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Mercy

Bentonville, Arkansas
Surgery Renovation
Schematic Design

January 9, 2026

Contents

SURGERY
CONCEPT PLAN

MERCY HOSPITAL - Bentonville - Highway 102

MERCY INFUSION, SURGERY, IMAGING, CLINIC AND LAB

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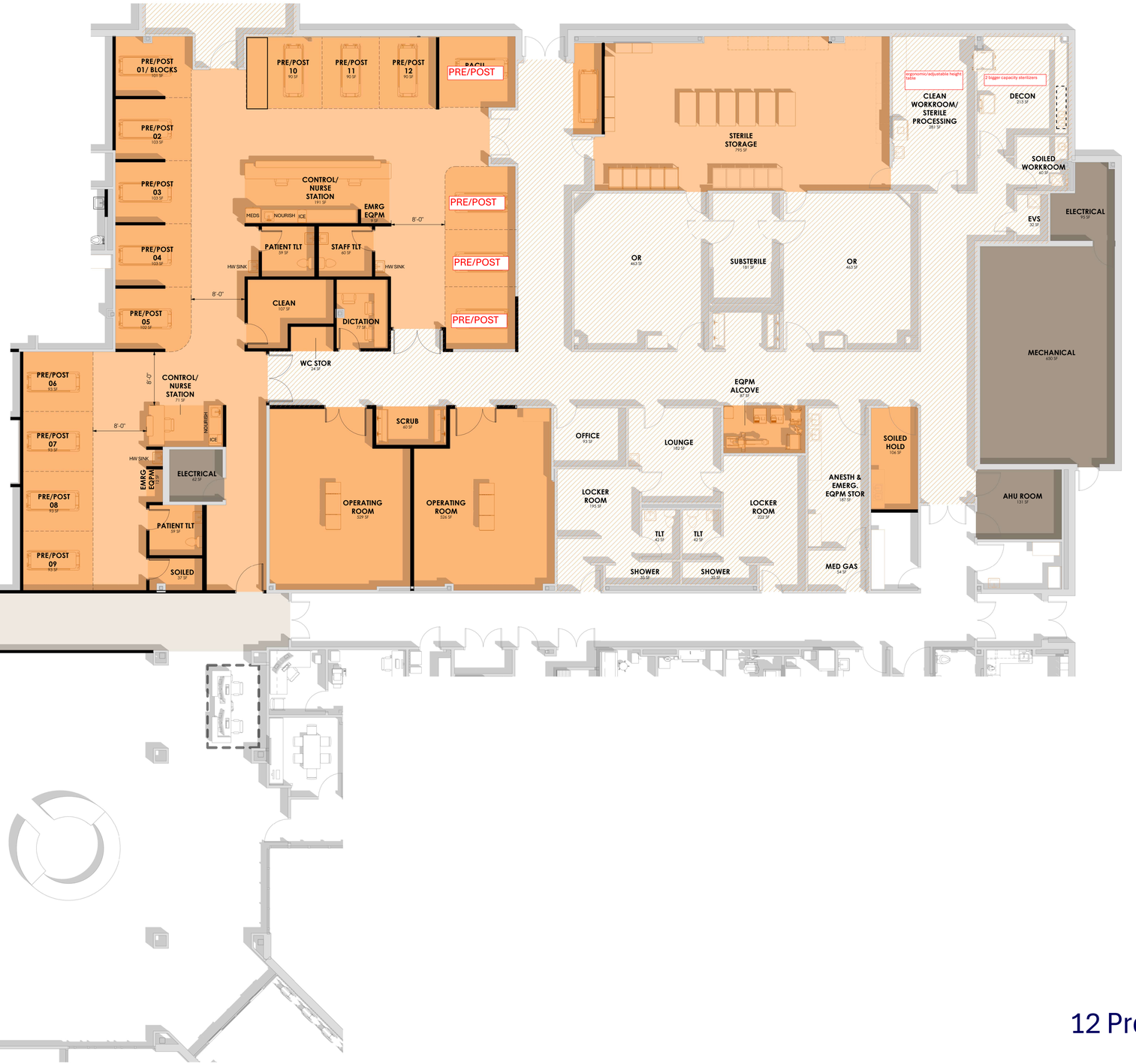

16 Bays

12 Pre/Post, 4 PACU

SURGERY PLAN W/ PACU RELOCATED

SCALE: 1/8" = 1'-0"

01.06.2026

S02.1

Schematic Design Drawings

Iowa City: 136 S Dubuque Street, Iowa City IA 55241 | **Kansas City:** 2380 McGee Street, Suite 310, Kansas City MO 64108 816.249.1500 | **Tulsa:** 320 S Boston, Suite 1400, Tulsa OK 74103 918.398.6400 | Bentonville: 206 SW 8th Street, Suite 206, Bentonville AR 72712 479.448.4099 | **Wichita:** 330 N Mead Street, Suite 100, Wichita KS 67202 316.262.2500 | www.hfgarchitecture.com

MERCY NORTHWEST ARKANSAS

MERCY INFUSION, SURGERY, IMAGING, CLINIC AND LAB

3101 SE 14TH ST.
BENTONVILLE, AR 72712

SCHEMATIC DESIGN - SURGERY

GENERAL NOTES

1. DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF THE ARCHITECT AND MAY NOT BE REUSED OR REPRODUCED IN ANY MANNER WITHOUT EXPRESSED WRITTEN CONSENT.

2. THE GENERAL CONTRACTOR SHALL INVESTIGATE ALL FIELD CONDITIONS RELEVANT TO THE PROJECT INCLUDING BUT NOT LIMITED TO DIMENSIONS, ELEVATIONS, GENERAL CONDITIONS, PROPERTY LINES, EASEMENTS, AND OTHER MISCELLANEOUS EXISTING CONDITIONS AND SHALL PROMPTLY NOTIFY THE ARCHITECT TO ANY WHICH DO NOT AGREE WITH THOSE SHOWN ON THE DRAWINGS.

3. THE GENERAL CONTRACTOR SHALL ALSO VERIFY THE COORDINATION OF DIMENSIONS AND THE LOCATION OF THE VARIOUS TRADE WORK, SUBCONTRACTORS AND SEPARATE CONTRACTS AND REPORT ANY CONFLICTS TO THE ARCHITECT IMMEDIATELY.

4. ALL DIMENSIONS ARE TO FACE OF MASONRY, FACE OF STUD OR CENTERLINE OF COLUMNS UNLESS OTHERWISE NOTED.

5. REPAIR DAMAGE TO EXISTING BUILDINGS, CEILING, PAVING, WALKS AND PLANTING AREAS INCURRED DURING CONSTRUCTION. PATCH ALL FLOOR AREAS, WALLS, AND CEILINGS ALTERED DURING CONSTRUCTION AS REQUIRED TO MATCH EXISTING WHERE OR NOT INDICATED BY THE DRAWINGS.

6. SEE SHEET G-101 FOR CODE INFORMATION.

DRAWING SYMBOLS

98.5 TOC — NEW ELEVATION / EXISTING ELEVATION
98.5 E TOC — EXISTING ELEVATION / EXISTING ELEVATION
95 — EXISTING CONTOUR
95.00 — NEW CONTOUR
ELEVATION DATUM (SECTIONS, ELEVATIONS ONLY)
B — TEST BORING (SITE PLANS ONLY)
PROPERTY LINE
1 / A101 — SHT. REFERENCE
1 / A101 — MATCHLINE
PRECAST CONCRETE WALL PANEL TAG

X / X.X — BUILDING SECTION
X / X.X — WALL SECTION
1 / A101 — DETAIL DRAWING
A3.1 / 1 — BUILDING ELEVATION
1 / A6.1 — INTERIOR ELEVATION
— PLAN NOTES
WINDOW ID TAG
A100 — DOOR NUMBER

ROOM NAME / 101 — ROOM NAME & NUMBER
A-4 — ALTERNATE TAG
XXX — PARTITION SYMBOL
1 — REVISION TAG
0 — COLUMN LINE GRID
— DEMOLITION PLAN NOTES
? — SITE PLAN NOTES
EXXX — EQUIPMENT NUMBER
PT-XX — PAINT COLOR TAG

VICINITY MAP
NO SCALE

PROJECT LOCATION
3101 SE 14TH ST.
BENTONVILLE, AR
72712

MATERIAL SYMBOLS

EARTH
GRANULAR FILL
CONCRETE
CONCRETE MASONRY
FACE BRICK
LVC FILL
CUT STONE
STEEL
CONT WD FRAMING
WOOD BLOCKING
FINISH WOOD
PLYWOOD
RIGID OR TAPERED INSULATION, EIFS
BATT INSULATION
GLASS
ASPHALT
GYPSUM BOARD

ABBREVIATIONS

+/-	plus or minus	CONC	concrete	FF	finish floor / finish face	JAN	janitor	PL	plate/plastic/ property line	STD	standard
A/C	air conditioning	CONF	conference	FG	finish grade	JT	joint	PLBG	plumbing	STL	steel
AB	anchor bolt	CONST	construction	FIN	finish	JST	joist	PLYWD	plywood	STOR	storage
AC	acoustical	CONT	continuous	FL	flow line	LAM	laminate	PR	pair	STRUCT	structure/structural
ACCU	air cooled condensing unit	CORR	corridor	FLDG	folding	LAV	lavatory	PREFIN	prefinished	SUSP	suspended
ADJ	adjustable	CPT	carpet	FLR	floor	LDR	ladder	PROJ(D)	project(projected)	T	tread
AFF	above finish floor	CRS	course	FLUOR	fluorescent	LF	lineal feet	PT	pressure treated	T&B	top & bottom
ALT	alternate	CT	ceramic tile	FRP	fiberglass reinforced plastic	LOCN	location	PTD	painted	T&G	tongue & groove
ALUM	aluminum	DBL	double	FRT	fire retardant	LVC	low volume change	QT	quarry tile	TB	tackboard
ANOD	anodized	DF	drinking fountain	FS	foot scraper	MAS	masonry	R	riser	TEL	telephone
APPROX	approximate	DIA	diameter	FT(')	foot	MATL	material	RAD(R)	radius	TLT	toilet
ARCH	architect/ architectural	DIM	dimension	FTG	footing	MAX	maximum	RAG	return air grille	TO	top of
@	at	DN	down	FURR	furring	MECH	mechanical	RD	roof drain	TOC	top of curb
BD	board	DO	ditto	FURN	furnace	MEMB	membrane	REF	refer/reference	TPH	toilet paper holder
BLDG	building	DTL	detail	FV	field verify	MANUF	manufacturer	REFRIG	refrigerator	TV	television
BLK	block/blocking	DWG	drawing	G	gas	MH	manhole	REINF	reinforcing	TW	top of wall
BM	beam	E	east	GA	gauge	MIN	minimum	REQ'D	required	TYP	typical
BMRK	benchmark	EA	each	GALV	galvanized	MIRR	mirror	RESIL	resilient	UCL	under cabinet light
BOC	back of curb	EC	electrical contractor	GB	grab bar	MISC	miscellaneous	RM	room	U.N.O	unless noted otherwise
BRG	bearing	EG	existing grade	GC	general contractor	MO	masonry opening	RO	rough opening	VCT	vinyl composition tile
BRK	brick	EIFS	exterior insulation finish system	GL	glass/glazing	MTL	metal	ROW	right of way	VERT	vertical
BRZ	bronze	EJ	expansion joint	GRD	grade	MULL	mullion	RVS	rigid vinyl sheet	VEST	vestibule
BO	bottom of	ELEC	electrical	GYP	gypsum	N	north	S	south	VIF	verify in field
BS	both sides	ELEV	elevation/elevator	HB	hose bib	NA	not applicable	SAN	sanitary	VWC	vinyl wall covering
BTM	bottom	EQUIP	equipment	HDWD	hardwood	NIC	not in contract	SAT	suspended acoustical tile	W	west
BUR	built-up roof	ETR	existing to remain	HDWR	hardware	NO(#)	number	SB	splash block	W/	with
BW	bottom of wall	EW	each way	HM	hollow metal	NOM	nominal	SECT	section	W/O	with out
CAB	cabinet	EXIST	existing	HORZ	horizontal	NTS	not to scale	SF	square feet	WC	water closet
CB	chalkboard	EXP	exposed	HPDL	high pressure decorative laminate	OA	overall	SHT	sheet	WD	wood
CC	center to center	EPDM	ethylene propylene diene terpolymer	HT	height	OC	on center	SHWR	shower	WNDW	window
CJ	control joint/ construction joint	EXT	exterior	HVAC	heating, ventilating & air conditioning	OD	outside diameter	SL	solid surface similar	WH	water heater
CL	center line	FD	floor drain	HW	hot water	OFF	office	SIM	sanitary napkin dispenser	WNSCT	wainscot
CLG	ceiling	FDN	foundation	ID	inside diameter	OPNG	opening	SND	specifications	WP	waterproofing, waterproof
CLO	closet	FE	fire extinguisher	IN(")	inch	OVHD	overhead	SPECS	square	WT	weight
CLR	clear/clearance	FEC	fire extinguisher cabinet	INSUL	insulation	PART	partition	SQ	studded rubber tile	WWF	welded wire fabric
CMU	concrete masonry unit			INT	interior	PLAS	plaster	SRT	stainless steel	YD	yard
COL	column							SS			

FOR MEDICAL FACILITIES ONLY

CS	central sterile
CT	computed tomography
ER	emergency room
ICU	intensive care unit
LDRP	labor-delivery-recovery-post partum
LTC	long term care
MRI	magnetic resonance imaging
MICU	medical intensive care unit
OR	operating room
OT	occupational therapy
PACU	post anesthetic care unit
PT	physical therapy
RT	respiratory therapy
SICU	surgical intensive care unit

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Architects Logo

No.	Date	Desc.
1		
2		
3		
4		
5		
6		

PROGRESS DRAWINGS
01/05/2026
NOT FOR CONSTRUCTION

Sign & Seal:

MERCY NORTHWEST ARKANSAS
Building No.: 0391
MERCY INFUSION, SURGERY, IMAGING, CLINIC AND LAB
3101 SE 14TH ST. BENTONVILLE, AR 72712
Mercy Project No.: 2040-828175

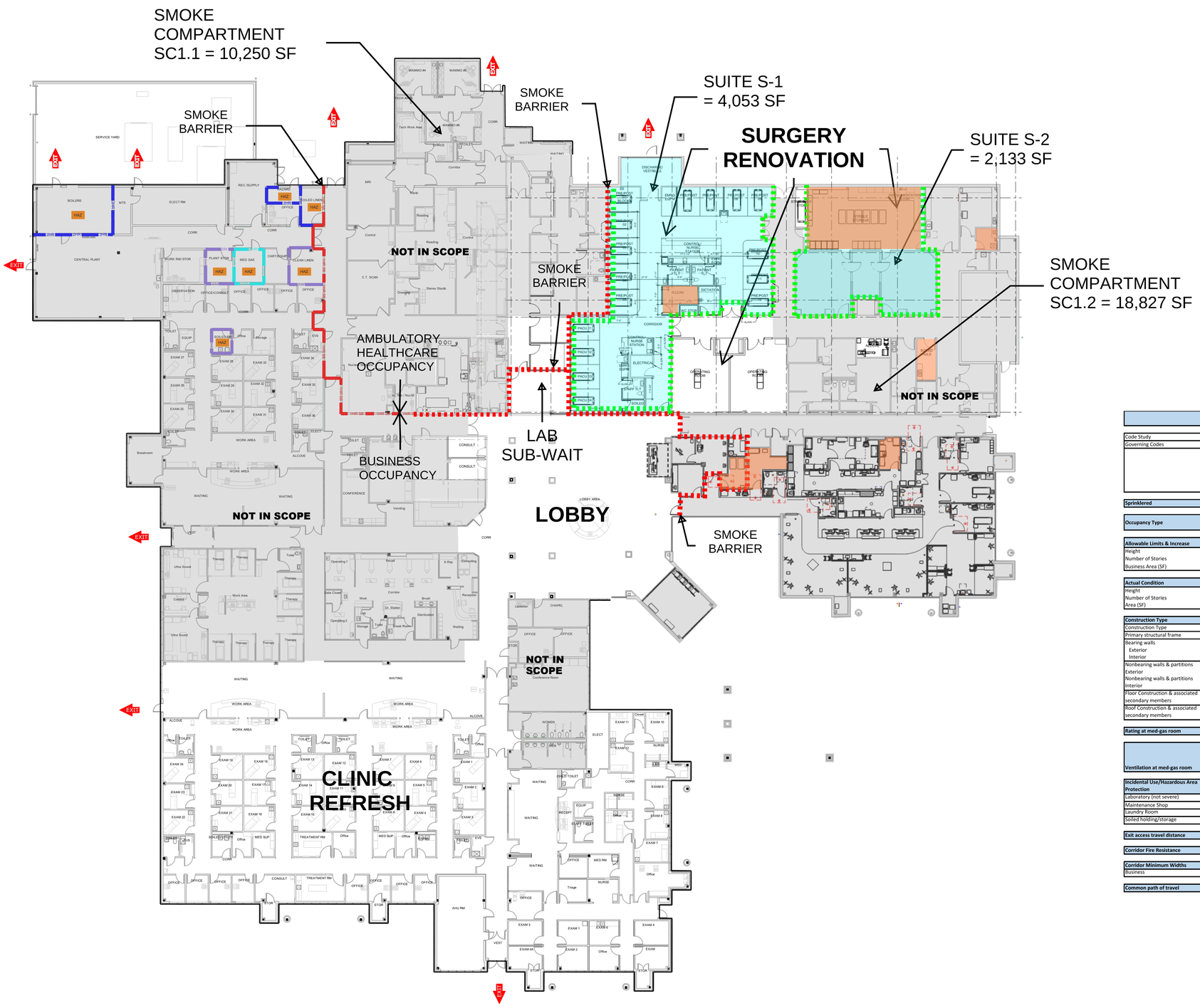
Date: 01/05/2026
Scale:

Sheet Name: **TITLE SHEET**

Mercy

Sheet No.: **G-001**

Iowa City: 136 S Dubuque Street, Iowa City IA 55241 | **Kansas City:** 2380 McGee Street, Suite 310, Kansas City MO 64108 816.249.1500 | **Tulsa:** 320 S Boston, Suite 1400, Tulsa OK 74103 918.398.6400 | Bentonville: 206 SW 8th Street, Suite 206, Bentonville AR 72712 479.448.4099 | **Wichita:** 330 N Mead Street, Suite 100, Wichita KS 67202 316.262.2500 | www.hfgarchitecture.com



LEGEND	
1 HOUR FIRE BARRIER	
2 HOUR FIRE BARRIER	
1 HOUR FIRE AND SMOKE BARRIER	
2 HOUR FIRE AND SMOKE BARRIER	
SUITE BOUNDARY (NON-RATED)	
BARRIER IDENTIFICATION	(1A)
NON-SPRINKLERED AREA	
HAZARDOUS AREA (SEE NOTE BELOW)	
SMOKE COMPARTMENT DESIGNATION	SC:#
SUITE DESIGNATION	S#
SHAFT LOCATIONS	
EXIT LOCATION	
CORRIDOR (NON-RATED SMOKE PART.)	
EXIT STAIR/ PASSAGEWAY	
UNDER CONSTRUCTION	
EXIT LIGHTS	

HAZARDOUS AREA: BUILDING IS FULLY SPRINKLERED. EXCEPT FOR ROOMS CONTAINING MEDICAL GAS CYLINDERS OR MANIFOLDS WHERE 1-HOUR FIRE BARRIERS ARE REQUIRED, WALLS AT HAZARDOUS AREAS ARE SMOKE PARTITIONS TO RESIST THE TRANSFER OF SMOKE.

CODE REVIEW -ARKANSAS FIRE PREVENTION CODE (AFPC) AND NFPA

Code Study	Mercy NWA -HWY 102 SURGERY RENOVATION & CLINIC REFRESH			
Governing Codes	Miscellaneous Codes	State of AR - AFPC (IBC Equivalent)		NFPA
	ANSI 2017, A117.1	AFPC Vol. II, 2021 (IBC/IEBC 2021)		NFPA 101 - 2021
	ADA, 2010	AFPC Vol. I, 2021 (IFC 2021)		NFPA 99 - 2012
	FGI, 2018	AR State Fuel and Gas Code, 2018		NFPA 70; NEC 2020
		AR State Mech. Code, 2021 (IMC 2021)		NFPA 5000 - 2021
		AR Energy Code (IECC 2009)		
		AR State Plumb. Code, 2018 (IPC 2018)		

Sprinklered	Yes			
Occupancy Type	B/Ambulatory Care Facilities	AFPC Vol. II, 304.1	Business/Ambulatory Health Care	NFPA 101, Ambulatory Health Care; Chapter 20, Business; Chapter 38

Allowable Limits & Increase		AFPC (IBC)		NFPA
Height	85 FT	AFPC Vol. II, Table 504.3	85 FT	NFPA 5000 - Table 7.4.1
Number of Stories	6	AFPC Vol. II, Table 504.4	6	NFPA 5000 - Table 7.4.1
Business Area (SF)	150,000	AFPC Vol. II, Table 506.2	150,000	NFPA 5000 - Table 7.4.1

Actual Condition	
Height	65 ft
Number of Stories	1
Area (SF)	72,064

Construction Type		AFPC Vol. II, Table 601		NFPA 5000 - Table 7.2.1.1
Construction Type	Rating in hours	IIA		II (111)
Primary structural frame		1-Hour		1-Hour
Bearing walls				
Exterior		1-Hour		1-Hour
Interior		1-Hour		1-Hour
Nonbearing walls & partitions				
Exterior		0-Hour		0-Hour
Nonbearing walls & partitions				
Interior		0-Hour		0-Hour
Floor Construction & associated secondary members		1-Hour		1-Hour
Roof Construction & associated secondary members		1-Hour		1-Hour

Rating at med-gas room	1-HR walls and doors	NFPA 99 - 5.1.3.3.2(4)
Ventilation at med-gas room	Supply/Exhaust ducts enclosed w/ 1-HR shaft enclosure to exterior	AFPC Vol. I, 5306.2.2

Incidental Use/Hazardous Area Protection				
Laboratory (not severe)	0-HR	AFPC Vol. II, Table 509	0-HR	NFPA 101 - 20.3.2.1/8.7.1
Maintenance Shop	0-HR	AFPC Vol. II, Table 509	0-HR	NFPA 101 - 20.3.2.1/8.7.1
Laundry Room	0-HR (if > 100 sqft)	AFPC Vol. II, Table 509	0-HR	NFPA 101 - 20.3.2.1/8.7.1
Soiled holding/storage	0-HR (if > 100 sqft)	AFPC Vol. II, Table 509	0-HR	NFPA 101 - 20.3.2.1/8.7.1

Exit access travel distance	300 ft Max.	AFPC Vol. II, Table 1017.2	200 ft Max.	NFPA 101 - 20.2.6

Corridor Fire Resistance	0-HR	AFPC Vol. II, Table 1020.2	0-HR	NFPA 101 - 20.3.6.1(3)

Corridor Minimum Widths				
Business	44 inches	AFPC Vol. II, Table 1020.3	44 inches	NFPA 101 - 20.2.3.2

Common path of travel	75 ft Max.	AFPC, Vol. II, Table 1006.2.1	100 ft Max.	NFPA 101 - 20.2.5.2.1

N

A LIFE SAFETY PLAN
1/16" = 1'-0"

0' 8' 16' 32'
1/16" = 1'-0"

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Architects Logo

No.	Date	Description

Sign & Seal

Building Name
MERCY NORTHWEST ARKANSAS
Building No.: 0391
MERCY INFUSION, SURGERY, IMAGING, CLINIC AND LAB
3101 SE 14TH ST. BENTONVILLE, AR 72712
Mercy Project No.: 2040-828175
Date: 11/05/2025
Scale:

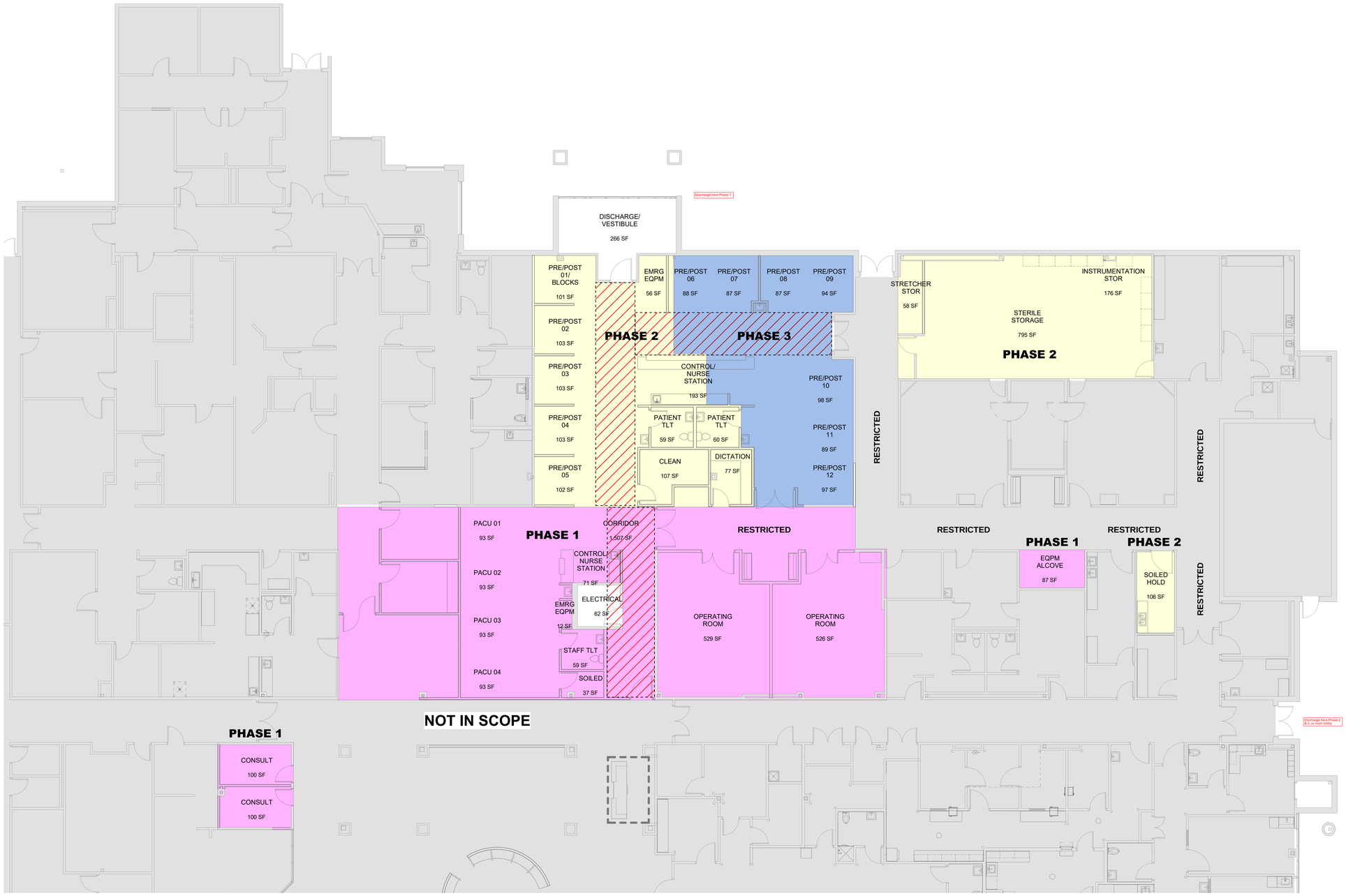
Sheet Name:
LIFE SAFETY PLAN - SURGERY

MercyT

Floor No.

Sheet No.
G-101

Iowa City: 136 S Dubuque Street, Iowa City IA 55241 | **Kansas City:** 2380 McGee Street, Suite 310, Kansas City MO 64108 816.249.1500 | **Tulsa:** 320 S Boston, Suite 1400, Tulsa OK 74103 918.398.6400 | Bentonville: 206 SW 8th Street, Suite 206, Bentonville AR 72712 479.448.4099 | **Wichita:** 330 N Mead Street, Suite 100, Wichita KS 67202 316.262.2500 | www.hfgarchitecture.com



1 PHASING PLAN - SURGERY
1/8" = 1'-0"

HFG

Architects Logo

No.	Date	Description

PROGRESS DRAWINGS

12/24/25

Sign & Seal

NOT FOR CONSTRUCTION

Building Name:

MERCY NORTHWEST ARKANSAS

Building No.: 0391

MERCY INFUSION, SURGERY, IMAGING, CLINIC AND LAB

3101 SE 14TH ST. BENTONVILLE, AR 72712

Mercy Project No.: 2040-828175

Date: 12/24/25

Scale: 1/8" = 1'-0"

Sheet Name:

PHASING PLAN

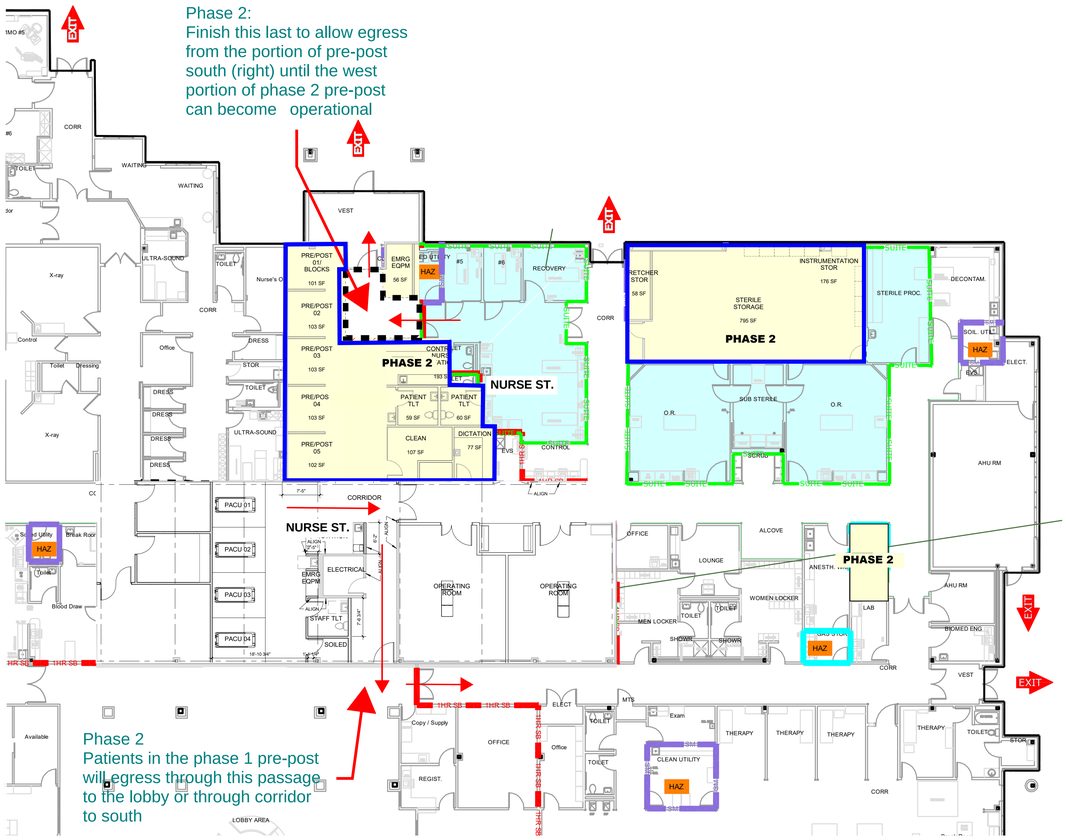
MercyT

Floor No.

Sheet No.

G-102

Iowa City: 136 S Dubuque Street, Iowa City IA 55241 | **Kansas City:** 2380 McGee Street, Suite 310, Kansas City MO 64108 816.249.1500 | **Tulsa:** 320 S Boston, Suite 1400, Tulsa OK 74103 918.398.6400 | Bentonville: 206 SW 8th Street, Suite 206, Bentonville AR 72712 479.448.4099 | **Wichita:** 330 N Mead Street, Suite 100, Wichita KS 67202 316.262.2500 | www.hfgarchitecture.com



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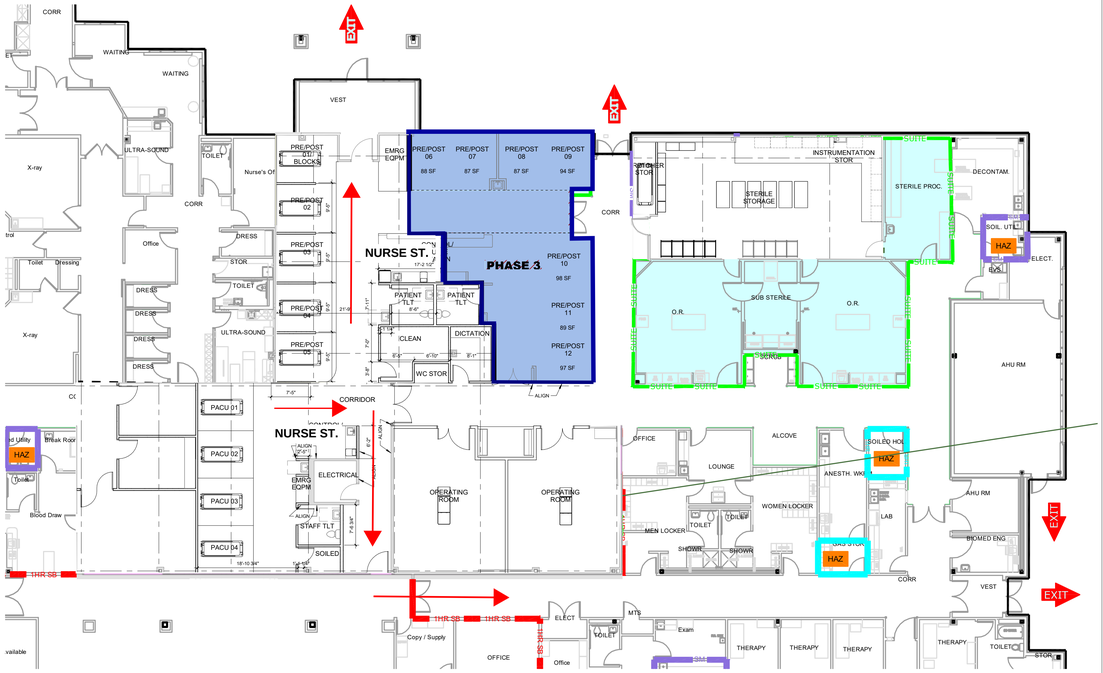
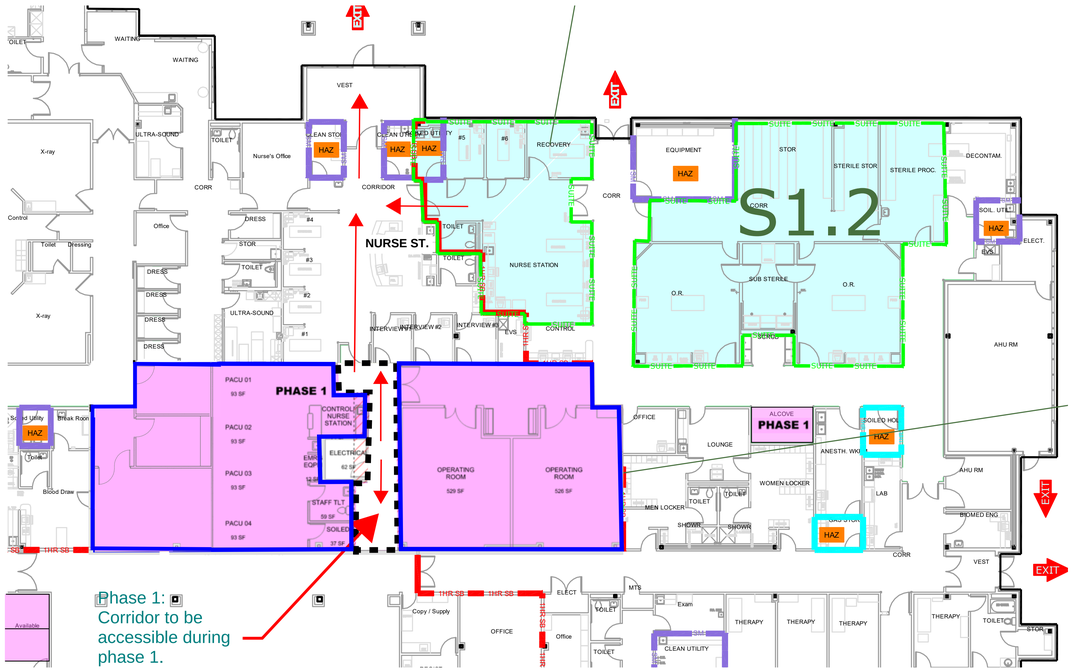


PHASE 3



PHASE 1

PHASING PLANS NOT TO SCALE

HFG

Architects Logo

No.	Date	Description

PROGRESS DRAWINGS

12/24/25

NOT FOR CONSTRUCTION

Sign & Seal

Building Name:
MERCY NORTHWEST ARKANSAS
Building No.: 0391
MERCY INFUSION, SURGERY, IMAGING, CLINIC AND LAB
3101 SE 14TH ST. BENTONVILLE, AR 72712

Mercy Project No.: 2040-828175
Date: 12/24/25
Scale: 1/8" = 1'-0"

Sheet Name:
PHASING PLAN

MercyT

Floor No.

Sheet No.
G-103

Iowa City: 136 S Dubuque Street, Iowa City IA 55241 | **Kansas City:** 2380 McGee Street, Suite 310, Kansas City MO 64108 816.249.1500 | **Tulsa:** 320 S Boston, Suite 1400, Tulsa OK 74103 918.398.6400 | Bentonville: 206 SW 8th Street, Suite 206, Bentonville AR 72712 479.448.4099 | **Wichita:** 330 N Mead Street, Suite 100, Wichita KS 67202 316.262.2500 | www.hfgarchitecture.com

DEMO SCHEDULE	
1	REMOVE EXISTING DOOR AND FRAME.
2	REMOVE EXISTING PLUMBING FIXTURE AND ASSOCIATED PIPES - REF. PLUMBING.
3	REMOVE GYPSUM BOARD AND METAL STUD WALL ASSEMBLY. PATCH ADJ. SURFACES AND PREPARE FOR NEW CONSTRUCTION.
4	REMOVE EXISTING LAY-IN ACOUSTICAL CEILING ASSEMBLY AND ASSOCIATED EQUIPMENT. COORDINATE WITH MECH. AND ELECT. DRAWINGS.
5	REMOVE EXISTING MILLWORK.
6	REMOVE PART OF MILLWORK. PATCH AND REPAIR.
7	REMOVE EXISTING FLOORING & WALL BASE. PREP FOR INSTALLATION OF NEW FLOORING DURING CONSTRUCTION
8	REMOVE PORTION OF EXISTING GYP BD AND METAL STUD PARTITION REQUIRED TO ALLOW FOR INSTALLATION OF NEW DOOR AND FRAME DURING CONSTRUCTION.
11	REMOVE EXISTING EMERGENCY SHOWER. REPAIR CEILING TO MATCH EXISTING.
13	REMOVE EXISTING SLIDING DOORS AND PREPARE OPENING FOR NEW SLIDING DOORS.
14	EXTENTS OF FLOOR SLAB DEMOLITION AND REPLACEMENT
15	REMOVE EXISTING TRANSACTION WINDOW, SILL, AND TRIM, AND OVERHEAD COILING COUNTER DOOR. SALVAGE AND RETURN TO OWNER.

DEMO LEGEND

WALL

DOOR

NOT IN SCOPE

1 DEMO PLAN - SURGERY
1/8" = 1'-0"

Architects Logo

No.	Date	Description

PROGRESS DRAWINGS

12/24/25

NOT FOR CONSTRUCTION

Sign & Seal

Building Name:

MERCY NORTHWEST ARKANSAS

Building No.: 0391

MERCY INFUSION, SURGERY, IMAGING, CLINIC AND LAB

3101 SE 14TH ST. BENTONVILLE, AR 72712

Mercy Project No.: 2040-828175

Date: **12/24/25**

Scale: **1/8" = 1'-0"**

Sheet Name:

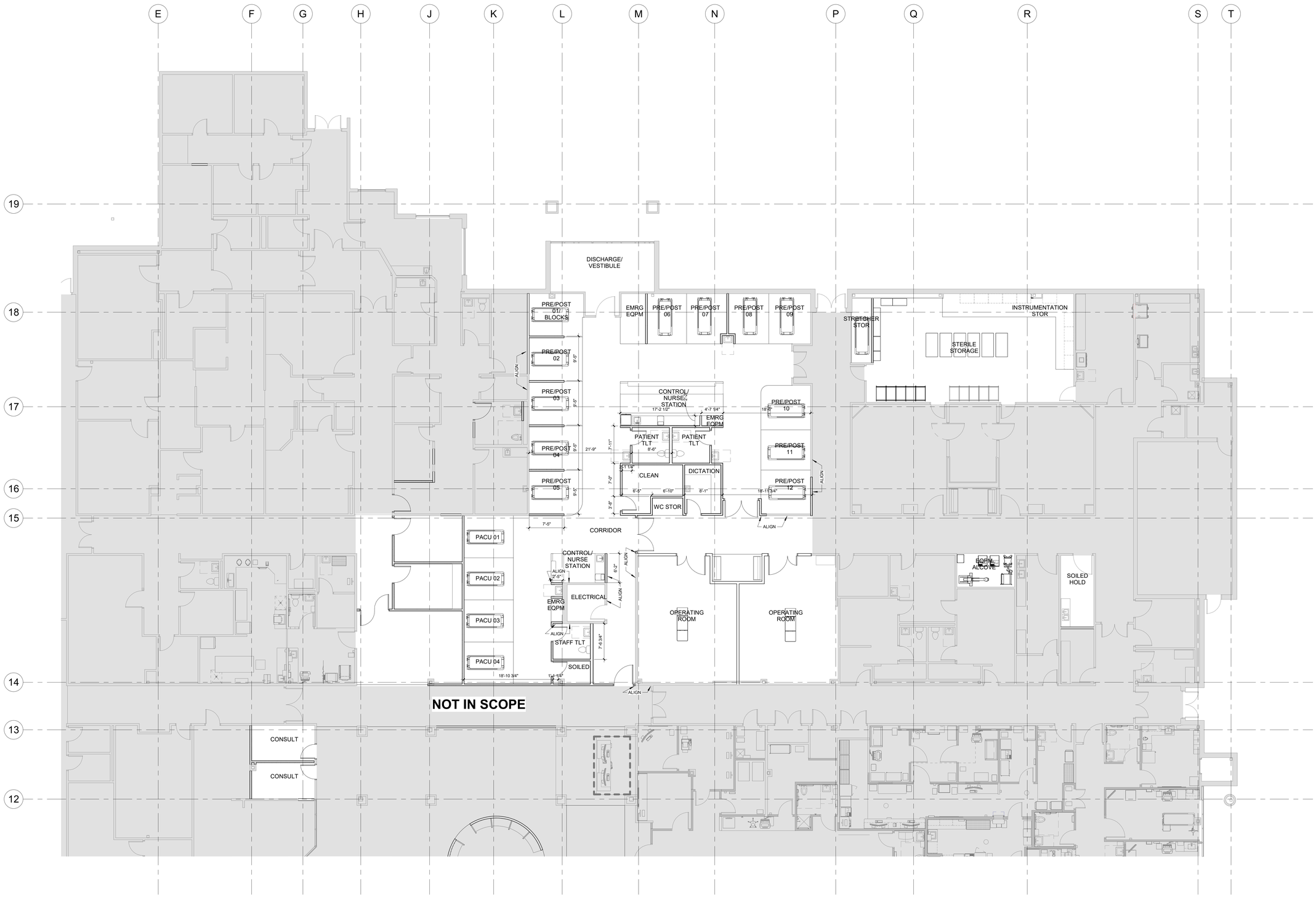
DEMOLITION PLAN

Floor No.

Sheet No.

A-102

Iowa City: 136 S Dubuque Street, Iowa City IA 55241 | **Kansas City:** 2380 McGee Street, Suite 310, Kansas City MO 64108 816.249.1500 | **Tulsa:** 320 S Boston, Suite 1400, Tulsa OK 74103 918.398.6400 | Bentonville: 206 SW 8th Street, Suite 206, Bentonville AR 72712 479.448.4099 | **Wichita:** 330 N Mead Street, Suite 100, Wichita KS 67202 316.262.2500 | www.hfgarchitecture.com



1 DIM PLAN - SURGERY
1/8" = 1'-0"

HFG

Architects Logo

No.	Date	Description

PROGRESS DRAWINGS

12/24/25

Sign & Seal

NOT FOR CONSTRUCTION

Building Name:

MERCY NORTHWEST ARKANSAS

Building No.: 0391

MERCY INFUSION, SURGERY, IMAGING, CLINIC AND LAB

3101 SE 14TH ST. BENTONVILLE, AR 72712

Mercy Project No.: 2040-828175

Sheet Name: FLOOR PLAN - DIMENSIONS

Date: 12/24/25

Scale: 1/8" = 1'-0"

Mercy

Floor No.

Sheet No.

A-103

Interiors Narrative

Interiors Narrative –
Design Criteria for NWA Surgery Renovation

WALL FINISHES

Walls in the operating room to be washable; free of fissures, open joints, and crevices. The primary wall finish throughout the operating room will be monolithic wall panel (Mercy standard finishes).

In areas outside of the operating room, including but not limited to the Pre/Post Op, Storage, corridors, wall finishes will be smooth, scrubbable, and water resistant. The primary wall finish throughout will be two coats of epoxy paint with accent colors as requested. Wall protection will be included in areas susceptible to damage.

CEILING FINISHES

Ceilings in the operating room will be monolithic construction & scrubbable, capable of withstanding cleaning and/or disinfecting chemicals. All openings will be gasketed. The primary system will be epoxy painted gypsum board.

In areas outside of the imaging room, including but not limited to the Pre/Post Op, Storage, corridors, new lay-in ceiling, smooth surface without crevices, scrubbable, non-absorptive, non-perforated; capable of withstanding cleaning chemicals; lay-in ceiling permitted if gasketed or each ceiling tile weighs at least one pound square foot and no perforated, tegular, serrated, or high textured tiles.

FLOORING

Flooring in the operating room will be cleanable and wear-resistant, stable, firm and slip-resistant for wet conditions with flush thresholds.

Monolithic floor with integral coved wall base carried up the wall to a minimum of 6” and will be tightly sealed to the wall.

In areas outside of the imaging room, including but not limited to the Pre/Post Op, Storage, corridors, flooring to be cleanable, firm and slip-resistant.

MILLWORK, SPECIALTIES, EQUIPMENT, AND FIXTURES

New millwork and cabinetry to follow Mercy Standard design and finishes. All Equipment and fixtures will be determined by Mercy and provided to the design team upon request.

Materials, color, and finish for all areas will follow FGI 2018 Hospital guidelines and Mercy interior standards. In the absence of existing finish information, coordinate with owner.

Mechanical, Electrical, Plumbing Narrative

Mercy

Mercy Rogers Infusion and OR Renovation

IMEG #25005022.00

TABLE OF CONTENTS

Schematic Design Narrative
for
Mercy Rogers Infusion / OR Renovation
Rogers, Arkansas

IMEG #25005022.00
January 9, 2026

A. Introduction

1. Purpose

a. The purpose of this report is to describe the proposed building systems for the renovation of the existing endoscopy rooms, pre/post area, and the clinical education area. This report is meant for design coordination and Owner review.

b. The proposed design assumptions are outlined for Owner review and approval. These assumptions include, but are not limited to, external and internal temperature and humidity criteria, noise limits, occupancy, vibration criteria, future expansion needs, fire resistance, and lighting levels.

c. The proposed building systems may evolve in future design phases. Any preliminary pricing must include cost contingencies appropriate to the current phase.

d. The initial submission of this report was for the schematic phase of the oncology area which is replacing clinical education. This reissuance is to capture the schematic information for the surgery area and keep all information in a single comprehensive report.

e. Refer to the architectural Schematic Design drawings for more information.

2. Project Description

a. This project is a multiple phased renovation of an existing ambulatory center located in Rogers, Arkansas. The renovation will affect three specific areas within the building. The first phase will be renovating the existing clinical education area into an oncology/infusion suite with a USP 797/800 pharmacy. The second phase of the project will be the renovation of the existing surgery area to replace endoscopy rooms with operating rooms and to improve the pre/post area and the women's health area. The third phase will be an interior update of the clinic area on the southwest side of the building, and this phase will include minimal MEPT scope.

b. Oncology/Infusion Area: There are two specific areas within this renovation. The oncology/infusion suite will be a 4,800 square foot renovation that will include multiple infusion bays, nurses' stations, new bathrooms and a small lab. The USP 797/800 pharmacy will be a 1,000 square foot renovation that will have a clean compounding room, ante room, hazardous compounding room, hazardous drug storage and a pharmacy workspace.

c. Surgery Area: The surgery area will receive a 4,400 square foot renovation that includes adding PACU rooms, improving the women's health changing area, converting two endoscopy rooms into operating rooms, and renovating an existing lab space to become an ultrasound and bone density suite.

B. Adopted Codes and Standards

1. Codes

a. Building Code – 2021 Arkansas Fire Protection Code Volume II
b. Electrical Code - National Electrical Code NFPA 70 2020
Mechanical Code - 2021 Arkansas Mechanical Code which is based on the 2021 IMC
c. Plumbing Code - 2018 Arkansas Plumbing Code which is based on the 2018 IPC
d. Energy Conservation Code – 2014 Arkansas Energy Code
e. Fire Protection Code - 2021 Arkansas Fire Prevention Code Volume 1
f. Fire Alarm Code – Arkansas Fire Protection Code 2021
g. Fuel Gas Code - 2018 Arkansas Fuel Gas Code which is based on the 2018 IFGC
h. State Department of Labor Requirements
i. State Department of Health Requirements
j. State and Federal Safety and Health Laws

2. Industry Recognized Standards: Facility Guidelines Institute FGI - 2014

3. Owner Standards

a. Published Standards of Mercy Healthcare.
b. Health Care Facility Governing Body (Owner's Representative). The documented Owner project requirements as defined by the Health Care Facilities Governing Body. Reference 2020 NFPA 70 National Electrical Code Article 517 Health Care Facilities (2021 NFPA 99 Healthcare Facilities Code). The Governing body is the person or persons who have the overall legal responsibility for the operation of a health care facility.
c. Risk Management: FM Global Published Standards

C. General Building Design Criteria and Assumptions

1. Summer Space Environmental Requirements: 72°F ± 2°F. The pharmacy area will need environmental requirements of 67°F ± 1°F and a max of 60% RH.
2. Cooling Design Outdoor Air Conditions: 98°Fdb/78°Fwb. (based on ASHRAE 0.4% DB/MCWB for Rogers, AR.
3. Winter Space Environmental Requirements: 70°F ± 2°F. The pharmacy and operating rooms will have a minimum humidity requirement of 30%.
4. Zone Heating Design Outdoor Air Conditions: -1°F based on ASHRAE 10-Year Extreme
5. Ventilation (Heating Coil) Design Outdoor Air Conditions: -1°F based on ASHRAE 10-Year Extreme

D. Structural Design Requirements

1. Design Code and Risk Category: The project design will follow ASCE 7-16.

2. Performance Requirements

a. Live Load

1) Building live loads are designed as follows:

a) Typical floors: 100 psf – Slab on Grade

b. Snow, Wind and Seismic Loads

1) Snow load is based on ASCE7 Chapter 7 as follows:

a) Ground snow load: 15 psf
b) Exposure factor, Ce: 1.0
c) Thermal factor, Ct: 1.0
d) Importance factor: 1.2
e) Flat roof snow load: 13 psf
f) Rain-on-snow surcharge: 5 psf
g) Design load: 18 psf

2) Wind load is based on ASCE 7 as follows:

a) Design wind speed: 119 mph
b) Exposure class: B

3) Seismic load is based on ASCE 7 as follows:

a) Ss = 0.155
b) S1 = 0.09
c) Seismic Site Class = D (Assumed)
d) Sds = 0.165
e) Sd1 = 0.144

3. Structural System

a. The following information is based on review of limited architectural drawings as structural drawings were not available. The structural system was graphically shown on the architectural drawings but not specifically detailed.

b. Foundation System: Based on limited information, the foundation is assumed to consist of reinforced concrete spread footings.

c. Slab-on-grade Construction: The floor structure is slab on grade. Slab thickness is unknown at this time.

d. Roof Construction: Steel roof deck with steel joists spanning to steel beams and columns.

e. Lateral Load Resisting System: The lateral load resisting system is not detailed on the architectural drawings but likely consists of steel braced or moment frames.

f. Medical Equipment and New Mechanical System Support

1) New ceiling mounted medical equipment will be supported from the steel roof framing. Due to the limited capacity of the steel roof joist system, joist reinforcement will most likely be required. As an alternate option, a "structural lid" framed with steel could be provided to support the medical booms. Given the high elevation of the existing roof, this option may be a more economical solution.

2) There will be multiple trenches in the slab on grade to allow access below the slab. The slab will need to be replaced in these areas.

E. Mechanical Design Requirements

1. Existing HVAC System Evaluation

a. The existing HVAC system is original to the building's construction completed in 1999. All the building's HVAC systems are near end of life, but there have been improvements made throughout the last 25 years. The building's heating water system is comprised of two hydronic boilers that serve the preheat and reheat systems and are located in the mechanical room on the northeast side of the building. The heating water system has a maximum capacity of 3,500 MBH and operates at temperatures of 165°F entering and 130°F leaving. The chilled water system consists of two chillers and two associated cooling towers located in the mechanical room on the northeast side of the building. The maximum capacity of the chilled water system is 300 tons and operates at temperatures of 55°F

entering and 45°F leaving. The chillers recently received equipment upgrades, and the facilities team has indicated both the hydronic heating and chilled water systems operate well without any major issues. The building's hydronic mains are 4" heating water and 8" chilled water. The hydronic mains are routed down the main corridor in the surgery suite where a secondary ceiling has been installed below the hydronic mains that prevents easy access to the chilled and heating water piping. Existing trend data from the previous year has been provided by the facilities staff and is being analyzed to determine the available capacity in the building's heating water and chilled water systems.

b. The air handling unit that currently serves the existing surgery and clinical education areas is designated as AHU-1. AHU-1 is located on the south side of the building in a mechanical room near the exterior. AHU-1 is a 32,800 CFM, variable air volume air handling unit that supplies cooled and dehumidified air to a series of distributed terminal air boxes. These terminal air boxes reheat the air supplied to each zone to maintain the required cooling and heating temperature setpoints as measured by wall mounted temperature sensors in each zone.
   1) The air handling units outside air and return air are mixed prior to entering the unit. The unit is comprised of a prefilter and mixing box, chilled water coil, supply fan, HEPA filter and a discharge plenum with an electric steam generated humidifier. The unit does not have a return/relief fan or heating coil. Facilities indicated there have not been any issues with coils freezing inside of the existing air handling unit. When IMEG was on site for observation, the humidifier section was leaking water.
   2) It is advised that this existing air handling unit (AHU-1) will be renovated as required for proper function as part of this project.

2. Air Handling Systems

   a. Renovation of Existing AHU-1
      1) The existing AHU-1 will continue to serve all of the spaces outside of the USP 797/800 pharmacy and the new operating rooms.
      2) The existing supply fan and humidifier will be replaced to improve AHU-1's deficiencies. Both the supply fan and the humidifier will be sized to replace existing.
         a) The existing supply fan is a single fan. The new fan will be a two-fan array and will be plenum type. The blades will be backwards incline type.
         b) The new humidifier will be an electric steam generated humidifier. The electric generator will utilize soft cold water to provide the required humidification steam.

3) Most of the existing downstream supply and return ductwork distribution system will be reused to serve the renovated spaces. The existing supply ductwork directly after the unit is lined ductwork, and should be investigated and tested before reuse.
   a) Supply duct work will be G90 galvanized steel with fiberglass exterior wrap.
   b) Return ductwork will be G90 galvanized steel with no insulation.
4) The existing 4" chilled water piping routed to AHU-1will continue to serve the existing AHU-1.

b. New Pharmacy and Operating Room Air Handling Unit

A new air handling unit will be provided to serve the pharmacy area and operating rooms. The new unit will be installed on the roof. This work has been outlined in the infusion and lab construction documents.

1) A separate air handling unit is required to serve the pharmacy because of the maximum room temperature and relative humidity requirements outlined in USP 797/800. USP 797/800 requires a maximum room temperature of 68°F and a maximum relative humidity of 60%. The new air handling unit will be designed to maintain a space temperature of 67°F and a maximum relative humidity of 50%. Due to these space temperature and humidity requirements, the new air handling unit will contain a CDQ wheel housed within the AHU. The CDQ wheel will produce supply air at 56.7°F dry bulb and 70.3% RH to satisfy the planned space temperature and relative humidity setpoints.

2) The new pharmacy and operating room air handling unit will be a 6,750 CFM variable volume unit that will operate continuously (24 hours a day, 7 days a week).
   a) The new indoor air handling unit will deliver cooled and dehumidified supply air to individual zones served by VAV boxes and reheat coils.
   b) Return air and outside air are mixed, heated or cooled, and filtered at the air handling unit.
   c) Variable frequency drives (VFDs) will be provided with the air handling unit.
3) Pre-filters will be provided upstream of all coils. Final filters will be provided downstream of supply fans. HEPA filters will be provided in the diffusers at point of use.
4) Outside air capability will include a minimum-position damper to provide constant outside air. The outside air section will contain a flow station to monitor the quantity of outside air introduced.

5) Supply fan(s) will be plenum type. Blades will be backward-inclined type.
6) Motors will be electronically commutated (ECM) or AC induction with VFDs.
7) The unit will be provided with preheat and cooling coils. The cooling coil will be an intertwined DX coil with a remote condensing unit. The preheat coil will be a pumped hot water coil.
8) The air handling unit will also be provided with a steam humidification manifold after the cooling coils. To provide the required humidification steam, an electric generator will be provided that utilizes soft cold water.

c. A dedicated fume exhaust fan with a stack will be provided to serve the hazardous compounding and storage rooms. Each of the USP pharmacy rooms will have venturi air valves to provide accurate control for pressurization and airflow.

d. The new heating water piping installed to serve AHU-1 will be extended to serve the new pharmacy air handling unit's preheat coil and the duct mounted heating coils installed downstream of the supply air venturi air valves in the pharmacy spaces.

3. Exhaust Systems

a. The existing exhaust systems will be re-utilized to serve the renovation project areas, but multiple inline exhaust fans will need to be replaced because they are in poor operating condition due to the equipment's age.
1) EF-5 – 3,000 CFM 1.5 HP Fan
2) EF-7 – 2,000 CFM 1.5 HP Fan
3) EF-3 – 1,140 CFM 1.5 HP Fan

b. A new redundant hazardous exhaust fan will be installed to serve the pharmacy space. Th new exhaust fans will have stacks that extend a minimum of 1'-0" above the roof line to expel the hazardous air per the USP 797/800 code.

c. General exhaust ductwork will be galvanized steel and will be insulated within 10' of roof penetrations with fiberglass insulation wrap. Moisture laden exhaust ductwork from showers will be aluminum.

d. Hazardous exhaust ductwork will be welded stainless steel from the exhaust grille in the room through the rooftop exhaust stack.

e. All exhaust fan motors will be electronically commutated (ECM) or AC induction with VFDs.

4. Heating System Components

    a. The building's existing heating water system will be re-utilized for this renovation, and no infrastructure upgrades are currently planned. The existing branch heating water piping will be modified to accommodate the installation of new VAV boxes, duct mounted heating coils, and other terminal units.

    b. Heating water piping 2" and smaller will be copper with soldered joints and fittings. Shutoff valves will be ball type, and check valves will be swing type. Piping 2-1/2" and larger will be Schedule 40 black steel, with butt-welded, mechanically coupled, or flanged joints, or Type L copper piping with soldered joints. Shutoff valves will be butterfly type, and check valves will be double-door type.

5. Cooling System Components

    a. The building's existing chilled water system will be re-utilized for this renovation, and no infrastructure upgrades are currently planned.

    b. New chilled water branch piping will be extended to new FCUs that will serve MTS technology rooms and any new electrical rooms needed for the build outs.

    c. Chilled water piping 2" and smaller will be copper with soldered joints and fittings. Shutoff valves will be ball type, and check valves will be swing type. Piping 2-1/2" and larger will be Schedule 40 black steel with butt-welded, mechanically coupled, or flanged joints. Shutoff valves will be butterfly type, and check valves will be double-door type.

6. Controls System: The building's existing controls system will be re-utilized and upgraded as required for the project's scope. Once the project is approaching 100% Design Development (DD) with final scope confirmed, the temperature controls contractor (TCC) will be engaged to confirm what existing system upgrades will be required to accommodate the new mechanical equipment.

7. General Plumbing Description: The existing plumbing system consists of a distributed domestic cold water system and a central domestic hot water system that serves the whole hospital. The existing mains will be reused and branch piping will be adjusted as required for new plumbing fixtures.

8. Plumbing Fixtures

    a. Plumbing fixtures (lavatories, water closets, urinals) will be porcelain type. Fixture colors will be selected by the Architect. Sensor-operated flush valves and

sensor-operated faucets will be provided for public restrooms. Manual flush valves and manual faucets will be provided for private restrooms.

b. Sinks will be stainless steel by Elkay or other approved manufacturer. Fixture trim will be by Chicago Faucet or other approved manufacturer.

c. Counters with integral sinks will be provided by architectural trades. Trim will be provided by mechanical trades.

d. Showers will be detailed on the architectural drawings.

9. Domestic Water System Components

a. Service Connection: A 6" domestic water service serves the building which is downsized to a 4" line prior to entering the building. The water line enters into the central utility plant and is immediately metered. An existing backflow preventor is located within the northeast mechanical room.

b. Pipes and Distribution

1) Hot, cold, and tempered water above-ground will be Type L copper with 100% lead-free solder. Insulation will be glass-fiber with all-service jacket or pre-formed rigid cellular.
2) Hot and cold water below ground will be Type K copper with 100% lead-free solder.
3) Shutoff valves will be located at all major branches and all final use locations.

10. Sanitary Waste and Vent System Description

a. Sanitary Service Connection: Existing 4" and 8" sanitary mains currently route through the renovated project areas. Neither of these existing mains are expected to be replaced as part of this project. The branch sanitary piping will be adjusted as required for the new plumbing fixture locations. The entire building is slab on grade so saw-cutting and excavation will be required where the existing branch sanitary piping will be modified.

b. Piping: Underfloor sanitary piping will be PVC. All above grade sanitary and vent piping will be cast iron with no-hub fittings.

11. Medical Gas System Description

a. Medical Vacuum

1) The building's existing vacuum pump is in the central utility plant and will be reused to serve the renovated project areas. The existing pump is a duplex system capable of providing 110 SCFM of vacuum at 25" H.g.

2) Piping: Type K or L hard drawn copper tube cleaned and capped "for oxygen service". Joints will be BCuP silver brazed with wrought copper fittings.

3) Outlets: NFPA 99 compliant, non-interchangeable connectors with automatic valves, color-coded and labeled for intended service.

b. Medical Air

1) Medical air to the existing building is provided by a medical air manifold located within the med gas storage room near the central utility plant. The existing medical air piping will be modified as required for the renovated spaces, and no modifications are expected to the source equipment.

2) Piping

a) 3" and under: Type L hard drawn copper tube cleaned and capped "for oxygen service".

b) Joints will be BCuP silver brazed with wrought copper fittings.

3) Outlets: NFPA 99 compliant, non-interchangeable connectors with automatic valves and secondary check valves on positive pressure outlets, color-coded and labeled for intended service.

c. Oxygen

1) Oxygen for the existing building is provided by an oxygen manifold located within the med gas storage room near the central utility plant. The existing oxygen piping will be modified as required for the renovated spaces, and no modifications are expected to the source equipment.

2) Piping

a) 3" and under: Type L hard drawn copper tube cleaned and capped "for oxygen service".

b) Joints will be BCuP silver brazed with wrought copper fittings.

3) Outlets: NFPA 99 compliant, non-interchangeable connectors with automatic valves and secondary check valves on positive pressure outlets, color-coded and labeled for intended service.

d. Nitrogen and Nitrous Oxide

1) Nitrogen and nitrous oxide are provided to the building by two separate manifolds located within the med gas storage room near the central

utility plant. The existing nitrogen and nitrous oxide piping systems will be modified as required for the renovated spaces, and no modifications are expected to the source equipment.

2) Piping
   a) 3" and under: Type L hard drawn copper tube cleaned and capped "for oxygen service".
   b) Joints will be BCuP silver brazed with wrought copper fittings.
3) Outlets: NFPA 99 compliant, non-interchangeable connectors with automatic valves and secondary check valves on positive pressure outlets, color-coded and labeled for intended service.

e. Alarm Panels: The existing medical gas area alarm panels will be removed, and new medical gas area alarm panels will be installed in the renovated areas.

f. Medical Gas Valve Boxes: The existing medical gas valve boxes will be removed, and new valve boxes will be installed in the renovated areas.

12. Fire Protection Description

a. Hazard Classification: Ordinary hazard.

b. Incoming Service: The existing fire protection system is served by an 8" incoming pipe that enters into the central utility plant. The fire protection backflow preventor is located on the west wall of the central utility plant. The 8" fire protection line serves three fire protection zones.

c. Piping
   1) Wet piping 2" and smaller will be Schedule 40 black steel with screwed or flanged joints.
   2) Wet piping 2-1/2" and over will be Schedule 40 black steel with mechanically coupled grooved joints.

d. Sprinkler Types:
   1) Areas with pressure control: Concealed with gasketing.
   2) Areas with no ceilings: Upright.
   3) Areas with ceilings: Concealed.

F. Electrical Design Requirements

1. Overview

a. The electrical design for this project will include the components of lighting systems and controls, power distribution, fire alarm and automatic detection.

1) The design will extend the normal and essential (life safety and critical) power to support patient care functions with new equipment as required. Emergency power will be provided for code-mandated systems and critical clinical equipment. The normal and essential power distribution will be reinforced to support pharmacy, infusion, and public areas, including emergency power.
2) Dedicated circuits for hoods, hazardous drug containment equipment, and refrigerators/freezers will be provided in the pharmacy area. Cleanroom-rated, sealed LED luminaires; integrate occupancy and daylight controls to be specified to meet the energy code.
3) For the operating rooms, provide isolated power systems with line isolation monitors, equipment grounding bus, and distribution to surgical lights, booms, imaging displays, and specialty equipment per vendor requirements. Implement surgical lighting with components for visibility and staff comfort. Connect critical loads to essential power branches with appropriate redundancy and selective coordination.

b. Refer to the Technology Design Requirements for a description of the remaining electrical-based low voltage system requirements.

2. Lighting Systems and Controls

a. Lighting System Design Criteria
1) Lighting basis of design per the maintained illumination targets published by the Illumination Engineering Society (IES), applicable local municipal lighting ordinance, and Owner standards. Refer to average maintained illuminance level criteria in the table below.
2) Correlated Color Temperature (CCT): Interior Luminaires - Public Spaces: 3,500°K; Healthcare Spaces: 4,000°K.
3) Color Rendering Index (CRI) - Interior Luminaires: 90
4) Interior Luminaires: Specification-grade LED source luminaires with switched or dimmable drivers, minimum 50,000 hour rated life.
5) Egress and Emergency Egress Lighting Design Basis
a) Egress (non-emergency) lighting will be provided for all corridors, stairways, and egress paths defined by the Architect.
b) Emergency egress lighting will be served from life safety branch emergency branch.
c) Exit Signage
(1) Hexmodal HEX-A LED type, served from life safety branch.

(2) Ceiling / wall mounted for all applicable egress paths, exterior exits, assembly spaces, and code-required spaces.

d) Automatic load control relays (ALCR) will be provided for each lighting control zone when served by an emergency power source remote from the luminaire.

b. Lighting Control System Criteria

1) Additional mandatory controls for lighting that includes manual switching/dimming, automatic controls to reduce lighting levels, and daylight responsive controls will be installed.

2) The energy code compliant lighting control system will include a combination of standalone controls and room-based controls. Refer to the Lighting and Lighting Control System - Space Description Table. The following system components will be included:

a) Wall Mounted: Switches, dimmers, scene selection control stations, manual override stations.

b) PIR, Ultrasonic, and Combination Sensors: Occupancy and vacancy based.

c) Where allowed, a vacancy sensor that controls lighting with a dimmable driver will come on automatically to 50% and manually to 100%.

d) Time Clock: Astronomical.

3) Daylight Responsive Control

a) Daylight responsive controls will be used in areas required by the energy code. In addition, the following spaces provide a value-added energy savings opportunity for daylight responsive control.

b) Dimming control will be used to modulate artificial lighting sources up/down based on available daylighting contributions.

4) Receptacle Control

a) Receptacle control will be used in areas required per the applicable energy code.

Lighting and Lighting Control System - Space Description Table			
Space Description	Luminaires	Lighting Controls	Illuminance Levels
Common Administration Spaces			
Corridors, Circulation	Recessed dimmable acrylic lens luminaires.	Occupancy sensor. Fire alarm override.	10 to 15 foot-candles

Lighting and Lighting Control System - Space Description Table			
Space Description	Luminaires	Lighting Controls	Illuminance Levels
Single Use Restrooms	Down lights and vanity luminaire.	Wall switch with occupancy sensor.	10 to 20 foot-candles
Small and Medium Meeting Rooms	2'x4 dimmable volumetric type luminaires and dimmable down lights.	Vacancy sensors with wall-mounted dimming control.	30 to 40 foot-candles
Large Meeting Rooms	Linear suspended with 40% up and 60% down distribution. LED downlights at perimeter.	Vacancy sensors with wall-mounted dimming control.	30 to 40 foot-candles
Break, Kitchenette, Lunch	2'x4' or 2'x2' dimmable volumetric type luminaires.	Occupancy sensors with wall-mounted controller.	30 foot-candles
Private Office	2'x4' or 2'x2' dimmable volumetric type luminaires.	Vacancy sensors with wall-mounted controller. Receptacle control.	30 to 40 foot-candles
Health Care Spaces			
ED Exam Rooms	Multi-function (ambient, reading, exam) above bed patient light (Kenall MPC) and dimmable down lights.	Manual controls.	30 foot-candles ambient 50 foot-candles at patient bed
General Exam Rooms	Dimmable volumetric type 2'x4'.		
Procedure Rooms	Dimmable volumetric type 2'x4' and dimmable down lights.		
Operating Room	Sealed and gasketed asymmetric surgical troffers, dimmable down lights, and emergency battery wall pack luminaires.	Manual dimming controls.	100 foot-candles
Recovery Room	Dimmable volumetric type 2'x4' and dimmable down lights.		
Patient Rooms	Multi-function (ambient, reading, exam) above bed patient light (Kenall MPC), dimmable down lights, and wall-mounted night light.	Manual controls.	30 foot-candles ambient 50 foot-candles at patient bed
Waiting Rooms	Down lights and architectural wall sconces.	Controlled by motor-operated circuit breakers/relays and networked control stations.	15 to 30 foot-candles
Medication Rooms, Nourishment Rooms	2'x4' volumetric type luminaires.	Manual controls with ceiling-mounted vacancy sensor.	30 to 50 foot-candles

Lighting and Lighting Control System - Space Description Table			
Space Description	Luminaires	Lighting Controls	Illuminance Levels
Linen Services, Storage Rooms, Equipment Rooms, Soiled Utilities	Acrylic lens luminaires.	Wall switch type vacancy sensor.	15 to 25 foot-candles
Clean Utility	Acrylic lens luminaires.	Wall switch type vacancy sensor.	50 foot-candles

Luminaire Type	Description	Basis of Design Manufacturer / Series Manufacturer
Recessed Acrylic Luminaire	LED static grid lensed troffer, 22 gauge steel housing with flush steel door in white, 0.110" thick #12 pattern acrylic lens.	Acuity Lithonia GTL Series Cooper Metalux GR Series Signify Daybrite TG Series
Recessed volumetric Luminaire	Direct with high angle illuminance, one-piece steel reflector assembly housing, acrylic prismatic diffuser, single lamp chamber.	Acuity Lithonia RT Series Cooper Metalux Accord AC Series H.E. Williams HET Series Current Columbia LEPC Series Leviton Viscor LRTJ Series
Recessed Direct/Indirect	Indirect LED, steel housing with two curved reflectors and side-mounted LEDs.	Acuity Lithonia 2BZL Series LSI SLI Series H.E. Williams DI Series
Suspended Direct/Indirect	Rectangular linear suspended direct/indirect, aluminum housing.	Current Litecontrol SAE105 Acuity Peerless H.E. Williams Cooper Corelite Signify Ledalite
Recessed Down Light	Open downlight, galvanized stamped steel housing.	Signify Lightolier Calculite Acuity Gotham Current Prescolite Liteistry Cooper Portfolio
Multi-function (Ambient, Reading, Exam) Above Bed Patient Light	LED multifunction, with reading, ambient and exam functions, 20 gauge steel housing, 0.100" linear ribbed acrylic lenses.	Visa Serenity Series Kenall
Exit Sign, Edge-Lit	Exit sign, injection molded acrylic mirror lens and extruded aluminum housing, edge lit, red letters, white background, emergency ni-cad battery.	Acuity Lithonia LRP Series Hubbell Dual-Lite Le Series Signify Chloride 44r Series

3. Power System Requirements

   a. Normal Distribution: New normal power branch receptacle loads will be served from existing branch circuit panels.

   b. Critical Distribution: Critical branch power branch receptacle loads will be served from existing branch circuit panels.

4. Power Distribution

   a. Circuit Breaker Distribution Panel
      1) Cabinet with hinged trim on doors to allow access to wire gutters without removal of trim and flush lock.
      2) Copper bus with copper ground bus.
      3) Arc energy reduction (AER) (1,200 amp or larger).
      4) Molded case circuit breakers, bolt-on type, thermal-magnetic trip.
      5) Current limiting molded case circuit breakers, bolt-on type, thermal-magnetic trip, current limiting, 100K interrupting rating.

   b. Circuit Breaker Branch Panelboards
      1) Cabinet with door-in-door constructions, concealed hinge, and flush lock all keyed alike.
      2) Copper bus with copper ground bus.
      3) Molded case circuit breakers, bolt-on type, thermal-magnetic trip.
      4) Current limiting molded case circuit breakers, bolt-on type, thermal-magnetic trip, current limiting, 100K interrupting rating.

   c. Isolated Power Panels
      1) Stainless steel cabinet with isolation transformer, line isolation monitor, primary circuit breaker, and circuit breaker distribution panel in a common enclosure. Double pole branch circuit breakers.
      2) Provided for the following spaces: Operating rooms.

   d. Dry Type Transformers
      1) 2016 Department of Energy (DOE) TP-1 efficiency standards.
      2) Transformers Windings: Aluminum windings, rated for 150°C temperature rise over ambient.
      3) Installation: 45KVA and less - suitable for trapeze mounting from structure; greater than 45KVA - floor mounted on concrete housekeeping pads.

5. Branch Power Distribution

a. Branch Circuit Panelboards

1) Branch circuit panels serving lighting and receptacle loads will use molded case, thermal magnetic type circuit breakers.
2) Minimum Spare Capacity: 20% spare circuits.
3) Spare Branch Raceways: Recess-mounted panels and panels located in shallow electrical closets less than two feet deep will be provided with five empty 1" conduits stubbed into an accessible location above the ceiling for future use.

b. Branch Circuits

1) Branch circuit design will be based on a maximum of 1,900 volt-amperes per 20 amp, 120 volt circuit, and 4,400 volt amp per 20 ampere, 277 volt circuit.
2) General Purpose Lighting: 277 volt
3) Minimum wire size will be #12 for power circuits and #18 for controls circuits.
4) A dedicated neutral conductor will be provided in all branch circuits.
5) Not more than three computer workstations will be served by a common circuit.
6) Dedicated circuits will be provided to serve the following equipment:
    a) Refrigerators.
    b) Freezers.
    c) Copiers.
    d) Microwave.
    e) Coffee brewers.
    f) Equipment with a load greater than 10 amps.
    g) Medication dispensers.
    h) Defibrillators.

6. Receptacle and Wiring Devices

a. All receptacles will be hospital grade with unbreakable thermoplastic coverplates.

b. Tamper Resistant: All receptacles in public lobbies, waiting areas, and where required by the electrical code will be tamper resistant type.

c. GFCI receptacles will be provided for the following locations:

1) Interior Locations: When located adjacent to sinks (within six feet), electric water coolers, wet / damp locations, vending machines

mechanical / electrical / plumbing / fire protection equipment spaces and other locations required by the electrical code.

2) Maintenance receptacles will be provided adjacent to all exterior MEP equipment located on grade or the roof.

d. Emergency Power Receptacles: Provide with red color for emergency circuits.

7. Motor Connection and Control

a. Motors 3/4 horsepower and larger will be served at 480 or 208 volt, 3-phase, 3-wire. Motors less than 3/4 horsepower will be served at 120 volt service, 1-phase, 2-wire as applicable.

b. Heating, ventilation, air conditioning, and other mechanical loads will generally be served at 480 volt, 3-phase, 3-wire.

c. Fans and large pumps will be controlled by VFDs. Smaller motors will be controlled by full voltage starters or manual starters as required for the application.

8. Variable Frequency Drives VFD and Harmonic Filtering

a. Acceptable Manufacturers, Basis of Design: Toshiba, ABB, Allen Bradley, Danfoss, Yaskawa.

b. Pulse width modulated (PWM), diode bridge rectifier or IGBT active front end, with IGBT inverter section, 100KA short circuit.

c. Harmonic Filtering Performance

1) 15 HP or Less Applications: 6 pulse drive, 3% input line reactor or DC choke.

2) 16HP to 99 HP Applications

a) Minimum Criteria: 6 pulse drive, with 3% input line reactor.

b) Minimum Performance: Voltage THDv: 8 percent at the input line terminals of the VFD.

c) Minimum Performance: Current THDi: 8 percent at the input line terminals of the VFD.

3) Acceptable harmonic distortion solutions beyond the minimum criteria:

a) VFD configurations with 6, 12, 18 pulse. VFDs with active front end IGBT rectifier.

b) Passive harmonic filter with minimum equivalent (3) impedance.

c) Active harmonic filer with minimum equivalent 3% impedance.

9. Wire, Cable, Raceway

a. Voltage Drop: Feeder sizes will be increased as required to limit voltage drop from the service entrance to the branch circuit panel to 2% or less. The total voltage drop from the service entrance to the end of the branch circuit will not exceed 5%.

b. Feeders and Branch Circuits
   1) 100 Amp or Larger: Copper, stranded conductor, 600-volt insulation, THHW/THWN or XHHW-2 copper.
   2) Other Ratings: Copper, solid or stranded conductor, 600-volt insulation, THHN/THWN.
   3) Special Applications
      a) Feeders and Branch Circuits Serving Motor Loads: Copper.
      b) Motor Control Centers: Copper.
      c) Motor Feed from VFD: Copper, XHHW-2.
   4) Isolated Power Branch Circuits: XLP low leakage insulation.

c. Raceways
   1) Rigid Metal Conduit (RMC)
      a) Wet, damp, dry interior, exterior, and underground locations.
      b) Subject to physical damage.
   2) Intermediate Metallic Conduit (IMC)
      a) Damp, dry interior and exterior locations.
      b) Subject to physical damage.
   3) Electrical Metallic Conduit (EMT)
      a) Dry interior locations.
      b) Die-cast fittings.
      c) 2" Diameter or Smaller: Compression or setscrew type.
      d) Larger than 2" Diameter: Compression or setscrew type.
   4) Flexible Metallic Conduit (FMC)
      a) Final connection to luminaires, motors, equipment.
      b) Dry interior locations.
   5) Liquidtight Flexible metallic Conduit (LFMC)
      a) Final connection to luminaires, motors, equipment.
      b) Wet, damp, dry interior locations.

10. Grounding and Bonding System Requirements

a. A grounding system and equipment grounding will be provided per the applicable electrical code. The electrical distribution system will be provided with

an effective bond and ground path for all equipment, including distribution panels, panelboards, transformers, raceways, cable tray, and enclosures.

b. Additional bonding requirements include:
   1) Building steel.
   2) Information Technology (IT) room bonding system; refer to Technology descriptions.
   3) Patient Care Spaces. The ground busses of normal, critical, and other panels service patient care areas will be bonded per the requirements of the electrical code.
   4) Healthcare Operating and Procedure Rooms: Operating and medical procedures rooms will be provided with a master grounding module. All metallic building components in the patient vicinity will be bonded to the grounding module including but not limited to, fixed furniture, fixed equipment, window/door frames, metal wall studs, ceiling system, etc.

c. Feeders and Branch Circuits: A green insulated copper equipment ground conductor sized per the applicable electrical code will be provided with all feeders and branch circuits.

d. Utilization Equipment: Fixed-in-place utilization equipment served by the electrical power distribution system will be bonded using the equipment ground conductor.

11. Fire Alarm and Automatic Detection System

a. Approved Manufacturers, Basis of Design: Siemens Fire Safety.

b. The existing addressable fire alarm system will be modified and extended.

c. Circuit Pathway, Survivability, Raceway
   1) Pathway Class: B, circuits not capable of transmitting alarm beyond a fault condition in the wiring system.
   2) Pathway Survivability: Level 1, circuit system protected by automatic sprinkler and installed in metal raceways.
   3) Raceway: System installed in red colored conduit raceway with red junction box covers installed in raceway when concealed in walls, ceilings, and installed in spaces without finished ceilings; open cabling with J-hook and bridle ring supports are acceptable in accessible plenum spaces.
   4) Circuit Integrity (CI) (two-hour rated): Notification appliance circuits (NAC) and signal line circuits (SLC) passing through, but not serving, a two-hour

fire/smoke compartment will be two-hour rated assembly; enclosure, concrete encased, MI cable, or alternative approved assembly.

d. System notification will consist of ADA- and NFPA-compliant audio horn, visual, and combination audio/visual devices.
   1) Device Color: Red with white letters and pictograph.
   2) Notification appliance circuit panels will be sized for 24 hours of standby operation and 15 minutes of alarm.

e. System initiation will consist of individually addressable analog smoke and heat detectors, addressable fire pull stations, and sprinkler system flow switches.
   1) Partial coverage automatic detection will be provided. Addressable smoke detectors will be located in corridors and areas open to the corridor.
   2) Rated Dampers: smoke dampers (SD), and fire-smoke dampers (FSD) will be provided with a duct-type smoke detector with sampling tube or smoke type detector inside the duct, remote indicator when not visible from the floor, addressable relay to shut down associated air handling systems, to close smoke dampers, and shut down air distribution systems.
   3) Pull stations will be located within a travel distance of 200 feet and at all exterior exits. Additional pull stations will be provided at stairway entrances nurse stations.

f. Additional Fire Alarm System Components
   1) Fire alarm test and drill.
   2) Automatic sprinkler water flow detection and valve position tamper switch monitor.
   3) Air handling system smoke detection and shutdown.
   4) Lighting control system override.
   5) Fire/Smoke Doors: Fire alarm addressable control modules will be provided for door holders and door unlock functions per the safety plans and applicable codes.
   6) Medical procedure.
   7) Access control override.

12. Identification of Electrical System

a. Labeling for Raceways
   1) 600 Volts and Below Normal: White letters on black background indicating feeder identification and voltage.

2) 600 Volt and Below Emergency: White or black letters on red background indicating feeder identification and voltage.
3) Fire Alarm: Red letter on white background indicating “FIRE ALARM”.
4) Temperature Control: White or black letters on blue background.
5) Grounding: White letters on green background indicating “GROUND” and equipment and designation.
6) Security System: Blue letters on yellow background indicating "Security".
7) Telephone System: Green letters on yellow background indicating "Telephone".

b. Labeling Instructions
1) Indoor Equipment: Self-adhesive, engraved laminated acrylic or melamine label. Unless otherwise indicated, provide a single line of text with 1/2” high letters on 1-1/2” high label. Where two lines of text are required, use labels 2” high.
2) Elevated Components: Increase size of labels and letter to those appropriate for viewing from the floor.
3) Unless provided with self-adhesive means of attachment, fasten labels with appropriate mechanical fasteners that do not change the NEMA or NRTL rating of the enclosure.
4) Equipment to be labeled:
   a) Panelboards.
   b) Transformers.
   c) Variable speed controllers.
   d) Contactors.
   e) Enclosed switches.
   f) Enclosed circuit breakers.
   g) Enclosed controls (starters).
   h) Enclosures and electrical cabinets.
   i) Access doors and panels for concealed electrical items.
   j) Emergency system boxes and enclosures.
   k) Color coding of equipment nameplates will be as follows:
      (1) Normal Power: Black plate with white lettering.
      (2) Emergency Power Standby: Red plate with white lettering.
      (3) Fire Alarm: White plate with red lettering.
      (4) Temperature Controls: Blue plate with white lettering.
      (5) Grounding: Green plate with white lettering.
5) Each switch and receptacle will be identified as to the circuit and panelboard from which it is fed. This will be identified both inside the junction box (permanent magic marker) and on the coverplate.

6) All junction, pull, and connection boxes will be provided with identification on the cover. Identification will be neatly handwritten with permanent magic marker denoting the wiring system, voltage, and panel and circuit numbers.

7) Panelboard directories will be created using Microsoft Word, and the typed printout should be provided in each panel. The Word file will be turned over to the Owner upon completion of the project.

13. Power System Study for Arc Flash Hazard, Selective Coordination, and Equipment Short Circuit Current Ratings (SCCR): The IMEG base design services include a preliminary power system study based on industry recognized standards. The vendor characteristics of finally selected over current protection devices (OCPDs) and the final length of feeders influenced by means-and-method contractor routing has a dynamic influence on the final power system study results. The design specifications will include a performance-based final power system study based on contractor installation coordination drawings, installed means-and-method conditions, and performed by the equipment manufacturer. Alternatively, IMEG can perform and maintain the final power system study calculations on behalf of the Owner as an additional service.

a. Arc Flash Hazard Calculations and Equipment Labeling: The operation, maintenance, and safety procedures are the responsibility of the facility owner operator. The basis of design will be based on the following industry recognized standards:

1) IEEE 1584-2018 Guide for Performing Arc-Flash Hazard Calculations.

2) NFPA 70E Standard for Electrical Safety in the Workplace.

b. IEEE 1584 / NFPA 70E requires a revised power system model for every modification or addition of the distribution system; otherwise, a periodic review for accuracy every five years. Practical examples of a distribution system modification or addition include switchboards, distribution panels, motor control centers, branch panels, feeders, and equivalent motor loads of 5HP or more; excludes branch circuits serving as the final OCPD for the equipment.

c. Arc Flash Hazard Scope of Work

1) Final Calculations: Manufacturer.

2) Labels printed by Contractor.

3) Labels installed by Contractor.

G. Technology Design Requirements

1. General Technology System Description

a. New network information outlets will be provided as required in the new operating rooms, supporting spaces, and other renovated areas.

b. Nurse call system devices will be included in the operating rooms and other renovated areas as required.

c. Security system components, i.e., cameras, door controls, intercom, etc. will be provided as directed by the Owner.

2. General

a. Demolition: Demolition of technology systems will be required in the areas of renovation. Removed devices may be relocated to the new construction as deemed appropriate.

b. Firestopping: Firestopping will be provided at cable penetrations through rated wall assemblies.

3. Telecommunications Pathways and Spaces

a. Interior Spaces

1) Entrance Facility (EF): The existing entrance facilities remain in service and are not part of this project scope.
2) Equipment Room (ER): The existing equipment room to remain in service.
3) Telecommunication Rooms (TR): The existing TRs that service the renovation area will be modified as required to facilitate the new design. Additional patch panels, where required, will match the existing equipment unless otherwise directed by the Owner's IT staff and Mercy Contractor Guidelines for low voltage structured cabling.

b. Interior Pathways

1) General: Anywhere that a penetration is required through a corridor, wall or hard ceiling for telecommunications cabling, installation of conduit sleeves will be required. For penetrations serving more than 12 cables, mechanical firestopping will be required.
2) Where applicable any existing cable tray system will be utilized for new cabling. It is not anticipated that new cable tray will be required for this renovation.

4. Structured Cabling System

   a. The telecommunications infrastructure will be a "structured cabling system" designed and installed to EIA/TIA requirements and any additional requirements of the Owner's IT department.

   b. The system will be required to be fully tested to CAT 6 performance requirements and will be tested at 250 MHz.

   c. All horizontal cabling (e.g., cabling between the workstations and TRs) will be Category 6, four-pair unshielded twisted pair cable for both voice and data. Cabling will be identical for all applications (e.g., voice and data). All Category 6 cabling will terminate on modular patch panels on equipment racks in the TRs. All horizontal cabling installed in plenum spaces will be plenum rated. Horizontal cabling will be installed to feed ceiling-mounted 802.11 wireless requirements throughout the renovated areas. The 802.11 wireless access points will be furnished and installed by the Owner. The typical information outlet configuration will be two Category 6 jacks (RJ45). The outlet box will be a 4-9/16" X 4-9/16" X -3/4" deep box with a single gang plaster ring mounted at 18", unless otherwise noted. Special use outlets will be configured per the requirements of the equipment serviced by the outlet (copy machines, printers, wall phones, etc.).

   d. Labeling and Administration: Cabling, faceplates, and patch panels will be labeled using the Owners standard labeling scheme.

5. Security Systems

   a. Access Control System: Any door requiring access control will be connected to the existing access control system. Modification of the existing system head-end equipment is not anticipated for this renovation.

   b. Video Surveillance System: New cameras will be provided and connected to the existing video surveillance system. New cameras will be IP based, with Category 6A cable drops to each camera.

6. Audio Video Systems

   a. Public Address/Overhead Paging System
      1) The existing overhead paging system will have speakers relocated to the new layout where applicable.
      2) New speakers to be specified to achieve required coverage of the renovated area where necessary.

b. Nurse Call System

1) New nurse call system devices will be provided where required. New nurse call devices will include emergency stations, duty/staff stations, toilet stations, master call station, and dome lights.

2) Nurse call stations will be provided throughout the renovated area. Areas of coverage include, but are not limited to:

Patient Bed	Patient Station Pillow Speaker with Entertainment and Lighting Control Code Blue Bed Interface Module Medical Equipment Monitoring
Clinical Corridors	Dome Lights Zone Dome Lights (as required)
Clean Linen	Duty Station
Soiled Utility	Duty Station
Charting	Duty Station
Nourishment	Duty Station
Medication	Duty Station
Equipment Storage (Clinical Areas)	Duty Station
Exam/Treatment Rooms	Duty Station Nurse Assistance Station
Patient Toilet	Patient Assist Pull Cord
Bath/Shower	Patient Assist Pull Cord
Outpatient Surgery	Nurse Assistance Station Code Blue (some areas)
Recovery	Patient Station Pillow Speaker Code Blue Medical Equipment Monitoring Nurse Assistance Station
Pre-OP	Patient Station Pillow Speaker Code Blue
Misc. Procedure Room	Nurse Assistance Station Code Blue (some areas)
Stress / EKG	Nurse Assistance Station Code Blue
Admissions / Discharge	Nurse Assistance Station

Seclusion / Isolation / Ante	Nurse Assistance Station
Imaging Suite	Nurse Assistance Station
Staff Lounge	Duty Station

7. Specialty Systems

a. Cable Television (CATV) System

1) Modifications to the existing coaxial cabling infrastructure will be provided to distribute CATV programming.

2) The coaxial system will be RG-6 quad-shield in the horizontal, distributed from the telecom closets. RG-6 quad shielded cable will be installed from each television location to the closest TR. The TR will contain the required amplification and splitting required for each individual drop.

b. The Contractor will provide amplifiers, taps, and splitters, as required based on the design, to maintain a 6 dB +/- 3 dB signal level at each jack.

a. Biomedical/Telemetry System: Biomedical/Telemetry System: Required telemetry monitoring equipment will be specified as directed by the Owner.

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