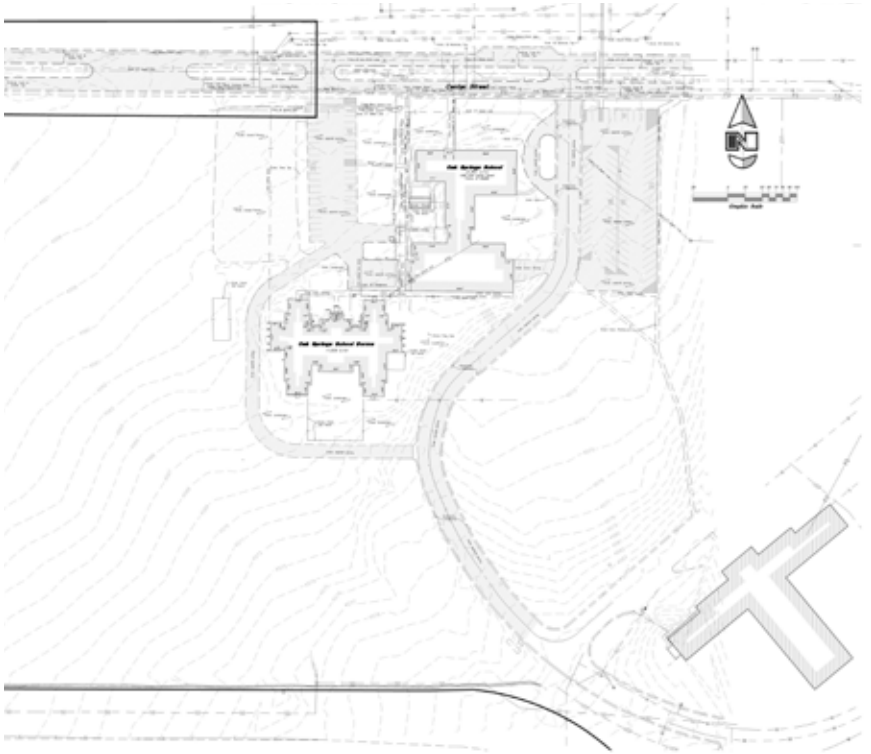


Figure 2: Topographical Survey

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 patients 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 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.

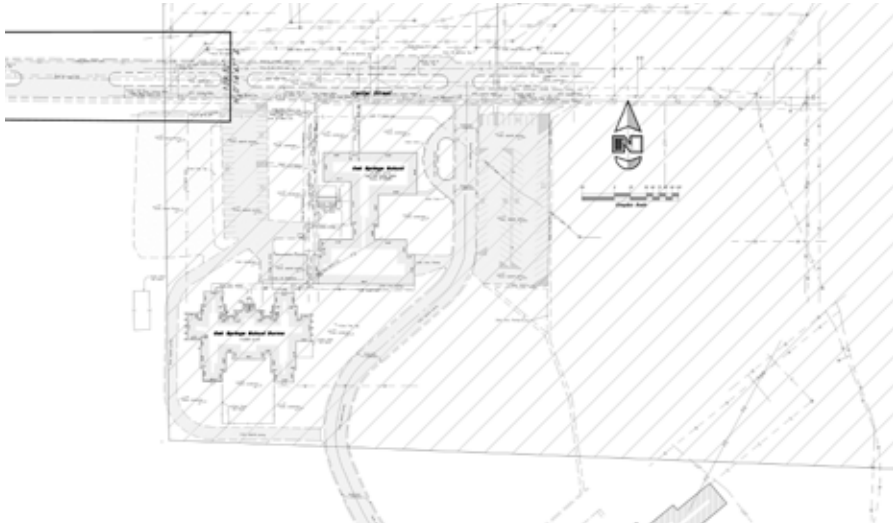


Figure 3: Site with Easements

Based on this, the use of a 10-foot setback on all sides is justified. According to the zoning for this 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

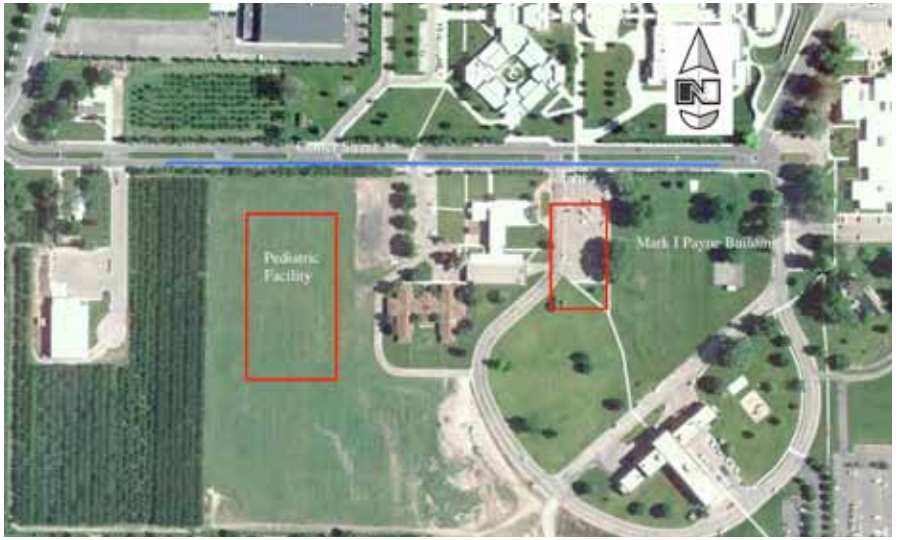


Figure 4: Water System

29,500 square feet and will have a fire flow requirement of about 2000 gallons per minute and 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

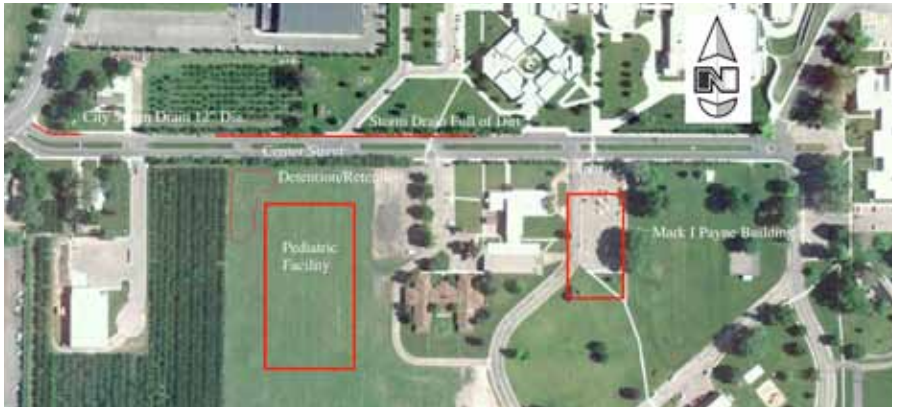


Figure 6 - Storm Drain

with the geotechnical report and with the owner. It is understood that the groundwater in the 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 Pediatric Facility, a residential facility which will replace the existing Youth Center and Beesley Building, along with the residential portion of the existing Medical Services Building. The second new building will be the Mark I. Payne Building, which will house many campus-wide programs and services that are currently located in the Medical Services Building.

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 Pediatric Facility will be a single story facility with no basement. It will occupy approximately 86,000 gross square feet. The building will provide care for the Hospital's pediatric patients, from six to eighteen years of age. The facility will contain three residential units (Boys Youth, Girls Youth and Children), for a total of 72 patient beds. The facility will have a school and other support functions needed to provide care for these patients: activity spaces (indoor and outdoor), administrative and medical offices, and staff support space.

This new facility will be constructed on the State Hospital campus south of Center Street, west of the existing Youth Center and Beesley Building. The new Mark I. Payne Building will be constructed south of Center Street to the east of the new Pediatric Facility. 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.

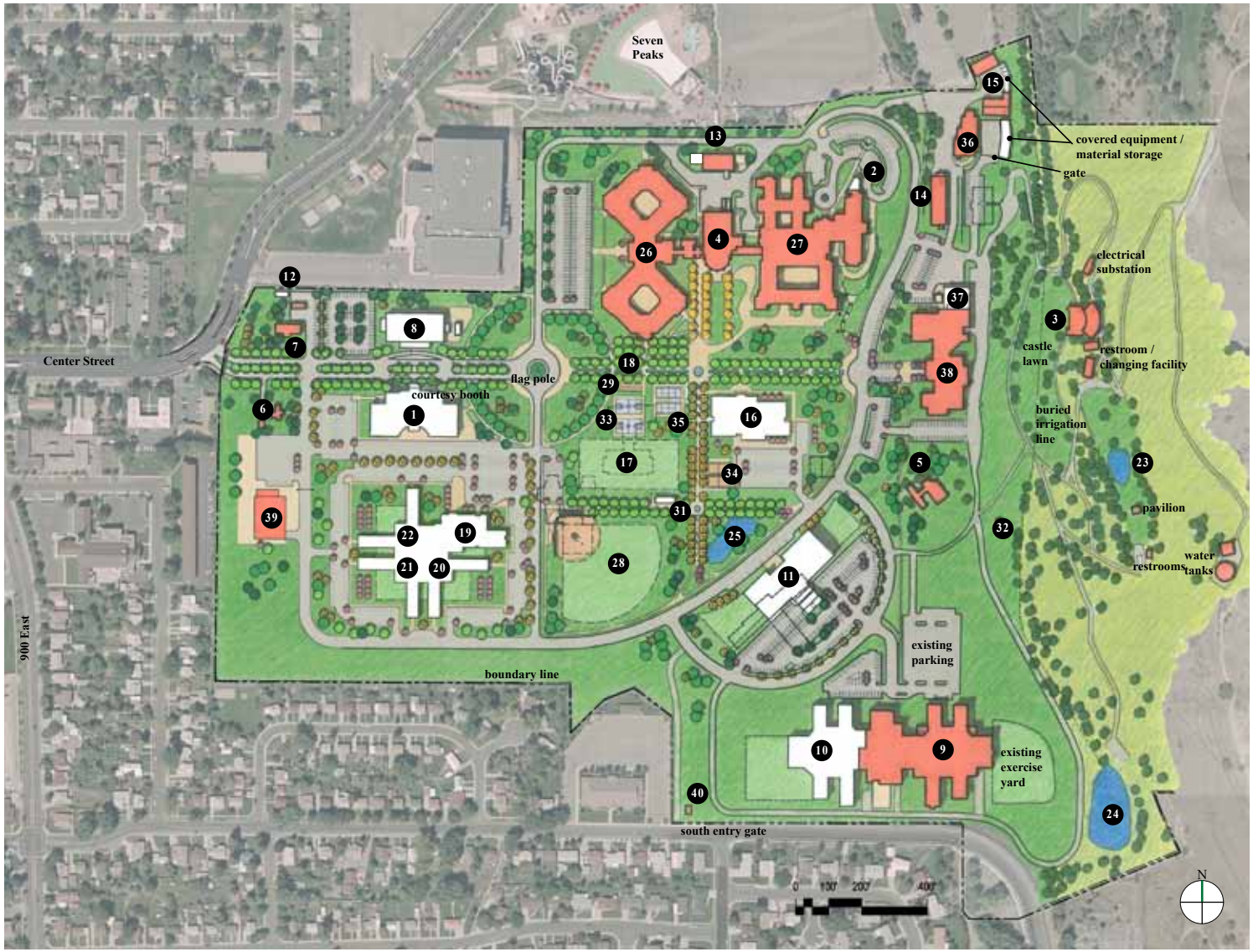
2. Immediately after construction completion, the occupants of the existing Beesley Building and Youth Center (Girls Youth Residential Unit and Adolescent School) move into the new Pediatric Facility and the two existing facilities are demolished.

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. Locating the Pediatric Facility as far east as possible will allow the greatest amount of open space to be preserved. Of special interest is the existing orchard located west of the existing Beesley Building. Preserving as much of this orchard as possible is a critical goal of this project.

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 Pediatric Facility was either from Center Street or from a looping road west and south of the building, and the campus interior east of the master-planned Center Street terminus 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. These rules and guidelines must be followed in design and construction of the new Pediatric Facility.

Of note is an operational and safety requirement established by the Utah State Hospital that mandates that patient bathrooms/toilet rooms not open directly into the patient bedrooms. These operational imperatives require patients to leave their rooms and access toilet rooms from the corridor. This design will require eventual approval and possible variance to the Guidelines that may be in effect at the time of design approval (this assumes the 2010 guidelines will be in effect at the time the project is reviewed for code compliance).

As with all new buildings built under the jurisdiction of the State DFCM, the new Pediatric Facility 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.

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 Pediatric Facility will be highly visible from 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 east. The design of the new building must avoid exposing a service side to the public right of way and parking areas. Thus, the north, west, and east faces of the building will need to be presentable and project an appropriate image to the public. Service access will likely need to be located on the south facing portions of the building.

The exterior design image of this facility should project an appearance of a comfortable and attractive educational and residential facility, while avoiding an institutional feel. Incorporation of natural light and windows will need to be balanced with a need for security and safety, especially in the residential units. . Appropriate amounts of exterior glass will be expected, with solar orientation playing a role in the amount, location and types of glazing.

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.

SAFETY AND SECURITY CONSIDERATIONS

The comfort and safety of the staff, visitors and patients are of critical importance in overall design considerations. Safety and security risks will be present in the operation of the facility. The design should seek to minimize these risks and facilitate response to any safety or security incidents that might occur. Patient privacy without compromising safety and security must also be a consideration in the facility design.

This facility will have several zones that require differing levels of security, safety, durability and vandal resistant finishes. The range of finishes and security features will vary with each zone. Areas which are restricted from patient access can have more traditional medical office building finishes that are both warm and comfortable. These areas should have lockable doors to prevent unnoticed patient access. Areas where patients will have supervised access, such as corridors, counseling areas and interview rooms will have an increase in the durability of the finishes. Areas where patients will congregate, such as day rooms and therapy/activity rooms, will have increasing levels of safety and durability. Areas where patients will have unsupervised access, such as sleeping rooms and toilet rooms, will have a very high level of safety and durability. Seclusion rooms will have a unique level of finish that is extremely durable and resistant to self-inflicted patient injury.

While levels of durability are important to maintain the facilities, patient and staff safety are also of paramount importance. Consideration must be given to providing fixtures, furnishings, and finishes that can resist injury or suicide. Items such as toilet or bathroom accessories must be able to resist patient efforts to remove them from their installation for use as weapons. Anything that can be used as a ligature attachment should be avoided.

It might be considered easy to provide a prison-like set of fixtures and finishes, but the hope is that the finishes can be as non-institutional as possible, to present a residential and educational environment that is comfortable yet secure and safe. Fixtures, furnishings, and finishes must be ultimately approved by the Utah State Hospital. They must also comply with all building and life safety codes.

Maintaining patients where they are supposed to be is important to the safe operation of the facility. Walls of areas that patients will access, even if supervised, should extend up to the structural deck to prevent access to other parts of the building through interstitial spaces. Consideration may be given to hard ceilings in lieu of extended walls. Hard ceilings will be required in all patient rooms, patient toilet rooms and some other patient areas.

Utility infrastructure must be designed and located to prevent patient interaction with the systems. Access for utility service is preferred to be located outside patient rooms and located behind lockable enclosures.

The layout of spaces must maintain clear vision and access from nursing stations to patient and toilet room doors. Alcoves for doors must be avoided for this reason.

Exterior lighting should be considered for the exterior of the facilities in order to prevent dark or visually secluded locations around the perimeter of the facilities.

It is not the purpose of this program to exhaustively annotate all possible fixture, furnishing, and finish considerations that must be given to the design of this facility. The purpose is rather to remind the design professional of the need to design in accordance with accepted and accredited standards. Volumes have been written on the safety, security, privacy and comfort of these types of facilities. The design team must take appropriate care to assure these criteria are met in a way that fosters patient and staff safety, security, comfort and privacy, while meeting the approval of State Hospital project representatives.

Appendix A contains information regarding specialty products that should be considered during design. 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

The Pediatric Facility will be made up of a Central Core and three residential units. The residential units will serve three distinct patient populations: Boys Youth (ages 12-18), Girls Youth (ages 12-18) and Children (ages 6-12). The adolescent units will have capacity for 26 patients each and the children's unit will have capacity for 20 patients.

The Central Core will contain elements that serve all of the pediatric patients: a school, activity spaces, and administrative and medical staff offices. It will have the main building entry, and staff support spaces that serve the entire facility.

The Central Core main entry should be highly visible and easily accessed from the parking lot. The main entry must provide controlled but easy access to the Central Core's administrative and medical staff offices, school, and also the transition zones that connect the Central Core to the more secure and private residential units.

Each residential unit will be divided into two equally-sized residential wings. The wings will contain patient daily living spaces: bedrooms, patient toilet rooms, day rooms, dining rooms, and support spaces. Each residential unit will have a group of spaces that are shared by the two wings: a nursing station, kitchen, medications room and nurse's charting room.

EXTERIOR COURTYARDS

Each residential unit will have two secure exterior courtyards, one with hard surface and one with lawn. Each courtyard should range in size from 2,500 to 2,800 square feet. The enclosures surrounding the courtyards can be formed by the building or by secure, no-climb, mesh fencing. The design and materials must discourage attempts to escape the courtyard and to cause vandalism or injury. Each of the two residential unit wings must be able to access both exterior courtyards, without accessing the other wing. Depending on the building design, access could be directly from the residential wing, or from a common, controlled-access vestibule that serves both wings.

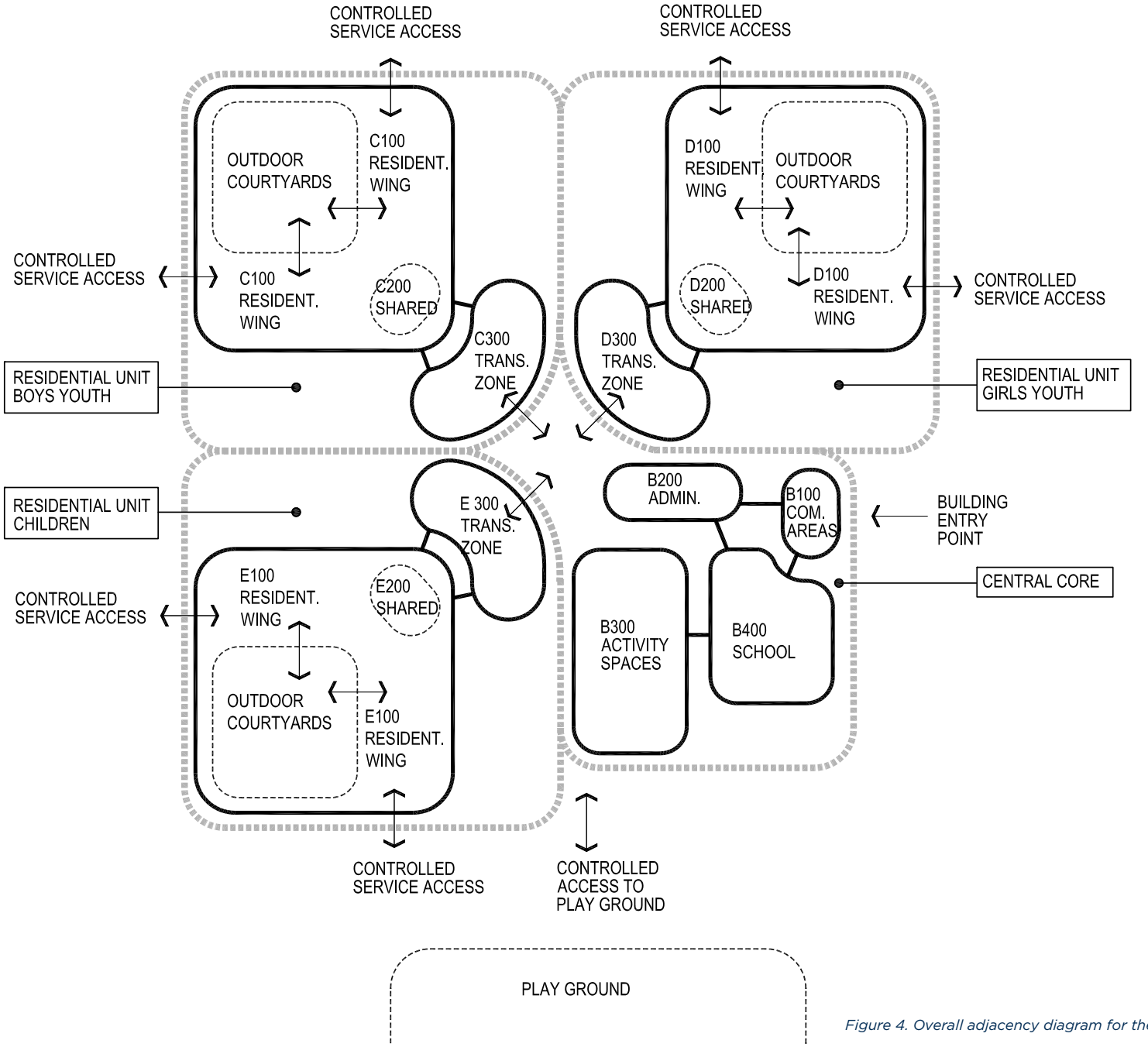


Figure 4. Overall adjacency diagram for the new Pediatric Facility.

The courtyards should have a south orientation if possible, to make them as usable and pleasant as possible during cold weather. In particular, the grass courtyard should have a south exposure, to prevent muddiness and help the lawn maintain a good condition despite heavy use.

The hard-surface courtyard could be concrete, asphalt paving or sport court. It should have basketball hoops on each of its four sides.

One or both of the courtyards should have a high netting system on at least one side to keep balls from leaving the courtyard.

The courtyards must be visually monitored, either by sightlines from the Unit Nursing Station or by a security camera with a monitor at the Nursing Station.

CHILDREN'S PLAYGROUND

The Pediatric Facility should have a playground for use by patients ages 6 to 12. The playground should be an enclosed area approximately 3,500 to 4,000 square feet. It must have direct access from the building, either from the large Multipurpose/Activity Room that will serve as the facility's indoor activity space, or from the Children's Unit. It should be enclosed by 8' high chain link fencing.

The playground should have a south orientation to promote usability during cold weather. It should be in a visually private location that is shielded from public view.

The play equipment will be similar to that found on an elementary school playground: swings, slides, catwalks, monkey bars, teeter-totters, metal spider-web climbing domes, etc. The equipment area should have a bark surface. The remainder of the enclosed area should be lawn, for playing tag, ball games, etc.

There should be a small number of picnic tables and benches, to accommodate visits by family members. It would be beneficial if the area were shaded, particularly from the west sun, by trees planted outside of the enclosed area.

GENERAL REQUIREMENTS

Patient and staff safety is critical in this facility, as with all other facilities on campus. As possible and where conducive to operational goals, the facility should be as open and cleanly designed on the interior as to promote clear vision of all areas where patients may be within the building.

The design team must coordinate with the Utah State Hospital to provide an appropriate duress notification system that does not agitate or unduly alert patients to situations that may be occurring in other parts of the building.

Proper operation of the facility will require that access be controlled for both the public and the patients. The design must facilitate and allow easy separation and control of the public side of the facilities from the patient side of the facilities. Within the patient portions of the building, the design must also allow for restricted access of patients as appropriate for care and treatment. Restricting patients from one another will also be an important consideration in certain parts of the facility, such as sleeping rooms and toilet rooms.

Parent and family involvement are often part of the treatment program for individual patients. Access for families within the facility will need to be controlled and monitored for the sake of the patients, the staff, and the family members. Families and visitors will have public access to the entry vestibule and reception area of the core. They will be escorted to other areas of the building by staff members.

Attention shall be given in the design to allow routine maintenance and service activities to be accomplished without entering the patient living units to the extent possible.

Portions of the building's Central Core will be used as a school for the patients. Teachers come from the Provo School District and are trained to work with students who are patients at the facility. Staff will also work with students to teach them life skills so they will eventually have the ability to take care of themselves after their treatment is completed.

Patients may help prepare their own breakfast and dinner time meals in small residential style kitchen facilities in each unit. Most meals will be prepared in the hospital's central kitchen and sent over in bulk to each unit where the food will be served family style by staff members. On school days, lunch will be cooked in the central kitchen, brought to a serving kitchen adjacent to the central core Multipurpose/Activity room near the school, and served to the patients.

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.

OFFICE SPACES

The Pediatric Facility'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.

Interior expansion joints may be required depending upon the final configuration of the floor plan. Care should be given to the thermal expansion properties of the structural framing members.

Different areas of the building 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.

  The wall surfaces within the patient areas shall be constructed of durable materials such as reinforced concrete masonry units (CMU) or reinforced concrete.

  Wood roof framing materials shall not be used.

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.

Tunnel demolition and reconstruction will be included in this project. The existing tunnel in Center Street will be extended west to serve the new pediatric building. When the Beasley Building is demolished, the tunnel that extends south from Center Street will be filled in, and the existing steam piping must be capped at Center Street and removed from the tunnel.

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 25o, when a second boiler is required. No changes to the existing boiler plant are anticipated.

Anticipated demand is 2,700 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
Clinic	74	85	74	62	25-30
Medications Room	75	85	72	62	35-40
Public Restroom	75	85	72	62	n/a
Private Restroom	75	85	72	62	n/a
Kitchen	75	85	72	62	40-45
Storage	80	85	65	62	n/a
Mechanical Rooms	78	85	65	60	n/a
Recreation Therapy Room	75	85	72	65	30-35
Library	75	85	72	62	35-40
Multipurpose Room	75	85	72	62	40-45
Dining	75	85	72	62	40-45
OT/Serving Room	75	85	72	62	40-45
Bedroom	75	85	72	62	30-35
Clean Linen	80	80	65	65	n/a
Soiled Linen	80	80	65	65	n/a

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

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)
- Radiant heating and cooling

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	Educaton: 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	
Medications Room	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
Kitchen	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	
Mechanical Rooms	Misc: Electrical Equipment Rooms	0.000	0.078	1.5	tbd	
Recreational Therapy Room	Education: Music/Theatre/Dance	0.035	0.533	1.2	0.60	DCV
Library	Education: Media Center	0.025	0.481	1.2	0.50	DCV
Multipurpose Room	Education: Multi-use Assembly	0.100	1.05	1.3	0.25	DCV
Dining	Food & Beverage Service: Cafeteria	0.100	1.29	1.3	0.25	DCV
OT/Serving Room	Table 6-4: Kitchens-Commercial	0.100	0.630	1.2	tbd	
Bedroom	Dormitories: Bedroom/Living Room	0.014	0.167	1.1	1.25	Continuously exhaust at 75 csf/room
Clean Linen	General: Storage Rooms	0.000	0.156	0.9	0.00	
Soiled Linen	Table 6-4: Soiled Laundry Storage	0.000	0.900	0.9	0.00	Continuously exhaust at 1.00 cfm/ft²

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

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

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 180oF supply, with 30oF 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 14oF temperature rise, using two-way flow limiting valves (similar to Griswold PIC).

Anticipated peak load is 175 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:

Central Core: Air Handler 1

Description: Central station air handler with chilled water cooling coils, indirect 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. 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.

2" double wall construction
25,000 cfm (estimated)
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
Condenser water coil: 5/8" diameter 0.035" thick tubes, 8 rows, 10 fpi, 450 fpm face velocity
Direct Evaporative Media: 12" CelDeck, stainless steel sump, 550 fpm face velocity.

Residential Units, Option 1: VAV Air Handlers 2-4

Description: Same as Common areas, with added requirement that all VAV boxes serving residential units be located in a secure service area that provides adequate room for service, and does not require entry to residential unit.

2" double wall construction
12,500 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
Condenser water coil: 5/8" diameter 0.035" thick tubes, 8 rows, 10 fpi, 450 fpm face velocity
Direct Evaporative Media: 12" CelDeck, stainless steel sump, 550 fpm face velocity.

Pros: Standard and common solution
Central, secure maintenance for fans and filters

Cons: Duct size
Required access to VAV boxes at patient room creates accessibility and maintenance issues
Supply and return grilles must be vandal resistant

Residential Units, Option 2: Four pipe fan coils

Description: Four-pipe distribution in corridors to fan coil at each room. Ventilation in patient rooms through trickle vent at window or central dedicated outdoor air system (DOAS), and heating/cooling/ventilating in common areas with fan coil + DOAS

Pros: Standard technology
Smaller air handler and distribution ductwork compared to VAV (DOAS only)

Cons: Noise
Local maintenance (filters, motors, condensate pans)
Low efficiency

Provide a DOAS air handler with heat recovery. Use Option 1: VAV standard for air handler construction, with propylene glycol in heating and cooling coils, separated as appropriate from main system with a brazed plate heat exchanger.

Residential Units, Option 3: Radiant Heating/Cooling

Description: Hydronic tubing (PEX) embedded in ceiling of residential units. Four-pipe distribution in corridors to manifold at each room. Ventilation in patient rooms through trickle vent at window or central DOAS, and heating/cooling/ventilating in common areas with either radiant + DOAS, or packaged single zone rooftop.

Pros: Most energy efficient
Silent
Uses no room
Minimal chance for vandalism because grilles are very small or non-existent
Low maintenance
Most comfortable, even with warmer summer temperatures and colder winter temperatures

Cons: Higher first cost, for ceiling panels, and for 4-pipe distribution system that must be insulated
Unfamiliar technology may raise first cost
No ability to dehumidify

Provide a DOAS air handler with heat recovery. Use Option 1: VAV standard for air handler construction, with propylene glycol in heating and cooling coils, separated as appropriate from main system with a brazed plate heat exchanger

Exhaust

Exhaust patient rooms continuously through the toilet rooms at a rate 50% higher than code minimum. Evaluate combining exhaust and using heat recovery, especially if option 2 or 3 is chosen.

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.

Install VAV boxes and other terminal devices in secure and accessible location.

Design for vandal resistance, including high security grilles in patient areas (patient rooms, patient toilet rooms and seclusion suites) , and heavy gauge ductwork and duct mounted diffusers where exposed.

Plumbing

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

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

Distribute water in Type L copper pipe, then PEX manifolds for distribution to individual rooms.

Provide shut-off valves at each room, accessible from hallway or overhead.

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.

Patient Accessible Rooms:

All 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.

Water closets are floor mount, white glazed stainless steel siphon jet, similar to Acorn 1695, with 1.6 gpf flush valve recessed in wall, operated by manual push button, similar to Sloan Royal 611.Urinals are wall hung, white glazed stainless steel siphon jet, similar to Acorn 1602, with 1.0 gpf flush valve recessed in wall, operated by manual push button, similar to Sloan Royal 611.

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.

Elsewhere:

All fixtures must be reviewed and approved by USH staff.

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.

Lavatories are wall hung vitreous china, with single temperature sensor faucet.

All sensors are hard-wired (not battery operated)

Waterless urinals are not acceptable.

Prove trap primers at all floor drains.

Provide hot and cold water hose bib 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.

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
Patient Rooms	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
Library	Ordinary Hazard, Group 2

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 ft2. area
Ordinary-Hazard, Group 1 Occupancy	0.15 gpm over 1500 ft2. area
Ordinary-Hazard, Group 2 Occupancy	0.20 gpm over 1500 ft2. 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 ft2
Storage Areas	130/400 ft2
Mechanical Equipment Rooms	130 ft2
Electrical Equipment Rooms	130 ft2
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 vandal resistant throughout.

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 125 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

Special Fire Alarm Requirements

For institutional I-2 application, requires automatic smoke detection in all corridors and spaces open to the corridors. Where smoke compartments contain patient sleeping areas, no smoke detectors are required where the units contain smoke detectors, and the detectors have a visual display on the corridor side of the patient sleeping units and provides visual and audible alarm at the nursing station. Another exception is where sleeping unit doors are equipped with automatic door closing devices with integral smoke detectors on the unit sides installed according to their listing, provided the integral detectors perform the required alerting functions. These special provisions will require an analysis of the safety, security, and potential damage by vandalism with the fire marshal and the owner. Currently most facilities are using the Door closer function.. The staff is required to evacuate the facility if there is any alarm conditions.

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.

Consider using a fire system that allows the patients to be moved from one area to another without having to evacuate the entire building. Each unit could be a zone, and unless there is an alarm in two zones at the same time, the doors to the entire building stay locked, and only the doors in the alarm area unlock to allow the patients to leave the alarm area and move to another area 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, or at the nursing station, 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 two building sites, and it is expected that the loop will be extended to the facilities.

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

For the Pediatric facility, an existing pad mount switch with a spare way is located near the orchard, and could be a good feed point for the new facility.

The IECC and ASHRAE 90.1 rules required lighting loads will not exceed 1.1 watts per square foot using entire building method.

Service size shall contain a minimum of 30% spare capacity according to the DFCM design guidelines. It is expected that the Pediatric Facility will be in the 15 watt/SF range (including the required spare capacity).

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 100% building backup including HVAC for all patient areas. The school classrooms may be excluded from 100% generator backup if desired, unless it is more feasable to transfer the entire building load.

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 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 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. Electrical outlets in each Patient Room and each Patient Toilet Room shall be on separate circuits that can be controlled from a keyed switch in central location that is readily available to the staff.

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

Where 208 volt outlets are located for special equipment such as clothes dryers, provide a lockable enclosure over the plug.

Provide key operated switch to disable power to electric range and garbage disposal in Serving Room and Kitchen.

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 hospital grade, tamper resistant, GFI outlets in all patient areas.
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 at least one outlet in Seclusion Ante Room.

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.

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.

In patient rooms, provide a separate lighting zone above the desk on a separate switch. 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 Pediatric facility is targeting 20% 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. Two 4 inch conduits extend west from the tunnel to the warehouse area. If the tunnel is extended, the two 4 inch conduits and associated fiber optic will need to be relocated. The Pediatric facility building is intended to extend cable tray through the new tunnel system to the new facility, and reroute the existing warehouse fiber as required to avoid the new tunnel expansion. 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 cabline, 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.

Closed Circuit TV

Provide cameras in each seclusion room, DOS room, day room, in hallways, entrances to the units, courtyards and visiting rooms. The monitor for the school seclusion rooms, DOS Room, and Courtyard shall be located in the nursing office. Remaining cameras shall be recorded on DVR and accessable through the network for retrieval. The monitor for the residential units shall be located at the nursing station. The cameras for the day rooms, hallways, entrances, family visiting rooms, courtyards, family visiting rooms, etc shall be recorded by dvr for 72 hours minimum.

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.

Entrance Intercom System

Provide a call button system with a speaker near the front door inside the Lobby/Waiting Room with the capability to call several different locations in the building for assistance.

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
Provo School District Classroom A/V standards

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.

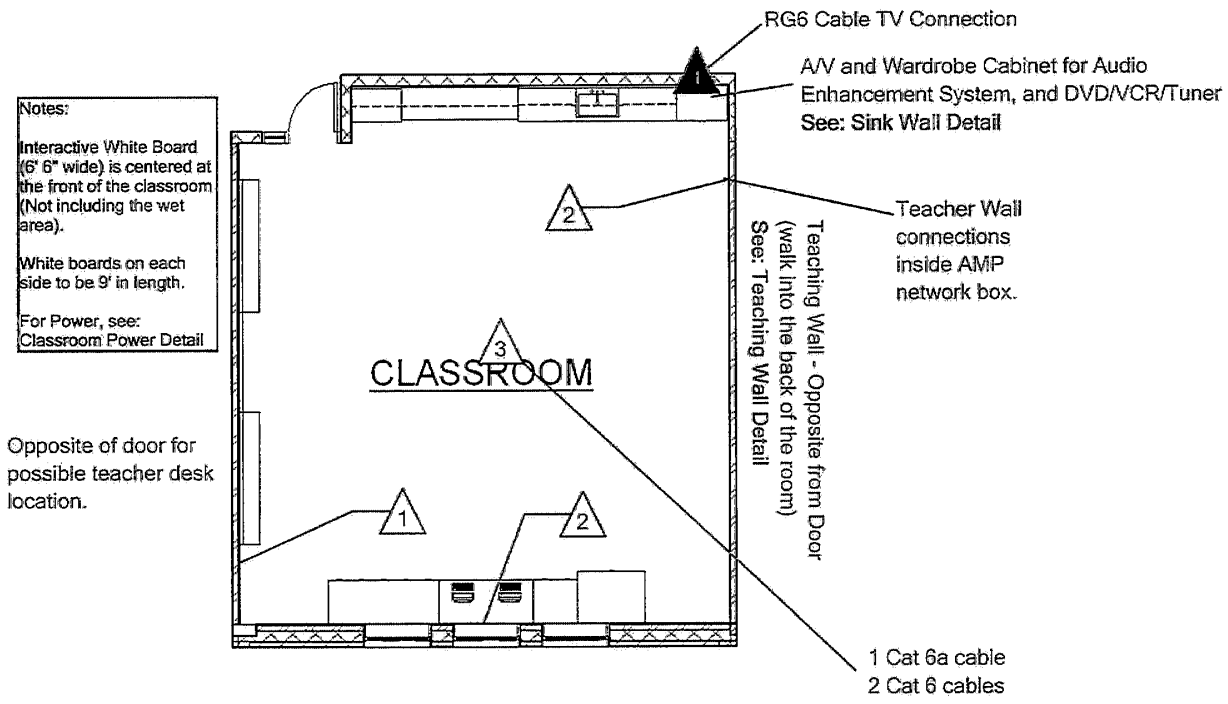
All conduits to have insulated bushings both ends, and contain no more than two 90 degree bends between pullboxes.

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

Speakers are preferred to be distributed overhead.

The control is a touchscreen (usually by Crestron, although other vendors may be considered).

Lighting is integrated into the A/V controls in the Standard System. Lighting control, volume, and menus all are reflected in the touchscreen.



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.

An audio system is needed at one way glass areas to allow the staff to observe and hear the kids from the hallway. Volume control shall be specified.

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.

Multipurpose Room Systems

The Multipurpose roomsystem consists of a large amplifer and speaker 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 multipurpose room 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.

Play Therapy Room

Provide a cctv camera and microphones in the play therapy room to record audio and video. Provide speakers in the observation room to monitor audio in the play therapy room.

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 Pediatric Facility. 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
PEDIATRIC FACILITY				
B	**Central Core**	20,848	25,727	30,615
B100	Common Areas	1,284	1,659	1,974
B200	Admin./Medical Staff	780	1,037	1,235
B300	Activity Spaces	8,480	9,907	11,789
B400	School	10,304	13,123	15,617
C	**Residential Unit Boys Youth**	11,984	15,883	18,901
C100	Residential Wings	8,434	11,156	13,275
C200	Unit Shared Spaces	1,260	1,676	1,994
C300	Unit Transition Zone	2,290	3,051	3,631
D	**Residential Unit Girls Youth**	12,024	15,939	18,967
D100	Residential Wings	8,474	11,212	13,342
D200	Unit Shared Spaces	1,260	1,676	1,994
D300	Unit Transition Zone	2,290	3,051	3,631
E	**Residential Unit Children**	10,944	14,675	17,463
E100	Residential Wings	6,904	9,290	11,056
E200	Unit Shared Spaces	1,260	1,676	1,994
E300	Unit Transition Zone	2,780	3,709	4,413
	Pediatric Facility Totals	**55,800**	72,223	**85,946**

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).

CENTRAL CORE

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
B100	**COMMON AREAS**			**1,284**		**1,659**
B101	Lobby/Waiting	1	420	420	1.33	559
B102	Public Toilet Room	2	42	84	1.40	118
B103	Employee Lounge	1	680	680	1.25	850
B104	Staff Shower/Locker	1	100	100	1.33	133
B200	**ADMIN./MEDICAL STAFF**			**780**		**1,037**
B201	Clinical Director	1	150	150	1.33	200
B202	Medical Doctor	2	120	240	1.33	319
B203	Occupational Therapist	1	120	120	1.33	160
B204	Environmentalist	1	150	150	1.33	200
B205	Family Facilitator	1	120	120	1.33	160
B300	**ACTIVITY SPACES**			**8,480**		**9,907**
B301	Recreational Therapy Room	1	800	800	1.25	1,000
B302	RT Storage / Kitchenette	1	100	100	1.33	133
B303	RT Storage	1	100	100	1.33	133
B304	TRT Office	1	150	150	1.33	200
B305	Weight Room	1	250	250	1.33	333
B306	Multipurpose / Activity Room	1	5,250	5,250	1.10	5,775
B307	Multipurpose / Dining Room	1	750	750	1.25	938
B308	OT/Serving Room	1	500	500	1.25	625
B309	Chair & Table Storage	1	400	400	1.33	532
B310	Storage (RT/OT)	1	180	180	1.33	239

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
B400	**SCHOOL**			**10,304**		**13,123**
B401	Classroom	7	900	6,300	1.25	7,875
B402	Time-out Room	2	110	220	1.33	293
B403	Seclusion Room	2	100	200	1.33	266
B404	Seclusion Ante Room	2	65	130	1.40	182
B405	Seclusion Toilet Room	2	45	90	1.40	126
B406	Library	1	900	900	1.25	1,125
B407	Testing Room	2	80	160	1.40	224
B408	Storage (Textbooks)	1	80	80	1.40	112
B409	Activity Room	1	600	600	1.25	750
B410	Teacher's Prep/ Workroom	1	480	480	1.33	638
B411	Principal	1	150	150	1.33	200
B412	Secretary Office	1	180	180	1.33	239
B413	Nursing Office	1	150	150	1.33	200
B414	Exam Room	1	110	110	1.33	146
B415	Medications Room	1	90	90	1.40	126
B416	Conference Room	1	400	400	1.33	532
B417	Server Room	1	64	64	1.40	90
B418	Patient Toilet Room	4	250			
B419	Staff Toilet Room	2	170			
B420	Custodial Closet	2	60			

BOYS YOUTH

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
C100	**RESIDENTIAL WINGS**			**8,434**		**11,156**
C101	Bedroom	24	110	2,640	1.33	3,511
C102	Patient Toilet Room	8	80	640	1.40	896
C103	Medical Bedroom	2	110	220	1.33	293
C104	Medical Toilet Room	2	80	160	1.40	224
C105	Day Room	2	560	1,120	1.25	1,400
C106	TV Room	2	150	300	1.33	399
C107	Telephone Room	2	60	120	1.40	168
C108	Dining Room	2	570	1,140	1.25	1,425
C109	Seclusion Room	2	100	200	1.33	266
C110	Seclusion Ante Room	2	65	130	1.40	182
C111	Seclusion Toilet Room	2	45	90	1.40	126
C112	Tutoring Room	2	80	160	1.40	224
C113	Direct Observation Room (DOS)	2	100	200	1.33	266
C114	One-on-One Room (Comfort Room)	2	80	160	1.40	224
C115	Patient Laundry Room	2	100	200	1.33	266
C116	Clean Linen	2	125	250	1.33	333
C117	Soiled Linen	2	110	220	1.33	293
C118	Staff Toilet Room	2	42	84	1.40	118
C119	Unit Storage	2	80	160	1.40	224
C120	Patient Storage	2	120	240	1.33	319

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
C200	**UNIT SHARED SPACES**			**1,260**		**1,676**
C201	Nursing Station	1	450	450	1.33	599
C202	Nursing Station Approach Area	1	200	200	1.33	266
C203	Medications Room	1	180	180	1.33	239
C204	Charting Room	1	150	150	1.33	200
C205	Kitchen	1	280	280	1.33	372
C300	**UNIT TRANSITION ZONE**			**2,290**		**3,051**
C301	Unit Administrative Director	1	150	150	1.33	200
C302	Unit Nursing Director	1	120	120	1.33	160
C303	Psychiatrist	1	150	150	1.33	200
C304	Psychologist	1	150	150	1.33	200
C305	Recreation Therapist	1	80	80	1.40	112
C306	Social Worker	2	120	240	1.33	319
C307	Intern Office	1	120	120	1.33	160
C308	Secretary	1	100	100	1.33	133
C309	Conference	1	300	300	1.33	399
C310	Group Room	2	240	480	1.33	638
C311	Visiting Room	2	200	400	1.33	532

GIRLS YOUTH

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
D100	**RESIDENTIAL WINGS**			**8,474**		**11,212**
D101	Bedroom	24	110	2,640	1.33	3,511
D102	Patient Toilet Room	8	80	640	1.40	896
D103	Medical Bedroom	2	110	220	1.33	293
D104	Medical Toilet Room	2	80	160	1.40	224
D105	Day Room	2	560	1,120	1.25	1,400
D106	TV Room	2	150	300	1.33	399
D107	Telephone Room	2	60	120	1.40	168
D108	Dining Room	2	570	1,140	1.25	1,425
D109	Seclusion Room	2	100	200	1.33	266
D110	Seclusion Ante Room	2	65	130	1.40	182
D111	Seclusion Toilet Room	2	45	90	1.40	126
D112	Tutoring Room	2	80	160	1.40	224
D113	Direct Observation Room (DOS)	2	100	200	1.33	266
D114	One-on-One Room (Comfort Room)	2	80	160	1.40	224
D115	Patient Laundry Room	2	100	200	1.33	266
D116	Clean Linen	2	125	250	1.33	333
D117	Soiled Linen	2	110	220	1.33	293
D118	Staff Toilet Room	2	42	84	1.40	118
D119	Unit Storage	2	80	160	1.40	224
D120	Patient Storage	2	120	240	1.33	319
D121	Vanity	2	20	40	1.40	56

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
D200	**UNIT SHARED SPACES**			**1,260**		**1,676**
D201	Nursing Station	1	450	450	1.33	599
D202	Nursing Station Approach Area	1	200	200	1.33	266
D203	Medications Room	1	180	180	1.33	239
D204	Charting Room	1	150	150	1.33	200
D205	Kitchen	1	280	280	1.33	372
D300	**UNIT TRANSITION ZONE**			**2,290**		**3,051**
D301	Unit Administrative Director	1	150	150	1.33	200
D302	Unit Nursing Director	1	120	120	1.33	160
D303	Psychiatrist	1	150	150	1.33	200
D304	Psychologist	1	150	150	1.33	200
D305	Recreation Therapist	1	80	80	1.40	112
D306	Social Worker	2	120	240	1.33	319
D307	Intern Office	1	120	120	1.33	160
D308	Secretary	1	100	100	1.33	133
D309	Conference	1	300	300	1.33	399
D310	Group Room	2	240	480	1.33	638
D311	Visiting Room	2	200	400	1.33	532

CHILDREN

		Space Qty.	NSF/ Space	Total NASF	Wall/ Circ. Factor	DGSF
E100	**RESIDENTIAL WINGS**			**6,904**		**9,290**
E101	Bedroom	18	110	1,980	1.33	2,633
E102	Patient Toilet Room	6	80	480	1.40	672
E103	Medical Bedroom	2	110	220	1.33	293
E104	Medical Toilet Room	2	80	160	1.40	224
E105	Day Room	2	430	860	1.33	1,144
E106	TV Room	2	150	300	1.33	399
E107	Telephone Room	2	60	120	1.40	168
E108	Dining Room	2	345	690	1.33	918
E109	Seclusion Room	2	100	200	1.33	266
E110	Seclusion Ante Room	2	65	130	1.40	182
E111	Seclusion Toilet Room	2	45	90	1.40	126
E112	Tutoring Room	2	80	160	1.40	224
E113	Direct Observation Room (DOS)	2	100	200	1.33	266
E114	One-on-One Room (Comfort Room)	2	80	160	1.40	224
E115	Patient Laundry Room	2	100	200	1.33	266
E116	Clean Linen	2	125	250	1.33	333
E117	Soiled Linen	2	110	220	1.33	293
E118	Staff Toilet Room	2	42	84	1.40	118
E119	Unit Storage	2	80	160	1.40	224
E120	Patient Storage	2	120	240	1.33	319

		Space Qty.	NSF/ Space	Total NASF	Wall/ Circ. Factor	DGSF
E200	**UNIT SHARED SPACES**			**1,260**		**1,676**
E201	Nursing Station	1	450	450	1.33	599
E202	Nursing Station Approach Area	1	200	200	1.33	266
E203	Medications Room	1	180	180	1.33	239
E204	Charting Room	1	150	150	1.33	200
E205	Kitchen	1	280	280	1.33	372
E300	**UNIT TRANSITION ZONE**			**2,780**		**3,709**
E301	Unit Administrative Director	1	150	150	1.33	200
E302	Unit Nursing Director	1	120	120	1.33	160
E303	Psychiatrist	1	150	150	1.33	200
E304	Psychologist	1	150	150	1.33	200
E305	Recreation Therapist	1	80	80	1.40	112
E306	Social Worker	3	120	360	1.33	479
E307	Intern Office	1	120	120	1.33	160
E308	Secretary	1	100	100	1.33	133
E309	Conference	1	300	300	1.33	399
E310	Group Room	2	240	480	1.33	638
E311	Visiting Room	2	200	400	1.33	532
E312	Sensory Room	1	110	110	1.33	146
E313	Play Therapy Room	1	180	180	1.33	239
E314	Observation Room	1	80	80	1.40	112

B100: COMMON AREAS

Hours of Operation

B101-102 (public spaces): 7 days per week, 8 AM – 9 PM
B103-104 (staff spaces): 24-hour / 7 days per week access

Security

B101-102 (Lobby/Waiting and Public Toilet rooms) will be open to access by State Hospital visitors. The Lobby/Waiting area will have an intercom system that connects with the Residential Unit Secretaries or the State Hospital switchboard, for assistance in gaining access beyond the lobby. A glass-enclosed vestibule with two sets of locked doors will serve as a sally port control point to travel from the Lobby/Waiting room to other areas within the Pediatric Facility (Administration/Medical Staff offices, School, or the Residential Unit Transition Zones).

Functions

B101-102 (Lobby/Waiting, Public Toilet Rooms): The Lobby/Waiting space is the entry and access control point for visitors to the Pediatric Facility. Non-staff professionals involved in patient cases, family members and other visitors will enter the Pediatric Facility through this space. This may also serve as a staff entry for those working in the building. The Public Toilet Rooms are for the use of public visitors.

B103-104 (Employee Lounge, Staff Shower/Locker): These are support spaces serving all staff members working in the Pediatric Facility. The Employee Lounge will provide space for staff to eat meals or take breaks. The Staff Shower/Locker is a unisex, single-user space, with shower and toilet facilities. The room has a minimal quantity of lockers intended for temporary, non-assigned use.

Location / Adjacency

B101-102 (Lobby/Waiting, Public Toilet Rooms)
The Pediatric Facility public/visitor entry and the Lobby/Waiting space must be easy for first-time visitors to locate and access from the hospital vehicular entry and drive. The entry must have adjacent visitor parking. This entry may also require adjacent staff parking, depending on the building design and staff entry locations.

The Lobby/Waiting will provide access to the building's major components (Administration/Medical Staff office, the school, and the residential units) through a sally port/vestibule control point.

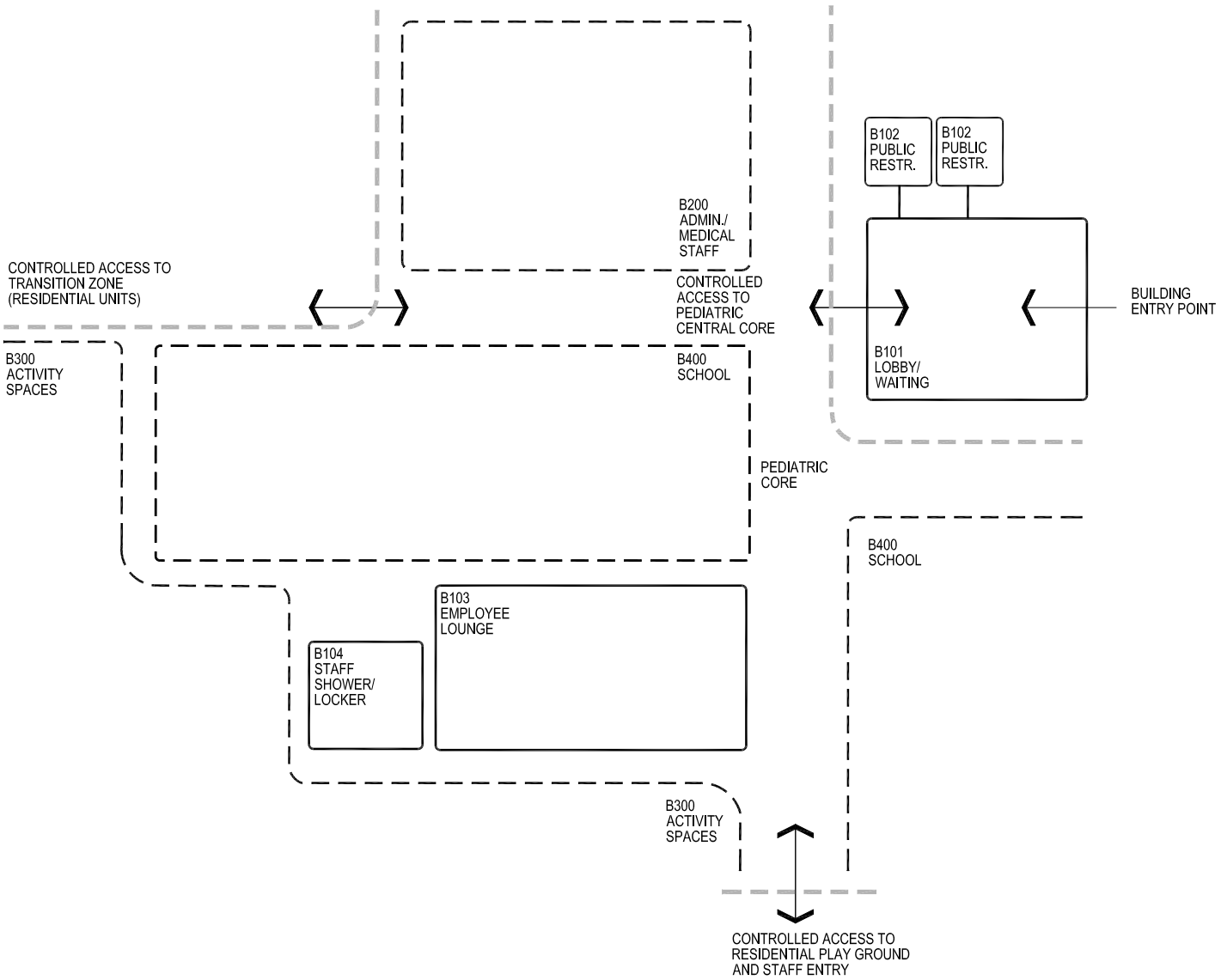
B103-104 (Employee Lounge, Staff Shower/Locker)
Ideally, these spaces should be adjacent to each other and to staff toilet rooms. They must be in a location that is easily accessed by all building staff, who generally have limited time for their breaks and meal periods. It would be beneficial if they were located near a primary staff entry point.

The Staff Shower/Locker room should be easily accessed from the Activity Spaces, for the convenience of staff who may shower after taking part in physical activities such as basketball and weight-lifting.

B100: COMMON AREAS

SPACE LIST

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
B100	**COMMON AREAS**			**1,284**		**1,659**
B101	Lobby/Waiting	1	420	420	1.33	559
B102	Public Toilet Room	2	42	84	1.40	118
B103	Employee Lounge	1	680	680	1.25	850
B104	Staff Shower/Locker	1	100	100	1.33	133



B100: COMMON AREAS
ADJACENCY DIAGRAM

B101 LOBBY/WAITING

AREA: 420 NSF

Occupants: Up to 16 people

Function:
Public access point to Pediatric Facility, with controlled access beyond this space to Administration / Medical Staff, school and residential unit transition zones
Visitor waiting space
Display space for historical and current information about the Utah State Hospital

Adjacency:
Accessed from public parking
Adjacent to access points for Administration / Medical Staff, school and residential unit transition zones
Public Toilet Rooms accessed from this space

Environment:

Floor: Hard surface flooring (i.e. stained concrete, ceramic tile)
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile & painted gypsum board; 10' height
Windows: Exterior windows with window coverings desired
Door: Glass storefront entry doors, locking

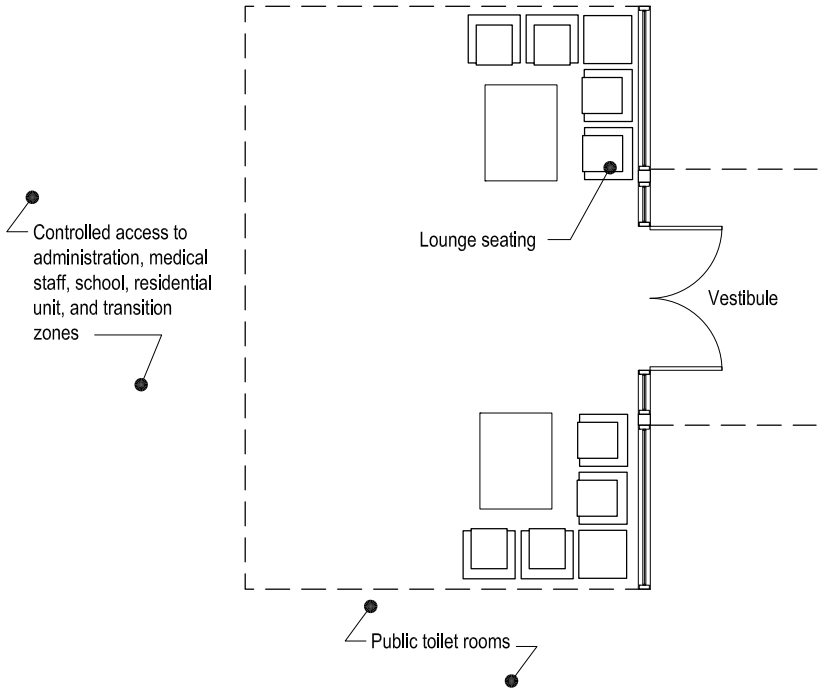
Equipment: Intercom access-control station, connecting to Residential Unit Secretary Workstations or State Hospital switchboard

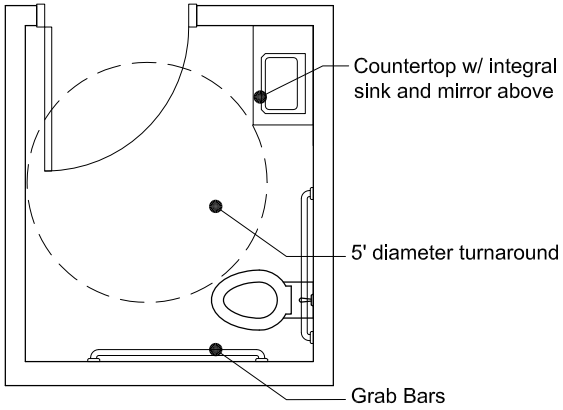
Furnishings: Lounge seating, occasional tables

Mechanical: Dedicated HVAC zone

Electrical:
Duplex electrical outlets per code
Fluorescent parabolic lighting

Notes:





B102 PUBLIC TOILET ROOM

AREA: 42 NSF

Occupants: 1 person

Function: Single-user, toilet rooms (Men's and Women's) for use by visitors

Adjacency: Private entry point within or adjacent to Lobby / Waiting

Environment:

Floor: Ceramic tile
Walls: Ceramic tile / painted gypsum board
Ceiling: Painted gypsum board; 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 countertop

Notes:

B103 EMPLOYEE LOUNGE

AREA: 680 NSF

Occupants: Up to 30 people

Function: Break and lunch space for Utah State Hospital Pediatric Facility staff

Adjacency:
Near staff toilet rooms and Staff Shower/Locker
Near Teacher's Prep / Workroom
Near staff entry

Environment:

Floor: Hard-surface flooring in food area; carpet in lounge area
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 10' height
Windows: Exterior windows with window coverings
Door: 3' x 7' wood door, locking

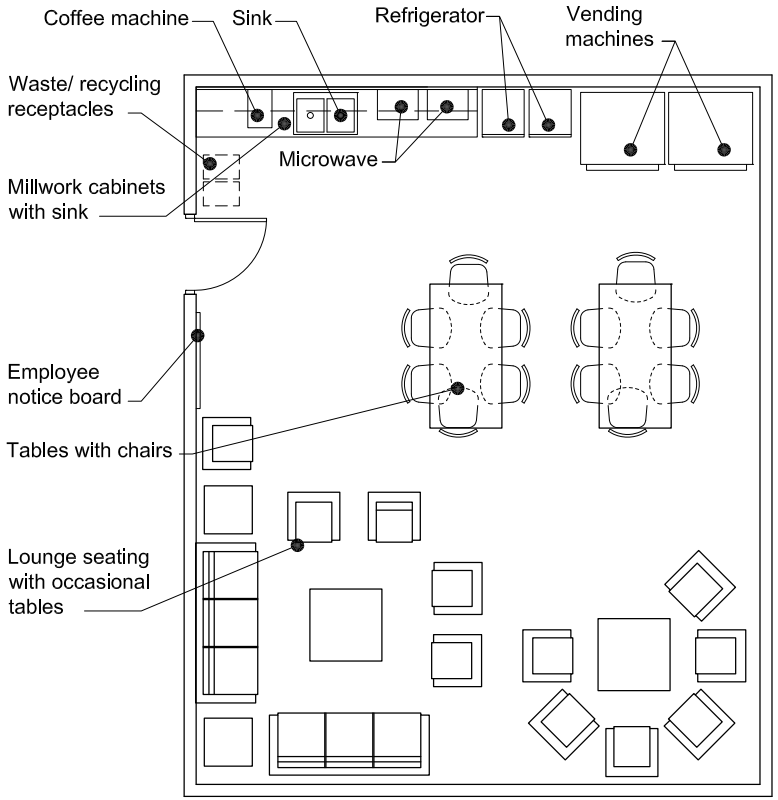
Equipment:
Millwork countertop with storage cabinets/drawers below, storage cabinets above
Double compartment kitchen sink
2 refrigerators, 2 microwave ovens, coffee machine
2 vending machines

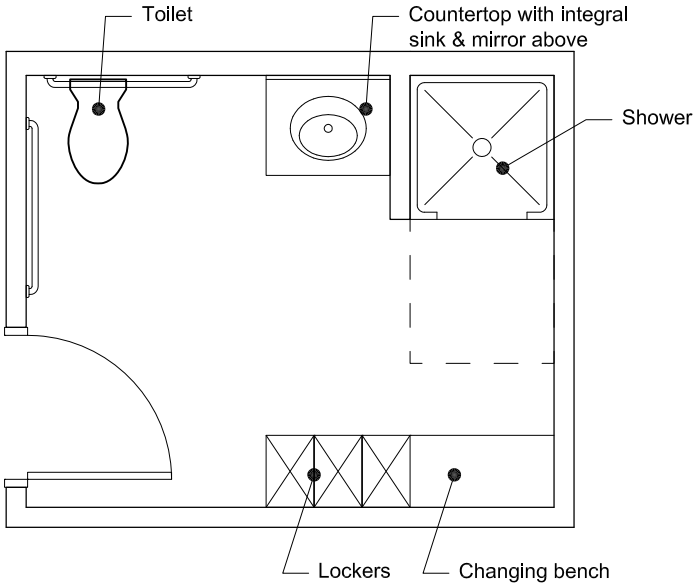
Furnishings:
(2) 6' x 3' tables with 6 chairs each
Lounge seating, including sofas, and occasional tables
Employee notice board

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

Electrical:
Duplex electrical outlets per code
Electrical outlets above countertop
Electrical outlets as required for refrigerators, microwaves, coffee machine and vending machines
Compact fluorescent lighting

Notes: Countertops at 34" high to meet ADA





B104 STAFF SHOWER/LOCKER

AREA: 100 NSF

Occupants: 1 occupant

Function: Single-user toilet and shower facilities for Pediatric Facility staff

Adjacency:
Near Employee Lounge
Near school Multipurpose / Activity and Weight Rooms
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:

B200: ADMIN./ MEDICAL STAFF

Hours of Operation

Monday – Friday, 8 AM – 5 PM

Security

Administration / Medical Staff does not have any special security requirements, other than controlled visitor access.

Functions

Administrative / Medical Staff consists of offices for administrative and medical staff who serve the entire Pediatric Facility.

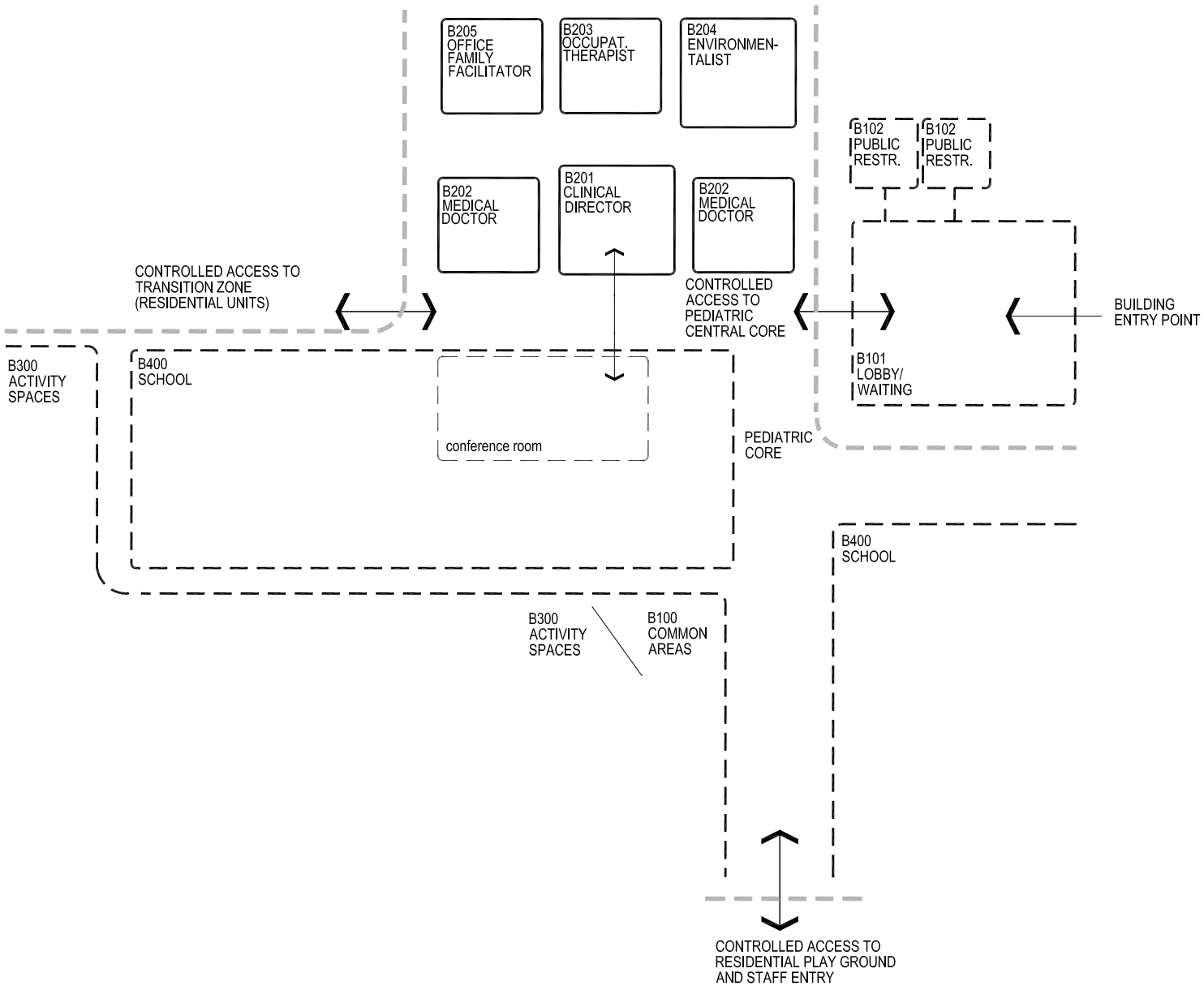
Location / Adjacency

- Public visitors will access these offices through the Central Core Lobby / Waiting room.
- This space group must have good accessibility to the Transition Zone of all three residential units.
- The Clinical Director will use the school Conference Room (B400 space group) frequently, and must have direct adjacency to it.
- This group requires access to shared office equipment (copier, fax machine).

B200: ADMIN./MEDICAL STAFF

SPACE LIST

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
B200	**ADMIN./MEDICAL STAFF**			**780**		**1,037**
B201	Clinical Director	1	150	150	1.33	200
B202	Medical Doctor	2	120	240	1.33	319
B203	Occupational Therapist	1	120	120	1.33	160
B204	Environmentalist	1	150	150	1.33	200
B205	Family Facilitator	1	120	120	1.33	160



B200: ADMIN./MEDICAL STAFF
ADJACENCY DIAGRAM

B201 CLINICAL DIRECTOR

AREA: 150 NSF

Occupants: 1 occupant, with up to 3 visitors

Function: Private office for Pediatric Facility Clinical Director; paperwork; small meetings; computer work; telephone calls

Adjacency:
With other administrative offices
Directly adjacent to School Conference Room
Near Residential Unit Transition Zones
Easily accessed from Lobby / Waiting
Requires easy access to a shared work room, with copier / printer, fax machine and office supplies

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

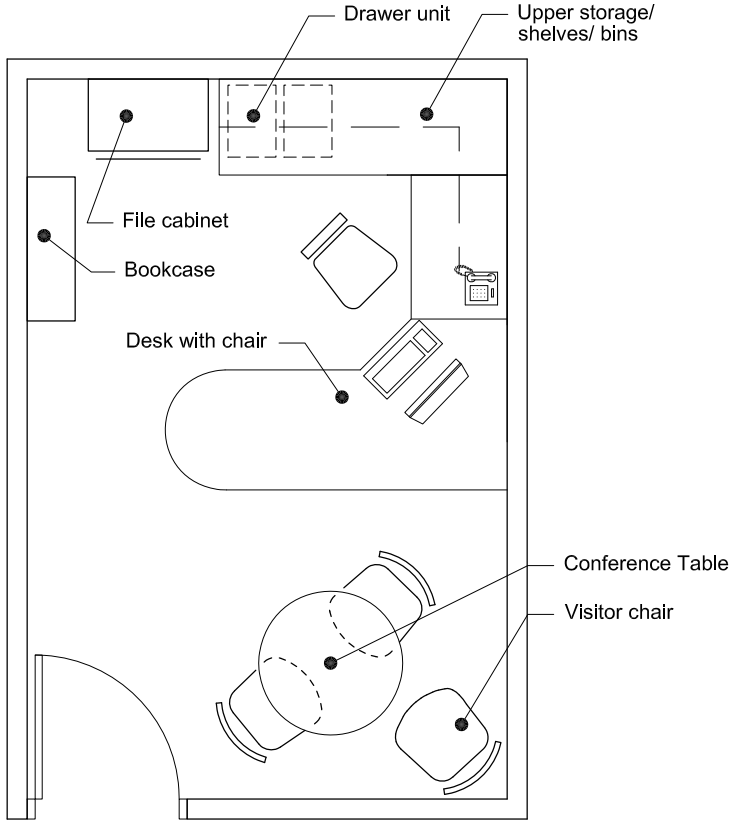
Equipment: Computer; telephone

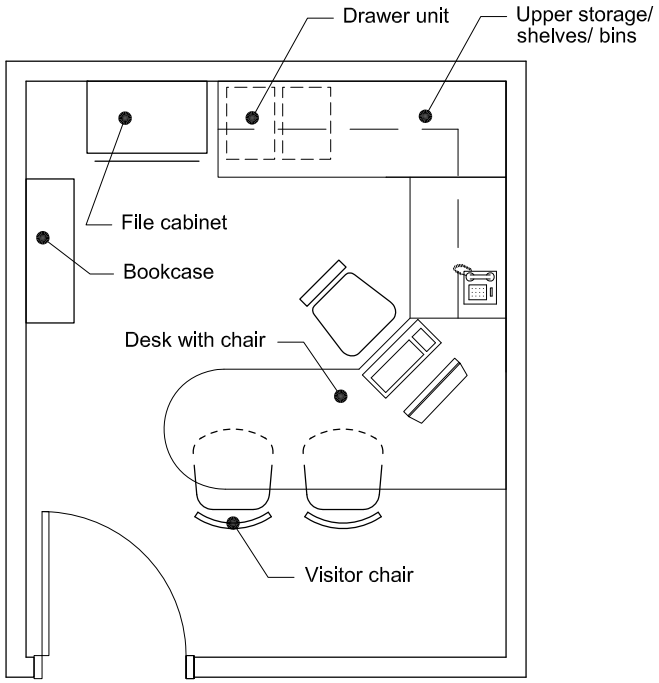
Furnishings:
Systems furniture U-shaped desk with shelves / bins above and drawer units below
Desk chair
3 visitor chairs
Bookcase / file cabinet

Mechanical: Shared HVAC zone

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

Notes:





B202 MEDICAL DOCTOR

AREA: 120 NSF

Occupants: 1 occupant, with up to 2 visitors

Function: Private office for Pediatric Facility Medical Doctor; paperwork; small meetings; computer work; telephone calls

Adjacency:
Near Clinical Director
Near residential unit transition zones
Easily accessed from Lobby / Waiting

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:

B203 OCCUPATIONAL THERAPIST

AREA: 120 NSF

Occupants: 2 occupants, with up to 2 visitors

Function: Shared enclosed office for occupational therapy staff

Adjacency: With administrative offices
Easy access to school Multipurpose Room and residential units, where occupational therapy takes place

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

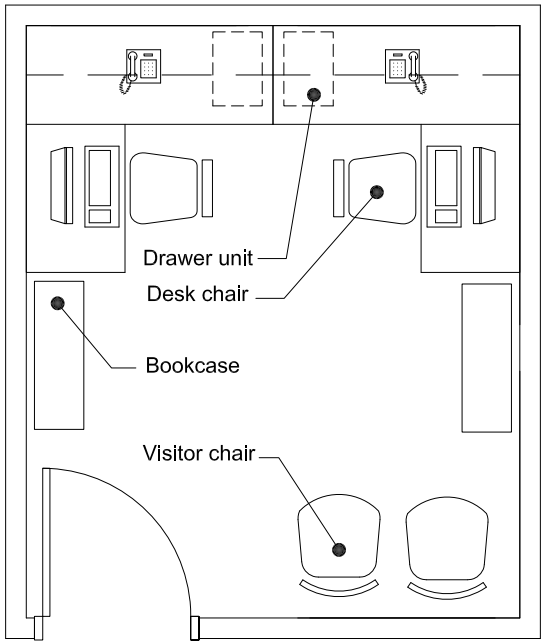
Equipment: 2 computers; 2 telephones
1 shared printer

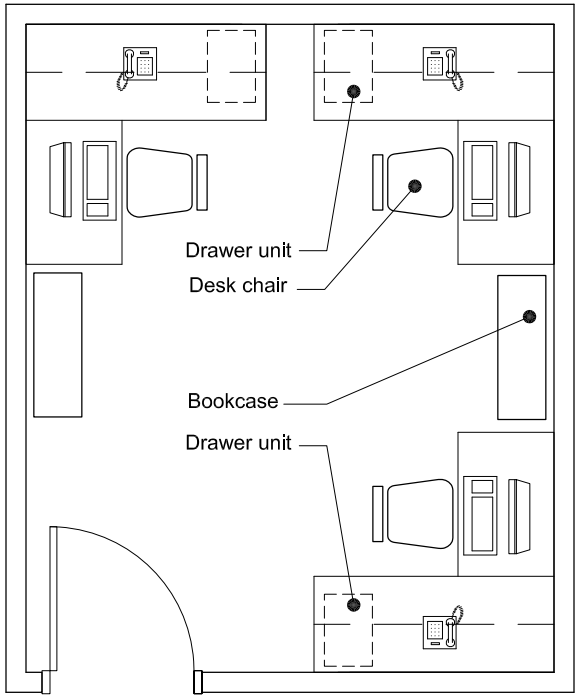
Furnishings: 2 systems furniture L-shaped workstations; shelves / bins above and drawer units below
2 desk chairs
2 visitor chairs
2 bookcases

Mechanical: Shared HVAC zone

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

Notes:





B204 ENVIRONMENTALIST

AREA: 150 NSF

Occupants: 3 occupants

Function: Shared enclosed office for environmental staff, who monitor physical conditions and supplies in residential units

Adjacency: Easy access to three residential units
Requires easy access to a shared work room, with copier / printer, fax machine and office supplies

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: 3 computers; 3 telephones

Furnishings: 3 systems furniture L-shaped workstations; shelves / bins above and drawer units below
3 desk chairs
2 bookcases

Mechanical: Shared HVAC zone

Electrical: Duplex electrical outlets per code
3 sets of voice / data outlets
Fluorescent parabolic lighting

Notes:

B205 FAMILY FACILITATOR

AREA: 120 NSF

Occupants: 1 occupant, with up to 2 visitors

Function: Private office for Family Facilitator; paperwork; small meetings; computer work; telephone calls

Adjacency:
With administrative and medical offices
Near residential unit transition zones
Easily accessed from Lobby / Waiting

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

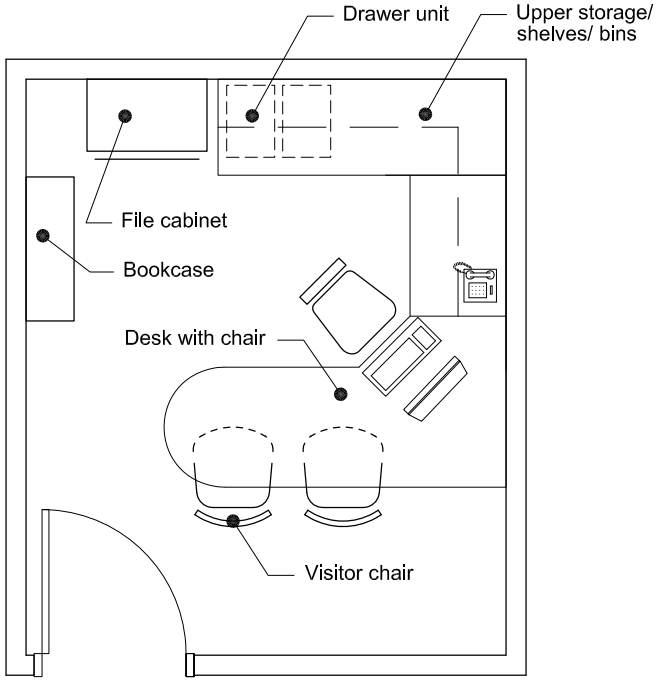
Equipment: Computer; telephone

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:



B300: ACTIVITY SPACES

Hours of Operation

All days, 7 AM – 10 PM

Security

The Activity Spaces are patient-access spaces; injury and suicide-resistant fixtures and design elements must be incorporated. This area will have controlled access.

Functions

This grouping includes spaces for functions such as PE that take place in conjunction with the school day, as well as for activities that occur independently of the school in the daytime or evening. Functions include:

- Physical activities such as basketball, volleyball, etc.
- Ceramics/crafts, table tennis, pool.
- School-day lunch serving and dining.
- Occupational therapy (food preparation and serving).
- Music therapy.
- Large gatherings (family / holiday banquets).
- Large group recreational activities (movies, etc.).
- Large group instructional activities / training (lectures).

Location / Adjacency

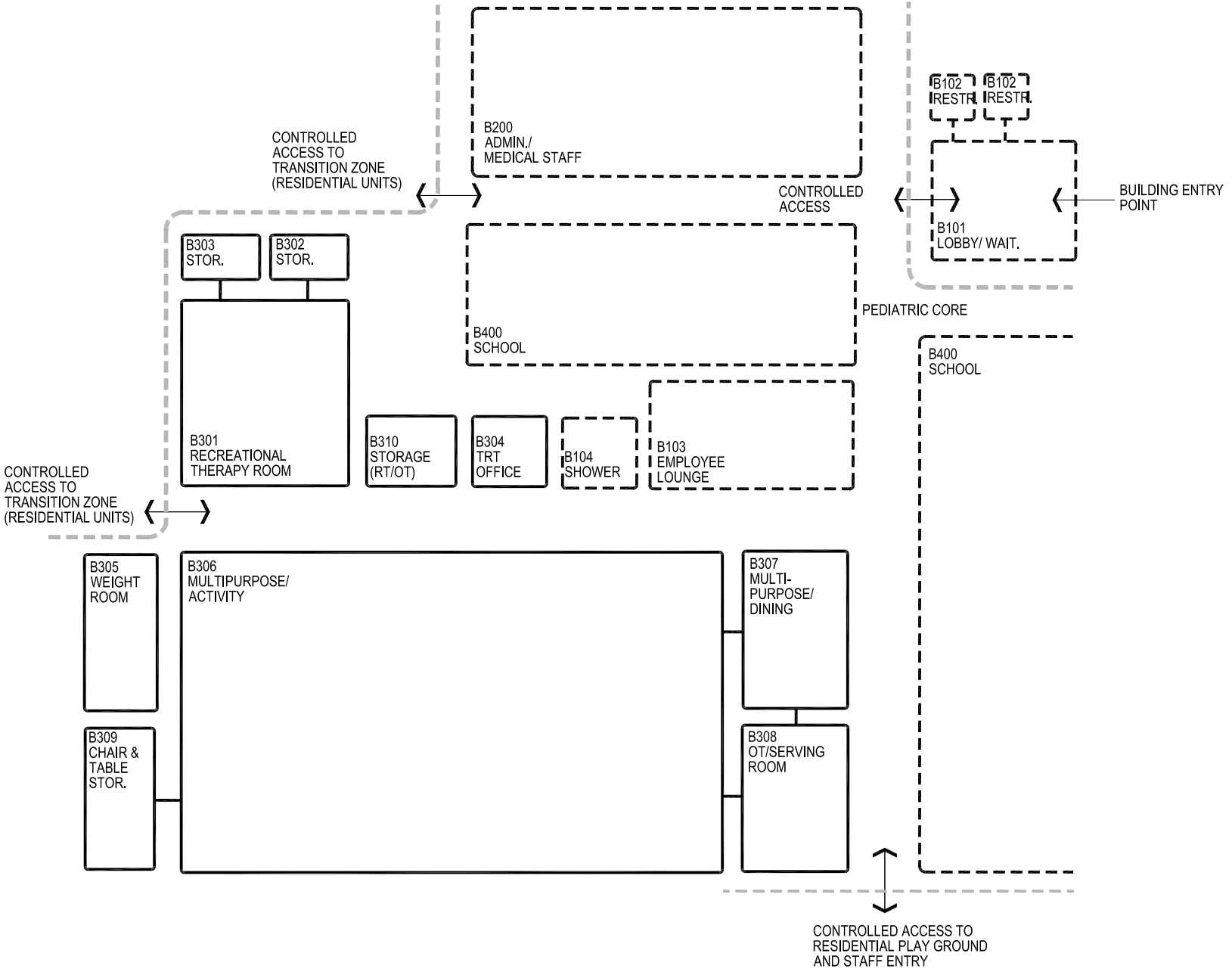
This space grouping must be easily accessible from both the School and from the residential units.

The Multipurpose / Activity Room and the Weight Room should have easy access to the Staff Shower / Locker room.

B300: ACTIVITY SPACES

SPACE LIST

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
B300	**ACTIVITY SPACES**			**8,480**		**9,907**
B301	Recreational Therapy Room	1	800	800	1.25	1,000
B302	RT Storage / Kitchenette	1	100	100	1.33	133
B303	RT Storage	1	100	100	1.33	133
B304	TRT Office	1	150	150	1.33	200
B305	Weight Room	1	250	250	1.33	333
B306	Multipurpose / Activity Room	1	5,250	5,250	1.10	5,775
B307	Multipurpose / Dining Room	1	750	750	1.25	938
B308	OT/Serving Room	1	500	500	1.25	625
B309	Chair & Table Storage	1	400	400	1.33	532
B310	Storage (RT/OT)	1	180	180	1.33	239



B300: ACTIVITY SPACES
ADJACENCY DIAGRAM

B301 RECREATIONAL THERAPY ROOM

AREA: 800 NSF

Occupants: Up to 32 people

Function:
Activity, recreational and hobby space for Pediatric Facility patients; table tennis, pool, ceramics, crafts
Room divides in two equal sections with movable partition

Adjacency:
Easily accessible from school and residential units
Adjacent to Multipurpose/Activity Room, Weight Room, and RT Storage
RT Kitchenette and RT Storage accessed from this space

Environment:

- **Floor:** Hard-surface flooring (VCT, ceramic tile, stained concrete, etc.)
- **Walls:** CMU
- **Ceiling:** Painted gypsum board; 10' height
- **Windows:** Exterior windows with window coverings
- **Door:** 3' x 7' steel door, locking

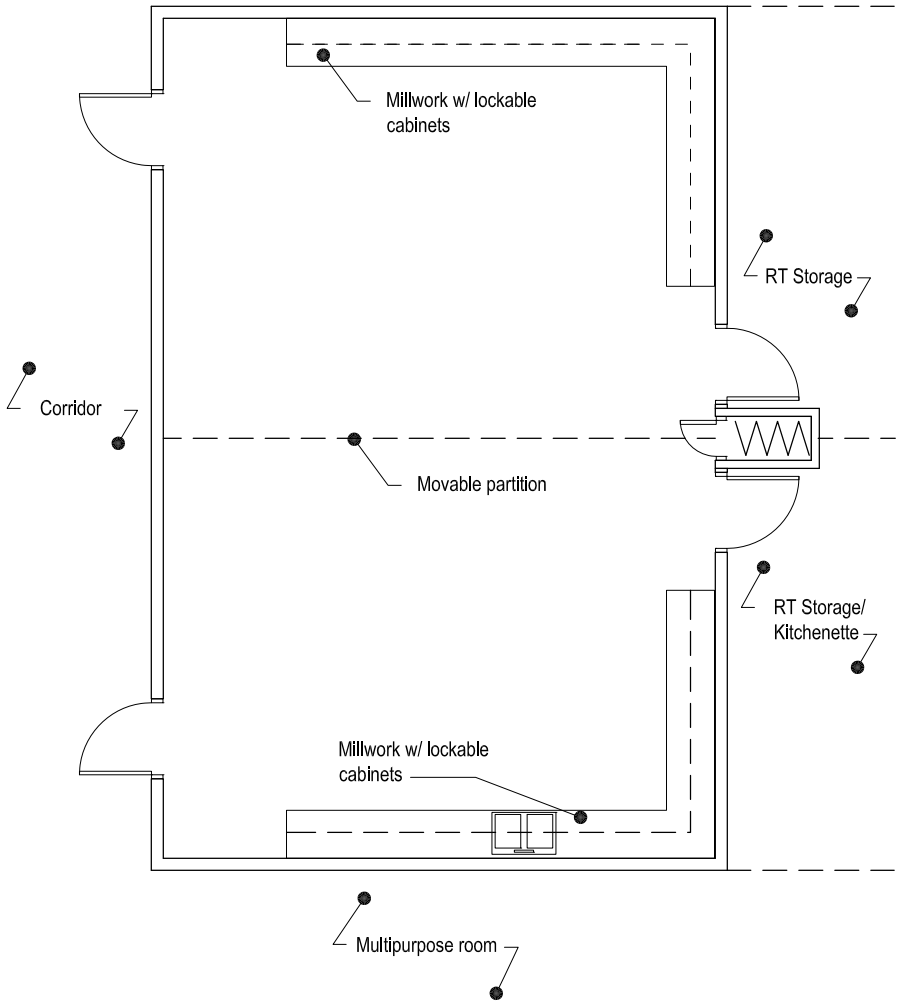
Equipment:
Movable panel partition divides room in two; STC 50; manual operation; recessed storage pocket, locking
Solid surface countertop with lockable millwork storage cabinets/drawers below, storage cabinets above, in each half of room
Double compartment kitchen sink
Millwork display case

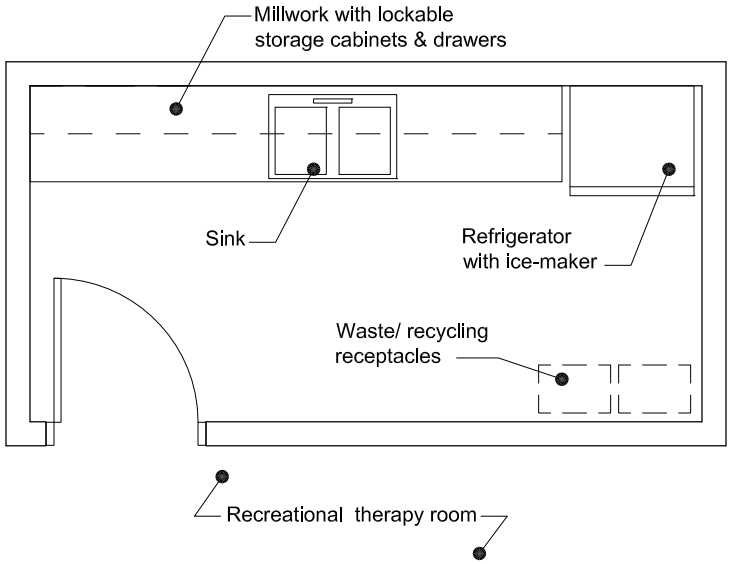
Furnishings:
Table tennis table, folding
Folding tables for crafts and activities, 8'L x 3'W
Folding chairs

Mechanical: Dedicated HVAC zone with exhaust

Electrical:
Duplex electrical outlets per code
Electrical outlets above countertop
Compact fluorescent lighting

Notes:
Countertops at 34" high to meet ADA
Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements





B302 RT STORAGE/KITCHENETTE

AREA: 100 NSF

Occupants: None

Function: Food preparation and storage space; support space for Recreational Therapy functions (barbeques; family food events, etc.)

Adjacency: Accessed through Recreational Therapy Room

Environment:

Floor: Hard-surface flooring (VCT)
Walls: CMU
Ceiling: Lay-in acoustic tile; 9' height
Windows: None
Door: 3' x 7' steel door, locking

Equipment: Solid surface countertop with lockable storage cabinets/drawers below & storage cabinets above
Double compartment kitchen sink
Refrigerator with ice-maker

Furnishings: Waste and recycling receptacles

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

Electrical: Duplex electrical outlets per code
Electrical outlets above countertop
Electrical outlets as required for refrigerator & microwave
Compact fluorescent lighting

Notes: Countertops at 34" high to meet ADA
Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements

B303 RT STORAGE

AREA: 100 NSF

Occupants: None

Function: Storage of materials, furnishings, equipment used in Recreational Therapy Room

Adjacency: Accessed through Recreational Therapy Room

Environment:

Floor: Hard-surface flooring (VCT)
Walls: CMU
Ceiling: Lay-in acoustic tile; 9’ height
Windows: None
Door: 3’ x 7’ steel door, locking

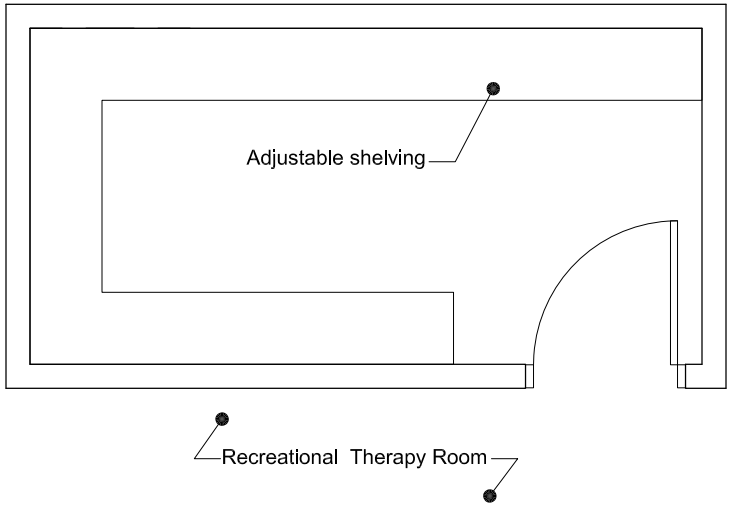
Equipment: Heavy-duty adjustable steel shelving on heavy-duty wall-hung standards; varying depths

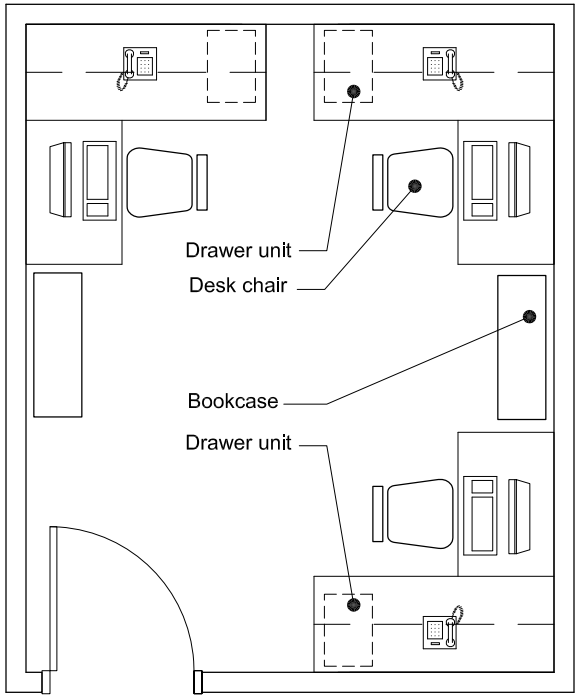
Furnishings: None

Mechanical: Minimal HVAC

Electrical: Duplex electrical outlets per code
Compact fluorescent lighting

Notes: Countertops at 34” high to meet ADA
Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements





B304 TRT OFFICE

AREA: 150 NSF

Occupants: 3 occupants

Function: Shared enclosed office for recreational therapy staff

Adjacency: Adjacent to Recreational Therapy 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: **3** computers; 3 telephones

Furnishings: 3 systems furniture L-shaped workstations; shelves / bins above and drawer units below
3 desk chairs
2 bookcases

Mechanical: Shared HVAC zone

Electrical: Duplex electrical outlets per code
3 sets of voice / data outlets
Fluorescent parabolic lighting

Notes:

B305 WEIGHT ROOM

AREA: 250 NSF

Occupants: Up to 5 people

Function: Weight-lifting and fitness activities monitored by RT and OT staff

Adjacency: Adjacent to Multipurpose/Activity and Recreational Therapy Room
Easy access to Staff Shower / Locker

Environment:

- **Floor:** Rubber sports flooring
- **Walls:** CMU
- **Ceiling:** Painted gypsum board; 10' height
- **Windows:** Natural light (skylights, clerestory windows) desired
- **Door:** 3' x 7' steel double doors, locking

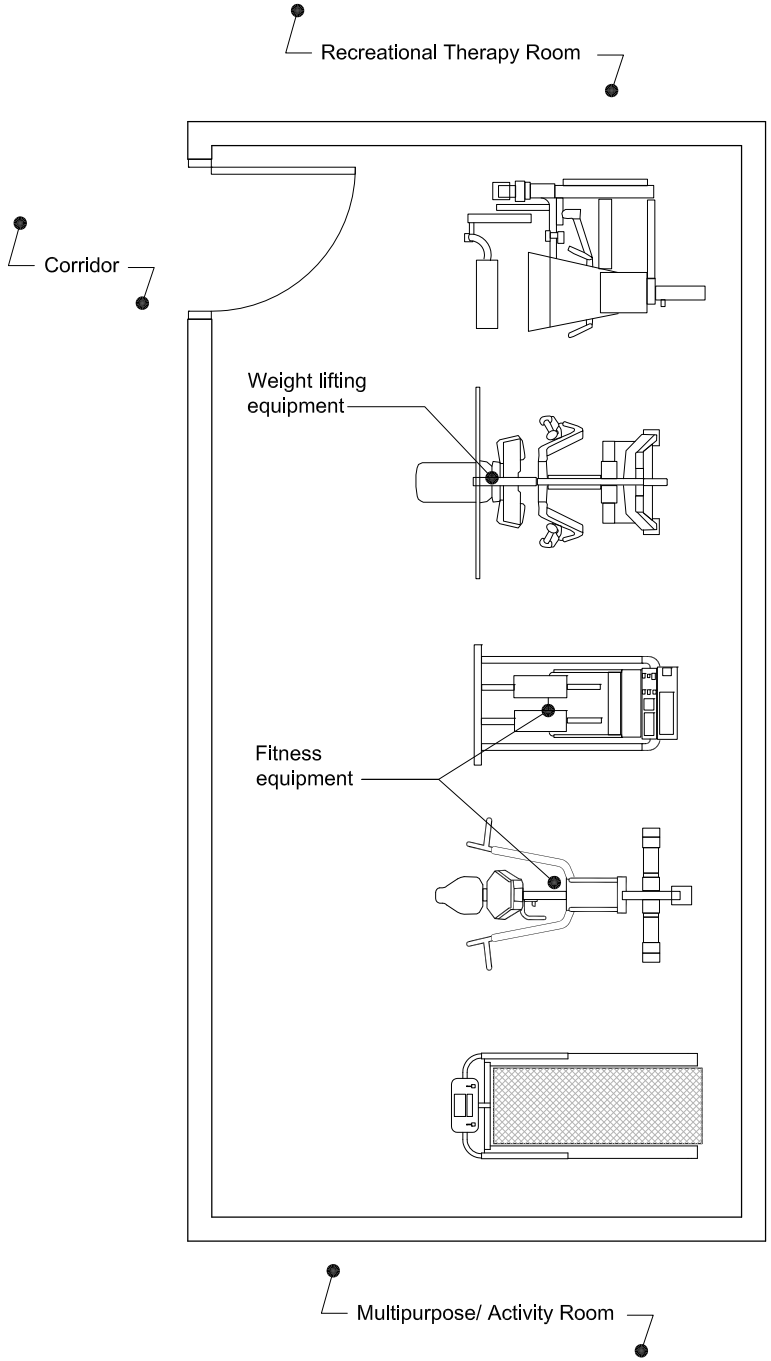
Equipment: 5 weight or cardio equipment stations
Mirrors on one or two walls

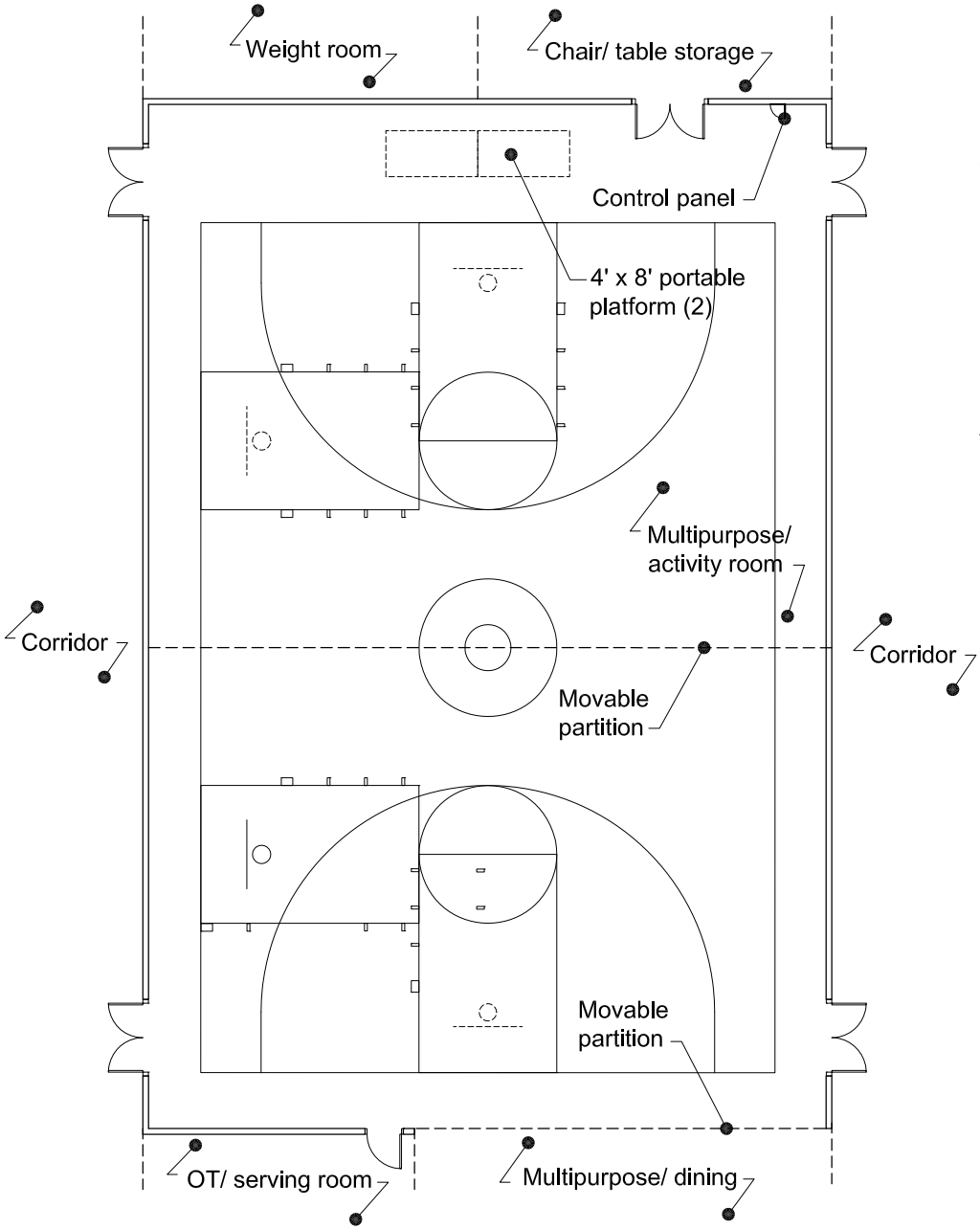
Furnishings: None

Mechanical: Dedicated HVAC zone

Electrical: Duplex electrical outlets per code
Electrical and data outlets as needed for equipment

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements





B306 MULTIPURPOSE/ACTIVITY ROOM

AREA: 5,250 NSF

Occupants:
Capacity for up to 100 people in large gatherings
Typical activity / recreational use: 24 students

Function:
Physical activities (basketball, PE classes, etc.)
Large-group training; large-group recreational activities (films, lectures, presentations)
Large gatherings involving patient families, State Hospital staff (Christmas parties; large dinners, etc.)
Room sub-divides in two with movable panel partition

Adjacency:
Near Recreational Therapy Room
Easily accessible from classrooms and residential units
Adjoins Multipurpose/Dining Room & OT/Serving Room
Chair & Table Storage accessed from this space

Environment:

Floor: Rubber sports flooring; basketball court layout design
Walls: CMU; sound absorptive panels
Ceiling: Exposed structure; 20-25' height; sound absorption
Windows: Natural light (skylights, clerestory windows) desired; must have room darkening capability
Door: 3' x 7' steel double doors, locking

Equipment:
Basketball standards (4)
Projection screen (electrical operation) and projector, mounted on upper-structure; built-in sound system
AV control panel, recessed in wall; locking cover panel
Portable platform, 2 sections, each 8'W x 48'D x 6"H
Movable panel partition, electric operation; STC 50; recessed storage pocket with locking door

Furnishings:
Folding tables and chairs for 100

Mechanical:
Dedicated HVAC zone; exposed ductwork with side diffusers

Electrical:
Duplex electrical outlets per code
General recreational-use lighting; lighting for room AV usage; spot lighting at portable platform

Notes:
Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements

B307 MULTIPURPOSE/DINING

AREA: 750 NSF

Occupants: Capacity for up to 32 people for dining (24 patients plus staff)

Function: Lunch dining space (on school days)
Music therapy (primarily an evening use)

Adjacency: Adjoins Multipurpose/Activity & OT/Serving Room
Easily accessible from classrooms and residential units

Environment:

- **Floor:** Hard surface floor (sheet vinyl, stained concrete, etc.)
- **Walls:** CMU with sound absorption panels
- **Ceiling:** Painted gypsum board with sound absorption panels; 10' height
- **Windows:** Natural light (skylights, clerestory windows) desired
- **Door:** 3' x 7' steel double doors, locking

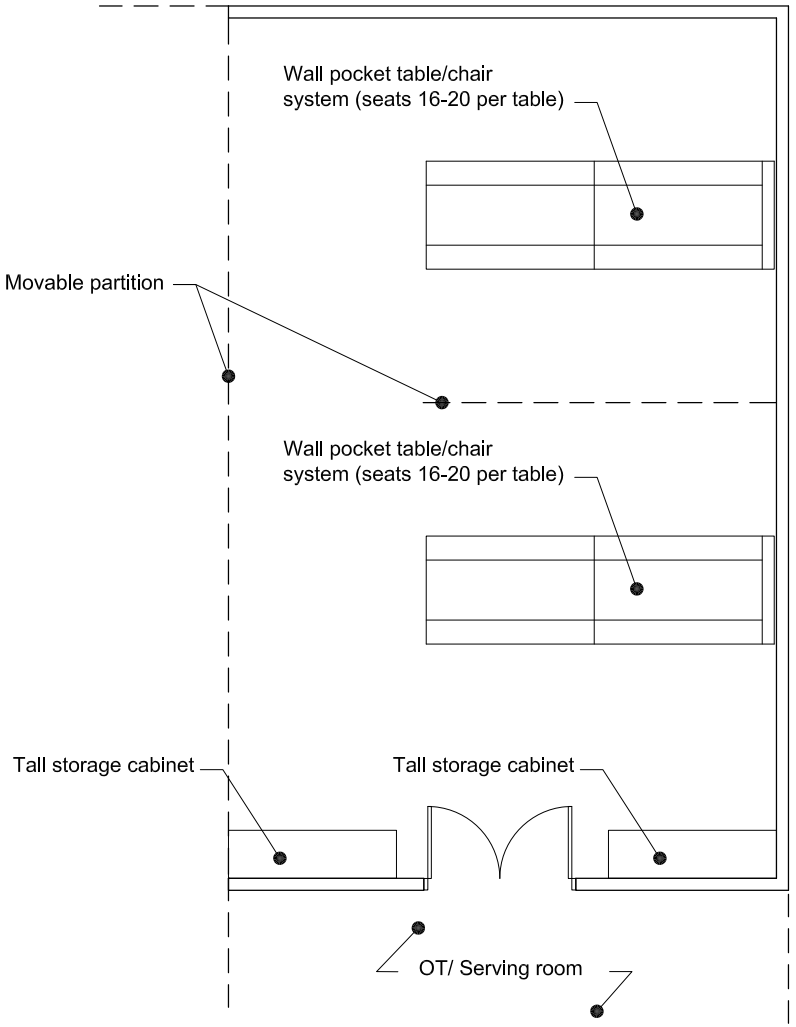
Equipment: Wall-attached dining tables with benches (4 at 8-seat capacity each); fold into wall alcoves when not in use
Movable panel partition separating this space from Multipurpose/Activity; manual operation; STC 50; recessed storage pocket with locking door
Movable panel partition between the two dining tables, for separating patients into smaller groups during dining; manual operation; recessed storage pocket with locking door
2 millwork storage cabinets on sides of entry door; full-height; adjustable shelving; locking (1-music therapy storage; 1-OT storage)

Furnishings: None

Mechanical: Dedicated HVAC zone; exhaust

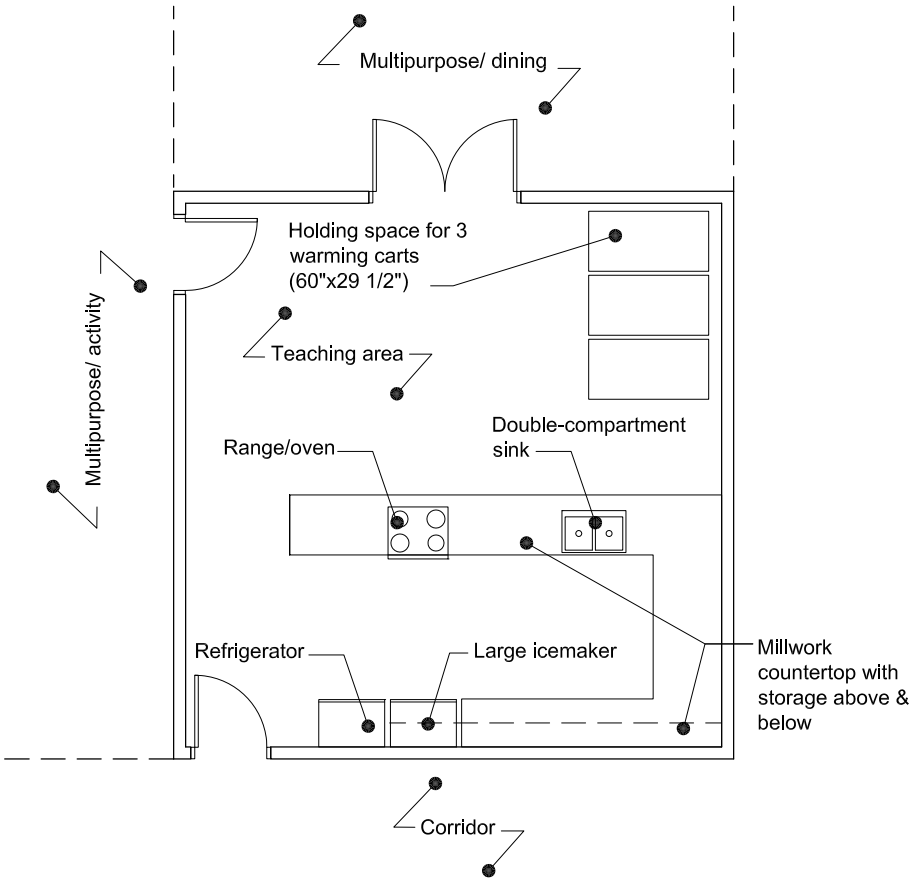
Electrical: Duplex electrical outlets per code
Compact fluorescent lighting

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements



B308 OT/SERVING ROOM

AREA: 500 NSF



Occupants: Up to 15 people for OT (12 patients plus staff)

Function:
School lunch serving space (on school days)
Occupational therapy (cooking skills)

Adjacency:
Adjoins Multipurpose/Dining
Easily accessible from classrooms

Environment:

- **Floor:** Hard surface floor (sheet vinyl, stained concrete, etc.)
- **Walls:** CMU
- **Ceiling:** Painted gypsum board; 10’ height
- **Windows:** None
- **Door:** 3’ x 7’ steel doors, locking

Equipment:
Solid surface countertop with lockable storage cabinets/drawers below & storage cabinets above
Double compartment kitchen sink
Refrigerator with ice-maker, microwave oven, electric range/oven
Holding area for food warming carts
Large-capacity ice machine

Furnishings: Waste and recycling receptacles

Mechanical: Dedicated HVAC zone; exhaust

Electrical:
Duplex electrical outlets per code
Electrical outlets above countertop
Electrical outlets as required for refrigerator, microwave and range
Compact fluorescent lighting

Notes:
Countertops at 34” high to meet ADA
Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements

B309 CHAIR & TABLE STORAGE

AREA: 400 NSF

Occupants: None

Function: Storage space for portable platform; folding tables & chairs; recreational therapy equipment; school equipment used in Multipurpose/ Activity Room
Multipurpose/ Activity Room AV equipment is in this room, with control panel recessed in wall of MP/A Room, behind locking access door

Adjacency: Accessed from Multipurpose/Activity Room

Environment:

- **Floor:** Sealed concrete
- **Walls:** CMU
- **Ceiling:** Exposed structure; 10-12' height
- **Windows:** None
- **Door:** 3' x 7' steel double doors, locking

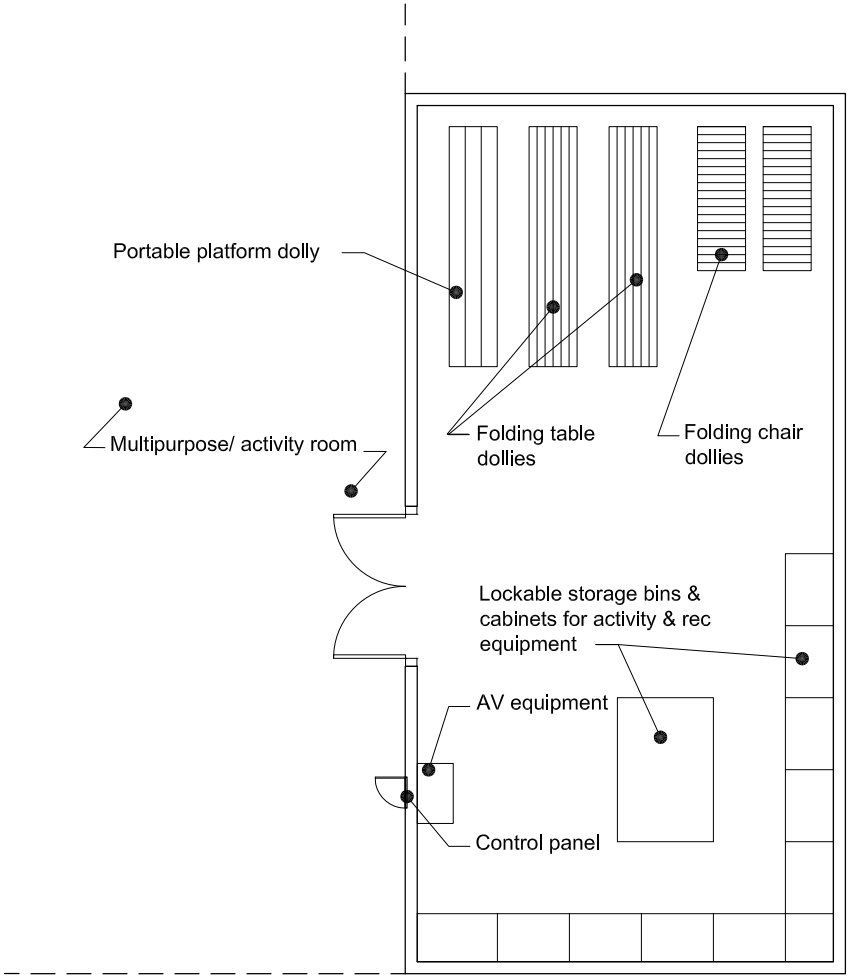
Equipment: Lockable storage cabinets/bins for School activity / athletic equipment
Lockable storage cabinets/bins for Recreational Therapy activity / athletic equipment
Dollies for folding tables and chairs
Dolly for portable platform
AV / sound system equipment used in Multipurpose/ Activity Room

Furnishings: None

Mechanical: Minimal HVAC

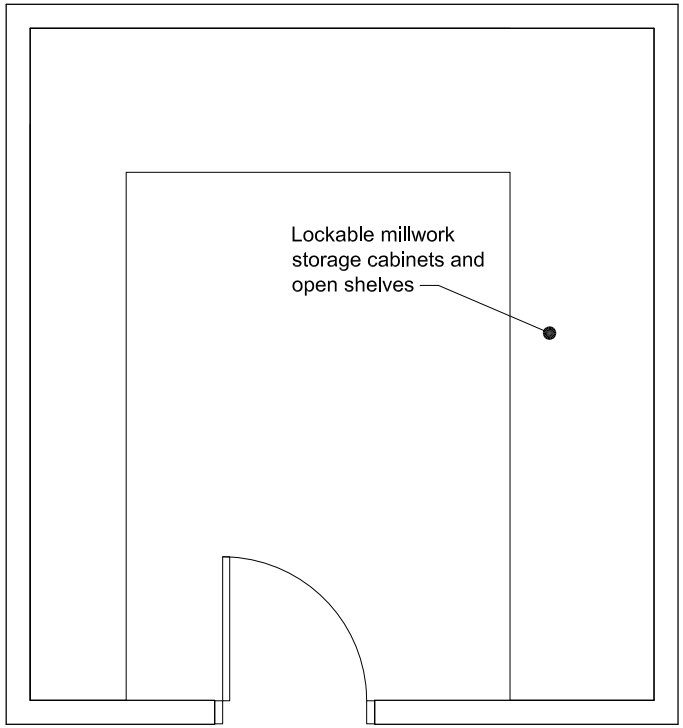
Electrical: Duplex electrical outlets per code
Compact fluorescent lighting

Notes: Potential patient-access space: equipment and fixtures to meet patient safety and security requirements



B310 STORAGE (RT/OT)

AREA: 180 NSF



Occupants: None

Function: Enclosed room with cabinets and shelving units to store RT and OT equipment and materials

Adjacency: Adjacent to RT, OT and Multipurpose/Activity spaces

Environment:

- **Floor:** Sealed concrete
- **Walls:** CMU
- **Ceiling:** Painted gypsum board; 10' height
- **Windows:** None
- **Door:** 3' x 7' steel double doors, locking

Equipment: Lockable millwork storage cabinets and open shelves

Furnishings: None

Mechanical: Minimal HVAC

Electrical: Duplex electrical outlets per code
Compact fluorescent lighting

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements

B400: SCHOOL

Hours of Operation

Monday – Friday, 8 AM – 3 PM

Security

The School contains patient-access spaces which must incorporate injury and suicide-resistant fixtures and design elements. The School will have controlled entry and exit. Its layout must respond to internal safety issues, such as the need for separation between the elementary and adolescent age children, and the need for personnel in the Secretary Office to see patients and others as they enter / exit the school area.

Functions / Space Adjacencies

The school will have seven classrooms, three for elementary grades 1-6 and four for secondary grades 7-12 (2 boys/2 girls). The school must be designed so that the elementary children do not come in contact with the secondary children. Each of the two classroom groupings will have an adjacent seclusion suite and its own set of patient / student toilet rooms (the toilet rooms are multi-user for speed / efficiency of toilet room usage and also so that staff can be in the rooms for monitoring purposes). The Library, a classroom-size room, will serve all, and will provide access to two Testing Rooms and a Textbook Storage room.

The school's administrative offices will consist of a Principal's private office, a Secretary Office for two people, a Nursing Office for 4, a Teacher's Prep / Workroom which will contain the school's secure student files, and an Exam Room, Medications Room and Conference Room. The Exam and Medications Rooms should be adjacent to the Nursing Office. The Conference Room should be near the Principal and Secretary offices, but will also be used by the Pediatric Facility Clinical Director (B200 space group), and must have good adjacency to that office.

General Location / Adjacency

The School must have good adjacency with:

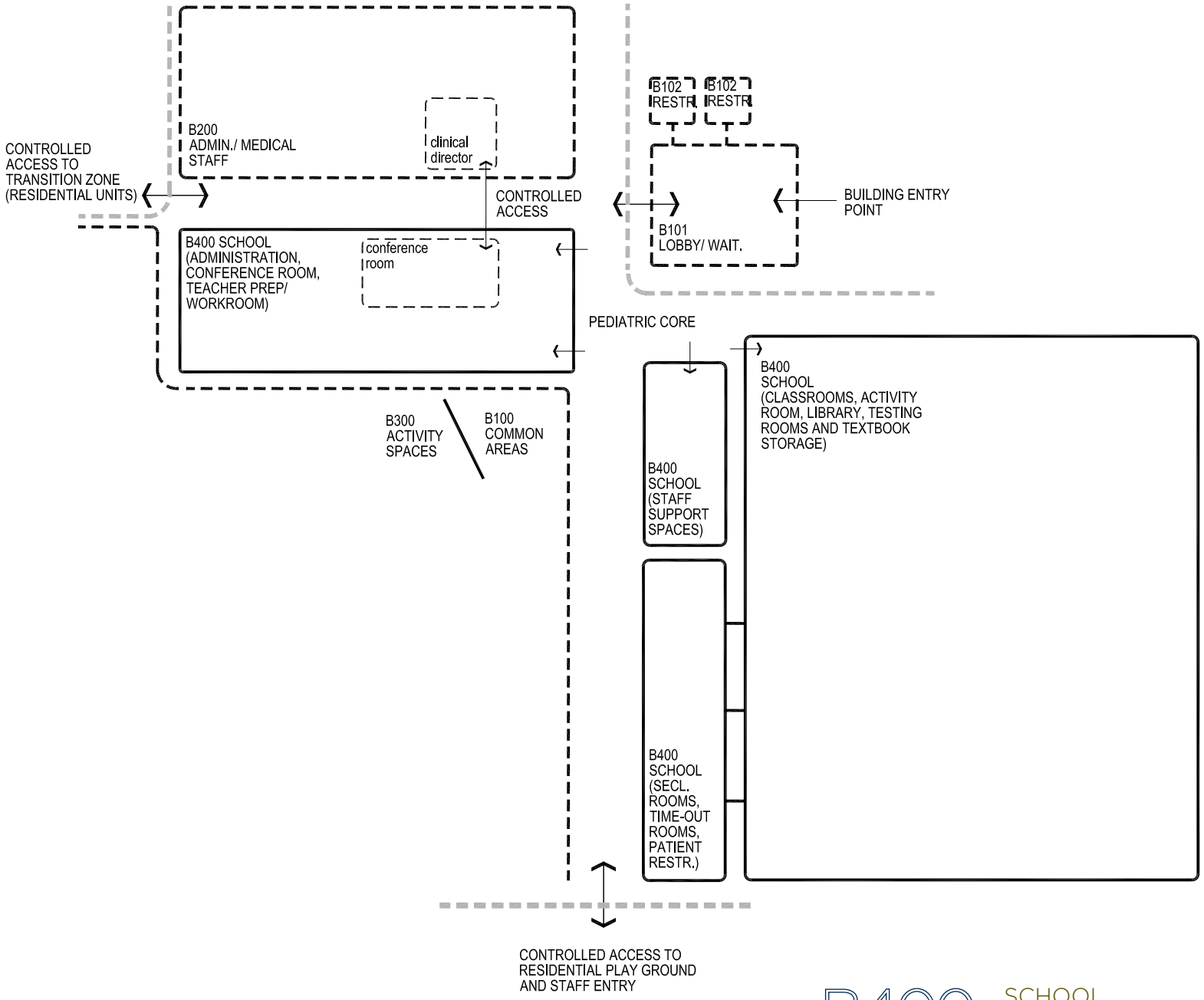
- The residential wings of the three residential units.
- The Activity Spaces, where patients will eat lunch and have PE during the school day.
- The Administration / Medical Staff offices (in particular the Clinical Director Office requires proximity to the school Conference Room).
- The residential unit transition zones (in particular the Psychologist offices; the Psychologists will administer tests in the school library Testing Rooms).

Staff Amenities

The school should have convenient access to the building's Employee Lounge, Staff Shower/Locker room, and staff parking area.

B400: SCHOOL
SPACE LIST

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
B400	**SCHOOL**			**10,304**		**13,123**
B401	Classroom	7	900	6,300	1.25	7,875
B402	Time-out Room	2	110	220	1.33	293
B403	Seclusion Room	2	100	200	1.33	266
B404	Seclusion Ante Room	2	65	130	1.40	182
B405	Seclusion Toilet Room	2	45	90	1.40	126
B406	Library	1	900	900	1.25	1,125
B407	Testing Room	2	80	160	1.40	224
B408	Storage (Textbooks)	1	80	80	1.40	112
B409	Activity Room	1	600	600	1.25	750
B410	Teacher's Prep/ Workroom	1	480	480	1.33	638
B411	Principal	1	150	150	1.33	200
B412	Secretary Office	1	180	180	1.33	239
B413	Nursing Office	1	150	150	1.33	200
B414	Exam Room	1	110	110	1.33	146
B415	Medications Room	1	90	90	1.40	126
B416	Conference Room	1	400	400	1.33	532
B417	Server Room	1	64	64	1.40	90
B418	Patient Toilet Room	4	250			
B419	Staff Toilet Room	2	170			
B420	Custodial Closet	2	60			



B400: SCHOOL
ADJACENCY DIAGRAM

B401 CLASSROOM

AREA: 900 NSF

Occupants: Up to 15 people (12 patients/students, 3 teaching staff)

Function:
Desk work, computer work, reading (individual & group)
Storage of classroom materials and teacher belongings
Teacher work areas

Adjacency:
7 Classrooms (3 elementary; 4 secondary)
Near Time-out and Seclusion rooms

Environment:

Floor: Carpet
Walls: CMU
Ceiling: Painted gypsum board; 10' height
Windows: Exterior windows with window coverings
One-way glass observation window to corridor
Door: 3' x 7' steel door, locking

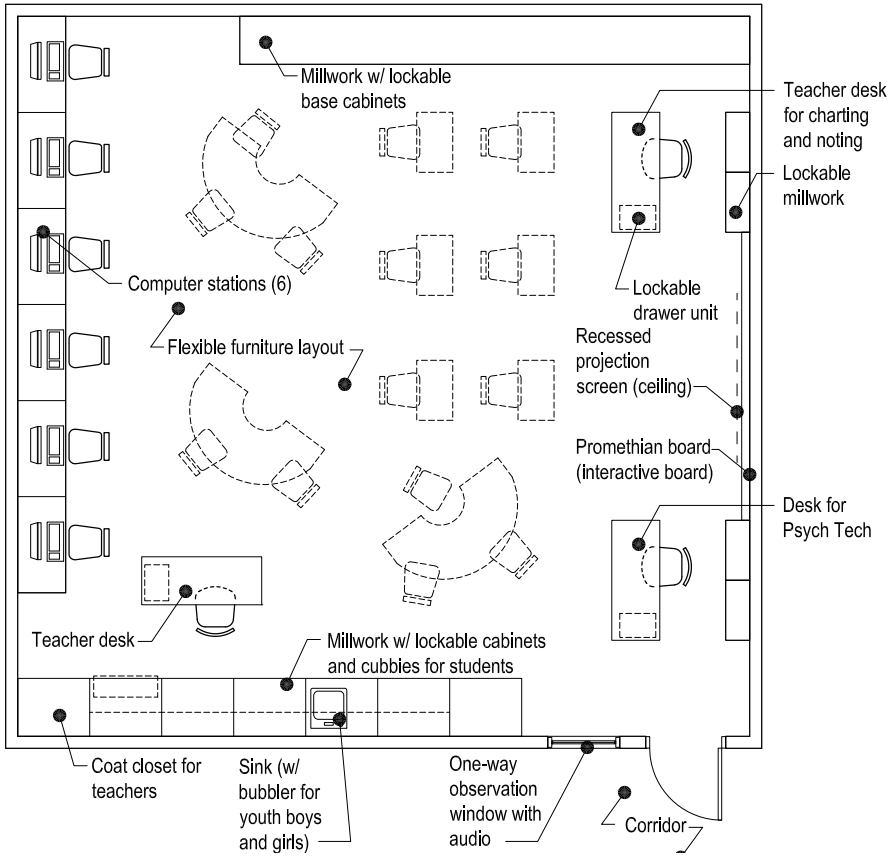
Equipment:
Solid surface countertops with lockable millwork storage cabinets/drawers above & below; millwork cubbies for student items; coat storage closet for 3 teaching staff
Single compartment sink (with bubbler in secondary classrooms)
Millwork countertop for student computers
Interactive (Promethean) board
Ceiling-recessed projection screen, electric operation
Ceiling-mounted projector
6 student computers; computers & telephones at 3 staff desks (all monitors visible to staff at all times)
Audio for corridor one-way observation window

Furnishings: 3 staff desks & chairs; student desks; horseshoe tables; student chairs

Mechanical: Dedicated HVAC zone

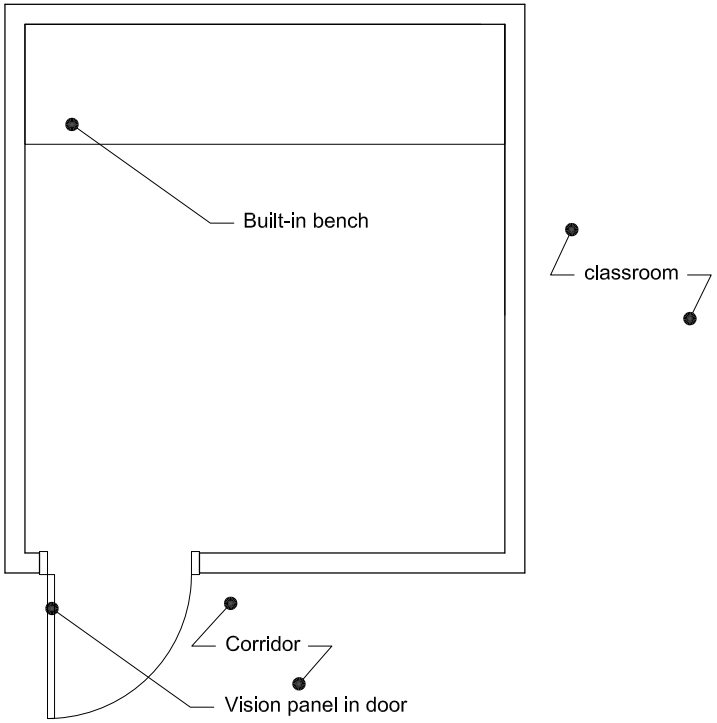
Electrical:
Duplex electrical outlets per code; outlets above countertop; electrical & voice/data for computers
Compact fluorescent lighting

Notes:
Countertops at 34" high to meet ADA
Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements
Classroom design will require input from Provo School District, who will provide teaching staff
Staff desks face into classroom; staff monitors must not be visible by patients



B402 TIME-OUT ROOM

AREA: 110 NSF



Occupants: 1 patient

Function: Low-stimulus room where patients can go to calm down; secondary use for one-on-one tutoring
For use during school hours; usage controlled by school staff; staff is with student in the room

Adjacency: Near Classrooms; 1 Time-out Room near 2 different classroom groupings

Environment:

Floor: Hard-surface flooring (stained concrete, sheet vinyl, etc.)
Walls: CMU
Ceiling: Painted gypsum board; 9' height
Windows: Vision panel in door
Door: 3' x 7' steel door, locking

Equipment: Solid-surface millwork bench bolted to wall

Furnishings: None

Mechanical: Dedicated HVAC zone

Electrical: Duplex electrical outlets per code
Lighting, dimmable

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements

B403 SECLUSION ROOM

AREA: 100 NSF

Occupants: 1 patient

Function: Acoustically isolated room for patients who are highly agitated / out of control
For use during school hours; usage controlled by State Hospital staff

Adjacency: Combines with Seclusion Ante and Toilet Rooms to form 3-room suite; Ante Room is access point
Near Classrooms; 1 Seclusion suite near 2 different classroom groupings
If floor plan allows, school seclusion suite can serve as residential unit seclusion suite as well

Environment:

- **Floor:** Concrete with synthetic-resinous padding
- **Walls:** CMU or concrete with synthetic-resinous padding
- **Ceiling:** Hardened gypsum board with synthetic-resinous padding
- **Windows:** Small, secure exterior vision window desired; one-way vision panel in door
- **Door:** 3' x 7' steel door, locking, with synthetic-resinous padding

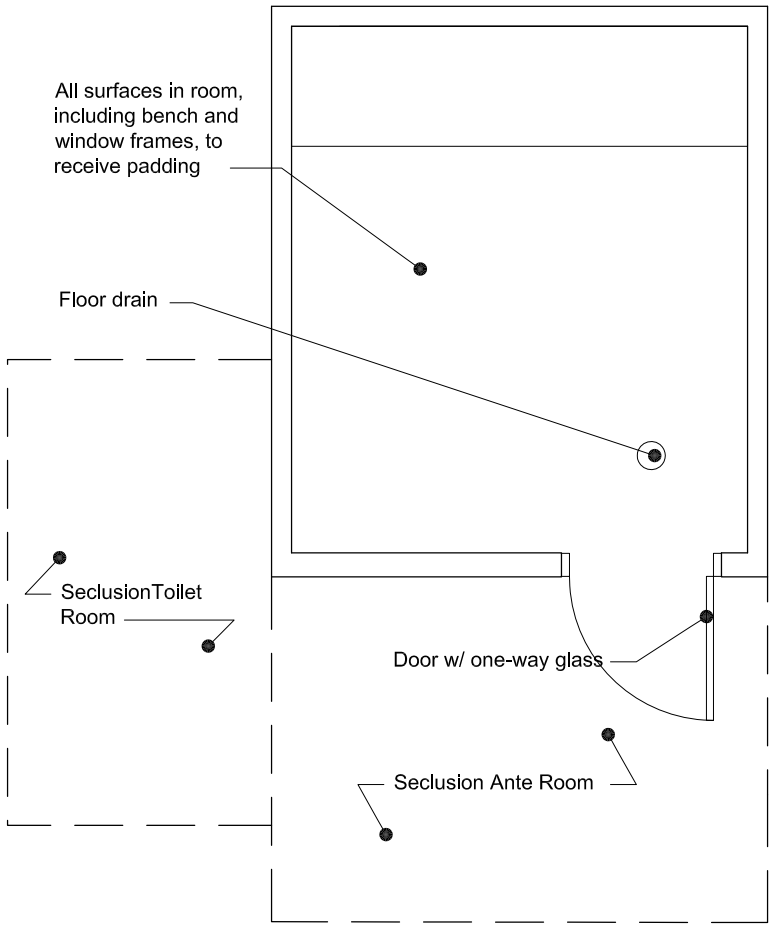
Equipment: Built-in 18"D concrete bench along 1 wall, with synthetic-resinous padding
Intercom system for staff/ patient communication
Security camera (monitor in Nursing Office)

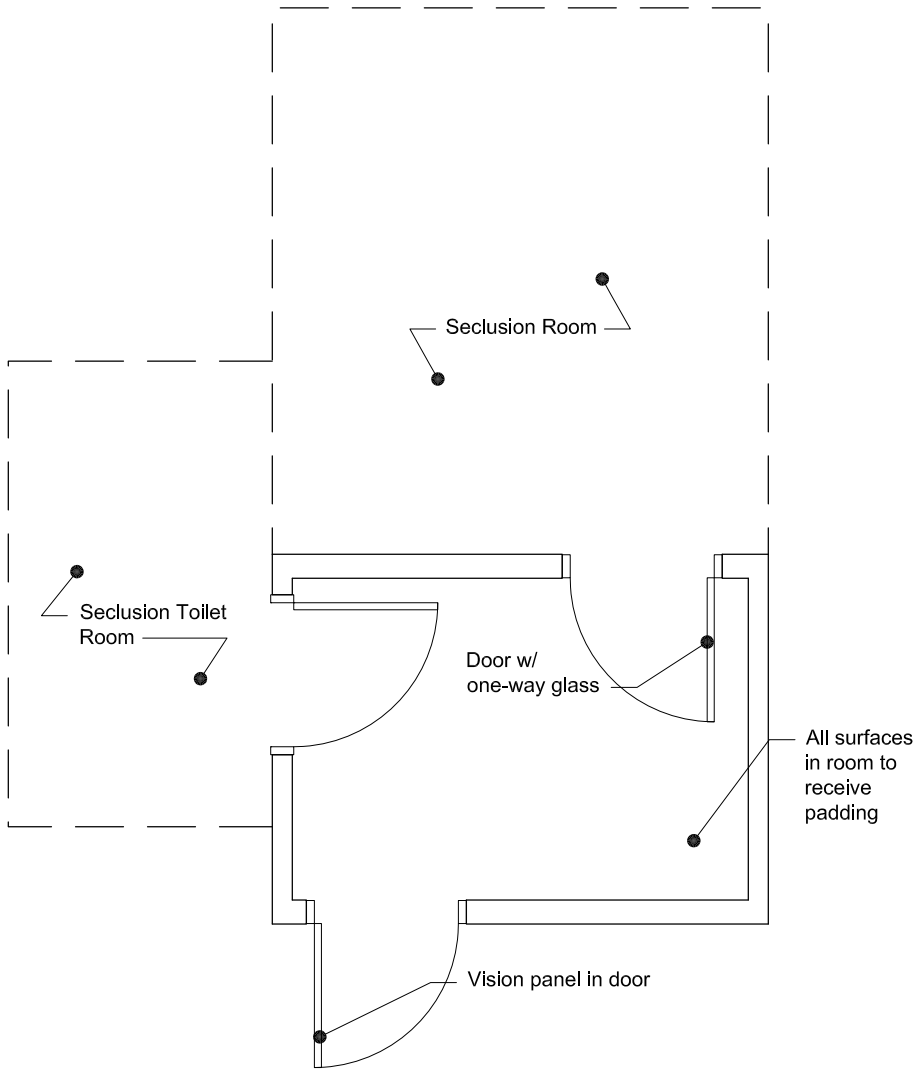
Furnishings: None

Mechanical: Dedicated HVAC zone; floor drain

Electrical: No electrical outlets; secure lighting (switch in Ante Room)

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements
Pathway from classrooms to Seclusion suite must be as short and direct as possible; must be free of any objects, finishes, etc. susceptible to damage or destruction by out-of-control patient
Acoustical isolation critical; should not be able to hear noise generated from within seclusion suite, when doors are closed





B404 SECLUSION ANTE ROOM

AREA: 65 NSF

Occupants: 1 patient plus possible 1-2 staff

Function: Anteroom, access point for Seclusion and Seclusion Toilet rooms

Adjacency:
Combines with Seclusion and Seclusion Toilet Rooms to form 3-room suite; Ante Room is access point
Near Classrooms; 1 Seclusion suite near 2 different classroom groupings
Visually private access point
If floor plan allows, school seclusion suites can serve as residential units seclusion suites as well

Environment:
- **Floor:** Concrete with synthetic-resinous padding
- **Walls:** CMU or concrete with synthetic-resinous padding
- **Ceiling:** Hardened gypsum board with synthetic-resinous padding
- **Windows:** Vision panel in door
- **Door:** 3' x 7' steel door, locking, with synthetic-resinous padding

Equipment: Intercom system for staff/ patient communication

Furnishings: None

Mechanical: Dedicated HVAC zone

Electrical: No electrical outlets; secure lighting
Seclusion Room light switch in this space

Notes:
Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements
Pathway from classrooms to Seclusion suite must be as short and direct as possible; must be free of any objects, finishes, etc. susceptible to damage or destruction by out-of-control patient
Acoustical isolation critical; should not be able to hear noise generated from within seclusion suite, when doors are closed

B405 SECLUSION TOILET ROOM

AREA: 45 NSF

Occupants: 1 patient plus possible 1-2 staff

Function: Toilet and shower facilities within seclusion suite

Adjacency:
Combines with Seclusion and Seclusion Ante Rooms to form 3-room suite; Ante Room is access point
Near Classrooms; 1 Seclusion suite near 2 different classroom groupings
If floor plan allows, school seclusion suite can serve as residential unit seclusion suite as well

Environment:
- **Floor:** Ceramic tile
- **Walls:** Ceramic tile
- **Ceiling:** Hardened gypsum board at toilet area; ceramic tile at shower area
- **Windows:** None
- **Door:** 3' x 7' steel door, locking, with synthetic-resinous padding

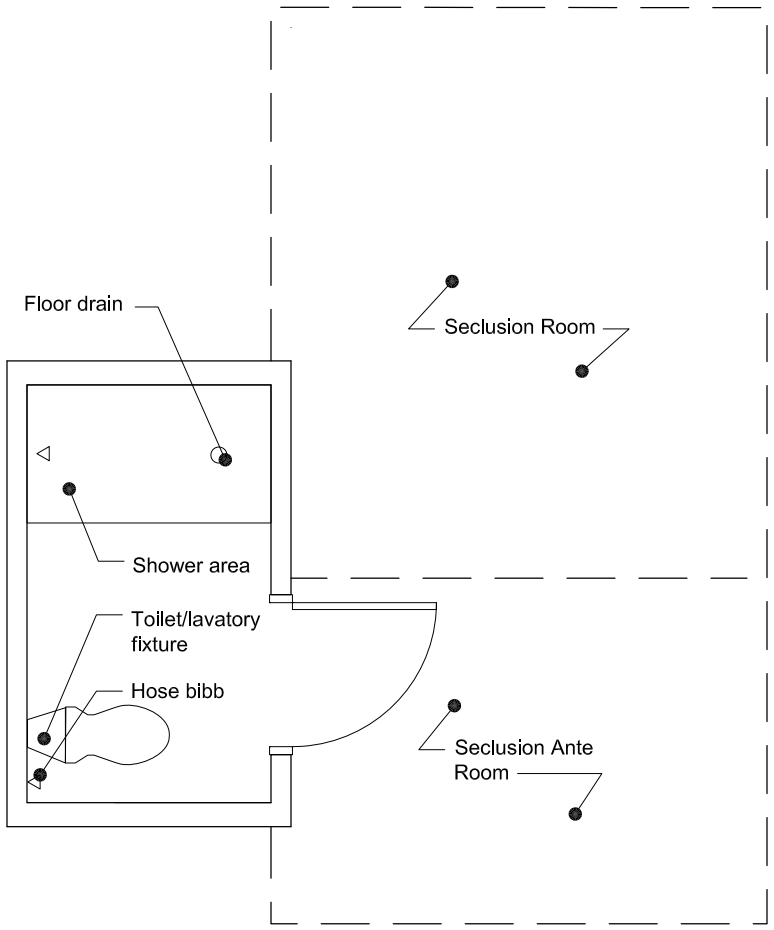
Equipment:
Intercom system for staff/ patient communication
Prison-type secure toilet / lavatory / mirror unit
Shower head and shower curtain rod
Toilet / shower room accessories: robe hooks; soap, paper towel & toilet tissue dispensers; shower curtain

Furnishings: None

Mechanical:
Dedicated HVAC zone with exhaust
Floor drain; hose bibb

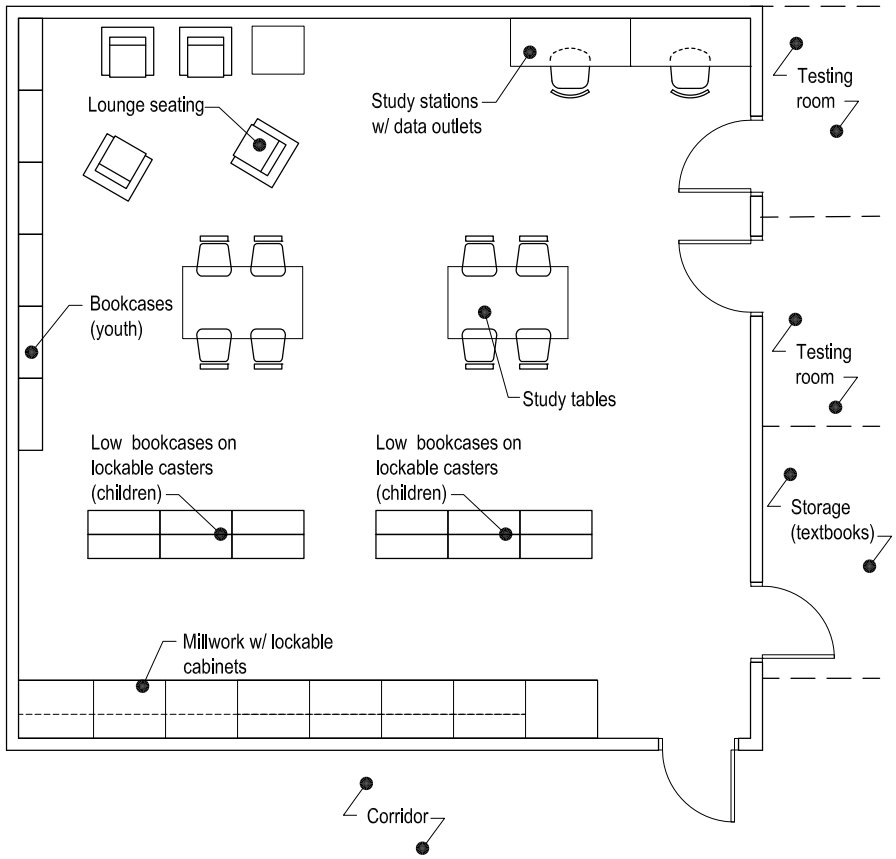
Electrical: No electrical outlets; secure lighting

Notes:
Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements
Acoustical isolation critical; should not be able to hear noise generated from within seclusion suite, when doors are closed



B406 LIBRARY

AREA: 900 NSF



Occupants: Up to 12 people (10 patients, 2 staff)

Function: Studying, reading, book / media display, possible music listening

Adjacency:
Near Classrooms
Easily accessible to Psychologist offices (Psychologists administer tests in the Library Testing Rooms
2 Testing Rooms and Storage (Textbooks) accessed from this room

Environment:
- **Floor:** Carpet
- **Walls:** CMU
- **Ceiling:** Painted gypsum board; 10' height
- **Windows:** Exterior windows with window coverings
- **Door:** 3' x 7' steel door, locking

Equipment:
Solid surface countertops with lockable millwork storage cabinets/drawers above & below
Millwork bookcases for book / media display; children's and youth sections; on lockable casters
Computers (future – in study carrels)

Furnishings: Study tables & chairs; study carrels with chairs; lounge seating with occasional tables

Mechanical: Dedicated HVAC zone

Electrical:
Duplex electrical outlets per code
Electrical outlets above countertop
Electrical & voice/data outlets for study carrel computers
Compact fluorescent lighting

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements

B407 TESTING ROOM

AREA: 80 NSF

Occupants: Up to 3 people (patient, Psychologist, other staff)

Function: Enclosed room for academic, psychological or audiological testing; enclosed room enhances patient ability to concentrate

Adjacency: Accessed from Library
Easily accessible to Psychologist offices (Psychologists administer tests)

Environment:

- **Floor:** Carpet
- **Walls:** CMU
- **Ceiling:** Painted gypsum board; 9' height
- **Windows:** Vision panel in door
- **Door:** 3' x 7' steel door, locking

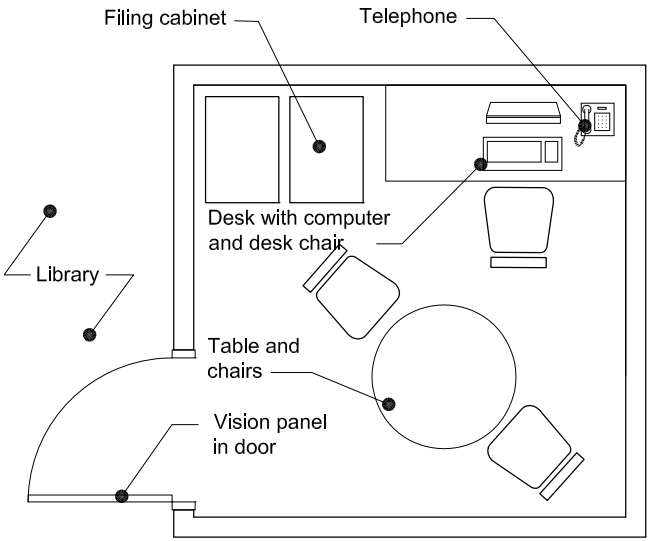
Equipment: Computer

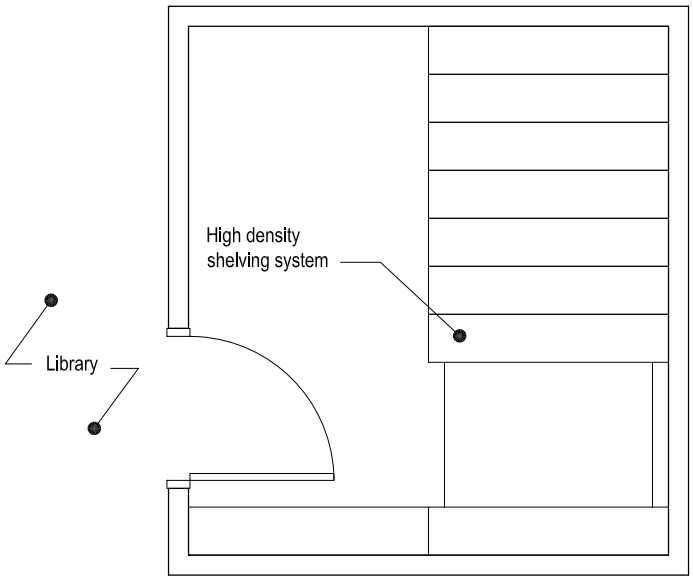
Furnishings: Table with 2 chairs
Desk with chair
2 file cabinets, locking, for testing materials

Mechanical: Shared HVAC zone

Electrical: Duplex electrical outlets per code
Electrical and data outlets for computer
Compact fluorescent lighting

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements





B408 STORAGE (TEXTBOOKS)

AREA: 80 NSF

Occupants: None

Function: Enclosed room for storage of textbooks and rolling carts used to transport books to other areas of building

Adjacency: Accessed from Library
Near Teacher's Prep/Workroom

Environment:
- **Floor:** Carpet
- **Walls:** CMU
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** None
- **Door:** 3' x 7' steel door, locking

Equipment: High-density shelving units

Furnishings: Rolling shelving units / book carts

Mechanical: Minimal HVAC

Electrical: Duplex electrical outlets per code
Compact fluorescent lighting

Notes: Potential patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements

B409 ACTIVITY ROOM

AREA: 600 NSF

Occupants: Up to 14 people (12 patients, 2 staff)

Function: Enclosed space for flexible use: seminary classes, group therapy, etc.

Adjacency:
Easily accessible from classrooms
Easily accessible from residential units

Environment:

Floor:	Carpet
Walls:	CMU
Ceiling:	Painted gypsum board; 10' height
Windows:	Exterior windows with window coverings
Door:	3' x 7' steel door, locking

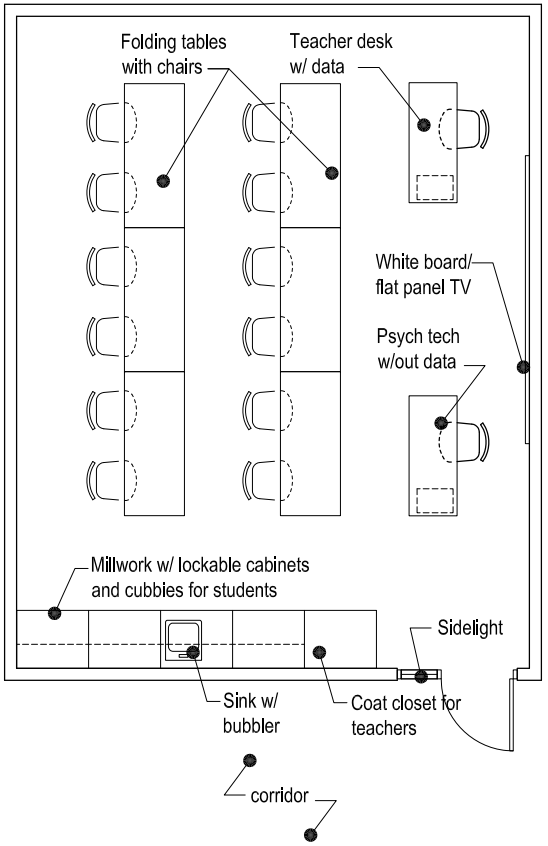
Equipment:
Solid surface countertops with lockable millwork storage cabinets/drawers above & below, with single-compartment sink with bubbler; millwork cubbies for patient/student items
Computers at staff desks
Flat panel monitor with wall-recessed AV control panel behind locking access door

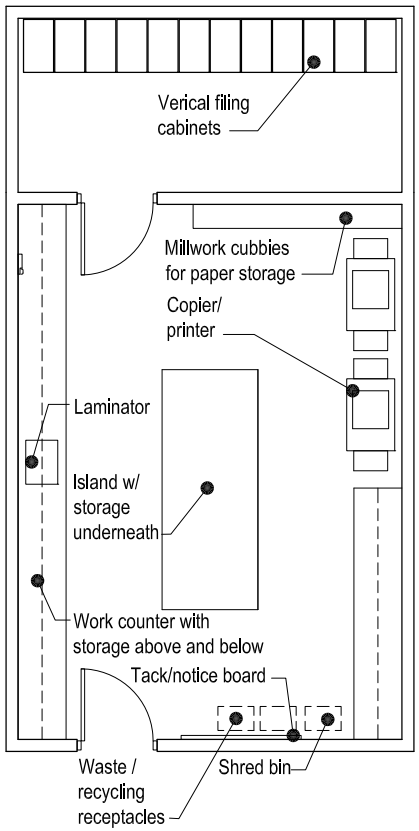
Furnishings:
2 staff desks & chairs
Folding tables & chairs
White board, 12'L x 4'H

Mechanical: Dedicated HVAC zone

Electrical:
Duplex electrical outlets per code
Electrical outlets above countertop
Electrical & voice/data outlets for staff computers
Compact fluorescent lighting

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements





B410 TEACHER'S PREP/WORKROOM

AREA: 480 NSF

Occupants: Teaching staff (occasional)

Function:
Printing, copying, compiling, collating & assembling prep booklets, handouts, and other school materials
Storage of printed materials, AV materials (DVD's, etc.) and equipment used in School
Educational supplies storage
Secure storage of school records

Adjacency:
Near Classrooms
Near School administrative offices
Easy access to Central Core Employee Lounge

Environment:
- **Floor:** Carpet
- **Walls:** Painted gypsum board
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** None
- **Door:** 3' x 7' steel door, locking (2)

Equipment:
Copier / printer
Millwork countertops & work island with storage cubbies, cabinets and/or drawers above and below
Laminator, paper cutter
12 vertical file cabinets for school records (8 existing + 4 future)

Furnishings:
Waste and recycling receptacles; shred bin
Tack / notice board

Mechanical:
Dedicated HVAC zone
Exhaust

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

Notes:
Secure school records storage room; access from within Workroom (see room diagram)

B411 PRINCIPAL

AREA: 150 NSF

Occupants: 1 occupant, with up to 3 visitors

Function: Private office for School Principal; paperwork, computer work, telephone calls, small meetings

Adjacency:
Adjacent to Secretary Office
Near Conference room
Easily accessible to visitors

Environment:

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

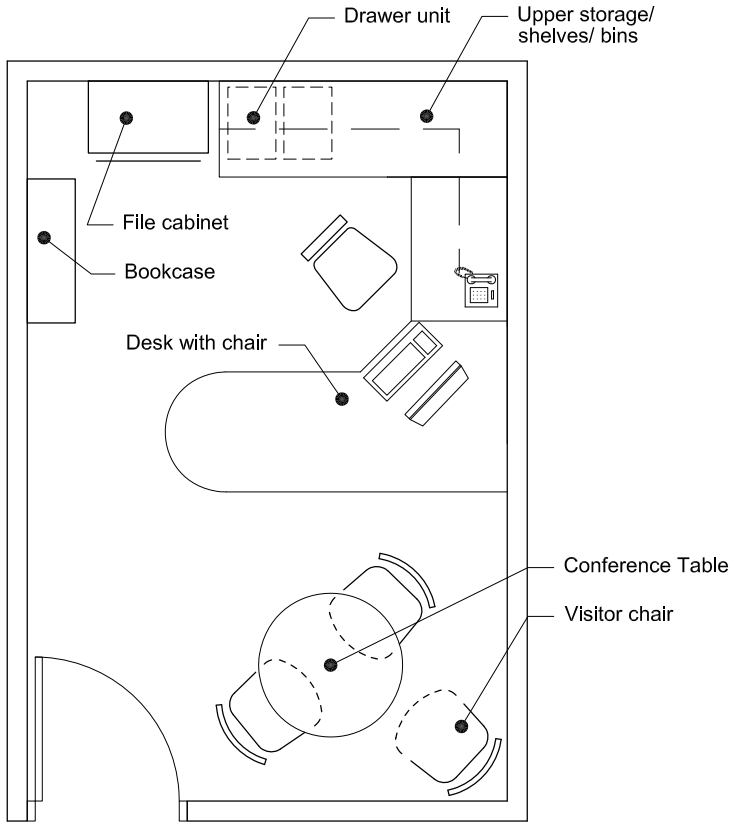
Equipment: Computer; telephone

Furnishings:
Systems furniture U-shaped desk with shelves / bins above and drawer units below
Desk chair
36" diameter table
3 visitor chairs
File cabinet / bookcase

Mechanical: Shared HVAC zone

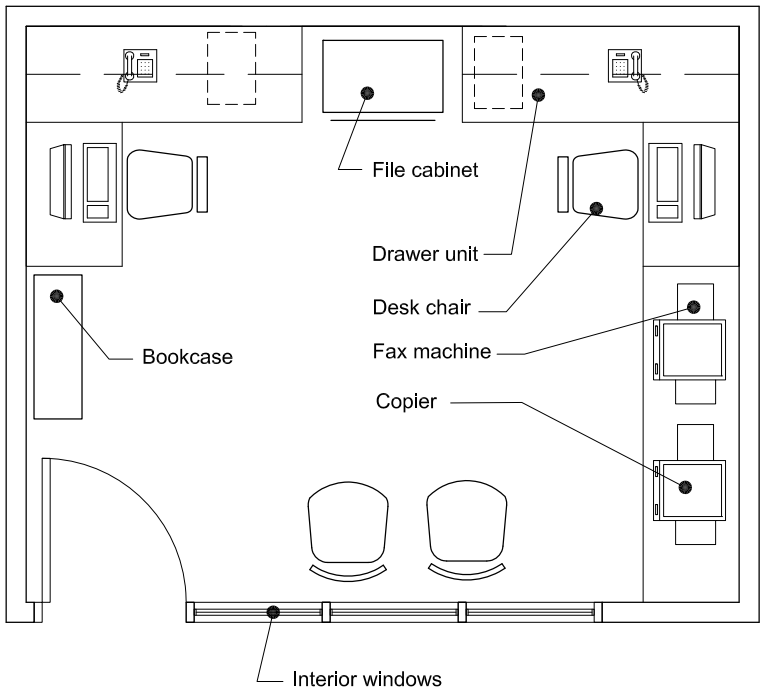
Electrical:
Duplex electrical outlets per code
2 sets of voice / data outlets for furniture layout flexibility
Fluorescent parabolic lighting

Notes:



B412 SECRETARY OFFICE

AREA: 180 NSF



Occupants: 2 occupants, with up to 2 visitors

Function: Shared enclosed office for School Secretary and 1 other staff member

Adjacency: At entry point to School from residential units; requires visibility from office into corridor used by patients
Adjacent to Principal
Near Teacher's Prep/Workroom

Environment:

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

Equipment: 2 computers; 2 telephones
Copier / printer
Fax machine

Furnishings: 2 systems furniture L-shaped workstations; shelves / bins above and drawer units below
2 desk chairs
2 visitor chairs
Worksurface for shared equipment
Locking file cabinet for student / special education records

Mechanical: Shared HVAC zone

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

Notes:

B413 NURSING OFFICE

AREA: 150 NSF

Occupants: Up to 4 people (3 nurses, 1 unit clerk), plus 1 visitor

Function: Enclosed shared office for nurses and unit clerk, for use during school hours

Adjacency: Directly adjacent to Exam Room
Near School administrative offices

Environment:

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

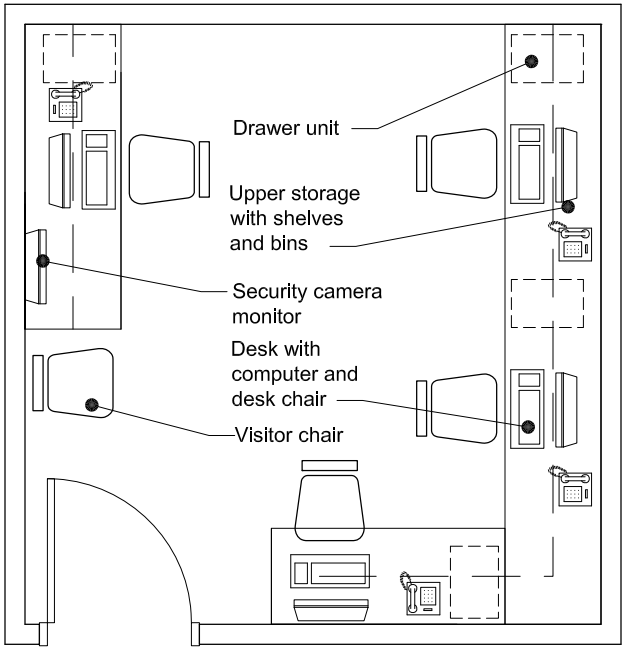
Equipment: 4 computers, 4 telephones
Security camera monitor (Seclusion Rooms)

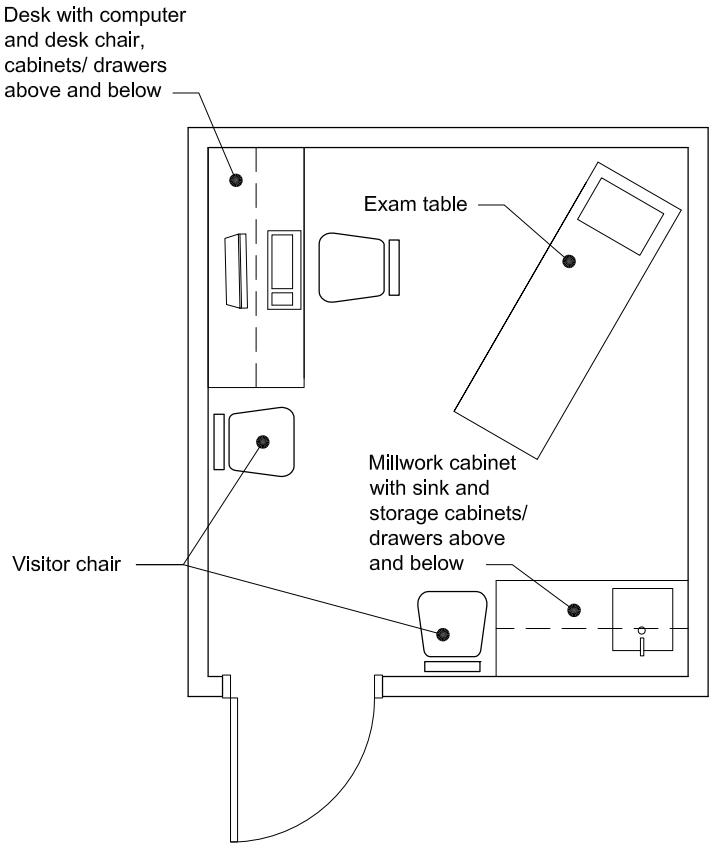
Furnishings: Desks / worksurfaces for 4 people, with drawer units and upper storage shelves / bins
4 desk chairs
Visitor chair

Mechanical: Shared HVAC zone

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

Notes:





B414 EXAM ROOM

AREA: 110 NSF

Occupants: Up to 4 people (patient, nurse/doctor, assistant, other)

Function: Enclosed room for medical exams and minor procedures, for pediatric facility patients

Adjacency: Adjacent to School Nursing Office

Environment:

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

Equipment:
Exam table
Millwork countertop / cabinet with hand-washing sink; storage above and below
Computer & telephone
Wall ophthalmoscope/otoscope
Wall blood pressure cuff

Furnishings:
Desk / computer surface, with storage cabinets above
Stool with casters
2 visitor chairs

Mechanical: Dedicated HVAC zone

Electrical:
Duplex electrical outlets per code
Electrical and voice / data outlets as needed for computer, telephone and other equipment
Compact fluorescent lighting
Wall-hung exam light

Notes: Crash cart & oxygen tank will be stored in Exam Room

B415 MEDICATIONS ROOM

AREA: 90 NSF

Occupants: 1 occupant (nurse – temporary)

Function: Enclosed, secure room for storing, preparing and dispensing medication to patients during school day

Adjacency:
Adjacent to Nursing Office
Near School administrative offices
Easily accessible from classrooms

Environment:

Floor: Moisture-impervious flooring (stained concrete, sheet vinyl, VCT, etc.)
Walls: CMU
Ceiling: Painted gypsum board; 9' height
Windows: Secure glazed medications pass-through window above countertop, for distributing medications from this room to corridor
Door: 3' x 7' steel door, locking, car-key access only

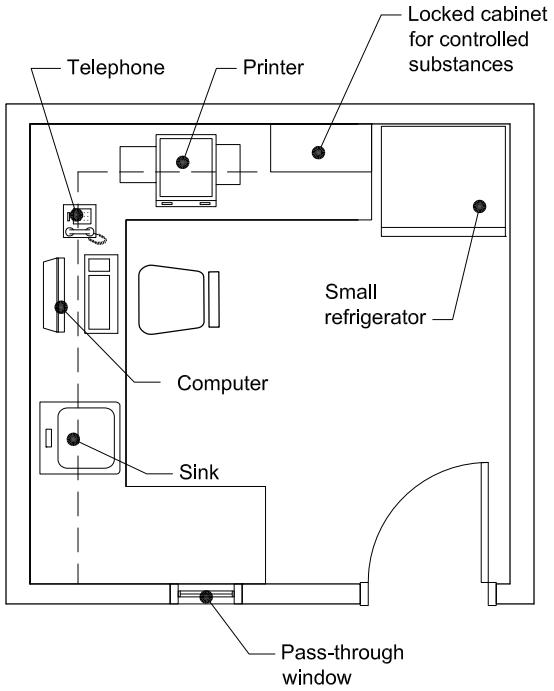
Equipment: Millwork countertop / cabinet with single-compartment sink; storage above and below; locking cabinet for storage of controlled substances
Small refrigerator
Computer, printer, telephone

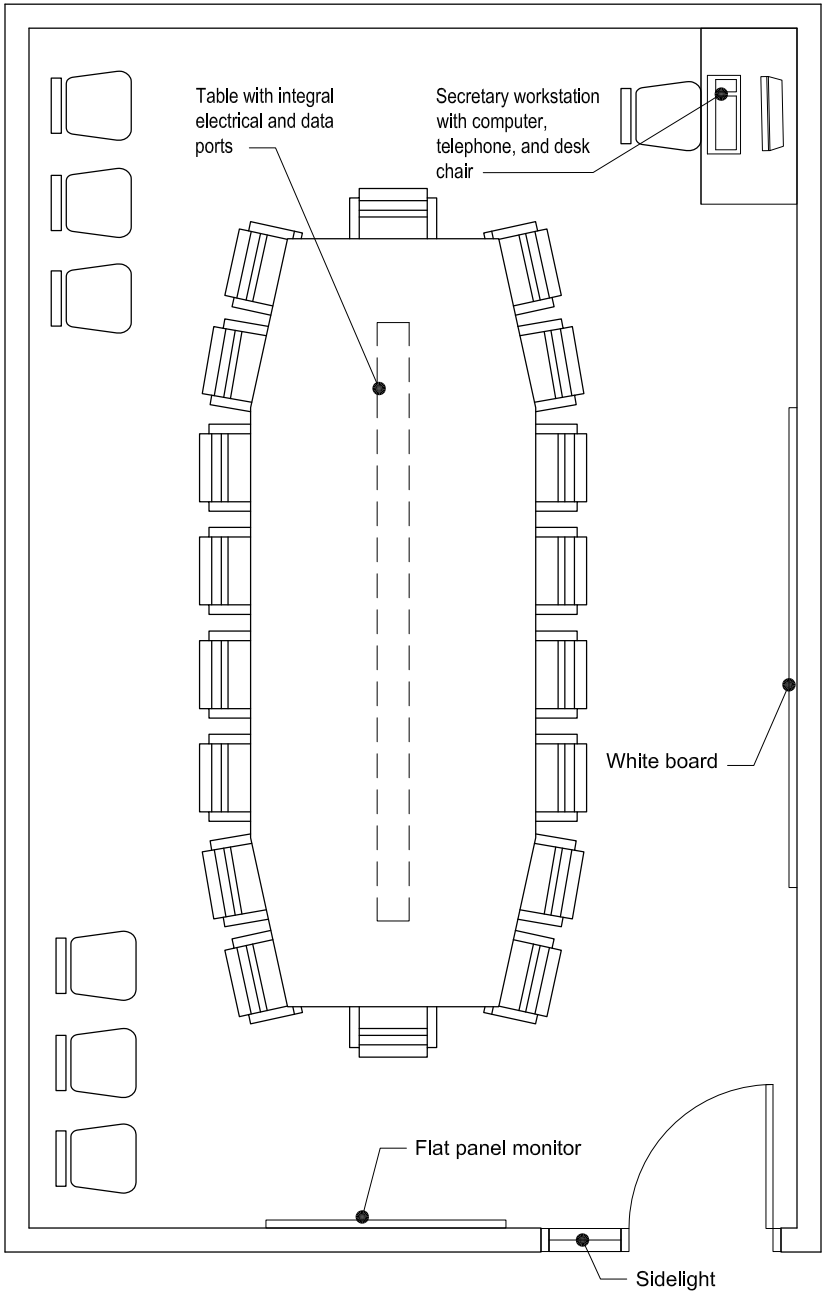
Furnishings: Desk chair

Mechanical: Dedicated HVAC zone

Electrical: Duplex electrical outlets per code
Electrical and voice / data outlets as needed for computer, printer, telephone, refrigerator, other equipment
Fluorescent parabolic lighting

Notes:





B416 CONFERENCE ROOM

AREA: 400 NSF

Occupants: Approximately 20 people

Function:
School-related functions such as IEP meetings and school admissions interviews
Shared use by other occupants of the Pediatric Facility

Adjacency:
Near Pediatric Facility Clinical Director's office
Near Principal's and Secretary Offices
Located for ease of access and use by Pediatric Facility administrators and medical staff

Environment:

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

Equipment:
Flat-panel monitor, wall-mounted
Equipment as needed for videoconferencing and telemedicine capability
Computer & telephone at Secretary desk / station

Furnishings:
Table, 16'L x 54"W, with 18 chairs, with integral electrical & data ports
Additional chairs at room perimeter (2-6)
3'W secretary workstation, with desk chair
White board, 8'L x 4'H

Mechanical: Dedicated HVAC zone

Electrical:
Electrical outlets per code
Electrical / data outlets in floor, as source for table electrical / data; coordinate w/ table pedestal locations
Electrical and data infrastructure as needed for videoconferencing and telemedicine capability
Electrical & voice / data outlets for Secretary equipment
Multiple preset lighting configurations to support AV use

Notes:

B417 SERVER ROOM

AREA: 64 NSF

Occupants: None

Function: Enclosed room for servers that support Pediatric Facility school

Adjacency: Central location within school; locate so that all school rooms served are within 90 meter cable length limit of Server Room

Environment:

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

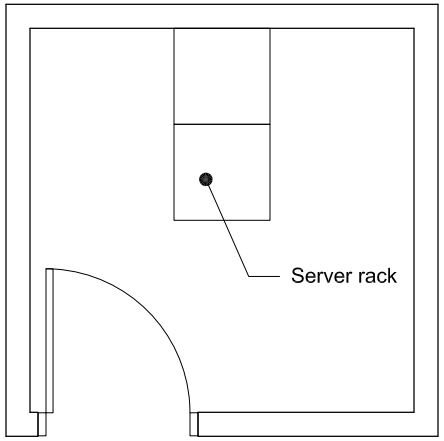
Equipment: Server racks, approximately 2'D x 2'W, quantity to be determined

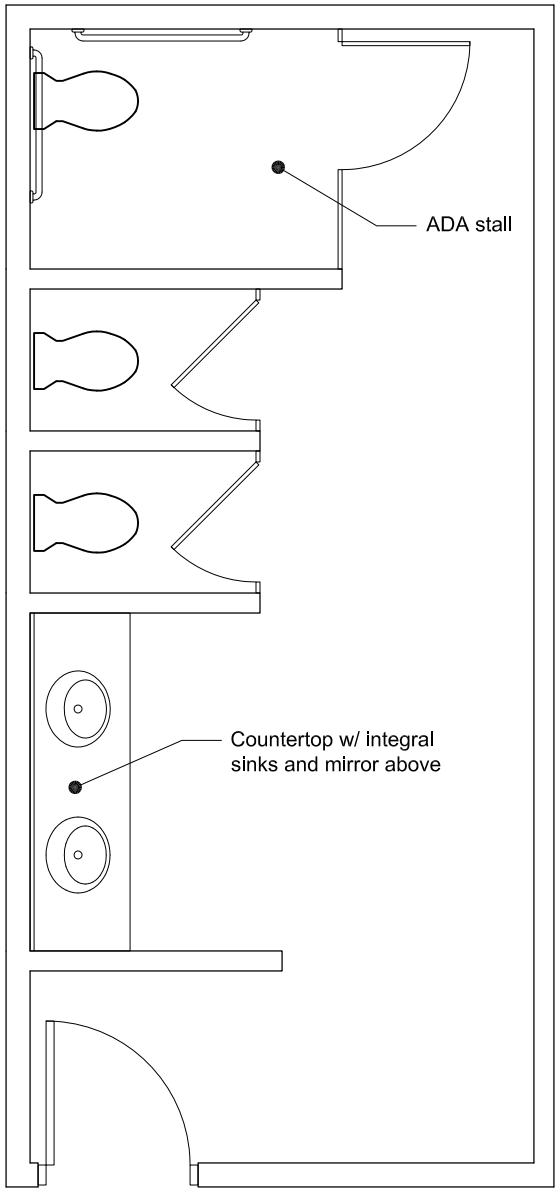
Furnishings: None

Mechanical: Dedicated HVAC system – 24/7 operation

Electrical: Electrical outlets per code
Electrical & voice / data connections as required for servers
Compact fluorescent lighting

Notes: Locking entry door





B418 PATIENT TOILET ROOM

AREA: 250 NSF

Occupants: Up to 6 people (5 patients, 1 staff)

Function: 4 multi-user patient toilet rooms: 2 for children (boys and girls) and 2 for adolescents (boys and girls)

Adjacency: 2 children's toilet rooms near children's classrooms; 2 adolescent toilet rooms near Boys Youth & Girls Youth classrooms
Accessed from main corridor

Environment:

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

Equipment: 3 toilets (girls); 2 toilets & 1 urinal (boys)
Solid-surface countertop with 2 integral sinks, with mirror above
Toilet room accessories: grab bars; soap, paper towel & toilet tissue dispensers, etc.
Girls Youth: locking, wall-mounted cabinet for feminine products

Furnishings: None

Mechanical: Dedicated HVAC zone with exhaust

Electrical: No electrical outlets
Compact fluorescent lighting

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements

B419 STAFF TOILET ROOM

AREA: 170 NSF

Occupants: Up to 3 people

Function: 2 multi-user staff toilet rooms: 1 for men, 1 for women

Adjacency:
Near Teacher's Prep/Workroom
Near Employee Lounge

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-card-key access

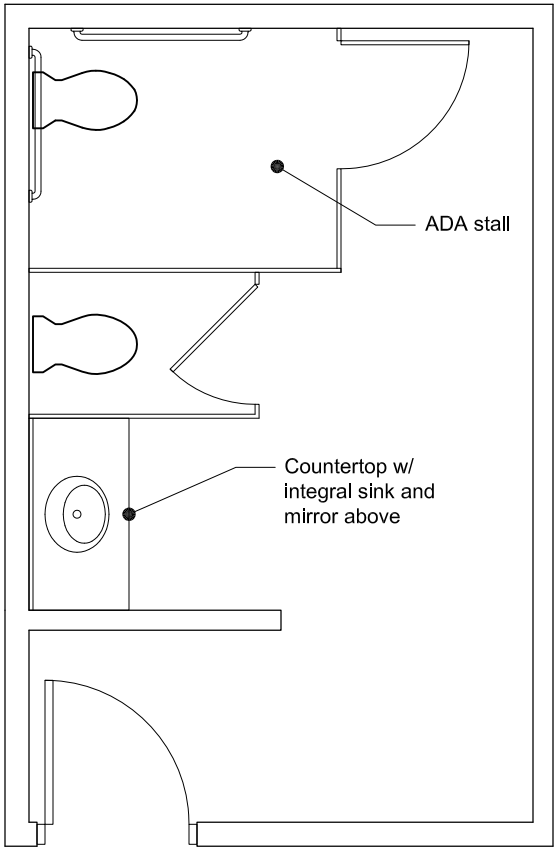
Equipment:
2 toilets in baked-enamel toilet stalls (Women's)
1 toilet / 1 urinal with baked-enamel partitions (Men's)
Solid-surface countertop with integral sink, with mirror above
Toilet room accessories: grab bars; soap, paper towel & toilet tissue dispensers, etc.

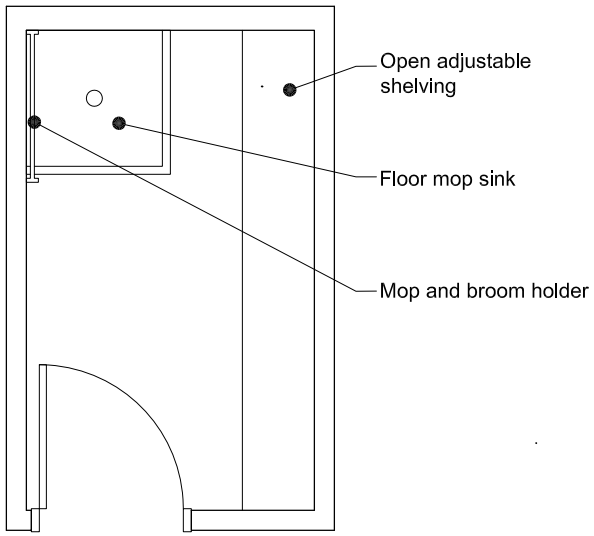
Furnishings: Waste receptacle

Mechanical: Dedicated HVAC zone with exhaust

Electrical:
Electrical outlets per code
Electrical outlets at vanity
Compact fluorescent lighting

Notes:





B420 CUSTODIAL CLOSET

AREA: 60 NSF

Occupants: None

Function: Storage of custodial and maintenance supplies and equipment

Adjacency: 2 Custodial Closets with centralized locations in two portions of school
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:

C100: RESIDENTIAL WINGS

Hours of Operation

24 hours/day, 7 days/week

Security

The Residential Wings contain patient-access spaces which must incorporate injury and suicide-resistant fixtures and design elements. The residential wings will have controlled entry and exit. The layout of the residential wings must address some critical safety issues:

- Staff in the Nursing Station (Unit Shared Spaces group) must have clear visibility of the residential wing gathering spaces (day room, TV room, dining room) and the doors to all patient bedrooms and toilet rooms.
- The spaces listed in Residential Wings are intended to be divided into two equal groupings. Each grouping will form one wing; the two wings will have the Unit Shared Spaces at their center. Each wing must be separate and discrete; patients from one wing must not be able to enter another wing.

Functions / Space Adjacencies

The Residential Wings consist primarily of patients' daily living spaces – bedrooms, toilet rooms, gathering spaces (day, dining and TV rooms) and daily-life support spaces (telephone, tutoring and laundry rooms). The wings also contain spaces that support patient medical functions (direct observation room; one-on-one/comfort room; seclusion suite). There are several unit and staff support spaces that may be outside the patient access area (clean and soiled linen; staff toilet rooms; unit and patient storage rooms).

General Location / Adjacency

The two Residential Wings connect directly with the Unit Shared Spaces, and also with the Unit Transition Zones (the transition space between the Residential Wings and the Pediatric Facility Central Core). The Residential Wings require good adjacency to:

- The School, attended by patients each weekday.
- The Activity Spaces, for daytime and after-school occupational and recreational therapy activities.
- Two secure outdoor courtyards, one with a hard surface and one with lawn. There will be one pair of courtyards for each residential unit (two wings). Within a residential unit, patients from each wing must be able to access both courtyards without accessing the other wing. (See Section 3 General Building Considerations for more information regarding the courtyards.)
- A service access, for the delivery of food and clean linen, and the removal of trash / recycling and soiled linen.

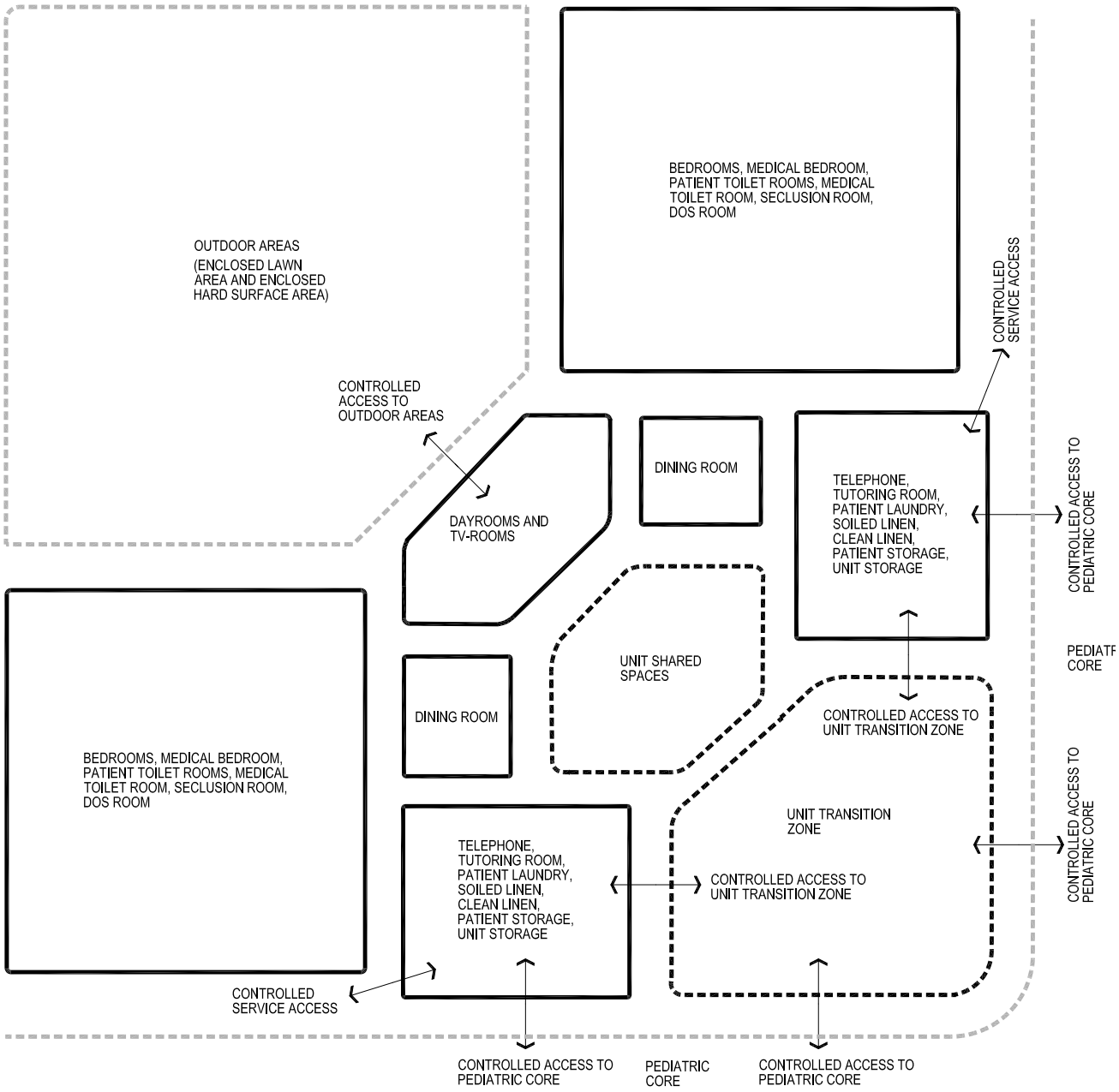
Staff Amenities

The Residential Wings should have convenient access to the building's Employee Lounge and staff parking area.

C100: RESIDENTIAL WINGS

SPACE LIST

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
C100	**RESIDENTIAL WINGS**			**8,434**		**11,156**
C101	Bedroom	24	110	2,640	1.33	3,511
C102	Patient Toilet Room	8	80	640	1.40	896
C103	Medical Bedroom	2	110	220	1.33	293
C104	Medical Toilet Room	2	80	160	1.40	224
C105	Day Room	2	560	1,120	1.25	1,400
C106	TV Room	2	150	300	1.33	399
C107	Telephone Room	2	60	120	1.40	168
C108	Dining Room	2	570	1,140	1.25	1,425
C109	Seclusion Room	2	100	200	1.33	266
C110	Seclusion Ante Room	2	65	130	1.40	182
C111	Seclusion Toilet Room	2	45	90	1.40	126
C112	Tutoring Room	2	80	160	1.40	224
C113	Direct Observation Room (DOS)	2	100	200	1.33	266
C114	One-on-One Room (Comfort Room)	2	80	160	1.40	224
C115	Patient Laundry Room	2	100	200	1.33	266
C116	Clean Linen	2	125	250	1.33	333
C117	Soiled Linen	2	110	220	1.33	293
C118	Staff Toilet Room	2	42	84	1.40	118
C119	Unit Storage	2	80	160	1.40	224
C120	Patient Storage	2	120	240	1.33	319



C100: RESIDENTIAL WINGS
ADJACENCY DIAGRAM

C101 BEDROOM

AREA: 110 NSF

Occupants: 1 patient

Function: Sleeping, school work, storage of clothes and personal belongings, dressing

Adjacency:
Accessed from main residential unit hallway
3 Bedrooms grouped with 1 Patient Toilet Room
All bedroom doors in residential unit must be visible from Nursing Station

Environment:

- **Floor:** Stained concrete
- **Walls:** CMU
- **Ceiling:** Painted hardened gypsum board; 9' height
- **Windows:** Exterior window with integral blinds
  Possible vision panel in door
- **Door:** 3' x 7' steel door, locks to prevent entry from outside, always allows exiting from inside

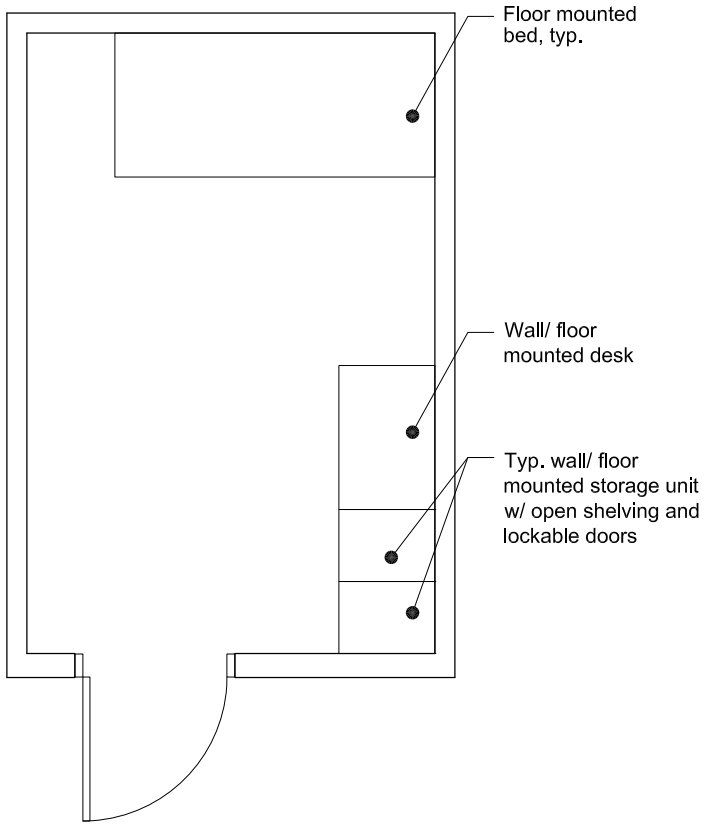
Equipment:
Millwork clothes closet (3'W x 2'D) with some open storage cubbies; bolted to walls / floor
Millwork desk (3'W x 2'D) with locking storage compartment above; bolted to walls / floor

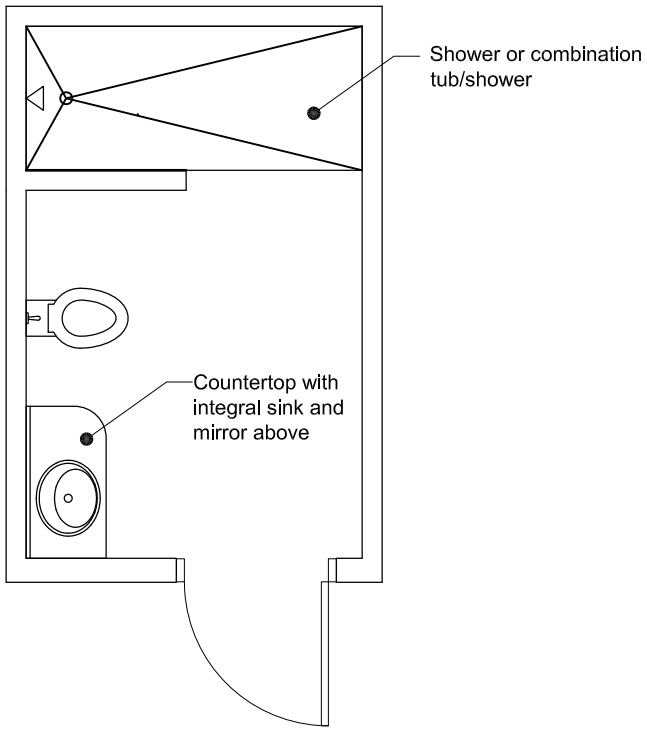
Furnishings:
Single bed, bolted to floor; 36" W x 75"L
Desk chair

Mechanical: Dedicated HVAC zone

Electrical:
May have electrical outlets with key switch in hallway; coordinate with State Hospital during design
Compact fluorescent lighting in ceiling and above desk
Night light
Electrical connection from door to Nursing Station, to notify of door being opened

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements





C102 PATIENT TOILET ROOM

AREA: 80 NSF

Occupants: 1 patient plus possible 1-2 staff

Function: Toilet and shower facilities for residential patients

Adjacency:
Accessed from main residential unit hallway
3 Bedrooms grouped with 1 Patient Toilet Room
All toilet room doors in residential unit must be visible from Nursing Station

Environment:
- **Floor:** Ceramic tile or stained concrete
- **Walls:** Ceramic tile
- **Ceiling:** Hardened gypsum board at toilet area; ceramic tile at shower area
- **Windows:** None
- **Door:** 3' x 7' steel door, locking

Equipment:
Toilet
Solid-surface countertop with integral sink, with drain piping encased; mirror above
Shower head and shower curtain rod
Toilet / shower room accessories: robe hooks; soap, paper towel / toilet tissue dispensers, shower curtain, etc.

Furnishings: None

Mechanical:
Dedicated HVAC zone with exhaust
Floor drain at shower

Electrical:
None
Secure lighting

Notes:
Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements
1 Patient Toilet Room per 13-bed wing will contain a tub/shower unit

C103 MEDICAL BEDROOM

AREA: 110 NSF

Occupants: 1 patient

Function: Bedroom for patients with medical or accessibility needs; sleeping, school work, storage of clothes and personal belongings, dressing

Adjacency:
Near Nursing Station
Direct connection to Medical Toilet Room
All bedroom doors in residential unit must be visible from Nursing Station

Environment:

Floor: Stained concrete
Walls: CMU
Ceiling: Painted hardened gypsum board; 9' height
Windows: Exterior window with integral blinds
Possible vision panel in door
Door: 3' x 7' steel door, locks to prevent entry from outside, always allows exiting from inside

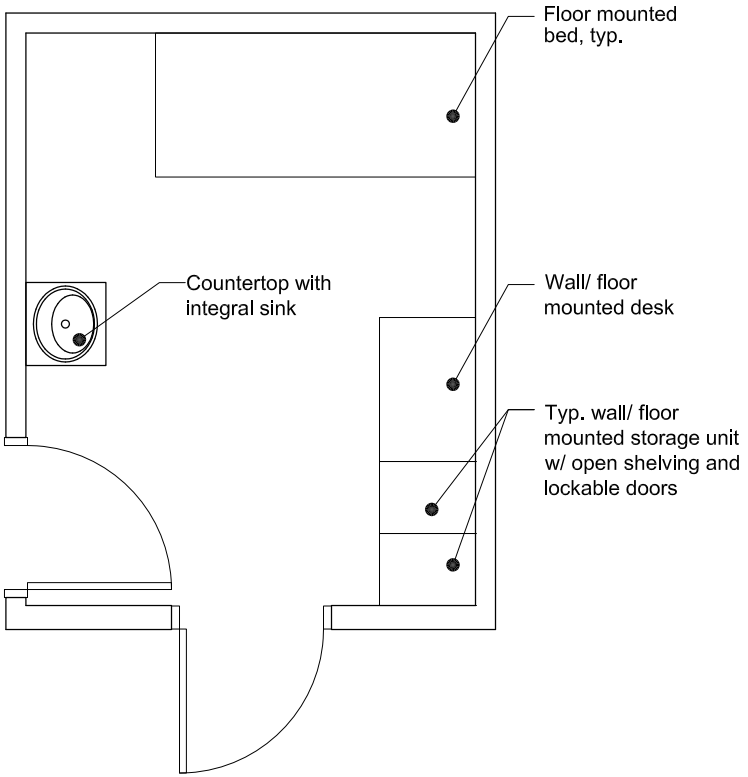
Equipment:
Millwork clothes closet (3'W x 2'D) with some open storage cubbies; bolted to walls / floor
Millwork desk (3'W x 2'D) with locking storage compartment above; bolted to walls / floor
Solid-surface countertop with integral sink, with drain piping encased; mirror above

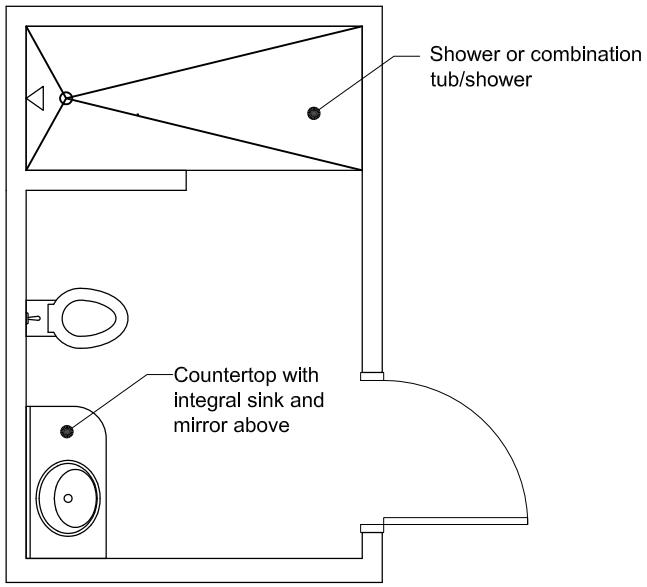
Furnishings:
Single bed, bolted to floor; 36" W x 75"L
Desk chair

Mechanical: Dedicated HVAC zone

Electrical:
No electrical outlets
Compact fluorescent lighting in ceiling and above desk
Night light
Electrical connection from door to Nursing Station, to notify of door being opened

Notes:
Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements
Room must meet all accessibility codes and standards





C104 MEDICAL TOILET ROOM

AREA: 80 NSF

Occupants: 1 patient plus possible 1-2 staff

Function: Toilet and shower facilities for patient with medical or accessibility needs

Adjacency: Accessed from Medical Bedroom

Environment:

- **Floor:** Ceramic tile or stained concrete
- **Walls:** Ceramic tile
- **Ceiling:** Hardened gypsum board at toilet area; ceramic tile at shower area
- **Windows:** None
- **Door:** 3' x 7' steel door, locking

Equipment:

Toilet
Solid-surface countertop with integral sink, with drain piping encased; mirror above
Shower head and shower curtain rod
Toilet / shower room accessories: robe hooks; grab bars (removable); soap, paper towel & toilet tissue dispensers, shower curtain, etc.

Furnishings: None

Mechanical:

Dedicated HVAC zone with exhaust
Floor drain at shower

Electrical:

None
Secure lighting

Notes:

Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements
Room must meet all accessibility codes and standards

C105 DAY ROOM

AREA: 560 NSF

Occupants: Up to 16 people (13 patients and 3 staff)

Function: Patient living room / lounge space; relaxing, interacting, games, etc.

Adjacency: Adjacent to and visible from Nursing Station and Nursing Station Approach
Adjacent to TV Room, Dining Room and Kitchen

Environment:

- **Floor:** Carpet
- **Walls:** CMU
- **Ceiling:** Painted hardened gypsum board; 1-1/2 to 2 story height
- **Windows:** Exterior windows / natural light
- **Door:** 3' x 7' steel door, locking, to exterior enclosed courtyard; with vision panel

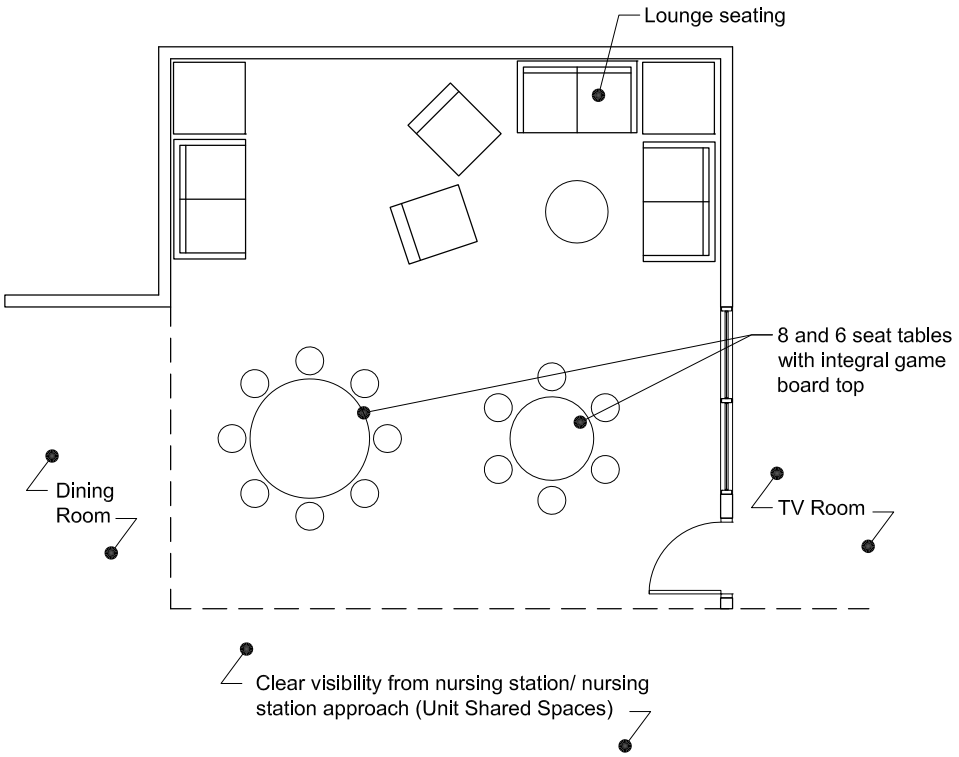
Equipment: Security camera (monitor in Nursing Station)

Furnishings: Lounge seating: sofas and chairs for 8 people
Floor-attached tables with attached seating, integral game boards in table top; (1) 4-seat; (1) 8-seat

Mechanical: Dedicated HVAC zone

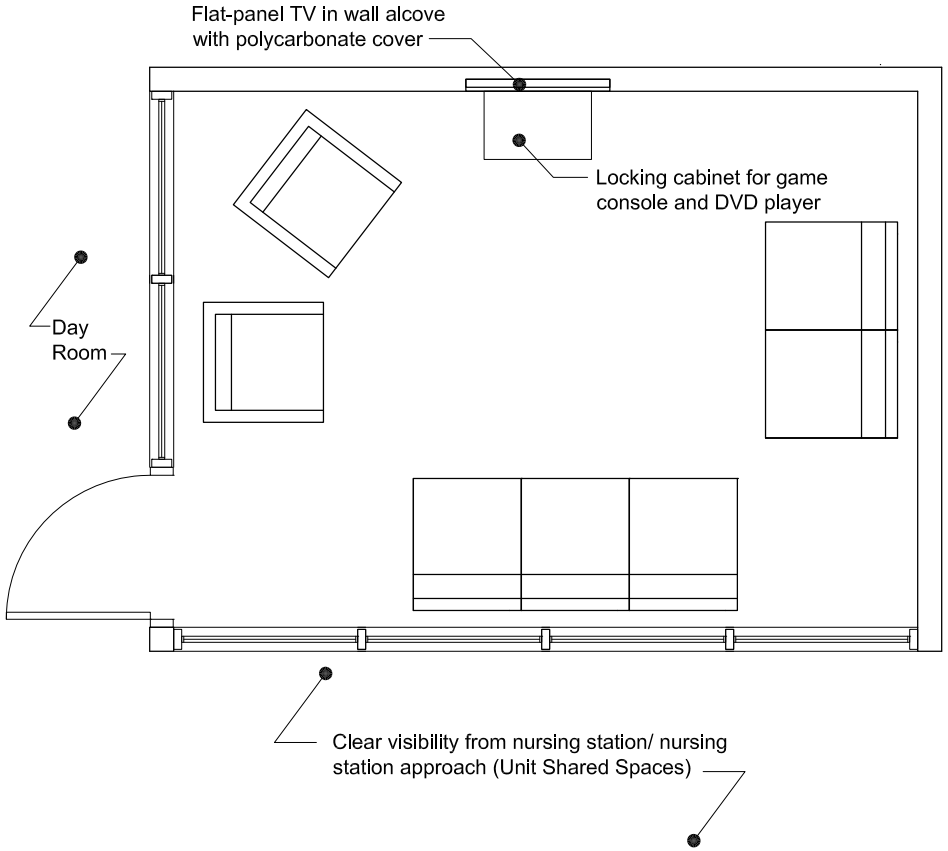
Electrical: Electrical outlets per code
Compact fluorescent lighting
Electrical release-button connection from Nursing Station to exterior courtyard door

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements



C106 TV ROOM

AREA: 150 NSF



Occupants: Up to 6 people

Function: Patient TV-viewing and electronic games

Adjacency:
Adjacent to and visible from Nursing Station, Nursing Station Approach and Day Room
TV Room accessed from Day Room or Nursing Station Approach

Environment:

Floor:	Carpet
Walls:	CMU
Ceiling:	Painted hardened gypsum board; 9' height
Windows:	Interior windows to allow full visibility into room
Door:	3' x 7' steel door, locking

Equipment:
Wall-mounted flat-panel TV in recessed wall alcove, with locking polycarbonate cover
Locking cabinet for DVD player and video game consoles

Furnishings: Lounge seating: sofas and chairs for 6 people

Mechanical: Dedicated HVAC zone

Electrical:
Electrical outlets per code
Compact fluorescent lighting
Electrical and cable TV outlets for TV and gaming equipment
Electrical release-button connection from Nursing Station to exterior courtyard door

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements

C107 TELEPHONE ROOM

AREA: 60 NSF

Occupants: Up to 2 people

Function: Enclosed room for patient telephone conversations, consultations, interviews

Adjacency: Access point visible from Nursing Station

Environment:

- **Floor:** Carpet
- **Walls:** CMU
- **Ceiling:** Painted hardened gypsum board; 9' height
- **Windows:** Sidelight adjacent to door; vision panel in door
- **Door:** 3' x 7' steel door, locking

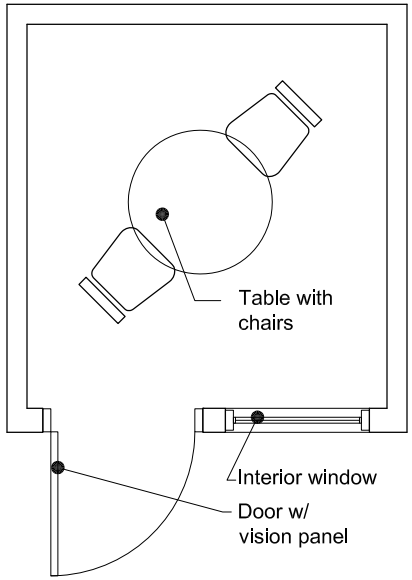
Equipment: Telephone (removable)

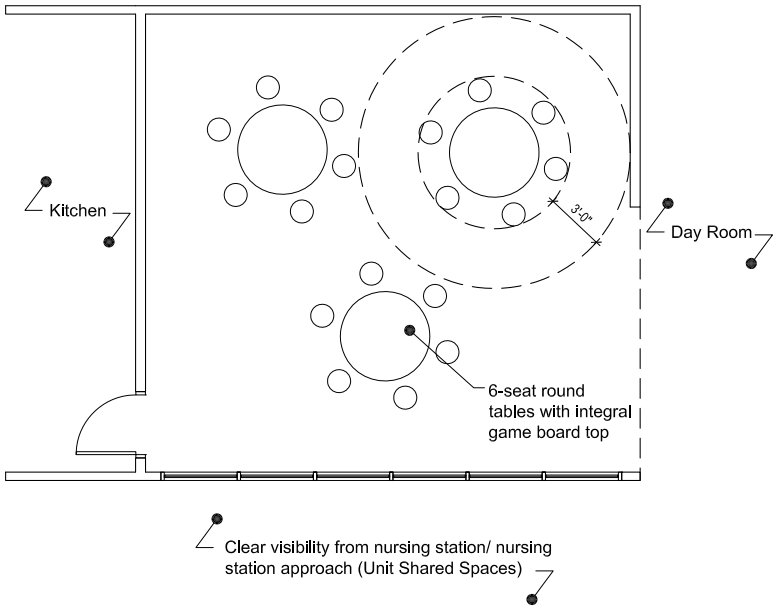
Furnishings: 36" diameter round table with 2 chairs

Mechanical: Shared HVAC zone

Electrical: Electrical outlets per code
Compact fluorescent lighting
Electrical and telephone outlets as needed for telephone
Electrical release-button connection from Nursing Station to exterior courtyard door

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements





C108 DINING ROOM

AREA: 570 NSF

Occupants: Up to 18 people (13 patients and 5 staff)

Function: Patient eating space
Secondary use as group room, group activity space

Adjacency: Adjacent to Kitchen, for food serving
Accessed from Day Room or Nursing Station Approach
Adjacent to and visible from Nursing Station and Nursing Station Approach

Environment:

- **Floor:** Hard surface (stained concrete, sheet vinyl, etc.)
- **Walls:** CMU; easily washable finish
- **Ceiling:** Painted hardened gypsum board; 1-1/2 to 2 story height
- **Windows:** Exterior windows / natural light desired
- **Door:** 3' x 7' steel access door(s), locking

Equipment: None

Furnishings: Floor-attached tables with attached seating, integral game boards in table tops; (3) 6-seat

Mechanical: Dedicated HVAC zone; exhaust

Electrical: Electrical outlets per code
Compact fluorescent lighting

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements

C109 SECLUSION ROOM

AREA: 100 NSF

Occupants: 1 patient

Function: Acoustically isolated room for patients who are highly agitated / out of control

Adjacency: Combines with Seclusion Ante and Toilet Rooms to form 3-room suite; Ante Room is access point
Near Nursing Station; 1 suite for each residential wing
If floor plan allows, school seclusion suite can serve as residential unit seclusion suite as well

Environment:
- **Floor:** Concrete
- **Walls:** CMU or concrete
- **Ceiling:** Hardened gypsum board
- **Windows:** Small, secure exterior vision window desired; one-way vision panel in door
- **Door:** 3' x 7' steel door, locking

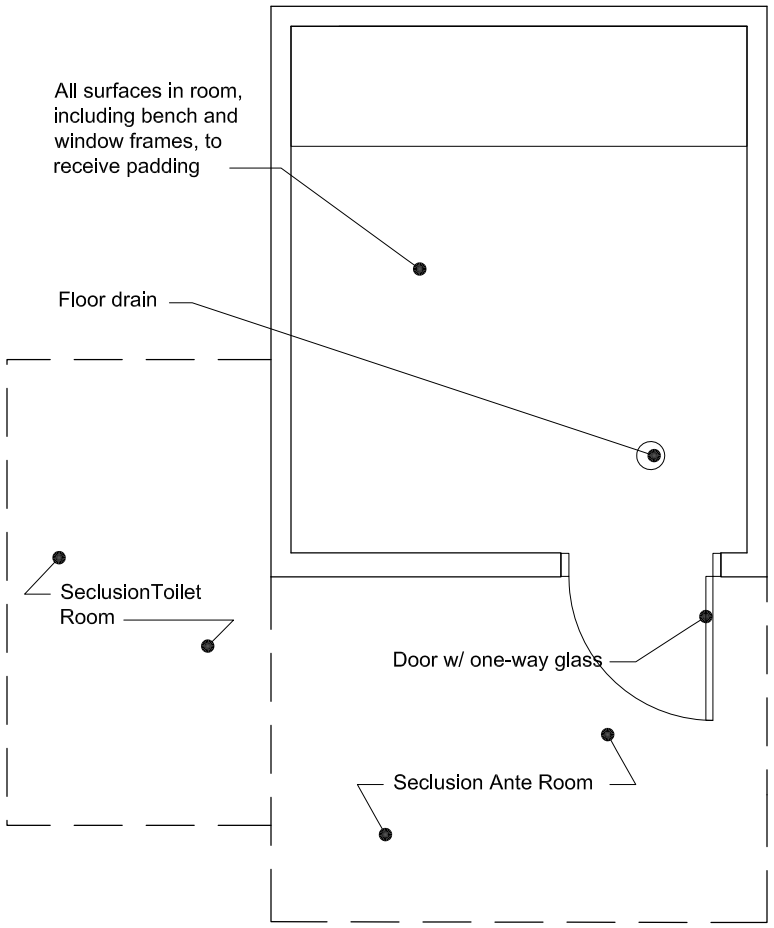
Equipment: Built-in 18"D concrete bench along 1 wall
Intercom system for staff/ patient communication
Security camera (monitor in Nursing Station)

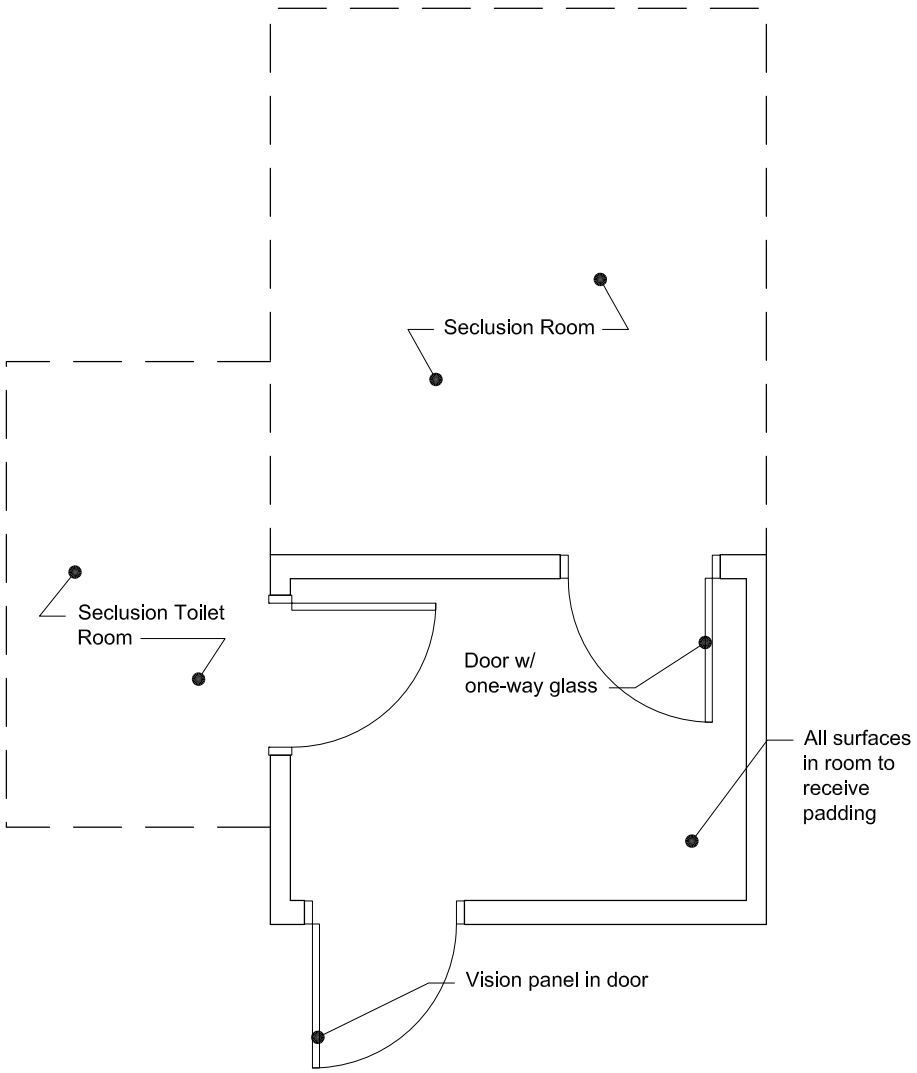
Furnishings: None

Mechanical: Dedicated HVAC zone; floor drain

Electrical: No electrical outlets; secure lighting (switch in Ante Room)

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements
Pathway from within unit to Seclusion suite must be as short and direct as possible; must be free of any objects, finishes, etc. susceptible to damage or destruction by out-of-control patient
Acoustical isolation critical; should not be able to hear noise generated from within seclusion suite, when doors are closed
1 of 2 seclusion room suites will be "soft"; all surfaces to be coated with synthetic resinous padding





C110 SECLUSION ANTE ROOM

AREA: 65 NSF

Occupants: 1 patient plus possible 1-2 staff

Function: Anteroom, access point for Seclusion and Seclusion Toilet rooms

Adjacency:
Combines with Seclusion and Seclusion Toilet Rooms to form 3-room suite; Ante Room is access point
Near Nursing Station; 1 suite for each residential wing
Visually private access point
If floor plan allows, school seclusion suite can serve as residential unit seclusion suite as well

Environment:
- **Floor:** Concrete
- **Walls:** CMU or concrete
- **Ceiling:** Hardened gypsum board
- **Windows:** Vision panel in door
- **Door:** 3' x 7' steel door, locking

Equipment: Intercom system for staff/ patient communication

Furnishings: None

Mechanical: Dedicated HVAC zone

Electrical: No electrical outlets; secure lighting
Seclusion Room light switch in this space

Notes:
Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements
Pathway to Seclusion suite must be as short and direct as possible; must be free of any objects, finishes, etc. susceptible to damage or destruction by out-of-control patient
Acoustical isolation critical; should not be able to hear noise generated from within seclusion suite, when doors are closed
1 of 2 seclusion room suites will be "soft"; all surfaces to be coated with synthetic resinous padding

C111 SECLUSION TOILET ROOM

AREA: 45 NSF

Occupants: 1 patient plus possible 1-2 staff

Function: Toilet and shower facilities within seclusion suite

Adjacency:
Combines with Seclusion and Seclusion Ante Rooms to form 3-room suite; Ante Room is access point
Near Nursing Station; 1 suite near each residential unit
If floor plan allows, school seclusion suite can serve as residential unit seclusion suite as well

Environment:
- **Floor:** Ceramic tile
- **Walls:** Ceramic tile
- **Ceiling:** Hardened gypsum board at toilet area; ceramic tile at shower area
- **Windows:** None
- **Door:** 3' x 7' steel door, locking (coated with synthetic-resinous padding in soft seclusion room suite)

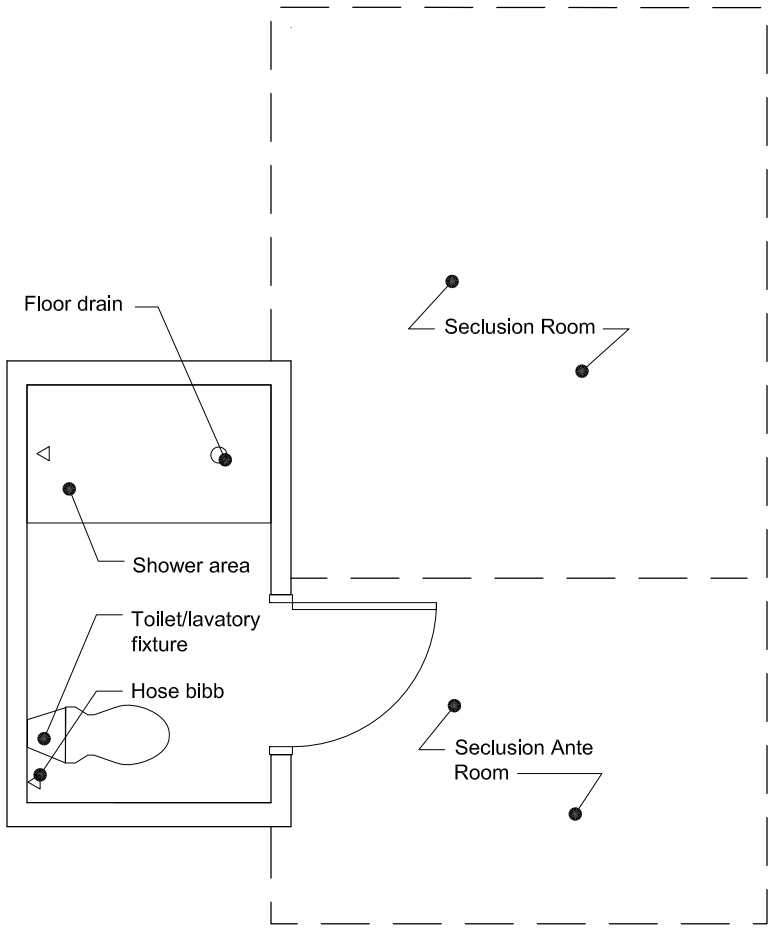
Equipment:
Intercom system for staff/ patient communication
Prison-type secure toilet / lavatory / mirror unit
Shower head and shower curtain rod
Toilet / shower room accessories: robe hooks; soap, paper towel & toilet tissue dispensers; shower curtain

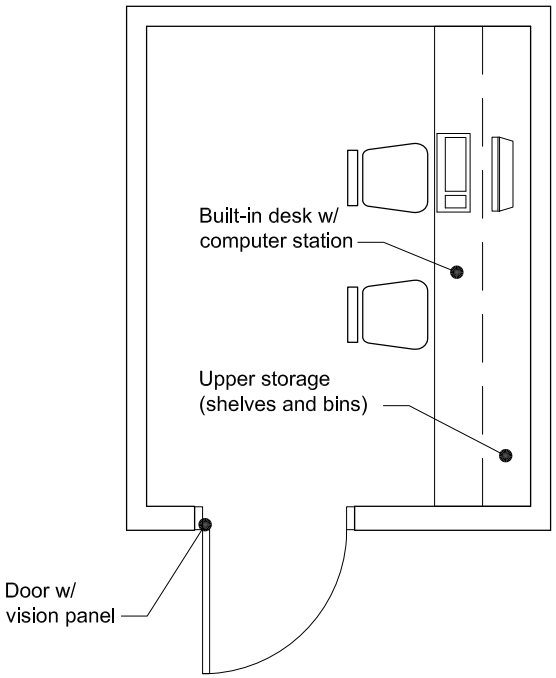
Furnishings: None

Mechanical:
Dedicated HVAC zone with exhaust
Floor drain; hose bibb

Electrical: No electrical outlets; secure lighting

Notes:
Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements
Acoustical isolation critical; should not be able to hear noise generated from within seclusion suite, when doors are closed





C112 TUTORING ROOM

AREA: 80 NSF

Occupants: 2 people (1 patient, 1 staff)

Function: Enclosed room for one-on-one tutoring sessions

Adjacency: Adjacent to group living spaces (Day Room, Dining Room, etc.)

Environment:

- **Floor:** Carpet
- **Walls:** CMU
- **Ceiling:** Painted hardened gypsum board; 9' height
- **Windows:** Vision panel in door
- **Door:** 3' x 7' steel door, locking

Equipment: Solid-surface millwork desk with locking upper storage bins
Computer

Furnishings: 2 chairs

Mechanical: Shared HVAC zone

Electrical: Electrical outlets per code
Electrical and data outlets for computer
Compact fluorescent lighting

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements

C113 DIRECT OBSERVATION ROOM (DOS)

AREA: 100 NSF

Occupants: 1 patient

Function: Enclosed patient sleeping space for patients who need close visual supervision

Adjacency: Directly adjacent to Nursing Station (closest patient space to Station)

Environment:

Floor: Stained concrete
Walls: CMU
Ceiling: Painted hardened gypsum board; 9' height
Windows: Exterior window with integral blinds
Vision panel in door
Door: 3' x 7' steel door, locking

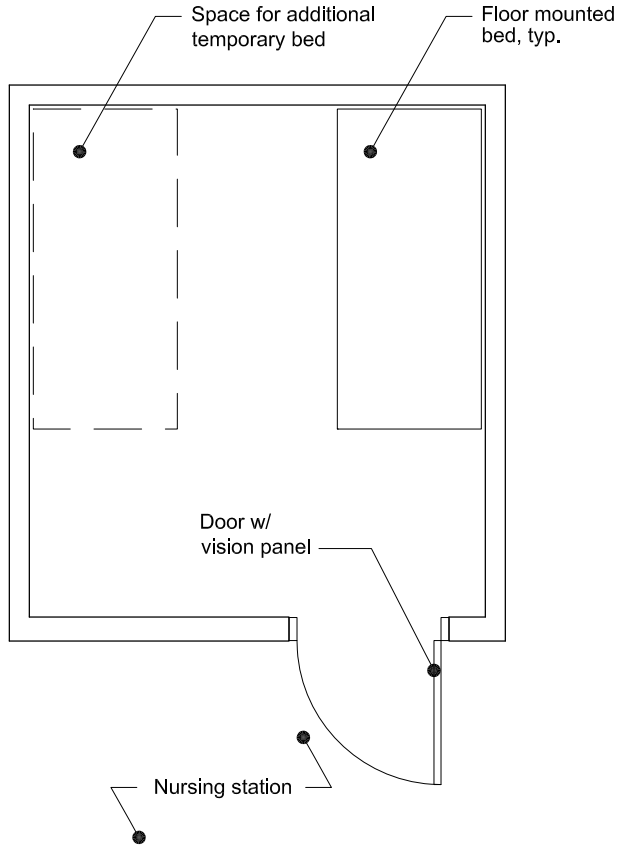
Equipment: Security camera (monitor in Nursing Station)

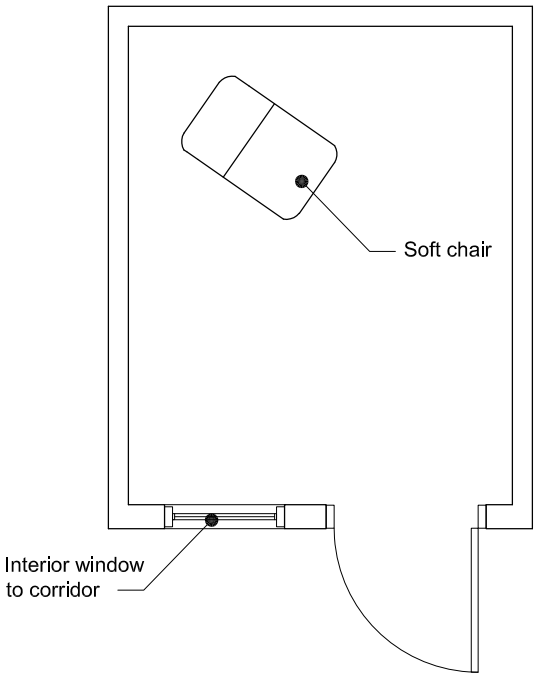
Furnishings: Single bed, bolted to floor; 36" W x 75"L, with space for a second bed when needed

Mechanical: Shared HVAC zone

Electrical: No electrical outlets
Compact fluorescent lighting; light switch in hallway

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements





C114 ONE-ON-ONE ROOM (COMFORT ROOM)

AREA: 80 NSF

Occupants: 1 patient

Function: Enclosed room with soft surfaces and soothing atmosphere, where patients can go to calm down

Adjacency: Accessed from main hallway; access point visible from Nursing Station

Environment:

- **Floor:** Carpet
- **Walls:** CMU, with reinforced gypsum board finished surface (smooth surface for wall murals)
- **Ceiling:** Painted hardened gypsum board; 9' height
- **Windows:** Sidelight adjacent to door
- **Door:** 3' x 7' steel door, locking

Equipment: Built-in sound system for music

Furnishings: Soft seating (large bean bag chair)

Mechanical: Shared HVAC zone

Electrical: Electrical outlets per code
Dimmable lighting

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements

C115 PATIENT LAUNDRY ROOM

AREA: 100 NSF

Occupants: 1 patient

Function: Enclosed room for patient to sort, wash, dry and fold his or her laundry

Adjacency: Near Nursing Station

Environment:

- **Floor:** Sealed concrete
- **Walls:** CMU
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** Vision panel in door
- **Door:** 3' x 7' steel door, locking

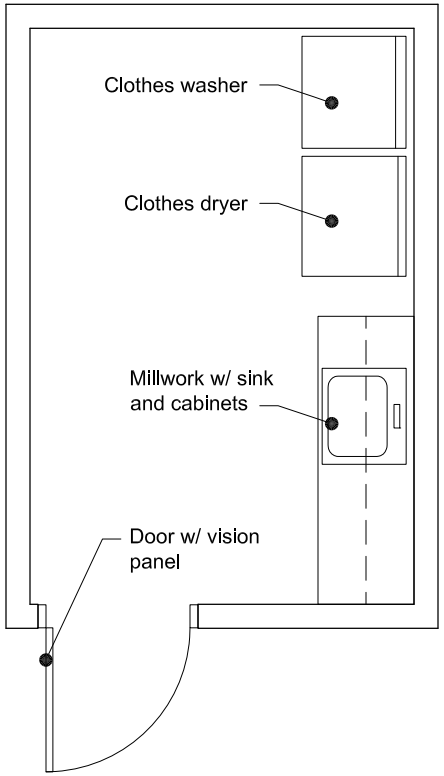
Equipment: Solid surface countertop, minimum 6'L, with large, single-compartment sink, with lockable millwork storage cabinets above & below
Large-capacity residential clothes washing machine
Large-capacity residential clothes dryer

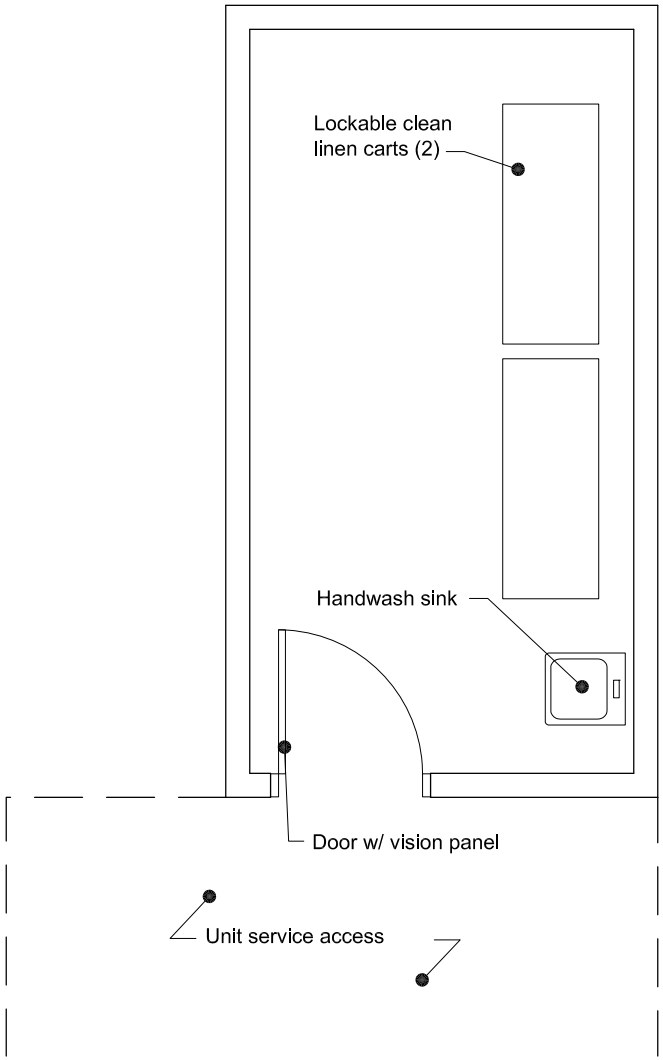
Furnishings: None

Mechanical: Dedicated HVAC zone; exhaust; dryer vent

Electrical: Duplex electrical outlets per code
Electrical outlets for washer & dryer
Compact fluorescent lighting

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements





C116 CLEAN LINEN

AREA: 125 NSF

Occupants: 1 staff member

Function: Enclosed room for receiving and holding of clean linen
Possible location for OSHA cabinet

Adjacency: Near residential unit service entrance
Outside patient area

Environment:

- **Floor:** Sealed concrete
- **Walls:** CMU
- **Ceiling:** Lay-in acoustic tile; 9’ height
- **Windows:** Vision panel in door
- **Door:** 3’ x 7’ steel door, locking

Equipment: Wall-hung lavatory sink

Furnishings: 2 clean laundry carts, locking, each 5’L x 2’D x 5’H
OSHA cabinet (possibly)

Mechanical: Dedicated HVAC zone

Electrical: Duplex electrical outlets per code
Compact fluorescent lighting

Notes: If within patient area, door must swing out

C117 SOILED LINEN

AREA: 110 NSF

Occupants: 1 staff member

Function: Enclosed room for holding of soiled linen for pick-up
Collection and holding area for trash and recycling

Adjacency: Near residential unit service entrance
Outside patient area

Environment:

- **Floor:** Sealed concrete
- **Walls:** CMU
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** Vision panel in door
- **Door:** 3' x 7' steel door, locking

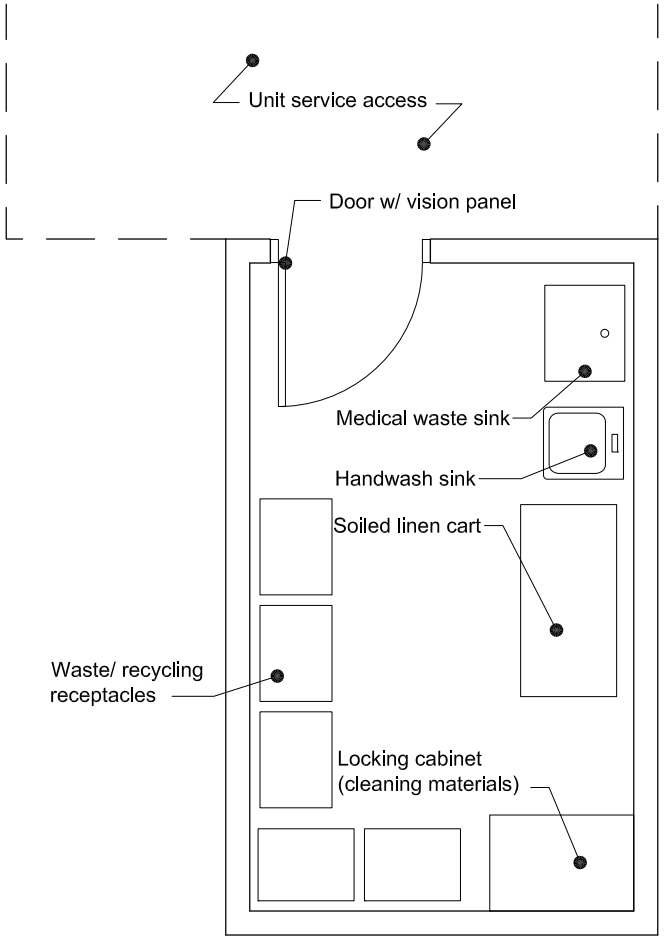
Equipment: Wall-hung hand-washing sink
Floor-mount medical waste sink

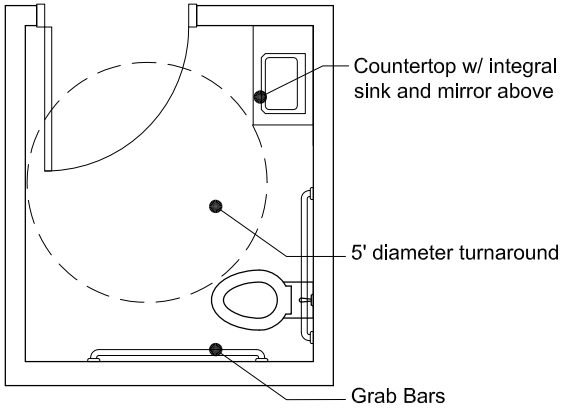
Furnishings: Locking cabinet for unit staff cleaning materials
Soiled linen cart, 4'L x 2'D x 5'H
Trash & recycling receptacles

Mechanical: Dedicated HVAC zone

Electrical: Duplex electrical outlets per code
Compact fluorescent lighting

Notes: If within patient area, door must swing out





C118 STAFF TOILET ROOM

AREA: 42 NSF

Occupants: 1 staff member

Function: Single-user, unisex toilet rooms for use by residential unit staff

Adjacency: Private entry point near residential unit service unit
Outside patient area

Environment:

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

C119 UNIT STORAGE

AREA: 80 NSF

Occupants: None

Function: Enclosed room for storage recreational materials and supplies used in the unit (books, art / craft materials, etc.)

Adjacency: Near Nursing Station

Environment:

- **Floor:** Sealed concrete
- **Walls:** CMU
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** None
- **Door:** 3' x 7' steel door, locking

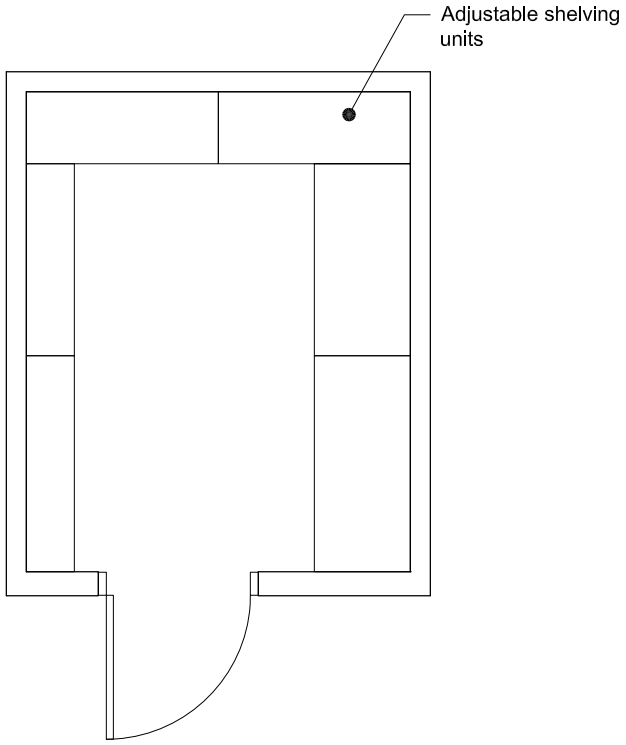
Equipment: None

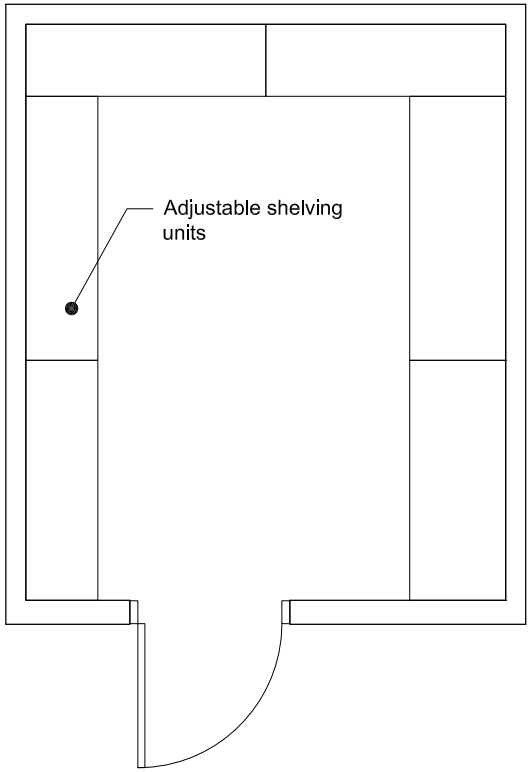
Furnishings: Adjustable steel shelving units, 12", 18" & 24" D

Mechanical: Minimal HVAC

Electrical: Duplex electrical outlets per code
Compact fluorescent lighting

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements





C120 PATIENT STORAGE

AREA: 120 NSF

Occupants: None

Function: Enclosed room for storage of patients' personal belongs that cannot be kept in their bedrooms; materials are stored in large plastic totes

Adjacency: Near Nursing Station

Environment:

- **Floor:** Sealed concrete
- **Walls:** CMU
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** None
- **Door:** 3' x 7' steel door, locking

Equipment: None

Furnishings: Adjustable steel shelving units, 18" & 24"D

Mechanical: Minimal HVAC

Electrical: Duplex electrical outlets per code
Compact fluorescent lighting

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements

C200: UNIT SHARED SPACES

Hours of Operation

24 hours/day, 7 days/week

Security

The Unit Shared Spaces contain some patient-access spaces (Nursing Station Approach Area; Kitchen) which must incorporate injury and suicide-resistant fixtures and design elements. The Unit Shared Spaces will have controlled entry and exit. The Medications Room has an increased need for security and will require cardkey-only access. The layout of the Unit Shared Spaces and Residential Wings must address a critical safety issue:

- Staff in the Nursing Station must have clear visibility of the Residential Wing gathering spaces (day room, dining room, TV room) and the doors to all patient bedrooms and toilet rooms.

Functions / Space Adjacencies

The Unit Shared Spaces group consists of single spaces which support two residential wings. The shared spaces must be located between and have direct connections with both wings.

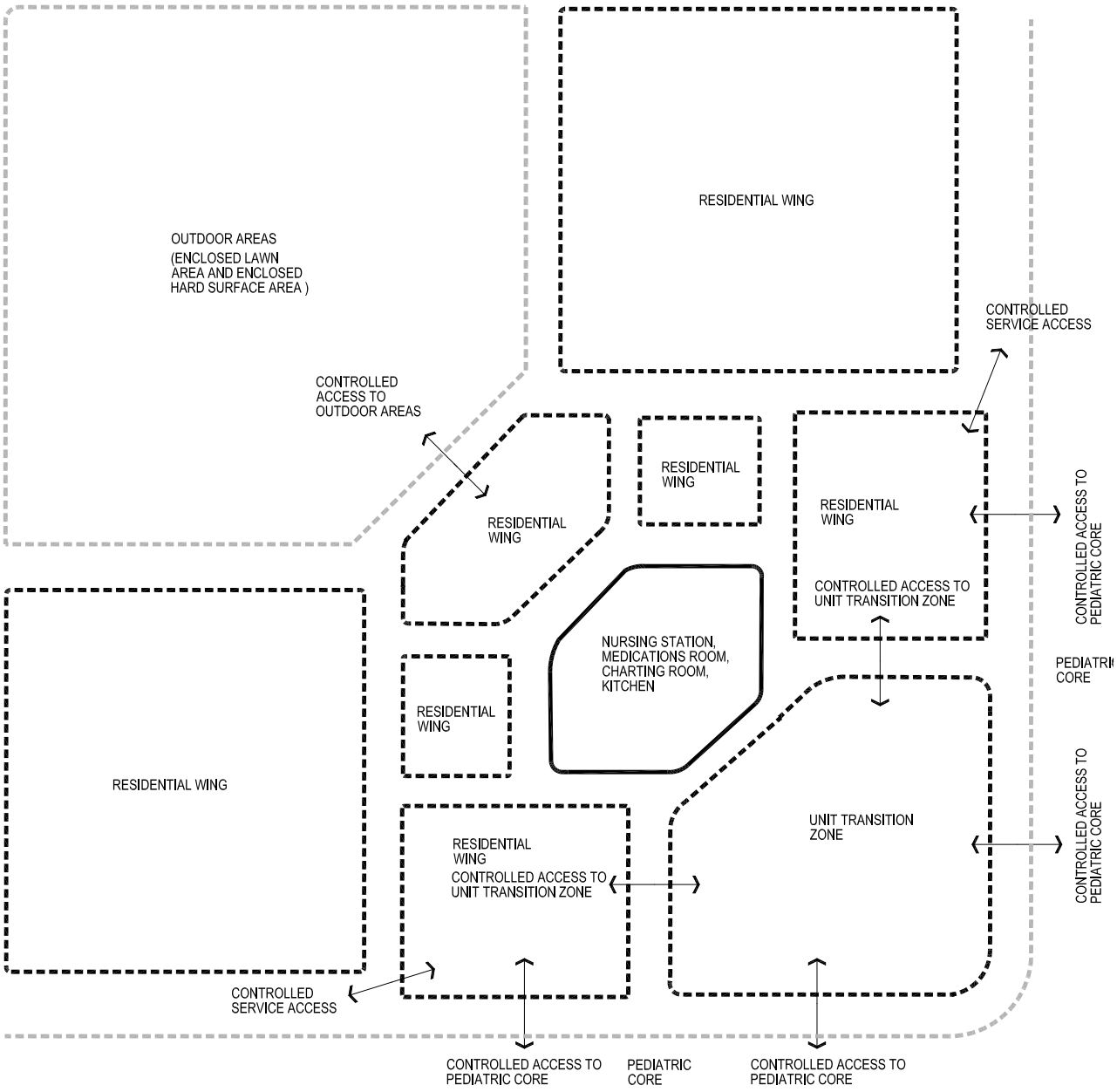
Staff Amenities

The Unit Shared Spaces should have convenient access to the building's Employee Lounge.

C200: UNIT SHARED SPACES

SPACE LIST

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
C200	**UNIT SHARED SPACES**			**1,260**		**1,676**
C201	Nursing Station	1	450	450	1.33	599
C202	Nursing Station Approach Area	1	200	200	1.33	266
C203	Medications Room	1	180	180	1.33	239
C204	Charting Room	1	150	150	1.33	200
C205	Kitchen	1	280	280	1.33	372



C200: UNIT SHARED SPACES
ADJACENCY DIAGRAM

C201 NURSING STATION

AREA: 450 NSF

Occupants: Up to 4 staff (2 current and 2 future)

Function: Secure, windowed enclosure for observing patients in residential unit
Paperwork, computer work; storage of staff personal items; storage of small patient personal items

Adjacency: At center point of 2 residential wings; adjacent to and with view into each Day Room & TV Room; clear view of all patient bedroom and toilet room doors
Adjacent to Direct Observation Room (DOS) and Medications Room; surrounded by Nursing Station Approach Area

Environment:

- **Floor:** Carpet
- **Walls:** CMU; security glass
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** Internal windows of security glass, with small openings at desktop for communicating with patients
- **Door:** 3' x 7' steel doors, locking; one to each residential wing and one to Medications Room

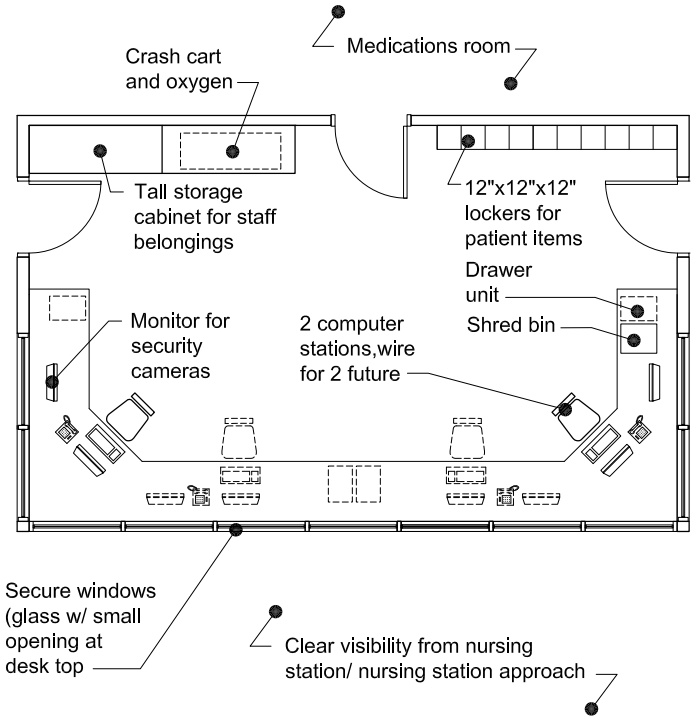
Equipment: Solid surface countertop with 4 staff computer workstations (2 future) & storage drawer units
Millwork or pre-manufactured lockers, 12" x 12" x 12", for small patient belongings; one for each patient
Millwork cabinets, lockable, for staff belongings
Computer, telephone & security camera monitor (1 set of each at each workstation)
Shred bin

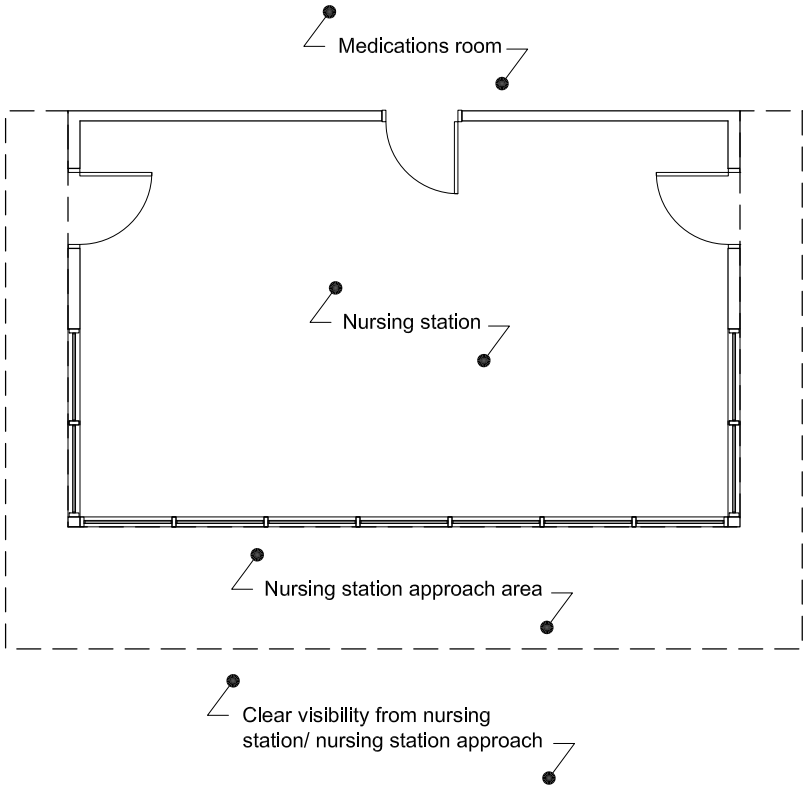
Furnishings: 4 desk chairs (2 for future use)

Mechanical: Dedicated HVAC zone

Electrical: Duplex electrical outlets per code
Electrical outlets above countertop
Electrical and data outlets for computer workstations
Compact fluorescent lighting

Notes: Crash cart & oxygen tank will be stored in this room





C202 NURSING STATION APPROACH AREA

AREA: 200 NSF

Occupants: Patients / staff

Function: Circulation space immediately outside Nursing Station; buffer between observation station and patient areas

Adjacency: Immediately outside / surrounding Nursing Station

Environment:

- **Floor:** Carpet
- **Walls:** CMU
- **Ceiling:** Lay-in acoustic tile; 1-1/2 to 2 story height
- **Windows:** None
- **Door:** None

Equipment: None

Furnishings: None

Mechanical: Shared HVAC zone

Electrical: Duplex electrical outlets per code
Compact fluorescent lighting

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements

C203 MEDICATIONS ROOM

AREA: 180 NSF

Occupants: 1 occupant (nurse – temporary)

Function: Enclosed, secure room for storing, preparing and dispensing medication to patients
Secure storage for controlled substances

Adjacency: Adjacent to / accessed from Nursing Station
Direct adjacency to each residential wing

Environment:

Floor: Moisture-impervious flooring (stained concrete, sheet vinyl, VCT, etc.)
Walls: CMU
Ceiling: Painted gypsum board; 9' height
Windows: 2 secure glazed medications pass-through windows above countertop, for distributing medications from this room to each residential wing
Door: 3' x 7' steel door, locking, car-key access only

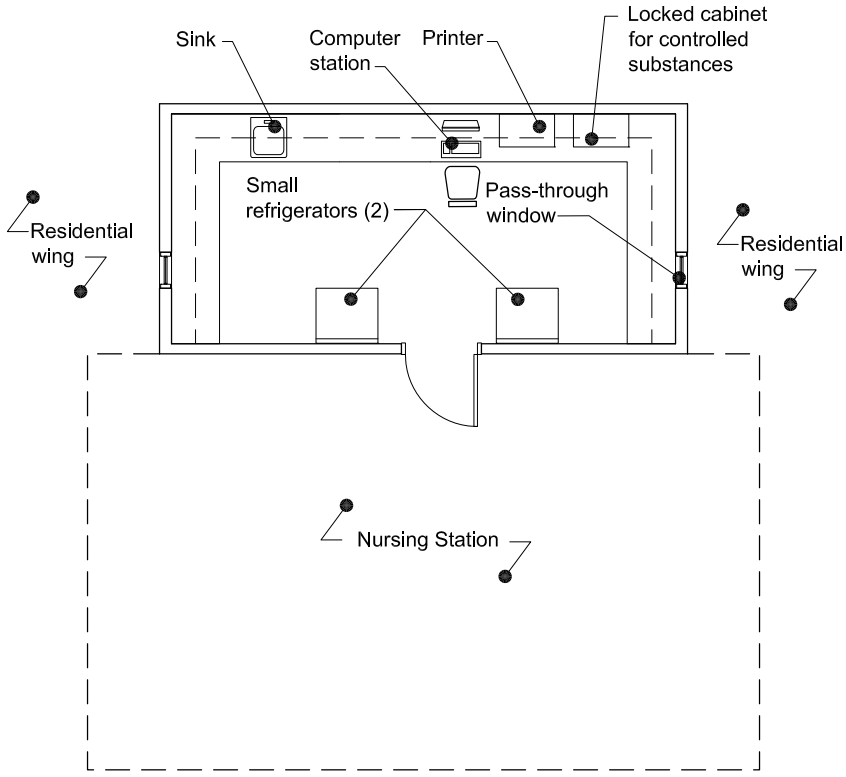
Equipment: Millwork countertop / cabinet with single-compartment sink; storage above and below; computer workstation; locking cabinet for storage of controlled substances
2 small refrigerators, one for each wing
Computer, printer & telephone

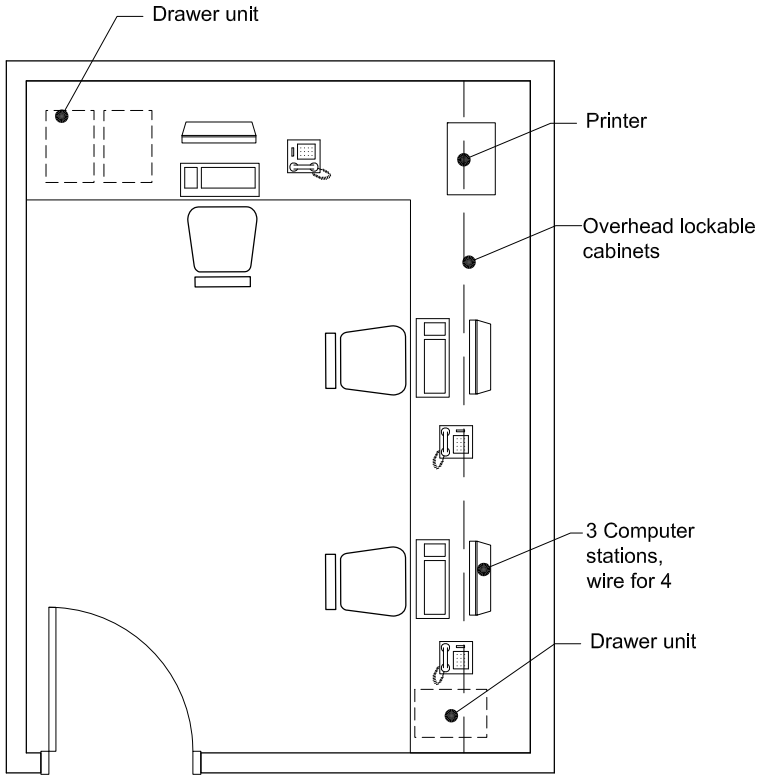
Furnishings: Desk chair

Mechanical: Dedicated HVAC zone

Electrical: Duplex electrical outlets per code, including outlets above countertop
Electrical and voice / data outlets as needed for computer, telephone, refrigerators, other equipment
Fluorescent parabolic lighting

Notes: Visually private space





C204 CHARTING ROOM

AREA: 150 NSF

Occupants: Up to 3 occupants

Function: Enclosed, private, distraction-free room for doing paper work related to patient care and residential unit management; primarily used by 1 person at a time

Adjacency: Adjacent to Nursing Station
Visual privacy – no visual connection to adjacent spaces

Environment:

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

Equipment: Millwork countertop with 3 computer workstations; locking drawer units at each station; lockable storage cabinets above
3 computers, 3 telephones, 1 shared printer & 1 shredder

Furnishings: 3 desk chairs

Mechanical: Dedicated HVAC zone

Electrical: Duplex electrical outlets per code, including outlets above countertop
Electrical and voice / data outlets for computers, telephones, printer and shredder; provide 4th set of electrical and voice / data outlets for future staff
Fluorescent parabolic lighting

Notes:

C205 KITCHEN

AREA: 280 NSF

Occupants: Staff and patients

Function:
Serving food delivered from the Rampton Cafeteria kitchen in warming carts
Preparing simple meals such as pancake breakfasts, lunches (non-school days), etc.
Meals and serving by staff and patients

Adjacency: Adjoins both residential wing dining rooms

Environment:
- **Floor:** Hard surface floor (sheet vinyl, stained concrete, etc.)
- **Walls:** CMU
- **Ceiling:** Hardened gypsum board, painted; 9' height
- **Windows:** None
- **Door:** 3' x 7' steel doors, locking

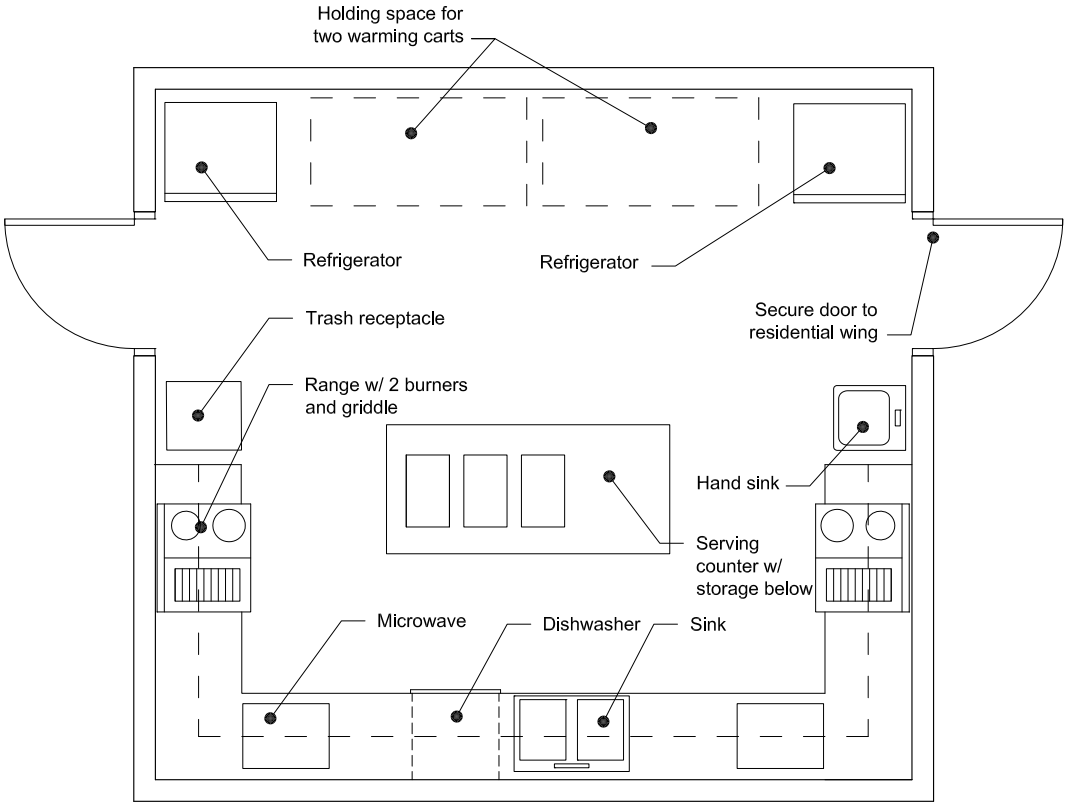
Equipment:
Solid surface countertops with lockable storage cabinets/drawers below & storage cabinets above
Millwork serving island with 3 built-in warming/serving trays (2 hot, 1 cold; each 20"l x 12"W). Dish storage below.
Double compartment kitchen sink
Wall-hung hand-washing lavatory
2 refrigerators with ice-maker, 2 microwave ovens, 2 electric range/ovens with built-in griddle
Residential-size, under-counter commercial dishwasher
Holding area for 2 food warming carts, each 60"L x 29-1/2"W

Furnishings: Waste and recycling receptacles

Mechanical: Dedicated HVAC zone; exhaust

Electrical:
Duplex electrical outlets per code
Electrical outlets above countertop
Electrical outlets as required for refrigerators, microwaves, range/ovens, food warming trays, dishwasher
Compact fluorescent lighting

Notes:
Countertops at 34" high to meet ADA
Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements



C300: UNIT TRANSITION ZONE

Hours of Operation

All days, 8 AM – 9 PM

Security

The Unit Transition Zone contains two patient-access spaces (Group Room; Visiting Room) which must incorporate injury and suicide-resistant fixtures and design elements. These two spaces will each have two access points: one to the Residential Wing and one to the Transition Zone, both with controlled access in and out.

The Unit Transition Zone will have controlled entry and exit.

Functions / Space Adjacencies

The Unit Transition Zone consists primarily of administrative and medical staff offices which support both wings of a residential unit. The Transition Zone also includes a Group Room and a Visiting Room which will be used by family members when attending group therapy or visiting patients in the Pediatric Facility.

The Transition Zone provides the physical connection between the Pediatric Facility Central Core (public access lobby; Pediatric Facility administrative offices; Activity Spaces; School) and the Residential Unit / Residential Wings. Important adjacencies include:

- The Secretary and the Central Core Lobby/Waiting (B100). The Secretary will be one of the contact points for visitors in the Lobby / Waiting using the call button / telephone system for access to the Pediatric Facility. The Secretary should have easy access to the Lobby / Waiting, to be able to assist those needing access.
- The Clinical Director (B200) and the Transition Zone Secretary spaces, for access to shared office equipment (copier, fax machine) which will be available within or near the Secretary offices.
- The Psychologist and the school library Testing Rooms.
- The Recreation Therapist and the Activity Spaces (B300).
- The Group Room and the Visiting Room must be directly adjacent to the Residential Wing, but must also be easily accessed by visitors and family members coming from the Central Core Lobby/Waiting.

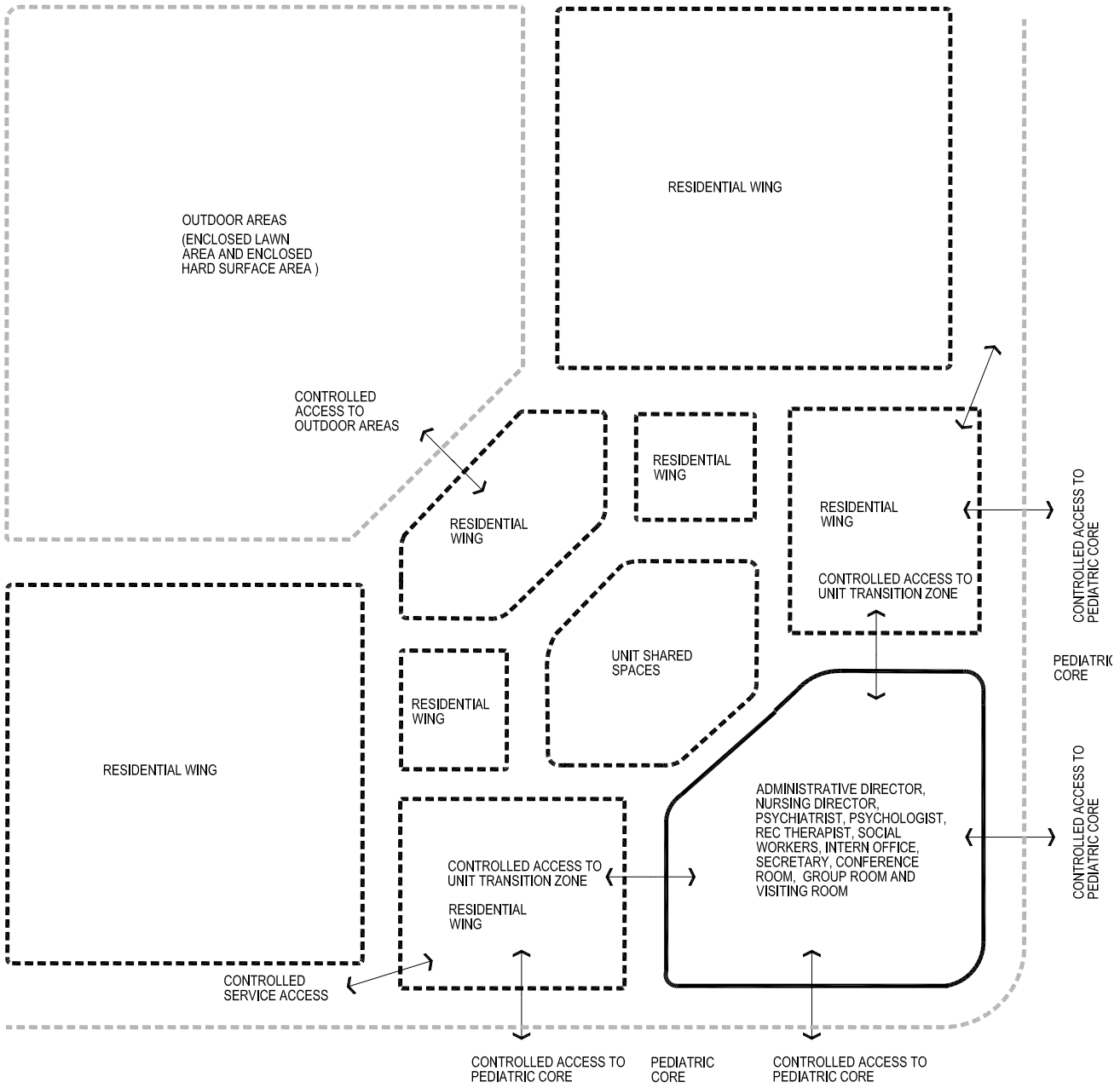
Staff Amenities

The Transition Zone should have convenient access to the building's Employee Lounge, staff toilet rooms and staff parking area.

C300: UNIT TRANSITION ZONE

SPACE LIST

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
C300	**UNIT TRANSITION ZONE**			**2,290**		**3,051**
C301	Unit Administrative Director	1	150	150	1.33	200
C302	Unit Nursing Director	1	120	120	1.33	160
C303	Psychiatrist	1	150	150	1.33	200
C304	Psychologist	1	150	150	1.33	200
C305	Recreation Therapist	1	80	80	1.40	112
C306	Social Worker	2	120	240	1.33	319
C307	Intern Office	1	120	120	1.33	160
C308	Secretary	1	100	100	1.33	133
C309	Conference	1	300	300	1.33	399
C310	Group Room	2	240	480	1.33	638
C311	Visiting Room	2	200	400	1.33	532



C300.

UNIT TRANSITION ZONE

ADJACENCY DIAGRAM

C301 UNIT ADMINISTRATIVE DIRECTOR

AREA: 150 NSF

Occupants: 1 occupant, with up to 3 visitors

Function: Private office for Unit Administrative Director, who is responsible for the management of residential unit; paperwork, computer work, telephone calls, small meetings

Adjacency: Adjacent to Secretary, Unit Nursing Director & Psychiatrist
Near Conference room
Unit administrative offices should be outside, but easily accessible to, residential unit

Environment:

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

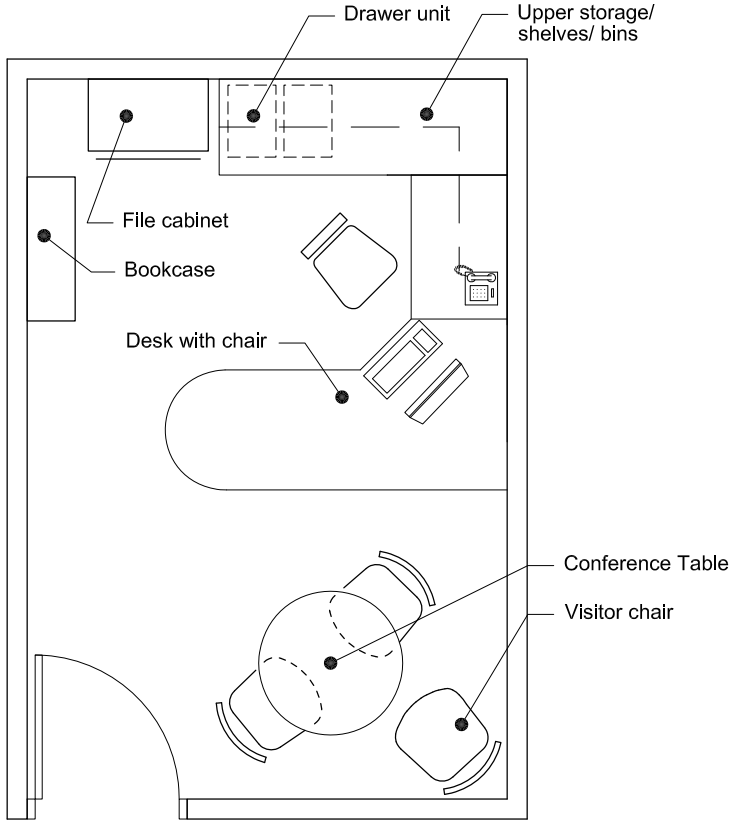
Equipment: Computer; telephone

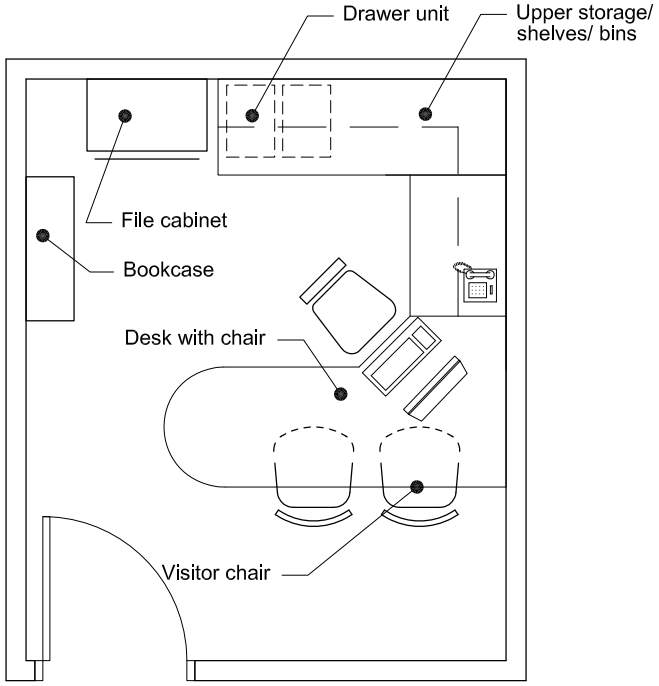
Furnishings: Systems furniture U-shaped desk with shelves / bins above and drawer units below
Desk chair
36" diameter table
3 visitor chairs
File cabinet / bookcase

Mechanical: Shared HVAC zone

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

Notes:





C302 UNIT NURSING DIRECTOR

AREA: 120 NSF

Occupants: 1 occupant, with up to 2 visitors

Function: Private office for Unit Nursing Director, who is responsible for management of all direct care staff on the unit and monitors all patients' medical and psychiatric needs; paperwork, computer work, telephone calls, small meetings

Adjacency:
Adjacent to Secretary, Psychiatrist & Unit Administrative Director
Near Conference room
Unit administrative offices should be outside, but easily accessible to, residential unit

Environment:

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

C303 PSYCHIATRIST

AREA: 150 NSF

Occupants: 1 occupant, with up to 3 visitors

Function: Private office for Psychiatrist, who is responsible for the clinical management of all patients in the residential unit; paperwork, computer work, telephone calls, small meetings

Adjacency: Adjacent to Secretary, Unit Nursing Director & Unit Administrative Director
Near Conference room
Unit administrative offices should be outside, but easily accessible to, residential unit

Environment:

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

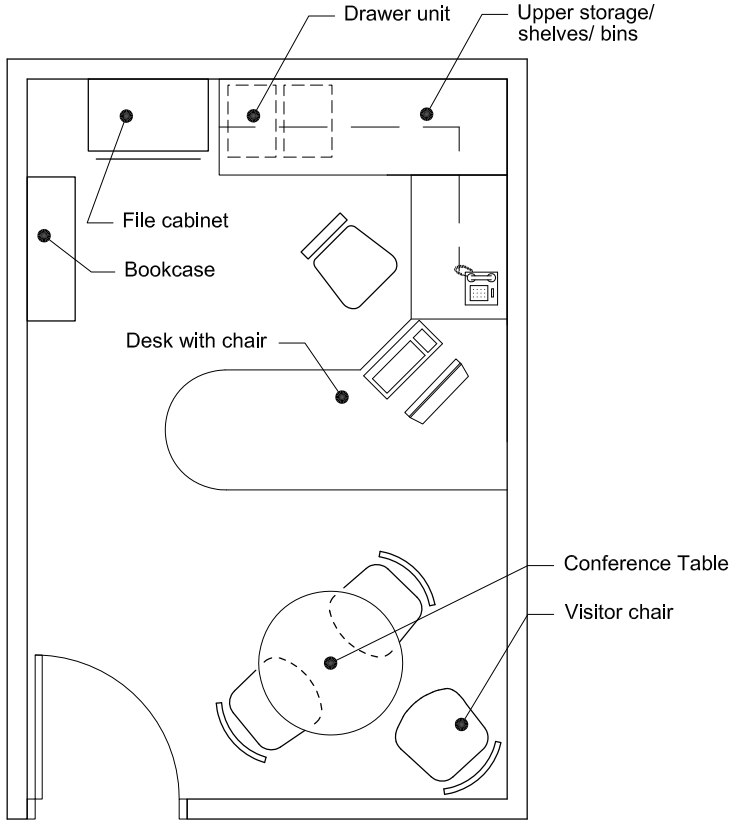
Equipment: Computer; telephone

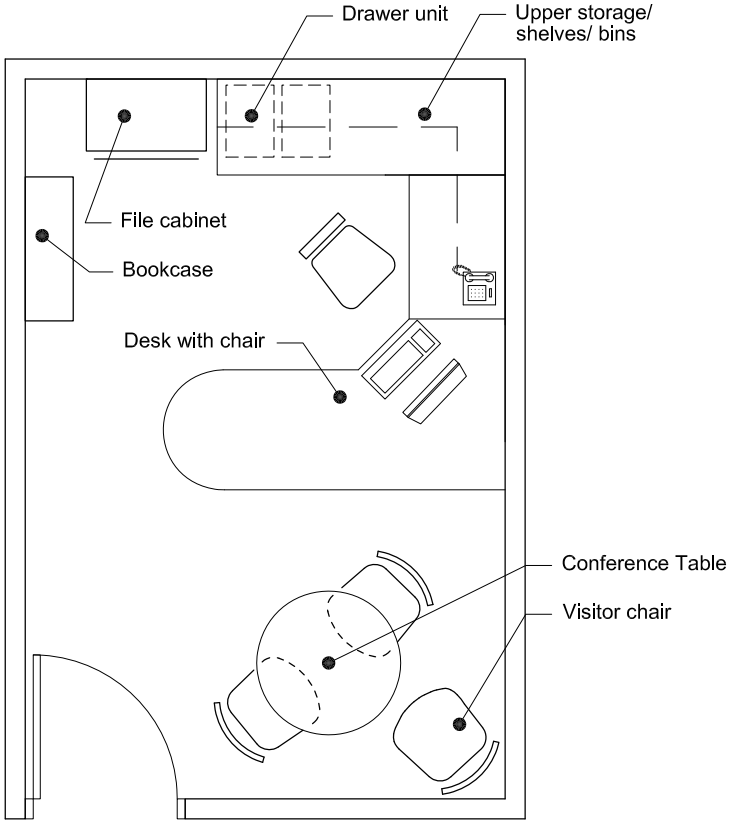
Furnishings: Systems furniture U-shaped desk with shelves / bins above and drawer units below
Desk chair
36" diameter table
3 visitor chairs
File cabinet / bookcase

Mechanical: Shared HVAC zone

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

Notes:





C304 PSYCHOLOGIST

AREA: 150 NSF

Occupants: 1 occupant, with up to 3 visitors

Function: Private office for Psychologist, who works with a particular residential unit
Office paperwork, small meetings, testing, telephone calls, computer work

Adjacency: Near other residential unit transition zone offices
Easy access to school library Testing Rooms

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
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:

C305 RECREATION THERAPIST

AREA: 80 NSF

Occupants: 1 occupant, with up to 1 visitor

Function: Private office for Recreation Therapist

Adjacency: With residential unit transition zone administrative and medical offices
Easy access to Activity Spaces and residential units, where recreational therapy takes place

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

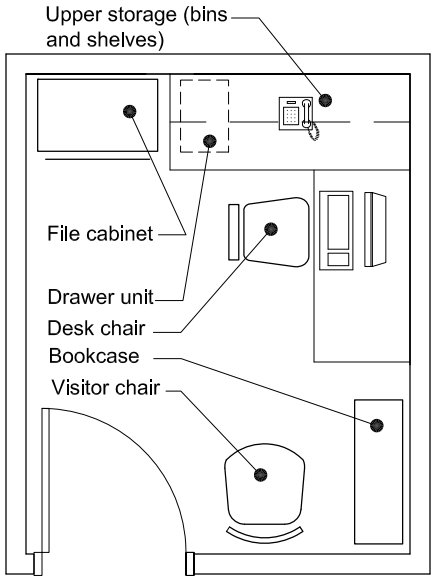
Equipment: **C**omputer; telephone

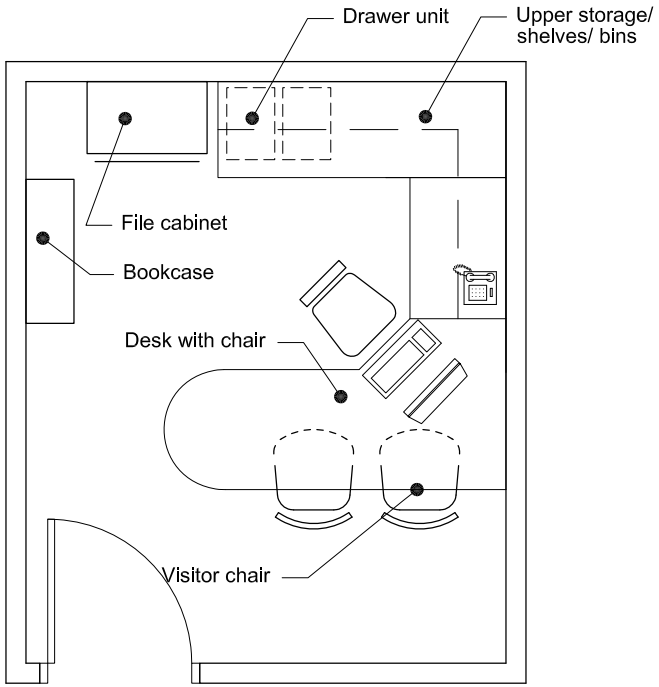
Furnishings: Systems furniture L-shaped workstation; shelves / bins above and drawer units below
Desk chair
Visitor chair
File cabinet / bookcase

Mechanical: Shared HVAC zone

Electrical: Duplex electrical outlets per code
Electrical & voice / data outlets for computer & telephone
Fluorescent parabolic lighting

Notes:





C306 SOCIAL WORKER

AREA: 120 NSF

Occupants: 1 occupant, with up to 2 visitors

Function: Private office for Social Worker; each of 2 Social Workers is responsible for half the patients in the residential unit; paperwork, computer work, telephone calls, small meetings

Adjacency: Adjacent to other administrative offices in Transition Zone
Near Conference and Group Rooms

Environment:

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

C307 INTERN OFFICE

AREA: 120 NSF

Occupants: 2 occupants, with up to 2 visitors

Function: Shared enclosed office for medical, social work or administrative interns

Adjacency: With administrative offices

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

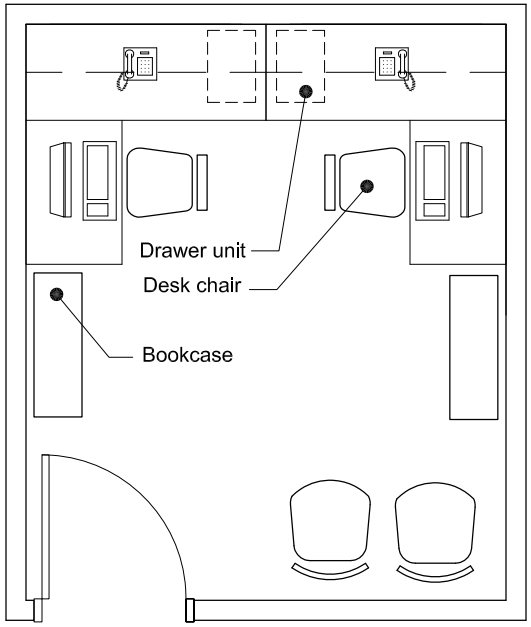
Equipment: 2 computers; 2 telephones
1 shared printer

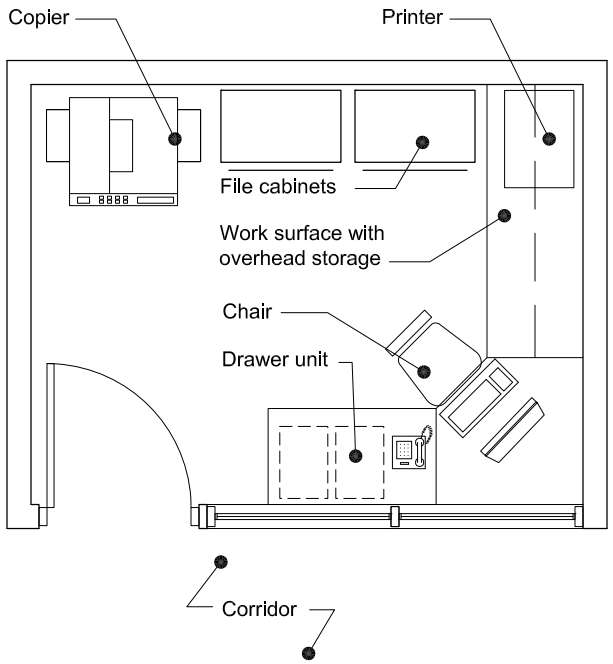
Furnishings: 2 systems furniture L-shaped workstations; shelves / bins above and drawer units below
2 desk chairs
2 visitor chairs
2 bookcases

Mechanical: Shared HVAC zone

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

Notes:





C308 SECRETARY

AREA: 100 NSF

Occupants: 1 occupant

Function:
Private office for Secretary, who provides office support for the residential unit administrative staff
Reception and control point for access to the administrative offices and residential unit

Adjacency:
With administrative offices, in particular Unit Administrative and Nursing Directors
Near Pediatric Facility Lobby / Waiting – at least one of three Res Unit Secretaries with sightline to Lobby / Waiting if building layout allows

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Exterior windows with window coverings
Interior window to corridor (at least one of three Res Unit Secretaries with window to building main entry lobby if building layout allows)
Door: 3' x 7' wood door, locking

Equipment: Computer; telephone; printer; copier

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

Mechanical: Shared HVAC zone

Electrical:
Duplex electrical outlets per code
Electrical & voice / data outlets for computer, telephone, printer, copier
Fluorescent parabolic lighting

Notes: 3 Residential Unit Secretaries should be near each other to share fax machine and office supply storage

C309 CONFERENCE

AREA: 300 NSF

Occupants: Up to 16 people

Function: Residential unit coordination meetings

Adjacency:
With transition zone administrative offices
Near Unit Administrative and Nursing Directors
Easily accessible by Pediatric Facility visitors

Environment:

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

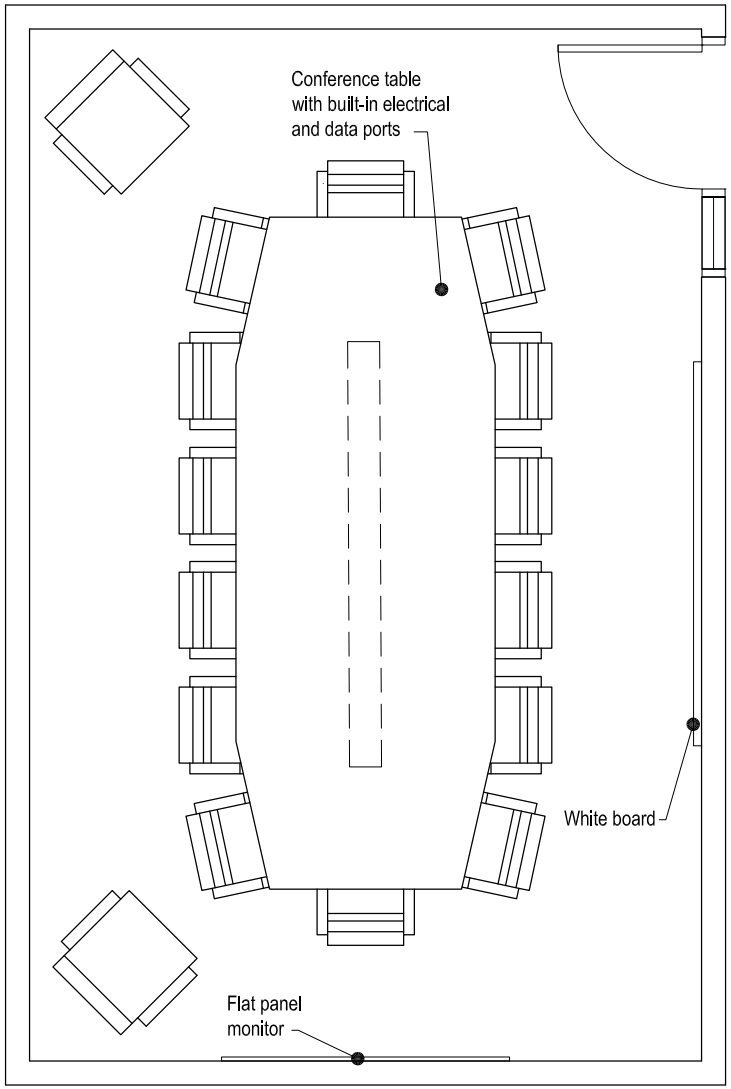
Equipment:
Flat-panel monitor, wall-mounted
Equipment as needed for videoconferencing and telemedicine capability

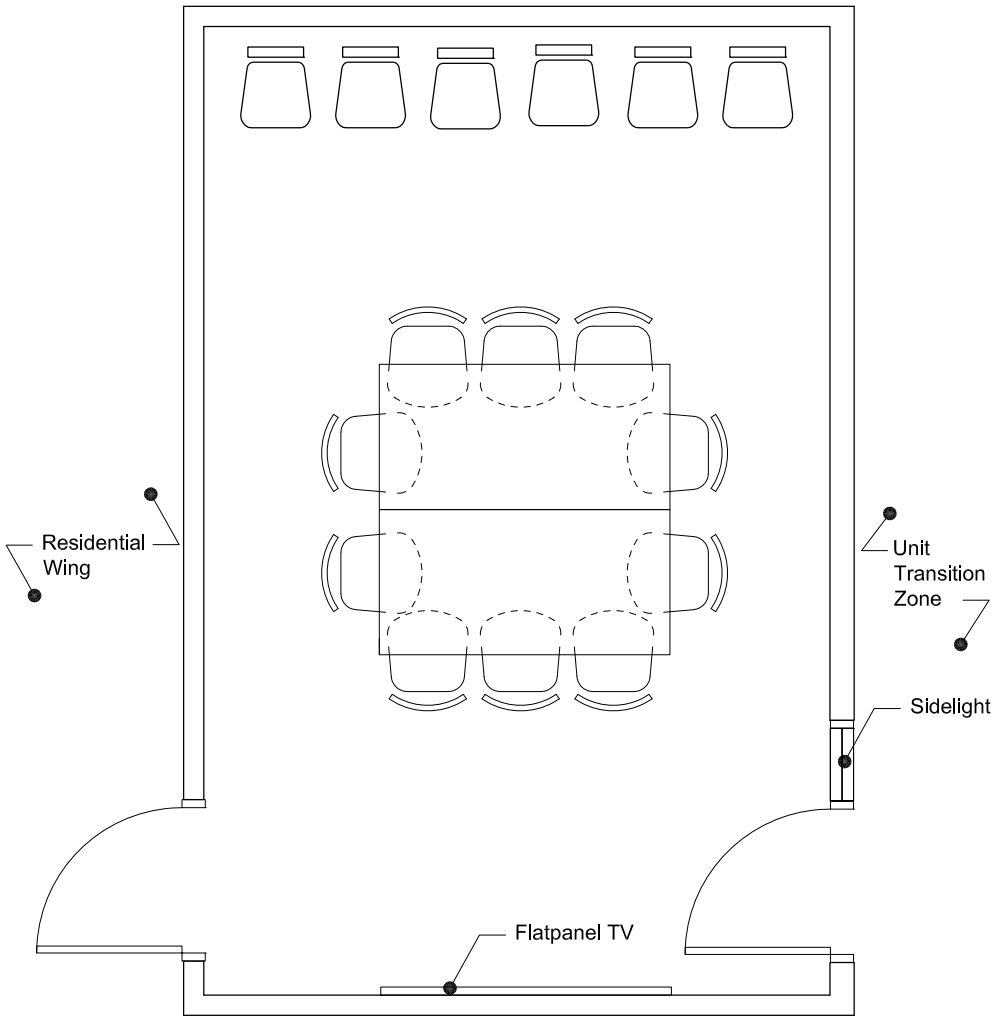
Furnishings:
Table, 12'L x 54"W, with 14 chairs, with integral electrical & data ports
2 additional chairs at room perimeter
White board, 8'L x 4'H

Mechanical: Dedicated HVAC zone

Electrical:
Electrical outlets per code
Electrical and data outlets in floor, as source for table electrical and data; coordinate with table pedestal locations
Electrical and data infrastructure as needed for videoconferencing and telemedicine capability
Multiple preset light configurations to support AV use

Notes:





C310 GROUP ROOM

AREA: 240 NSF

Occupants: Up to 16 people (patients, staff, family members)

Function: Enclosed room for group and family therapy

Adjacency: 2 access points: one from residential wing and the other from the residential unit transition zone
Easily accessible by Social Workers

Environment:

Floor: Carpet
Walls: CMU
Ceiling: Painted gypsum board; 9' height
Windows: Exterior windows / natural light desired
Entry door vision panel or sidelight (Transition Zone door only)
Door: (2) 3' x 7' steel doors, locking (door to residential wing must swing out into corridor)

Equipment: Wall-mounted, flat-panel TV / monitor

Furnishings: 2 folding tables, 16 chairs

Mechanical: Shared HVAC zone

Electrical: Duplex electrical outlets per code
Electrical, voice / data and cable TV outlets for flat-panel monitor
Compact fluorescent lighting

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements
Controlled entry and exit from both residential wing and transition zone

C311 VISITING ROOM

AREA: 200 NSF

Occupants: Patient and family members

Function: Enclosed room for patient-family visits; conversation, table games, eating

Adjacency: 2 access points: one from residential wing and the other from the residential unit transition zone

Environment:

- **Floor:** Carpet
- **Walls:** CMU
- **Ceiling:** Painted gypsum board; 9' height
- **Windows:** Exterior windows / natural light desired
  Entry door vision panel or sidelight (Transition Zone door only)
- **Door:** (2) 3' x 7' steel doors, locking (door to residential wing must swing out into corridor)

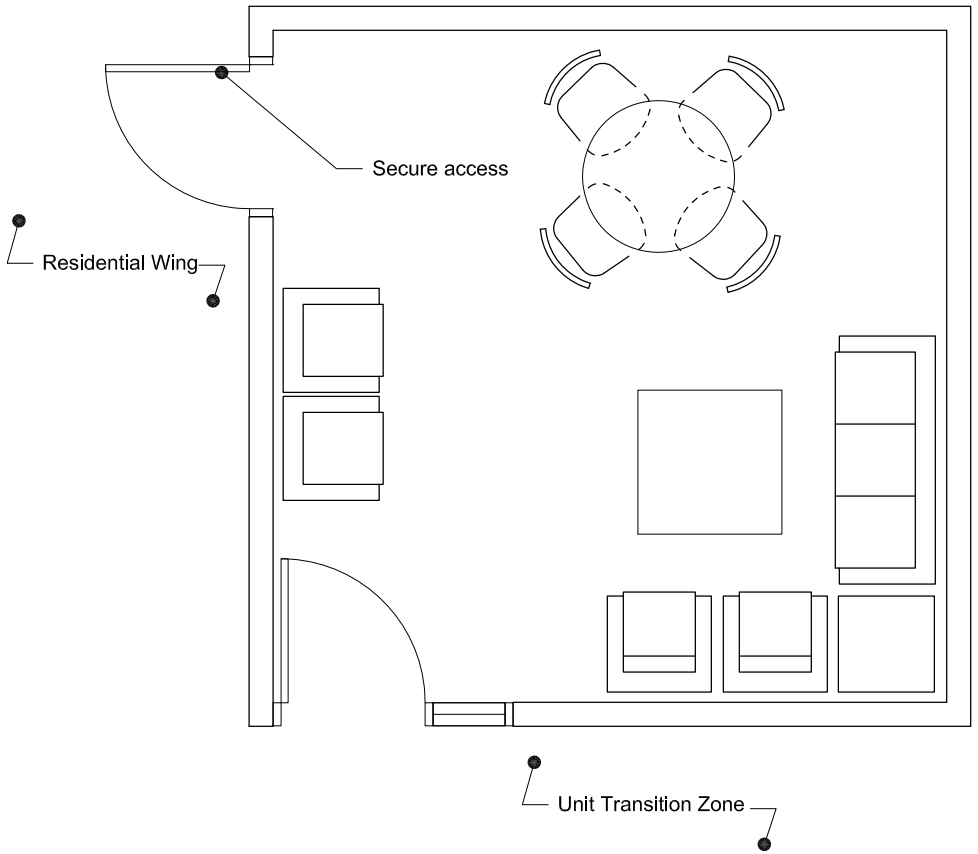
Equipment: Security camera (not connected to a monitor; creates tapes that are stored for 72 hours)

Furnishings: Lounge seating for 6-8 people, with occasional tables
42" diameter table with 4 chairs

Mechanical: Dedicated HVAC zone

Electrical: Duplex electrical outlets per code
Lighting, dimmable

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements
Controlled entry and exit from both residential wing and transitional zone



D100: RESIDENTIAL WINGS

Hours of Operation

24 hours/day, 7 days/week

Security

The Residential Wings contain patient-access spaces which must incorporate injury and suicide-resistant fixtures and design elements. The residential wings will have controlled entry and exit. The layout of the residential wings must address some critical safety issues:

- Staff in the Nursing Station (Unit Shared Spaces group) must have clear visibility of the residential wing gathering spaces (day room, TV room, dining room) and the doors to all patient bedrooms and toilet rooms.
- The spaces listed in Residential Wings are intended to be divided into two equal groupings. Each grouping will form one wing; the two wings will have the Unit Shared Spaces at their center. Each wing must be separate and discrete; patients from one wing must not be able to enter another wing.

Functions / Space Adjacencies

The Residential Wings consist primarily of patients' daily living spaces – bedrooms, toilet rooms, gathering spaces (day, dining and TV rooms) and daily-life support spaces (telephone, tutoring and laundry rooms). The wings also contain spaces that support patient medical functions (direct observation room; one-on-one/comfort room; seclusion suite). There are several unit and staff support spaces that may be outside the patient access area (clean and soiled linen; staff toilet rooms; unit and patient storage rooms).

General Location / Adjacency

The two Residential Wings connect directly with the Unit Shared Spaces, and also with the Unit Transition Zones (the transition space between the Residential Wings and the Pediatric Facility Central Core). The Residential Wings require good adjacency to:

- The School, attended by patients each weekday.
- The Activity Spaces, for daytime and after-school occupational and recreational therapy activities.
- Two secure outdoor courtyards, one with a hard surface and one with lawn. There will be one pair of courtyards for each residential unit (two wings). Within a residential unit, patients from each wing must be able to access both courtyards without accessing the other wing. (See Section 3 General Building Considerations for more information regarding the courtyards.)
- A service access, for the delivery of food and clean linen, and the removal of trash / recycling and soiled linen.

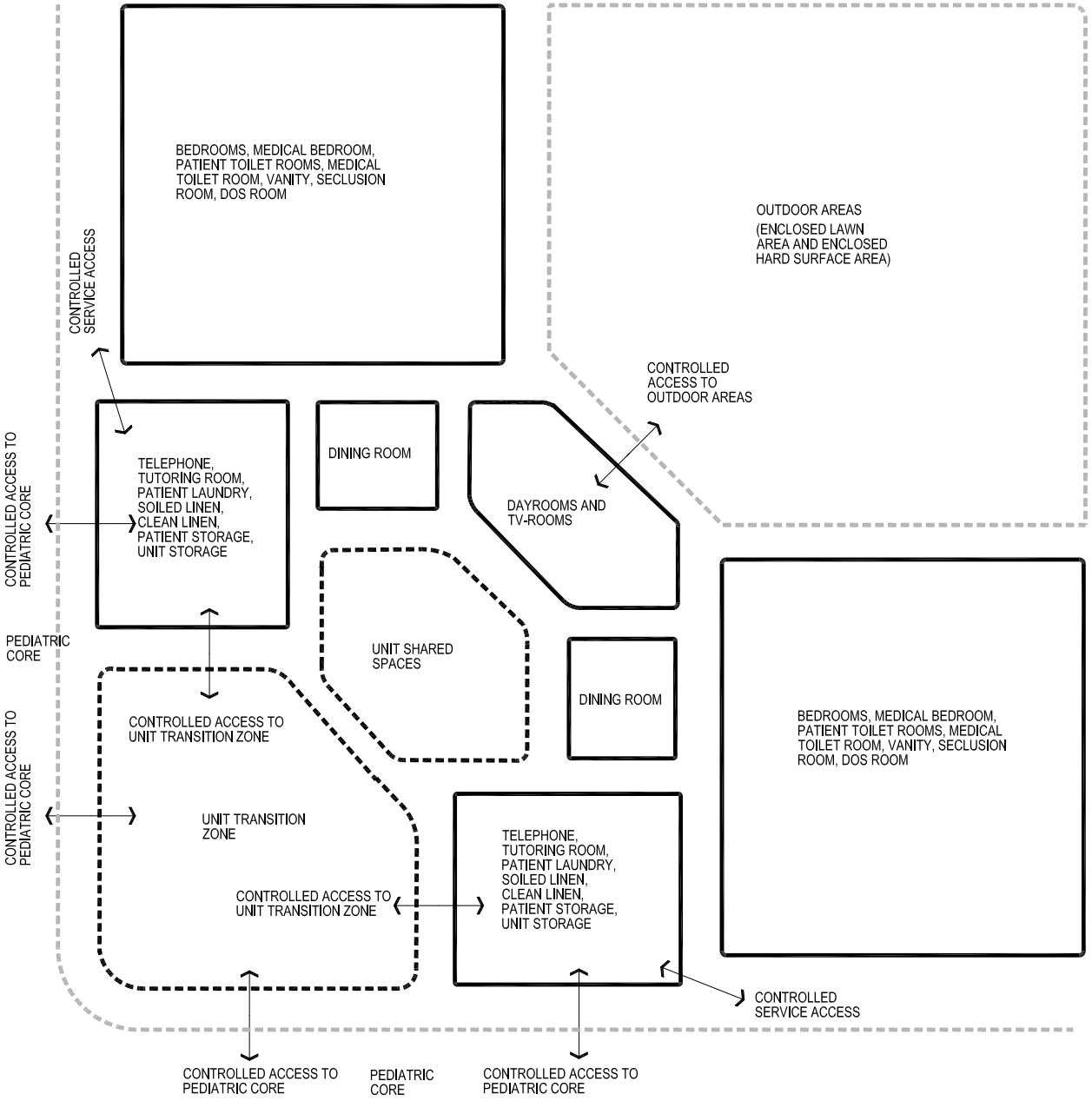
Staff Amenities

The Residential Wings should have convenient access to the building's Employee Lounge and staff parking area.

D100: RESIDENTIAL WINGS

SPACE LIST

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
D100	**RESIDENTIAL WINGS**			**8,474**		**11,212**
D101	Bedroom	24	110	2,640	1.33	3,511
D102	Patient Toilet Room	8	80	640	1.40	896
D103	Medical Bedroom	2	110	220	1.33	293
D104	Medical Toilet Room	2	80	160	1.40	224
D105	Day Room	2	560	1,120	1.25	1,400
D106	TV Room	2	150	300	1.33	399
D107	Telephone Room	2	60	120	1.40	168
D108	Dining Room	2	570	1,140	1.25	1,425
D109	Seclusion Room	2	100	200	1.33	266
D110	Seclusion Ante Room	2	65	130	1.40	182
D111	Seclusion Toilet Room	2	45	90	1.40	126
D112	Tutoring Room	2	80	160	1.40	224
D113	Direct Observation Room (DOS)	2	100	200	1.33	266
D114	One-on-One Room (Comfort Room)	2	80	160	1.40	224
D115	Patient Laundry Room	2	100	200	1.33	266
D116	Clean Linen	2	125	250	1.33	333
D117	Soiled Linen	2	110	220	1.33	293
D118	Staff Toilet Room	2	42	84	1.40	118
D119	Unit Storage	2	80	160	1.40	224
D120	Patient Storage	2	120	240	1.33	319
D121	Vanity	2	20	40	1.40	56



D100: RESIDENTIAL WINGS
ADJACENCY DIAGRAM

D101 BEDROOM

AREA: 110 NSF

Occupants: 1 patient

Function: Sleeping, school work, storage of clothes and personal belongings, dressing

Adjacency: Accessed from main residential unit hallway
3 Bedrooms grouped with 1 Patient Toilet Room
All bedroom doors in residential unit must be visible from Nursing Station

Environment:

- **Floor:** Stained concrete
- **Walls:** CMU
- **Ceiling:** Painted hardened gypsum board; 9' height
- **Windows:** Exterior window with integral blinds
  Possible vision panel in door
- **Door:** 3' x 7' steel door, locks to prevent entry from outside, always allows exiting from inside

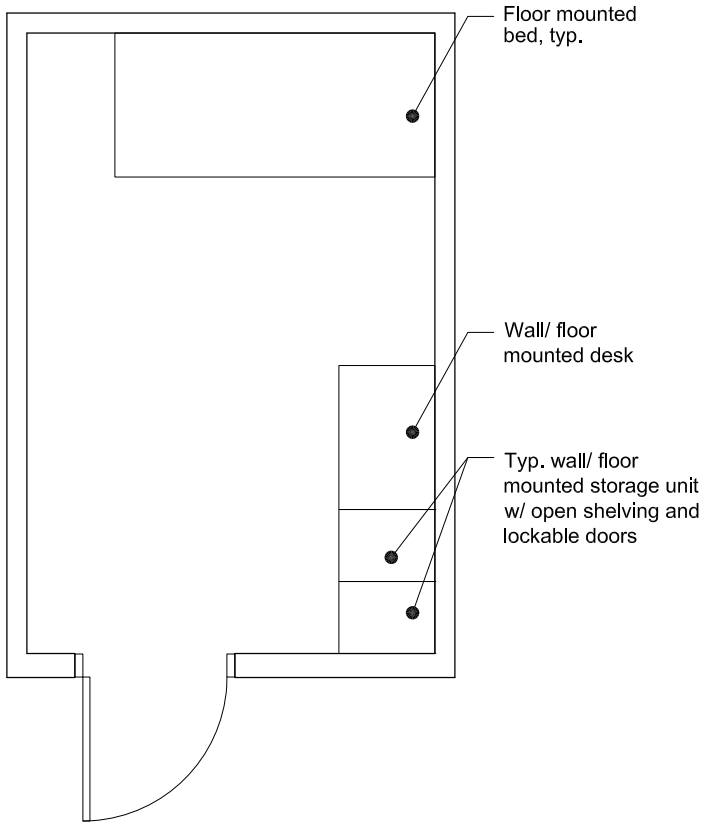
Equipment: Millwork clothes closet (3'W x 2'D) with some open storage cubbies; bolted to walls / floor
Millwork desk (3'W x 2'D) with locking storage compartment above; bolted to walls / floor

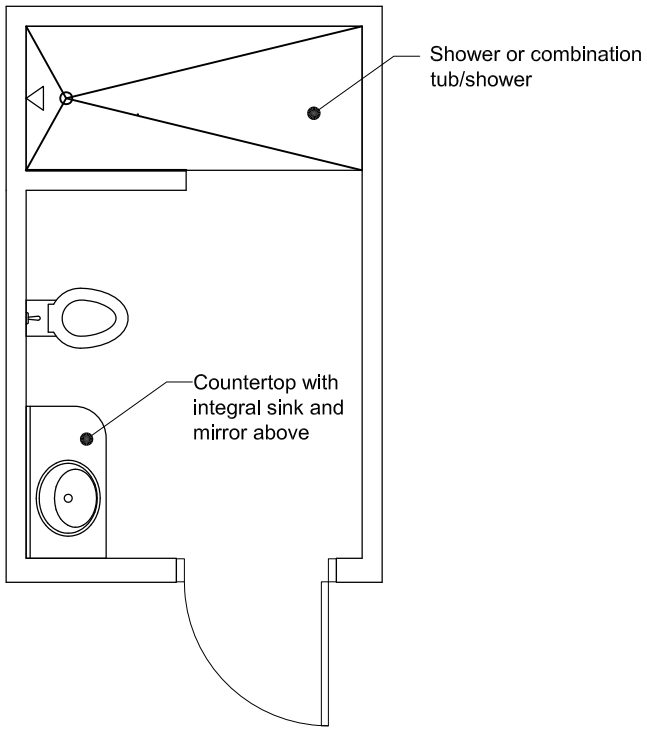
Furnishings: Single bed, bolted to floor; 36" W x 75"L
Desk chair

Mechanical: Dedicated HVAC zone

Electrical: May have electrical outlets with key switch in hallway; coordinate with State Hospital during design
Compact fluorescent lighting in ceiling and above desk
Night light
Electrical connection from door to Nursing Station, to notify of door being opened

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements





D102 PATIENT TOILET ROOM

AREA: 80 NSF

Occupants: 1 patient plus possible 1-2 staff

Function: Toilet and shower facilities for residential patients

Adjacency:
Accessed from main residential unit hallway
3 Bedrooms grouped with 1 Patient Toilet Room
All toilet room doors in residential unit must be visible from Nursing Station

Environment:
- **Floor:** Ceramic tile or stained concrete
- **Walls:** Ceramic tile
- **Ceiling:** Hardened gypsum board at toilet area; ceramic tile at shower area
- **Windows:** None
- **Door:** 3' x 7' steel door, locking

Equipment:
Toilet
Solid-surface countertop with integral sink, with drain piping encased; mirror above
Shower head and shower curtain rod
Toilet / shower room accessories: robe hooks; soap, paper towel / toilet tissue dispensers, shower curtain, etc.

Furnishings: None

Mechanical:
Dedicated HVAC zone with exhaust
Floor drain at shower

Electrical:
None
Secure lighting

Notes:
Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements
1 Patient Toilet Room per 13-bed wing will contain a tub/shower unit

D103 MEDICAL BEDROOM

AREA: 110 NSF

Occupants: 1 patient

Function: Bedroom for patients with medical or accessibility needs; sleeping, school work, storage of clothes and personal belongings, dressing

Adjacency:
Near Nursing Station
Direct connection to Medical Toilet Room
All bedroom doors in residential unit must be visible from Nursing Station

Environment:
- **Floor:** Stained concrete
- **Walls:** CMU
- **Ceiling:** Painted hardened gypsum board; 9' height
- **Windows:** Exterior window with integral blinds
  Possible vision panel in door
- **Door:** 3' x 7' steel door, locks to prevent entry from outside, always allows exiting from inside

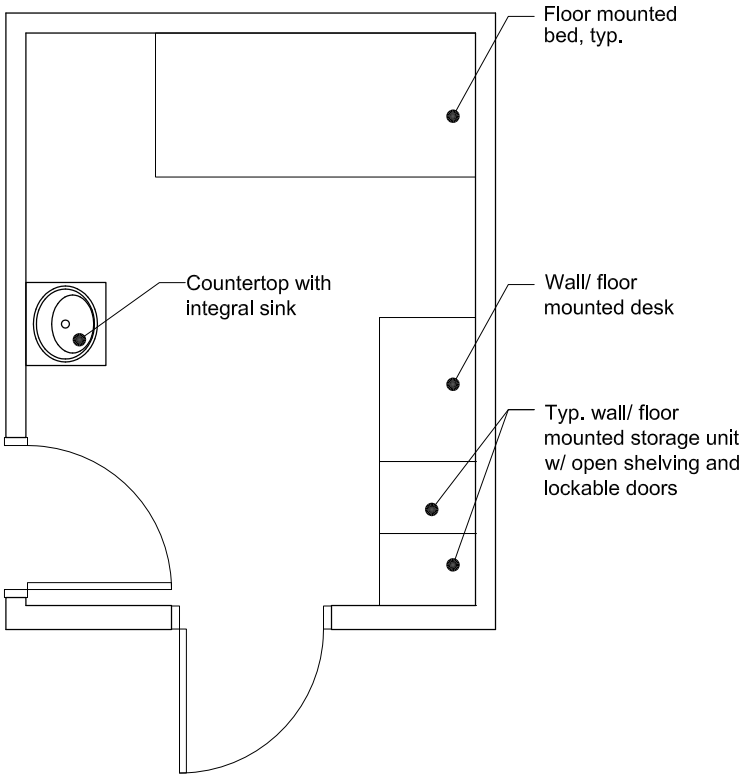
Equipment:
Millwork clothes closet (3'W x 2'D) with some open storage cubbies; bolted to walls / floor
Millwork desk (3'W x 2'D) with locking storage compartment above; bolted to walls / floor
Solid-surface countertop with integral sink, with drain piping encased; mirror above

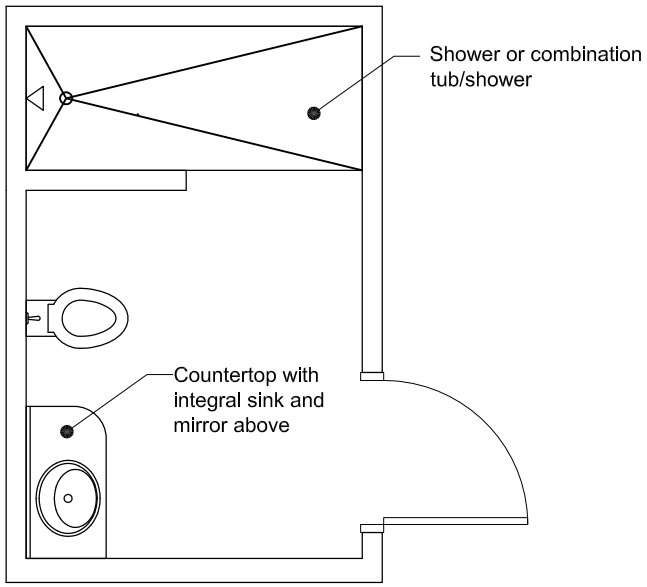
Furnishings:
Single bed, bolted to floor; 36" W x 75"L
Desk chair

Mechanical: Dedicated HVAC zone

Electrical:
No electrical outlets
Compact fluorescent lighting in ceiling and above desk
Night light
Electrical connection from door to Nursing Station, to notify of door being opened

Notes:
Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements
Room must meet all accessibility codes and standards





D104 MEDICAL TOILET ROOM

AREA: 80 NSF

Occupants: 1 patient plus possible 1-2 staff

Function: Toilet and shower facilities for patient with medical or accessibility needs

Adjacency: Accessed from Medical Bedroom

Environment:

- **Floor:** Ceramic tile or stained concrete
- **Walls:** Ceramic tile
- **Ceiling:** Hardened gypsum board at toilet area; ceramic tile at shower area
- **Windows:** None
- **Door:** 3' x 7' steel door, locking

Equipment:

Toilet
Solid-surface countertop with integral sink, with drain piping encased; mirror above
Shower head and shower curtain rod
Toilet / shower room accessories: robe hooks; grab bars (removable); soap, paper towel & toilet tissue dispensers, shower curtain, etc.

Furnishings: None

Mechanical:

Dedicated HVAC zone with exhaust
Floor drain at shower

Electrical:

None
Secure lighting

Notes:

Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements
Room must meet all accessibility codes and standards

D105 DAY ROOM

AREA: 560 NSF

Occupants: Up to 16 people (13 patients and 3 staff)

Function: Patient living room / lounge space; relaxing, interacting, games, etc.

Adjacency: Adjacent to and visible from Nursing Station and Nursing Station Approach
Adjacent to TV Room, Dining Room and Kitchen

Environment:

- **Floor:** Carpet
- **Walls:** CMU
- **Ceiling:** Painted hardened gypsum board; 1-1/2 to 2 story height
- **Windows:** Exterior windows / natural light
- **Door:** 3' x 7' steel door, locking, to exterior enclosed courtyard; with vision panel

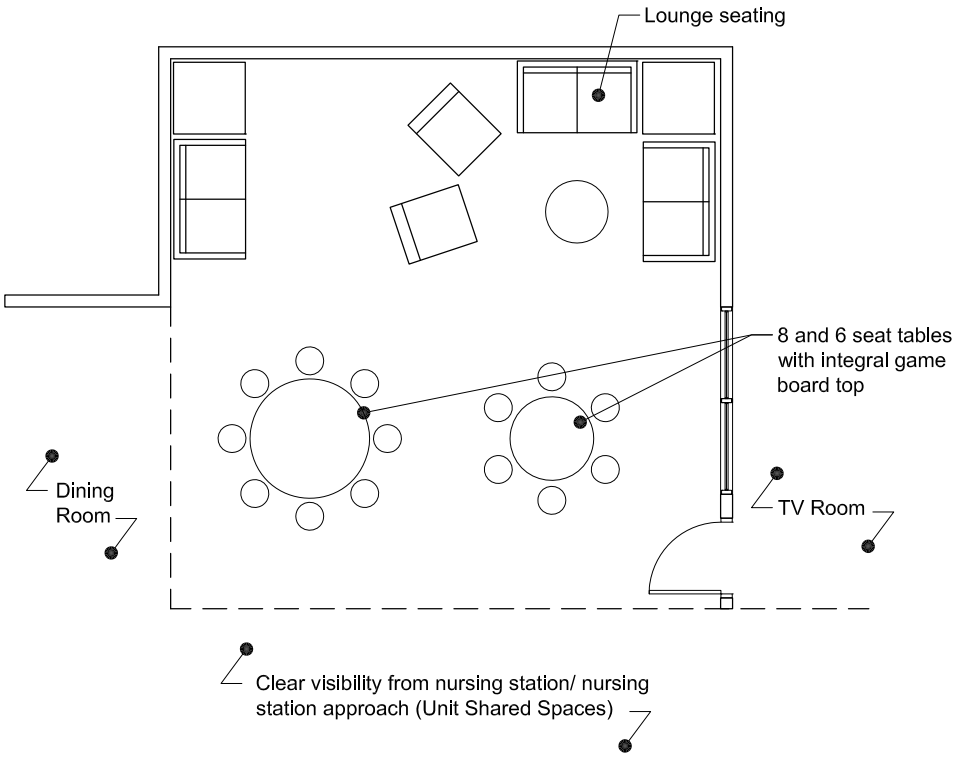
Equipment: Security camera (monitor in Nursing Station)

Furnishings: Lounge seating: sofas and chairs for 8 people
Floor-attached tables with attached seating, integral game boards in table top; (1) 4-seat; (1) 8-seat

Mechanical: Dedicated HVAC zone

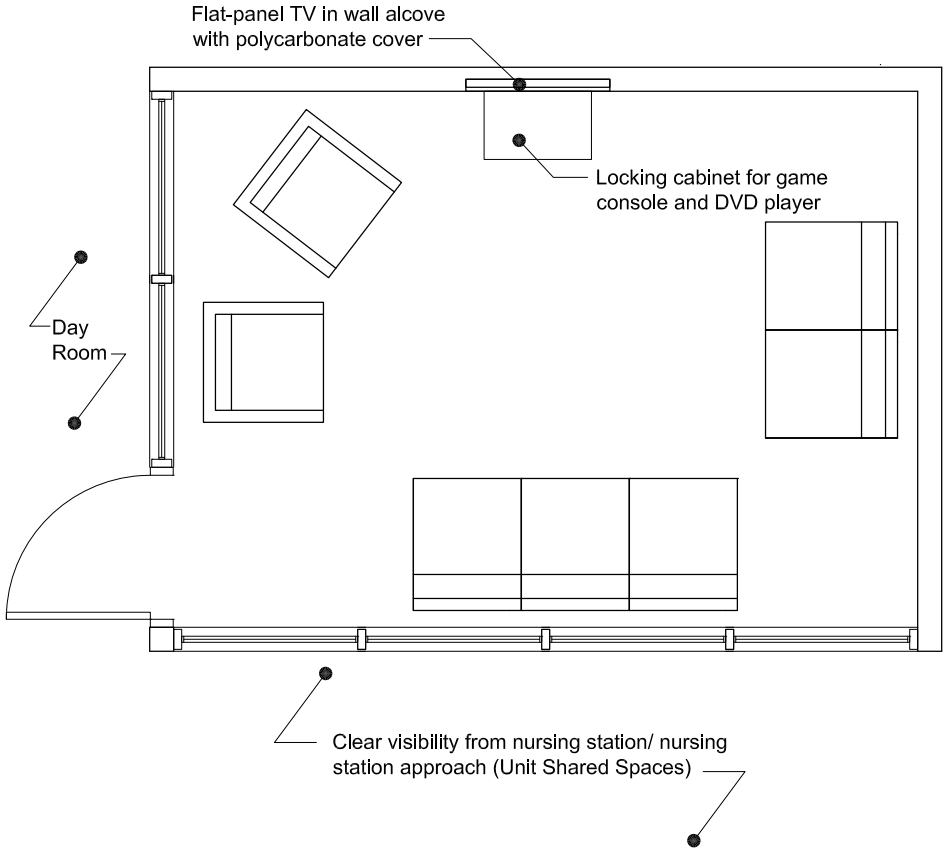
Electrical: Electrical outlets per code
Compact fluorescent lighting
Electrical release-button connection from Nursing Station to exterior courtyard door

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements



D106 TV ROOM

AREA: 150 NSF



Occupants: Up to 6 people

Function: Patient TV-viewing and electronic games

Adjacency:
Adjacent to and visible from Nursing Station, Nursing Station Approach and Day Room
TV Room accessed from Day Room or Nursing Station Approach

Environment:

- **Floor:** Carpet
- **Walls:** CMU
- **Ceiling:** Painted hardened gypsum board; 9' height
- **Windows:** Interior windows to allow full visibility into room
- **Door:** 3' x 7' steel door, locking

Equipment:
Wall-mounted flat-panel TV in recessed wall alcove, with locking polycarbonate cover
Locking cabinet for DVD player and video game consoles

Furnishings: Lounge seating: sofas and chairs for 6 people

Mechanical: Dedicated HVAC zone

Electrical:
Electrical outlets per code
Compact fluorescent lighting
Electrical and cable TV outlets for TV and gaming equipment
Electrical release-button connection from Nursing Station to exterior courtyard door

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements

D107 TELEPHONE ROOM

AREA: 60 NSF

Occupants: Up to 2 people

Function: Enclosed room for patient telephone conversations, consultations, interviews

Adjacency: Access point visible from Nursing Station

Environment:

- **Floor:** Carpet
- **Walls:** CMU
- **Ceiling:** Painted hardened gypsum board; 9' height
- **Windows:** Sidelight adjacent to door; vision panel in door
- **Door:** 3' x 7' steel door, locking

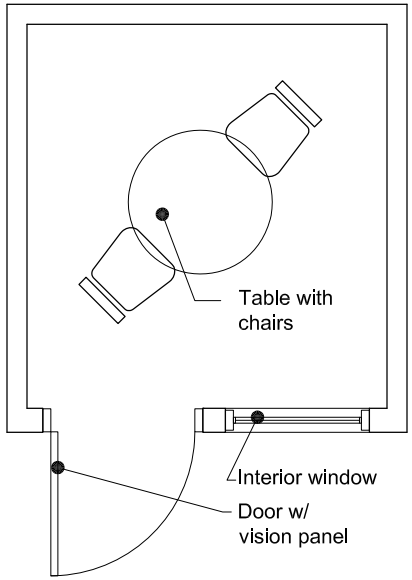
Equipment: Telephone (removable)

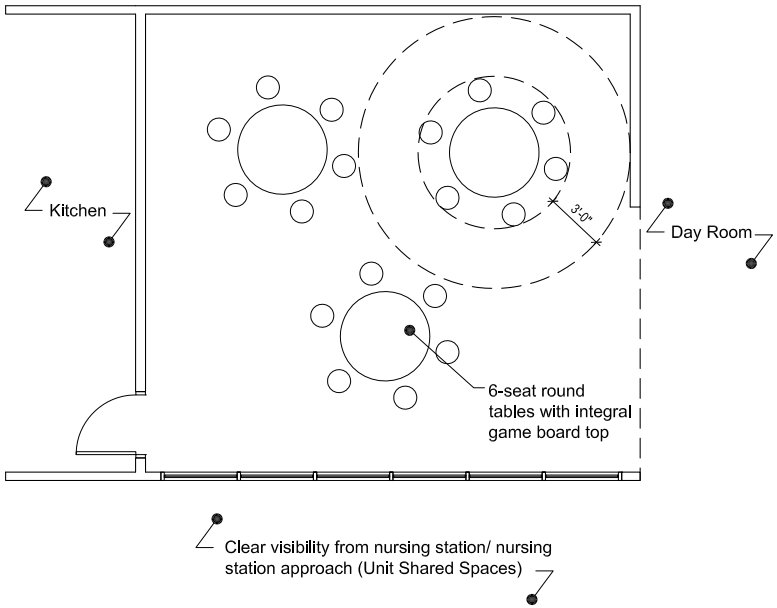
Furnishings: 36" diameter round table with 2 chairs

Mechanical: Shared HVAC zone

Electrical: Electrical outlets per code
Compact fluorescent lighting
Electrical and telephone outlets as needed for telephone
Electrical release-button connection from Nursing Station to exterior courtyard door

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements





D108 DINING ROOM

AREA: 570 NSF

Occupants: Up to 18 people (13 patients and 5 staff)

Function: Patient eating space
Secondary use as group room, group activity space

Adjacency: Adjacent to Kitchen, for food serving
Accessed from Day Room or Nursing Station Approach
Adjacent to and visible from Nursing Station and Nursing Station Approach

Environment:

- **Floor:** Hard surface (stained concrete, sheet vinyl, etc.)
- **Walls:** CMU; easily washable finish
- **Ceiling:** Painted hardened gypsum board; 1-1/2 to 2 story height
- **Windows:** Exterior windows / natural light desired
- **Door:** 3' x 7' steel access door(s), locking

Equipment: None

Furnishings: Floor-attached tables with attached seating, integral game boards in table tops; (3) 6-seat

Mechanical: Dedicated HVAC zone; exhaust

Electrical: Electrical outlets per code
Compact fluorescent lighting

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements

D109 SECLUSION ROOM

AREA: 100 NSF

Occupants: 1 patient

Function: Acoustically isolated room for patients who are highly agitated / out of control

Adjacency: Combines with Seclusion Ante and Toilet Rooms to form 3-room suite; Ante Room is access point
Near Nursing Station; 1 suite for each residential wing
If floor plan allows, school seclusion suite can serve as residential unit seclusion suite as well

Environment:

- **Floor:** Concrete
- **Walls:** CMU or concrete
- **Ceiling:** Hardened gypsum board
- **Windows:** Small, secure exterior vision window desired; one-way vision panel in door
- **Door:** 3' x 7' steel door, locking

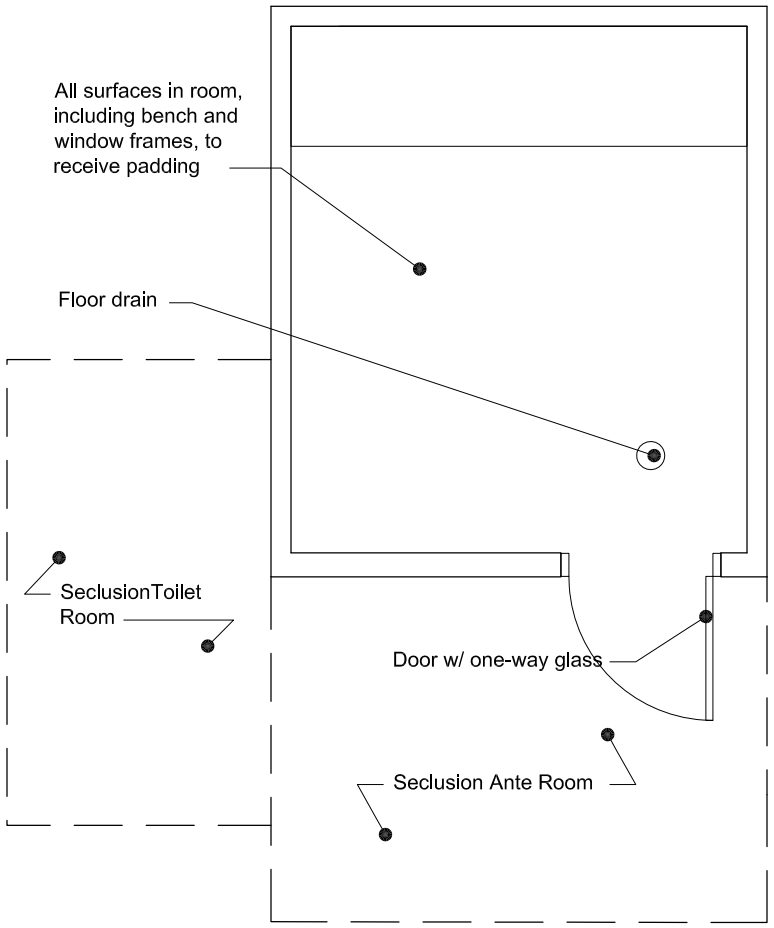
Equipment: Built-in 18"D concrete bench along 1 wall
Intercom system for staff/ patient communication
Security camera (monitor in Nursing Station)

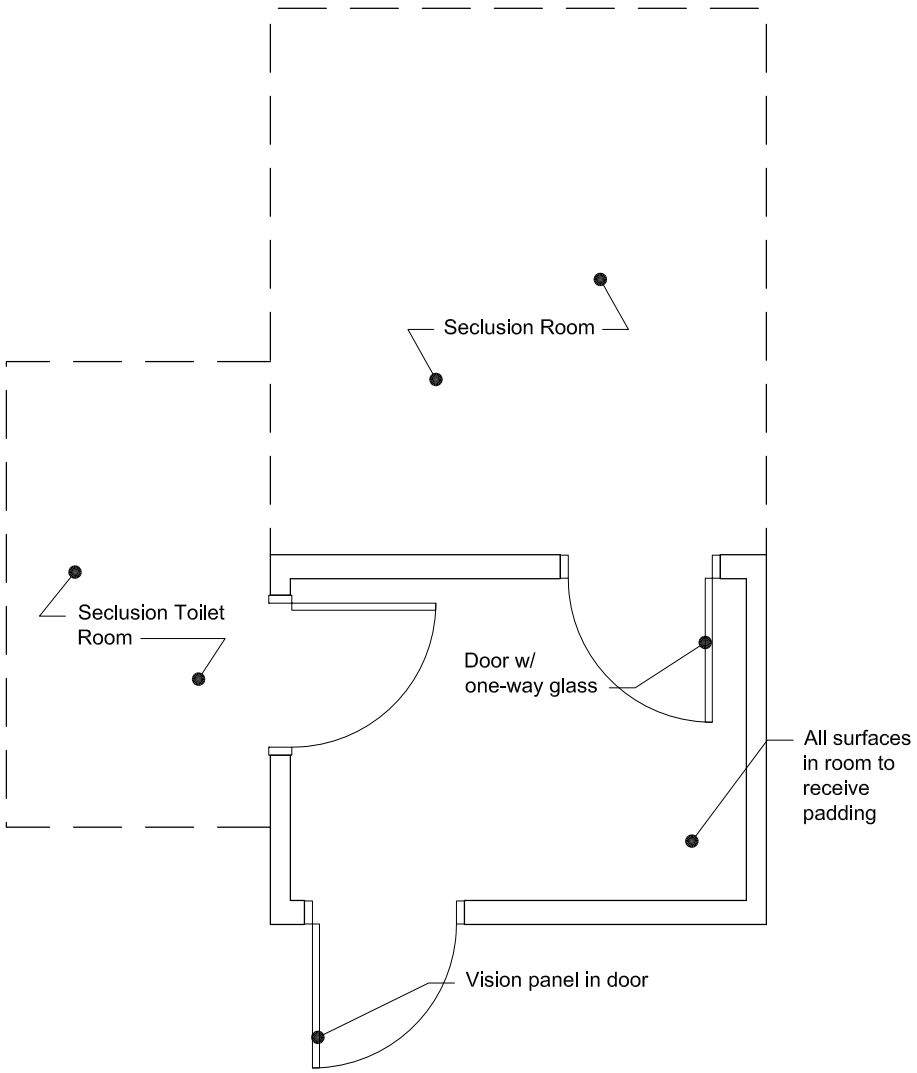
Furnishings: None

Mechanical: Dedicated HVAC zone; floor drain

Electrical: No electrical outlets; secure lighting (switch in Ante Room)

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements
Pathway from within unit to Seclusion suite must be as short and direct as possible; must be free of any objects, finishes, etc. susceptible to damage or destruction by out-of-control patient
Acoustical isolation critical; should not be able to hear noise generated from within seclusion suite, when doors are closed
1 of 2 seclusion room suites will be "soft"; all surfaces to be coated with synthetic resinous padding





D110 SECLUSION ANTE ROOM

AREA: 65 NSF

Occupants: 1 patient plus possible 1-2 staff

Function: Anteroom, access point for Seclusion and Seclusion Toilet rooms

Adjacency:
Combines with Seclusion and Seclusion Toilet Rooms to form 3-room suite; Ante Room is access point
Near Nursing Station; 1 suite for each residential wing
Visually private access point
If floor plan allows, school seclusion suite can serve as residential unit seclusion suite as well

Environment:
- **Floor:** Concrete
- **Walls:** CMU or concrete
- **Ceiling:** Hardened gypsum board
- **Windows:** Vision panel in door
- **Door:** 3’ x 7’ steel door, locking

Equipment: Intercom system for staff/ patient communication

Furnishings: None

Mechanical: Dedicated HVAC zone

Electrical: No electrical outlets; secure lighting
Seclusion Room light switch in this space

Notes:
Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements
Pathway to Seclusion suite must be as short and direct as possible; must be free of any objects, finishes, etc. susceptible to damage or destruction by out-of-control patient
Acoustical isolation critical; should not be able to hear noise generated from within seclusion suite, when doors are closed
1 of 2 seclusion room suites will be “soft”; all surfaces to be coated with synthetic resinous padding

D111 SECLUSION TOILET ROOM

AREA: 45 NSF

Occupants: 1 patient plus possible 1-2 staff

Function: Toilet and shower facilities within seclusion suite

Adjacency: Combines with Seclusion and Seclusion Ante Rooms to form 3-room suite; Ante Room is access point
Near Nursing Station; 1 suite near each residential unit
If floor plan allows, school seclusion suite can serve as residential unit seclusion suite as well

Environment:
- **Floor:** Ceramic tile
- **Walls:** Ceramic tile
- **Ceiling:** Hardened gypsum board at toilet area; ceramic tile at shower area
- **Windows:** None
- **Door:** 3' x 7' steel door, locking (coated with synthetic-resinous padding in soft seclusion room suite)

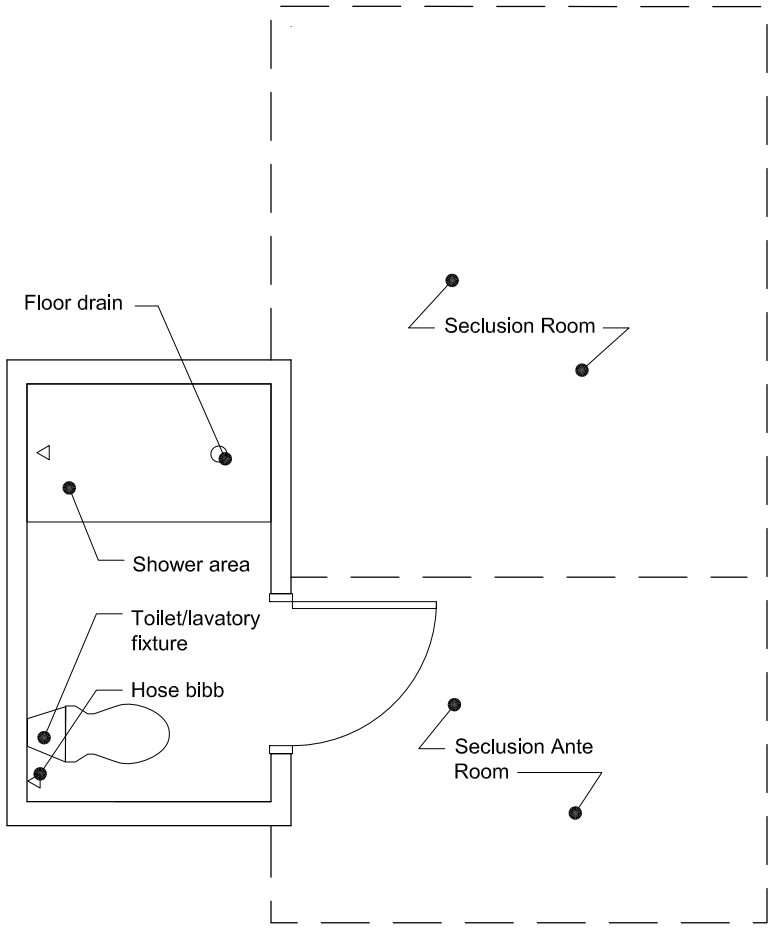
Equipment: Intercom system for staff/ patient communication
Prison-type secure toilet / lavatory / mirror unit
Shower head and shower curtain rod
Toilet / shower room accessories: robe hooks; soap, paper towel & toilet tissue dispensers; shower curtain

Furnishings: None

Mechanical: Dedicated HVAC zone with exhaust
Floor drain; hose bibb

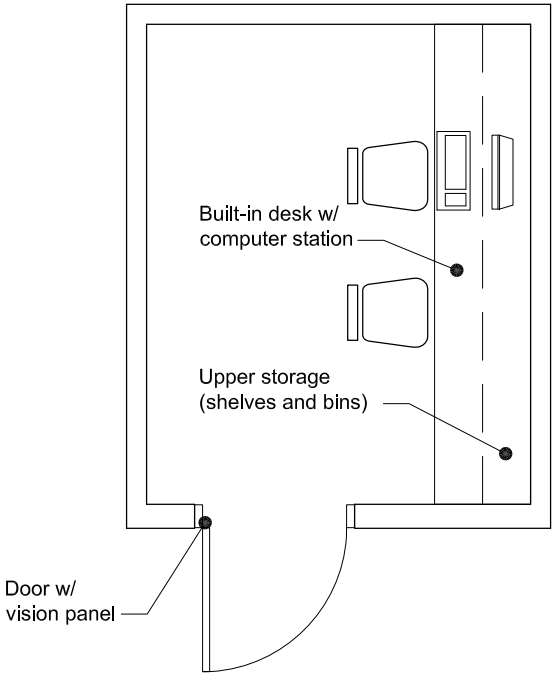
Electrical: No electrical outlets; secure lighting

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements
Acoustical isolation critical; should not be able to hear noise generated from within seclusion suite, when doors are closed



D112 TUTORING ROOM

AREA: 80 NSF



Occupants: 2 people (1 patient, 1 staff)

Function: Enclosed room for one-on-one tutoring sessions

Adjacency: Adjacent to group living spaces (Day Room, Dining Room, etc.)

Environment:

- **Floor:** Carpet
- **Walls:** CMU
- **Ceiling:** Painted hardened gypsum board; 9' height
- **Windows:** Vision panel in door
- **Door:** 3' x 7' steel door, locking

Equipment: Solid-surface millwork desk with locking upper storage bins
Computer

Furnishings: 2 chairs

Mechanical: Shared HVAC zone

Electrical: Electrical outlets per code
Electrical and data outlets for computer
Compact fluorescent lighting

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements

D113 DIRECT OBSERVATION ROOM (DOS)

AREA: 100 NSF

Occupants: 1 patient

Function: Enclosed patient sleeping space for patients who need close visual supervision

Adjacency: Directly adjacent to Nursing Station (closest patient space to Station)

Environment:

Floor: Stained concrete
Walls: CMU
Ceiling: Painted hardened gypsum board; 9' height
Windows: Exterior window with integral blinds
Vision panel in door
Door: 3' x 7' steel door, locking

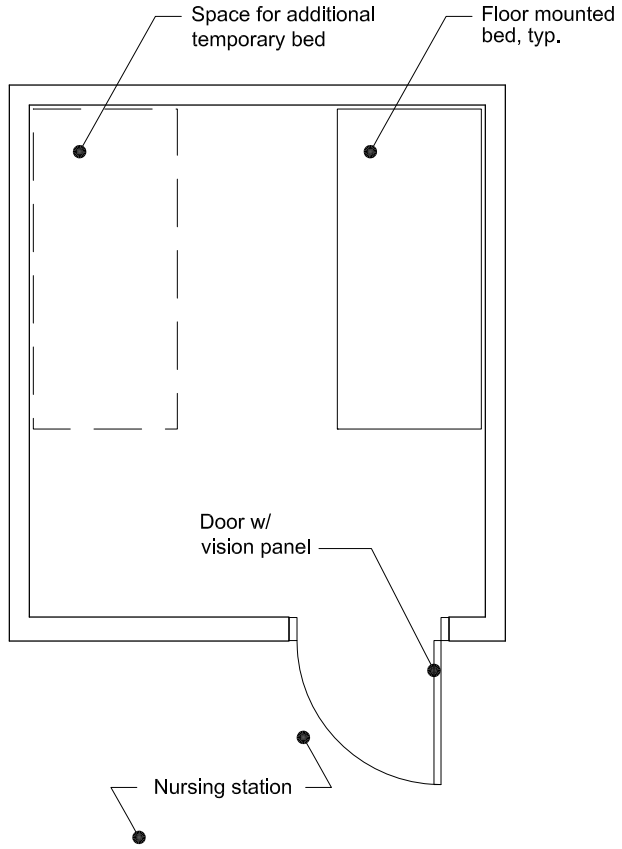
Equipment: Security camera (monitor in Nursing Station)

Furnishings: Single bed, bolted to floor; 36" W x 75"L, with space for a second bed when needed

Mechanical: Shared HVAC zone

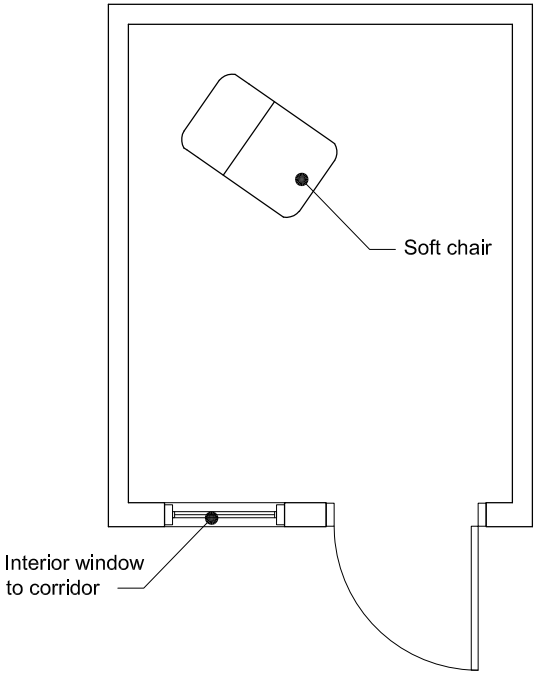
Electrical: No electrical outlets
Compact fluorescent lighting; light switch in hallway

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements



D114 ONE-ON-ONE ROOM (COMFORT ROOM)

AREA: 80 NSF



Occupants: 1 patient

Function: Enclosed room with soft surfaces and soothing atmosphere, where patients can go to calm down

Adjacency: Accessed from main hallway; access point visible from Nursing Station

Environment:

- **Floor:** Carpet
- **Walls:** CMU, with reinforced gypsum board finished surface (smooth surface for wall murals)
- **Ceiling:** Painted hardened gypsum board; 9' height
- **Windows:** Sidelight adjacent to door
- **Door:** 3' x 7' steel door, locking

Equipment: Built-in sound system for music

Furnishings: Soft seating (large bean bag chair)

Mechanical: Shared HVAC zone

Electrical: Electrical outlets per code
Dimmable lighting

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements

D115 PATIENT LAUNDRY ROOM

AREA: 100 NSF

Occupants: 1 patient

Function: Enclosed room for patient to sort, wash, dry and fold his or her laundry

Adjacency: Near Nursing Station

Environment:

- **Floor:** Sealed concrete
- **Walls:** CMU
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** Vision panel in door
- **Door:** 3' x 7' steel door, locking

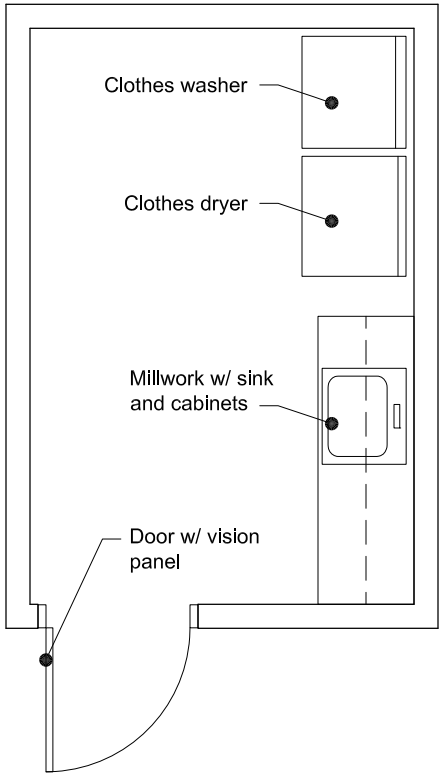
Equipment: Solid surface countertop, minimum 6'L, with large, single-compartment sink, with lockable millwork storage cabinets above & below
Large-capacity residential clothes washing machine
Large-capacity residential clothes dryer

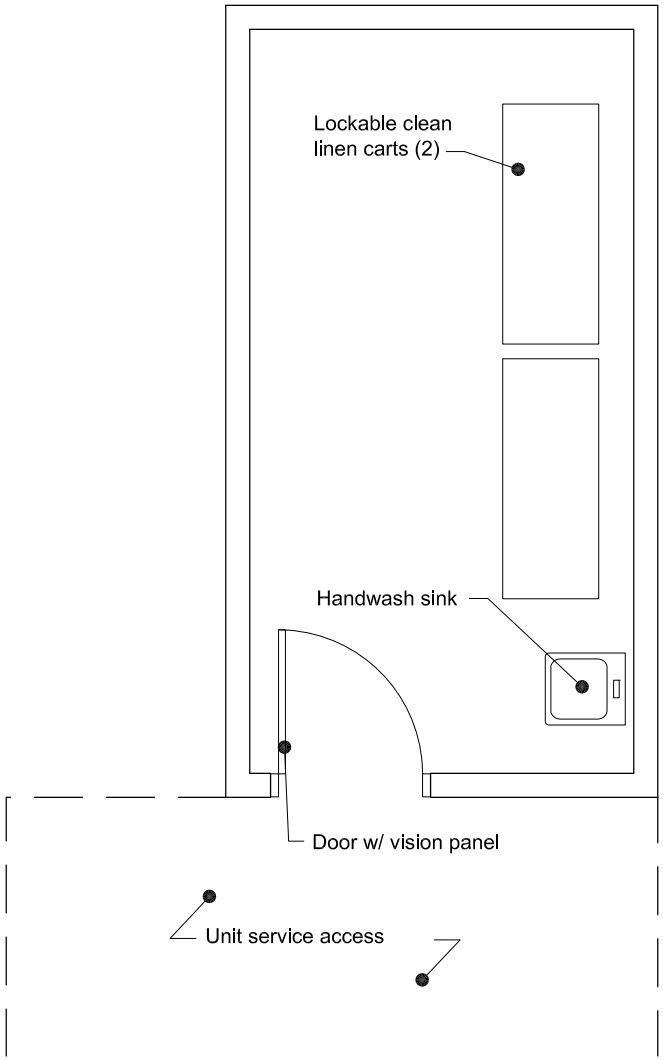
Furnishings: None

Mechanical: Dedicated HVAC zone; exhaust; dryer vent

Electrical: Duplex electrical outlets per code
Electrical outlets for washer & dryer
Compact fluorescent lighting

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements





D116 CLEAN LINEN

AREA: 125 NSF

Occupants: 1 staff member

Function: Enclosed room for receiving and holding of clean linen
Possible location for OSHA cabinet

Adjacency: Near residential unit service entrance
Outside patient area

Environment:

- **Floor:** Sealed concrete
- **Walls:** CMU
- **Ceiling:** Lay-in acoustic tile; 9’ height
- **Windows:** Vision panel in door
- **Door:** 3’ x 7’ steel door, locking

Equipment: Wall-hung lavatory sink

Furnishings: 2 clean laundry carts, locking, each 5’L x 2’D x 5’H
OSHA cabinet (possibly)

Mechanical: Dedicated HVAC zone

Electrical: Duplex electrical outlets per code
Compact fluorescent lighting

Notes: If within patient area, door must swing out

D117 SOILED LINEN

AREA: 110 NSF

Occupants: 1 staff member

Function: Enclosed room for holding of soiled linen for pick-up
Collection and holding area for trash and recycling

Adjacency: Near residential unit service entrance
Outside patient area

Environment:

- **Floor:** Sealed concrete
- **Walls:** CMU
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** Vision panel in door
- **Door:** 3' x 7' steel door, locking

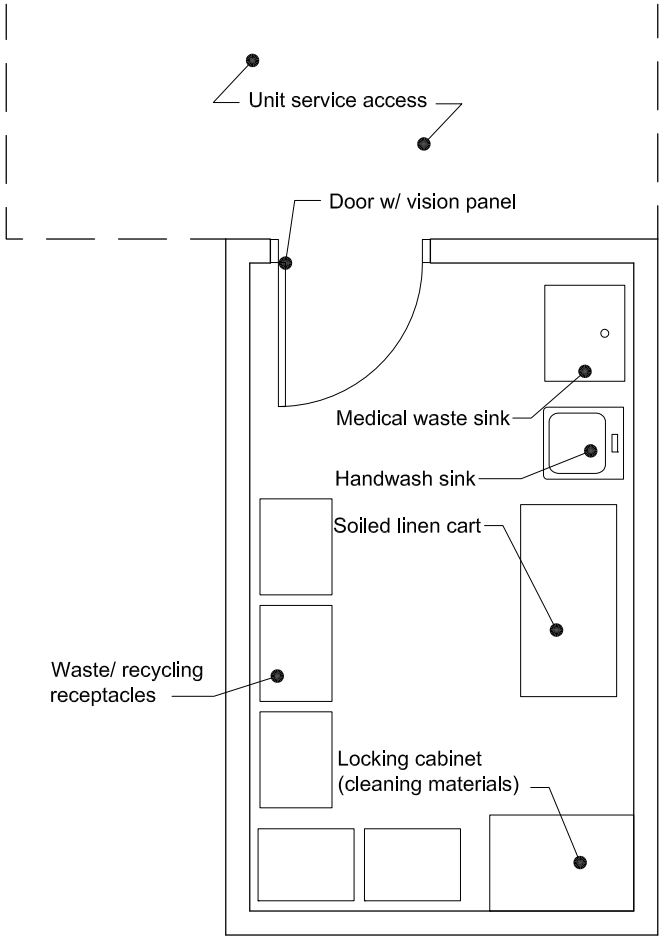
Equipment: Wall-hung hand-washing sink
Floor-mount medical waste sink

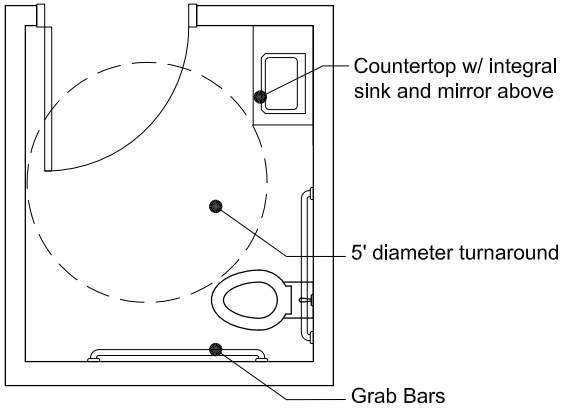
Furnishings: Locking cabinet for unit staff cleaning materials
Soiled linen cart, 4'L x 2'D x 5'H
Trash & recycling receptacles

Mechanical: Dedicated HVAC zone

Electrical: Duplex electrical outlets per code
Compact fluorescent lighting

Notes: If within patient area, door must swing out





D118 STAFF TOILET ROOM

AREA: 42 NSF

Occupants: 1 staff member

Function: Single-user, unisex toilet rooms for use by residential unit staff

Adjacency: Private entry point near residential unit service unit
Outside patient area

Environment:

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

D119 UNIT STORAGE

AREA: 80 NSF

Occupants: None

Function: Enclosed room for storage recreational materials and supplies used in the unit (books, art / craft materials, etc.)

Adjacency: Near Nursing Station

Environment:

- **Floor:** Sealed concrete
- **Walls:** CMU
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** None
- **Door:** 3' x 7' steel door, locking

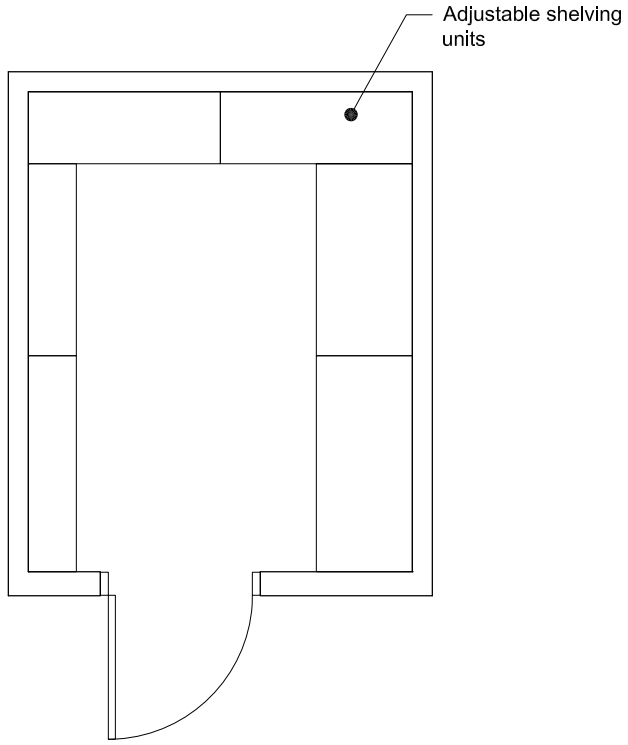
Equipment: None

Furnishings: Adjustable steel shelving units, 12", 18" & 24" D

Mechanical: Minimal HVAC

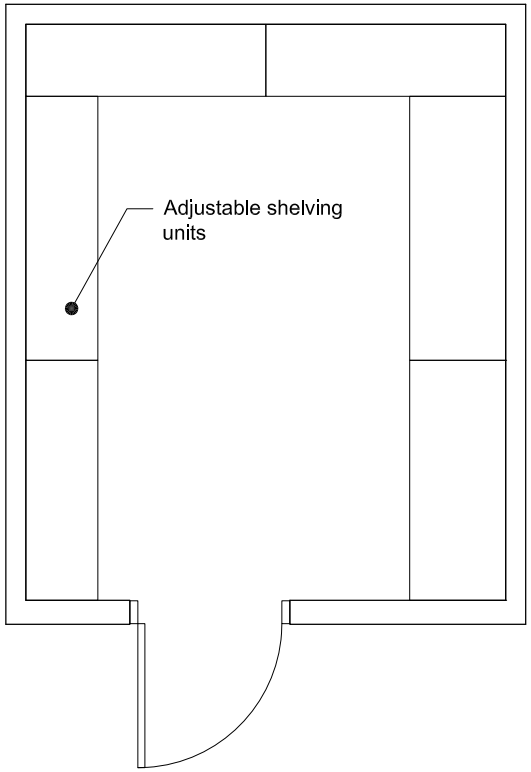
Electrical: Duplex electrical outlets per code
Compact fluorescent lighting

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements



D120 PATIENT STORAGE

AREA: 120 NSF



Occupants: None

Function: Enclosed room for storage of patients' personal belongs that cannot be kept in their bedrooms; materials are stored in large plastic totes

Adjacency: Near Nursing Station

Environment:

- **Floor:** Sealed concrete
- **Walls:** CMU
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** None
- **Door:** 3' x 7' steel door, locking

Equipment: None

Furnishings: Adjustable steel shelving units, 18" & 24"D

Mechanical: Minimal HVAC

Electrical: Duplex electrical outlets per code
Compact fluorescent lighting

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements

D121 VANITY

AREA: 20 NSF

Occupants: Up to 5 patients

Function:
Grooming and make-up counter for patients
Storage of patients' personal grooming supplies

Adjacency:
Located in an alcove on main residential unit hallway
Must be visible from Nursing Station

Environment:

- **Floor:** Carpet
- **Walls:** CMU
- **Ceiling:** Painted hardened gypsum board; 9' height
- **Windows:** None
- **Door:** None

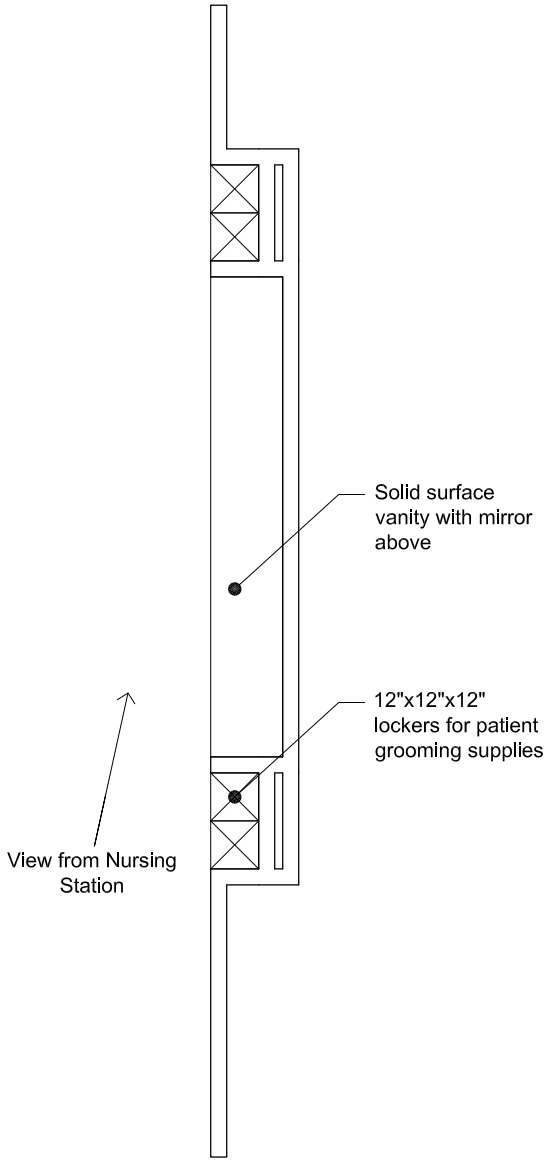
Equipment:
Solid surface countertop, 10'L x 18"D bolted to walls
13 lockers, 12" x 12" x 12", recessed in walls adjacent to countertop
Mirror above full width of countertop

Furnishings: None

Mechanical: Shared HVAC zone

Electrical:
Electrical outlets above countertop
Compact fluorescent lighting above mirror

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements



D200: UNIT SHARED SPACES

Hours of Operation

24 hours/day, 7 days/week

Security

The Unit Shared Spaces contain some patient-access spaces (Nursing Station Approach Area; Kitchen) which must incorporate injury and suicide-resistant fixtures and design elements. The Unit Shared Spaces will have controlled entry and exit. The Medications Room has an increased need for security and will require cardkey-only access. The layout of the Unit Shared Spaces and Residential Wings must address a critical safety issue:

- Staff in the Nursing Station must have clear visibility of the Residential Wing gathering spaces (day room, dining room, TV room) and the doors to all patient bedrooms and toilet rooms.

Functions / Space Adjacencies

The Unit Shared Spaces group consists of single spaces which support two residential wings. The shared spaces must be located between and have direct connections with both wings.

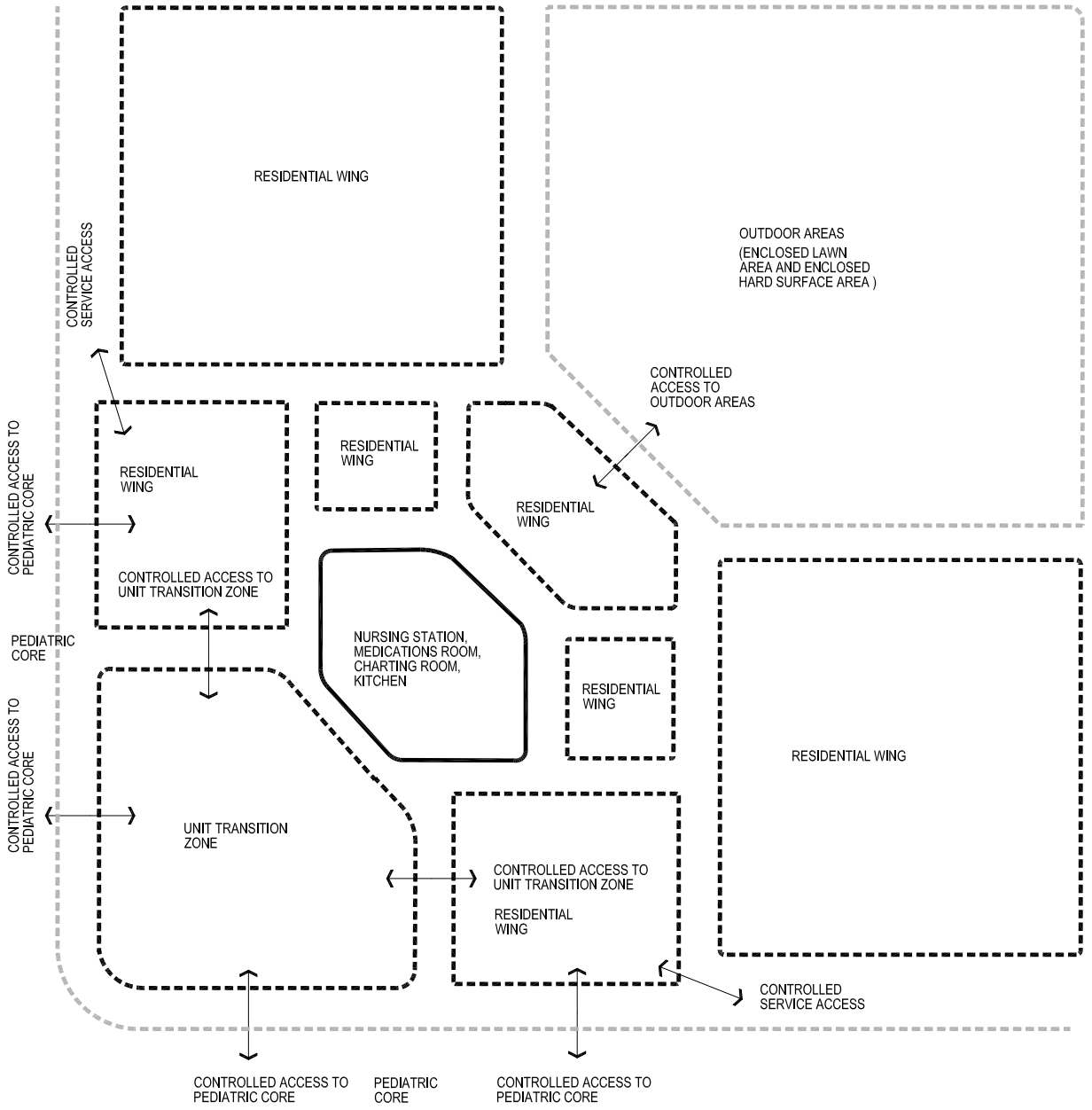
Staff Amenities

The Unit Shared Spaces should have convenient access to the building's Employee Lounge.

D200: UNIT SHARED SPACES

SPACE LIST

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
D200	**UNIT SHARED SPACES**			**1,260**		**1,676**
D201	Nursing Station	1	450	450	1.33	599
D202	Nursing Station Approach Area	1	200	200	1.33	266
D203	Medications Room	1	180	180	1.33	239
D204	Charting Room	1	150	150	1.33	200
D205	Kitchen	1	280	280	1.33	372



D200: UNIT SHARED SPACES

ADJACENCY DIAGRAM

D201 NURSING STATION

AREA: 450 NSF

Occupants: Up to 4 staff (2 current and 2 future)

Function: Secure, windowed enclosure for observing patients in residential unit
Paperwork, computer work; storage of staff personal items; storage of small patient personal items

Adjacency: At center point of 2 residential wings; adjacent to and with view into each Day Room & TV Room; clear view of all patient bedroom and toilet room doors
Adjacent to Direct Observation Room (DOS) and Medications Room; surrounded by Nursing Station Approach Area

Environment:

- **Floor:** Carpet
- **Walls:** CMU; security glass
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** Internal windows of security glass, with small openings at desktop for communicating with patients
- **Door:** 3' x 7' steel doors, locking; one to each residential wing and one to Medications Room

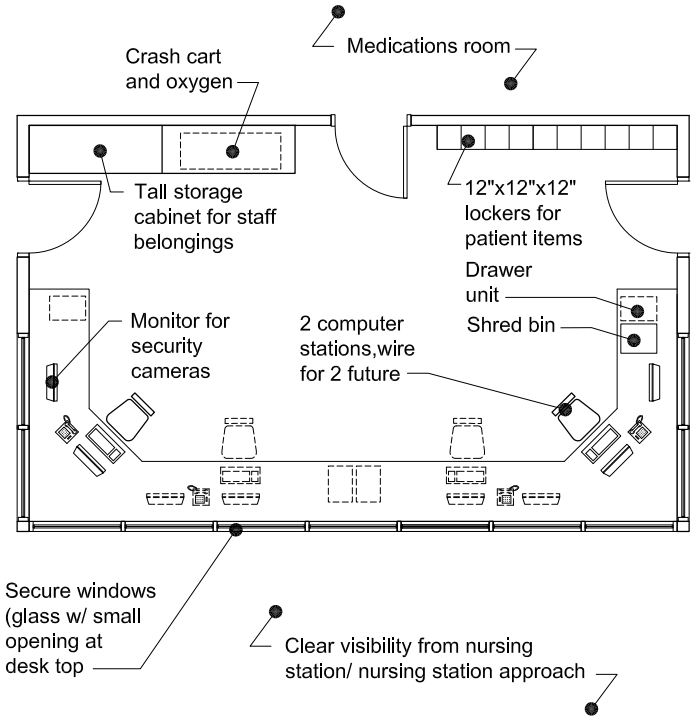
Equipment: Solid surface countertop with 4 staff computer workstations (2 future) & storage drawer units
Millwork or pre-manufactured lockers, 12" x 12" x 12", for small patient belongings; one for each patient
Millwork cabinets, lockable, for staff belongings
Computer, telephone & security camera monitor (1 set of each at each workstation)
Shred bin

Furnishings: 4 desk chairs (2 for future use)

Mechanical: Dedicated HVAC zone

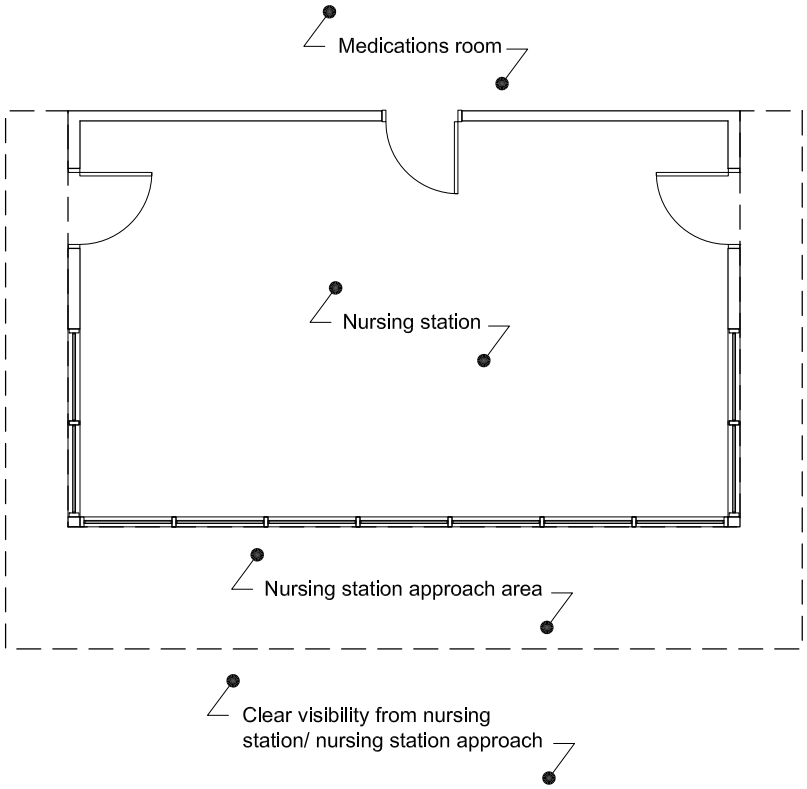
Electrical: Duplex electrical outlets per code
Electrical outlets above countertop
Electrical and data outlets for computer workstations
Compact fluorescent lighting

Notes: Crash cart & oxygen tank will be stored in this room



D202 NURSING STATION APPROACH AREA

AREA: 200 NSF



Occupants: Patients / staff

Function: Circulation space immediately outside Nursing Station; buffer between observation station and patient areas

Adjacency: Immediately outside / surrounding Nursing Station

Environment:

- **Floor:** Carpet
- **Walls:** CMU
- **Ceiling:** Lay-in acoustic tile; 1-1/2 to 2 story height
- **Windows:** None
- **Door:** None

Equipment: None

Furnishings: None

Mechanical: Shared HVAC zone

Electrical: Duplex electrical outlets per code
Compact fluorescent lighting

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements

D203 MEDICATIONS ROOM

AREA: 180 NSF

Occupants: 1 occupant (nurse – temporary)

Function: Enclosed, secure room for storing, preparing and dispensing medication to patients
Secure storage for controlled substances

Adjacency: Adjacent to / accessed from Nursing Station
Direct adjacency to each residential wing

Environment:

- **Floor:** Moisture-impervious flooring (stained concrete, sheet vinyl, VCT, etc.)
- **Walls:** CMU
- **Ceiling:** Painted gypsum board; 9' height
- **Windows:** 2 secure glazed medications pass-through windows above countertop, for distributing medications from this room to each residential wing
- **Door:** 3' x 7' steel door, locking, car-key access only

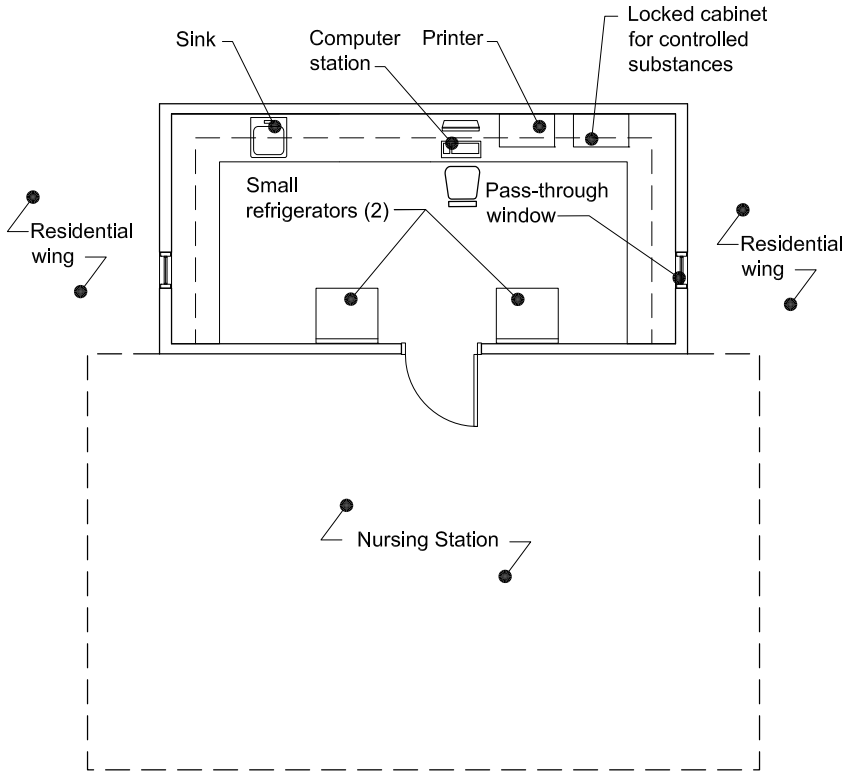
Equipment: Millwork countertop / cabinet with single-compartment sink; storage above and below; computer workstation; locking cabinet for storage of controlled substances
2 small refrigerators, one for each wing
Computer, printer & telephone

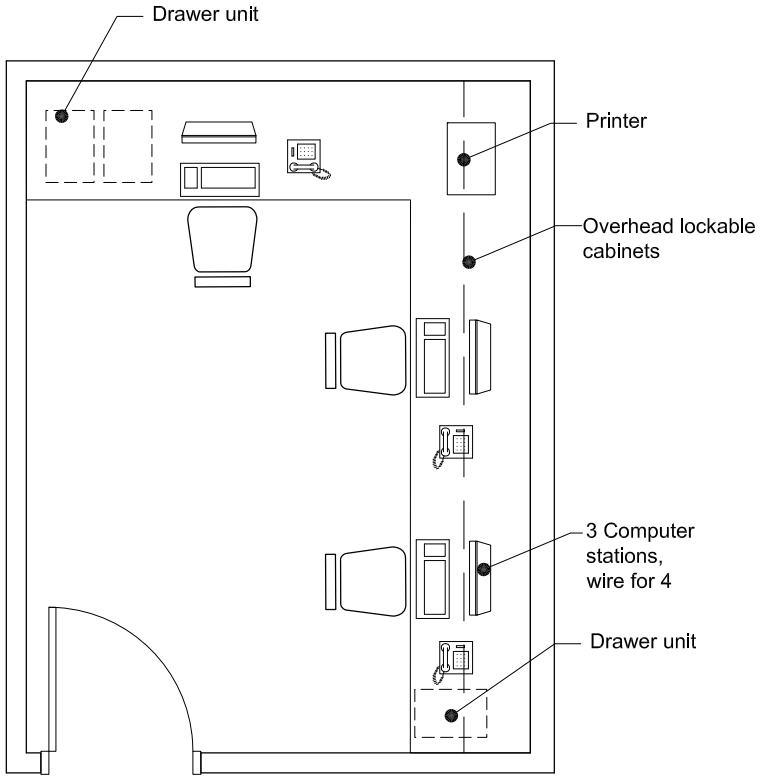
Furnishings: Desk chair

Mechanical: Dedicated HVAC zone

Electrical: Duplex electrical outlets per code, including outlets above countertop
Electrical and voice / data outlets as needed for computer, telephone, refrigerators, other equipment
Fluorescent parabolic lighting

Notes: Visually private space





D204 CHARTING ROOM

AREA: 150 NSF

Occupants: Up to 3 occupants

Function: Enclosed, private, distraction-free room for doing paper work related to patient care and residential unit management; primarily used by 1 person at a time

Adjacency: Adjacent to Nursing Station
Visual privacy – no visual connection to adjacent spaces

Environment:

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

Equipment: Millwork countertop with 3 computer workstations; locking drawer units at each station; lockable storage cabinets above
3 computers, 3 telephones, 1 shared printer & 1 shredder

Furnishings: 3 desk chairs

Mechanical: Dedicated HVAC zone

Electrical: Duplex electrical outlets per code, including outlets above countertop
Electrical and voice / data outlets for computers, telephones, printer and shredder; provide 4th set of electrical and voice / data outlets for future staff
Fluorescent parabolic lighting

Notes:

D205 KITCHEN

AREA: 280 NSF

Occupants: Staff and patients

Function:
Serving food delivered from the Rampton Cafeteria kitchen in warming carts
Preparing simple meals such as pancake breakfasts, lunches (non-school days), etc.
Meals and serving by staff and patients

Adjacency: Adjoins both residential wing dining rooms

Environment:
- **Floor:** Hard surface floor (sheet vinyl, stained concrete, etc.)
- **Walls:** CMU
- **Ceiling:** Hardened gypsum board, painted; 9' height
- **Windows:** None
- **Door:** 3' x 7' steel doors, locking

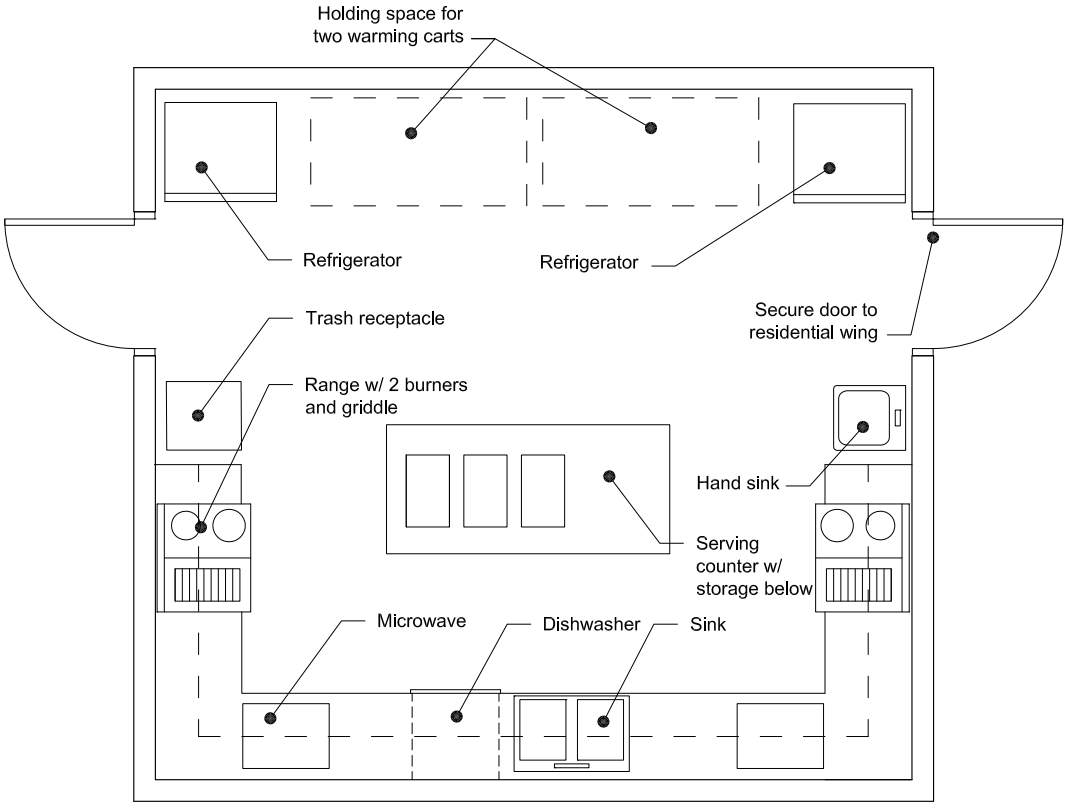
Equipment:
Solid surface countertops with lockable storage cabinets/drawers below & storage cabinets above
Millwork serving island with 3 built-in warming/serving trays (2 hot, 1 cold; each 20"l x 12"W). Dish storage below.
Double compartment kitchen sink
Wall-hung hand-washing lavatory
2 refrigerators with ice-maker, 2 microwave ovens, 2 electric range/ovens with built-in griddle
Residential-size, under-counter commercial dishwasher
Holding area for 2 food warming carts, each 60"L x 29-1/2"W

Furnishings: Waste and recycling receptacles

Mechanical: Dedicated HVAC zone; exhaust

Electrical:
Duplex electrical outlets per code
Electrical outlets above countertop
Electrical outlets as required for refrigerators, microwaves, range/ovens, food warming trays, dishwasher
Compact fluorescent lighting

Notes:
Countertops at 34" high to meet ADA
Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements



D300: UNIT TRANSITION ZONE

Hours of Operation

All days, 8 AM – 9 PM

Security

The Unit Transition Zone contains two patient-access spaces (Group Room; Visiting Room) which must incorporate injury and suicide-resistant fixtures and design elements. These two spaces will each have two access points: one to the Residential Wing and one to the Transition Zone, both with controlled access in and out.

The Unit Transition Zone will have controlled entry and exit.

Functions / Space Adjacencies

The Unit Transition Zone consists primarily of administrative and medical staff offices which support both wings of a residential unit. The Transition Zone also includes a Group Room and a Visiting Room which will be used by family members when attending group therapy or visiting patients in the Pediatric Facility.

The Transition Zone provides the physical connection between the Pediatric Facility Central Core (public access lobby; Pediatric Facility administrative offices; Activity Spaces; School) and the Residential Unit / Residential Wings. Important adjacencies include:

- The Secretary and the Central Core Lobby/Waiting (B100). The Secretary will be one of the contact points for visitors in the Lobby / Waiting using the call button / telephone system for access to the Pediatric Facility. The Secretary should have easy access to the Lobby / Waiting, to be able to assist those needing access.
- The Clinical Director (B200) and the Transition Zone Secretary spaces, for access to shared office equipment (copier, fax machine) which will be available within or near the Secretary offices.
- The Psychologist and the school library Testing Rooms.
- The Recreation Therapist and the Activity Spaces (B300).
- The Group Room and the Visiting Room must be directly adjacent to the Residential Wing, but must also be easily accessed by visitors and family members coming from the Central Core Lobby/Waiting.

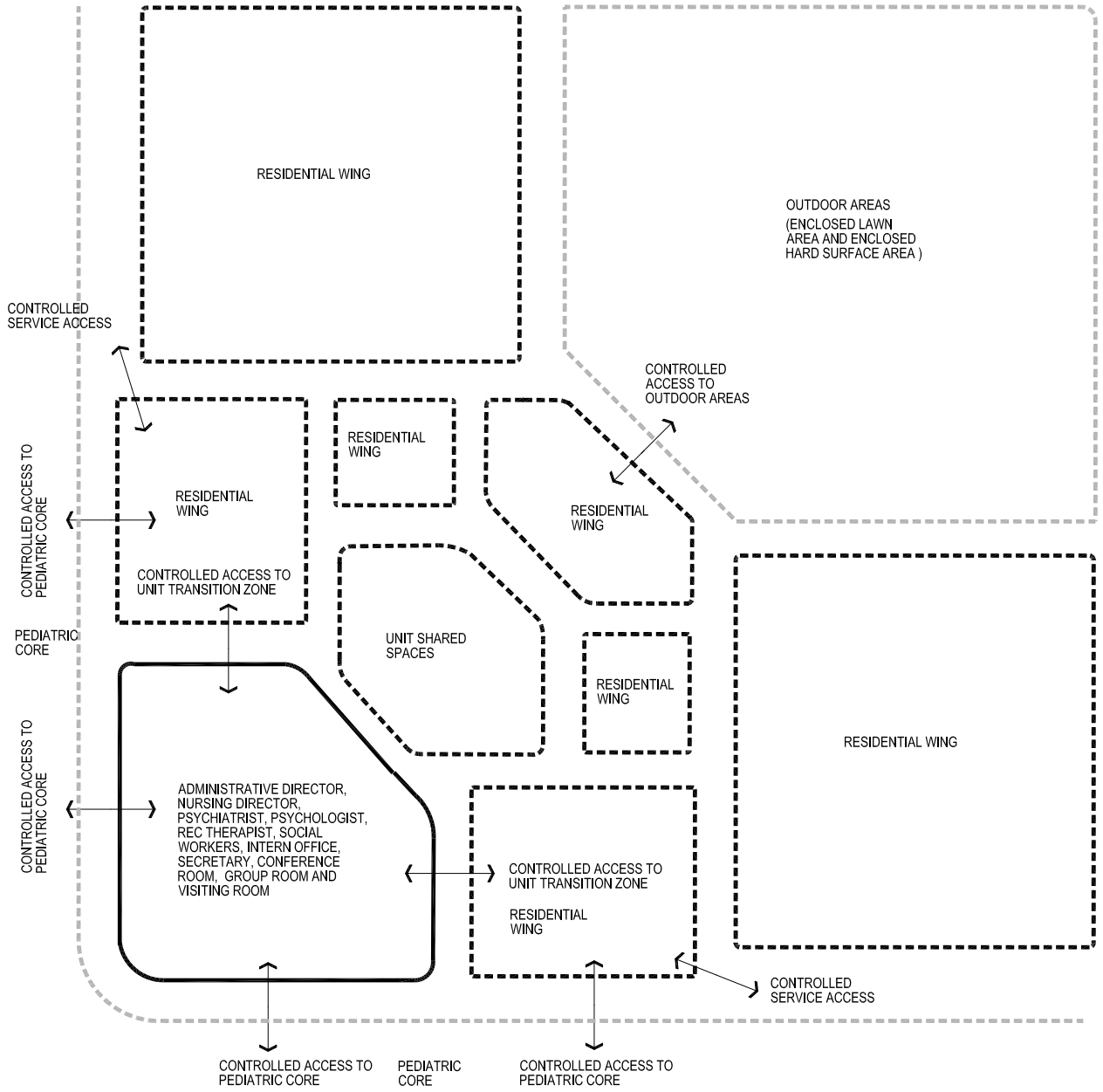
Staff Amenities

The Transition Zone should have convenient access to the building's Employee Lounge, staff toilet rooms and staff parking area.

D300: UNIT TRANSITION ZONE

SPACE LIST

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
D300	**UNIT TRANSITION ZONE**			**2,290**		**3,051**
D301	Unit Administrative Director	1	150	150	1.33	200
D302	Unit Nursing Director	1	120	120	1.33	160
D303	Psychiatrist	1	150	150	1.33	200
D304	Psychologist	1	150	150	1.33	200
D305	Recreation Therapist	1	80	80	1.40	112
D306	Social Worker	2	120	240	1.33	319
D307	Intern Office	1	120	120	1.33	160
D308	Secretary	1	100	100	1.33	133
D309	Conference	1	300	300	1.33	399
D310	Group Room	2	240	480	1.33	638
D311	Visiting Room	2	200	400	1.33	532



D300: UNIT TRANSITION ZONE
ADJACENCY DIAGRAM

D301 UNIT ADMINISTRATIVE DIRECTOR

AREA: 150 NSF

Occupants: 1 occupant, with up to 3 visitors

Function: Private office for Unit Administrative Director, who is responsible for the management of residential unit; paperwork, computer work, telephone calls, small meetings

Adjacency: Adjacent to Secretary, Unit Nursing Director & Psychiatrist
Near Conference room
Unit administrative offices should be outside, but easily accessible to, residential unit

Environment:

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

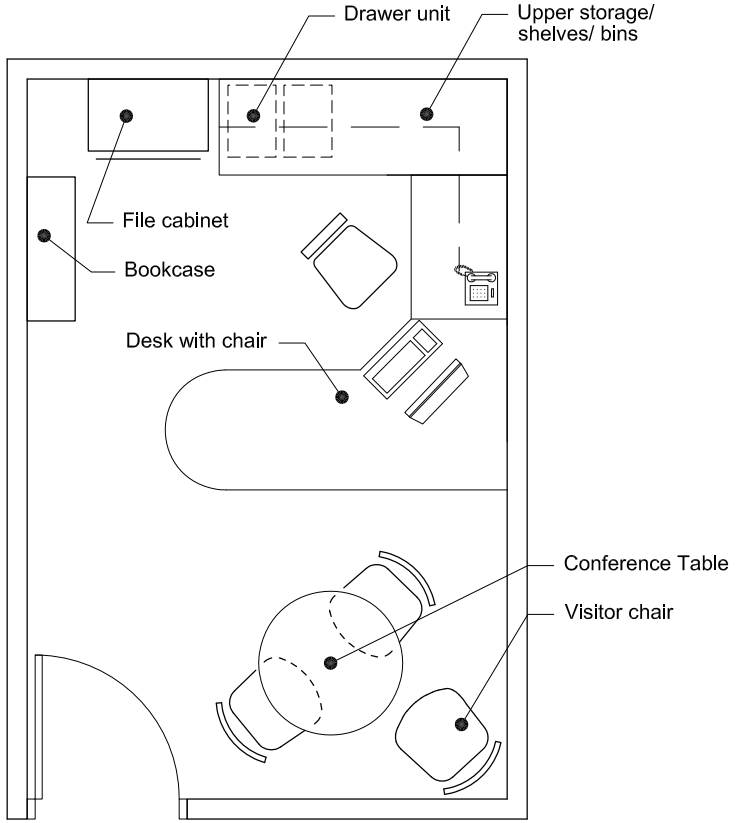
Equipment: Computer; telephone

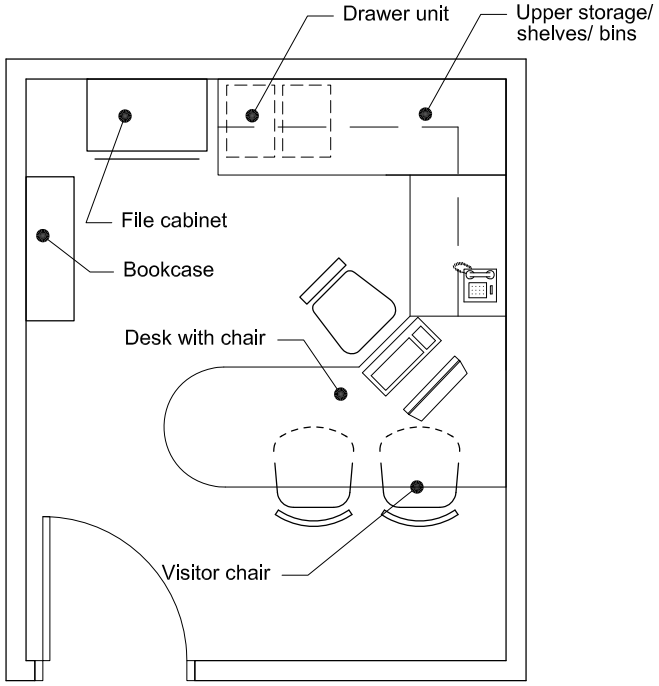
Furnishings: Systems furniture U-shaped desk with shelves / bins above and drawer units below
Desk chair
36" diameter table
3 visitor chairs
File cabinet / bookcase

Mechanical: Shared HVAC zone

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

Notes:





D302 UNIT NURSING DIRECTOR

AREA: 120 NSF

Occupants: 1 occupant, with up to 2 visitors

Function: Private office for Unit Nursing Director, who is responsible for management of all direct care staff on the unit and monitors all patients' medical and psychiatric needs; paperwork, computer work, telephone calls, small meetings

Adjacency:
Adjacent to Secretary, Psychiatrist & Unit Administrative Director
Near Conference room
Unit administrative offices should be outside, but easily accessible to, residential unit

Environment:

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

D303 PSYCHIATRIST

AREA: 150 NSF

Occupants: 1 occupant, with up to 3 visitors

Function: Private office for Psychiatrist, who is responsible for the clinical management of all patients in the residential unit; paperwork, computer work, telephone calls, small meetings

Adjacency: Adjacent to Secretary, Unit Nursing Director & Unit Administrative Director
Near Conference room
Unit administrative offices should be outside, but easily accessible to, residential unit

Environment:

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

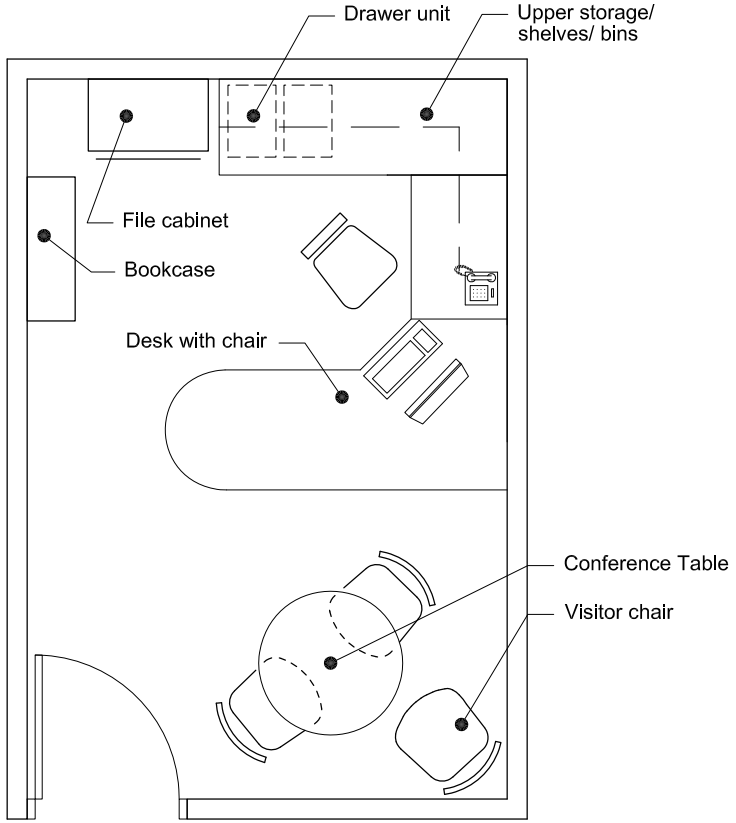
Equipment: Computer; telephone

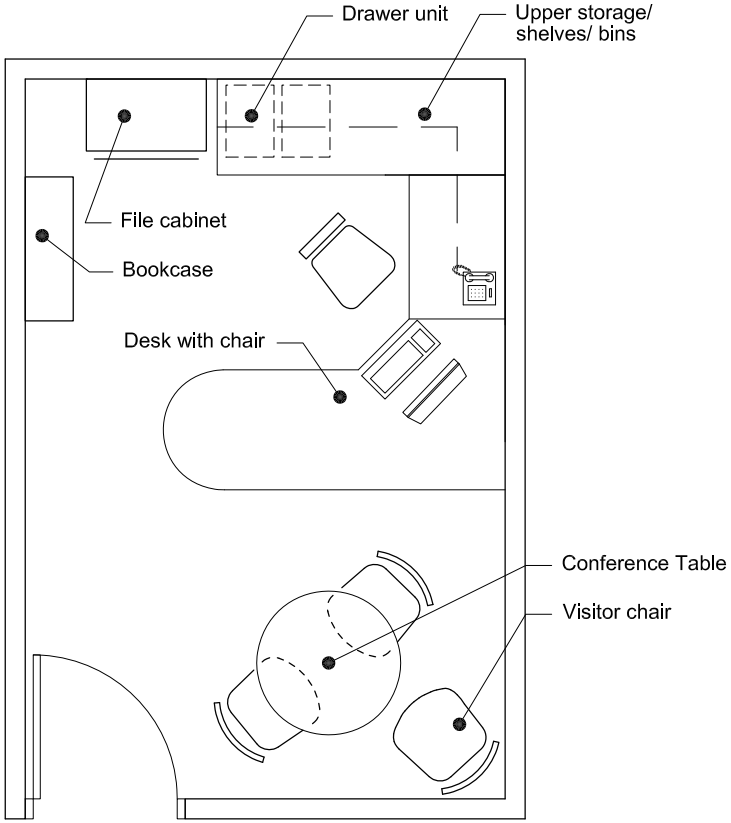
Furnishings: Systems furniture U-shaped desk with shelves / bins above and drawer units below
Desk chair
36" diameter table
3 visitor chairs
File cabinet / bookcase

Mechanical: Shared HVAC zone

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

Notes:





D304 PSYCHOLOGIST

AREA: 150 NSF

Occupants: 1 occupant, with up to 3 visitors

Function: Private office for Psychologist, who works with a particular residential unit
Office paperwork, small meetings, testing, telephone calls, computer work

Adjacency: Near other residential unit transition zone offices
Easy access to school library Testing Rooms

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
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:

D305 RECREATION THERAPIST

AREA: 80 NSF

Occupants: 1 occupant, with up to 1 visitor

Function: Private office for Recreation Therapist

Adjacency: With residential unit transition zone administrative and medical offices
Easy access to Activity Spaces and residential units, where recreational therapy takes place

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

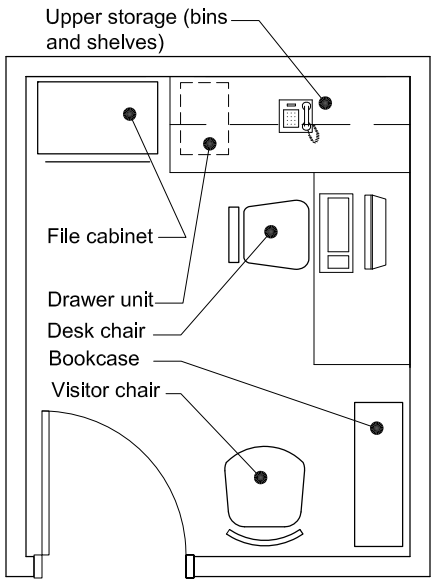
Equipment: **C**omputer; telephone

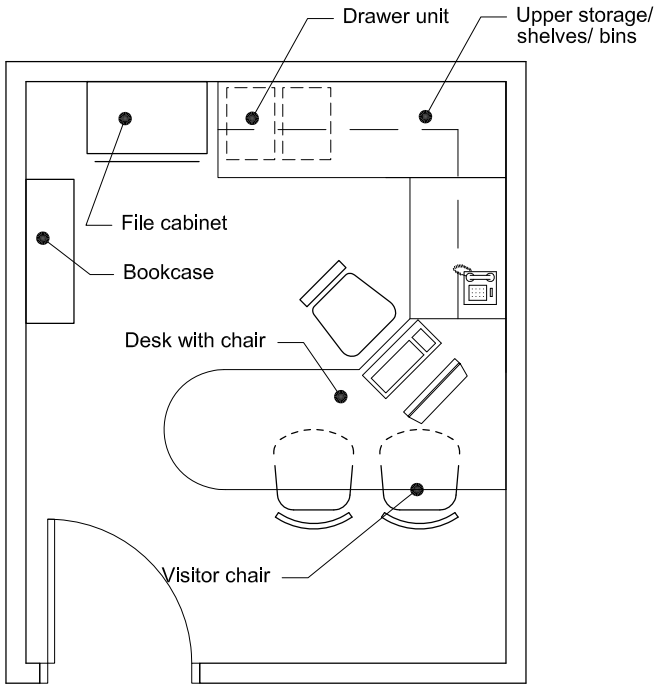
Furnishings: Systems furniture L-shaped workstation; shelves / bins above and drawer units below
Desk chair
Visitor chair
File cabinet / bookcase

Mechanical: Shared HVAC zone

Electrical: Duplex electrical outlets per code
Electrical & voice / data outlets for computer & telephone
Fluorescent parabolic lighting

Notes:





D306 SOCIAL WORKER

AREA: 120 NSF

Occupants: 1 occupant, with up to 2 visitors

Function: Private office for Social Worker; each of 2 Social Workers is responsible for half the patients in the residential unit; paperwork, computer work, telephone calls, small meetings

Adjacency: Adjacent to other administrative offices in Transition Zone
Near Conference and Group Rooms

Environment:

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

D307 INTERN OFFICE

AREA: 120 NSF

Occupants: 2 occupants, with up to 2 visitors

Function: Shared enclosed office for medical, social work or administrative interns

Adjacency: With administrative offices

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

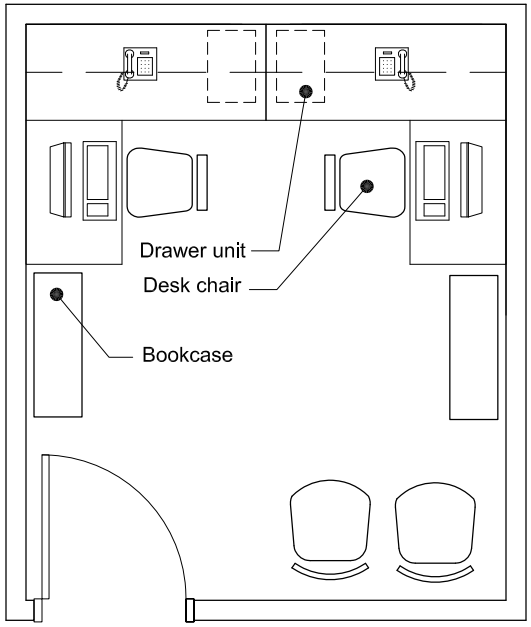
Equipment: 2 computers; 2 telephones
1 shared printer

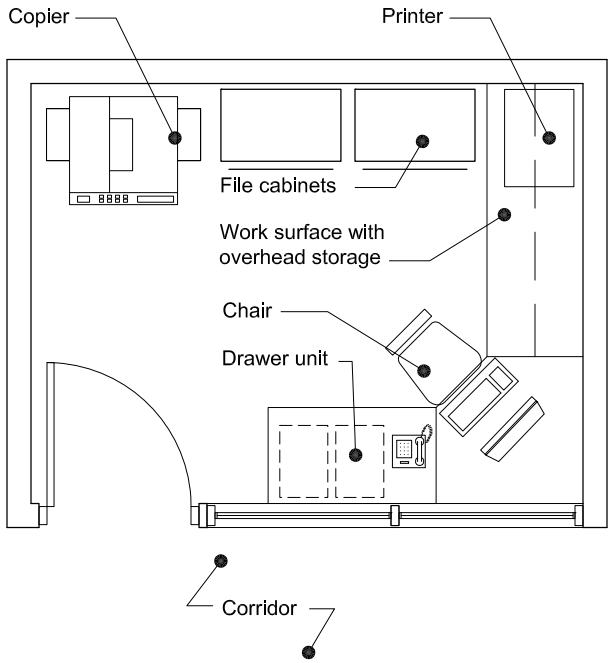
Furnishings: 2 systems furniture L-shaped workstations; shelves / bins above and drawer units below
2 desk chairs
2 visitor chairs
2 bookcases

Mechanical: Shared HVAC zone

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

Notes:





D308 SECRETARY

AREA: 100 NSF

Occupants: 1 occupant

Function:
Private office for Secretary, who provides office support for the residential unit administrative staff
Reception and control point for access to the administrative offices and residential unit

Adjacency:
With administrative offices, in particular Unit Administrative and Nursing Directors
Near Pediatric Facility Lobby / Waiting – at least one of three Res Unit Secretaries with sightline to Lobby / Waiting if building layout allows

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Exterior windows with window coverings
Interior window to corridor (at least one of three Res Unit Secretaries with window to building main entry lobby if building layout allows)
Door: 3' x 7' wood door, locking

Equipment: Computer; telephone; printer; copier

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

Mechanical: Shared HVAC zone

Electrical:
Duplex electrical outlets per code
Electrical & voice / data outlets for computer, telephone, printer, copier
Fluorescent parabolic lighting

Notes:
3 Residential Unit Secretaries should be near each other to share fax machine and office supply storage

D309 CONFERENCE

AREA: 300 NSF

Occupants: Up to 16 people

Function: Residential unit coordination meetings

Adjacency:
With transition zone administrative offices
Near Unit Administrative and Nursing Directors
Easily accessible by Pediatric Facility visitors

Environment:

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

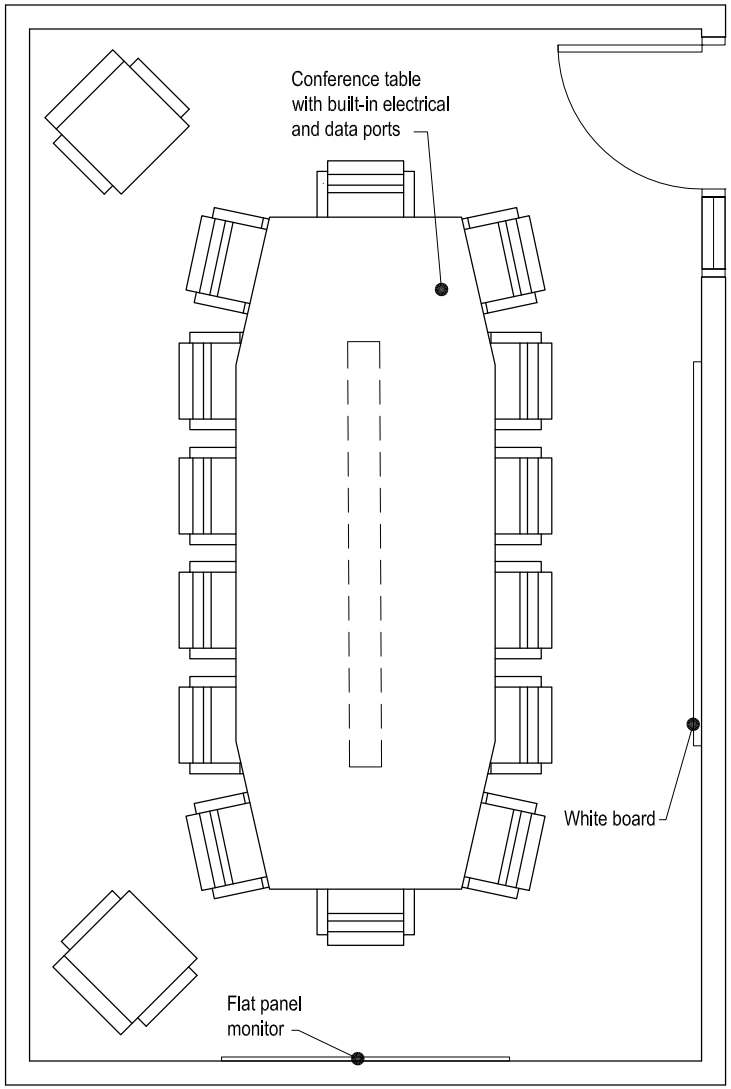
Equipment:
Flat-panel monitor, wall-mounted
Equipment as needed for videoconferencing and telemedicine capability

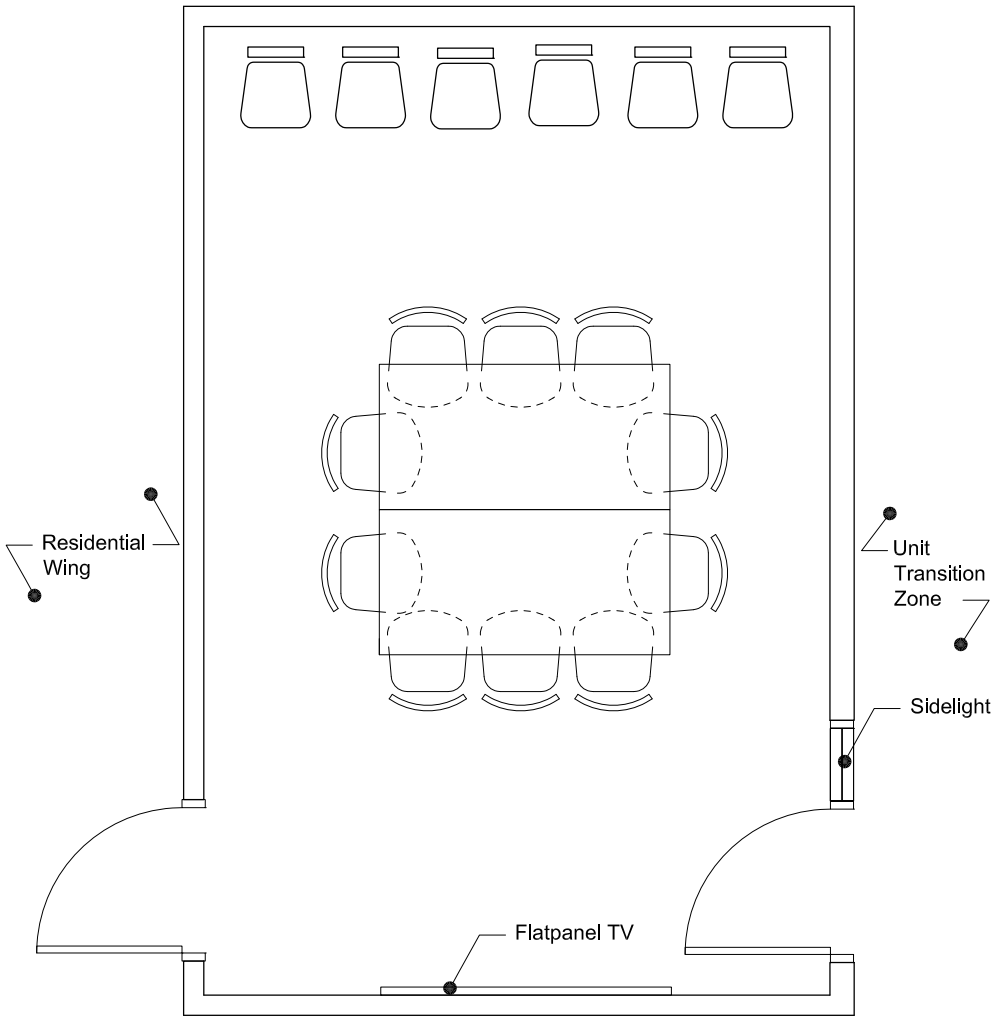
Furnishings:
Table, 12'L x 54"W, with 14 chairs, with integral electrical & data ports
2 additional chairs at room perimeter
White board, 8'L x 4'H

Mechanical: Dedicated HVAC zone

Electrical:
Electrical outlets per code
Electrical and data outlets in floor, as source for table electrical and data; coordinate with table pedestal locations
Electrical and data infrastructure as needed for videoconferencing and telemedicine capability
Multiple preset light configurations to support AV use

Notes:





D310 GROUP ROOM

AREA: 240 NSF

Occupants: Up to 16 people (patients, staff, family members)

Function: Enclosed room for group and family therapy

Adjacency: 2 access points: one from residential wing and the other from the residential unit transition zone
Easily accessible by Social Workers

Environment:

Floor: Carpet
Walls: CMU
Ceiling: Painted gypsum board; 9' height
Windows: Exterior windows / natural light desired
Entry door vision panel or sidelight (Transition Zone door only)
Door: (2) 3' x 7' steel doors, locking (door to residential wing must swing out into corridor)

Equipment: Wall-mounted, flat-panel TV / monitor

Furnishings: 2 folding tables, 16 chairs

Mechanical: Shared HVAC zone

Electrical: Duplex electrical outlets per code
Electrical, voice / data and cable TV outlets for flat-panel monitor
Compact fluorescent lighting

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements
Controlled entry and exit from both residential wing and transition zone

D311 VISITING ROOM

AREA: 200 NSF

Occupants: Patient and family members

Function: Enclosed room for patient-family visits; conversation, table games, eating

Adjacency: 2 access points: one from residential wing and the other from the residential unit transition zone

Environment:

- **Floor:** Carpet
- **Walls:** CMU
- **Ceiling:** Painted gypsum board; 9' height
- **Windows:** Exterior windows / natural light desired
  Entry door vision panel or sidelight (Transition Zone door only)
- **Door:** (2) 3' x 7' steel doors, locking (door to residential wing must swing out into corridor)

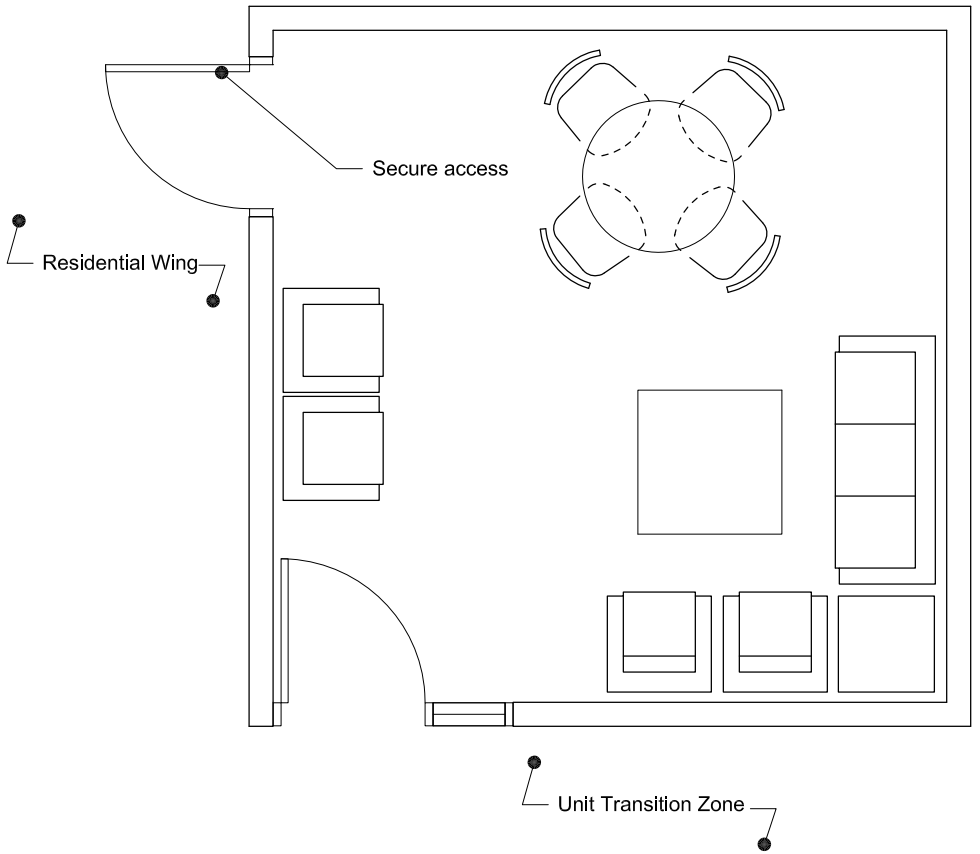
Equipment: Security camera (not connected to a monitor; creates tapes that are stored for 72 hours)

Furnishings: Lounge seating for 6-8 people, with occasional tables
42" diameter table with 4 chairs

Mechanical: Dedicated HVAC zone

Electrical: Duplex electrical outlets per code
Lighting, dimmable

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements
Controlled entry and exit from both residential wing and transitional zone



E100: RESIDENTIAL WINGS

Hours of Operation

24 hours/day, 7 days/week

Security

The Residential Wings contain patient-access spaces which must incorporate injury and suicide-resistant fixtures and design elements. The residential wings will have controlled entry and exit. The layout of the residential wings must address some critical safety issues:

- Staff in the Nursing Station (Unit Shared Spaces group) must have clear visibility of the residential wing gathering spaces (day room, TV room, dining room) and the doors to all patient bedrooms and toilet rooms.
- The spaces listed in Residential Wings are intended to be divided into two equal groupings. Each grouping will form one wing; the two wings will have the Unit Shared Spaces at their center. Each wing must be separate and discrete; patients from one wing must not be able to enter another wing.

Functions / Space Adjacencies

The Residential Wings consist primarily of patients' daily living spaces – bedrooms, toilet rooms, gathering spaces (day, dining and TV rooms) and daily-life support spaces (telephone, tutoring and laundry rooms). The wings also contain spaces that support patient medical functions (direct observation room; one-on-one/comfort room; seclusion suite). There are several unit and staff support spaces that may be outside the patient access area (clean and soiled linen; staff toilet rooms; unit and patient storage rooms).

General Location / Adjacency

The two Residential Wings connect directly with the Unit Shared Spaces, and also with the Unit Transition Zones (the transition space between the Residential Wings and the Pediatric Facility Central Core). The Residential Wings require good adjacency to:

- The School, attended by patients each weekday.
- The Activity Spaces, for daytime and after-school occupational and recreational therapy activities.
- Two secure outdoor courtyards, one with a hard surface and one with lawn. There will be one pair of courtyards for each residential unit (two wings). Within a residential unit, patients from each wing must be able to access both courtyards without accessing the other wing. (See Section 3 General Building Considerations for more information regarding the courtyards.)
- A service access, for the delivery of food and clean linen, and the removal of trash / recycling and soiled linen.

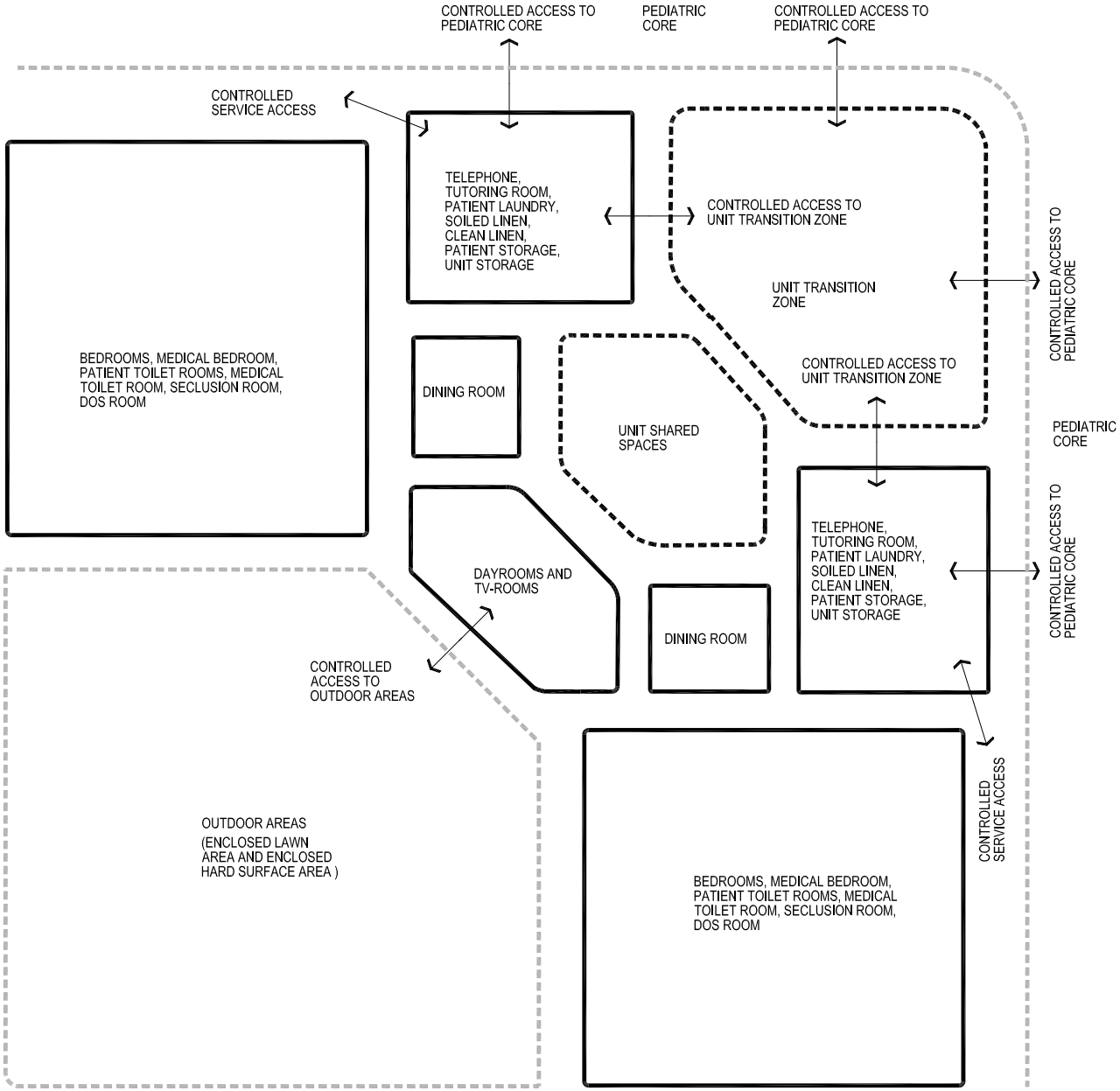
Staff Amenities

The Residential Wings should have convenient access to the building's Employee Lounge and staff parking area.

E100: RESIDENTIAL WINGS

SPACE LIST

		Space Qty.	NSF/ Space	Total NASF	Wall/ Circ. Factor	DGSF
E100	**RESIDENTIAL WINGS**			**6,904**		**9,290**
E101	Bedroom	18	110	1,980	1.33	2,633
E102	Patient Toilet Room	6	80	480	1.40	672
E103	Medical Bedroom	2	110	220	1.33	293
E104	Medical Toilet Room	2	80	160	1.40	224
E105	Day Room	2	430	860	1.33	1,144
E106	TV Room	2	150	300	1.33	399
E107	Telephone Room	2	60	120	1.40	168
E108	Dining Room	2	345	690	1.33	918
E109	Seclusion Room	2	100	200	1.33	266
E110	Seclusion Ante Room	2	65	130	1.40	182
E111	Seclusion Toilet Room	2	45	90	1.40	126
E112	Tutoring Room	2	80	160	1.40	224
E113	Direct Observation Room (DOS)	2	100	200	1.33	266
E114	One-on-One Room (Comfort Room)	2	80	160	1.40	224
E115	Patient Laundry Room	2	100	200	1.33	266
E116	Clean Linen	2	125	250	1.33	333
E117	Soiled Linen	2	110	220	1.33	293
E118	Staff Toilet Room	2	42	84	1.40	118
E119	Unit Storage	2	80	160	1.40	224
E120	Patient Storage	2	120	240	1.33	319



E100: RESIDENTIAL WINGS
ADJACENCY DIAGRAM

E101 BEDROOM

AREA: 110 NSF

Occupants: 1 patient

Function: Sleeping, school work, storage of clothes and personal belongings, dressing

Adjacency: Accessed from main residential unit hallway
3 Bedrooms grouped with 1 Patient Toilet Room
All bedroom doors in residential unit must be visible from Nursing Station

Environment:

Floor: Stained concrete
Walls: CMU
Ceiling: Painted hardened gypsum board; 9' height
Windows: Exterior window with integral blinds
Possible vision panel in door
Door: 3' x 7' steel door, locks to prevent entry from outside, always allows exiting from inside

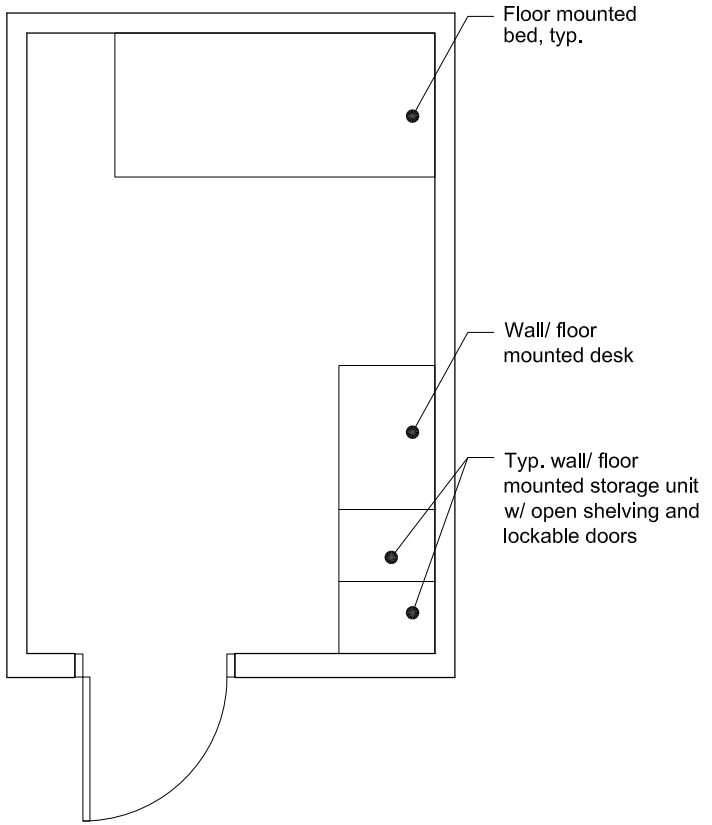
Equipment: Millwork clothes closet (3'W x 2'D) with some open storage cubbies; bolted to walls / floor
Millwork desk (3'W x 2'D) with locking storage compartment above; bolted to walls / floor

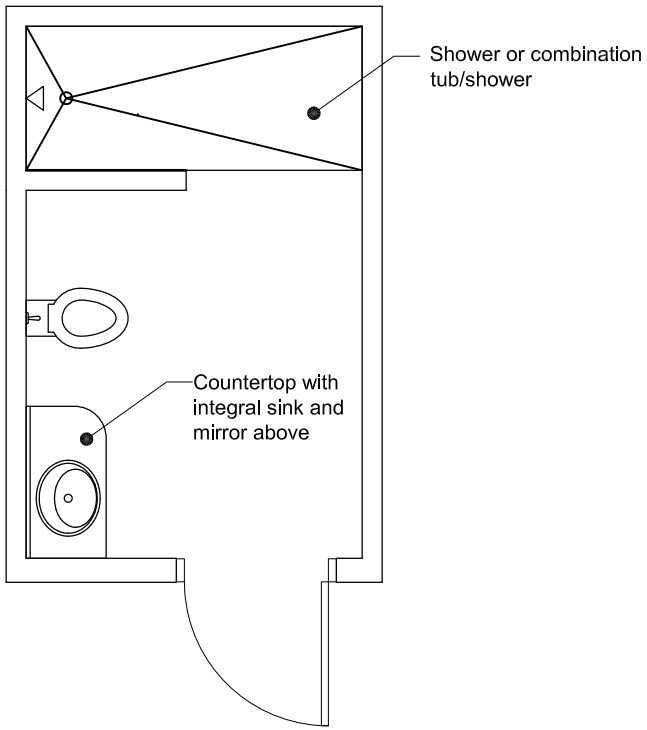
Furnishings: Single bed, bolted to floor; 36" W x 75"L
Desk chair

Mechanical: Dedicated HVAC zone

Electrical: May have electrical outlets with key switch in hallway; coordinate with State Hospital during design
Compact fluorescent lighting in ceiling and above desk
Night light
Electrical connection from door to Nursing Station, to notify of door being opened

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements





E102 PATIENT TOILET ROOM

AREA: 80 NSF

Occupants: 1 patient plus possible 1-2 staff

Function: Toilet and shower facilities for residential patients

Adjacency:
Accessed from main residential unit hallway
3 Bedrooms grouped with 1 Patient Toilet Room
All toilet room doors in residential unit must be visible from Nursing Station

Environment:
- **Floor:** Ceramic tile or stained concrete
- **Walls:** Ceramic tile
- **Ceiling:** Hardened gypsum board at toilet area; ceramic tile at shower area
- **Windows:** None
- **Door:** 3' x 7' steel door, locking

Equipment:
Toilet
Solid-surface countertop with integral sink, with drain piping encased; mirror above
Shower head and shower curtain rod
Toilet / shower room accessories: robe hooks; soap, paper towel & toilet tissue dispensers, shower curtain, etc.

Furnishings: None

Mechanical:
Dedicated HVAC zone with exhaust
Floor drain at shower

Electrical:
None
Secure lighting

Notes:
Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements
1 Patient Toilet Room per 10-bed wing will contain a tub/shower unit

E103 MEDICAL BEDROOM

AREA: 110 NSF

Occupants: 1 patient

Function: Bedroom for patients with medical or accessibility needs; sleeping, school work, storage of clothes and personal belongings, dressing

Adjacency:
Near Nursing Station
Direct connection to Medical Toilet Room
All bedroom doors in residential unit must be visible from Nursing Station

Environment:

Floor: Stained concrete
Walls: CMU
Ceiling: Painted hardened gypsum board; 9' height
Windows: Exterior window with integral blinds
Possible vision panel in door
Door: 3' x 7' steel door, locks to prevent entry from outside, always allows exiting from inside

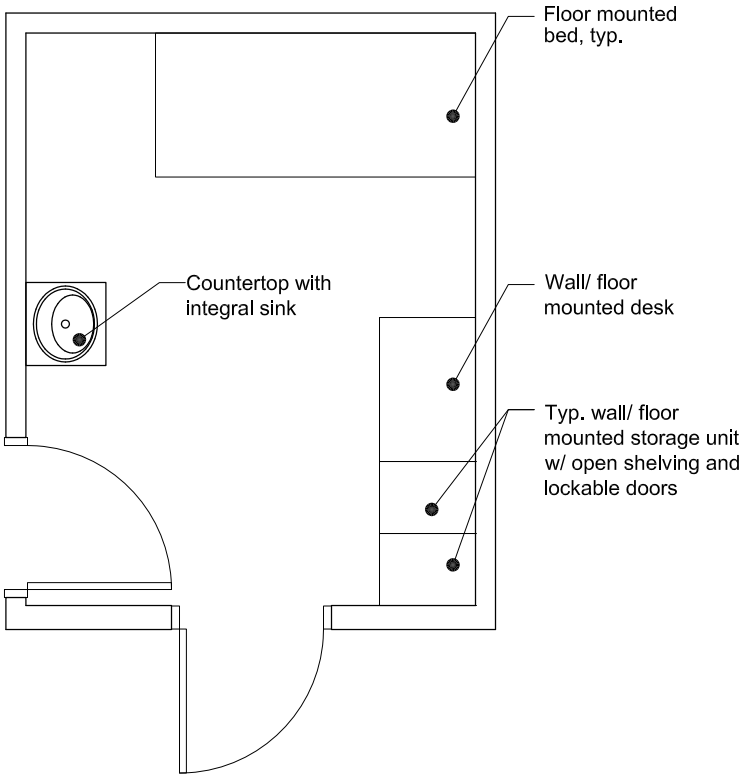
Equipment:
Millwork clothes closet (3'W x 2'D) with some open storage cubbies; bolted to walls / floor
Millwork desk (3'W x 2'D) with locking storage compartment above; bolted to walls / floor
Solid-surface countertop with integral sink, with drain piping encased; mirror above

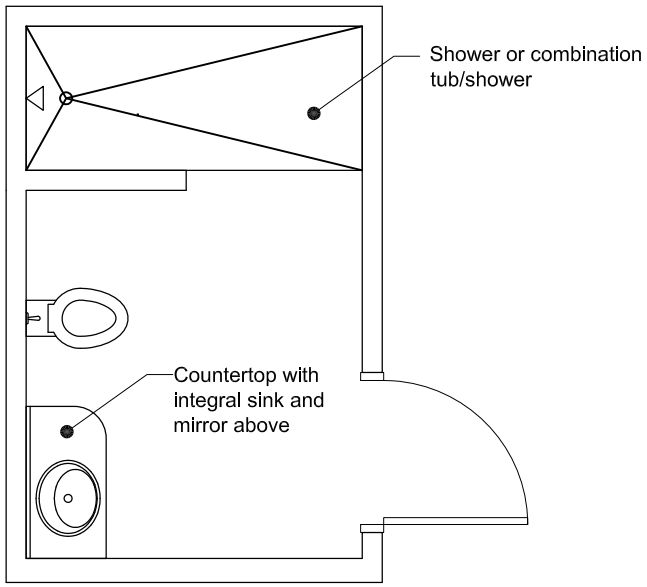
Furnishings:
Single bed, bolted to floor; 36" W x 75"L
Desk chair

Mechanical: Dedicated HVAC zone

Electrical:
No electrical outlets
Compact fluorescent lighting in ceiling and above desk
Night light
Electrical connection from door to Nursing Station, to notify of door being opened

Notes:
Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements
Room must meet all accessibility codes and standards





E104 MEDICAL TOILET ROOM

AREA: 80 NSF

Occupants: 1 patient plus possible 1-2 staff

Function: Toilet and shower facilities for patient with medical or accessibility needs

Adjacency: Accessed from Medical Bedroom

Environment:

- **Floor:** Ceramic tile or stained concrete
- **Walls:** Ceramic tile
- **Ceiling:** Hardened gypsum board at toilet area; ceramic tile at shower area
- **Windows:** None
- **Door:** 3' x 7' steel door, locking

Equipment:

Toilet
Solid-surface countertop with integral sink, with drain piping encased; mirror above
Shower head and shower curtain rod
Toilet / shower room accessories: robe hooks; grab bars (removable); soap, paper towel & toilet tissue dispensers, shower curtain, etc.

Furnishings: None

Mechanical:

Dedicated HVAC zone with exhaust
Floor drain at shower

Electrical:

None
Secure lighting

Notes:

Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements
Room must meet all accessibility codes and standards

E105 DAY ROOM

AREA: 560 NSF

Occupants: Up to 13 people (10 patients and 3 staff)

Function: Patient living room / lounge space; relaxing, interacting, games, etc.

Adjacency: Adjacent to and visible from Nursing Station and Nursing Station Approach
Adjacent to TV Room, Dining Room and Kitchen

Environment:

- **Floor:** Carpet
- **Walls:** CMU
- **Ceiling:** Painted hardened gypsum board; 9' height
- **Windows:** Exterior windows / natural light
- **Door:** 3' x 7' steel door, locking, to exterior enclosed courtyard; with vision panel

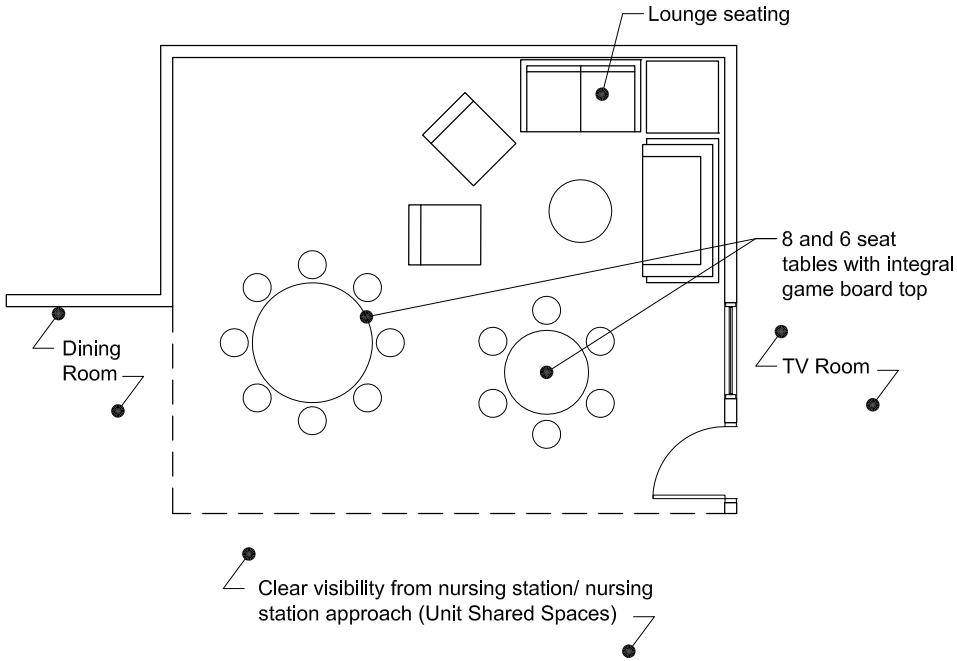
Equipment: Security camera (monitor in Nursing Station)

Furnishings: Lounge seating: sofas and chairs for 6 people
Floor-attached tables with attached seating, integral game boards in table top; (1) 4-seat; (1) 8-seat

Mechanical: Dedicated HVAC zone

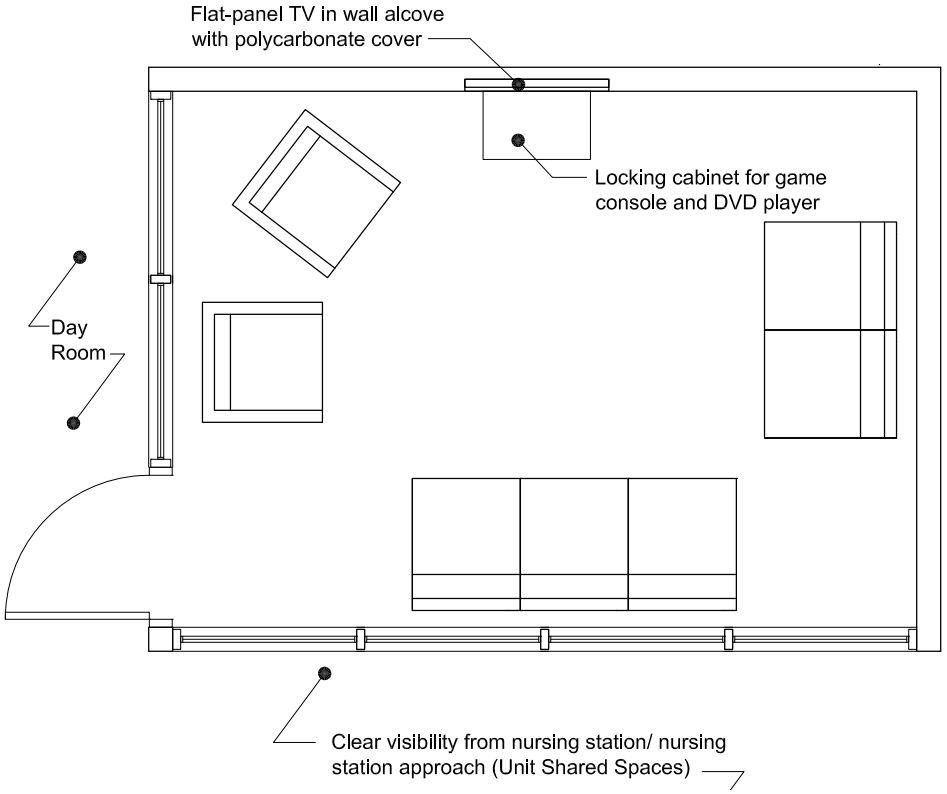
Electrical: Electrical outlets per code
Compact fluorescent lighting
Electrical release-button connection from Nursing Station to exterior courtyard door

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements



E106 TV ROOM

AREA: 150 NSF



Occupants: Up to 6 people

Function: Patient TV-viewing and electronic games

Adjacency:
Adjacent to and visible from Nursing Station, Nursing Station Approach and Day Room
TV Room accessed from Day Room or Nursing Station Approach

Environment:
- **Floor:** Carpet
- **Walls:** CMU
- **Ceiling:** Painted hardened gypsum board; 9' height
- **Windows:** Interior windows to allow full visibility into room
- **Door:** 3' x 7' steel door, locking

Equipment:
Wall-mounted flat-panel TV in recessed wall alcove, with locking polycarbonate cover
Locking cabinet for DVD player and video game consoles

Furnishings: Lounge seating: sofas and chairs for 6 people

Mechanical: Dedicated HVAC zone

Electrical:
Electrical outlets per code
Compact fluorescent lighting
Electrical and cable TV outlets for TV and gaming equipment
Electrical release-button connection from Nursing Station to exterior courtyard door

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements

E107 TELEPHONE ROOM

AREA: 60 NSF

Occupants: Up to 2 people

Function: Enclosed room for patient telephone conversations, consultations, interviews

Adjacency: Access point visible from Nursing Station

Environment:

- **Floor:** Carpet
- **Walls:** CMU
- **Ceiling:** Painted hardened gypsum board; 9' height
- **Windows:** Sidelight adjacent to door; vision panel in door
- **Door:** 3' x 7' steel door, locking

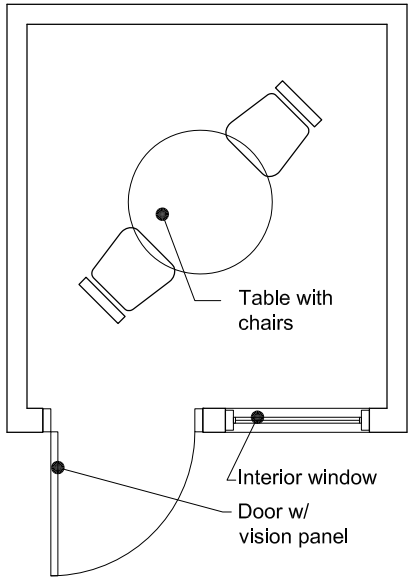
Equipment: Telephone (removable)

Furnishings: 36" diameter round table with 2 chairs

Mechanical: Shared HVAC zone

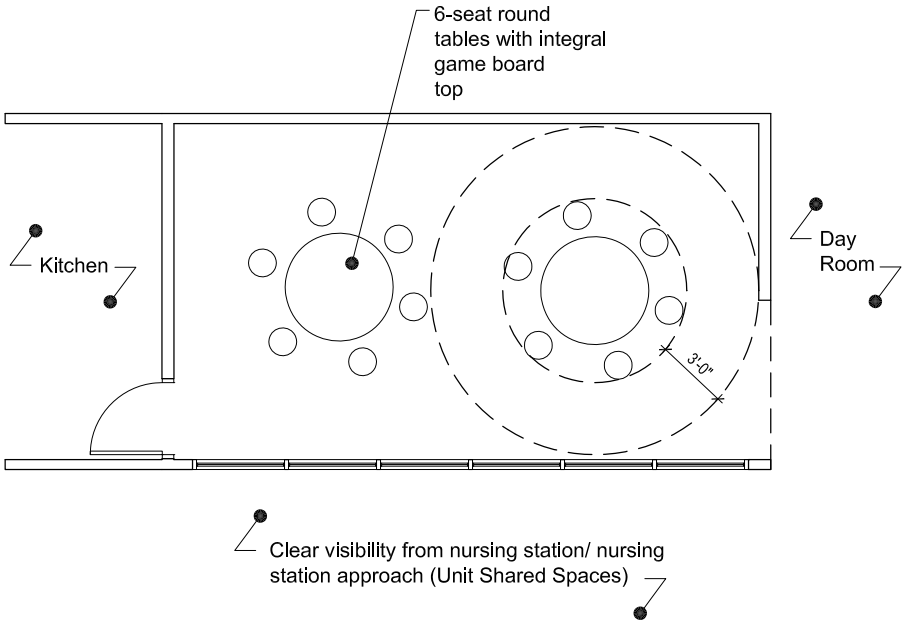
Electrical: Electrical outlets per code
Compact fluorescent lighting
Electrical and telephone outlets as needed for telephone
Electrical release-button connection from Nursing Station to exterior courtyard door

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements



E108 DINING ROOM

AREA: 345 NSF



Occupants: Up to 12 people (10 patients and 2 staff)

Function:
Patient eating space
Secondary use as group room, group activity space

Adjacency:
Adjacent to Kitchen, for food serving
Accessed from Day Room or Nursing Station Approach
Adjacent to and visible from Nursing Station and Nursing Station Approach

Environment:

- **Floor:** Hard surface (stained concrete, sheet vinyl, etc.)
- **Walls:** CMU; easily washable finish
- **Ceiling:** Painted hardened gypsum board; 9' height
- **Windows:** Exterior windows / natural light desired
- **Door:** 3' x 7' steel access door(s), locking

Equipment: None

Furnishings: Floor-attached tables with attached seating, integral game boards in table tops; (2) 6-seat

Mechanical: Dedicated HVAC zone; exhaust

Electrical:
Electrical outlets per code
Compact fluorescent lighting

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements

E109 SECLUSION ROOM

AREA: 100 NSF

Occupants: 1 patient

Function: Acoustically isolated room for patients who are highly agitated / out of control

Adjacency: Combines with Seclusion Ante and Toilet Rooms to form 3-room suite; Ante Room is access point
Near Nursing Station; 1 suite for each residential wing
If floor plan allows, school seclusion suite can serve as residential unit seclusion suite as well

Environment:

- **Floor:** Concrete with synthetic-resinous padding
- **Walls:** CMU or concrete with synthetic-resinous padding
- **Ceiling:** Hardened gypsum board with synthetic-resinous padding
- **Windows:** Small, secure exterior vision window desired; one-way vision panel in door
- **Door:** 3' x 7' steel door, locking, with synthetic-resinous padding

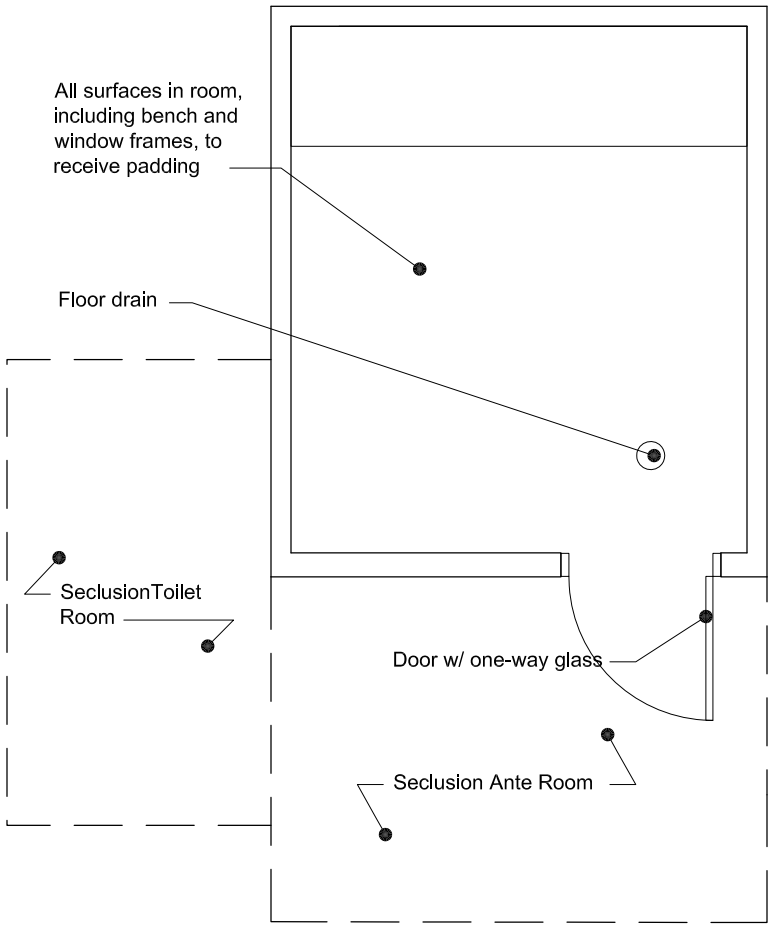
Equipment: Built-in 18"D concrete bench along 1 wall, with synthetic-resinous padding
Intercom system for staff/ patient communication
Security camera (monitor in Nursing Station)

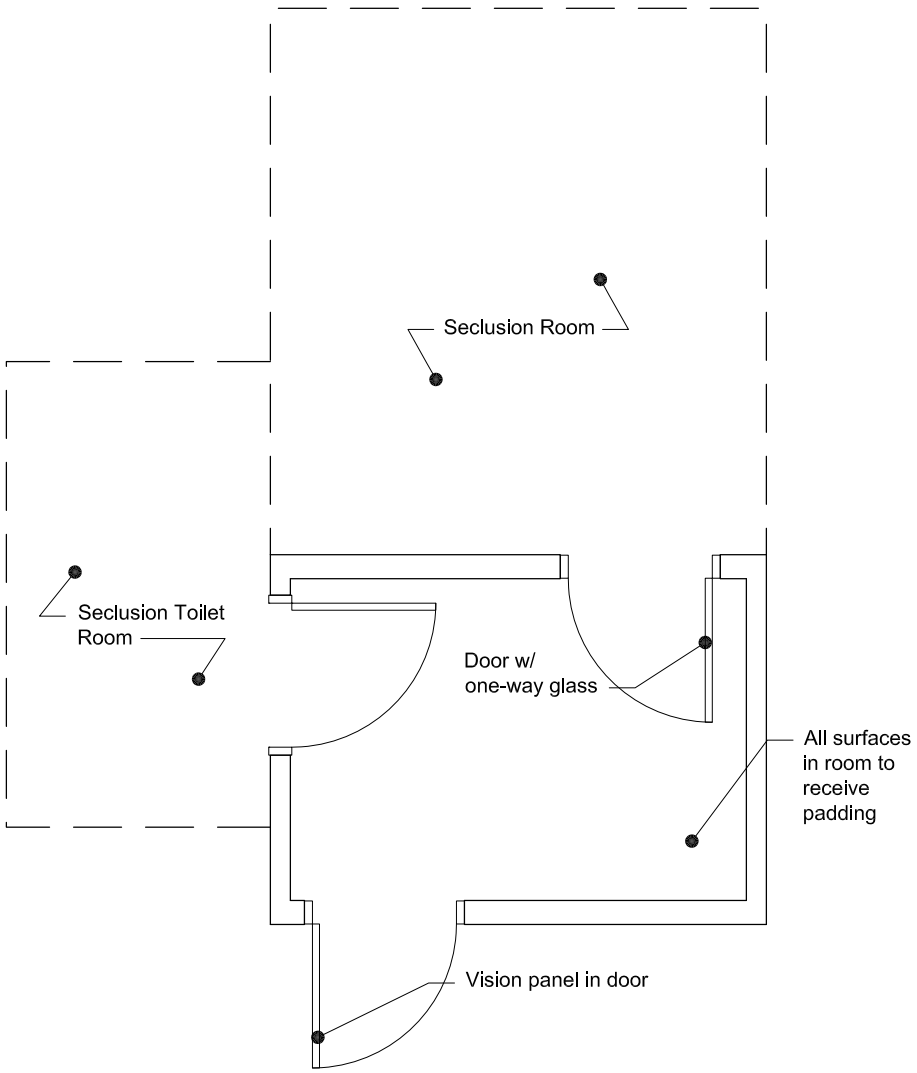
Furnishings: None

Mechanical: Dedicated HVAC zone; floor drain

Electrical: No electrical outlets; secure lighting (switch in Ante Room)

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements
Pathway from within unit to Seclusion suite must be as short and direct as possible; must be free of any objects, finishes, etc. susceptible to damage or destruction by out-of-control patient
Acoustical isolation critical; should not be able to hear noise generated from within seclusion suite, when doors are closed





E110 SECLUSION ANTE ROOM

AREA: 65 NSF

Occupants: 1 patient plus possible 1-2 staff

Function: Anteroom, access point for Seclusion and Seclusion Toilet rooms

Adjacency:
Combines with Seclusion and Seclusion Toilet Rooms to form 3-room suite; Ante Room is access point
Near Nursing Station; 1 suite for each residential wing
Visually private access point
If floor plan allows, school seclusion suite can serve as residential unit seclusion suite as well

Environment:
- **Floor:** Concrete with synthetic-resinous padding
- **Walls:** CMU or concrete with synthetic-resinous padding
- **Ceiling:** Hardened gypsum board with synthetic-resinous padding
- **Windows:** Vision panel in door
- **Door:** 3' x 7' steel door, locking; with synthetic-resinous padding

Equipment: Intercom system for staff/ patient communication

Furnishings: None

Mechanical: Dedicated HVAC zone

Electrical: No electrical outlets; secure lighting
Seclusion Room light switch in this space

Notes:
Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements
Pathway to Seclusion suite must be as short and direct as possible; must be free of any objects, finishes, etc. susceptible to damage or destruction by out-of-control patient
Acoustical isolation critical; should not be able to hear noise generated from within seclusion suite, when doors are closed

E111 SECLUSION TOILET ROOM

AREA: 45 NSF

Occupants: 1 patient plus possible 1-2 staff

Function: Toilet and shower facilities within seclusion suite

Adjacency:
Combines with Seclusion and Seclusion Ante Rooms to form 3-room suite; Ante Room is access point
Near Nursing Station; 1 suite for each residential wing
If floor plan allows, school seclusion suite can serve as residential unit seclusion suite as well

Environment:
- **Floor:** Ceramic tile
- **Walls:** Ceramic tile
- **Ceiling:** Hardened gypsum board at toilet area; ceramic tile at shower area
- **Windows:** None
- **Door:** 3' x 7' steel door, locking, with synthetic-resinous padding

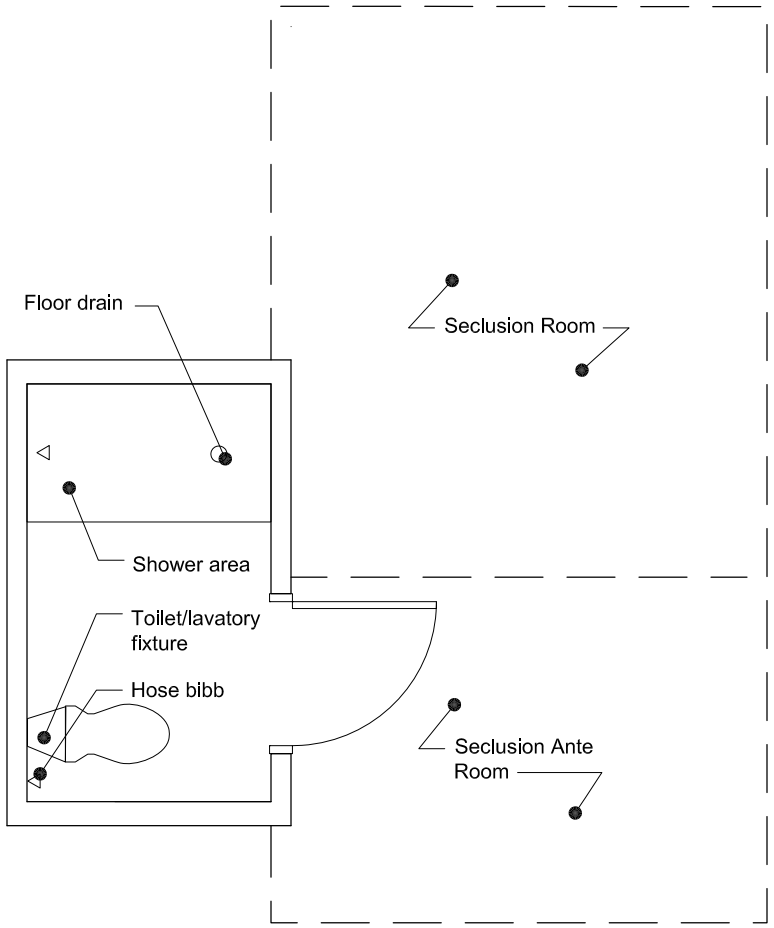
Equipment:
Intercom system for staff/ patient communication
Prison-type secure toilet / lavatory / mirror unit
Toilet / shower room accessories: robe hooks; soap, paper towel & toilet tissue dispensers; shower curtain

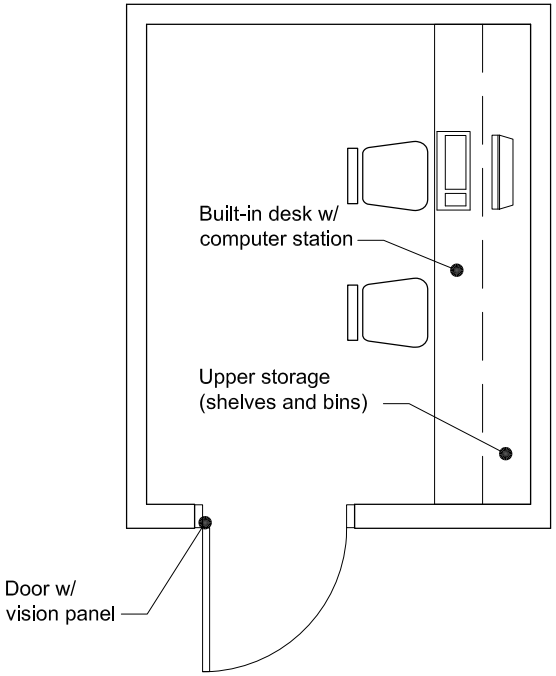
Furnishings: None

Mechanical:
Dedicated HVAC zone with exhaust
Floor drain; hose bibb

Electrical: No electrical outlets; secure lighting

Notes:
Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements
Acoustical isolation critical; should not be able to hear noise generated from within seclusion suite, when doors are closed





E112 TUTORING ROOM

AREA: 80 NSF

Occupants: 2 people (1 patient, 1 staff)

Function: Enclosed room for one-on-one tutoring sessions

Adjacency: Adjacent to group living spaces (Day Room, Dining Room, etc.)

Environment:

- **Floor:** Carpet
- **Walls:** CMU
- **Ceiling:** Painted hardened gypsum board; 9' height
- **Windows:** Vision panel in door
- **Door:** 3' x 7' steel door, locking

Equipment: Solid-surface millwork desk with locking upper storage bins
Computer

Furnishings: 2 chairs

Mechanical: Shared HVAC zone

Electrical: Electrical outlets per code
Electrical and data outlets for computer
Compact fluorescent lighting

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements

E113 DIRECT OBSERVATION ROOM (DOS)

AREA: 100 NSF

Occupants: 1 patient

Function: Enclosed patient sleeping space for patients who need close visual supervision

Adjacency: Directly adjacent to Nursing Station (closest patient space to Station)

Environment:

- **Floor:** Stained concrete
- **Walls:** CMU
- **Ceiling:** Painted hardened gypsum board; 9' height
- **Windows:** Exterior window with integral blinds
  Vision panel in door
- **Door:** 3' x 7' steel door, locking

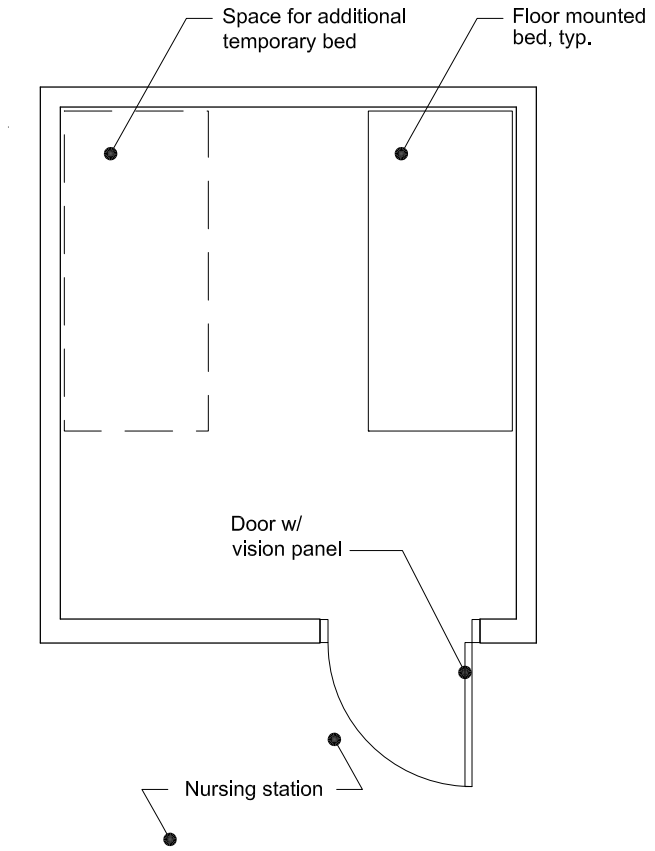
Equipment: Security camera (monitor in Nursing Station)

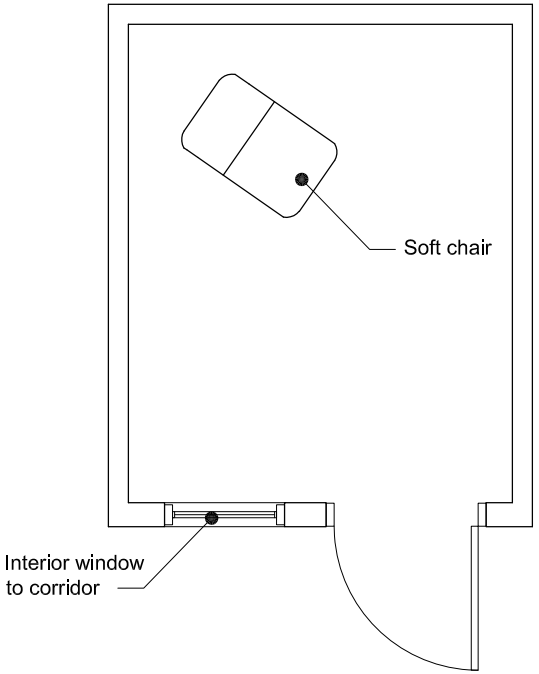
Furnishings: Single bed, bolted to floor; 36" W x 75"L, with space for a second bed when needed

Mechanical: Shared HVAC zone

Electrical: No electrical outlets
Compact fluorescent lighting; light switch in hallway

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements





E114 ONE-ON-ONE ROOM (COMFORT ROOM)

AREA: 80 NSF

Occupants: 1 patient

Function: Enclosed room with soft surfaces and soothing atmosphere, where patients can go to calm down

Adjacency: Accessed from main hallway; access point visible from Nursing Station

Environment:

- **Floor:** Carpet
- **Walls:** CMU, with reinforced gypsum board finished surface (smooth surface for wall murals)
- **Ceiling:** Painted hardened gypsum board; 9' height
- **Windows:** Sidelight adjacent to door
- **Door:** 3' x 7' steel door, locking

Equipment: Built-in sound system for music

Furnishings: Soft seating (large bean bag chair)

Mechanical: Shared HVAC zone

Electrical: Electrical outlets per code
Dimmable lighting

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements

E115 PATIENT LAUNDRY ROOM

AREA: 100 NSF

Occupants: 1 patient

Function: Enclosed room for patient to sort, wash, dry and fold his or her laundry

Adjacency: Near Nursing Station

Environment:

- **Floor:** Sealed concrete
- **Walls:** CMU
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** Vision panel in door
- **Door:** 3' x 7' steel door, locking

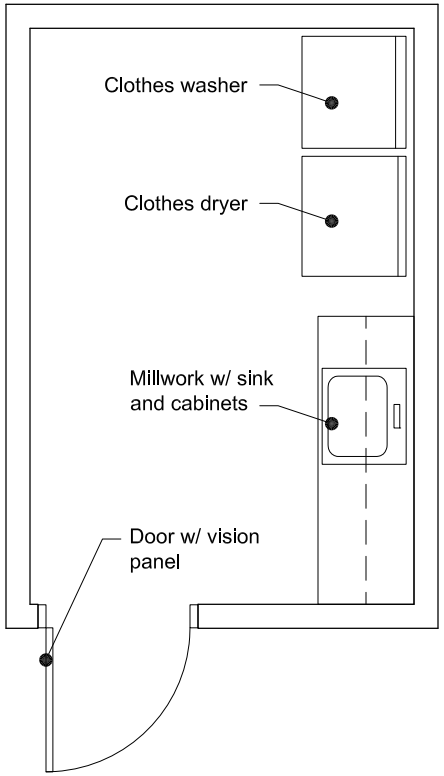
Equipment: Solid surface countertop, minimum 6'L, with large, single-compartment sink, with lockable millwork storage cabinets above & below
Large-capacity residential clothes washing machine
Large-capacity residential clothes dryer

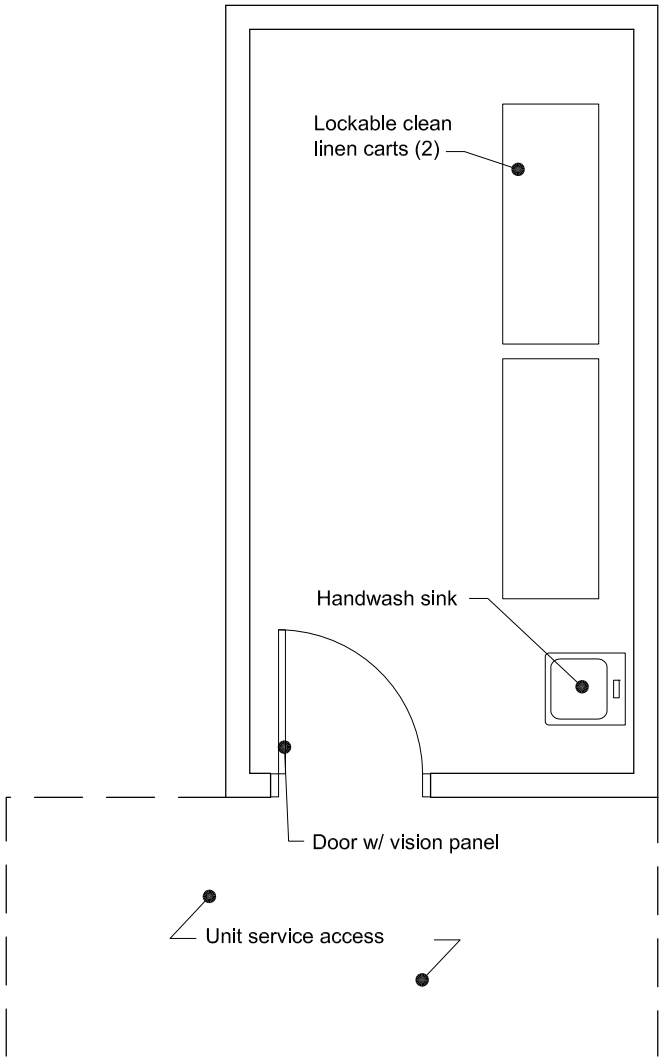
Furnishings: None

Mechanical: Dedicated HVAC zone; exhaust; dryer vent

Electrical: Duplex electrical outlets per code
Electrical outlets for washer & dryer
Compact fluorescent lighting

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements





E116 CLEAN LINEN

AREA: 125 NSF

Occupants: 1 staff member

Function: Enclosed room for receiving and holding of clean linen
Possible location for OSHA cabinet

Adjacency: Near residential unit service entrance
Outside patient area

Environment:

- **Floor:** Sealed concrete
- **Walls:** CMU
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** Vision panel in door
- **Door:** 3' x 7' steel door, locking

Equipment: Wall-hung lavatory sink

Furnishings: 2 clean laundry carts, locking, each 5'L x 2'D x 5'H
OSHA cabinet (possibly)

Mechanical: Dedicated HVAC zone

Electrical: Duplex electrical outlets per code
Compact fluorescent lighting

Notes: If within patient area, door must swing out

E117 SOILED LINEN

AREA: 110 NSF

Occupants: 1 staff member

Function: Enclosed room for holding of soiled linen for pick-up
Collection and holding area for trash and recycling

Adjacency: Near residential unit service entrance
Outside patient area

Environment:

- **Floor:** Sealed concrete
- **Walls:** CMU
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** Vision panel in door
- **Door:** 3' x 7' steel door, locking

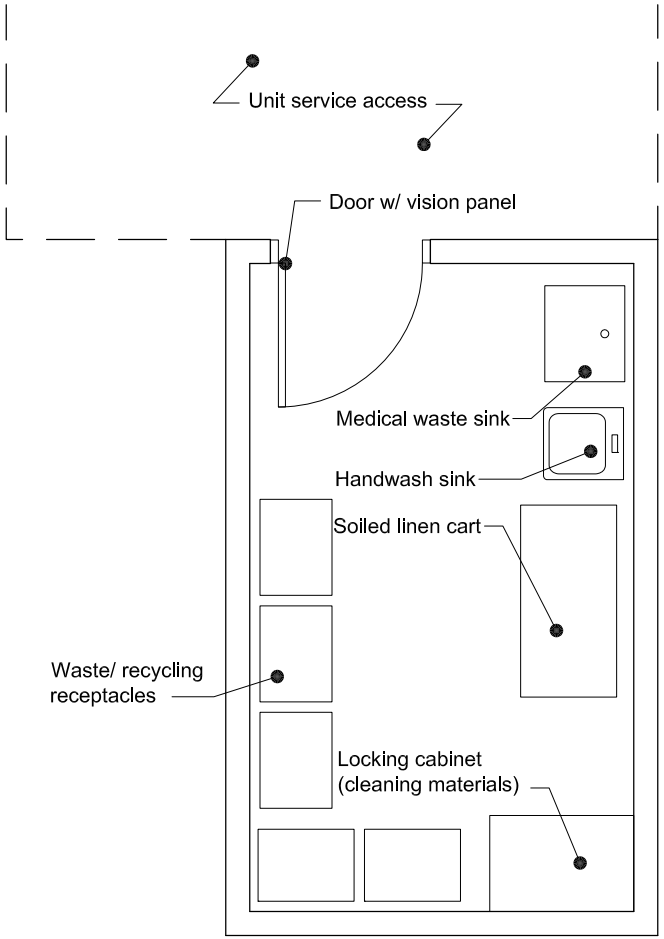
Equipment: Locking cabinet for unit staff cleaning materials
Wall-hung hand-washing sink
Floor-mount medical waste sink

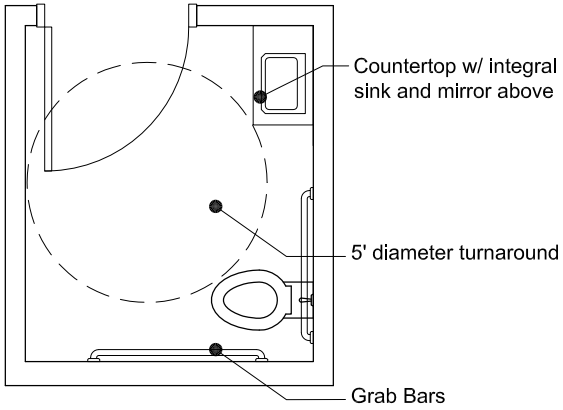
Furnishings: Soiled linen cart, 4'L x 2'D x 5'H
Trash & recycling receptacles

Mechanical: Dedicated HVAC zone

Electrical: Duplex electrical outlets per code
Compact fluorescent lighting

Notes: If within patient area, door must swing out





E118 STAFF TOILET ROOM

AREA: 42 NSF

Occupants: 1 staff member

Function: Single-user, unisex toilet rooms for use by residential unit staff

Adjacency: Private entry point near residential unit service unit
Outside patient area

Environment:

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

E119 UNIT STORAGE

AREA: 80 NSF

Occupants: None

Function: Enclosed room for storage recreational materials and supplies used in the unit (books, art / craft materials, etc.)

Adjacency: Near Nursing Station

Environment:

- **Floor:** Sealed concrete
- **Walls:** CMU
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** None
- **Door:** 3' x 7' steel door, locking

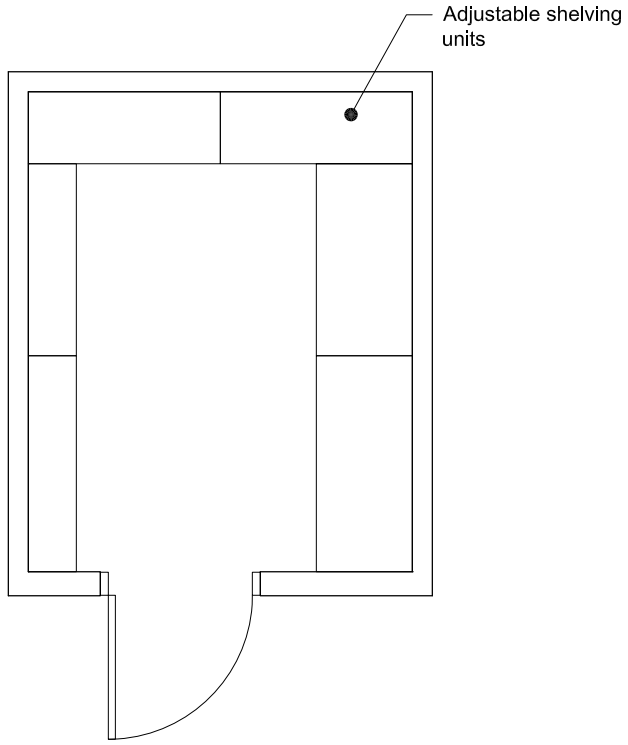
Equipment: None

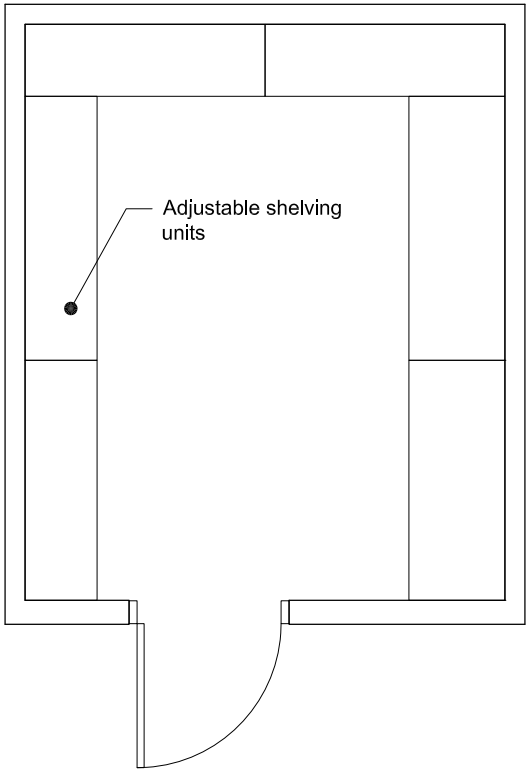
Furnishings: Adjustable steel shelving units, 12", 18" & 24" D

Mechanical: Minimal HVAC

Electrical: Duplex electrical outlets per code
Compact fluorescent lighting

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements





E120 PATIENT STORAGE

AREA: 120 NSF

Occupants: None

Function: Enclosed room for storage of patients' personal belongs that cannot be kept in their bedrooms; materials are stored in large plastic totes

Adjacency: Near Nursing Station

Environment:

- **Floor:** Sealed concrete
- **Walls:** CMU
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** None
- **Door:** 3' x 7' steel door, locking

Equipment: None

Furnishings: Adjustable steel shelving units, 18" & 24"D

Mechanical: Minimal HVAC

Electrical: Duplex electrical outlets per code
Compact fluorescent lighting

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements

E200: UNIT SHARED SPACES

Hours of Operation

24 hours/day, 7 days/week

Security

The Unit Shared Spaces contain some patient-access spaces (Nursing Station Approach Area; Kitchen) which must incorporate injury and suicide-resistant fixtures and design elements. The Unit Shared Spaces will have controlled entry and exit. The Medications Room has an increased need for security and will require cardkey-only access. The layout of the Unit Shared Spaces and Residential Wings must address a critical safety issue:

- Staff in the Nursing Station must have clear visibility of the Residential Wing gathering spaces (day room, dining room, TV room) and the doors to all patient bedrooms and toilet rooms.

Functions / Space Adjacencies

The Unit Shared Spaces group consists of single spaces which support two residential wings. The shared spaces must be located between and have direct connections with both wings.

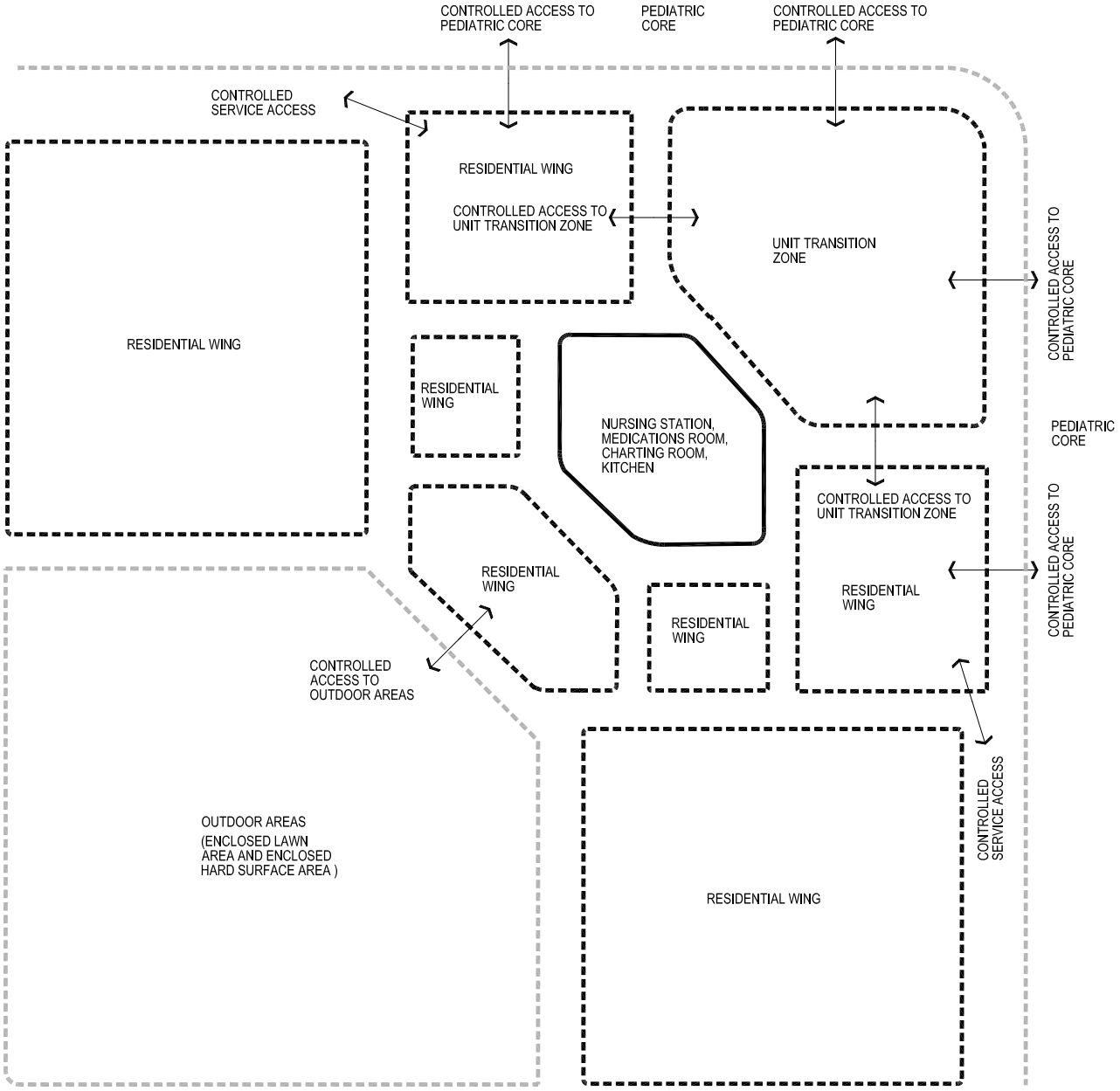
Staff Amenities

The Unit Shared Spaces should have convenient access to the building's Employee Lounge.

E200: UNIT SHARED SPACES

SPACE LIST

		Space Qty.	NSF/ Space	Total NASF	Wall/ Circ. Factor	DGSF
E200	**UNIT SHARED SPACES**			**1,260**		**1,676**
E201	Nursing Station	1	450	450	1.33	599
E202	Nursing Station Approach Area	1	200	200	1.33	266
E203	Medications Room	1	180	180	1.33	239
E204	Charting Room	1	150	150	1.33	200
E205	Kitchen	1	280	280	1.33	372



E200: UNIT SHARED SPACES
ADJACENCY DIAGRAM

E201 NURSING STATION

AREA: 450 NSF

Occupants: Up to 4 staff (2 current and 2 future)

Function: Secure, windowed enclosure for observing patients in residential unit
Paperwork, computer work; storage of staff personal items; storage of small patient personal items

Adjacency: At center point of 2 residential wings; adjacent to and with view into each Day Room & TV Room; clear view of all patient bedroom and toilet room doors
Adjacent to Direct Observation Room (DOS) and Medications Room; surrounded by Nursing Station Approach Area

Environment:

- **Floor:** Carpet
- **Walls:** CMU; security glass
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** Internal windows of security glass, with small openings at desktop for communicating with patients
- **Door:** 3' x 7' steel doors, locking; one to each residential wing and one to Medications Room

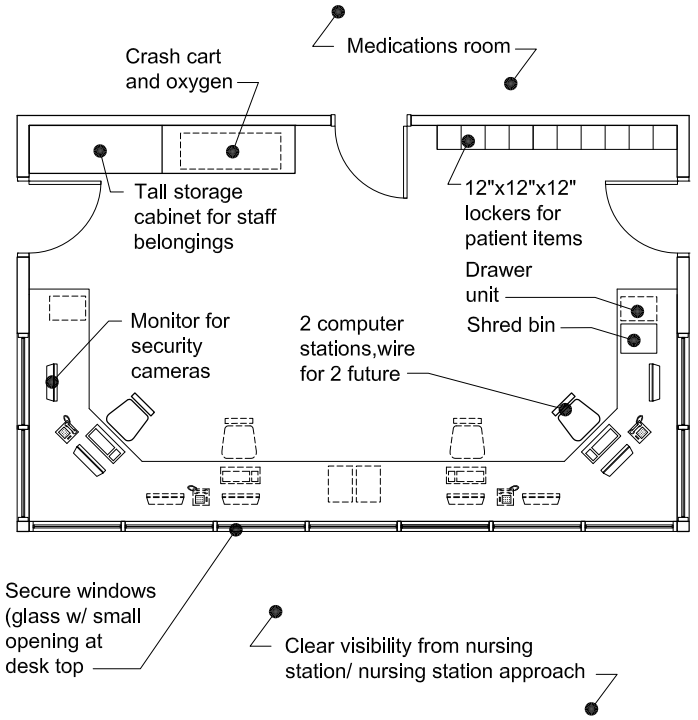
Equipment: Solid surface countertop with 4 staff computer workstations (2 future) & storage drawer units
Millwork or pre-manufactured lockers, 12" x 12" x 12", for small patient belongings; one for each patient
Millwork cabinets, lockable, for staff belongings
Computer, telephone & security camera monitor (1 set of each at each workstation)
Shred bin

Furnishings: 4 desk chairs (2 for future use)

Mechanical: Dedicated HVAC zone

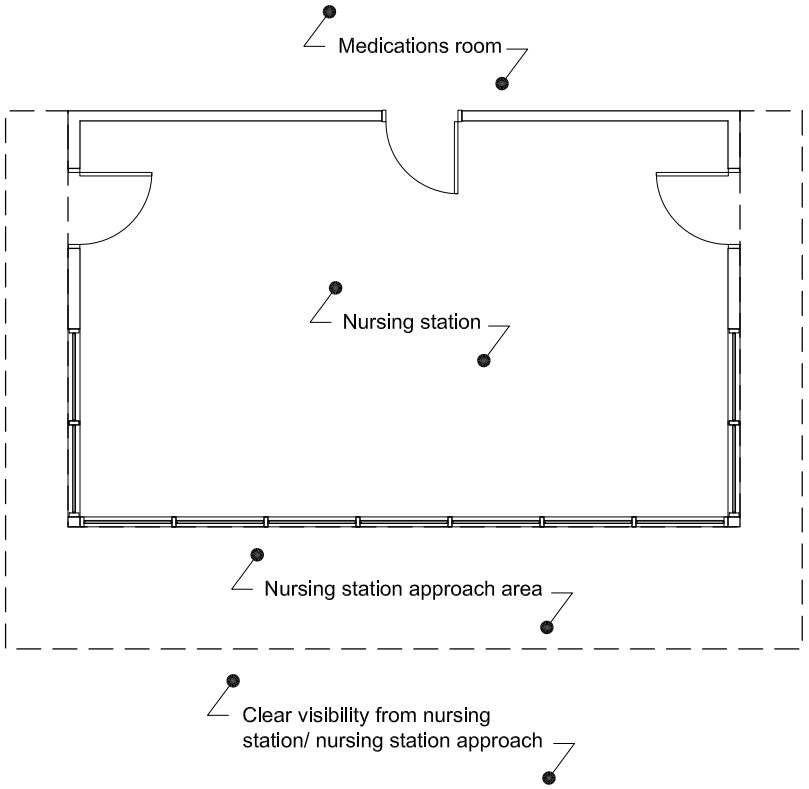
Electrical: Duplex electrical outlets per code
Electrical outlets above countertop
Electrical and data outlets for computer workstations
Compact fluorescent lighting

Notes: Crash cart & oxygen tank will be stored in this room



E202 NURSING STATION APPROACH AREA

AREA: 200 NSF



Occupants: Patients / staff

Function: Circulation space immediately outside Nursing Station; buffer between observation station and patient areas

Adjacency: Immediately outside / surrounding Nursing Station

Environment:

- **Floor:** Carpet
- **Walls:** CMU
- **Ceiling:** Lay-in acoustic tile; 1-1/2 to 2 story height
- **Windows:** None
- **Door:** None

Equipment: None

Furnishings: None

Mechanical: Shared HVAC zone

Electrical: Duplex electrical outlets per code
Compact fluorescent lighting

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements

E203 MEDICATIONS ROOM

AREA: 180 NSF

Occupants: 1 occupant (nurse – temporary)

Function: Enclosed, secure room for storing, preparing and dispensing medication to patients
Secure storage for controlled substances

Adjacency: Adjacent to / accessed from Nursing Station
Direct adjacency to each residential wing

Environment:

Floor: Moisture-impervious flooring (stained concrete, sheet vinyl, VCT, etc.)
Walls: CMU
Ceiling: Painted gypsum board; 9' height
Windows: 2 secure glazed medications pass-through windows above countertop, for distributing medications from this room to each residential wing
Door: 3' x 7' steel door, locking, car-key access only

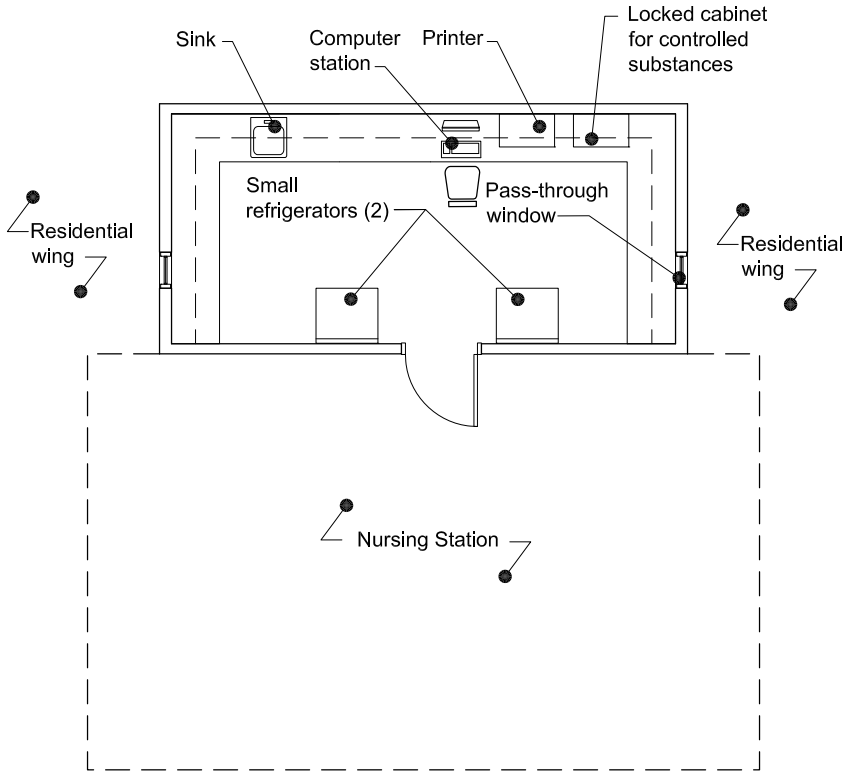
Equipment: Millwork countertop / cabinet with single-compartment sink; storage above and below; computer workstation; locking cabinet for storage of controlled substances
2 small refrigerators, one for each wing
Computer, printer & telephone

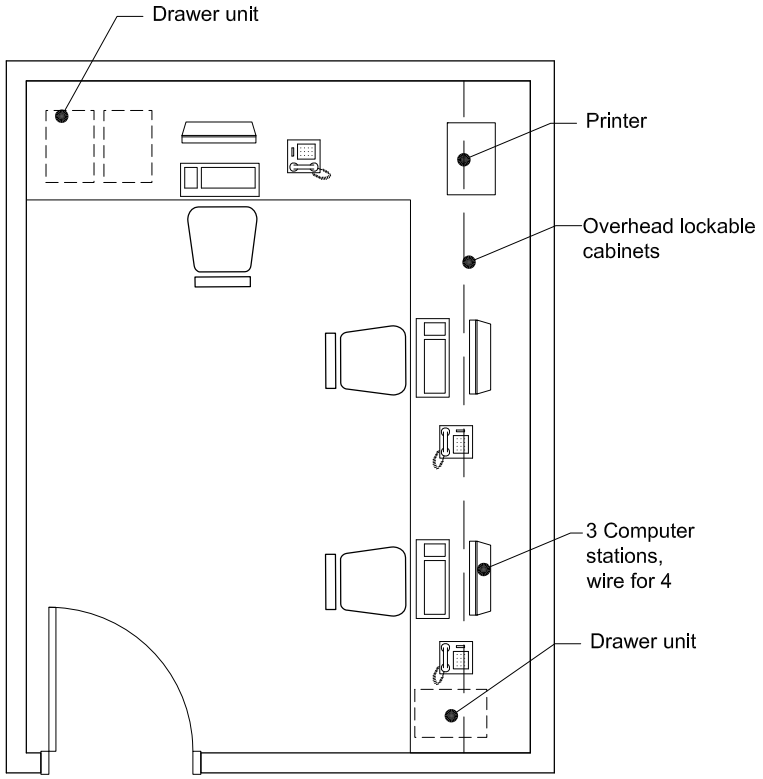
Furnishings: Desk chair

Mechanical: Dedicated HVAC zone

Electrical: Duplex electrical outlets per code, including outlets above countertop
Electrical and voice / data outlets as needed for computer, telephone, refrigerators, other equipment
Fluorescent parabolic lighting

Notes: Visually private space





E204 CHARTING ROOM

AREA: 150 NSF

Occupants: Up to 3 occupants

Function: Enclosed, private, distraction-free room for doing paper work related to patient care and residential unit management; primarily used by 1 person at a time

Adjacency: Adjacent to Nursing Station
Visual privacy – no visual connection to adjacent spaces

Environment:

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

Equipment: Millwork countertop with 3 computer workstations; locking drawer units at each station; lockable storage cabinets above
3 computers, 3 telephones, 1 shared printer & 1 shredder

Furnishings: 3 desk chairs

Mechanical: Dedicated HVAC zone

Electrical: Duplex electrical outlets per code, including outlets above countertop
Electrical and voice / data outlets for computers, telephones, printer and shredder; provide 4th set of electrical and voice / data outlets for future staff
Fluorescent parabolic lighting

Notes:

E205 KITCHEN

AREA: 280 NSF

Occupants: Staff and patients

Function:
Serving food delivered from the Rampton Cafeteria kitchen in warming carts
Preparing simple meals such as pancake breakfasts, lunches (non-school days), etc.
Meals and serving by staff and patients

Adjacency: Adjoins both residential wing dining rooms

Environment:
- **Floor:** Hard surface floor (sheet vinyl, stained concrete, etc.)
- **Walls:** CMU
- **Ceiling:** Hardened gypsum board, painted; 9' height
- **Windows:** None
- **Door:** 3' x 7' steel doors, locking

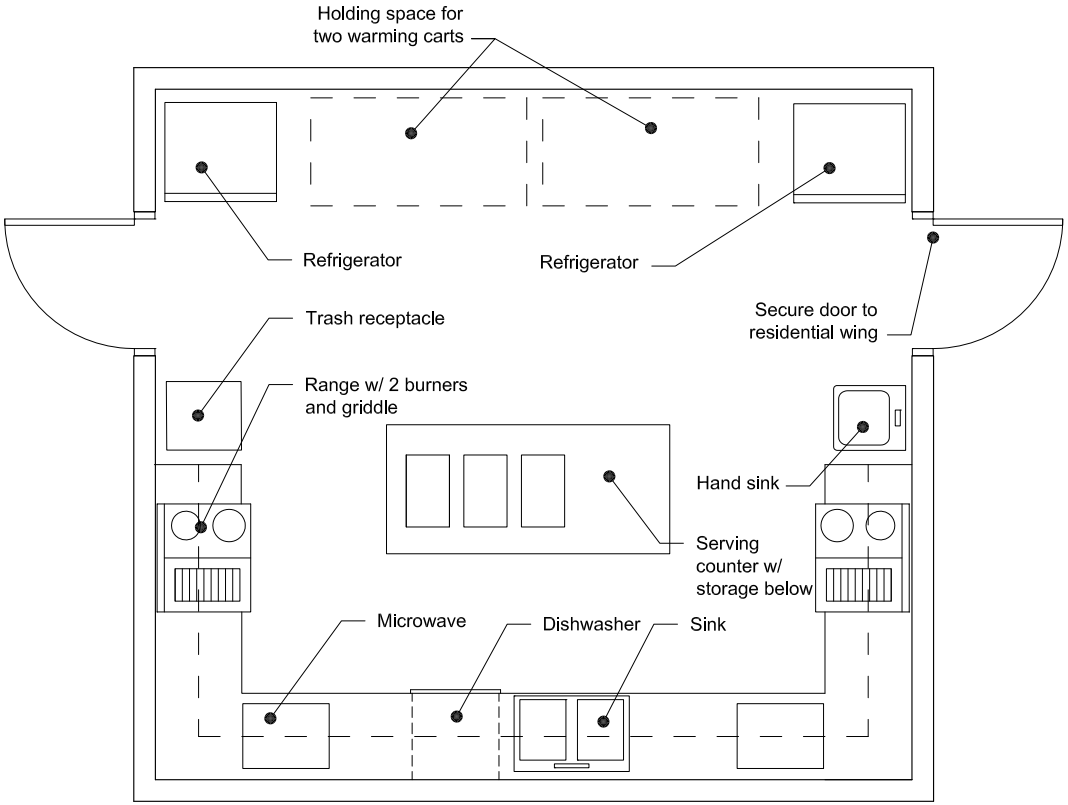
Equipment:
Solid surface countertops with lockable storage cabinets/drawers below & storage cabinets above
Millwork serving island with 3 built-in warming/serving trays (2 hot, 1 cold; each 20"l x 12"W). Dish storage below.
Double compartment kitchen sink
Wall-hung hand-washing lavatory
2 refrigerators with ice-maker, 2 microwave ovens, 2 electric range/ovens with built-in griddle
Residential-size, under-counter commercial dishwasher
Holding area for 2 food warming carts, each 60"L x 29-1/2"W

Furnishings: Waste and recycling receptacles

Mechanical: Dedicated HVAC zone; exhaust

Electrical:
Duplex electrical outlets per code
Electrical outlets above countertop
Electrical outlets as required for refrigerators, microwaves, range/ovens, food warming trays, dishwasher
Compact fluorescent lighting

Notes:
Countertops at 34" high to meet ADA
Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements



E300: UNIT TRANSITION ZONE

Hours of Operation

All days, 8 AM – 9 PM

Security

The Unit Transition Zone contains two patient-access spaces (Group Room; Visiting Room) which must incorporate injury and suicide-resistant fixtures and design elements. These two spaces will each have two access points: one to the Residential Wing and one to the Transition Zone, both with controlled access in and out.

The Unit Transition Zone will have controlled entry and exit.

Functions / Space Adjacencies

The Unit Transition Zone consists primarily of administrative and medical staff offices which support both wings of a residential unit. The Transition Zone also includes a Group Room and a Visiting Room which will be used by family members when attending group therapy or visiting patients in the Pediatric Facility.

The Transition Zone provides the physical connection between the Pediatric Facility Central Core (public access lobby; Pediatric Facility administrative offices; Activity Spaces; School) and the Residential Unit / Residential Wings. Important adjacencies include:

- The Secretary and the Central Core Lobby/Waiting (B100). The Secretary will be one of the contact points for visitors in the Lobby / Waiting using the call button / telephone system for access to the Pediatric Facility. The Secretary should have easy access to the Lobby / Waiting, to be able to assist those needing access.
- The Clinical Director (B200) and the Transition Zone Secretary spaces, for access to shared office equipment (copier, fax machine) which will be available within or near the Secretary offices.
- The Psychologist and the school library Testing Rooms.
- The Recreation Therapist and the Activity Spaces (B300).
- The Group Room and the Visiting Room must be directly adjacent to the Residential Wing, but must also be easily accessed by visitors and family members coming from the Central Core Lobby/Waiting.

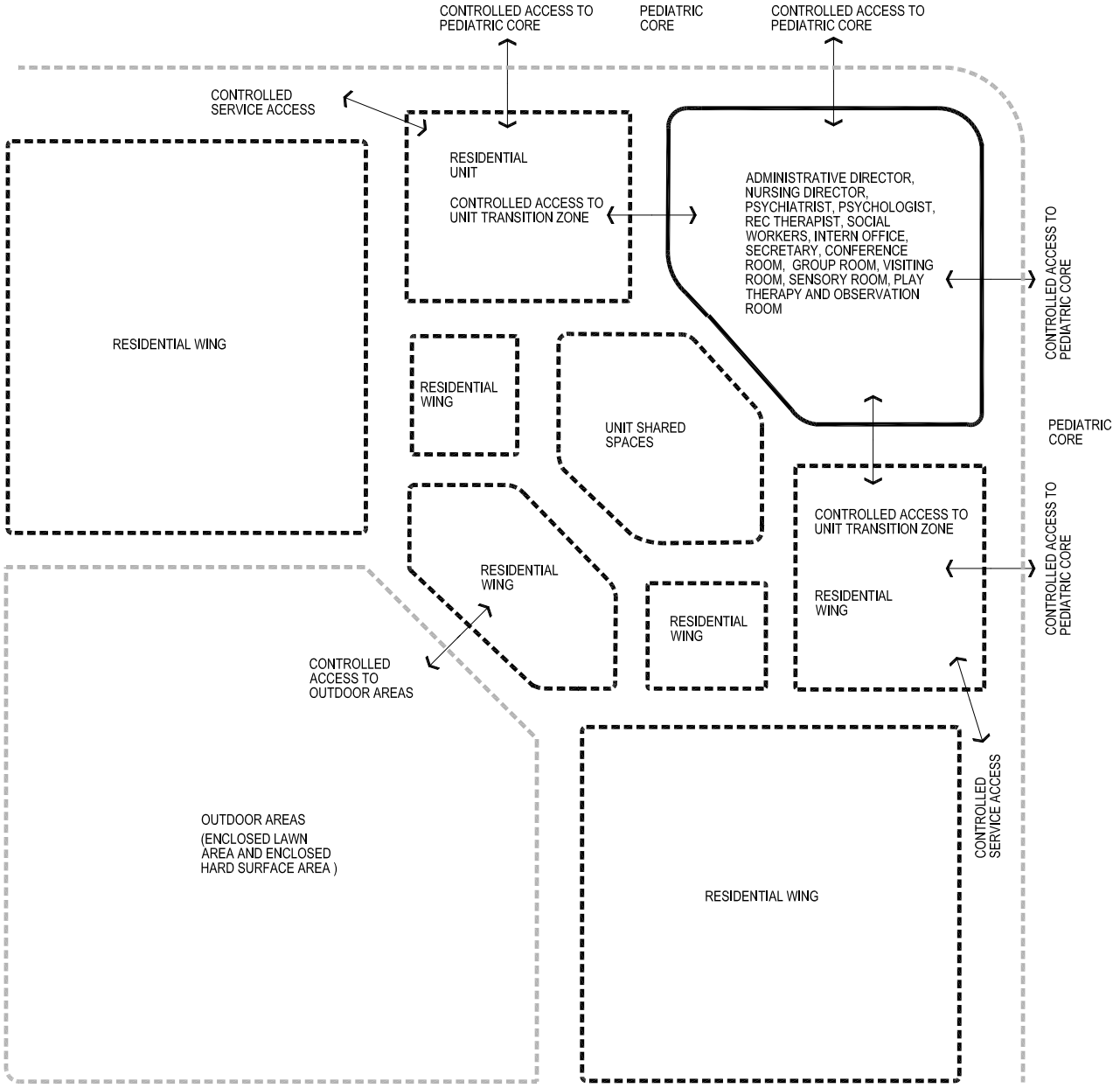
Staff Amenities

The Transition Zone should have convenient access to the building's Employee Lounge, staff toilet rooms and staff parking area.

E300: UNIT TRANSITION ZONE

SPACE LIST

		Space Qty.	NSF/ Space	Total NASF	Wall/ Circ. Factor	DGSF
E300	**UNIT TRANSITION ZONE**			**2,780**		**3,709**
E301	Unit Administrative Director	1	150	150	1.33	200
E302	Unit Nursing Director	1	120	120	1.33	160
E303	Psychiatrist	1	150	150	1.33	200
E304	Psychologist	1	150	150	1.33	200
E305	Recreation Therapist	1	80	80	1.40	112
E306	Social Worker	3	120	360	1.33	479
E307	Intern Office	1	120	120	1.33	160
E308	Secretary	1	100	100	1.33	133
E309	Conference	1	300	300	1.33	399
E310	Group Room	2	240	480	1.33	638
E311	Visiting Room	2	200	400	1.33	532
E312	Sensory Room	1	110	110	1.33	146
E313	Play Therapy Room	1	180	180	1.33	239
E314	Observation Room	1	80	80	1.40	112



E300: UNIT TRANSITION ZONE
ADJACENCY DIAGRAM

E301 UNIT ADMINISTRATIVE DIRECTOR

AREA: 150 NSF

Occupants: 1 occupant, with up to 3 visitors

Function: Private office for Unit Administrative Director, who is responsible for the management of residential unit; paperwork, computer work, telephone calls, small meetings

Adjacency: Adjacent to Secretary, Unit Nursing Director & Psychiatrist
Near Conference room
Unit administrative offices should be outside, but easily accessible to, residential unit

Environment:

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

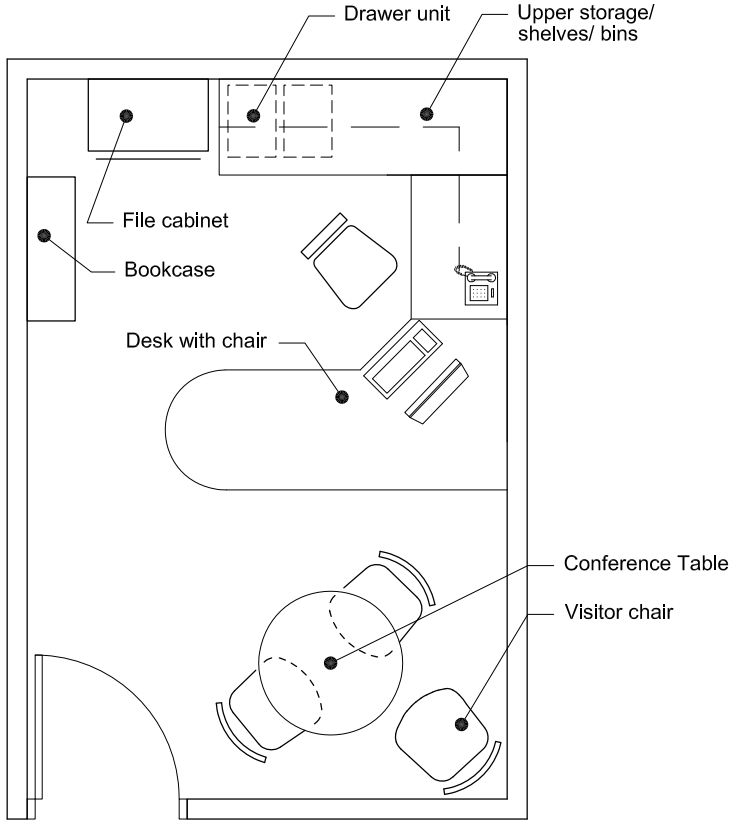
Equipment: Computer; telephone

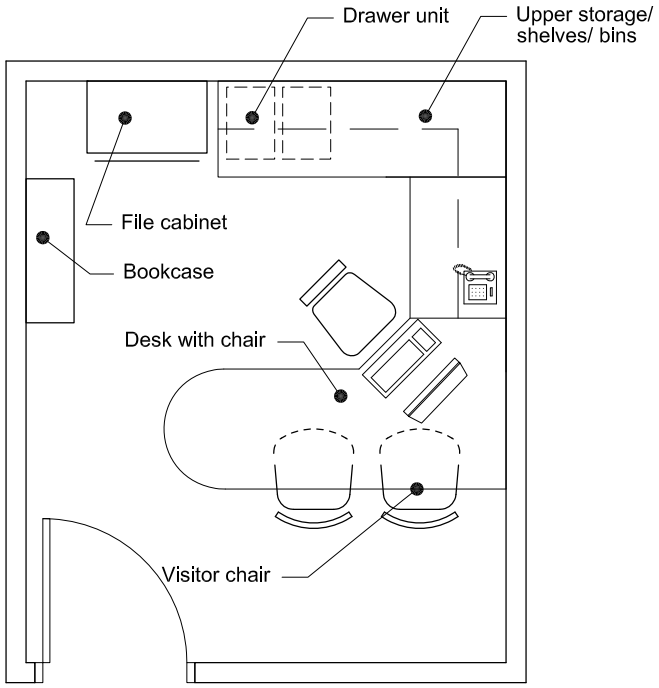
Furnishings: Systems furniture U-shaped desk with shelves / bins above and drawer units below
Desk chair
36" diameter table
3 visitor chairs
File cabinet / bookcase

Mechanical: Shared HVAC zone

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

Notes:





E302 UNIT NURSING DIRECTOR

AREA: 120 NSF

Occupants: 1 occupant, with up to 2 visitors

Function: Private office for Unit Nursing Director, who is responsible for management of all direct care staff on the unit and monitors all patients' medical and psychiatric needs; paperwork, computer work, telephone calls, small meetings

Adjacency:
Adjacent to Secretary, Psychiatrist & Unit Administrative Director
Near Conference room
Unit administrative offices should be outside, but easily accessible to, residential unit

Environment:

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

E303 PSYCHIATRIST

AREA: 150 NSF

Occupants: 1 occupant, with up to 3 visitors

Function: Private office for Psychiatrist, who is responsible for the clinical management of all patients in the residential unit; paperwork, computer work, telephone calls, small meetings

Adjacency: Adjacent to Secretary, Unit Nursing Director & Unit Administrative Director
Near Conference room
Unit administrative offices should be outside, but easily accessible to, residential unit

Environment:

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

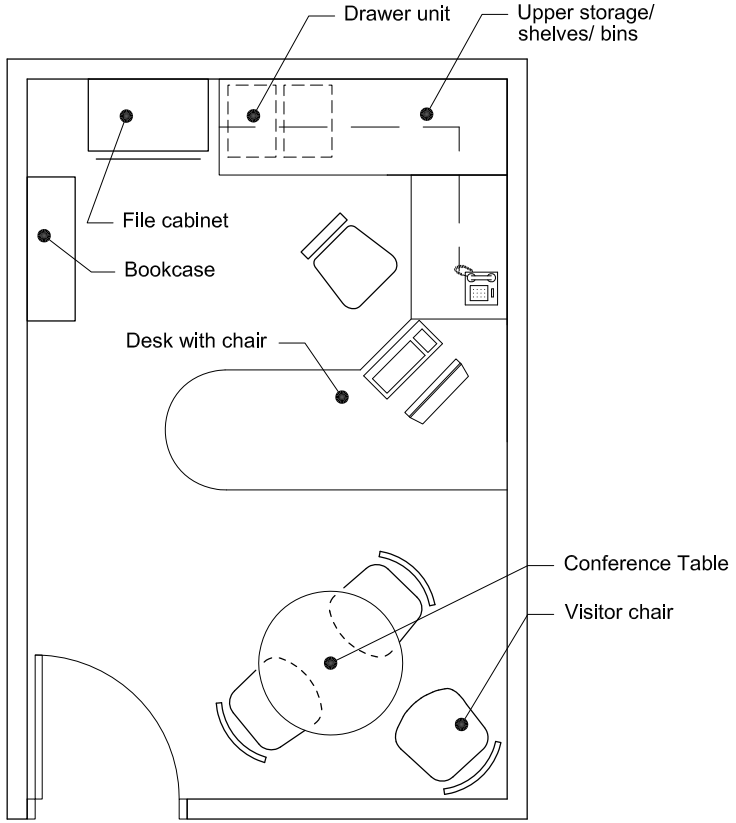
Equipment: Computer; telephone

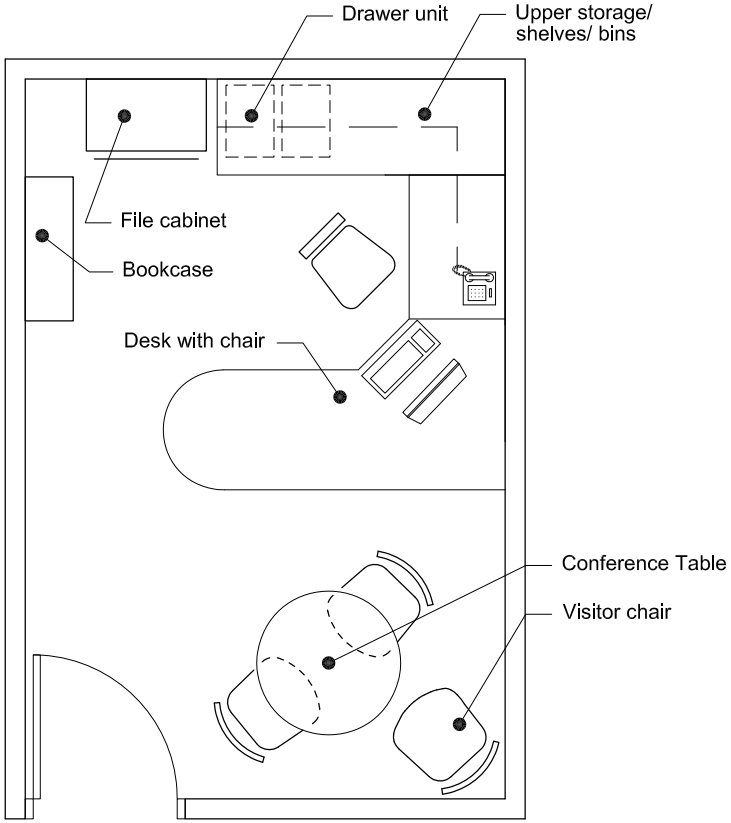
Furnishings: Systems furniture U-shaped desk with shelves / bins above and drawer units below
Desk chair
36" diameter table
3 visitor chairs
File cabinet / bookcase

Mechanical: Shared HVAC zone

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

Notes:





E304 PSYCHOLOGIST

AREA: 150 NSF

Occupants: 1 occupant, with up to 3 visitors

Function: Private office for Psychologist, who works with a particular residential unit
Office paperwork, small meetings, testing, telephone calls, computer work

Adjacency: Near other residential unit transition zone offices
Easy access to school library Testing Rooms

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
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:

E305 RECREATION THERAPIST

AREA: 80 NSF

Occupants: 1 occupant, with up to 1 visitor

Function: Private office for Recreation Therapist

Adjacency: With residential unit transition zone administrative and medical offices
Easy access to Activity Spaces and residential units, where recreational therapy takes place

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

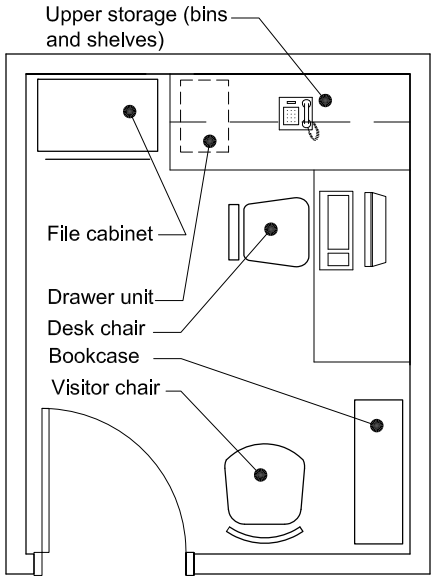
Equipment: **C**omputer; telephone

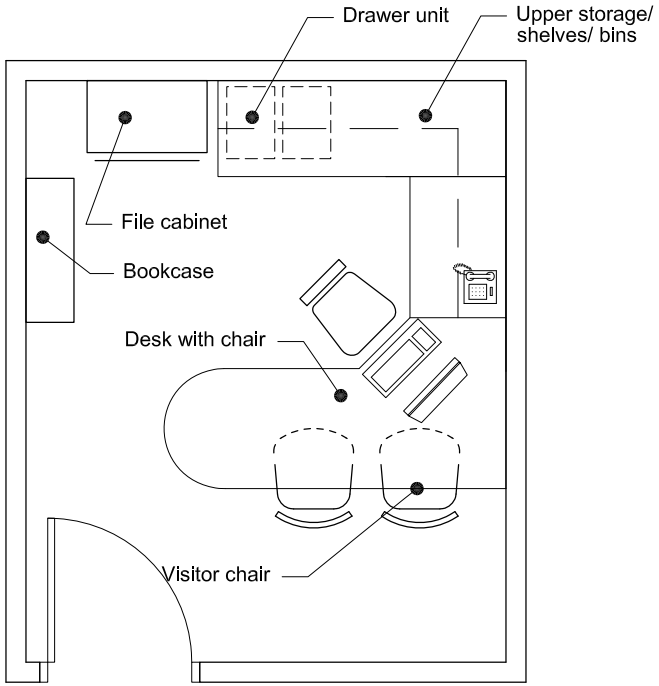
Furnishings: Systems furniture L-shaped workstation; shelves / bins above and drawer units below
Desk chair
Visitor chair
File cabinet / bookcase

Mechanical: Shared HVAC zone

Electrical: Duplex electrical outlets per code
Electrical & voice / data outlets for computer & telephone
Fluorescent parabolic lighting

Notes:





E306 SOCIAL WORKER

AREA: 120 NSF

Occupants: 1 occupant, with up to 2 visitors

Function: Private office for Social Worker; each of 2 Social Workers is responsible for half the patients in the residential unit; paperwork, computer work, telephone calls, small meetings

Adjacency: Adjacent to other administrative offices in Transition Zone
Near Conference and Group Rooms

Environment:

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

E307 INTERN OFFICE

AREA: 120 NSF

Occupants: 2 occupants, with up to 2 visitors

Function: Shared enclosed office for medical, social work or administrative interns

Adjacency: With administrative offices

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

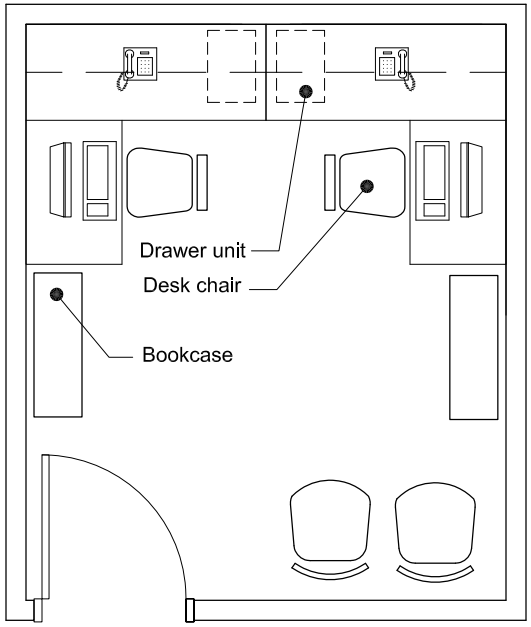
Equipment: 2 computers; 2 telephones
1 shared printer

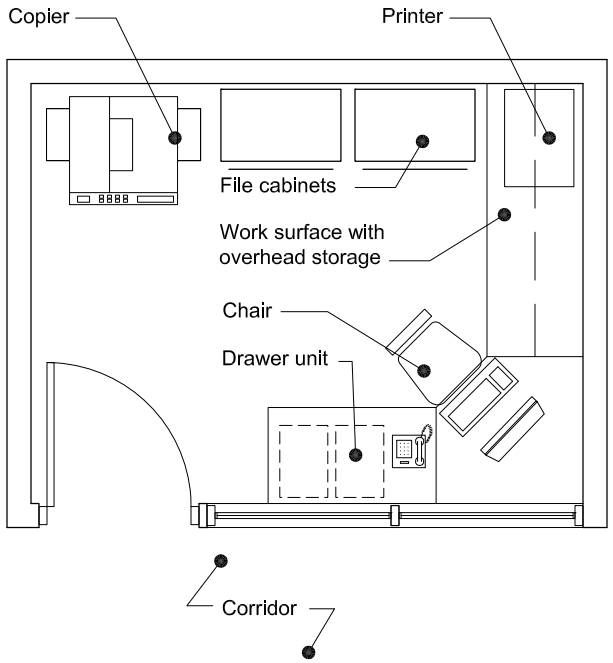
Furnishings: 2 systems furniture L-shaped workstations; shelves / bins above and drawer units below
2 desk chairs
2 visitor chairs
2 bookcases

Mechanical: Shared HVAC zone

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

Notes:





E308 SECRETARY

AREA: 100 NSF

Occupants: 1 occupant

Function:
Private office for Secretary, who provides office support for the residential unit administrative staff
Reception and control point for access to the administrative offices and residential unit

Adjacency:
With administrative offices, in particular Unit Administrative and Nursing Directors
Near Pediatric Facility Lobby / Waiting – at least one of three Res Unit Secretaries with sightline to Lobby / Waiting if building layout allows

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Exterior windows with window coverings
Interior window to corridor (at least one of three Res Unit Secretaries with window to building main entry lobby if building layout allows)
Door: 3' x 7' wood door, locking

Equipment: Computer; telephone; printer; copier

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

Mechanical: Shared HVAC zone

Electrical:
Duplex electrical outlets per code
Electrical & voice / data outlets for computer, telephone, printer, copier
Fluorescent parabolic lighting

Notes: 3 Residential Unit Secretaries should be near each other to share fax machine and office supply storage

E309 CONFERENCE

AREA: 300 NSF

Occupants: Up to 16 people

Function: Residential unit coordination meetings

Adjacency:
With transition zone administrative offices
Near Unit Administrative and Nursing Directors
Easily accessible by Pediatric Facility visitors

Environment:

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

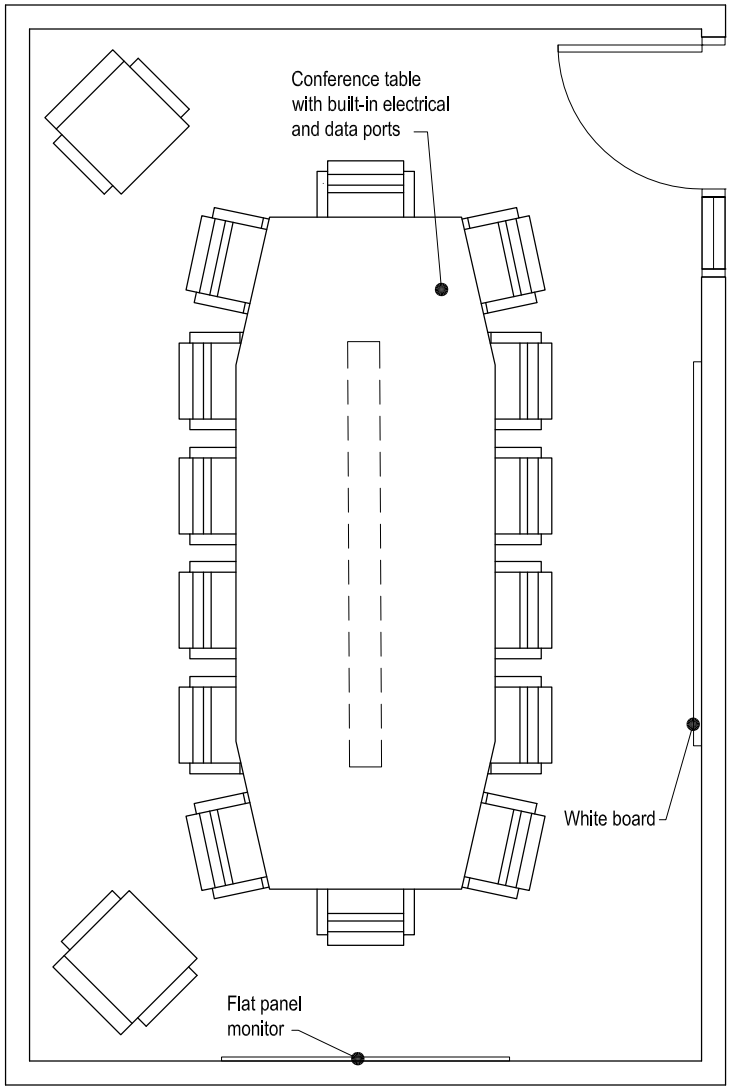
Equipment:
Flat-panel monitor, wall-mounted
Equipment as needed for videoconferencing and telemedicine capability

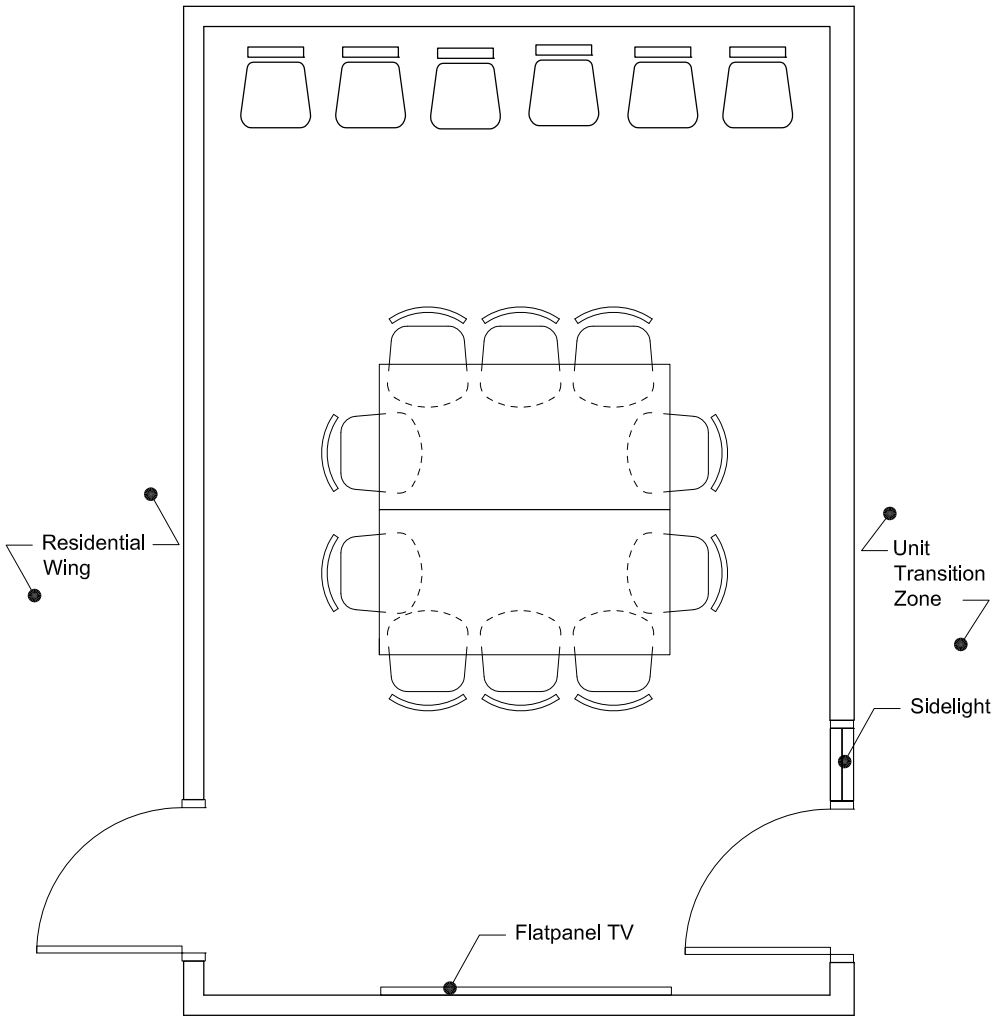
Furnishings:
Table, 12'L x 54"W, with 14 chairs, with integral electrical & data ports
2 additional chairs at room perimeter
White board, 8'L x 4'H

Mechanical: Dedicated HVAC zone

Electrical:
Electrical outlets per code
Electrical and data outlets in floor, as source for table electrical and data; coordinate with table pedestal locations
Electrical and data infrastructure as needed for videoconferencing and telemedicine capability
Multiple preset light configurations to support AV use

Notes:





E310 GROUP ROOM

AREA: 240 NSF

Occupants: Up to 16 people (patients, staff, family members)

Function: Enclosed room for group and family therapy

Adjacency: 2 access points: one from residential wing and the other from the residential unit transition zone
Easily accessible by Social Workers

Environment:

Floor: Carpet
Walls: CMU
Ceiling: Painted gypsum board; 9' height
Windows: Exterior windows / natural light desired
Entry door vision panel or sidelight (Transition Zone door only)
Door: (2) 3' x 7' steel doors, locking (door to residential wing must swing out into corridor)

Equipment: Wall-mounted, flat-panel TV / monitor

Furnishings: 2 folding tables, 16 chairs

Mechanical: Shared HVAC zone

Electrical: Duplex electrical outlets per code
Electrical, voice / data and cable TV outlets for flat-panel monitor
Compact fluorescent lighting

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements
Controlled entry and exit from both residential wing and transition zone

E311 VISITING ROOM

AREA: 200 NSF

Occupants: Patient and family members

Function: Enclosed room for patient-family visits; conversation, table games, eating

Adjacency: 2 access points: one from residential wing and the other from the residential unit transition zone

Environment:

- **Floor:** Carpet
- **Walls:** CMU
- **Ceiling:** Painted gypsum board; 9' height
- **Windows:** Exterior windows / natural light desired
  Entry door vision panel or sidelight (Transition Zone door only)
- **Door:** (2) 3' x 7' steel doors, locking (door to residential wing must swing out into corridor)

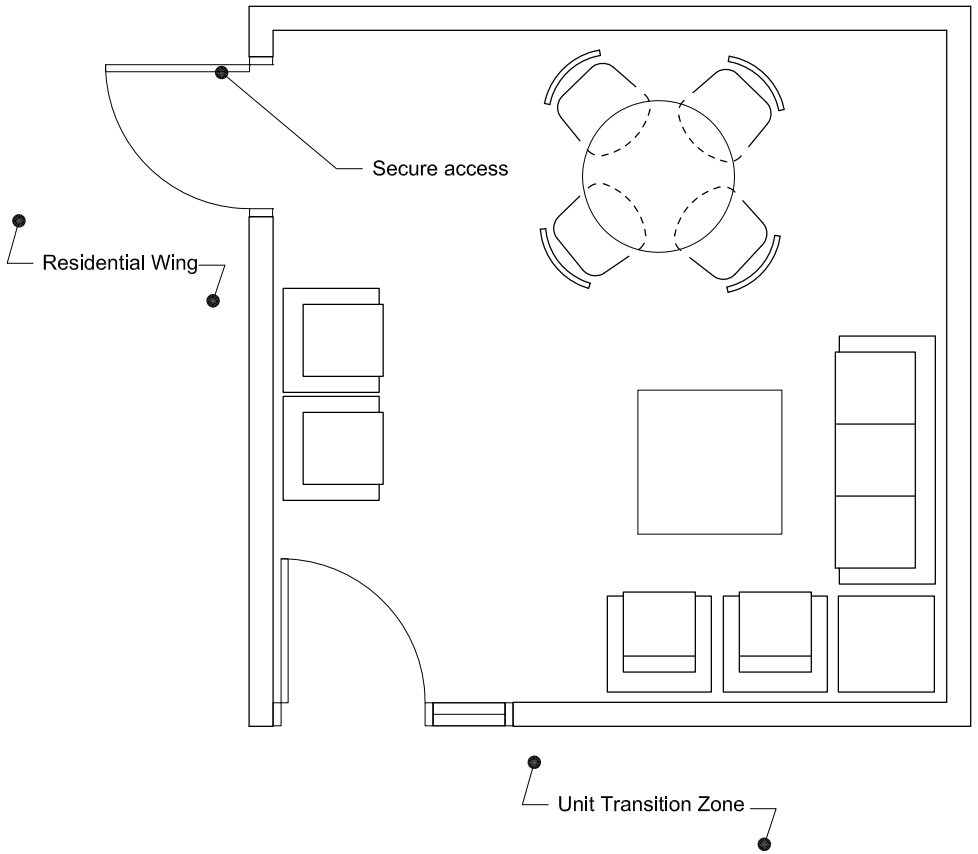
Equipment: Security camera (not connected to a monitor; creates tapes that are stored for 72 hours)

Furnishings: Lounge seating for 6-8 people, with occasional tables
42" diameter table with 4 chairs

Mechanical: Dedicated HVAC zone

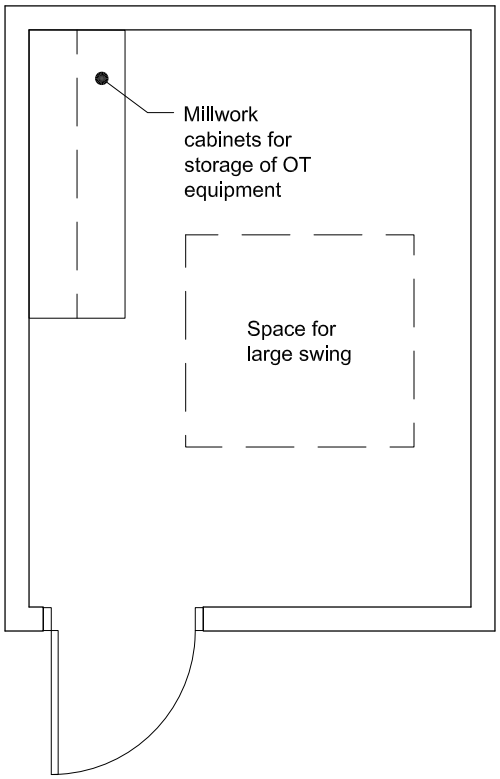
Electrical: Duplex electrical outlets per code
Lighting, dimmable

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements
Controlled entry and exit from both residential wing and transitional zone



E312 SENSORY ROOM

AREA: 110 NSF



Occupants: 1 patient & 1 staff

Function: Room used for occupational therapy functions within children's residential unit
Storage of occupational therapy materials

Adjacency: Easily accessible from residential wings

Environment:

- **Floor:** Carpet
- **Walls:** CMU
- **Ceiling:** Painted gypsum board; 9' height
- **Windows:** Vision panel in door
- **Door:** 3' x 7' steel door, locking

Equipment: Large swing, attached to upper structure anchors that are visible below finished ceiling
Millwork storage cabinets, 6'W x 2'D x 7'H, for occupational therapy supplies and materials

Furnishings: None

Mechanical: Shared HVAC zone

Electrical: Duplex electrical outlets per code
Lighting, dimmable

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements

E313 PLAY THERAPY ROOM

AREA: 180 NSF

Occupants: 1 patient and 2 staff

Function: Enclosed room for child patients to play and play-act while under observation from adjoining room

Adjacency: Separated from adjacent Observation Room by one-way glass
Easily accessible from both residential wing and unit transition zone

Environment:

- **Floor:** Hard-surface flooring (stained concrete, VCT, etc.) with area rug
- **Walls:** CMU
- **Ceiling:** Painted gypsum board; 9' height
- **Windows:** Exterior windows / natural light desired, with window coverings
  Internal window connecting to Observation Room, one-way glass
- **Door:** 3' x 7' steel door, locking

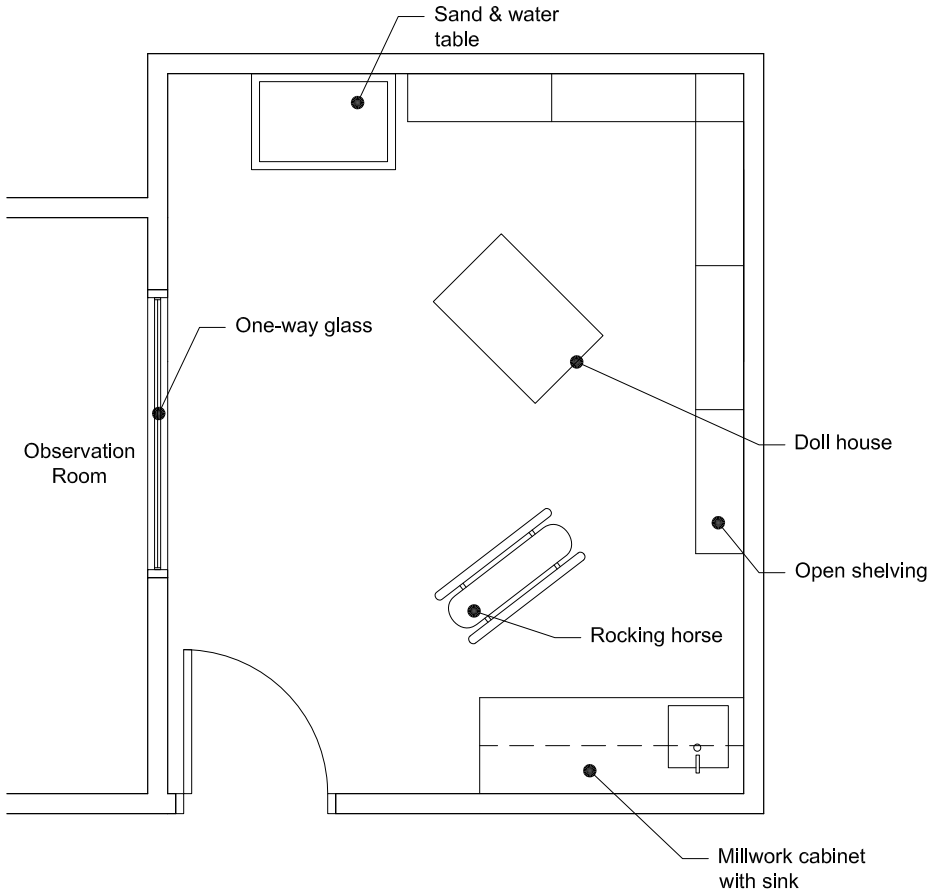
Equipment: Millwork cabinet, 6'L x 2'D, with sink, with storage cabinets & drawers below
Audio/video recording equipment; audio equipment connection to Observation Room

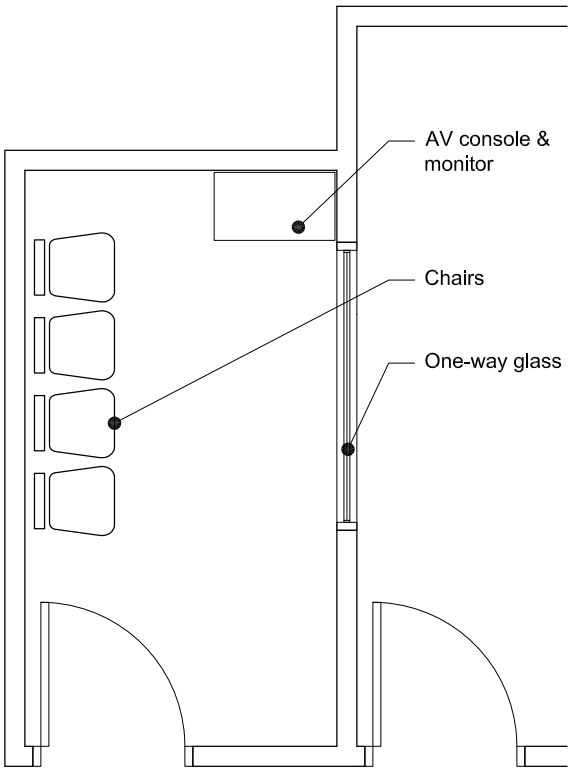
Furnishings: Open shelving for toy display and storage (12'L x 12"D x full height)
Toys and play-acting materials: doll house, rocking horse, sand & water table, bean bag chairs, etc.

Mechanical: Dedicated HVAC zone

Electrical: Electrical outlets per code
Electrical & voice / data as required for AV recording equipment
Compact fluorescent lighting

Notes: Patient-access space: equipment, fixtures and utilities to meet patient safety and security requirements





E314 OBSERVATION ROOM

AREA: 80 NSF

Occupants: Up to 4 people (staff, parents, others)

Function: Enclosed room from which to observe child patients playing and play-acting in adjoining room, through one-way glass

Adjacency: Separated from adjacent Observation Room by one-way glass
Easily accessible from both residential unit and unit transition zone

Environment:

Floor: Carpet
Walls: CMU or painted gypsum board
Ceiling: Painted gypsum board; 9' height
Windows: Internal window connecting to Play Therapy Room, one-way glass
Door: 3' x 7' steel door, locking

Equipment: Audio feed from Play Therapy Room; location for Play Therapy audio/ video recording console and monitor

Furnishings: 4 chairs

Mechanical: Dedicated HVAC zone

Electrical: Electrical outlets per code
Electrical & voice / data for AV equipment
Compact fluorescent lighting

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**

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:

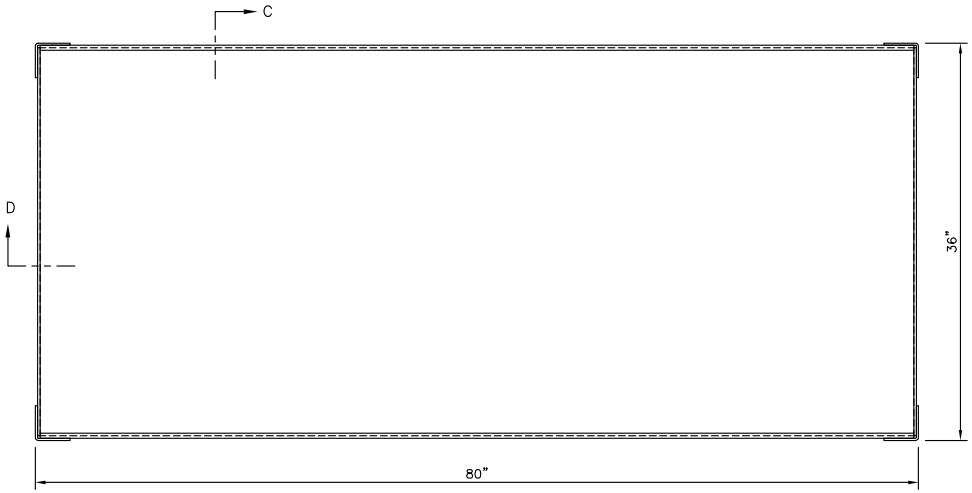
- Stainless steel toilets/fixtures should only be used in the seclusion rooms.
- No integral seat on ceramic toilets.
- Consider flush valve covers for toilet piping.
- Shower curtains must be break away and must allow visibility about 18-24 inches above the floor.
- Grab bars must be suicide resistant.
- 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*)

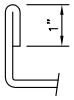
Breakaway Clothes Hanging.
http://www.securingprisons.com/shopexd.asp?id=7350&maincat=609&subcat=610&dispcat=137

Collapsible Towel Hook.
http://www.securingprisons.com/shopexd.asp?id=2473&maincat=609&subcat=610&dispcat=53

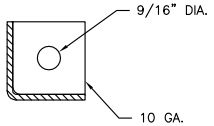


TOP VIEW

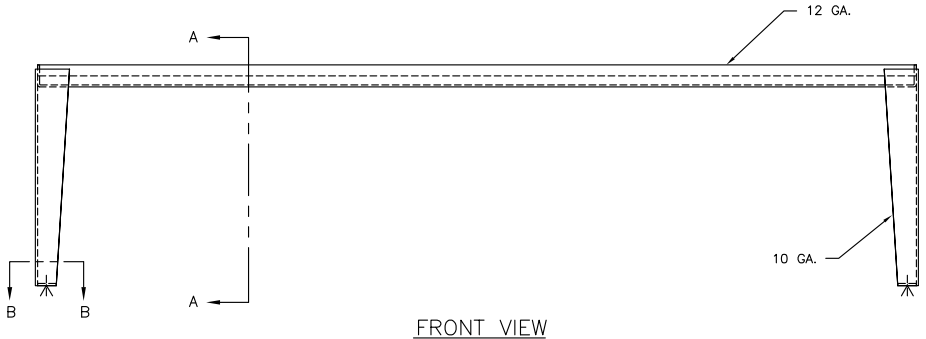
SECTION D



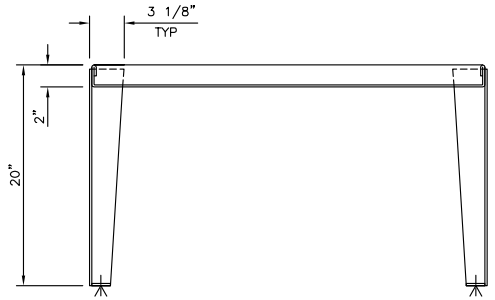
SECTION C



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 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

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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
Job No. 0128-076-11
Geotechnical Study
July 22, 2011

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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

State of Utah - DFCM
Job No. 0128-076-11
Geotechnical Study
July 22, 2011

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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

State of Utah - DFCM
Job No. 0128-076-11
Geotechnical Study
July 22, 2011

GSH
Gordon Spilker Huber
Geotechnical Consultants, Inc.

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.

State of Utah - DFCM
Job No. 0128-076-11
Geotechnical Study
July 22, 2011

GSH
Gordon Spilker Huber
Geotechnical Consultants, Inc.

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

State of Utah - DFCM
Job No. 0128-076-11
Geotechnical Study
July 22, 2011

GSH
Gordon Spilker Huber
Geotechnical Consultants, Inc.

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.

State of Utah - DFCM
Job No. 0128-076-11
Geotechnical Study
July 22, 2011

GSH
Gordon Spilker Huber
Geotechnical Consultants, Inc.

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.

State of Utah - DFCM
Job No. 0128-076-11
Geotechnical Study
July 22, 2011

GSH
Gordon Spilker Huber
Geotechnical Consultants, Inc.

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.

State of Utah - DFCM
Job No. 0128-076-11
Geotechnical Study
July 22, 2011

GSH
Gordon Spilker Huber
Geotechnical Consultants, Inc.

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:

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State of Utah No.146417
Senior Geotechnical Engineer

PRE/WKG/jlb

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

4 Idriss, I. M., and Boulanger, R. W. (2008), Soil liquefaction during earthquakes: Monograph MNO-12, Earthquake Engineering Research Institute, Oakland, CA, 261 pp.

Page 16

STATE OF UTAH - DFCM
JOB NO. 0128-076-11S

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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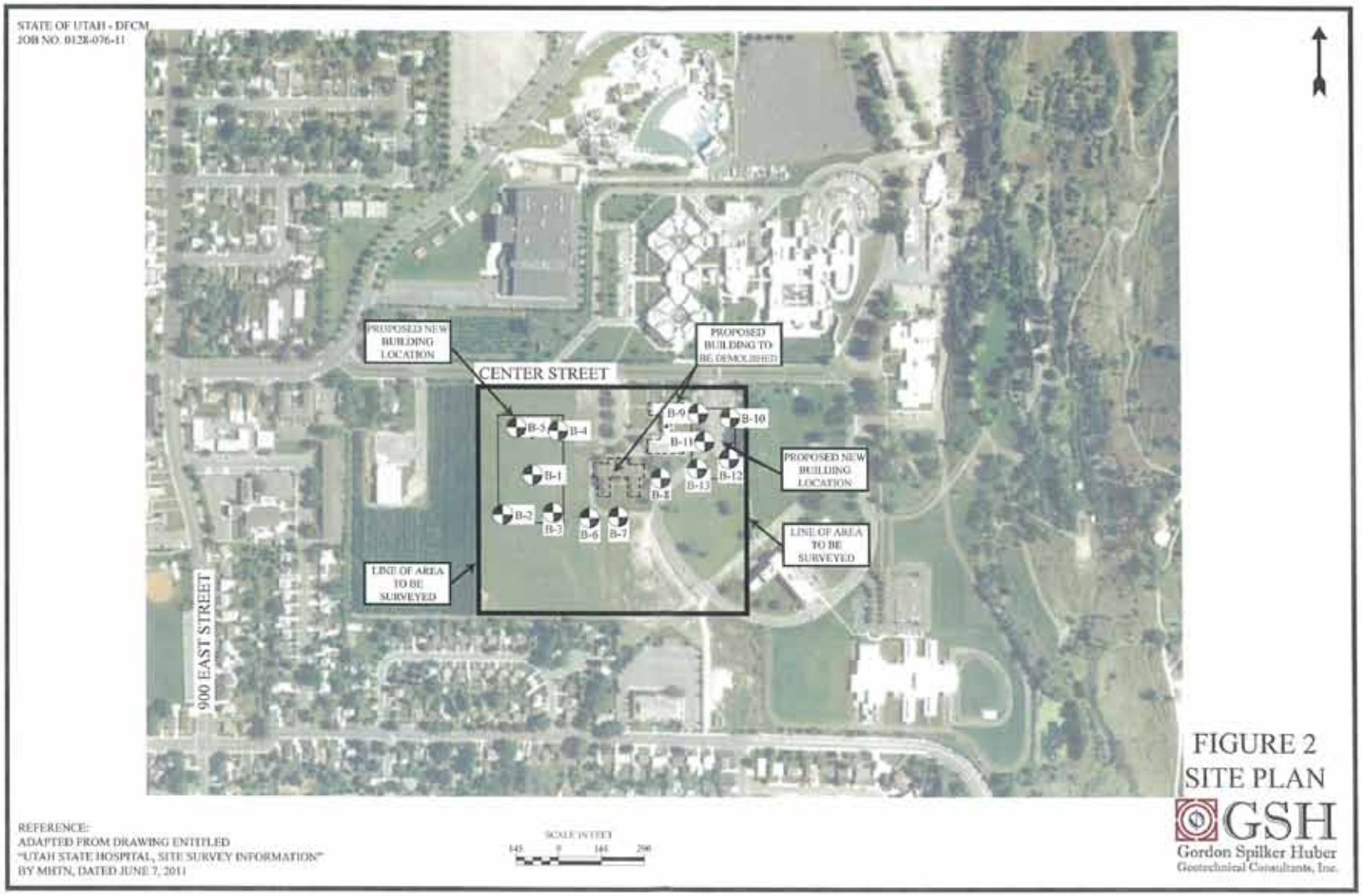

FIGURE 2
SITE PLAN

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BOREHOLE B-1

Page: 1 of 2

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

Gordon Spilker Huber Geotechnical Consultants, Inc.
Salt Lake City, Utah 84123

BOREHOLE B-1

Page: 2 of 2

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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Salt Lake City, Utah 84123

BOREHOLE B-2

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: 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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Salt Lake City, Utah 84123

BOREHOLE B-3

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: 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

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: 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								very moist
				7							medium stiff
			15								saturated
		Stopped drilling at 13.0'. Stopped sampling at 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 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)		15		17.4		114			loose to 3"-4" moist 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

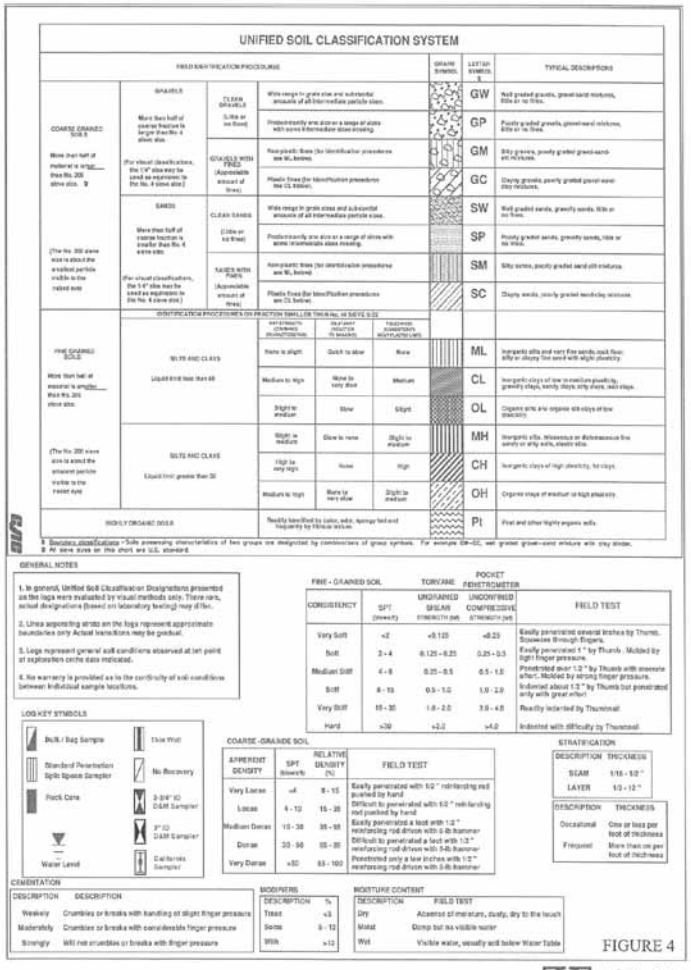
Project Name: Prop Med Svcs & Ped School Buildings
Location: S End of UT State Hospital Campus, Provo, Utah
Drilling Method: 3-3/4" ID Hollow-Stem Auger
Elevation: ---
Remarks:

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	TYPICAL DESCRIPTION
COARSE GRAINED SOILS: More than half of material is larger than No. 200 sieve size.	GRAVELS: More than half of coarse fraction is larger than 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.
	(For visual classifications, the 1/4" size may be used as equivalent to the No. 4 sieve size.)		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.	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.
	(For visual classifications, the 1/4" size may be used as equivalent to the No. 4 sieve size.)	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 can, 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.

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

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

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 Pediatric Facility, most of the photos were taken in the Boys Youth residential unit in the existing Rampton II building. The Play Therapy photos were taken in the Children's residential unit in the existing Medical Services Building.

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B301 Rec Therapy Room

B301 Rec Therapy Room

C, D, E 101 Bedroom - 1

C, D, E, 101 Bedroom - 2

C. D. E 101 Bedroom - 3

C, D, E 101 Bedroom - 4

C, D, E 101 Bedroom - 5

C, D, E 101 Bedroom - 6

C, D, E 101 Bedroom - 7

C, D, E 101 Bedroom - 8

C, D, E 101 Bedroom - 9

C, D, E 102 Patient Toilet Room - 1

C, D, E 102 Patient Toilet Room - 2

C, D, E 102 Patient Toilet Room - 3

C, D, E 102 Patient Toilet Room - 4

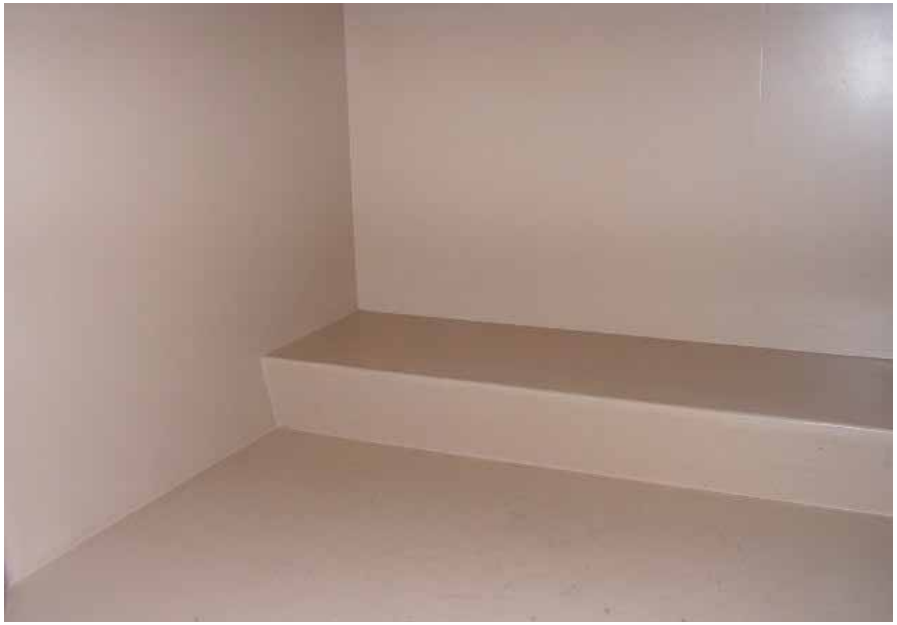
C, D, E 102 Patient Toilet Room - 5

C, D, E 102 Patient Toilet Room - 6

C, D, E 105 Day Room - 1

C, D, E 105 Day Room - 2

C, D, E 105 Day Room - 3



C, D, E 105 Seclusion Room - 1

C, D, E 105 Seclusion Room - 2

C, D, E 105 Seclusion Room - 3

C, D, E 111 Seclusion Toilet Room - 1

C, D, E 111 Seclusion Toilet Room - 2

C, D, E 111 Seclusion Toilet Room - 3

C, D, E 111 Seclusion Toilet Room - 4

C, D, E 114 One-On-One Room - 1

C, D, E 114 One-On-One Room - 2

C, D, E 115 Patient Laundry

C, D, E 117 Soiled LInen - 1

C, D, E 117 Soiled Linen - 2

C, D, E 119 Unit Storage

C, D, E 201 Nursing Station - 1

C, D, E 201 Nursing Station - 2

C, D, E 201 Nursing Station - 3

C, D, E 203 Meds Room - 1

C, D, E 203 Meds Room - 2

C, D, E 201 Nursing Station - 4

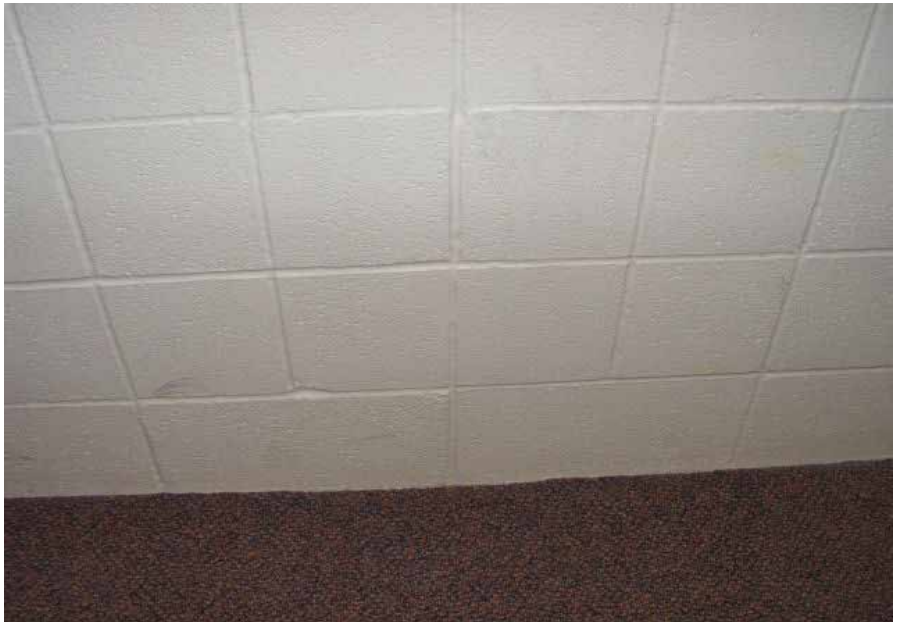
C, D, E311 Visiting Room - 1

C, D, E311 Visiting Room - 2

E 313 Play Therapy Room - 1

E 313 Play Therapy Room - 2

Ped Facility Secure Lighting Fixture



Ped Facility Wall-Base-Floor

Res Unit Door Closer

Res Unit Outdoor Courtyard - 1

Res Unit Outdoor Courtyard - 2

Res Unit Outdoor Courtyard - 3

Res Unit Outdoor Courtyard - 4

Res Unit Service Entry