ARCHITECTURAL FIRE SAFETY CODE ANALYSIS

SULLIVAN COUNTY
Sullivan, Indiana

Architectural Fire Safety Code Analysis

Fire Safety Concept:
Design a new medical office building of wood frame construction with no hourly rating for the structure. The allowable area is 9,000 sf (IBC Table 503) + 27,000 sf (IBC 506.3 – sprinkler increase) = 36,000 sf.

The waiting areas are considered part of the Group B occupancy per IBC 303.1.2 for small assembly spaces.

Outside exits are provided at four locations.

I. Applicable Codes:
*State Department of Homeland Security and City –
A. 2014 Indiana Building Code (2012 IBC with State amendments)
B. 2014 Indiana Mechanical Code (2012 IMC with State amendments)
C. 2012 Indiana Plumbing Code (2006 IPC with State amendments)
D. 2009 Indiana Electrical Code (2008 National Electrical Code with State amendments)
E. 2014 Indiana Fuel Gas Code (2012 International Fuel Gas Code with State amendments)
F. 2014 Indiana Fire Code (2012 International Fire Code with State amendments)
G. 2010 Indiana Energy Conservation Code (ASHRAE 90.1, 2007 edition with State amendments)
H. 2009 ANSI A117.1 Accessibility and Usable Building Facilities (with State amendments)

*Indiana State Department of Health (ISDH)
A. Indiana Health Care Facility Licensing Rules for Hospitals – 410 IAC 15–1.5 – October 2016
B. 2012 NFPA 101 Life Safety Code (LSC)
C. 2011 NFPA 70 National Electric Code
D. 2012 NFPA 90A Standard for the Installation of Air–Conditioning and Ventilation Systems
E. 2012 NFPA 99 Health Care Facilities Code
F. 2018 Guidelines for Construction and Equipment of Hospital and Medical Facilities

II. Occupancy Types:
A. Group B, Business (IBC 304)
B. Business (LSC Ch. 38)

III. Construction Types:
A. Type V–B (IBC 602.5)
B. Type V (000) NFPA 220

IV. Structural Fire Ratings:
None required.

V. Fire Suppression System:
Complete automatic sprinkler protection provided for entire building.

VI. Height and Area:
One story; 26,351 sf total

VII. Other Life Safety Considerations (most stringent of applicable codes is indicated):
A. Occupant load (IBC 1004.1.2):
26,351 sf.
100 sf./occ. = 263 occupants

B. Exit capacity (IBC 1005.3.2):
Outside Doors
4 (34") + 1 (67") = 203"
203"
0.2"/occ. = 1,015 occupants

C. Corridor width (IBC Table 1018.2):
36" minimum with a required occupancy capacity of less than 50; 44" minimum elsewhere

D. Dead end (IBC 1018.4, Ex. 2):
50' maximum; no requirement when only one exit is permitted.

E. Travel distance (IBC Table 1016.2):
Any point to an exit – 300' maximum

F. Door width (IBC 1008.1.1):
32" clear width minimum

G. Corridor construction (IBC 1018.1):
Non–hourly–rated in fully sprinklered building

H. Corridor doors (IBC 1018.1):
No requirements with a non–hourly–rated corridor

I. Incidental use or hazardous area separation (IBC Table 509):
Waste and linen collection more than 100 sq. ft. in area – Smoke–resistive

J. Interior finish (IBC Table 803.9):
Corridors – Class C maximum flame spread
Rooms – Class C maximum flame spread

K. Floor covering (IBC 804.4.2):
Enclosed exits & exit access – no minimum critical radiant flux criteria in fully sprinklered building

L. Accessible egress (IBC 1007.1):
Accessible outside exits in at least two remote locations provide accessible egress as required.

K. Floor finish (IBC 804.4.2):
Exits, corridors and means of egress – 0.22 watts/sq. cm. minimum as per NFPA 253 (radiant panel)

J. Accessible means of egress (IBC 1009.1 & LSC 7.5.4):
Accessible outside doors and horizontal exits can serve as accessible means of egress.
LSC 7.5.4.1.3 excepts fully sprinklered health care occupancies from accessible means of egress provisions.

286J/9782
8–15–22

INDEX OF DRAWINGS

COMcheck Software Version 4.1.5.5
Envelope Compliance Certificate

Project Information

Energy Code:	90.1 (2007) Standard
Project Title:	
Location:	Sullivan, Indiana
Climate Zone:	4a
Project Type:	New Construction
Vertical Glazing / Wall Area:	9%

Construction Site: 2200 North Section Street Sullivan, IN 47882
Owner/Agent:
Designer/Contractor:

Building Area / **Floor Area**

1-Floor Area (Health Care-Clinic) : Nonresidential	26351

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor
Floor 1: Slab-On-Grade:Unheated, Vertical 3 ft., [Bldg. Use 1 - Floor Area] (b)	26351	---	7.5	0.530	0.530
North Exterior Wall: Wood-Framed, 16" o.c., [Bldg. Use 1 - Floor Area]	4167	13.0	7.5	0.051	
Window 1: Metal Frame:Fixed, Perf. Type: Energy code default, Double Pane, Tinted , SHGC 0.50, [Bldg. Use 1 - Floor Area]	150	---	---	0.900	0.650
Window 2: Metal Frame:Fixed, Perf. Type: Energy code default, Double Pane, Tinted , SHGC 0.50, [Bldg. Use 1 - Floor Area]	168	---	---	0.900	0.650
Door 1: Glass (> 50% glazing),Metal Frame, Entrance Door, Perf. Type: Energy code default, Single Pane, Tinted , SHGC 0.70, PF 2.00, [Bldg. Use 1 - Floor Area]	120	---	---	1.250	0.850
East Exterior Wall: Wood-Framed, 16" o.c., [Bldg. Use 1 - Floor Area]	2301	13.0	7.5	0.051	0.089
Window 2: Metal Frame:Fixed, Perf. Type: Energy code default, Double Pane, Tinted , SHGC 0.50, [Bldg. Use 1 - Floor Area]	84	---	---	0.900	0.650
Window 8: Metal Frame:Fixed, Perf. Type: Energy code default, Double Pane, Tinted , SHGC 0.50, PF 0.40, [Bldg. Use 1 - Floor Area]	69	---	---	0.900	0.650
Door 2: Glass (> 50% glazing),Metal Frame, Entrance Door, Perf. Type: Energy code default, Single Pane, Tinted , SHGC 0.70, PF 0.40, [Bldg. Use 1 - Floor Area]	75	---	---	1.250	0.850
West Exterior Wall: Wood-Framed, 16" o.c., [Bldg. Use 1 - Floor Area]	2271	13.0	7.5	0.051	0.089
Window 1: Metal Frame:Fixed, Perf. Type: Energy code default, Double Pane, Tinted , SHGC 0.50, [Bldg. Use 1 - Floor Area]	144	---	---	0.900	0.650
Window 8: Metal Frame:Fixed, Perf. Type: Energy code default, Double Pane, Tinted , SHGC 0.50, PF 0.40, [Bldg. Use 1 - Floor Area]	69	---	---	0.900	0.650
Door 2: Glass (> 50% glazing),Metal Frame, Entrance Door, Perf. Type: Energy code default, Single Pane, Tinted , SHGC 0.70, PF 0.40, [Bldg. Use 1 - Floor Area]	75	---	---	1.250	0.850
South Exterior Wall: Wood-Framed, 16" o.c., [Bldg. Use 1 - Floor Area]	3241	13.0	7.5	0.051	
Window 2: Metal Frame:Fixed, Perf. Type: Energy code default, Double Pane, Tinted , SHGC 0.50, [Bldg. Use 1 - Floor Area]	84	---	---	0.900	0.650
Roof 1: Insulation Entirely Above Deck, [Bldg. Use 1 - Floor Area]	26531	---	20.0	0.048	0.048

Project Title: Report date: 02/29/24
Data filename: H:\2398702 - Sullivan Freestanding MOB\Sullivan ComCheck.cck Page 1 of 12

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor

(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements.
(b) Slab-On-Grade proposed and budget U-factors shown in table are F-factors.

Envelope PASSES: Design 1% better than code

Envelope Compliance Statement

Compliance Statement: The proposed envelope design represented in this document is consistent with the building plan specifications, and other calculations submitted with this permit application. The proposed envelope systems have been designed to meet the 90.1 (2007) Standard requirements in COMcheck Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Stephanie Pielich — Stephanie Pielich — 02-29-24
Name - Title — Signature — Date

Project Title: Report date: 02/29/24
Data filename: H:\2398702 - Sullivan Freestanding MOB\Sullivan ComCheck.cck Page 2 of 12

SEISMIC ANALYSIS FOR ARCHITECTURAL, MECHANICAL, PLUMBING, & ELECTRICAL COMPONENTS

ADD #02

REFER TO THE SPECIFICATIONS FOR APPLICATION OF THESE NOTES TO SPECIFIC BUILDING COMPONENTS

ARCHITECTURAL, MECHANICAL, & ELECTRICAL COMPONENTS AND SYSTEMS SEISMIC REQUIREMENTS
(BASED ON 2018 INTERNATIONAL BUILDING CODE WITH INDIANA AMENDMENTS SECTIONS 1613–1621)

Seismic Risk Category:	II
Seismic Importance Ie:	1.0
.2 SEC Spectral Response Acceleration Ss:	0.358
1.0 SEC Spectral Response Acceleration S1:	0.133
Site Class:	C
Design Spectral Response SDS:	0.316
Design Spectral Response SD1:	0.134
Seismic Design Category:	C
Resisting System:	Light–Framed Wood Walls Sheathed With Wood Structural Panels Rated for Shear Resistance
Response Modification Factor R:	6.5
Seismic Response Coefficient Cs:	0.016
Analysis Procedure:	Equivalent Lateral Force
Base Shear:	50 kips.

ARCHITECTURAL COMPONENTS		
COMPONENT	Coefficient (Ap)	Coefficient (Rp)
Exterior–nonbearing walls	1.0	2.5
Interior–nonbearing wall, including vertical shaft enclosures	1.0	2.5
Exterior & Interior ornamentations & appendages	2.5	2.5
Permanent floor supported cabinets and books stacks	1.0	2.5
Suspended ceilings	1.0	2.5
Access floor systems	1.0	2.5
Partitions	1.0	2.5
Light Fixtures	1.0	1.25

MECHANICAL, PLUMBING, & ELECTRICAL COMPONENTS		
COMPONENT	Coefficient (Ap)	Coefficient (Rp)
Tanks & Vessels including support systems.	1.0	2.5
Electrical, Mechanical, and plumbing equipment and associated conduit and ductwork and piping.	1.0	2.5
Electrical Distribution Systems	1.0	2.5
Electrical Equipment	1.0	2.5
Elevator Equipment	1.0	2.5

ADDITIONAL REQUIREMENTS:

1. SEISMIC RESTRAINTS MAY BE OMITTED FROM PIPING AND DUCT SUPPORTS IF ALL THE FOLLOWING CONDITIONS ARE SATISFIED:
   A. LATERAL MOTION OF THE PIPING OR DUCT WILL NOT CAUSE DAMAGING IMPACT WITH OTHER SYSTEMS.
   B. THE PIPING OR DUCT IS MADE OF DUCTILE MATERIAL WITH DUCTILE CONNECTIONS.
   C. LATERAL MOTION OF THE PIPING OR DUCT DOES NOT CAUSE IMPACT OF FRAGILE APPURTENANCES (E.G. SPRINKLER HEADS) WITH ANY OTHER EQUIPMENT, PIPING OR STRUCTURAL MEMBER.
   D. LATERAL MOTION OF THE PIPING OR DUCT DOES NOT CAUSE LOSS OF SYSTEM VERTICAL SUPPORT.
   E. ROD–HUNG SUPPORTS OF LESS THAN 12 INCHES IN LENGTH HAVE TOP CONNECTIONS THAT CANNOT DEVELOP MOMENTS.
   F. SUPPORT MEMBERS CANTILEVERED UP FROM THE FLOOR ARE CHECKED FOR STABILITY.
2. SEISMIC RESTRAINTS MAY BE OMITTED FROM ELECTRICAL RACEWAYS, SUCH AS CABLE TRAYS, CONDUIT AND BUS DUCTS, IF ALL THE FOLLOWING CONDITIONS ARE SATISFIED:
   A. LATERAL MOTION OF THE RACEWAY WILL NOT CAUSE DAMAGING IMPACT WITH OTHER SYSTEMS.
   B. LATERAL MOTION OF THE RACEWAY DOES NOT CAUSE LOSS OF SYSTEM VERTICAL SUPPORT.
   C. ROD–HUNG SUPPORTS OF LESS THAN 12 INCHES IN LENGTH HAVE TOP CONNECTIONS THAT CANNOT DEVELOP MOMENTS.
   D. SUPPORT MEMBERS CANTILEVERED UP FROM THE FLOOR ARE CHECKED FOR STABILITY.
3. PIPING, DUCTS AND ELECTRICAL RACEWAYS, WHICH MUST BE FUNCTIONAL FOLLOWING AN EARTHQUAKE, SPANNING BETWEEN DIFFERENT BUILDINGS OR STRUCTURAL SYSTEMS SHALL SUFFICIENTLY FLEXIBLE TO WITHSTAND RELATIVE MOTION OF SUPPORT POINTS ASSUMING OUT–OF–PHASE MOTIONS.
4. MOVEMENT OF COMPONENTS WITHIN ELECTRICAL CABINETS, RACK AND SKID–MOUNTED EQUIPMENT AND PORTIONS OF SKID–MOUNTED ELECTROMECHANICAL EQUIPMENT THAT MAY CAUSE DAMAGE TO OTHER COMPONENTS BY DISPLACING, SHALL BE RESTRICTED BY ATTACHMENT TO ANCHORED EQUIPMENT OR SUPPORT FRAMES.

ALTERNATIVES

ADD #02

~~A1/E1 – PROVIDE CANOPY FOR MAT SPACE~~
~~E1 – LIGHTING INVERTER FOR EMERGENCY POWER~~
~~A2 – PROVIDE ALUMINUM CLAD WOOD WINDOWS IN LIEU OF ALUMINUM STOREFRONT~~

BUILDING ENVELOPE

*PER 2010 INDIANA ENERGY CONSERVATION CODE (BASED ON ASHRAE 90.1–2007, I–PEdition); SULLIVAN COUNTY; ZONE 4A

ROOF (INSULATION ABOVE DECK):
R–VALUE (REQUIRED PER CODE*) R= 20c.i.
R–VALUE (ACTUAL DESIGN) R= 23c.i.

WALL:
WOOD FRAMED
R–VALUE (REQUIRED PER CODE*) R= 13
R–VALUE (ACTUAL DESIGN) R= R13 + 7.5c.i.
SLAB ON GRADE (UNHEATED SLAB):
R–VALUE (24" BELOW) NR
R–VALUE (ACTUAL DESIGN) R= 7.5c.i.

U–FACTORS (DESIGN MATCHES REQUIRED BELOW):

WINDOW (METAL W/ THERMAL BREAK) U= 0.50
DOOR (METAL W/ THERMAL BREAK) U= 0.70
SHGC: 0.40
ENTRANCE DOOR: U= 0.85

TYPICAL LIST OF ABBREVIATIONS

ACT	ACOUSTICAL CEILING TILE	FVC	FIRE VALVE CONNECTION	O.C.	ON CENTER
ALUM.	ALUMINUM	EXIST.	EXISTING	PC	PERSONAL COMPUTER
BLKG.	BLOCKING	EJ	EXPANSION JOINT	RD	ROOF DRAIN
B.O.	BOTTOM OF	FEC	FIRE EXTINGUISHER CABINET	RWL	RAIN WATER LEADER
CLG.	CEILING	F.C.	FACE OF CONCRETE	SQ. FT.	SQUARE FOOT
CMU	CONCRETE MASONRY UNIT	F.V.	FIELD VERIFY	STL.	STEEL
CONC.	CONCRETE	F.O.S.	FACE OF STUD	STRUCT.	STRUCTURAL
CONT.	CONTINUOUS	GYP. BD.	GYPSUM BOARD	T	TEMPERED
CT	CURTAIN TRACK	INSUL.	INSULATION	T.O.S.	TOP OF STEEL
DIA.	DIAMETER	MAX.	MAXIMUM	TYP.	TYPICAL
ELEC.	ELECTRICAL	MECH.	MECHANICAL	UNO	UNLESS NOTED OTHERWISE
EPDM	ELASTOMERIC MEMBRANE ROOFING	MIN.	MINIMUM	W/	WITH
		MTL.	METAL		

GENERAL NOTES

1. THE CONTRACTOR SHALL ASSEMBLE COMPONENTS WITH CAREFUL ATTENTION TO INSTALLATION OF FRAMING, SEALANTS, COMPONENTS, SUCH AS WINDOWS, DOOR FRAMES, LOUVERS, INSULATION SEALANTS, ETC. AS SHOWN ON THE DRAWINGS AND IS REQUIRED TO CREATE A COMPLETED PROJECT THAT IS IN COMPLIANCE WITH THE STATE DESIGN INTENT. FURTHERMORE, THE BUILDING SHALL BE IN COMPLIANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND GOOD CONSTRUCTION PRACTICES FOR THIS LOCATION.
2. CONTRACTOR SHALL COORDINATE THE WORK OF THE VARIOUS SUBCONTRACTORS AND MATERIAL SUPPLIERS TO ASSURE THE DESIGN INTENT HAS BEEN ACHIEVED.
3. ALL WALLS SHALL BE BUILT INCORPORATING CONTROL JOINTS AND/OR EXPANSION JOINTS AS APPROPRIATE TO CONTROL MOVEMENT IN THE WALL DUE TO TEMPERATURE VARIANCE.
4. ANY PENETRATIONS OF A SURFACE SHALL BE APPROPRIATELY SEALED.
5. CONTRACTOR SHALL MAINTAIN WALL RATINGS AS SHOWN ON NEW WORK PLANS AND PROPERLY SEAL ALL PENETRATIONS AS REQUIRED FOR NEW WORK. REFERENCE WALL PRIORITY DIAGRAMS SHEET W1.1 FOR PROPER RATED WALL CONSTRUCTION.
6. ALL WALLS ARE TO EXTEND TO DECK AND ARE TO HAVE SOUND PROOFING, U.N.O.
7. EXISTING CEILINGS TO BE REWORKED AND/OR REPLACED AS NEEDED TO COMPLETE PROJECT RENOVATIONS.

TYPICAL LEGEND OF TAGS

(1111) DOOR TAG (4+ NUMBERS)
(1) INTERIOR WINDOW TAG (NUMBER)
(X) EXTERIOR WINDOW TAG (LETTER)
(X) PLAN KEY NOTE
(X) CASEWORK TAG
(100 OFFICE) ROOM TAG
(A / X) SECTION MARK
(1 / X) DETAIL MARK
(1 / X) ENLARGED ENPLAN MARK

CONSTRUCTION DRAWINGS

JJCA
Johnson Johnson Crabtree Architects P.C.
4551 Trousdale Drive
Nashville, TN 37204
tel 615.837.0656
fax 615.837.0657

Freestanding Medical Office Building Shell for:
Sullivan County Community Hospital
Sullivan, Indiana

STEPHANIE PIELICH — REGISTERED — No. AR12300185 — 03.22.2024 — STATE OF INDIANA — ARCHITECT

Sheet Re-Issue Log
(Individual revisions clouded and labeled within each sheet)

ADD #02	03/22/2024

PROJECT NUMBER
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DATE
February 28, 2024

I–1.0
INDEX AND CODE ANALYSIS