THE MEDICAL CENTER OF AURORA

ICU Sleeping Suite Separation

CARDIAC TOWER, 3RD FLR, 1501 S. POTOMAC ST., AURORA, CO 80012

City of Aurora Building Division
Project: *The Medical Center of Aurora*
Address: *1501 E Potomac St, 3rd Floor Cardiac (North) Tower*
Occupancy Group: *IBC I-2*
Construction Type: *IBC TYPE IA-SPK*
RSN: *904445*
Permit: *2014-852595-LT*

PROJECT TEAM:

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GENERAL NOTES

1. ALL WORK SHALL BE PERFORMED IN STRICT CONFORMANCE WITH ALL LOCAL LAWS, ORDINANCES, RULES, REGULATIONS AND CODES OF THE GOVERNMENT AUTHORITIES HAVING JURISDICTION.
2. DIMENSIONS ARE TO FINISHED FACE OF GYPSUM WALL BOARD OR FACE OF EXISTING BASE BUILDING CONSTRUCTION, UNLESS NOTED OTHERWISE.
3. VERIFY ALL ROUGH-IN DIMENSIONS AND ELECTRICAL REQUIREMENTS FOR EQUIPMENT. COORDINATE OUTLET PLACEMENT WITH CASEWORK.
4. CONTRACTOR SHALL NOTIFY OWNER BEFORE COMMENCING WORK ON ANY ITEMS NOT CLEARLY DEFINED.
5. CHANGES OR DEVIATIONS FROM THE PLANS MADE WITHOUT THE CONSENT OF OWNER ARE UNAUTHORIZED.
6. G.C. TO PROVIDE SEALANT AROUND ALL PLUMBING FIXTURES, PIPING AND EQUIPMENT ABUTTING OR PENETRATING A WALL OR PARTITION. COLOR TO MATCH.
7. INSTALL FIRE-SAFING INSULATION, PUTTY OR FIRE-RATED INTUMESCENT-TYPE SEALANT (INCLUDING PIPE-SLEEVES, DAMMING BOARDS AND ACCESSORIES) AROUND ALL PENETRATIONS THROUGH FIRE-RATED PARTITIONS, FLOORS AND WALLS PER MANUFACTURER'S TESTED INSTALLATION FOR APPLICATION AND REQUIRED RATING. PROVIDE STENCILING ABOVE CEILING ON ALL RATED WALLS TO INDICATE PROPER RATING.
8. ALL ELECTRICAL AND MECHANICAL DEVICES OR APPLIANCES INSTALLED ON THIS PROJECT SHALL BE UL LISTED.
9. WHERE REMODELING IS TO OCCUR, THE CONTRACTOR SHALL PRESENT A WORKABLE PHASING PLAN TO THE OWNER PRIOR TO COMMENCEMENT OF WORK WITHIN THE AFFECTED AREA. CONTRACTOR SHALL ALSO KEEP THE OWNER APPRISED OF ANY VARIATIONS IN PHASING PLAN THAT WILL AFFECT THE OPERATION OF THE OWNER'S BUSINESS.
10. CONTRACTOR SHALL PRESENT A WORKABLE PLAN TO MAINTAIN SECURITY AND SAFETY OF THE OWNER'S BUSINESS FOR AREAS AFFECTED BY CONSTRUCTION DURING THE ENTIRE PHASE OF CONSTRUCTION.
11. CONTRACTOR SHALL MINIMIZE DISRUPTION BY CONSTRUCTION WORK TO THE ONGOING BUSINESSES AND TRAFFIC IN THE VICINITY. CONSTRUCTION AREA SHALL BE ENCLOSED TO KEEP OTHER AREAS FREE OF DUST, DEBRIS & NOISE.
12. EMPLOYEES OR SUBCONTRACTORS OF THE GENERAL CONTRACTOR SHALL REFRAIN FROM PROFANE OR OFFENSIVE LANGUAGE WHILE ON THE PROJECT SITE AND SHALL REFRAIN FROM USING LOUD RADIOS OR OTHER MUSIC PLAYERS WHILE OWNERS AND/OR DESIGN TEAM IS ONSITE.
13. GENERAL CONTRACTOR SHALL COORDINATE APPROPRIATE PARKING ACCOMMODATIONS FOR EMPLOYEE AND SUBCONTRACTOR VEHICLES WITH OWNER PRIOR TO COMMENCEMENT OF WORK.
14. G.C. SHALL COORDINATE APPROPRIATE CONSTRUCTION STAGING AREAS AND TRASH REMOVAL. G.C. WILL BE RESPONSIBLE FOR OBTAINING A DUMPSTER AND TRASH PICKUP FROM JOB SITE ON A REGULAR BASIS.
15. SUBSTITUTIONS OF SPECIFIED PRODUCTS MAY NOT OCCUR UNLESS SPECIFICALLY NOTED ON DRAWINGS THAT "OR EQUAL" IS ACCEPTABLE. OWNER APPROVAL IS REQUIRED FOR ALL SUBSTITUTIONS CONSIDERED BY G.C. TO MEET "OR EQUAL" REQUIREMENTS PRIOR TO BID SUBMISSION/INSTALLATION.
16. APPROVAL OF SHOP DRAWINGS DOES NOT IMPLY APPROVAL OF A SUBSTITUTED COLOR, SIZE OR FUNCTION OF AN ITEM SPECIFIED ON THESE CONTRACT DOCUMENTS UNLESS ATTENTION IS SPECIFICALLY CALLED TO THE REVISION AND APPROVAL IS GIVEN.
17. G.C. SHALL KEEP TOILET FACILITIES ON SITE CLEAN AND USABLE.
18. NO PLUMBING CLEAN-OUTS SHALL EXTEND INTO ROOM MORE THAN IS MINIMALLY REQUIRED. NO PIPE SHALL BE EXPOSED AND THERE SHALL BE ESCUTCHEON PLATES AT ALL GYPSUM WALL BOARD PENETRATIONS.
19. MULTIPLE SWITCHES SHALL BE GANGED IN SINGLE BOXES WITH COVER PLATE COLORS/ DEVICES TO BE WHITE, SWITCH PLATES SHALL ALIGN.
20. GENERAL CONTRACTOR SHALL PROVIDE FIRE SPRINKLER DESIGN/BUILD AS PART OF SCOPE OF WORK. ALL SPRINKLER HEADS SHALL BE FLUSH MOUNTED CONCEALED STYLE TO MATCH HOSPITAL STANDARDS. SPRINKLER HEADS SHALL BE PLACED IN CENTER OF AFFECTED CEILING TILE.

DRAWING INDEX

A0.0 COVER SHEET
A1.0 LIFE SAFETY PLAN

PROJECT NARRATIVE

THE MEDICAL CENTER OF AURORA IS INITIATING A CONSTRUCTION IMPROVEMENT PROJECT TO ENHANCE THE EXISTING LIFE SAFETY CONDITIONS LOCATED ON THE 3RD FLOOR OF THE NORTH PATIENT TOWER. CONSTRUCTION CONSISTS OF ADDING NEW FIRE/SMOKE BARRIER RATED CORRIDOR PARTITIONS, TWO NEW FIRE RATED DOUBLE EGRESS DOORS, AND UPGRADING EXISTING WALL ASSEMBLIES TO MEET FIRE & SMOKE BARRIER REQUIREMENTS. THE AFFECTED AREA OF WORK IS IDENTIFIED ON SHEET A1.0. THE INTENT OF THE PROJECT IS TO CREATE A NURSING UNIT AND SEPARATE THE EXISTING PATIENT ROOMS AS A SLEEPING SUITE AS PER THE 2012 NFPA 101 CODE SECTIONS 18.2.5.7.1.4 THROUGH 18.2.5.7.4, SUITE SEPARATION.

CODE INFORMATION SUMMARY

PROJECT NAME: ICU SLEEPING ROOM SEPARATION

PROJECT ADDRESS: 1501 S. POTOMAC ST.
AURORA, CO 80012

CONSTRUCTION TYPE: I-A

OCCUPANCY CLASSIFICATION: GROUP I-2 HOSPITAL

AFFECTED SQUARE FOOTAGE: 14,106 SF

OCCUPANT LOAD FACTOR: 120 SF/OCC (SLEEPING DEPT), 300 SF/OCC (MECH./STORAGE), 100 SF/OCC (BUSINESS)

OCCUPANT LOAD: 70 SLEEPING DEPT, 18 MECH./STORAGE, 4 BUSINESS = 92 TOTAL

SPRINKLER SYSTEM: EXISTING TO REMAIN

APPLICABLE CODES:
2009 INTERNATIONAL BUILDING CODE (IBC)
2009 INTERNATIONAL EXISTING BUILDING CODE (IEBC)
2009 INTERNATIONAL MECHANICAL CODE (IMC)
2009 INTERNATIONAL PLUMBING CODE (IPC)
2009 INTERNATIONAL FIRE CODE (IFC)
2011 NATIONAL ELECTRICAL CODE (NEC)
2012 NATIONAL FIRE PROTECTION ASSOCIATION 101 (NFPA)
2009 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)
CHAPTER 22 BUILDINGS & REGULATIONS: THE AURORA BUILDING & ZONING CODES
CHAPTER 66 FIRE PREVENTION & PROTECTION REGULATIONS: THE AURORA BUILDING & ZONING CODES

EXITS: 2 EXISTING REMOTE EXITS
8' EXIT ACCESS CORRIDORS

FIRE PROTECTION: EXISTING BUILDING IS FULLY SPRINKLERED. AREAS AFFECTED BY WORK UNDER THIS CONTRACT SHALL MAINTAIN FIRE PROTECTION SYSTEM AND BE FULLY SPRINKLERED ON COMPLETION

CODE NOTES

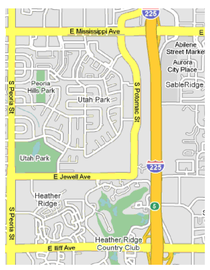
A. EXISTING SHAFTS, STAIRS, AND ELEVATORS ARE TO REMAIN WITHOUT MODIFICATION.

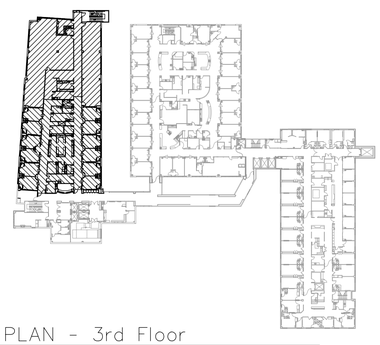
B. FIRE ALARM VENDOR TO SECURE SEPARATE PERMIT FOR NEW INSTALLATIONS.

C. EXISTING FIRE RATED WALL ASSEMBLIES WILL BE UPGRADED TO MEET NEW CODE STANDARDS AS REQUIRED.

VICINITY MAP

MEDICAL CENTER OF AURORA
SOUTH CAMPUS





KEY PLAN - 3rd Floor
NTS

NORTH

NOTE: Adding a New 1 Hour Fire/ Smoke Barrier is a State Requirement; However, All the Work Must Comply with the 2009 I Codes.

City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: *J. Van Essen*
Date: *Jun 13, 2014*
2009 INTERNATIONAL CODES & 2011 NEC

RSN: *904445*
Permit #: *2014-852595-LT*

DWG FILENAME:

The Medical Center of Aurora
Health ONE

ICU SLEEPING SUITE SEPARATION

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AURORA, COLORADO 80012

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All drawings and written material appearing herein constitute the original and unpublished work of Tom Thompson, Architect. These documents are strictly proprietary and confidential. They are not to be disclosed to third parties, distributed or reproduced without the express written permission of Tom Thompson, Architect.

STATE OF COLORADO
TOM THOMPSON
305692
06.02.14
LICENSED ARCHITECT

PROJECT NO.: 14-01

DRAWN BY: TH
CHECKED BY: TT
SCALE:
DATE: 06/02/2014
ISSUED FOR: CONSTRUCTION
REVISIONS:

SHEET TITLE:

COVER SHEET

SHEET NO.:

A0.0

SMOKE COMPARTMENT DATA: 3A

TOTAL SMOKE COMPARTMENT SQUARE FOOTAGE:
6,654 SQ. FT. (22,500 SQ. FT. MAXIMUM ALLOWED)

TRAVEL DISTANCE TO A SMOKE BARRIER DOOR:
LONGEST LENGTH = 96'-5" (200' MAXIMUM ALLOWED)

AREA OF REFUGE REQUIRED FOR THIS ZONE:
32 OCCUPANTS X 6 SF/OCCUPANT = 192 SQ. FT.

EXSITING SMOKE COMPARTMENT DATA: 3C

TOTAL SMOKE COMPARTMENT SQUARE FOOTAGE:
6,000 SQ. FT. (22,500 SQ FT MAXIMUM ALLOWED)

AREA OF REFUGE REQUIRED FOR THIS ZONE:
53 OCCUPANTS X 6 SF/OCCUPANT = 582 SQ. FT.

SMOKE COMPARTMENT DATA: 3B

TOTAL SMOKE COMPARTMENT SQUARE FOOTAGE:
7,452 SQ. FT. (22,500 SQ. FT. MAXIMUM ALLOWED)

TRAVEL DISTANCE TO A SMOKE BARRIER DOOR:
LONGEST LENGTH = 83'-3" (200' MAXIMUM ALLOWED)

AREA OF REFUGE REQUIRED FOR THIS ZONE:
60 OCCUPANTS X 6 SF/OCCUPANT = 360 SQ. FT.
12 BEDS X 30 SQ. FT. = 360 SQ. FT.

ADJACENT SMOKE COMPARTMENT 3A:
32 OCCUPANTS X 6 SF/OCCUPANT = 192 SQ. FT.

ADJACENT SMOKE COMPARTMENT 3C:
53 OCCUPANTS X 6 SQ FT/OCCUPANT = 318 SQ FT

TOTAL AREA OF REFUGE REQUIRED = 1,230 SQ FT

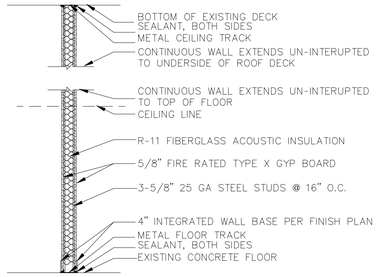
U.L. DESIGN *U494

PROVIDE STENCILING ABOVE CEILING TO INDICATE WALL RATING.

NEW 1 HR FIRE/SMOKE BARRIER PARTITION:

- CONSTRUCTED AS SHOWN. ALL PENETRATIONS TO BE SEALED WITH FIRE-RATED SEALANT BOTH SIDES OF WALL AND TOP AND BOTTOM TRACKS.
- NEW ONE HOUR RATED WALL: CONSTRUCTED AS SHOWN ADDING SMOKE AND FIRE (UL) RATED SEALANT
- PIPES, WIRES, CONDUITS SHALL NOT BE EMBEDDED IN STRUCTURAL MEMBER PROTECTION
- SCREW FASTENERS ARE TO BE USED FOR THE ATTACHMENT OF GYPSUM BOARD TO STEEL FRAME MEMBERS AS PER CODE AND MANUFACTURE'S RECOMMENDATIONS.

TYPE A WALL CONSTRUCTION



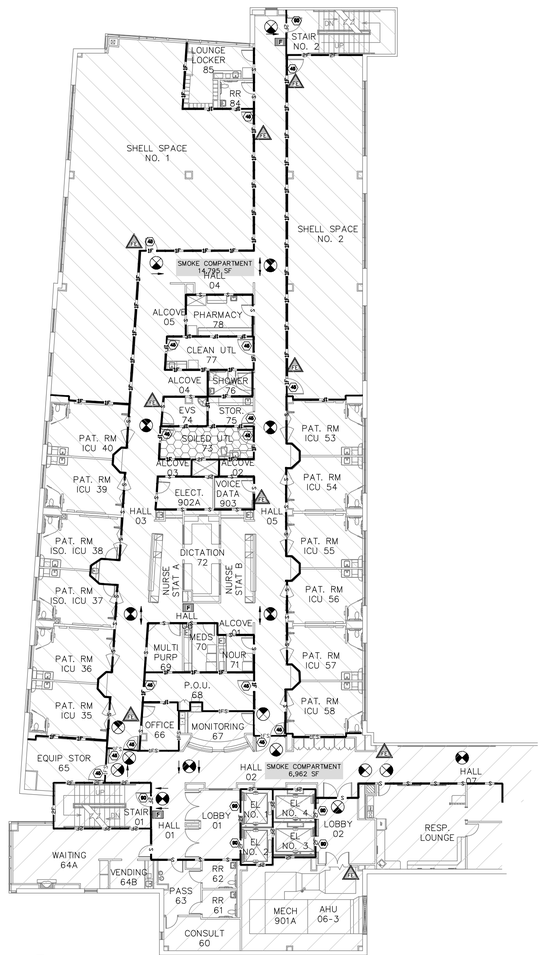
WALL TYPE A
SCALE: 1/2" = 1'

LEGEND:

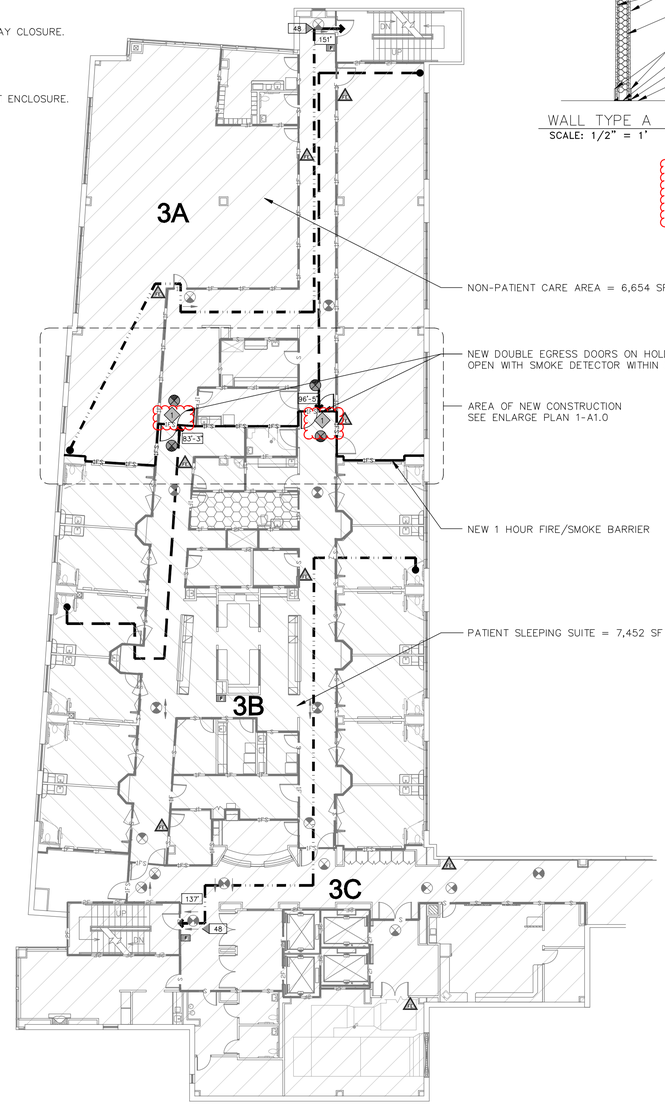
- S — S — SMOKE PARTITION
- 1F — 1F — 1 HOUR FIRE BARRIER
- 1FS — 1FS — 1 HOUR FIRE BARRIER / SMOKE COMPARTMENT
- 2F — 2F — 2 HOUR FIRE/SMOKE BARRIER
- SMOKE COMPARTMENT
- LOW HAZARD MATERIALS STORAGE
- F — PULL STATION
- EXISTING EXIT SIGNS (FILLED DENOTES FACE OF EXIT FIXTURE) (ARROW DENOTES DIRECTIONAL ARROW)
- NEW EXIT SIGNS
- FE — FIRE EXTINGUISHER (TYPE A-B-C)
- 72 — EXIT LOCATION AND WIDTH (IN INCHES)
- 90 — FIRE RATING OF DOOR
- X' — LONGEST ROUTE TO AN ADJACENT SMOKE COMPARTMENT
- X' — LONGEST ROUTE TO AN EXIT
- X — WALL TYPE
- X / X — SCHEDULED DOOR NUMBER / HANDLE TYPE
- DC - DOOR CLOSURE HARDWARE
- ST - SMOKE TIGHT
- HM - HOLLOW METAL
- PB - PANIC BAR

KEY NOTE:

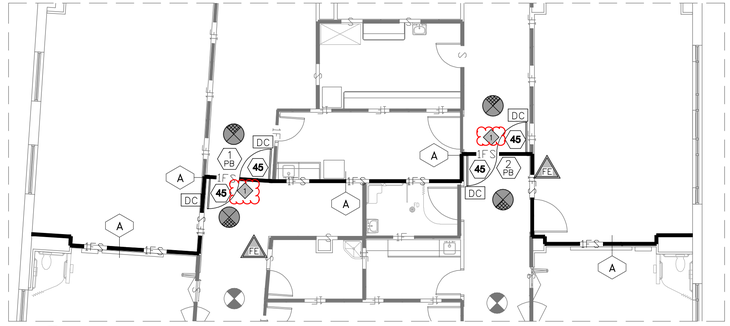
1 NEW FIRE/SMOKE DAMPER LOCATION



EXISTING LIFE SAFETY PLAN
SCALE: NTS

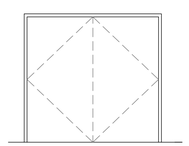


NEW LIFE SAFETY PLAN
SCALE: 1/16" = 1'

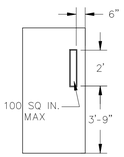


1 / A1.0 ENLARGED PLAN
SCALE: NTS

DOOR SCHEDULE									
DOOR NO.	DOOR SIZE			DOOR/FRAME FIRE RATING	LOCK TYPE	DOOR TYPE	FRAME TYPE	FRAME DEPTH	REMARKS
	WIDTH	HEIGHT	DEPTH						
1	7'-4"	7'-0"	1-3/4"	45 MIN, ST	PB	TYPE A NARROW VIEW	DOUBLE EGRESS H.M.	4-7/8"	SOLID CORE, CHERRY WOOD VENEER DOOR, STAIN TO MATCH EXISTING HOSPITAL STANDARDS W/ STEEL EDGE & KICK PLATE ON ACTION SIDE ONLY. DOOR OPENERS ON FIRE ALARMED MAG LOCKS.
2	7'-4"	7'-0"	1-3/4"	45 MIN, ST	PB	TYPE A NARROW VIEW	DOUBLE EGRESS H.M.	4-7/8"	SOLID CORE, CHERRY WOOD VENEER DOOR, STAIN TO MATCH EXISTING HOSPITAL STANDARDS W/ STEEL EDGE & KICK PLATE ON ACTION SIDE ONLY. DOOR OPENERS ON FIRE ALARMED MAG LOCKS.



DOUBLE EGRESS FRAME
SCALE: 1/4" = 1'



TYPE A - NARROW VIEW
SCALE: 1/4" = 1'

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City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: *J. Van Essen*
Date: *Jun 13, 2014*
2009 INTERNATIONAL CODES & 2011 NEC
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GENERAL NOTES:

A. ALL EXISTING ROOM USAGES REMAIN THE SAME.
B. CONTRACTOR TO INSTALL FIRE DAMPERS WHERE HVAC DUCTS PENETRATION UPGRADED/NEW FIRE RATED WALL ASSEMBLIES.
C. RELOCATE EXISTING 2' X 4' FLUORESCENT LIGHT FIXTURES AS NEEDED TO NEAREST AVAILABLE GRID LOCATION.
D. FIRE DAMPER SPECIFICATIONS TO BE SUBMITTED BY FIRE ALARM VENDOR.
E. FIRE ALARM VENDOR TO PROVIDE SMOKE DETECTION WITH TOTAL COVERAGE (COMPLETE) AUTOMATIC SMOKE DETECTION SYSTEM.
F. TYPE "C" CONSTRUCTION / MEDIUM RISK / CLASS 3 INFECTION CONTROL.
G. HVAC SYSTEM WILL BE ISOLATED TO PREVENT CONTAMINATION OF DUCT SYSTEM DURING CONSTRUCTION.
H. EGRESS PATHWAY WILL BE OBSTRUCTED DURING CONSTRUCTION. NEW EVACUATION MAPS WILL BE POSTED AT EXISTING MAPS & AT THE LOCATION OF OBSTRUCTION.
I. NO PART OF THE FIRE SUPPRESSION OR SPRINKLER SYSTEM WILL BE IMPAIRED (BUILDING IS FULLY SPRINKLED).
J. NO ADJACENT PATIENT CARE AREAS WILL BE AFFECTED.
K. TEMPORARY HARDWALL CONTAINMENT WILL BE INSTALLED PRIOR TO CONSTRUCTION.
L. NEW TEMPORARY EXIT SIGNS WILL BE HUNG WHERE EXISTING SIGNS ARE AFFECTED BY THE HALLWAY CLOSURE.
M. ALL CONTRACTORS WILL BE REQUIRED TO ATTEND HOSPITAL TRAINING AND SAFETY COURSE.
N. CONSTRUCTION DEBRIS WILL BE REMOVED BY COVERED CARTS DOWN THE FREIGHT ELEVATOR.
O. AN ABOVE CEILING PERMIT WILL BE REQUIRED FOR ALL CEILING WORK OUTSIDE OF CONTAINMENT.
P. NEW TEMPORARY WAY FINDING SIGNS WILL BE HUNG TO DIRECT TRAFFIC AWAY FROM CONTAINMENT ENCLOSURE.
Q. CONTRACTOR WILL PERFORM FIRE WATCH.
R. A CONTRACTOR PROVIDED, CERTIFIED FIRE EXTINGUISHER WILL BE REQUIRED INSIDE CONTAINMENT.

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Health ONE

ICU SLEEPING SUITE SEPARATION

MEDICAL CENTER OF AURORA

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AURORA, COLORADO 80012

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STATE OF COLORADO
TOM THOMPSON
305692
06.02.14
LICENSED ARCHITECT

PROJECT NO.: 14-01

DRAWN BY: TH
CHECKED BY: TT
SCALE:
DATE: 06/02/2014
ISSUED FOR: CONSTRUCTION
REVISIONS:

SHEET TITLE:

COVER SHEET

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A1.0

DWG. FILENAME:

City of Aurora Building Division
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This Page was Included for Reference Only*
New State Requirements are above and beyond the 2009 IBC

This sheet of drawings has not been reviewed for code compliance.

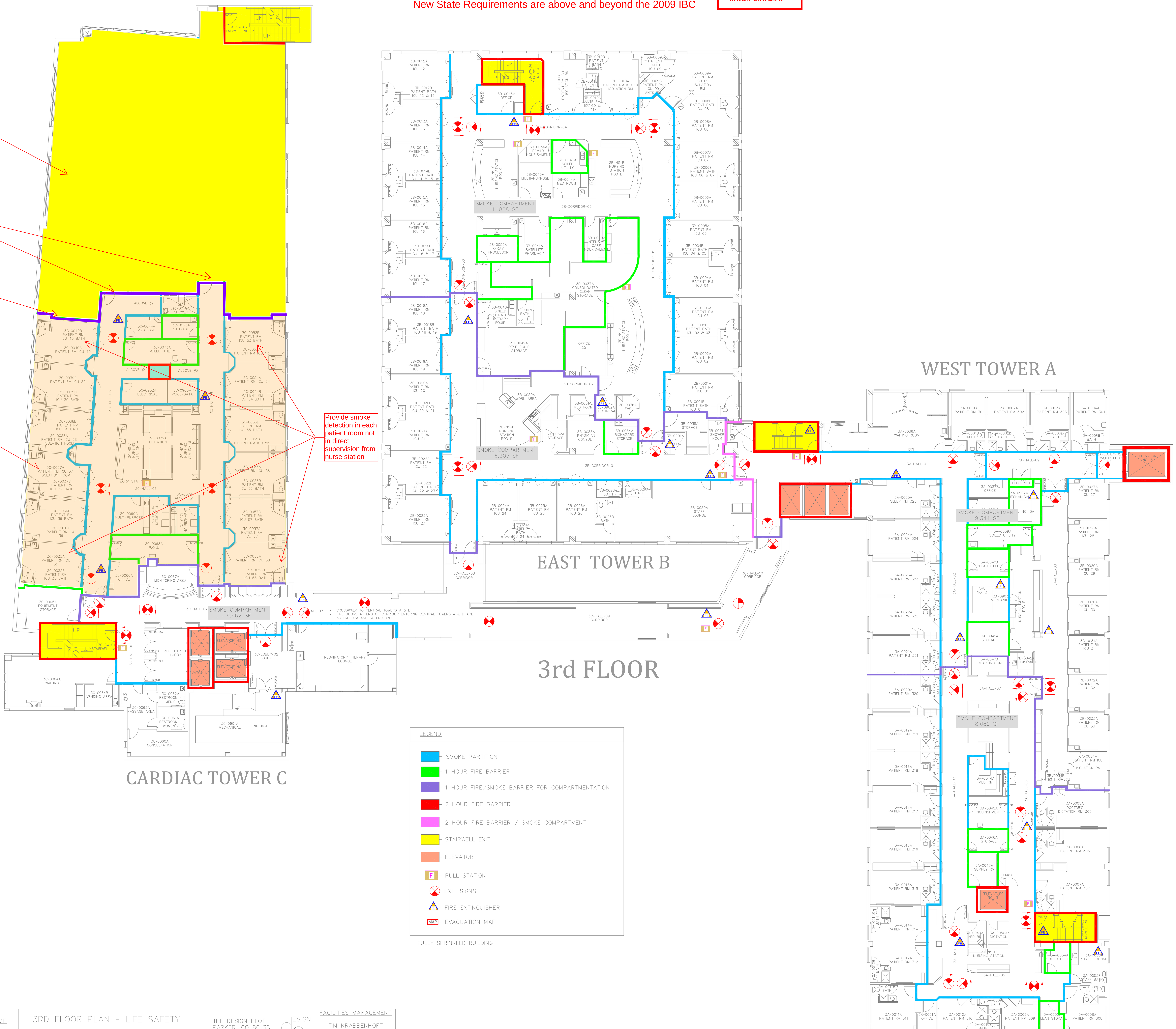
Non-patient care suite = 6,654 SF

New double egress doors on hold open with smoke detector within 5 ft.

New 1 hour smoke barrier

Patient sleeping suite = 7,452 SF

Provide smoke detection in each patient room not in direct supervision from nurse station



LEGEND

- SMOKE PARTITION
- 1 HOUR FIRE BARRIER
- 1 HOUR FIRE/SMOKE BARRIER FOR COMPARTMENTATION
- 2 HOUR FIRE BARRIER
- 2 HOUR FIRE BARRIER / SMOKE COMPARTMENT
- STAIRWELL EXIT
- ELEVATOR
- PULL STATION
- EXIT SIGNS
- FIRE EXTINGUISHER
- EVACUATION MAP

FULLY SPRINKLED BUILDING

The Medical Center of Aurora Health ONE	PDF FILE NAME 3rd_LS-JCO	3RD FLOOR PLAN - LIFE SAFETY MAY 27, 2014 — SCALE: NOT TO SCALE	THE DESIGN PLOT PARKER, CO 80138 303-565-7282 DESIGN PLOT	FACILITIES MANAGEMENT TIM KRABBENHOFT DAN CALLAHAN

RSN: *904445*
Permit #: *2014-852595-LT*

Insert name of Hospital - FSES

Floor - | **Smoke Compartment -** **A**

There **Are** **Patient Treatment or Patient Sleeping Rooms in this Zone**

WORKSHEET 4.7.2 OCCUPANCY RISK PARAMETER FACTORS

Risk Parameters **Risk Factor Values**

1. Patient Mobility *(M)*

Mobility Status	Mobile	Limited Mobility	Not Mobile	Not Movable
Risk Factor	1	1.6	3.2	4.5

2. Patient Density *(D)*

No. of Patients	1-5	6-10	11-30	>30
Risk Factor	1	1.2	1.5	2

3. Zone Location *(L)*

Floor	1st	2nd or 3rd	4th to 6th	7th and Above	Basement
Risk Factor	1.1	1.2	1.4	1.6	1.6

4. Ratio of Patients to Attendants *(T)*

Patients / Attendant	1-2 / 1	3-5 / 1	6-10 / 1	>10 / 1	One or More / None *
Risk Factor	1	1.1	1.2	1.5	4

5. Patient Average Age *(A)*

Age	Under 65 Years and Over 1 Year	65 Years and Over 1 Year and Younger
Risk Factor	1	1.2

* A risk factor of 4.0 is charged to any zone that houses patients without any staff in immediate attendance

WORKSHEET 4.7.3 OCCUPANCY RISK FACTOR CALCULATION

	M		*D*		*L*		*T*		*A*		*F*
Occupancy Risk	1	x	1	x	1.1	x	1	x	1.2	=	1.32

WORKSHEET - ADJUSTED OCCUPANCY RISK FACTOR

This Zone is **Existing**

		C		*F*		*R*
R	=	0.6	x	1.32	=	1

Zone 0 A

Patient Mobility.

The single most important factor controlling risk in a health care facility is the degree to which patients need assistance in taking the actions necessary for their safety. The level of capability in health care facilities varies from patients who, if informed or directed, are able to take positive, self-protecting actions to those patients who have no ability to move or even to take the simplest actions to safeguard themselves. In some cases, patients are directly connected to a fixed life-support system and are so dependent on it that, regardless of their physical condition or the availability of assistance, they cannot be moved without jeopardy of death or serious harm. In the measurement of occupancy risk factors, the least mobile category of patient expected in the zone determines the risk factor for that zone. The rationale for this approach is that, if a zone accepts any patient with a reduced mobility status, it might accept other such patients at any time. The impact of this approach is that most health care facilities should be rated in the "not mobile" risk category. Mobility status should be based on the minimum level of mobility in an average 24-hour period.

Mobility Status Factor. Patient mobility status is based on the capability of each patient to take actions necessary for self-protection. The four classes are defined as follows.

(1) *Mobile.* Capable of readily rising from bed and taking self-protecting actions at approximately the same rate as a healthy adult. To be classified as mobile, the patient must not need assistance in getting out of bed and must be able to open a closed or locked door. Persons shall be considered to be mobile if they are not restrained or in any other way limited in response capabilities so that the type of arousal mechanism that normally would awaken an adult is not effective.

(2) *Limited Mobility.* Those patients who have all of the capabilities of a mobile person except that their rate of travel is significantly slower.

(3) *Not Mobile.* Patients incapable of removing themselves from danger exclusively by their own efforts. Examples include persons who are totally bedridden, who need assistance getting out of bed or moving, and who are restrained, locked in their rooms, or otherwise prevented from taking complete emergency self-protection evacuation actions without assistance.

(4) *Not Movable.* Patients not capable of being moved from the room in which they are housed during the course of a fire. Examples include patients attached to life-support systems or involved in medical or surgical procedures that prohibit their immediate relocation without extreme danger of death or serious harm.

Patient Density.

The occupancy risk evaluation for occupancy density (number of patients within the zone) measures both the inherent increase in the maximum fire death potential that occurs as the number of patients in a zone increases and the problems involved for a limited staff in handling larger numbers of patients during an emergency.

Patient Factor. The density of patients is the number of patients who could potentially be housed in the zone. The patient count should be based on the number of assignable beds in the zone, assuming that they might all be occupied at the time of the fire emergency.

Zone Location.

This risk factor relates to fire department accessibility to a fire. The rating system recognizes the inherent advantages for the first floor zone. It also recognizes the problems of evacuation from higher floors and the virtual impossibility of using external fire-fighting efforts above the sixth floor in any building.

Floor Factor. The measured zone's location shall be considered to be on floor one if the floor has direct access to the exterior at or within less than one-half floor height above or below grade. If a building is on a sloping grade, each floor that has such exterior access shall be considered as a first floor for the purpose of measuring fire zones on those floors. The measured zone shall be considered to be on the second to third floor range and the fourth to sixth floor range, based on the height of the zone above the nearest at-grade floor. The zone shall be considered to be above the sixth floor if it is more than six floors above the nearest at-grade floor. The risk factor value for zones in basements is the same as for zones at or above the seventh floor. The problems involved in emergency internal access and in fire fighting and rescue and the inability to make external attack in basements are approximately equivalent to those in the upper stories of buildings.

Ratio of Patients to Attendants.

This risk factor recognizes the importance to patient safety of a staff that is immediately available to respond in an emergency. The emergency actions that might be undertaken by the staff include detection, alarm, fire extinguishment, confinement of the fire, establishment of barriers between the patients and the fire (closing patient room doors), rescue, emergency medical aid, and other related functions. A few of these functions, such as detection and alarming, might not be critically related to the ratio of nursing staff to patients, while those related to rescue and the closing of patient room doors have a strong relationship to the staffing ratio. The staff ratio considered is based on the minimum staffing level immediately available (normally the night shift).

Patient–Attendant Factor. The ratio of patients to attendants is based on those patients in the fire/smoke zone and the immediately available attendant staff.

The ratio calculation shall be based on the minimum staffing level (usually occurring during the night shift). Where nursing stations or other positions of attendants are located at the junction of two or more zones and the location of the station is such that each of the zones has immediate access and is in view of the nursing station, the total staffing assigned to the nursing station can be credited to each of the zones. An exception occurs when staff members are bound by duty assignments (cardiac care units, infant nurseries, operating suites, etc.) that prevent them from responding to other than their assigned zone.

The evaluation system assesses this risk factor at 4.0 in any case involving periods when no attendants are immediately available to a zone that houses patients but where attendants are available within one floor of all patient floors. This evaluation system is not intended to be used in cases where no staff are present in the building housing patients.

Patient Average Age.

This risk factor recognizes the increased susceptibility of the elderly and of infants up to one year old to physical harm by smoke particles, gaseous combustion products, and heated air. A larger risk factor is assigned to zones occupied by a population whose average age is above 65 years or below one year. Basically, imposition of this rating demands additional safety protection in nursing homes for the aged and in nurseries.

The mode value is used to arrive at the age factor for the patients in the zone. The calculation should be based on the past record of occupants assigned to the zone. Patients under one year old are classified at the same risk level as those over 65. This factor recognizes the susceptibility of infants to fire.