

PROGRAM NARRATIVE



Western MHI New Replacement Facility Phase Two
Bolivar, Hardeman County, Tennessee
SBC Project No. 344/015-01-2023

INTRODUCTION

Western Mental Health Institute (WMHI) is a psychiatric hospital catering to 24 counties in West Tennessee. It also provides administrative and logistical support for the Memphis Mental Health Institute. Established in Bolivar, Tennessee in 1889, the hospital encompasses 4 long-term care units, 2 short-term care units, forensic services, and therapeutic treatment units, amounting to a total of 150 beds.

Owner Information

State of Tennessee Real Estate Asset Management (STREAM)

312 Rosa L. Parks Blvd, 24th Floor, Nashville, TN 37243

Department of Mental Health & Substance Abuse Services

Development Manager: Barret Hampton

Agency Representative: Jay Oziminski

Project Location

Bolivar, Hardeman County, Tennessee

The Phase II Project is a two-story addition due west and tangent to Phase I / 2010 construction.

Project Description

The objective is to build a Phase Two addition to the existing replacement facility, aiming to centralize operations on the campus. The original Phase I had budget shortfalls so the initial program was reduced and pushed for a future phase. This addition will include essential amenities and staff support such as a dietary, a gym, support services, relocated fiscal services, laboratory services, relocated maintenance/grounds facilities, and additional inpatient rooms. Site and infrastructure improvements will include additional parking, utility work, and a new dock area.

Designer Scope

The task entails constructing a roughly 65,000 gross square foot addition to the replacement facility completed in 2010, consolidating some operations currently dispersed across older campus structures, and providing new programs for the Phase 1 facility.

The project currently includes.

- Dietary – approximately 7,000 sf for kitchen functions which provides meal service to patients, staff, and guests. This is currently being provided by a temporary onsite facility.
- Gymnasium - approximately 4,100 sf for a half-court gymnasium to support physical fitness activities for the patients.
- Administration Services - approximately 5,500 sf for additional administration space.
- Support Services – approximately 13,100 sf for support services which includes space for materials management, laundry services, housekeeping, and environment of care support.
- Fiscal Services - approximately 1,700 sf to relocate the fiscal department services from the existing Phase 1 location.
- Laboratory Services - approximately 1,700 sf for additional lab space
- Inpatient Rooms - approximately 16,000 sf for an additional 25 inpatient beds.
- Maintenance and Grounds Keeping - approximately 2,600 sf to relocate maintenance and groundskeeping currently located on the property in separate locations.

This project will also encompass all requisite site improvements pertaining to utilities, parking, and vehicular and pedestrian circulation. New courtyards and other outdoor spaces will also be included to support both patients and staff. Minor improvements will be made to the existing Phase 1 facility including washing the exterior façade, improving 1st floor glazing protection, and minor interior reorganization.

Budget/Schedule

The current Bid Target is \$36,700,000. The Program Verification Phase kicked off on February 6, 2024. We will continue to have meetings during this phase to further develop the program. Once the CM/GC selection process is completed, we will start collaborative efforts towards completion of the Schematic Design Phase by the end of June 2024. Upon Schematic Design approval by the owner/agency, we will target completion of the Design Development Phase by March of 2025 which should establish a GMP directly after. The project is tentatively scheduled to begin construction in June 2025 with a projected completion by June 2027.

DESIGN TEAM

Prime Consultant

ARCHITECTURE / BUILDING ENGINEERING / CIVIL ENGINEERING / LANDSCAPE ARCHITECTURE:

Allen & Hoshall, Inc.
1661 International Drive, Suite 100
Memphis, TN 38120
901.820.0820

Subconsultants

HEALTHCARE / BEHAVIORAL HEALTH / ARCHITECTURAL SUPPORT:

brg3s architects
396 N Cleveland Street
Memphis, TN 38104
(901) 260-9600

SECURITY/ IT INFRASTRUCTURE:

Faith Group
3101 S Hanley Road
St. Louis, MO 63143
(314) 991-2228

KITCHEN/DINING & LAUNDRY FACILITY:

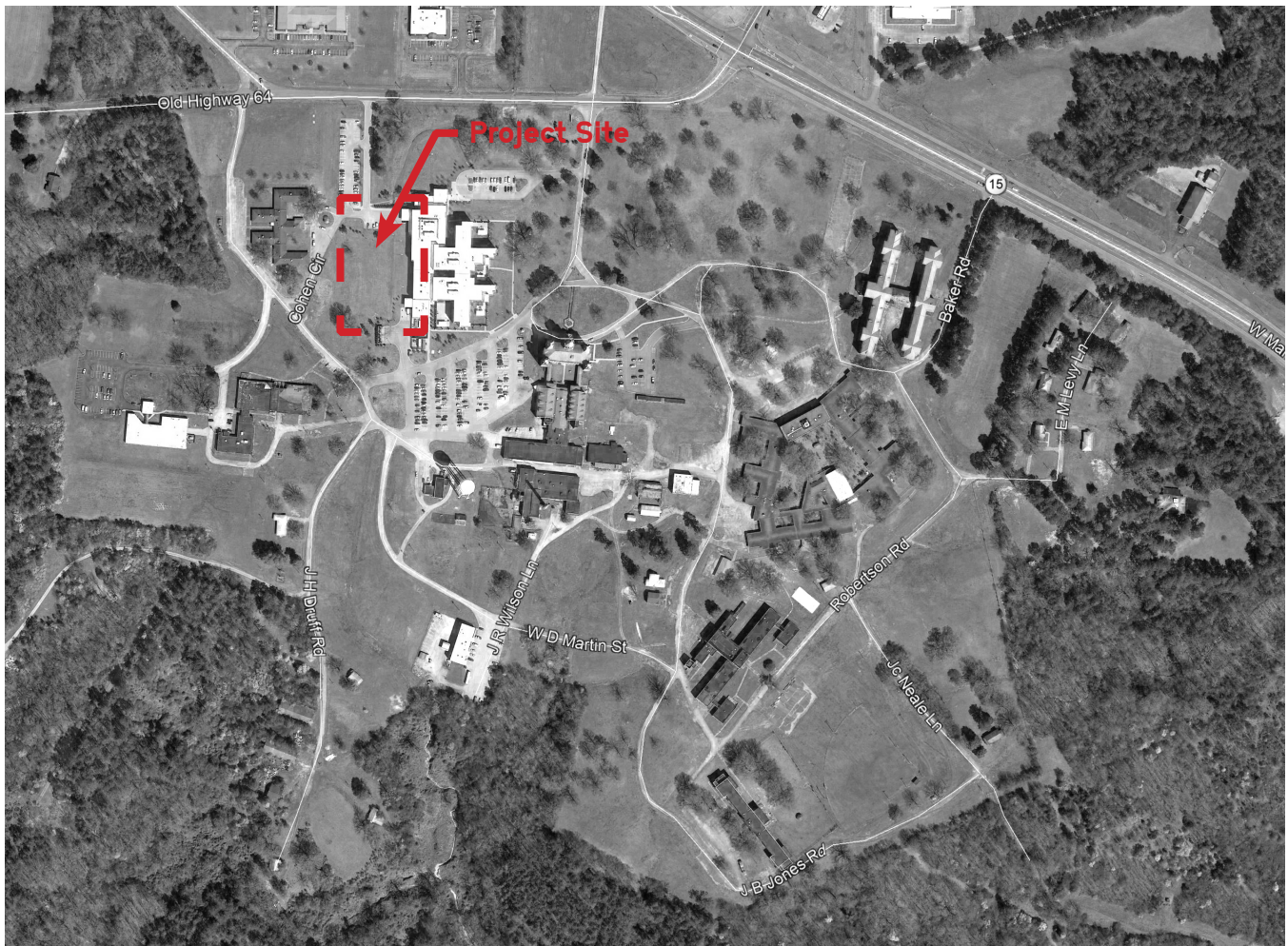
Fisher & Associates
1685 Galloway Avenue
Memphis, TN 38112
(901) 278-3116

SITE EVALUATION

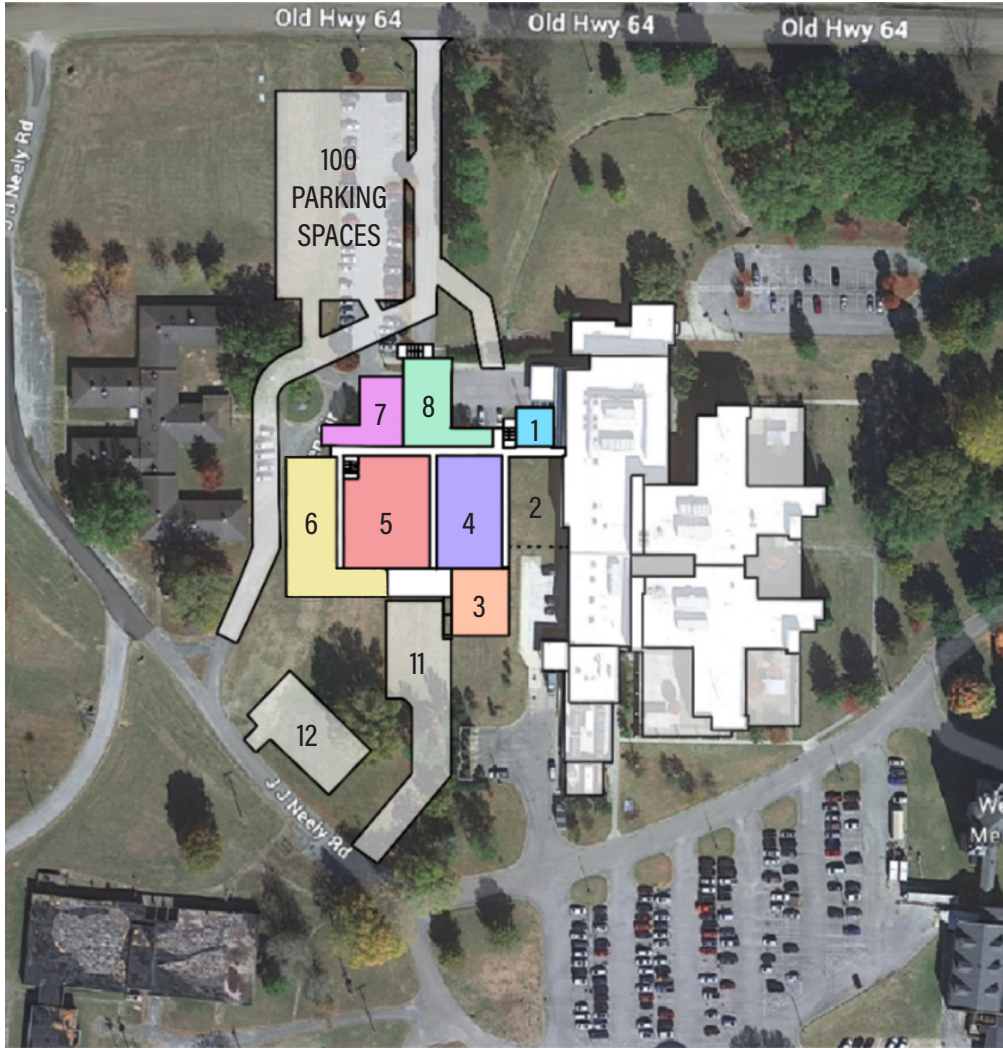
Western Mental Health Institute is situated on approximately 650 acres of land in Hardeman County, nestled within the city confines of Bolivar, Tennessee. Positioned 65 miles directly east of Memphis and 30 miles south/southwest of Jackson, the institute enjoys a strategically convenient location.

Site Narrative

The project area consists of a portion of the campus bounded by Old Highway 64 to the North, J. J. Neely Road to the West, and J P Douglas Drive to the South. The project area's land cover consists of turf grass, landscaping, sidewalks, approximately 2 large structures/buildings, asphalt roadways, and asphalt parking areas. Access to the site is facilitated via Highway 64/Old Highway 64, with a vehicular circulation system comprising narrow, meandering roads and drives.

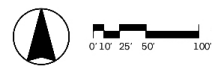


Conceptual Expansion Diagram

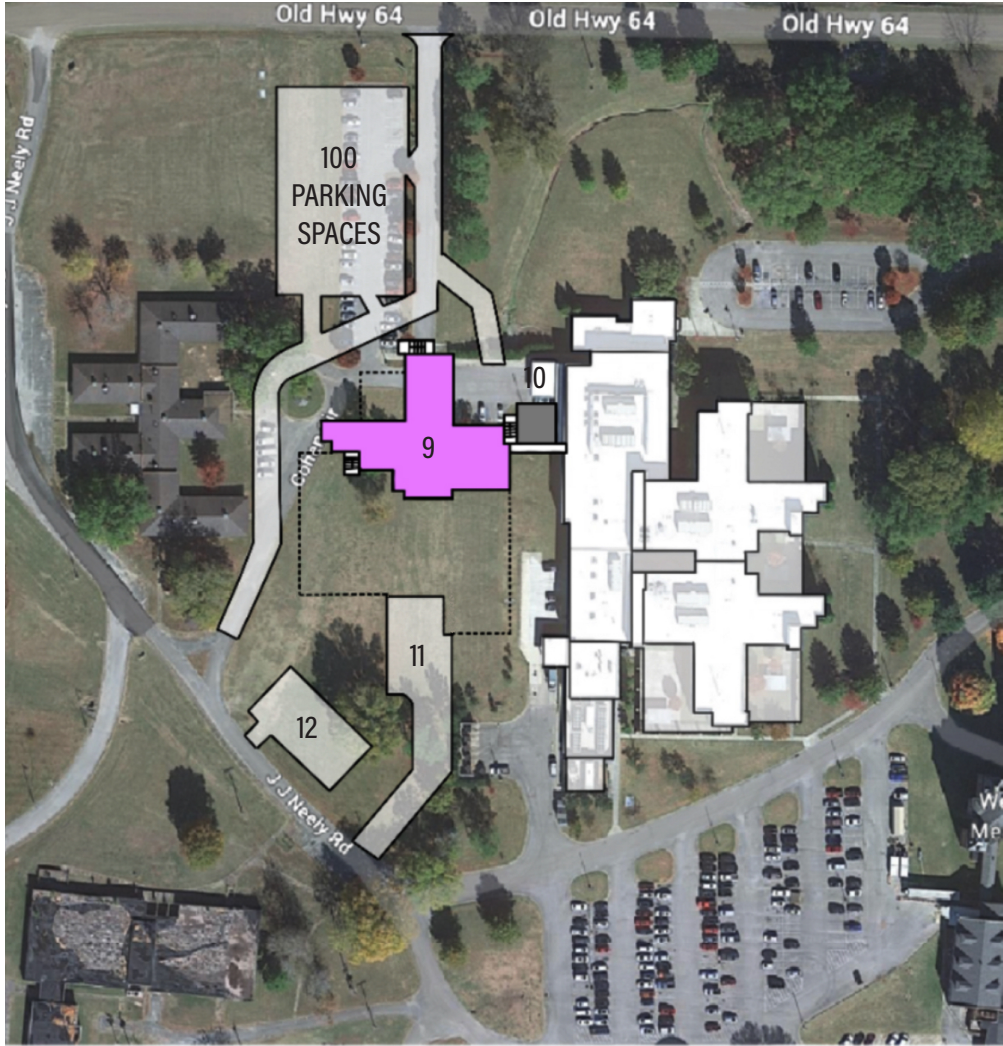


1. LABS - 1,700 SF *
2. STAFF COURTYARD - 8,500 SF *
3. GYM - 4,000 SF *
4. DIETARY - 7,000 SF *
5. SUPPORT SERVICES - 13,100 SF *
6. MAINTENANCE/ GROUND - 2,600 SF *
7. FISCAL DEPT. - 1,700 SF *
8. ADMIN. - 5,500 SF *
9. INPATIENT UNIT ON 2ND FLOOR (25 BEDS)
10. ADMIN. ON 2ND FLOOR
11. LOADING DOCK 2,000 SF *
12. 30 PARKING SPACES

**SF are subject to change as the design progresses.*



Conceptual Expansion Diagram



- 9. INPATIENT UNIT (25 BEDS) ON 2ND FLOOR
- 10. ADMIN. ON 2ND FLOOR
- 11. LOADING DOCK 2000 SF
- 12. 30 PARKING SPACES

ARCHITECTURE

Architecture Summary

The facility is required to adhere to the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) standards and the AHA Guidelines for Healthcare Facility Design and Construction, as mandated by the State of Tennessee.

The State Fire Marshal's office will provide plans review and Certificate of Occupancy jurisdiction for the building. The TNSFM currently adopts the 2012 International Building Code but is currently slated to transition to the 2021 IBC by the fall of 2024. The State of Tennessee High Performance Building Requirements (HPBr) will be followed. Checklists will be included and further defined throughout the design and included in the final Project Manual. Third-party commissioning will also be required.

The facility's design will balance aesthetics, security requirements, risk factors, operational considerations, and budgetary limitations. The Phase II addition will maintain architectural consistency with the existing Phase I facility with regard to the exterior aesthetics. The two-story building will consist of a structural steel frame with poured concrete slabs. The exterior walls will be framed in light gauge steel studs with sheathing which will support a variety of exterior veneer finishes which include brick, ground face CMU, prefinished metal wall paneling, and various glazing types. For patient safety reasons laminated glazing will be used at certain locations throughout the facility. Public exterior doors and windows will be aluminum framed while the support doors and back of house area will be painted hollow metal. The roof design will be a low-sloped system to support rooftop equipment and will consist of a steel deck, insulation, and a membrane system. Roofing pavers will be utilized to support any rooftop outdoor areas.

The building's interior areas are separated into public, staff, service, and in-patient. Security and abuse-resistant requirements are higher in the In-patient and Public areas due to the possibility of uncontrolled behavior. Staff areas are less restrictive, and most service areas are treated like the back-of-house spaces.

Interior wall construction will consist of light gauge, metal stud framing with a painted gypsum board finish. The public and inpatient areas will require abuse-resistant gypsum board. Toilet rooms and high moisture areas will require an epoxy paint finish. Typical spaces will consist of a 9' high 2x2 lay-in acoustical ceiling tile system while patient areas will receive 10' high abuse-resistant gypsum board ceilings.

Interior doors serving the Inpatient and service areas will be painted hollow metal for additional abuse resistance while the staff and public areas will consist of aluminum framing and glazing. Sizes and view light locations will be determined by room function, observation, and security. Doors will be provided with a lifetime warranty. Door locksets shall be mortise type and anti-ligature. Where closers are used in patient areas, they are to be concealed or have the arms located on the non-patient side. Access control shall be provided to separate public/staff areas from the patient areas.

This facility will require specific needs to address the safeguarding of patients and building elements which include but are not limited to special wall/corner protection, tamper-resistant mounting for toilet accessories and other wall-mounted objects, anti-ligature millwork/door hardware, and special considerations for safe room designs.

Civil Engineering Summary

The existing site proposed for this facility currently houses the Western Mental Health Institute Facility, which is located on an approximately 650-acre site in Hardeman County within the city limits of Bolivar, Tennessee. The site is 65 miles due east of Memphis; 30 south/southwest of Jackson and 20 miles north of the Mississippi state line. The project area consists of the area of the campus bounded by Old Highway 64 to the North, J. J. Neely Road to the West, and J P Douglas Drive to the South. The project area's land cover consists of turf grass, landscaping, sidewalks, approximately 2 large structures/buildings, asphalt roadways, and asphalt parking areas. Selective demolition of existing structures to accommodate the new facilities is proposed.

SITE LAYOUT

The proposed site improvements are anticipated to encompass approximately 6 acres. This includes approximately 62,000 square feet for the Western Mental Health Phase Two Expansion. The project will also include all necessary site improvements related to utilities, parking, and circulation for vehicles and pedestrians.

Heavy-duty asphalt pavement should be used for all access drives, parking lot drive aisles, and any traffic circles. Light-duty asphalt pavement can be used in the new parking spaces. The parking lot will be designed to accommodate passenger vehicles and will include standard striping as well as accessible spaces in concrete. Concrete curbing will be placed at all perimeter drives and parking spaces. Heavy-duty concrete will be used in any service areas. Sidewalks will be provided for pedestrian circulation.

GRADING & DRAINAGE

The existing site topography is considered developed with mild to moderate slopes. The majority of the surface runoff from the project site flows into an existing detention pond located in the Northeast quadrant of the site. The proposed site grades are anticipated to follow the same flow patterns. At the time of this summary, the details of any existing stormwater system are unknown. In accordance with TDEC requirements, stormwater water quantity and quality will need to be assessed as part of the design due to the anticipated land disturbances being over 1 acre.

Grading for the site will include clearing and grubbing within the project limits, stripping and respreading the topsoil, mass excavation of soils, and all finish grading. The overall site grading plan will be designed to reflect relationships between the proposed building, its associated improvements, and adjacent surroundings.

UTILITIES

Water – There is an existing 8" Fire Water main that loops the existing WMHI and is connected to an existing 8" City of Bolivar Water Main. An existing domestic water line is present, but at the time of this summary, the size is unknown. It is anticipated that portions of the existing system will remain in place and other portions will be modified to meet the needs of new buildings, fire protection, and any proposed irrigation system. Private fire hydrant(s) may be added or adjusted to satisfy the fire protection requirements related to hydrant coverage and relationship to the fire department connection point. Once the demands are known, coordination with the Bolivar Utility Department will be required to determine that service demands can be satisfied.

Sanitary Sewer – There is an existing 8" sanitary main that exits the existing WMHI to the North and connects to a sanitary system that was installed by the State.

Gas – Based on record drawings, an existing gas line is present, but the size is unknown. It is anticipated that portions of the existing system will remain in place and other portions will be modified to meet the needs of new buildings. Coordination with the respective utility services for any modifications or additions shall be performed as necessary.

ENGINEERING

Mechanical Engineering Summary

The existing facility is served by two air-cooled chillers which feed seven roof-mounted air handling units. Based on the original construction documents, one chiller will supply enough chilled water to serve the rooftop AHU's with no spare capacity. It is assumed that the second chiller is a full backup chiller, similar to the MMHI facility in Memphis. Assuming that full redundancy is desired, two new air-cooled chillers will need to be provided for the addition.

Two gas-fired boilers are serving the existing facility that provide heating water to the rooftop air handlers and the VAV reheat terminal units. These boilers have fuel oil backup provided by an underground tank. Based on the original construction documents, both boilers are required to meet the maximum heating demand of the existing facility. Two new boilers will need to be provided to serve the addition, which will also have fuel oil backup. The size of the existing underground fuel oil storage tank will need to be evaluated to determine the number of hours of operation that will be provided after the addition of the new boilers and potentially, a second generator.

The addition will also utilize roof-mounted air handling units. These will be variable air volume (VAV) and will utilize an outside air economizer.

All ductwork will be constructed in accordance with SMACNA and ASHRAE 90.1. Air distribution systems will be designed with primary consideration for energy efficiency and acoustic performance. The main air distribution system will serve VAV boxes with hot water reheat coils. Grilles used in patient spaces will be tamper-resistant/abuse-resistant/anti-ligature.

The kitchen will be provided with a properly sized, UL-Listed, Type 1 commercial kitchen hood, exhaust duct system, and exhaust fan, constructed and installed in accordance with the International Building Code and NFPA 96. The dishwasher will be provided with a Type 2 exhaust hood. Makeup air will be provided into the space using a 100% outside air unit with heating and cooling capabilities.

The HVAC systems will be controlled using a BACnet direct digital control (DDC) system which will be tied into the existing building automation system (BAS).

Plumbing Summary

The plumbing systems for this facility will include domestic water (hot and cold), sanitary waste and vent, roof rainwater drainage, and condensate drainage. The facility will have no medical gases. These systems will include equipment, piping, and related appurtenances as described below.

DOMESTIC WATER

The new domestic water systems will be fed from a new water main entering the building at the first-floor level. The new water main will be equipped with a duplex reduced pressure principle backflow preventer arrangement and will supply a duplex booster pump system if the local water pressure is not sufficient to meet the pressure demands of the building. Two (2) gas-fired water heaters located in an equipment room will supply the domestic hot water. A piped hot water return system with circulation pump will be included to ensure hot water will be available to the remote portions of the hot water system within a reasonable period of time. All water piping will be type-L copper with lead-free soldered joints and will be insulated in accordance with ASHRAE 90.1 for its entire length throughout the building.

SANITARY WASTE, SANITARY VENT, AND ROOF RAINWATER DRAINAGE

The sanitary sewer and roof rainwater drainage systems will be gravity systems and connected to the on-site sanitary sewer and underground site drainage systems respectively. Condensate from the air conditioning system will discharge into indirect waste receptors connected to the sanitary sewer system. The sanitary sewer drainage system piping will be cast iron with no-hub joints and fittings above slab-on-grade and cast iron with push-on gasketed joints and fittings below slab-on-grade. The roof rainwater drainage system piping will be cast iron with no-hub joints and fittings above slab-on-grade and cast iron with push-on gasketed joints and fittings below slab-on-grade. The condensate piping will be DWV copper or standard-weight no-hub cast iron. The condensate piping, horizontal rainwater piping, and that portion of the sanitary waste piping carrying cold drainage will be insulated to avoid building damage due to exterior condensation on the piping.

PLUMBING FIXTURES

The plumbing fixtures will be commercial-grade white vitreous china or enameled cast iron and comply with all anti-ligature/patient-type requirements throughout the facility. Plumbing fixtures to be used in Public and Inpatient areas to be anti-ligature. In public and inpatient areas, water closets to have in-wall concealed flush valve with access panel. The lavatories in the restrooms will be solid surface integral bowls and will be equipped with automatic hands-free, sensor-operated faucets.

Fire Protection Summary

All new construction will be provided with a complete combination horizontal standpipe system fed from the existing standpipe and automatic wet-type sprinkler system. All system pipe sizing to be hydraulically calculated. All requirements of the insurance underwriter will be met.

The most recent existing fire pump test/standpipe test report will be required. Sprinkler heads will be institutional type and quick response with a white finish in patient areas. In other areas standard upright, concealed pendent and semi-recessed sidewall heads will be used. Fire protection systems will conform to NFPA 13, 14, 20, and 24; International Fire Code and International Building Code.

Electrical Engineering Summary

Electrical systems for the building are to include normal power distribution, additions to the essential electrical system, lighting and devices, lighting protection and an expansion of the existing fire alarm system including a new FACP.

The electrical service for the phase II expansion shall originate from a new utility pad mount transformer to be located in the prepared space for Phase II utility transformer. New secondary feeders to be routed in existing conduit to the existing switch gear location in the main electrical room. Provide a new 3000A tie breaker in prepared space and build out remaining sections of switchgear for Phase II construction. Distribution within the facility will be 480Y/277V, 3 phase, 4 wire. Step down transformers will be provided to serve 208Y/120V, 3 phase 4 wire branch circuit panels. For the essential electrical system, new automatic transfer switches will be provided for the Life Safety, Critical Branch and Equipment Branch. The spare capacity of the existing 1000kW genset has not been evaluated at this time, but the intention is to connect new essential loads to the existing generator.

A system of j-boxes, conduits and raceways will be provided to facilitate the install of A/V systems.

Lighting in observation, assessment, therapy, and other areas as required will be designed in consideration of patient health, such as lamp temperature and fixture intensity. Patient room lights to be switched at room as well as an override at centralized staff control area. Lighting fixtures in Inpatient spaces to be tamper resistant/abuse resistant/anti-ligature.

Site lighting for new parking areas, and security lighting around the building will be provided.

Structural Engineering Summary

The design team will explore systems to determine the most economical and appropriate building type in this market. It is anticipated that the structure will be structural steel framing supported on shallow concrete foundations. The concrete slab on grade will be constructed on a vapor barrier and 4" thick, free-draining stone base. Elevated slabs will be constructed with concrete on a composite steel deck and will be framed with steel beams and girders. The roof will be metal deck on steel joists and steel beams. The exterior façade will match the existing façade of masonry and metal panels. Exterior non-loadbearing masonry walls will be supported with thickened slabs or strip footings. Building columns will be supported on individual spread footings. The lateral force-resisting system is anticipated to be buckling-restrained braces.

STRUCTURAL DESIGN CRITERIA

The structural design criteria will be determined in accordance with the International Building Code (IBC), as required by the State of Tennessee. The State Fire Marshal's Office currently requires compliance with the 2012 Edition of the IBC. It is anticipated that the building code will be updated to the 2021 Edition of the IBC during the course of the project. A qualified testing and inspection agency shall perform required testing and special inspections per Chapter 17 of the International Building Code.

GEOTECHNICAL REPORT

A geotechnical report will be required to establish foundation design criteria and is in the process of being completed.

STRUCTURAL SUPPORT OF ARCHITECTURAL, MECHANICAL AND ELECTRICAL COMPONENTS

Architectural, mechanical, and electrical components will be anchored or braced to resist seismic and wind loads as required by the International Building Code.