JPS Health Network
Fort Worth, Texas

JPS HEALTH CENTER FOR WOMEN

HEALTH CENTER FOR WOMEN SCHEMATIC DESIGN BOOK
05.30.2025

HOEFER WELKER

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ARCHITECTURAL NARRATIVE

Applicable Building Codes

IBC 2021

IFC 2021

IECC 2015

NEC 2020 (w/ 2023 amendments)

NFPA 2012, Chapter 20

Zoning Restrictions

City of Fort Worth: Zoning Regulations + Near Southside Standards

Development Standards: Appendix A, Chapter 6

Landscaping: Appendix A, Chapter 6, Article 3

Summary Understanding:

This facility is a 7-story new-build garage that contains a retail "shell" space on the 1st floor (ground level). The shell space is approximately 21k GSF situated at the northern side of the garage which affronts Magnolia Blvd. It is the intent of JPS to build out this space as a medical clinic for their women's clinical program.

Garage Construction Type:

Fire Resistance Rating Requirements (Table 601)		
	CONSTRUCTION TYPE	TYPE I-A
	PRIMARY STRUCTURAL FRAME	3 HR
	BEARING WALLS	3 HR
	EXTERIOR	3 HR
	INTERIOR	3 HR
	NONBEARING WALLS AND PARTITIONS - EXTERIOR	See Table 602
	NONBEARING WALLS AND PARTITIONS - INTERIOR	0 HR
	FLOOR CONSTRUCTION AND SECONDARY MEMBERS	2 HR
	ROOF CONSTRUCTION AND SECONDARY MEMBERS	1.5 HR

ROOF SUPPORT RATING REDUCTION (Note a.): — — — — — — — — — — — — — YES
ROOF CONSTRUCTION ABOVE 20 FT RATING REDUCTION (Note b.): — — — — — — NO
HEAVY TIMBER ALLOWED (Note c.): — — — — — — — — — — — — — — — NO

Fire Resistance Rating Requirements (Table 705.5)		FIRE SEPARATION DISTANCE	RATING
	A. NORTH WALL	30'-0"	0 HR
	B. EAST WALL (GROUND FLOOR)	0"	2 HR
	C. EAST WALL (LEVELS 1-7)	30'-0"	0 HR
	D. SOUTH WALL	15'-0"	0 HR
	E. WEST WALL	30'-0"	0 HR
	F.	0"	
	G.	0"	
	H.	0"	

Shell Space: For the purposes of this narrative, and the project as a whole, the shell space will be referred to as an existing condition given that the garage is currently under construction and should be completed in February 2026. The following conditions about the space shall be considered:

- Foundation: Slab leave out - See Structural Narrative
- Exterior Envelope: All exterior walls will be provided as part of the shell which will consist of the following:
  - North Wall is made of a mix of precast concrete "tilt-panel", Aluminum Curtain Wall Framing, Masonry block wall with steel backup wall, and perforated metal panel above.
  - East Wall is made of a masonry 7 5/8" block wall
  - South Wall is made of a masonry 7 5/8" block wall
  - West Wall is made of a masonry 7 5/8" block wall
  - Roof is not a traditional roof, rather it is made of a concrete "drive" deck above with a water proof coating
  - A new interior air barrier and insulation will not be provided as part of the shell space and will need to be added as part of this build-out project. This will also include a one-sided interior partition made of a metal stud and type "x" gypsum board.
- Existing Interior Condition:
  - The overall shell space is currently open and only provided with minimal systems to avoid environmental concerns.
  - An existing "main" entrance is provided on the north side between column grids 5 and 6. It is the assumption of this build-out project that this entrance will serve as the primary public entrance. At this time, there are no plans to alter or replace anything related to the store front or associated doors.
  - An existing Fire, Domestic, IDF, and Electrical rooms are provided in the northeast corner of the shell space
  - There are 4 shear walls located along column grid B that will be left as-is with no alterations

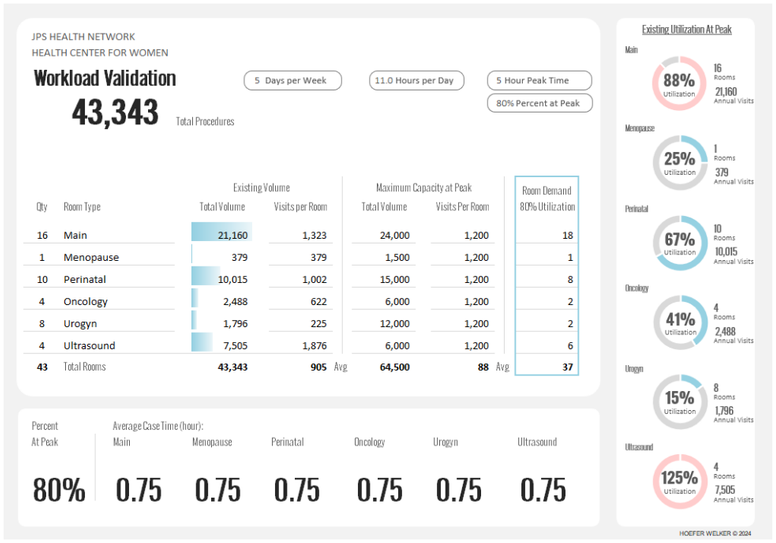
New Build-out: Will be designed and built as a B-Business occupancy medical clinic with the following assumptions:

- Interior Condition
  - Interior Partitions will be of varying sizes but will be made of interior metal studs, type "x" gypsum board, acoustical batt sound attenuating blanket.
  - Doors and hardware will be typical to match JPS standards
  - Casework will be typical to match JPS standards
  - Ceilings will be primarily made of acoustical ceiling tile with some mix of gypsum board "hard-lid" ceilings in select areas
  - Finishes will be typical to match JPS standards but it is assumed to consist of the following:
    - Flooring: Ceramic tile, VCT, Carpet Tile
    - Walls: Painted gyp., ceramic tile, vinyl wall protection (in select areas only), Vinyl Corner Guards

ARCHITECTURAL NARRATIVE

JPS Health Center for Women- Fort Worth is currently located on Main Street, less than a mile away from the Hospital Main Campus. The building spans approximately 44,000 square feet and is divided into 7 “pods” labeled A-G, housing clinics for UroGyn, OB/Gyn, and Maternal Fetal Medicine (MFM), as well as Centering for group classes, a Breast Center, and administrative offices. These existing pods are arranged around a spacious central atrium that functions as both a check-in area and an overflow waiting space. Overall, the current HCW features 39 examination rooms, 4 ultrasound rooms, and 1 procedure room to accommodate the various sub-specialties.

As a result of the workload validation exercise and the implementation of the exam room flex strategy, a total of 37 exam rooms were identified to meet the current demand. The Breast Center will continue to operate at its current site until the new Medical Outpatient Building (MOB) is completed, at which point it will be co-located with Outpatient Imaging. Furthermore, the UroGyn Clinic has been excluded from the HCW program and will eventually be located with the Urology Clinic in the new MOB. Non-clinical administrative areas is slated to move to the existing JPOC buildings.



The Garage and the retail space is presently undergoing construction and is considered as an existing condition for this project. The primary entrance, situated at the center of the retail space, creates a central lobby with pods flanking either side for MFM/Ultrasound and GYN/Oncology. Like the current facility, each pod is arranged to establish a unique identity and to facilitate distinct in/out movement. Service and Staff enter discreetly from the garage via back door, away from the lobby. Clinical staff and provider movement between the two pods is anticipated to be minimal. Administrative traffic between the two pods through the lobby is viewed as a positive one that will foster situation awareness.

The lobby will feature 1-2 furniture focal points, a designated waiting area for families with young children, a separate waiting area for oncology patients, and water fountains with a bottle filler. Additionally, it will have kiosks for check-in, a concierge to provide extra support for patients, and four registration stations. The consultation room and the practice manager’s office are positioned next to the waiting area for convenient access and to ensure visibility into the lobby, respectively.

The Centering is situated directly adjacent to the lobby for easy patient access, with back door connection to MFM Clinic for staff convenience. It features two classrooms, each designed to accommodate 14 seats. Two classrooms facilitate the ability to hold classes in both English and Spanish simultaneously.

These classrooms are designed to be versatile, serving as spacious conference rooms for staff meetings. Additionally, The Centering will include two Exam Rooms that are strategically positioned to offer flexibility to MFM Clinic during peak operational times.

The new JPS Office Standards dictate the allocation and dimensions for various administrative spaces. Most staff and physicians will have access to touchdown stations. To promote collaboration and teaching without concerns regarding confidential conversations, enclosed workrooms for physicians are provided within the exam pods. This positions providers near the patients, improving efficiency and access. The clinic is expected to accommodate a total of 30 providers and students, 19 nurses, and 20 CNA.

The interior design approach will focus on the JPS goals for the patient experience: to create a timeless, warm, comfortable space that supports functional needs and optimizes patient comfort. To create a timeless material palette, materials from nature such as wood tones will be incorporated. Warm and light neutral colors will serve as the foundational layer of color, while imagery or accent colors from nature (such as florals or landscapes) will enhance the design and wayfinding opportunities. Overall, the material and finish solutions will prioritize functional performance such as durability, cleanability, and safety.

3.0
SCHEMATIC DESIGN

Program

Floor Plan

CONCEPT SPACE PROGRAM

ROOM TYPE	EXISTING KPU	CONCEPT KPU	COMMENTS
KPU SUMMARY			
EXAM	39	31	
PROCEDURE	1	1	
ULTRASOUND	4	6	
TOTAL (KPU)	**44**	**38**	

	EXISTING DGSF	CONCEPT DGSF	COMMENTS
PROGRAM SUMMARY			
LOBBY	5,970	2,230	
HEALTH CENTER FOR WOMEN	29,750	12,262	
WOMEN'S CLINIC POD A-D	16,900	8,028	
MFM CLINIC (POD G)	7,660	-	
CENTERING	1,200	1,050	
ADMINISTRATIVE	3,840	2,704	
LAB	150	480	
BREAST CENTER	4,900	-	
GENERAL STORES	340	-	
SUBTOTAL	40,960	14,492	
DGSF Conversion Factor	**3,200**	**5,908**	
TOTAL (DGSF)	**44,160**	**20,400**	

SPACE NAME	EXISTING # OF SPACES	EXISTING AREA/ SPACE	EXISTING TOTAL SF	PROPOSED (CONCEPT) # OF SPACES	PROPOSED (CONCEPT) AREA/ SPACE	PROPOSED (CONCEPT) TOTAL SQ. FT.	COMMENTS
WOMEN'S HEALTH CLINIC							
PUBLIC							
Consult	-	-	-	2	105	210	Locate in each pod.
Drinking Fountain	-	-		3	10	30	
Entry Vestibule	1	350	350	1	266	266	
Reception/ Check-in	8	80	640	1	260	260	(4) Check-in (2) Check-out counters.
Toilet, Public (Female)	1	300	300	1	162	162	(4) WC, (3) Lav Req'd.
Toilet, Public (Male)	1	185	185	1	162	162	(3) WC, (1) Urinal, (3) Lav Req'd.
Waiting Area, Inmate	-	-	-	-	-	-	
Waiting Area, Public	9	400	3,600	54	20	1,080	1.5 seats per Exam Room as recommended by FGI 2022.
Subwait, Oncology	-	-	-	3	20	60	
SUBTOTAL			5,075			2,230	
CLINIC POD							
31 EXAM ROOMS				**1 PROCEDURE ROOMS**			
10 PROVIDERS				**6 ULTRASOUND**			
Exam Room, General	15	120	1,800	21	120	2,520	
Exam Room, Menopause	1	120	120	-	120	-	Included in General Exam count.
Exam Room, Perinatal	10	115	1,150	8	120	960	
Exam Room, Oncology	4	130	520	2	120	240	
Exam Room, Uro/Gyn	9	115	1,035	-	120	-	Co-locate with Urology Clinic.
Exam Room, Flex			-	-	120	-	
Procedure Room	1	180	180	1	120	120	Room sized reduced per HCW.
Ultrasound Room	4	180	720	6	168	1,008	BPP (Biophysical profile) in 1 room.
Charting Area/Room	15	140	2,100	38	20	760	
◦ Nurse Charting	11			18			
◦ CMA	15			20			
Clean Supply Storage	3	120	360	2	95	190	
Emergency Equipment Alcove	-	-	-	-	20	-	Provide wall mtd AED.
Equipment Alcove	-	-	-	12	20	240	
Equipment Storage	-	-	-	2	115	230	
Housekeeping	2	50	100	2	45	90	
General Supply	-	-	-	1	103	103	
Lab	1	140	140	1	160	160	
Medication Room	3	130	390	2	100	200	
Patient Toilet	8	65	520	9	60	540	
Receiving/ Breakdown	-	-	-	1	85	85	
Sono Viewing Room	4	30	120	1	210	210	(8) includes (2) NST Reading Stations.
Specimen Collection/ POC	3	160	480	3	110	330	Adjacent to Pat Tlt.
Staff Toilet	3	60	180	2	56	112	
Sterile Supply Storage	3	120	360	-	-	-	Combine w/ Clean Supply per HCW.
Soiled Holding Room	2	120	240	2	90	180	
Weight Station	-	-	-	3	40	120	Provide (1) WC Scale.
SUBTOTAL			10,515			8,398	

CONCEPT SPACE PROGRAM

SPACE NAME	EXISTING # OF SPACES	EXISTING AREA/ SPACE	EXISTING TOTAL SF	PROPOSED (CONCEPT) # OF SPACES	PROPOSED (CONCEPT) AREA/ SPACE	PROPOSED (CONCEPT) TOTAL SQ. FT.	COMMENTS
WOMEN'S HEALTH CLINIC							
ADMIN / STAFF SUPPORT							
Conference, Large	1	350	350	-	-	-	Use Centering Group Room.
Conference, Small	1	160	160	-	-	-	Use Centering Group Room.
Copier Alcove/ Workroom	1	230	230	-	-	-	Provide within "Workroom."
Lactation Room	1	130	130	-	-	-	
Office, Hoteling	-	-	-	1	70	70	
Office, Private (120sf)	7	120	840	4	120	480	
∘ Director, Community Health	2			-			Remote - relocate to JPOC.
∘ APP Program Director	1			1			
∘ MFM Medical Director	1			1			Dr. Li
∘ OP Medical Director	1			1			Dr. Taylor
∘ Oncology Medical Director	1			1			Locate in Gyn/Onc Pod.
Office, Private (100sf)	-	-	-	1	100	100	
∘ Practice Manager	1			1			Locate near Reception.
Office, Shared (100 sf)	9	160	1,440	-	-	-	
∘ Referral Coord/ Countdown	1			-			Remote - WFH.
∘ Provider	2			-			Provider touchdown spaces in Physician Workroom.
∘ Provider, MFM	1			-			
∘ Registration Training	3			-			Remote - prefer to locate near leadership - SE Med Home.
∘ Triage Nurse	1			-			Remote - WFH.
Workroom	5	160	800	-	-	-	Provider copy/file within bullpen.
Workroom, Resident	1	160	160	-	-	-	2-3 residents/student per clinic. Co-locate w/ providers.
Workroom, Providers				5	210	1,050	Bullpen w/ touchdown space for providers, APP, residents & students. Provide reading capability.
∘ General Pod - Total Providers & Students				9			
∘ MFM Pod - Total Providers & Students				6			
Workstation, Cubicle (6x6 L-shape)	9	30	270	10	36	360	
∘ Case Mgmt	2			2			Closed door cubicle.
∘ Diabetes Educator	1			1			Dedicated (locate near MFM).
∘ Eligibility	1			1			Closed door cubicle near registration.
∘ Lactation	1			-			
∘ MFM Care Navigator	2			-			Removed per Kia Jackson.
∘ Patient Access Rep	2			-			Removed per Kia Jackson.
∘ Navigator	2			1			Locate near Gyn/Onc.
∘ Surgery Scheduler	1			1			Locate near Registration.
∘ Team Lead, MFM				1			
∘ Team Lead, RN	2			2			
∘ Team Lead, Sono	2			1			
Workstation, Touchdown (4ft linear)	-	-	-	6	20	120	
∘ MFM APP	-			1			Dedicated workstation.
∘ MFM Community Health LVN	1			1			Hybrid - 3 days in clinc.
∘ MFM Patient Navigator	1			1			Hybrid - 3 days in clinc.
∘ Nutritionist	1			1			
∘ Hoteling	1			2			
Staff Toilet	-	-	-	1	64	64	
Staff Lounge	2	300	600	2	190	380	Small kitchenette is acceptable.
Staff Lockers	-	-	-	20	4	80	3-tier, day lockers (60 total).
Storage	-	-	-	-	10	-	Use cabinets within clinics.
SUBTOTAL			**4,980**			**2,704**	

SPACE NAME	EXISTING # OF SPACES	EXISTING AREA/ SPACE	EXISTING TOTAL SF	PROPOSED (CONCEPT) # OF SPACES	PROPOSED (CONCEPT) AREA/ SPACE	PROPOSED (CONCEPT) TOTAL SQ. FT.	COMMENTS
WOMEN'S HEALTH CLINIC							
CENTERING							
Classroom	2	375	750	2	330	660	Classroom with space for 12 - run 2 classes at same time (spanish & english); Use for Staff Mtg.
Exam Room	-	-	-	2	120	240	
Workroom, Nurse	4	80	320	1	110	110	
Storage, Supply	-	-	-	1	40	40	30-36" deep cabinet.
SUBTOTAL			**1,070**			**1,050**	
BLDG SUPPORT							
ELECTR				1	40	40	Confirm size.
IDF				1	70	70	Confirm Ssize & distance.
SUBTOTAL			**-**			**110**	
SUBTOTAL			**21,640**			**14,492**	
DGSF Conversion Factor	**0.57**		12,400	**0.41**		5,908	
DEPARTMENT TOTAL (DGSF)			**34,040**			**20,400**	

LEVEL 1 : OVERALL PLAN

LEVEL 1 : ENLARGED PLAN

4.0
BUILDING SYSTEMS NARRATIVES

Structural Narrative

MEP Narrative

Technology Narrative

4.1
STRUCTURAL NARRATIVE

STRUCTURAL NARRATIVE

Structural Engineering Basis of Design Narrative

Design Criteria

Codes and References

The provisions of the following codes and references will be used for both design and construction of the tenant infill. These documents establish the minimum structural strength and serviceability requirements to be met to safeguard the public health, safety, and general welfare.

1. International Building Code (IBC), 2021 Edition
2. American Society of Civil Engineers/Structural Engineering Institute (ASCE/SEI) 7-16, Minimum Design Loads for Buildings and Other Structures
3. American Concrete Institute (ACI) 318-19, Building Code Requirements for Structural Concrete
4. The Masonry Society 402/602-16, Building Code Requirements and Specification for Masonry Structures
5. American Institute of Steel Construction Design Guide 11, Floor Vibrations Due to Human Activity
6. American Welding Society (AWS) D1.1, Structural Welding Code – Steel, 2020 Edition
7. 2022 FGI Guidelines for Design and Construction of Outpatient Facilities

Design Loads

The design live loads used are the maximum loads expected by the intended use or occupancy, but in no case less than the minimum loads listed in the governing building code. In addition to the dead loads calculated for the various framing systems and building functions, the building structure will be designed for the following design live loads:

Roof Live Loads – Not Applicable (Tenant Infill)

Superimposed Dead Loads (Note values shown are preliminary, pending verification of equipment and floor finishes)

Allowance for Partitions	15 psf
Allowance for Suspended MEP	15 psf

Floor Live Loads

Diagnostic and Treatment Areas	100 psf
Aisles, Stairs, and Exitways	100 psf
Lobbies	100 psf
Light Storage	125 psf
Computer Equipment	150 psf
Mechanical Rooms	150 psf

Live loads will be reduced in accordance with the International Building Code.

Snow Loads - Not Applicable (Tenant Infill)

Wind Loads – Not Applicable (Tenant Infill)

Seismic Loads

Seismic design forces will be determined using the equivalent lateral force method outlined in IBC 2021 and the American Society of Civil Engineers, Minimum Design Loads for Buildings and Other Structures, ASCE/SEI 7-16 standard. Information below is assumed and will be updated based on a site-specific geotechnical report being completed.

Mapped 0.2 sec Spectral Acceleration, Ss	0.091g
Mapped 1 sec Spectral Acceleration, S1	0.051g
Site Class	C
Site Coefficient, short period, Fa	1.3
Site Coefficient, 1 sec period, Fv	1.5
0.2 se Spectral Response Coefficient, S_{ds}	0.079g
1 sec Spectral Response Coefficient, S_{d1} (%g)	0.051g
Occupancy/Risk Category	III
Seismic Importance Factor	1.25
Seismic Deign Category	A

Serviceability

Serviceability refers to various limit state requirements for a building to perform adequately during its service life extending beyond the typical strength requirements. These additional requirements include, but are not limited to, durability, deflection, cracking, and excessive vibrations. Each of these items is considered and appropriate measures will be incorporated into the structural design.

Vibrations

Floor vibration will be assessed for the building based on the programming. Equipment on structured framing will have vibration requirements ranging from 2000 mips (microinches per second) to 8000 mips depending on the specific usage requirements. Locations away from sensitive equipment will be analyzed for general pedestrian comfort vibration.

Future Expansion

No provisions for any future vertical expansion are considered or incorporated into the structural design at this time.

STRUCTURAL NARRATIVE

Materials

Materials for the design and construction of the primary structural frame shall comply with the governing building code, design codes, and manuals noted previously, and the following:

Structural Steel

Structural steel shall be defined as that work prescribed in Section 2.1 of the AISC "Code of Standard Practice for Steel Buildings and Bridges". All structural steel shapes shall be new steel as defined by ASTM A6 unless noted otherwise. Structural steel in unconditioned spaces or exterior shall be hot-dipped galvanized or painted with a high-performance paint system. Structural steel materials shall conform to the following:

a. Wide Flange and WT Shapes ASTM A992 Grade 50
b. Channels ASTM A36
c. Angles ASTM A36
d. Structural Steel Plates and Bars ASTM A36
e. Base Plates ASTM A36
f. Hollow Structural Sections ASTM A500 Grade B
g. High Strength Bolts ASTM A325 and A490
h. Anchor Rods ASTM F1554 Grade 55

Cast-in-Place and Precast Concrete

Structural concrete elements shall be designed and constructed in accordance with the requirements of the governing building code and applicable American Concrete Institute standards and project durability requirements. Concrete materials and classes shall conform to values in **Table S1**.

CLASSES OF CONCRETE MATRIX

CONCRETE USAGE	MIN. f'c	CONCRETE TYPE	EXPOSURE CLASSES	MAX. W/CM RATIO	AIR CONTENT	REQUIRED CEMENT REPLACEMENT
ELEVATED CONCRETE FLOORS	4,000 PSI	NWC	-	0.45	N/A	0-50%
TOPPING SLAB	4,000 PSI	NWC	-	0.45	N/A	0-50%

Table S1: Classes of Concrete Matrix

Reinforcing for Cast-in-Place Concrete

Structural concrete elements shall be designed and constructed in accordance with the requirements of the governing building code and applicable American Concrete Institute standards and project durability requirements. Reinforcing materials shall conform to the following:

a. Reinforcing Steel ASTM A615 Grade 60
b. Deformed Bar Anchors ASTM A496
c. Headed Stud Anchors ASTM A108
d. Smooth Welded Wire Reinforcement ASTM A185
e. Synthetic Macro Fibers ASTM C1116

Reinforced Masonry

Reinforced concrete masonry shall meet F'm = 1,500 PSI, comply will requirements of the TMS 402/602-16 Building Code Requirements and Specifications for Masonry Structures and the following:

a. CMU Compressive Strength 1900 psi, C 90 NW
b. Mortar Portland Cement/Lime, Type M or S, ASTM C 270
c. Grout Course with Compressive Strength 2000 psi, ASTM C 476

Structural Systems

Foundations:

The base design consists of a 10" thick structured concrete slab (two-way slab) on a 12" void system supported by existing piers and grade beams. No pad preparation, excavation, or modification of the existing structure is expected.

Alternate #1 consists of a structured concrete slab and beam system over a 12" void system, also supported by existing piers and grade beams. No pad preparation is expected, but excavation to accommodate the beam and void system depths is likely required. In addition, the isolated piers provided by the garage design team for the anticipated 10" thick structured concrete slab would need to be cut down 2-3 feet to accommodate the beam and slab system. Reinforcing/modification of existing grade beams and pier caps may be required.

Alternate #2 consists of a 10" structured concrete slab similar to the base design, but with a full crawl space below the slab. Zones would be provided around columns that could be used for future sleeves. Reinforcing/modification of existing grade beams and pier caps may be required.

This Basis of Design Narrative is released for the purpose of interim review under the authority of Vicki Ford, PE 89279, on May 30, 2025. It is not to be used for permit, bidding or construction.

Walter P. Moore and Associates, Inc.; Firm Registration Number 1856.

END OF STRUCTURAL

4.2
MECHANICAL NARRATIVE

MECHANICAL NARRATIVE

MECHANICAL SYSTEMS NARRATIVE

PROJECT DESCRIPTION

The project will consist of an approximately 21,000 square foot space for the Health Center for Women located on the ground level of a new-build parking garage that is currently under construction. The facility shall be served by a stand-alone system that will not be connected to the Central Utility Plant.

BUILDING CODES

- 2023 National Electric Code with Fort Worth Amendments
- 2021 International Building Code with Fort Worth Amendments
- 2015 International Energy Conservation Code with Fort Worth Amendments
- 2021 International Fuel Gas Code with Fort Worth Amendments
- 2021 International Mechanical Code with Fort Worth Amendments
- 2013 ASHRAE 90.1 Energy Standard for Buildings Except Low-Rise Residential Buildings
- NFPA 99
- NFPA 101

JPS Standards – The project will follow current JPS Standards for HVAC systems

DESIGN CRITERIA

A. Outside Summer Conditions as defined by 2021 ASHRAE Fundamentals Handbook: the 0.4% summer dry bulb temperature is 101.6°F, while the mean coincident wet bulb temperature is 74.0°F.
B. Outside Winter Conditions as defined by the same source: the 99.6% winter dry bulb temperature is 22.6°F.
C. Inside design temperature and relative humidity during summer or winter shall be compliant with Texas Department of State Health Services (DSHS) Title 25 Chapter 133 Hospital Licensing for the given area. Areas not listed in TDSHS Title 25 regulations shall be maintained at 72°F dry bulb.

HVAC DISTRIBUTION SYSTEM

The HVAC system will utilize variable air volume (VAV) DX air-handling units with remote condensers to provide supply and return air to the facility. Currently anticipated are two air-handling units (each approximately 40 tons / 12,000 CFM) to be located in a mechanical room on the ground floor under the ramp, south-west of the clinic.

The two condensing units (each 40 tons) shall be located on the first level of the parking garage adjacent to the NW stairs.

Air-handling units to utilize fan walls and to be provided with N+1 required supply and return fans for redundancy along with redundant VFDs. Each AHU will be constructed of solid, double wall sheet metal panels with 3” injected foam insulation in the walls, diamond treadplate flooring, windows in every door and external pressure ports. AHU will also include modulating outside air and return air dampers with economizer capability, outside airflow measuring station, MERV 8 pre-filters, electric preheat coil, DX or chilled-water cooling coil (depending on which option is selected), MERV-14 final filters and UV lighting on the cooling coil. Sound attenuators will be provided downstream in the air system as needed to mitigate system noise. Air Handling Units shall be manufactured by Trane or approved equal.

Supply air will be provided to rooms via metal, externally insulated ductwork (no interior lining allowed), VAV air terminal units (ATU), and diffusers (institutional type in patient areas). Anticipate approximately 60 ATU’s. Terminal units are to be provided in accessible locations but are not to be provided in procedure rooms – locations will consider maintenance accessibility and overall safety. Terminal units will utilize electric reheat coils. Return air system to be fully ducted.

Room temperature, ventilation, humidity, pressurization, and air change requirements will be per TDSHS\FGI\ASHRAE requirements.

Areas requiring exhaust air shall be provided with inline exhaust fans (combined as allowed and convenient) and discharged through the south wall of the clinic. Fans will be provided with sensors (current sensing relays – CSRs) to alarm exhaust fan failure.

IT Rooms to be cooled off system air and have packaged DX fan-coil units to provide cooling on air system failure.

BUILDING AUTOMATION SYSTEM / TEMPERATURE CONTROLS

Johnson Controls (JCI) will be the temperature control\BAS system manufacturer. The system will be tied into the existing JPS campus JCI Metasys system.

4.3
ELECTRICAL NARRATIVE

ELECTRICAL NARRATIVE

PROJECT DESCRIPTION

The project will consist of a 20,336 square foot space for the Health Center for Women. This is B-Occupancy space that is part of the parking garage that is currently under construction.

Electrical Service

The HCW electrical service will be fed from the main electrical system of the garage under construction. The HCW will use a 480/277V, 250A, existing panel HLS, 75kVA step-down transformer, and 225A panel at 120/208V already in the east electrical room. Wires to be pulled in the existing empty conduit from the emergency panel to serve emergency lighting. A secondary electrical room will be provided on the opposite end to reduce wire upsizing due to the voltage drop. The clinic needs more power than originally allocated so we will be extending the 400A feeder planned for the other shell area under the ramp to overhead over to the secondary electric room and pull wire. The scope will be divided 1/2 for East electric room and 1/2 for West electric room. Mechanical equipment will be served out of the new 400A panel on the West side.

Power distribution

The HCW east electrical room is currently served with 250A/480/277V, 3ph, 4W panel (HLS), (1) 75kVA step-down transformer and (1) 225A/208/120V, 3PH, 4W panel (LLS1). An additional panel 225A/208/120V , 3ph, 4W panel (LLS2) will be provided and fed through panel LLS1.

The west electrical room will be provided with (1) 400A/480/277V, 3ph, 4W panel (HLSA), (1) 75kVA step-down transformer and (1) 225A/208/120V, 3PH, 4W 2 section panel (LLSA)

Emergency

Wires (2-#10 &1-12G) will be pulled in the existing empty conduit from the emergency panel HE1 to serve emergency lighting.

(2) circuits of (2-10 & 1-#12G in 3/4”C) from panel L1E2 will be provided and terminated in Jbox for use with fire alarm expansion panel and any fire dampers (if needed).

Equipment and Circuit Sizing Criteria

Interior lighting: 277v (and 120v for specialty), single phase, 4000VA max/ckt (277v), 1500 VA max/ckt (120v)

Motors 3/4 hp and larger: 480v, 3ph

Motors less than 3/4 hp: 120v or 277v single phase

General receptacles: 120v single phase, 6 max/circuit

Branch circuits will be equipped with dedicated neutrals. Shared neutrals will not be permitted.

Feeder and branch circuits adjusted to accommodate maximum voltage drop of 2%

Bonding and equipment grounding

Provide insulated equipment grounding conductor in each feeder and branch circuit raceway. Raceway will not be allowed to be used as the sole equipment grounding conductor.

Minimum equipment ground conductor size: #12 AWG

Lighting

LED lighting will be used throughout the building, match JPS standard light fixtures, and controlled through a combination of vacancy sensors, dimming controls, daylight harvesting, and on/off digital switches.

Wireless control systems are not allowed. Dual technology wall sensors are preferred. Lighting control system will not interface with the building automation system (BAS). Toggle switches or buttons are preferred while touch screens are not allowed.

Interior lighting will have selectable CCT ranging from 3500K-5000K and may be lay-in, surface mount, or specialty fixtures. IESNA recommendations will be met. Lobby areas have 90 CRI while everywhere else will have 80 CRI.

Backup power for emergency lighting and exit signs will be from the generator. Interior emergency lights to remain on.

Fire Alarm System

Extension of the existing fire alarm system is anticipated for this project.

System will be addressable, intelligent, microprocessor-based fire alarm system including the following:

Fire Alarm Control Unit (FACU)

Annunciators

Notification devices

- Combination of audible, visible and audible/visible devices – Speaker
  - Voice intelligibility, where required by the AHJ, shall be considered for the following acoustically distinguishable spaces (ADS);
    - Entrance Lobby
    - Concourses
- Textual notification

Initiation devices

- Photoelectric smoke detectors
- Duct mounted Photoelectric smoke detectors
- Manual pull stations

ELECTRICAL NARRATIVE

Control Modules

Signal to security system for egress/security door control

Signal to BMS

Smoke Dampers

Door release

Door Hold Open devices

Isolator modules

Sound levels to be achieved in accordance with NFPA 72 Section 19 and assume ambient noise levels as outlined in NFPA 72 table A 18.4.3 for:

Public Mode

Private Mode

Notification Device circuits to be class B wiring and protected for survivability level:

Level 0 – has no specific requirements for survivability

Level 1 – pathways in buildings protected by automatic sprinkler system

Level 2 – 2 HR rated cable system, or 2 HR rated enclosure

Level 3 - 2 HR rated cable system, or 2 HR rated enclosure and in building protected by automatic sprinkler system

Secondary Power Supply Sizing is based on:

Connection to automatic starting generator system AND storage batteries dedicated to the fire alarm system sized for 4 hours of capacity.

Commissioning/functional testing

The owner will direct the services of an independent commissioning agent. The CXA will develop and establish a commissioning plan for:

Lighting Control System in accordance with ASHRAE 90.1 2016 section 9.4.3

Fire Alarm System

Material of Construction

Conductors

Feeders 125A and larger: copper

Minimum wire size: #12 AWG for power and lighting

Wire shall be solid for all conductors smaller than No. 10 AWG and smaller; stranded for No. 8 and larger

Branch circuit wiring shall be adjusted for voltage drop:

20 A, 120 V circuits longer than 75 feet (23 m): 10AWG

20 A, 120 V circuits longer than 150 feet (46 m): 8AWG

20 A, 277 V circuits longer than 150 feet (46 m): 10 AWG.

Copper Building Wire Insulation shall be Type THHN/THWN, except as indicated below.

Size 4 AWG and Larger: Type THHN/THWN-2.

All conductors shall be in metal conduit unless otherwise noted.

Type AC-HCF and Type MCAP-HCF is only acceptable for final connection to light fixtures.

Panelboards

Bussing: copper

Electronic trip type circuit breakers will be provided where necessary in order to ensure overcurrent device coordination; Otherwise all circuit breakers shall be thermal magnetic type.

Acceptable Manufacturers: Cutler-Hammer, General Electrical, Square D

Motor Controllers

Motor Controllers will be required for each multi-phase motor application as indicated on mechanical schedules and operational sequences.

Where VFD’s are indicated, manufacturer will be required to submit a harmonic analysis for the project showing all additional filtering required for compliance with IEEE 519.

Analysis to include total harmonic voltage distortion and total harmonic current distortion (TDD).

VFD manufacturer shall analyze and provide calculations, specific to this installation with his VFDs, indicating total harmonic voltage distortion is less than 3% with total dynamic distortion less than 8%.

Expected drive configurations are as follows:

Pumps: Single VFD/motor, no bypass

AHU’s: Single VFD for multi-motor application, no bypass

Chillers: Single VFD/motor, no bypass

Fans: Single VFD/motor, no bypass

Disconnect Switches

Quick-make, quick-break enclosed safety switches listed and labeled as complying with UL 98; Heavy Duty (480V) with ratings, configurations, and features as required for application.

Where available fault current at disconnect location exceeds 10 kAIC, fusible switch is required, regardless of presence of upstream OCP.

ELECTRICAL NARRATIVE

Wiring Devices

Switches: industrial specification grade. 120/277V

Receptacles: Hospital grade, tamper-resistant, 20A, 125V NEMA 5-20R

GFI Receptacles: Hospital grade, tamper-resistant 20A, 125V NEMA 5-20R

Wall Plates: Combination of nylon and stainless steel as directed by architectural finishes

Floor outlets in slab: Multi-service, recessed, with recessed connections, as required for application

Finish Color:

Normal Power - White device with stainless steel or White Nylon cover plate, engraved black lettering

Raceway Applications:

Below Grade: PVC

Exterior Exposed: IMC

Interior Exposed above 6’: EMT

Interior Exposed below 6’: IMC

Interior Concealed: EMT

4.4
PLUMBING NARRATIVE

PLUMBING NARRATIVE

JPS HEALTH CENTER FOR WOMEN

SCHEMATIC DESIGN NARRATIVE 5-30-2025 FIRE PROTECTION

The project will follow current JPS Standards for fire protection systems. The system will comply with JCAHO requirements, FM Global Insurance Requirements, NFPA 99 (2012), NFPA 13/14, and NFPA 101 (2012). The Authority Having Jurisdiction (AHJ) is the City of Fort Worth.

The building will be fully sprinkled with a wet pipe automatic sprinkler system. The building will not require a fire pump. Space will be allocated above the ceiling to be dedicated to fire protection piping.

All sprinkler heads within the facility will be quick-response Tyco RFII concealed sprinkler heads. Heads will be located within 6” of ceiling tiles at higher design areas (where there is tile). Exterior or unheated areas will utilize dry or frost proof heads, depending on the situation. Design will provide criteria in the drawings and specs for the CMAR as to how heads are to be placed within the ceiling. Coordinated shop drawings will then be provided for review.

MDF and IDF rooms are to utilize wet sprinkler systems – clean agent and preaction systems are not to be used.

All fire and sprinkler piping is required to be American Made. Fire protection pipe materials to be schedule 40 welded steel with threaded joints for pipe sizes 2” and smaller. Schedule 10 welded steel pipe suitable for roll grooving for pipe sizes 2-1/2” and larger. Fittings: threaded or grooved joints. Sprinkler piping and fittings shall be schedule 40 galvanized or ASTM-A135 ERW black steel for dry pipe systems and pre-action systems, where piping is exposed to weather or located in a corrosive environment. Stainless steel flexible head connections are only allowed in lay in ceilings.

All fire protection and sprinkler piping and valves to be painted red, whether exposed or not.

Based on the height of the building an automatic standpipe system will not be required.

The sprinkler demand will be based on FM Global Hazard Categories, with the mechanical room requiring the largest demand as an HC-2 area (.2 GPM / 2500 sqft design density). The hose stream allowance is required to be 250 GPM.

The existing shell space provided as part of the Garage project includes a wet pipe sprinkler system that will need to be reworked to suit the Architectural layout and buildout of the space. The garage’s manual standpipe main line is routed through the HCW and will need to be coordinated with the build out of the space. The fire department connection for the HCW was provided by the garage project and is expected to remain. The IDF and Electrical room at the HCW are indicated to be served by a dry pipe system served from the Garage’s manual standpipe system. Additionally, this same dry pipe system serves the soffit space at the MOB’s proposed loading dock. Any required changes to the existing Garage/HCW sprinkler or standpipe systems due to the MOB project constraints will be addressed as part of the MOB project. There are several sections of existing pipe that will need to rerouted to avoid the new IDF rooms.

End of Fire Protection Narrative

PLUMBING NARRATIVE

PLUMBING

The project will follow current JPS Standards for plumbing systems. The system will comply with current plumbing codes, JCAHO requirements, HHS Requirements, and NFPA 99.

Plumbing Fixtures:

Plumbing fixtures will match current JPS Standards for water closets, sinks, lavatories, etc. All toilet rooms will have a floor drain in them and all water closets, floor drains, and showers are to be provided with separate cleanouts. Water closets are to be provided with a minimum 1000 lb rated carrier and toilet seats are required to have brass nuts and bolts.

Domestic Water Systems

The existing Garage project has provided a 2-1/2" water service line and reduced pressure backflow preventer to serve both the Garage and the buildout (HCW).

Downstream of the RPZ assembly shall be a full building water softener, which will need to be located within the existing Plumbing room provided as part of the Garage project.

Due to the height of the building, a domestic water booster pump will not be required.

Domestic cold, domestic hot, and domestic water recirculation systems will generally be type L copper pipe with soldered or press fit joints. System valves shall be as per JPS guidelines.

Space will be allocated above the ceiling to be dedicated to plumbing piping. All bathroom groups are to have individual accessible isolation valves.

Domestic hot water is to be fed from new electric domestic water heaters, located in a new mechanical room under the ramp in the Garage. Water heaters are to be provided with master mixing valves. All fixtures are to have domestic hot water recirculated as close to the hot water connection to the fixture as possible.

Domestic water piping passing through the garage will be heat traced and insulated.

The Building Automation System (BAS) shall alarm excessive, continuous water flow as well as domestic hot and domestic cold water temperatures out of range.

All exposed piping below 10 feet in back of house areas (mech rooms, janitor closets) to have aluminum jacket protecting the piping insulation. All exposed piping below 10 feet in occupied areas to have PVC jacket protecting the piping insulation. All exposed pipe and pipe insulation is to be painted.

Sanitary and Vent

Based on the size and type of the building the estimated sanitary sewer load is 230 drainage fixture units. This will require an 6" sanitary sewer main at 1/8" slope connected to the city sewer line adjacent to the site.

Sanitary and vent will be provided to each plumbing fixture. Pipe materials to be cast iron, standard weight; below grade joints will be gasketed, bell/spigot; above ground joints will be no-hub with 4 band couplings. PVC is acceptable underground. Sanitary waste mains serving water closets are to be a minimum of 6". Individual branch lines serving water closets are to be a minimum of 4".

Storm Water

The footprint of the HCW lies under the existing Garage, therefore a new roof drainage system is not anticipated. There are several sections of existing pipe and floor penetrations that will need to rerouted/ relocated to avoid the new IDF rooms and exam rooms.

Natural Gas

It is assumed that the building will not require any natural gas.

Medical Gas Systems

It is assumed that the building will not require any piped medical gases.

Geotechnical / Foundation Considerations

Per the Geotechnical Engineering report, the existing soil conditions include expansive clays which will require the foundation to consider a slab-on-void structured slab or a crawlspace.

Slab-on-void systems will require the plumbing to be suspended from the slab and entirely isolated from the soil with a minimum of 12" vertically and 24" horizontally clear per the Geotechnical Engineer recommendations. Additionally, where the piping transitions between the void space and the exterior of the building into the expansive soil zone, flexible expansion joints/couplings shall be provided on each plumbing service line.

A crawlspace will require additional sub-slab drainage and catch basins with duplex submersible pumps. The existing perimeter drainage system is to be confirmed/modified to below the mud slab level along the length of the foundation wall as recommended by the Geotechnical report. This subsurface drainage system will interconnect with the catch basin(s) located within the crawlspace where the water will be discharged out to the storm sewer system.

Other General Plumbing Requirements

Connection to any non- plumbing system will require backflow prevention.

Color coded, fully painted plumbing piping is required where exposed. Labeled only piping is acceptable above ceilings and in concealed locations. JPS to provide standard for this. At floor penetrations, flanged sleeves are required to prevent potential water from leaking to a lower floor(s) – min 4" sleeves above the floor.

All plumbing valves are to be tagged and labeled so they can be easily located.

End of Plumbing Narrative

4.5
TECHNOLOGY NARRATIVE

TECHNOLOGY NARRATIVE

The project will consist of a 21,000 SF Healthcare for Women's center located within the ground level of a new structured parking garage. Program spaces include ultrasound, classrooms, exam and procedure rooms, clinical workrooms, a lab, and office space.

This space will connect to the existing/new parking garage that will be connected to the JPS network. Reference contract documents for Parking Garage scope of work for project specific telecommunications design information.

Construction Codes and Design Standards

Building codes adopted by the City of Fort Worth govern the scope of work:

2021 International Building Code with Fort Worth Amendments

2020 National Electrical Code with Fort Worth Amendments

2021 International Fire Code with Fort Worth Amendments

2015 International Energy Conservation Code with Fort Worth Amendments

2012 Texas Accessibility Standards

City of Fort Worth Zoning Ordinance

NFPA 101 – Life Safety Code

BICSI TDMM

EIA-TIA 568

FGI Standards

JPS Low Voltage and Network Cabling Standards

ANSI/NECA/BICSI-568 -- Standard for Installing Commercial Building Telecommunications Cabling

ANSI/TIA/EIA Standards – Latest Edition:

- ANSI/TIA/EIA-568-B.1 -- Commercial Building Telecommunications Cabling Standard, Part 1: General Requirements
- ANSI/TIA/EIA-568-B.2 -- Commercial Building Telecommunications Cabling Standard, Part 2: Balanced Twisted Pair Cabling Components
- ANSI/TIA/EIA-568-B.3 -- Optical Fiber Cabling Components Standard
- ANSI/TIA/EIA-606(A) -- The Administration Standard for the Telecommunications Infrastructure of Commercial Buildings
- ANSI/TIA/EIA-607(A) -- Commercial Building Grounding and Bonding Requirements for Telecommunications
- ANSI/TIA/EIA-758(A) -- Customer-Owned Outside Plant Telecommunications Cabling Standard
- TIA/EIA TSB 67 - Transmission Performance Specifications for Field Testing of Twisted - Pair Cabling Systems.
- Federal, state, and local codes, rules, regulations, and ordinances governing the work, are as fully part of the specifications as if herein repeated or hereto attached. If the contractor should note items in the drawings or the specifications, construction of which would be code violations, promptly call them to the attention of the Owner's Representative in writing. Where the requirements of other sections of the specifications are more stringent than applicable codes, rules, regulations, and ordinances, the specifications shall apply.
- Underwriters Laboratories, Inc. (UL): U.L. 60950-1 -- Information Technology Equipment Safety.
- Underwriters Laboratories, Inc. (UL): U.L. 2560 -- Standard for Emergency Call Systems for Assisted Living and Independent Living Facilities
- National Fire Protection Association (NFPA): NFPA 70 - National Electrical Code.
- Americans with Disabilities Accessibility Guidelines.
- Code of Federal Regulations, Title 29, Chapter XVII, Part 1910 (OSHA).
- International Building Code (IBC).

Technology Systems

The outpatient visit of the future will look far different than today's experience. Before even coming to the JPS Campus, future patients will likely have already had communication with clinical staff, the scheduling department, even admissions. Moving forward, all facilities shall be designed to support telehealth and remote patient monitoring, integrating connected medical devices for real-time diagnostics and care.

Ambulatory patients will be using wearable technologies that will communicate with Mobile Body Area Networks (MBAN) sending data directly to care providers no matter where they are in the world. Patients entering the MOB will have sensor data automatically uploaded via a robust JPS WiFi environment.

JPS will adopt a modular, AI-enabled Internet of Things (IoT) platform that integrates multiple applications into unified architecture.

With so much time wasted in today's hospital buildings searching for equipment, looking for a patient, trying to track a family down, there will be much reliance on The Internet of Things (IoT) and tracking/locating systems. While multiple real-time location systems (RTLS) and IoT solutions are in place within JPS, standardization and consolidation into a single unified RTLS platform are necessary to optimize effectiveness. The modernization plan focuses on eliminating proprietary technologies, ensuring interoperability, and expanding capabilities across patients, staff, and asset tracking.

Unseen to the patients and visitors will be a series of systems and infrastructure, integrated and interconnected into a single, ubiquitous ecosystem. A critical part being the ability to gather data from the building, the movement of people, time of day, day of week and through use of predictive analytics, machine learning, and other AI-supported algorithms, efficiently enhance workflows and decision making. The real-time 3D/interactive maps, automatic translation services for both language and medical terminology, the integration into the Electronic Medical Record, and the ambient AI, designed to reduce the clinical burden through AI-assisted documentation and decision support are part of the future.

Quoted from the document JPS Health Technology Vision Overview (FY25-FY29): *"JPS will leverage appropriate cutting-edge technology to create a digitally enabled, highly efficient, and patient-centric health system. Through AI-driven intelligence, IoT modernization, cloud-based infrastructure, and enhanced cybersecurity, JPS will optimize care delivery, improve outcomes, and enhance operational resilience. This transformation will create a highly efficient, adaptive, and patient-centric healthcare system that improves clinical workflows, operational resilience, and patient safety while ensuring workforce readiness, financial sustainability, and community engagement".*

Supporting this vision is a robust, scalable, manageable, and often redundant infrastructure as follows:

Incoming Utilities:

Primary and secondary connections to the JPS IT Network shall be provided via underground pathways to handholes (HHs) to be placed by the JPS Fiber Loop Project. This Center will connect to the existing (new) parking garage telecommunications service entrance facility/ telecommunications equipment center located within the garage on the same level.

Within the Center, these conduits will connect to the JPS IT Network via two Tube Distribution Units (for redundancy) to be located within the IT rooms within the program space.

Cabling Requirements (fiber and copper)

General OSP Parameters:

Not less than two physically separated service entrance pathways into this location shall be required. These will be covered by the existing infrastructure in the garage, so no outside plant connections are required.

Communications Equipment Rooms:

The program space may require multiple communications equipment rooms to properly serve the technology systems. However, it could be designed with a single IT room so long as the number of users to be supported does not exceed the size of the IT room. The IT room/s include the following based on naming conventions:

TECHNOLOGY NARRATIVE

Telecommunications Service Entry Room (TSER)/Telecommunications Equipment Center (TEC) (formerly known as a Main Distribution Room (MDF)). This is a combined space called the TSER/TEC. The TSER/TEC is already in place within the garage.

The TSER/TEC will act as the primary distributor for intrabuilding fiber that is distributed to each Telecommunications Distribution Room (TDR) within the space. This is also already in place within the parking garage.

Telecommunications Distribution Room (TDR):

The TDRs will serve as the program space head-end and termination concentration point for horizontal cabling to support end user devices. There shall be a minimum of (1) TDR per floor per FGI. They will be designated by serving areas to comply with the 100-meter cabling distance limitations of structured cabling and BICSI standards including the channel run above ceiling and up/down the wall to the serving area. Additional TDRs may be required based on cable distance limitations.

There will be a chain link fence dividing the room. The more secure side of the room behind the fence will be dedicated to JPS IT Network infrastructure, cabling and devices. The other side of the room will be dedicated to 3rd party vendors. 3rd party vendor equipment includes access control, cameras, nurse call, paging/intercom and other systems that are supported by outside vendors. The fence will need a sliding gate instead of a swing fence to potentially decrease the room size.

The racks for the new TDRs could be a mix of 4-post 7'(h) and 2-post rack 7'(h) X 19"(w). The approved equipment rack is Panduit. The vertical wire manager will be 7'(H) X 10" (W) dual sided. The approved vertical wire manager is Panduit. The vertical wire manager will be installed on each end and between each rack on a rack row.

There will be 2 levels of basket cable tray installed in the TDRs. Each ladder rack is 18" (W). One ladder rack will be at 7'-6" (3rd Party) and the other at 8'-6" (JPS). Waterfalls will be used to transition cables from the ladder rack into the vertical wire managers. The approved cable tray manufacturer is Panduit. At each level of cable tray firestop sleeves will be installed between the corridor and the TDR. Refer to the life safety firestopping requirements for sleeve information.

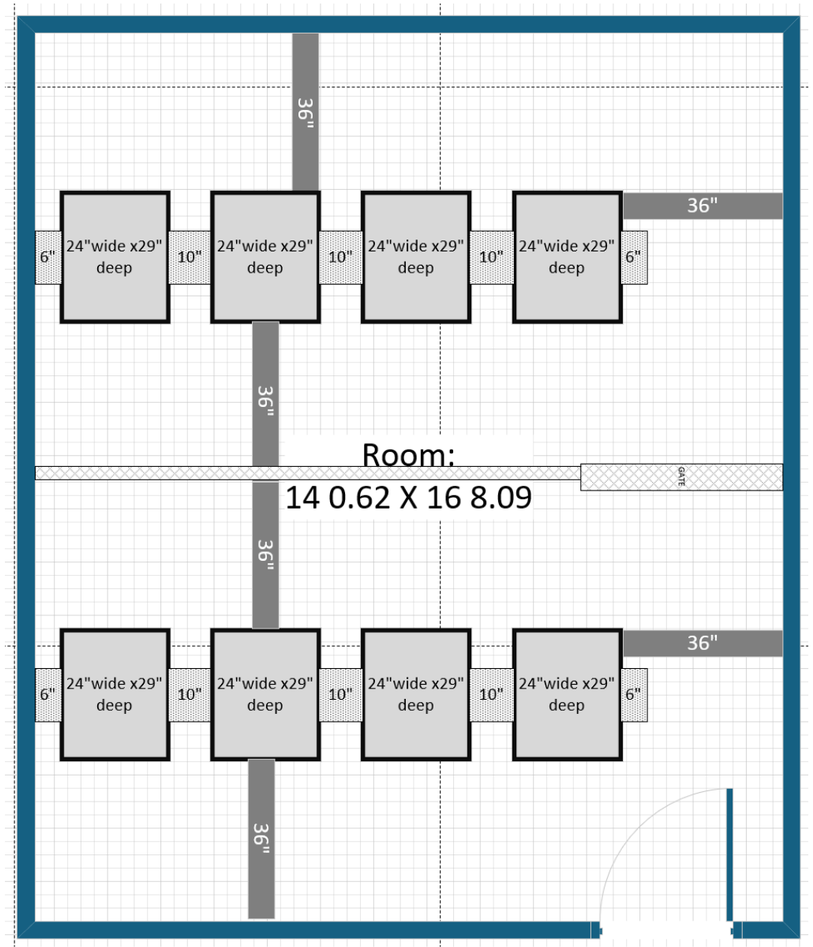
Each of the new rooms will be designed to maintain a temperature range of 64-75 °F with a relative humidity between 30-50%.

Each rack will require both normal and emergency power. Two (2) dedicated 30A, 208VAC emergency circuits shall be provided for each rack. Transition of normal to generator power will be by a rack mounted UPS.

Convenience electrical receptacles will be located on each wall. There will not be a finished ceiling (exposed to the structure above) and the flooring can be sealed concrete. A Telecommunications Ground Bar (TGB) with a dual-lug pattern will also be located on the wall near the racks.

Both vertical and horizontal penetrations shall be via a firestop appliance such as STI Ez-Path or Hilti Speed Sleeves (or similar).

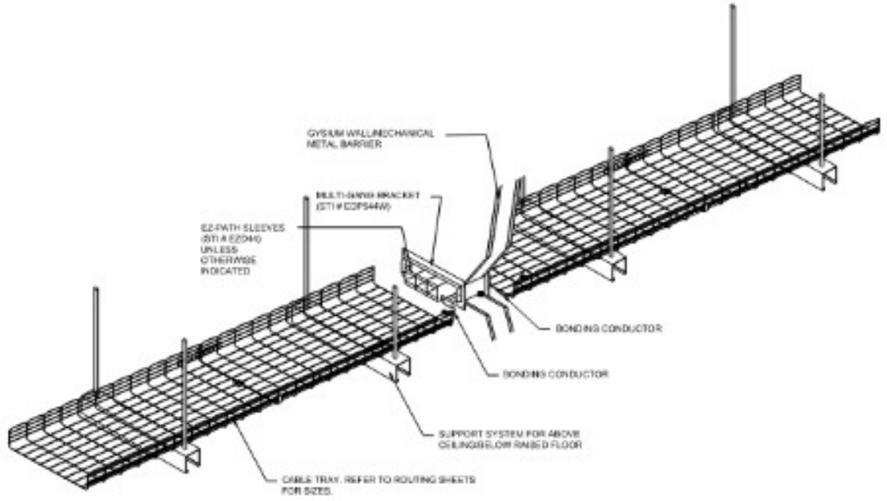
Below is a sample of an acceptable room. The Women's program space does not have the occupancy that will necessitate a space containing four racks. This room is currently, as of this writing, under review.



Primary Horizontal Cable Pathway:

Ladder-type cable tray will be required to serve primary routes of structured cabling and other low voltage systems infrastructure outside the IT spaces. Basket-type cable tray is to be used within the IT spaces. In corridors, maximin of 18" in width should be expected within areas of high use (staff cubicles/offices). For other areas, the design will indicate the correct tray width and will consider a 40% fill ratio at the end of construction to allow for future installations of cable. All corridor cable trays shall be mounted on a trapeze allowing for two points of anchor into the deck from each support. Where tray is stopped prior to a wall, the tray must be bonded via a 1" conduit and approved appliances shall be installed to allow cabling to pass through the wall.

TECHNOLOGY NARRATIVE



D 1 TC501 CABLE TRAY (BASKET) TO EZ-PATH TRANSITION DETAIL

All JPS projects will require multiple horizontal conduit and cable tray pathways to serve interbuilding and intrabuilding cabling. Refer to the riser conduit and site drawings in the technology set for location and quantity of conduits, to be determined during early DD phases.

Ladder style cable tray will be required to serve primary routes of structured cabling and other low voltage systems infrastructure within corridors. Cable tray shall be a minimum of 12" wide and 4" deep and may increase in width up to 24" depending on cable density – to be determined during late in the DD phase. J-hooks can be used to support small bundles of structured cabling in order to transition to the cable tray, per drawings.

The approved wire mesh cable tray manufacturers are Cablofil, Cooper B-Line, or Snake Tray.

Manufacturer fire-rated penetration assemblies, such as products from STK (Ez-Path) and Hilti (Firestop Speed Sleeves) with gang plates and modular fire sleeves with adjustable gang plates, are required for the following conditions:

- When cable tray or primary communications pathways penetrate fire-rated walls
- Floors within the TSER/TEC and TDR rooms to support vertical cabling when communications equipment rooms are symmetrically stacked

Conduit sleeves will be required for cabling passing over any hard ceiling area without access panels. Conduit pathways will also be required for any cabling passing through or being installed in an open ceiling area such as mechanical and electrical rooms.

When cable tray or a primary communications pathways penetrate smoke or acoustical walls and at each level of cable tray firestop sleeves will be installed between the corridor and the TDR. Refer to the life safety firestopping requirements for sleeve information. New cable trays will be required in the work area. 1" Conduit will be installed between the workstation outlet and either the accessible ceiling or basket tray. Where there are small bundles J-Hooks can be used.

Structured Cabling System:

The intent of a structured cabling system (SCS) is to provide a universal, application-independent infrastructure for various applications and technologies. Wherever possible, standard cabling types will be used by each system. The structured cabling system is generally divided into two main categories: backbone (risers) and horizontal. These are then subdivided into pathways and cabling systems. In general, backbone cabling is composed of fiber optic cabling routed between technology rooms while horizontal cabling is composed of copper unshielded twisted pair (UTP) cabling.

JPS has standardized on Panduit Category 6a plenum for all data connectivity media and infrastructure (racks, cabinets, wire managers, patch panels, patch cords etc) within its facilities. The horizontal structured cabling will conform to ANSI/EIA/TIA requirements and will be installed in a star topology in a continuous run directly from the TDRs.

Voice, data and networked video requirements will be supported using Category 6a plenum Unshielded Twisted Pair (UTP) cables extending from each TDR to each Work Area Outlet (WAO). Each typical WAO will contain at least two (2) CAT 6a cables (more if equipment needs require) terminated in a 4-port faceplate with 2 blanks. Each cable shall be considered Universal (not dedicated to a specific technology). Certain exceptions to the WAO standard include single CAT 6a plenum cables located for but not limited to employee timekeeping systems, wall mounted telephone sets, pneumatic tube systems, and medicine distribution cabinets. There should be no more than 12" of slack stored in an in-wall box, modular furniture raceway, or insulated walls. There should be 5' of slack in the ceiling above the WAO.

Cables shall not traverse floors. Horizontal cabling shall be served from the same floor as the Work Area Outlet (WAO). Each WAO can contain up to four (4) Category 6a cables terminated into a 4-port modular faceplate. Typical WAOs will require a 4" square back-box with a minimum of a 1" conduit to the accessible ceiling space.

Within the TDR(s), horizontal cabling will terminate onto rack-mounted angled patch panels.

All cabling within the facility will be plenum-rated.

The systems typically supported via this infrastructure are:

- Voice and Data Networks (includes all IP addressable systems: computers, printers, scanners, fax, modems, phones, dictation, Med Dispensers, PACS, etc.)
- Clinical Devices and Equipment
- Wireless LAN
- Teleconferencing/Telemedicine Connectivity
- LAN Fiber and Copper Riser and Distribution Systems
- RTLS (Real Time Location Systems)
- Telephone System Cabling, Telephone Handset Cabling, and Riser Distribution Cabling
- Patient Monitoring and other Biomedical Equipment Systems including Telemetry

Backbone Cabling:

Fiber and copper will be required for the new TDR from the TDUs placed within the building. The new TDR/s will require two (2) 48 strands of single mode fiber and one (1) 25-pair copper. The topology will be Air Blown Fiber (ABF) instead of the traditional armored fiber or fiber within metal conduits. Each TDR will have a direct run from that TDR to the IT fiber concentration points within the parking garage and ultimately connect to the IT space to be designed in the new/future CUP. From each TDR within the space, a 2-tube cable will be placed to the garage TSER/TEC (MDF).

Horizontal Cabling:

Voice, data, and networked video requirements will be supported using a mixture of optical fiber and copper Category 6A plenum Unshielded Twisted Pair (UTP) cables extending from each TDR to each Work Area Outlet (WAO). Where copper is required, the typical WAO will contain at least two (2) CAT 6A cables (more if equipment needs require) terminated in a 4-port faceplate with 2 blanks.

TECHNOLOGY NARRATIVE

Each cable, fiber and copper, shall be considered Universal (not dedicated to specific technology). Certain exceptions to the WAO standard include single CAT 6A plenum cables located for but not limited to employee timekeeping systems, wall mounted telephone sets, and medicine distribution cabinets. There should be no more than 12" of slack stored in an in-wall box, modular furniture raceway, or insulated walls. There should be 10' of slack in the ceiling above the WAO.

The horizontal cabling is Panduit Cat6A. They will be terminated on Panduit angled patch panels in the TDR/s.

Wi-Fi:

The facility will contain infrastructure to provide ubiquitous Wi-Fi throughout the facility. Category 6A cables (x2) terminated into a surface mount box with 20' of cable slack for future adjustments will be required per Wireless Access Point (WAP).

Data Network:

Access layer network switches will reside within the TDR/s. IT equipment (Cisco switches) will be procured by the GC and configured and installed by JPS IT.

Voice System:

The project will require an expansion of the existing JPS Voice over IP (VoIP) system.

The basis of design assumes that JPS will furnish will use VoIP gateways within the TSER/TECs and install the individual handsets within the user space.

Patch Cords:

Patch Cords will be procured by the GC via a quantity that IT will supply.

Labeling:

All new racks and patch panels in the TDR will be labelled with the rack number. Patch Panels will be labeled numbered sequentially starting with "01".

Nurse Call:

The nurse call system will be procured and installed by the GC. Nurse call locations will be detailed during the Design Development phase.

Real Time Location Services (RTLS):

The system is not expected within this program space.

Audio visual system:

Two consult rooms and two classrooms requiring AV elements, a sub-waiting space likely needing a TV, overhead paging, and a wayfinding kiosk are expected to be detailed into the space. The GC will procure and install this equipment with the wayfinding kiosk configured by JPS IT.

Overhead Paging:

Overhead paging will be provided via a series of amplifiers and overhead speakers. Some may be controlled via individual volume controls while others may be grouped in zones. Amplifiers will typically be rack-mounted in the TDR/s with signal distribution aligning to each paging zone. Backbone cabling between the communications rooms will be required to connect the paging system components.

Additional paging requirements will be outlined in the Interior Tenant fit out program and narrative. If mass notification is found to be required during the DD phase, the drawings will indicate connections to the existing overhead paging system.

Distributed Antenna Systems

Neutral Host Distributed Antenna System (NHDAS):

A neutral host distributed antenna system (NHDAS) may be installed within the parking garage to re-radiate signal(s) from selected service providers, carriers, and pagers. However, the garage is not complete enough in construction for JPS determine if the facility requires this system. If so, the head-end equipment will be designed into the TSER/TEC of the garage, and this project will connect to that head-end. Bi-directional amplifiers, cabling, antennas, and other components ensure coverage in all areas of the space will be detailed in the DD Phase. It is recommended to consider this system is a requirement in terms of budgeting.

The NHDAS will support commercial cellular telephones (AT&T and Verizon) which are the current JHS providers.

Emergency Responder Radio Communication System (ERRCS):

Two Emergency Responder Radio Communication System (ERRCS) may be required within the space. One system is dedicated to the City of Fort Worth Police and the other for the JPS Police Department. The parking garage, if required, will procure and install these systems. However, predictive analysis will need to be provided as part of the garage project in order to ascertain if this is a required system. Once the garage is far enough along in construction, the AHJ will make the determination. It is advised that this project budget funds to connect this system to the garage TSER/TEC even though we will not know if it's required until substantial completion.

Security Systems

JPS is continuing to undergo a review to select a manufacturer to provide a unified security system to include access controls, intercoms, and cameras. Unless JPS selects a sole-source manufacturer, it is expected that this program will be expand from the existing system.

Access Control System:

The scope of work will include new card readers, control panels, electrified door hardware, and alarm initiating devices. Access controlled doors are required, but not limited to, the following spaces:

- Exterior entry doors
- Telecommunications Rooms
- Staff entrance doors
- All outside doors will be monitored for door status.

Typical access-controlled doors consist of card readers, door position switches, request-to-exit sensors (integrated door hardware) and electrified door hardware. Conduit for each of these security devices will route to a junction box over the door in the accessible ceiling space on the secure side of the door. Cabling for card reader doors and alarm initiating devices will route to wall-mounted equipment panels in the TRs.

Panic Buttons:

Panic buttons will be located at registration/reception desks. Device and cabling will be included as part of the CD Phase package.

Video Surveillance System:

The VSS will be an expansion of the existing system. Network based cameras capable of recording in HD format (1920 x 1080) will be utilized to cover:

- Public lobbies
- Emergency phones
- Main corridors
- Exterior areas
- Other secure areas.

CAT 6A UTP cabling for the security cameras will be part of the structured cabling system and connect to rack mounted patch panels in the 3rd party rack location. Expansion of existing application servers, network video recording servers, and storage appliances will be required to serve the expanded VSS, unless JPS selects a new manufacturer.

5.0
PROJECT BUDGET VALIDATION

Estimate of Probable Costs and Options

ESTIMATE OF PROBABLE COSTS

TO BE DEVELOPED

6.0
APPENDIX

XXX

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