OWNER/HOSPITAL

Sullivan County Community Hospital

2200 N. Section Street, Box 10 Sullivan, IN 47882-0010 Office 812-268-4311 Contact: Ron Shake

Freestanding Medical Office Building Shell for: Sullivan County Community Hospital

2200 N Section St, Sullivan, IN 47882

CONSTRUCTION DOCUMENTS - SHELL

STRUCTURAL ENGINEER

EMC Structural Engineers, P.C.

4525 Trousdale Drive Nashville, TN 37204 Office 615-781-8199 Contact: Benjamin B. Faris Engineer Of Record: Mark W. Savage IN License #: PE11200057



MECHANICAL ENGINEER

Smith Seckman Reid, Inc.

2995 Sidco Dr. Nashville, TN 37204 Office 615-330-6596 **Contact: George Johnson** Engineer Of Record: Michael B. Burton IN License #: PE12100520



02.26.24

JJCA



Johnson Johnson Crabtree Architects P.C.

4551 Trousdale Drive Nashville, TN 37204

tel 615.837.0656 fax 615.837.0657



JJCA Project 23987.02 February 28, 2024

Architect of Record: Stephanie Pielich IN License #: AR12300165 Contact Person: Harry Hadlock

Office: 615-837-0656



ELECTRICAL ENGINEER

Smith Seckman Reid, Inc.

2995 Sidco Dr. Nashville, TN 37204 Office 615-330-6596 Contact: George Johnson Engineer of Record: Herbert M. Jenkins IN License #: PE10001079



02.26.24

LIFE SAFETY/CODES CONSULTANT

Fire Protection

Associates

4205 Hillsboro Road, Suite 209 Nashville, TN 37215 Office 615-292-8880 Contact: Bill Steffenhagen





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 -

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- 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): <u>26,351 sf.</u>
- 100 sf./occ. = 263 occupants
- B. Exit capacity (IBC 1005.3.2): Outside Doors
 - 4 (34") + 1 (67") = 203"<u>203"</u>
 - 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

INDEX & CODE ANALYSIS

<u>COVER</u>

1-1.0

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	Envelop

ARCHITECTURAL	_	
AO.1 A1.0	LIFE SAFETY PLAN FLOOR PLAN DIMENSIONED AND NOTED	Project Information Energy Code:
A1.5	ROOF PLAN	Project Title:
A2.1	BUILDING ELEVATIONS	Location:
A3.1	WALL SECTIONS	Broject Type:
A3.2	WALL SECTIONS	Project Type.
A4.1	WALL DETAILS	vertical olizing / vval / tea.
A4.Z	WALL DETAILS	
A4.3	WALL DETAILS	Construction Site:
A4.IU A4.11		2200 North Section Street
A4.11 AG 1	DOODS SCHEDHLE AND WINDOW ELEVATIONS	Sullvall, IN 47002
A0.1	DUORS SCHEDULE AND WINDOW ELEVATIONS	Building Area
<u>STRUCTURAL</u>		1-Floor Area (Health Care-Clinic) : Nonr
S0.1	GENERAL NOTES AND QUALITY ASSURANCE PLAN	
S1.1	FOUNDATION PLAN	Envelope Assemblies
S1.2	ROOF FRAMING PLAN	
S2.1	SECTIONS AND DETAILS	Assembly
S3.1	SECTIONS AND DETAILS	
MECHANICAL		Floor 1: Slab-On-Grade:Unheated, Vertical 3
	MECHANICAL LEGEND NAMING CONVENTION AND INDEX	Area] (b)
M0.0 M0.1	MECHANICAL SCHEDULES	North Exterior Wall: Wood-Framed, 16" o.c., [
M0 2	MECHANICAL COMCHECK	Window 1: Metal Frame:Fixed, Perf. Type: En
M0.3	MECHANICAL COMCHECK	Pane, Tinted, SHGC 0.50, [Bidg. Use 1 - Floo
M1.1	MECHANICAL PLAN - ROOF	Pane. Tinted . SHGC 0.50. [Bldg. Use 1 - Flo
M5.1	MECHANICAL DETAILS – SHELL	Door 1: Glass (> 50% glazing):Metal Frame, I
M7.1	MECHANICAL CONTROLS – SHELL	Energy code default, Single Pane, Tinted , SH
		Use 1 - Floor Area]
<u>PLUMBING</u>		East Exterior Wall: Wood-Framed, 16" o.c., [E
P0.0	PLUMBING GENERAL NOTES, LEGENDS, INDEX AND DETAILS – SHELL	Pane. Tinted . SHGC 0.50. [Bldg. Use 1 - Flog
P1.0	PLUMBING PLAN – SUB SURFACE DRAINAGE SYSTEM – SHELL	Window 8: Metal Frame:Fixed, Perf. Type: En
P1.1	PLUMBING AND FIRE PROTECTION PLAN - SHELL	Pane, Tinted , SHGC 0.50, PF 0.40, [Bldg. Us
		Door 2: Glass (> 50% glazing):Metal Frame, I
<u>ELECTRICAL</u>		Energy code default, Single Pane, Tinted , SF
E0.1	ELECTRICAL LEGENDS, INDEX AND NOTES - SHELL	West Exterior Wall: Wood-Framed, 16" o.c., [
E0.2	ELECTRICAL SCHEDULES – SHELL	Window 1: Metal Frame:Fixed, Perf. Type: En
ES1.1	SITE PLAN – SHELL	Pane, Tinted , SHGC 0.50, [Bldg. Use 1 - Floo
E1.1	ELECTRICAL PLAN – SHELL	Window 8: Metal Frame:Fixed, Perf. Type: En
E5.1	ELECTRICAL DETAILS - SHELL	Pane, Tinted, SHGC 0.50, PF 0.40, [Bidg. Us
E6.1	ONE LINE DIAGRAM – SHELL	Energy code default Single Pane Tinted St
TEOLINIOLOOV		Use 1 - Floor Area]
<u>TECHNOLOGY</u>		South Exterior Wall: Wood-Framed, 16" o.c.,
	TECHNOLOGY LEGENDS, INDEX AND NOTES - SHELL	Window 2: Metal Frame:Fixed, Perf. Type: En
11.U TZ 0	IEGHNULUGY PLAN - SHELL	Pane, Tinted , SHGC 0.50, [Bldg. Use 1 - Floo
13.U TE 0	TECHNOLOGY DETAILS - SHELL	ROOT TE INSUIATION ENTIRELY Above Deck, [Bldg.
13.0	IEUTINULUGI DETAILS - SHELL	

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

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: Seismic Importance le: .2 SEC Spectral Response Acceleration Ss: 0.358 1.0 SEC Spectral Response Acceleration S1: 0.133 Site Class: Design Spectral Response SDS: Design Spectral Response SD1: Seismic Design Category: Resisting System:

1.0 D (Assumed) 0.361 (Assumed) 0.207 (Assumed) D (assumed) Light-Framed Wood Walls Sheathed With Wood Structural Panels Rated for Shear Resistance 6.5 0.016

Equivalent Lateral Force

Response Modification Factor R: Seismic Response Coefficient Cs: Analysis Procedure: Base Shear:

	ARCHITECTU	RAL 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, PLUM	MBING, & ELECTRIC	CAL 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 SATIS 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 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 MOME
- 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,
- 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.
- ROD-HUNG SUPPORTS OF LESS THAN 12 INCHES IN LENGTH HAVE TOP CONNECTIONS THAT CANNOT DEVELOP MOMI 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 BETWE
- DIFFERENT BUILDINGS OR STRUCTURAL SYSTEMS SHALL SUFFICIENTLY FLEXIBLE TO WITHSTAND RELATIVE MOTION OF SUPP POINTS ASSUMING OUT-OF-PHASE MOTIONS.
- MOVEMENT OF COMPONENTS WITHIN ELECTRICAL CABINETS, RACK AND SKID-MOUNTED EQUIPMENT AND PORTIONS OF SKIL ELECTROMECHANICAL EQUIPMENT THAT MAY CAUSE DAMAGE TO OTHER COMPONENTS BY DISPLACING, SHALL BE RESTRIC ATTACHMENT TO ANCHORED EQUIPMENT OR SUPPORT FRAMES.

Complia	510N 4.1	.3.3					Assembly	or	R-Value	Cont. R-Value	Proposed U-Factor	Factor _(a)
	nce Co	ertifi	cate			(a) Budget U-factor (b) Slab-On-Grade	s are used for software baseline ca	Perimo alculations ONLY, and are n own in table are F-factors.	eter	nts.		
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(2007) Standard van, Indiana						Compliance Stateme specifications, and c	ance Statement ent: The proposed envelope de ther calculations submitted wi	esign represented in this th this permit application	document is con . The proposed	nsistent with envelope sy	n the building stems have b	plans, een
Construction						Stephanie Piel	e 90.1 (2007) Standard require ents listed in the Inspection Cl ch	hecklist.	Palich		02-29-24	
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	or Perimeter	R-Value	R-Value	U-Factor								
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 $\frac{-1}{2}$, Typical scale this sheet unless noted otherwise

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	DOOR SCHEDULE - FLOOR *SEE WINDOW ELEVATION										
NUMBER	TYPE	MATL	WIDTH	HEIGHT	FIN	UL	HDW	FTYPE	FMATL	FFIN	REMARKS
001	_	AL	12'-0" PKG	7'-10" PKG	PF	_	1	_	AL	PF	AUTO SLIDERS
002	D	AL	3'-0"	7'-10"	PF	_	2	F1	AL	PF	AC
003	D	AL	3'-0"	7'-10"	PF	_	2	F1	AL	PF	AC
004	D	AL	3'-0"	7'-10"	PF	_	2	F1	AL	PF	AC
005	D	AL	3'-0"	7'-10"	PF	—	2	F1	AL	PF	AC
006	D	AL	3'-0"	7'-10"	PF	—	2	F1	AL	PF	

LEGEND - WINDOW ELEVATIONS

TEMPERED GLAZING

HEAD, JAMB AND SILL DETAIL NOTES: 1. REFER TO DETAILS ON SHEET A4.5 FOR TYPICAL EXTERIOR ALUMINUM STOREFRONT WINDOW DETAILS. 2. ALL MULLIONS TO BE 2" THICK, U.N.O.

EXTERIOR WINDOW ELEVATIONS

TYPICAL SCALE THIS SHEET UNLESS NOTED OTHERWISE 2' 1' 0 2'

	<u>S</u>
DESIGN AND CODE INFORMATION	REINFORCED CONCRE
 ALL CONSTRUCTION SHALL CONFORM TO THE INTERNATIONAL BUILDING CODE, 2012 IBC w/ 2014 INDIANA AMENDMENTS. 	1. ALL CONCRETE WC FOR REINFORCED (
 VERIFY EXISTING CONDITIONS AND ALL DIMENSIONS AND NOTIFY ARCHITECT OF ANY CONDITIONS WHICH CONFLICT WITH OTHER PLANS AND SPECIFICATIONS. STRUCTURAL DRAWINGS MUST BE COORDINATED WITH ARCHITECTURAL DRAWINGS. STRUCTURAL DRAWINGS ARE NOT INTENDED FOR BUILDING LAYOUT. 	 REINFORCING STEE MATERIAL PROPER
3. SHOP DRAWINGS WILL NOT BE REVIEWED BY THE DESIGNER UNTIL AFTER THE GENERAL CONTRACTOR HAS THOROUGHLY REVIEWED THE SHOP DRAWINGS, VERIFIED EXISTING CONDITIONS, AND COORDINATED THE SHOP DRAWINGS WITH OTHER AFFECTED TRADES. SUBMIT PDF COPIES OF REVIEWED DRAWINGS FOR	
ENGINEER'S REVIEW. ONLY PDF SETS OF MARKED UP SHOP DRAWINGS SHALL BE RETURNED BY THE DESIGNER. REPRODUCTION OF STRUCTURAL DRAWINGS FOR SHOP DRAWINGS IS NOT PERMITTED.	3.1 Cast-in-place concr a. Footings b. Slab on gi Int. Slab
4. COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR COMPONENTS NOT DESIGNED BY THE ENGINEER OF RECORD AND NOT SPECIFIED ON THE PROJECT CONSTRUCTION DOCUMENTS SHALL BE SEALED AND SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROJECT STATE AND SHALL BE SUBMITTED TO THE ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO BEGINNING FABRICATION, INCLUDING BUT NOT LIMITED TO THE FOLLOWING COMPONENTS:	Ext. Slab c. All other d. Concrete (Lightweig 3.2 Other concrete
(X) WOOD TRUSSES	a. Masonry Grout fill
5. THE STRUCTURE IS UNSTABLE UNTIL ALL LOAD BEARING WALLS ARE ERECTED AND STEEL MEMBERS ARE ERECTED, CONNECTIONS ARE COMPLETELY BOLTED AND/OR WELDED AND INSPECTED, THE STEEL DECK ATTACHED TO THE STEEL	*Prior to adding w 4. EXPOSURE CLASS
FRAMING, AND THE CONCRETE FLOORS PLACED AND ATTAINS 75% OF 28-DAY STRENGTH. UNTIL SUCH TIME, TEMPORARY BRACING IS REQUIRED. THE DESIGN ADEQUACY OF TEMPORARY BRACING AND SHORING IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR	5. LAP SPLICES FOR F ACI 318, UNLESS NO
6. DO NOT SCALE STRUCTURAL DRAWINGS, AND FOR LOCATION OF MISCELLANEOUS	6. THE LONGITUDINAL FOOTINGS SHALL B
WORK, SEE ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS.	7. CLEAR CONCRETE MASONRY WA
7. DEAD LOADS: SELF-WEIGHT OF STRUCTURE ROOF: 20 PSF	SLAB ON GRA FOOTINGS:
 LIVE LOADS: OFFICES: 100 PSF (INCLUDING PARTITIONS) REDUCIBLE PER CODE ROOFS: 20 PSF (REDUCIBLE PER CODE) 	8. CONCRETE WALLS WITH 2-#5 BARS IN THE OPENING, UNL
9. ROOF LOADS: GROUND SNOW LOAD: 20 PSF SNOW EXPOSURE Ce: 1.0	9. MECHANICAL VIBRA
SNOW IMPORTANCE I: 1.0 THERMAL FACTOR Ct: 1.0 ELAT ROOF SNOW LOAD: 20 PSE	10. CHAMFER EXPOSE
10. WIND LOADS: BASIC WIND SPEED: CATEGORY II BASIC WIND SPEED 106 MPH	FINISHED TO THE FINISHED TO TH
WIND EXPOSURE FACTOR: C INTERNAL PRESSURE COEFFICIENT: ±0.18 CLADDING LOAD: SEE DIAGRAMS ON S0.1	SPECIFIED OVE FLATNES LEVEL FL
11. RAIN LOADS: DESIGN LOAD: 20 PSF	MINIMUM LOCA
12. SEISMIC LOADS: RISK CATEGORY: SEISMIC IMPORTANCE Ie: .2 SEC SPECTRAL RESPONSE ACCELERATION Ss: 0.358 CONTRACT OF CONTRACT OF CONTRACT. OF CONTRACT OF CONT	12. COORDINATE ALL V CONCRETE SLABS
1.0 SEC SPECTRAL RESPONSE ACCELERATION S1: 0.133 SITE CLASS: C DESIGN SPECTRAL RESPONSE SDS: 0.316	REQUIREMENTS AN CONCRETE MASONRY
DESIGN SPECTRAL RESPONSE SD1: 0.134 SEISMIC DESIGN CATEGORY: C RESISTING SYSTEM: LIGHT-FRAMED WOOD WALLS SHEATHED WITH WOOD	1. MASONRY CONSTR ACI 530.1/TMS 602.
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	2. CONCRETE MASON ASSOCIATION SPEC HAVE A MINIMUM P
SPECIAL INSPECTIONS AND TESTING	3. GROUT FOR FILLIN SPECIFICATIONS F
1. THE CONTRACTOR/OWNER SHALL EMPLOY AN INDEPENDENT TESTING COMPANY TO PERFORM SITE INSPECTIONS AND TESTING IN ACCORDANCE WITH THE QUALITY ASSURANCE PLAN SHEET S0.2.	AT 28 DAYS. THE S WHERE THE MINIM INCHES OR LESS, U GROUT.
 THE CONTRACTOR/OWNER SHALL EMPLOY AN INDEPENDENT TESTING COMPANY TO PERFORM THE FOLLOWING FABRICATION INSPECTIONS AND TESTING PER SECTION 1704.2.5.1: 	4. MORTAR FOR CON ASTM C-270.
WOOD TRUSSES IF FABRICATOR IS NOT TPI CERTIFIED	5. ALL REINFORCING WITH STANDARD 9
1. THE ENGINEER OF RECORD HAS BEEN EMPLOYED TO PERFORM PERIODIC VISUAL OBSERVATIONS OF THE STRUCTURE DURING CONSTRUCTION FOR GENERAL CONFORMANCE TO THE DESIGN DRAWINGS.	 MASONRY LAP SPL REINFORCEMENT I
FOUNDATION NOTES	
 FOUNDATION DESIGN IS BASED ON A REPORT FROM TTL DATED 11-13-2023. REPORT # 000230802085.00 	
 FOOTINGS ARE DESIGNED TO BEAR ON UNIFORM SOIL CAPABLE OF SUPPORTING 2000 PSF (ISOLATED FOOTINGS) 1500PSF (CONTINUOUS FOOTINGS). 	
3. THE SOIL BEARING CAPACITY AND CONSISTENCY SHALL BE VERIFIED FOR THE BUILDING LIMITS BY A REGISTERED GEOTECHNICAL ENGINEER WHEN FOUNDATION EXCAVATIONS HAVE BEEN CARRIED DOWN TO THE PROPOSED ELEVATIONS. THE BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE 2'-0" MINIMUM BELOW FINISHED GRADE.	
4. WHERE FOOTING EXCAVATIONS ARE TO REMAIN OPEN AND MAY BE EXPOSED TO RAINFALL. THE EXCAVATIONS SHALL BE UNDERCLIT AND A 3-INCH THICK MUD	
MAT OF 2000 PSI CONCRETE SHALL BE PLACED IN THE BOTTOM TO PROTECT THE BEARING SOILS.	

STRUCTURAL GENERAL NOTES

<u>ONCRETE</u>

TE WORK SHALL CONFORM TO THE "BUILDING CODE REQUIREMENTS RCED CONCRETE," (ACI 318).

G STEEL SHALL BE DEFORMED BARS ASTM A-615 (GRADE 60).

OPERTIES – CONCRETE:

	Class Exposure	F'c psi at 28 <u>days</u>	Max. W/C <u>Ratio</u>	Max.* Slump <u>Inches</u>	Total Air <u>Content</u> (±1.5%)	Nom. Max Aggregate <u>Size</u>
-place concrete						
Footings	C1	4,000	0.50	4	No test	2"
Slab on grade	;					
Int. Slab		4,000	0.45	4	No test	1"
Ext. Slab	F1, C2	5,000	0.40	4	6	1"
All other		4,000	0.45	4	5	3/4"
Concrete fill o	n metal deck	-				
(Lightweight 8	k Normal)	4,000	0.45	4	4-7	3/4"
concrete						
Masonry wall						
Grout fill		2,000		8-10	No test	3/8"

dding water reducer

CLASS SHALL BE FO, SO, PO, AND CO PER ACI 318 UNO.

FOR REINFORCING BARS SHALL BE CLASS B IN ACCORDANCE WITH ESS NOTED OTHERWISE.

IDINAL REINFORCING STEEL IN BOND BEAMS, WALLS, AND HALL BE CONTINUOUS AROUND CORNERS. SEE TYPICAL DETAILS.

RETE COVER FOR REINFORCING STEEL

WALLS:	LOCATE IN CENTER OF WALL (UNO)
GRADE:	³ ⁄ ₄ " TOP STEEL
	1 ¹ / ₂ " BOTTOM STEEL
:	2" FORMED EDGES

3" CAST AGAINST GROUND

VALLS AND SLABS SHALL BE REINFORCED AROUND ALL OPENINGS ARS IN EACH FACE, ON ALL SIDES AND EXTENDED 2'-0" BEYOND , UNLESS SHOWN OTHERWISE.

VIBRATORS SHALL VIBRATE ALL CONCRETE.

(POSED CORNERS OF BEAMS, COLUMNS AND WALLS 3/4 INCH.

ERWISE DIRECTED BY THE OWNER, CONCRETE SLABS SHALL BE THE FOLLOWING FLATNESS CRITERIA. THESE FLOOR FLATNESS NOT APPLICABLE TO COMPOSITE STEEL CONSTRUCTION. SEE IRAL REQUIREMENTS FOR ADDITIONAL FLOOR FINISH INFORMATION:

D OVERALL F NUMBERS ATNESS FF = 35 VEL FL = 25

LOCAL F NUMBERS

FLATNESS FF = 24 LEVEL FL = 17

E ALL VAPOR RETARDERS, VAPOR BARRIERS, AND WATERPROOFING OF LABS-ON-GRADE AND CONCRETE WALLS WITH FINISH MATERIAL NTS AND ARCHITECTURAL SPECIFICATIONS.

ONRY

ONSTRUCTION SHALL CONFORM TO ACI 530/TMS 402 AND 602.

ASONRY SHALL CONFORM TO THE NATIONAL CONCRETE MASONRY SPECIFICATIONS, AND HAVE A DENSITY OF 125 PCF AND SHALL MUM PRISM STRENGTH (F'M) OF 2000 PSI.

FILLING CONCRETE MASONRY CELLS SHALL CONFORM TO STANDARD ONS FOR "MORTAR AND GROUT FOR REINFORCED MASONRY, "ASTM SHALL HAVE A COMPRESSIVE PRISM STRENGTH (F'M) OF 2000 PSI THE SLUMP SHALL BE BETWEEN 9 INCHES AND 11 INCHES. MINIMUM DIMENSION OF ANY CONTINUOUS VERTICAL CELL IS 3 ESS, USE FINE GROUT, OTHERWISE USE COARSE (PEA GRAVEL)

R CONCRETE MASONRY SHALL BE TYPE "S" AND SHALL CONFORM TO

CING BARS IN FILLED CELLS SHALL BE DOWELED INTO FOOTINGS ARD 90-DEGREE HOOKS.

AP SPLICES SHALL BE 48 BAR DIAMETERS (U.N.O.)

MENT IN WALLS SHALL BE PLACED IN THE CENTER OF THE WALL

WOOD TRUSSES

1. ROOF TRUSSES SHALL BE DESIGNED TO SUPPORT THE FOLLOWING LOADS: TOP CHORD: 12 PSF DEAD LOAD 20 PSF LIVE LOAD

BOTTOM CHORD: 8 PSF DEAD LOAD

- 2. IN ADDITION TO THE UNIFORM LOADING SPECIFIED FOR TRUSS DESIGN, THE TRUSS SUPPLIER SHALL INCLUDE ANY CONCENTRATED LOADS CAUSED BY ARCHITECTURAL FEATURES OR MECHANICAL EQUIPMENT IN THE TRUSS DESIGN.
- 3. SEE ARCHITECTURAL DRAWINGS FOR BEARING CONDITIONS AND DIMENSIONS OF TRUSSES.
- 4. A REGISTERED ENGINEER IN THE PROJECT STATE SHALL DESIGN TRUSSES. SHOP DRAWINGS, INCLUDING INDIVIDUAL TRUSS DESIGNS, PLAN LAYOUT, ALL TEMPORARY BRACING AND PERMANENT TRUSS MEMBER BRACING BEARING THE ENGINEERS SEAL SHALL BE SUBMITTED FOR REVIEW.
- 5. TRUSSES SHALL BE DESIGNED, FABRICATED AND ERECTED IN ACCORDANCE WITH APPLICABLE STANDARDS OF THE TRUSS PLATE INSTITUTE.
- 6. UNLESS NOTED OTHERWISE ON DRAWINGS, TRUSS SUPPLIER SHALL BE RESPONSIBLE FOR DESIGNING AND SUPPLYING OR SPECIFYING ALL TEMPORARY BRACING AND PERMANENT INDIVIDUAL TRUSS MEMBER BRACING REQUIRED BY DESIGN, ALL TRUSS TO-TRUSS CONNECTIONS, AND ALL UPLIFT CONNECTIONS AT BEARING LOCATIONS. ALL PERMANENT BRACING OF TRUSS MEMBERS SHALL BE CONTINUOUS AND BE ATTACHED TO AN END-WALL STUD OR HIP-TRUSS TOP CHORD WITH 2 #16D COMMON NAILS.
- 7. FIELD REPAIR OF DAMAGED TRUSSES MUST BE APPROVED IN WRITING BY THE TRUSS ENGINEER AND ENGINEER OF RECORD.
- 8. ALL ROOF TRUSS BEARING WALLS SHALL HAVE METAL FASTENERS TO RESIST UPLIFT FORCES AS NOTED ON ROOF FRAMING PLANS OR AS REQUIRED BY THE TRUSS ENGINEER.
- 9. TRUSS SUPPLIER IS TO PROVIDE PLAN AND PROCEDURES FOR INSTALLING, SECURING, AND BRACING OF ALL TRUSSES.
- 10. TRUSS SUPPLIER SHALL PROVIDE TRUSS BLOCKS CAPABLE OF TRANSFERRING LATERAL LOADS AS NOTED ON PLANS AND/OR DETAILS.
- 11. TRUSS MANUFACTURER TO COORDINATE WITH MECH./PLUMBING DRAWINGS FOR ADDITIONAL CONCENTRATED LOADS DUE TO DOMESTIC WATER AND SPRINKLER PIPE SUPPORTS.
- 12. TRUSS MANUFACTURER SHALL COORDINATE TRUSS LAYOUT WITH MECH/PLUMBING DRAWINGS TO ALLOW ALL PIPES AND DUCTS ADEQUATE SPACE FOR PROPER INSTALLATION.
- 13. PRE-ENGINEERED METAL PLATE CONNECTED WOOD TRUSSES SHALL BE BRACED IN INFORMATION BOOKLET, BCSI 1-03" AND RELATED SUMMARY SHEETS.
- LUMBER FRAMING

REDUCED 10%.

- 1. ALL NON-PREFABRICATED LOAD BEARING FRAMING MEMBERS SHALL BE #2 SOUTHERN YELLOW PINE 19% MOISTURE CONTENT UNLESS OTHERWISE NOTED.
- 2. STUDS IN LOAD BEARING WALLS MAY BE DOUGLAS FIR, SOUTHERN YELLOW PINE OR SPRUCE (#2), UNLESS NOTED OTHERWISE. 3. CONTRACTOR TO PROVIDE TEMPORARY WALL BRACING UNTIL ALL PLYWOOD DECKING,
- ROOF TRUSSES, AND SHEAR WALLS ARE INSTALLED. 4. ALL PLYWOOD SHEATHING SHALL BE APA RATED. SEE PLAN.
- 5. THE ALLOWABLE STRESSES FOR FIRE RETARDANT TREATED LUMBER SHALL BE
- 6. LVL AND PSL LUMBER SHALL BE MICROLAM OR PARALLAM LUMBER AS MANUFACTURED BY WEYERHAEUSER, OR EQUAL. LVL MEMBERS SHALL BE (MIN): f_b =2600 PSI, f_v =285 PSI, E=1,900,000 PSI PSL BEAMS SHALL BE (MIN): f_b=2900 PSI, fr=290 PSI, E=2,000,000 PSI
- 7. WALLS MUST HAVE BLOCKING BETWEEN STUDS AT MAXIMUM SPACING OF 6'-3" OR AT PANEL EDGES. THE BLOCKING MUST BE 2" IN THICKNESS AND MATCH THE STUD WIDTH.

POST-INSTALLED ANCHORS

- 1. UNLESS NOTED OTHERWISE, POST-INSTALLED CONCRETE ANCHORS SHALL COMPLY WITH ICC-ES ACCEPTANCE CRITERIA FOR ANCHORS IN CRACKED CONCRETE AND SEISMIC APPLICATIONS.
- 2. POST-INSTALLED ANCHORS SHALL ONLY BE USED WHERE SPECIFIED ON THE CONSTRUCTION DOCUMENTS UNLESS APPROVED OTHERWISE BY THE ENGINEER. 3. PLACE POST-INSTALLED ANCHORS TO AVOID CONFLICTS WITH EXISTING REBAR
- AND EMBEDS.
- 4. DRILL AND PREPARE HOLES AND INSTALL ANCHORS IN ACCORDANCE WITH EVALUATION REPORTS.
- 5. POST-INSTALLED ANCHORS SHALL BE INSPECTED BY A QUALIFIED SPECIAL INSPECTOR IN ACCORDANCE WITH THE PROJECT STATEMENT OF SPECIAL INSPECTION AND THE ICC-ES REPORT.
- UNLESS OTHERWISE NOTED IN THE ICC-ES REPORT, THE SPECIAL INSPECTOR SHALL INSPECT THE INITIAL INSTALLATION OF EACH TYPE OF ANCHOR AND PERIODICALLY INSPECT INSTALLATION THEREAFTER.
- 6. MECHANICAL ANCHORS FOR USE IN CONCRETE SHALL HAVE BEEN TESTED AND QUALIFIED IN ACCORDANCE WITH ACI 355.2 AND ICC-ES193. ACCEPTABLE MECHANICAL ANCHORS FOR USE IN CONCRETE INCLUDE THE FOLLOWING:
- HILTI KWIK BOLT TZ2 (ICC-ES ESR 1917) HILTI KWII HUS-EZ (ICC-ES ESR 3027)
- SIMPSON STRONG-TIE STRONG-BOLT 2 (ICC-ES ESR 3037) SIMPSON STRONG-TIE TITEN-HD (ICC-ES ESR-2713)
- DEWALT POWER STUD + SP2 (ICC ESR-2713) DEWALT SCREW-BOLT + (ICC ESR-3889)
- 7. ADHESIVE ANCHORS, INCLUDING REBAR, FOR USE IN CONCRETE SHALL HAVE BEEN TESTED AND QUALIFIED IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308. ADHESIVE ANCHOR SHALL BE INSTALLED INTO DRY HOLES DRILLED USING A CARBIDE DRILL BIT THAT HAS CURED FOR AT LEAST 21 DAYS. ACCEPTABLE ADHESIVE ANCHORS FOR USE IN CONCRETE INCLUDE THE FOLLOWING:

HILTI HIT RE 500 V3 (ICC-ESR 3814)

HILTI HIT-HY 200 ANCHOR RODS AND REINFORCING BAR (ICC-ES ESR 3187) SIMPSON STRONG-TIE SET-XP (ICC-ES ESR 2508) DEWALT PURE 110 + (ICC ESR-3298)

STATEMENT OF STRUCTURAL SPECIAL **INSPECTIONS/QUALITY ASSURANCE PROGRAM**

<u>GENERAL:</u>

THIS STATEMENT OF STRUCTURAL SPECIAL INSPECTIONS PLAN IDENTIFIES THE RESPONSIBILITIES OF THE CONTRACTOR AND THE SPECIAL INSPECTOR IN PERFORMING THE STRUCTURAL TESTING AND INSPECTION OF THE WORK REQUIRED BY CHAPTER 17 OF THE BUILDING CODE THAT IS WITHIN THE SCOPE OF THE STRUCTURAL ENGINEERING SERVICES FOR THIS PROJECT. REFER TO OTHER PORTIONS OF THE CONSTRUCTION DOCUMENTS FOR TESTING AND INSPECTIONS REQUIRED OF ARCHITECTURAL, MECHANICAL, ELECTRICAL, OR OTHER BUILDING COMPONENTS.

CONTRACTOR RESPONSIBILITIES:

THE CONTRACTOR SHALL SUBMIT TO THE BUILDING OFFICIAL AND THE ARCHITECT A WRITTEN STATEMENT OF RESPONSIBILITY THAT CONTAINS THE FOLLOWING:

- 1. ACKNOWLEDGEMENT OF AWARENESS OF THE SPECIAL REQUIREMENTS CONTAINED WITHIN THIS STATEMENT OF STRUCTURAL SPECIAL INSPECTIONS.
- 2. ACKNOWLEDGEMENT THAT CONTROL SHALL BE EXERCISED TO OBTAIN CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS APPROVED BY THE BUILDING OFFICIAL
- 3. PROCEDURES FOR EXERCISING CONTROL WITHIN THE CONTRACTOR'S ORGANIZATION, THE METHOD AND FREQUENCY OF REPORTING, AND THE DISTRIBUTION OF REPORTS.
- 4. IDENTIFICATION AND QUALIFICATIONS OF THE PERSON(S) EXERCISING SUCH CONTROL AND THEIR POSITION(S) IN THE ORGANIZATION.

THE STRUCTURAL TESTING/INSPECTION AGENCY THAT IS TO ACT AS THE SPECIAL INSPECTOR WILL BE HIRED BY THE OWNER, BUT CONTRACTOR SHALL PAY FOR ANY ADDITIONAL STRUCTURAL TESTING/INSPECTION REQUIRED FOR WORK OR MATERIALS NOT COMPLYING WITH THE CONSTRUCTION DOCUMENTS DUE TO NEGLIGENCE OR NONCONFORMANCE AND SHALL PAY FOR ANY ADDITIONAL STRUCTURAL TESTING/INSPECTION REQUIRED FOR HIS CONVENIENCE.

CONTRACTOR IS RESPONSIBLE TO ENSURE THAT THE SPECIAL INSPECTOR IS PRESENT FOR ALL WORK REQUIRING SPECIAL INSPECTION. ANY WORK THAT REQUIRES SPECIAL INSPECTION AND IS PERFORMED WITHOUT THE SPECIAL INSPECTOR BEING PRESENT IS SUBJECT TO BEING DEMOLISHED AND RECONSTRUCTED.

CONTRACTOR HAS THE FOLLOWING RESPONSIBILITIES TO THE SPECIAL INSPECTOR:

- 1. PROVIDE COPY OF CONSTRUCTION DOCUMENTS TO THE SPECIAL INSPECTOR.
- 2. NOTIFY THE SPECIAL INSPECTOR SUFFICIENTLY IN ADVANCE OF OPERATIONS TO ALLOW ASSIGNMENT OF PERSONNEL AND SCHEDULING OF TESTS.
- 3. COOPERATE WITH SPECIAL INSPECTOR AND PROVIDE ACCESS TO WORK.
- 4. PROVIDE SAMPLES OF MATERIALS TO BE TESTED IN REQUIRED QUANTITIES.
- 5. PROVIDE STORAGE SPACE FOR THE SPECIAL INSPECTOR'S EXCLUSIVE USE, SUCH AS FOR STORING AND CURING CONCRETE TESTING SAMPLES.
- 6. PROVIDE LABOR TO ASSIST THE SPECIAL INSPECTOR IN PERFORMING TESTS/INSPECTIONS.

SPECIAL INSPECTOR'S RESPONSIBILITIES:

THE SPECIAL INSPECTOR SHALL BE A PROFESSIONAL ENGINEER LICENSED IN AND PRACTICING IN THE STATE OF INDIANA. SPECIAL INSPECTORS SHALL BE A LICENSED ENGINEER IN THE STATE OF INDIANA OR IS PERFORMING APPROPRIATE DUTIES DIRECTLY UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF INDIANA AND HAS A THOROUGH UNDERSTANDING OF THE SPECIAL INSPECTION REQUIREMENTS OF THE 2012 IBC. THE SPECIAL INSPECTOR SHALL BE AN INDIVIDUAL OR INDIVIDUALS CERTIFIED OR EXPERIENCED TO PERFORM SUCH INSPECTIONS IN A PARTICULAR FIELD.

THE SPECIAL INSPECTOR SHALL KEEP RECORDS OF ALL INSPECTIONS AND FURNISH REPORTS TO THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. PERIODIC REPORTS SHALL BE PROVIDED AND SHALL INDICATE THAT WORK INSPECTED WAS DONE IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THE DISCREPANCIES ARE NOT CORRECTED TO THE SATISFACTION OF THE SPECIAL INSPECTOR, THE DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE.

A WEEKLY REPORT OF INSPECTIONS DOCUMENTING REQUIRED SPECIAL INSPECTIONS AND CORRECTION OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS SHALL BE SUBMITTED. AT THE COMPLETION OF THE SPECIAL INSPECTIONS, THE LICENSED PROFESSIONAL ENGINEER IN CHARGE OF PERFORMING THE SPECIAL INSPECTION SHALL CERTIFY THE FINAL SPECIAL INSPECTION REPORT AND AFFIX HIS/HER SEAL TO THE SPECIAL INSPECTOR'S FINAL REPORT. PROVIDE THREE (3) COPIES OF THIS REPORT; TWO TO THE ARCHITECT AND ONE TO THE STRUCTURAL ENGINEER OF RECORD.

THE SPECIAL INSPECTOR FOR THIS PROJECT IS AS FOLLOWS:

SOILS AND FOUNDATIONS:

SPECIAL INSPECTOR SHALL PERFORM PERIODIC INSPECTIONS TO VERIFY THE FOLLOWING:

- 1. STRUCTURAL FILL COMPLIES WITH SPECIFICATIONS AND THE
- PROJECT GEOTECHNICAL.
- 2. OBSERVE PROOFROLLING.
- 3. PERFORM FIELD DENSITY TEST TO VERIFY COMPACTION OF STRUCTURAL FILL. AS A MINIMUM, PERFORM ONE TEST PER LIFT FOR EVERY 2500 SQUARE FEET OF FILL PLACED.

4. FOUNDATION BEARING CAPACITY OF ALL FOOTINGS.

WOOD CONSTRUCTION:

CONTRACTOR SHALL PERFORM THE FOLLOWING:

- 1. SUBMIT CERTIFICATION THAT THE FABRICATOR OF PRE-ENGINEERED WOOD PRODUCTS AND TRUSSES IS REGISTERED AND APPROVED BY THE BUILDING OFFICIAL TO PERFORM REQUIRED WORK WITHOUT SPECIAL INSPECTIONS.
- 2. IF FABRICATOR IS NOT REGISTERED AND APPROVED. SPECIAL INSPECTION OF THE FABRICATED ITEMS SHALL BE REQUIRED. SPECIAL INSPECTOR SHALL VERIFY THAT THE FABRICATOR MAINTAINS DETAILED FABRICATION AND QUALITY CONTROL PROCEDURES THAT PROVIDE A BASIS FOR INSPECTION CONTROL OF THE WORKMANSHIP AND THE FABRICATOR'S ABILITY TO CONFORM TO APPROVED CONSTRUCTION DOCUMENTS AND REFERENCED STANDARDS.

SPECIAL INSPECTOR SHALL PERFORM PERIODIC INSPECTIONS OF THE FOLLOWING:

- 1. VISUAL INSPECTION OF WOOD FRAMING TO VERIFY COMPLIANCE WITH DETAILS ON THE APPROVED CONSTRUCTION DOCUMENTS AND SHOP DRAWINGS INCLUDING MEMBER SIZES, LOCATIONS, BRACING, CONNECTION DETAILS, NAIL SIZES, NAIL SPACING, ETC.
- 2. VISUAL INSPECTION OF ROOF AND FLOOR DIAPHRAGMS FOR SHEATHING INSTALLATION, BOLTED CONNECTIONS, NAILING PATTERN, BLOCKING, ETC.
- 3. VISUAL INSPECTION OF SHEAR WALLS FOR SHEATHING INSTALLATION, BOLTED CONNECTIONS, NAILING PATTERN, BLOCKING, ETC.

			MECHANIC	AL LE	EGEN		(NOT ALL SYMBOLS MAY BE USED
			DUC	TWORK			
SYMBC)L/A	BBREVIATION	DESCRIPTION	SYMBOL / AE	BREVIATIO	N	DESCRIPTION
				12"X12" FACE	24"X24" FA	CE	
	<u> </u>		RECTANGULAR SUPPLY DUCT - UP				OUTS INDICATE NO AIR FLOW IN THIS
						Х	DIRECTION. (X DENOTES TYPE, SEE NOTE 1 OF AIR
	 {		RECTANGULAR SUPPLY DUCT - DOWN				DISTRIBUTION DEVICE SCHEDULE)
						~	RETURN GRILLE AND AIR QUANTITY
	 {		RECTANGULAR RETURN / EXHAUST DUCT -			^	(X DENOTES TYPE) EXHAUST GRILLE AND AIR QUANTITY
						X	(X DENOTES TYPE)
	{		RECTANGULAR RETURN / EXHAUST DUCT -		\sim		LAMINAR FLOW SUPPLY DIFFUSER AND AIR FLOW QUANTITY
				100SX	100SX		
					100		LINEAR SLOT DIFFUSER AND AIR FLOW QUANTITY
					100		SCREENED OPENING AND AIR FLOW QUANTIT
\sim				<u>AT-XX-XX</u> –		T	SOUND ATTENUATOR
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						_	
	 {		ROUND RETURN / EXHAUST DUCT - UP			7	ELECTRIC HEATING COIL WITH IDENT.
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ĺ×)	 ,		OVAL SUPPLY DUCT - DOWN	CB-XX-XX]	CHILLED BEAM WITH IDENT. & CFM
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	-7						
172				C	S		COLD DECK SUPPLY
10			OVAL RETURN / EXHAUST DUCT - DOWN		D		DRYER EXHAUST DUCT
)E		DISHWASHER EXHAUST
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							HOOD EXHAUST
⊢	 {		COMBINATION FIRE/SMOKE DAMPER		IS		
					E		ISOLATION EXHAUST
MVD	_				E		LAB EXHAUST
γ Ψ	,	ſſ		C	A		OUTSIDE AIR
┝	_			P	Έ		PHARMACY EXHAUST
м		нн М		F	A		RETURN AIR
(_			S	A		SUPPLY AIR LOW PRESSURE
' [A]	,	Гſ	AIR FLOW MONITORING STATION		A		SUPPLY AIR MEDIUM PRESSURE
				A			ACCESS DOOR
) DP			DIFFERENTIAL PRESSURE SENSOR	Δ	EE		
				^			
۶ SP			STATIC PRESSURE SENSOR	A			AUTOMATIC TEMPERATURE CONTROL PANEL
				BI	טכ		BACKDRAFT DAMPER
	 {		CARBON DIOXIDE DETECTOR	BC	DD		BOTTOM OF DUCT
				BO	OP		BOTTOM OF PIPE
	 {	<u> </u>		DI	C		DIRECT DIGITAL CONTROL
				D	.L.		INTERNAL DUCT LINING
<u> </u>	_	1 1		F	D		FIRE DAMPER
' <u>0</u> 2	•		DUCT SENSOR	F	SD		COMBINATION FIRE/SMOKE DAMPER
	,	1		Γ.	1L		MARINE LIGHT
, ♦			TRAVERSE DUCT TEST AND BALANCE	M	VD		
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	<u> </u>	<u>-xx</u> / <u></u>					
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				s 			
┝──┣─	;		TRANSITION	SV	VR		SIDEWALL REGISTER
				SV	VG		SIDEWALL GRILLE
_				Т	G		TRANSFER GRILLE
			RADIUS ELBOW	10	NO		UNLESS NOTED OTHERWISE
۲							
	4	re s	SQUARE THROAT ELBOW WITH TURNING				CONTROL DEVICES
			VANES	(D		THERMOSTAT OR TEMP SENSOR
5		<u></u>		(Ĥ		HUMIDISTAT OR HUMIDITY SENSOR
		_г Ш Ц,	RECTANGULAR OR ROUND BRANCH.	(i	DP)		DIFFERENTIAL PRESSURE SENSOR
;∳	;	\$\$	AIR DEVICES		<u> </u>		CARBON DIOXIDE SENSOR
		· · · · · · · · · · · · · · · · · · ·			<u> </u>		
╞┝┤──╸	+		RISE/DROP IN ELEVATION				
R/D		R/D					
				(E	:PO)		EMERGENCY POWER OFF
x_/			SPLITTER WITH SPLIT SIZE SHOWN		$1\overline{O_2}$		NITROGEN DIOXIDE SENSOR
	Х			(B		REFRIGERANT SENSOR
T_							
	,	┟┷┥┷	SPLITTER WITH SPLIT SIZES SHOWN				
x—∕	2	x_/					
T		ΠΠ					
, 			TEE AND TAP ROUND TRUNK.				
T		<u> </u>	BRANCH DUCT CONNECTION BEVELED TEE				
, _ _	;		ROUND TRUNK. MVD REQUIRED TO AIR DEVICES.				
		r					

MECHANICAL EQUIPMENT NAMING CONVENTION

ABB.	DESCRIPTION	ABB.	DESCRIPTION	ABB.	DES
ATU	AIR TERMINAL UNIT	RTU	ROOFTOP PACKAGE UNIT	VFD	VARIABLE FREQ
EF	EXHAUST FAN	SAF	SUPPLY AIR FAN		
REF	RELIEF AIR FAN	SAT	SOUND ATTENUATOR		
RH	RADIANT HEAT PANEL	UH	UNIT HEATER		

EQUIPMENT NO	OMENCLATURE
EQUIPMENT IDENTIFICATION TAG EQUIPMENT - LEVEL & TYPE - LEVEL & AREA EXAMPLE: EXHAUST FAN <u>EF-4</u>	AS ARE COMPOSED AS FOLLOWS: - EQUIPMENT TAG NUMBER WITHIN EACH SECTOR - LEVEL 4 & AREA B - EQUIPMENT TAG NUMBER OF 1 4B-1
LEVELS: 1 = LEVEL 1	AREA / QUAD / SECTOR: A = AREA A D = AREA D G = AREA G B = AREA B E = AREA E H = AREA H C = AREA C F = AREA F I = AREA I

SCRIPTION QUENCY DRIVE

NUMBER

M0.1

M0.2

M0.0

MECHANICAL SCHEDULES

MECHANICAL COMCHECK

SHEET INDEX - SHELL

SHEET NAME MECHANICAL LEGEND, NAMING CONVENTION AND INDEX

M0.3 MECHANICAL COMCHECK M1.1 MECHANICAL PLAN - ROOF M5.1 MECHANICAL DETAILS - SHELL M7.1 MECHANICAL CONTROLS - SHELL **MECHANICAL GENERAL NOTES** A. CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE PROJECT SCOPE, UTILITY CONNECTIONS, AND ALL BUILDING SERVICES. B. STANDARD DETAILS ILLUSTRATED ON THE DRAWINGS SHALL BE APPLIED IN ALL CASES WHERE THE FEATURE OCCURS IN THE SYSTEM DESIGN. C. ALL DUCTWORK SIZES SHOWN ARE CLEAR INSIDE DIMENSIONS IN INCHES. ALL DUCTWORK NOTED AS (D.L.) SHALL BE PROVIDED WITH INTERNAL DUCT LINING. REFER TO SPECIFICATION SECTION 230700 FOR DUCT INSULATION & LINING REQUIREMENTS. D. MAJOR EQUIPMENT SHOWN ON THE PLANS AND ELEVATIONS ILLUSTRATE THE GENERAL ARRANGEMENT AND SPACE ALLOCATIONS. THE CONTRACTOR SHALL VERIFY THE SPACE REQUIREMENTS FOR EACH SYSTEM COMPONENT USING MANUFACTURER CERTIFIED SHOP DRAWINGS AND MAKE THE NECESSARY ADJUSTMENTS IN EQUIPMENT PLACEMENT AND CONNECTION IN ORDER TO ACCOMMODATE THE EXACT EQUIPMENT TO BE INSTALLED. E. SUPPORTS, ANCHOR BOLTS, AND HANGERS FOR ALL EQUIPMENT SPECIFIED IN DIVISION 23 SHALL CONFORM TO THE SPECIFICATIONS. MISCELLANEOUS STEEL BRACING SUPPORTS AND REINFORCING STEEL NEEDED TO SUPPORT EQUIPMENT SPECIFIED IN DIVISION 23 SHALL BE PART OF THE SCOPE OF WORK OF DIVISION 23. F. DIFFUSERS, REGISTERS, AND GRILLES SHOWN ON THE MECHANICAL DRAWINGS SHALL BE IN ACCORDANCE WITH THE AIR DISTRIBUTION DEVICE SCHEDULE AND SPECIFICATIONS. BRANCH DUCTS TO AIR DEVICES SHALL BE IN ACCORDANCE WITH THE SCHEDULE UNLESS NOTED OTHERWISE. G. FIRE/SMOKE DAMPERS SHALL BE INSTALLED IN DUCTWORK PENETRATIONS THROUGH RATED PARTITIONS, WALLS, BARRIERS, FLOORS, AND SHAFTS IN ACCORDANCE WITH THE PROJECT APPLICABLE BUILDING CODES. DAMPERS SHALL MEET THE REQUIREMENTS OF THE FIRE/SMOKE RATING AND BE "U.L." LABELED. REFER TO ARCHITECTURAL DRAWINGS FOR THE LOCATIONS AND RATINGS OF ALL WALLS AND FLOORS. H. PENETRATIONS THROUGH RATED WALLS AND FLOORS SHALL BE SLEEVED, SEALED AND FIRESAFED TO MAINTAIN THE INTEGRITY OF THE WALL AND FLOOR UL FIRE RESISTANCE RATING. DUCTWORK AND LARGER ROUTED PARALLEL TO A RATED WALL SHALL BE INSTALLED WITH A MINIMUM 6" CLEARANCE TO ALLOW FOR INSPECTION OF WALL PENETRATIONS. J. DUCTWORK STORED ON-SITE AWAITING INSTALLATION SHALL REMAIN PROPERLY SEALED AND PROTECTED. OPEN ENDS OF DUCTWORK SHALL BE CAPPED AND SEALED AFTER INSTALLATION. K. SMOKE DETECTORS SHALL BE LOCATED AS INDICATED ON THE MECHANICAL PLANS AND IN CONFORMANCE WITH NFPA 90A AND LOCAL CODES. L. CEILING DIFFUSER LOCATIONS SHALL BE AS SHOWN ON THE ARCHITECTURAL REFLECTED CEILING PLANS. M. CEILING DIFFUSERS, REGISTERS AND GRILLES SHALL BE FURNISHED WITH MOUNTING FRAMES AND FEATURES IN ACCORDANCE WITH THE CEILING TYPE. N. PROVIDE MANUAL BALANCING/VOLUME DAMPERS AT ALL LOW PRESSURE BRANCH TAKE-OFFS TO DIFFUSERS AND GRILLES FROM SUPPLY, RETURN AND EXHAUST MAINS AND SUB-MAINS, AND AT ALL LOW PRESSURE DUCT SPLITS OR SUB-MAIN TAKE-OFFS. DAMPERS SHALL BE INSTALLED ABOVE AN ACCESSIBLE CEILING OR ACCESS PANEL. O. DRAWINGS ARE SCHEMATIC IN NATURE AND SHALL NOT BE SCALED. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING EXACT ROUTING OF ALL SERVICES WITH EXISTING CONDITIONS AND WITH ALL OTHER TRADES. REFER TO SPECIFICATIONS FOR COORDINATION DRAWING REQUIREMENTS. P. MAINTAIN ACCESSIBILITY OF ALL EQUIPMENT, DAMPERS, CONTROL PANELS, VALVES, AND OTHER DEVICES. PROVIDE ACCESS PANELS AS REQUIRED. COORDINATE PLACEMENT WITH THE ARCHITECT PRIOR TO INSTALLATION.

Q. CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT PRIOR TO CUTTING ANY OPENING IN THE STRUCTURE. R. OUTSIDE AIR INTAKES SHALL BE A MINIMUM OF 25 FEET AWAY FROM PLUMBING VENTS, EXHAUST VENTS, AND OTHER SOURCES OF NOXIOUS FUMES AND/OR ODORS. INTAKES SHALL BE A MINIMUM OF 36" ABOVE FINISHED ROOF AND 72" ABOVE FINISHED GRADE.

S. IN RETURN AIR PLENUM APPLICATIONS, CONTRACTOR SHALL PROVIDE MINIMUM 32" X 16" ACOUSTICALLY LINED AIR TRANSFER OPENING WITH TOP OF OPENING TIGHT TO PLENUM DECK ABOVE ROOM ENTRY DOOR IN FULL-HEIGHT WALLS. PROVIDE FIRE AND/OR SMOKE DAMPERS AT PENETRATIONS OF ALL FIRE AND SMOKE RATED WALLS AS REQUIRED TO MEET WALL RATING. PROVIDE SMOKE DETECTORS AT INLET OF EACH OPENING IN RATED SMOKE WALLS. CONTRACTOR IS DIRECTLY RESPONSIBLE FOR THIS COORDINATION AND INSTALLATION OF AIR TRANSFER OPENINGS IN FULL-HEIGHT WALLS.

MECHANICAL COMMISSIONING COORDINATION

COMMISSIONING SHALL BE PROVIDED FOR THIS PROJECT PER THE IECC CHAPTER C408. THE COMMISSIONING AGENT SHALL BE DESIGNATED BY THE OWNER AND BE RESPONSIBLE FOR TASKS SPECIFIED BY IECC C408.2.1. MECHANICAL, TEST AND BALANCE, CONTROLS, AND ELECTRICAL CONTRACTORS SHALL PROVIDE SUPPORT FOR THE COMMISSIONING AGENT AS REQUIRED BY THE COMMISSIONING PLAN.

GENERAL NOTES:

- 1. REFER TO PLANS FOR OVERALL AHU SIZE, COMPONENTS, AND ARRANGEMENT. 2. SEE SPECIFICATION 23-7413 FOR ADDITIONAL INFORMATION.
- 3. SUPPLY FAN TOTAL STATIC PRESSURE (TSP) INCLUDES SCHEDULED DIRTY FILTER LOSS. 4. FAN BRAKE HP SHALL BE NO GREATER THAN 85% OF THE MOTOR HP IN NORMAL OPERATING CONDITIONS.
- 5. DRAIN PAN IN FAN SECTIONS FOR DRAW THRU CONFIGURATIONS.
- 6. PROVIDE PREMIUM EFFICENCY MOTORS. 7. EXTERNAL STATIC PRESSURE (ESP) PERTAINS TO DUCTWORK AND EXTERNAL COMPONENTS ONLY.
- 8. SEE CONTROL DRAWINGS FOR SEQUENCE OF OPERATION.

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	I																														1														
			MODEL	NOMINAI			RICAL	UNI	r			SUPPL	Y FAN				SF MOTO	R		COO	LING COIL			нот	GAS RE	HEAT COIL	с	ONDENSER		MPRESSOR		RE	LIEF FAN			REF M	MOTOR			HEATING (COIL	OF	UNIT PERATING		
DESIGNATION	AREA SERVED	MANUFACTURE	NUMBER	TONS	VOLTAGE	E MCA (A	A) MOP (/	A)	CFM	OUTSID	E AIR ES (IN	SP TSP N. (IN. G) WG)	TOTAL FI LOSS (IN.	ILTER . WG)	ТҮРЕ	QTY BI	HP HP EA) (EA) F	RPM FV	EAT DB/WE	B LAT DB/WB (° F)	CAPACIT	Y ROWS	S REFRIG.	EAT DB/WB (° F)	LAT DB/WB (° F)	CAPAC MBTU	ITY QT IH FAI	TY HP NS (EA)	ο Ο Ο Ο Ο Ο Ο Ο Ο Ο Ο Ο Ο Ο Ο Ο Ο Ο Ο Ο	TONS (EA) CFM	ESP (IN. WG) (IN.	SP WG) T	ГҮРЕ	QTY BH	HP HP	RPM	EAT L (°F) (°	_AT C °F) (CAPACITY (MBTUH)	GAS PRESSUR (PSI)	E GAS CFH	WEIGHT (LBS)	RE	IMARKS
BTU-1-1	MOB		PREMIER	50	208/3	320	400	10 7	12200	2770 1	MAX	75 5 5 5 2	15		פחח	1 17	7/ 25 1	302 475	80/67	54/53.6	561.5	//17	B/10A	54/53.6	66 1/56 8	195	/	2	1	7 5/8 5/10/1	3 12200		77	FC	1 2	3 5	361	45 9	33.2	608	0.5	730	10.000	ABCDEEG	<u> </u>
RTU-1-2	MOB	JCI	PREMIER	50	208/3	320	400	10.7	12200	2770	2200 3.7	⁵ 5.52 75 5.52	1.5		DDP	1 17	7.4 25 1	302 475	80/67	54/53.6	561.5	4/17	R410A	54/53.6	66.1/56.8	3 195	4	- <u>2</u> - 2	4	7.5/8.5/10/1	3 12200	0.5 0.	77	FC	1 2.	.3 5	361	45 9	93.2	608	0.5	730	10,000	A,B,C,D,E,F,G	<u>.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>
																													F	FAN	SCF	IEDL	JLE												
																GE 1. M 2. E 3. C	NERAL NO MOTOR H.P 3HP SHALL CFM AT SIT	TES: . SHALL CC BE NO GRI E ELEVATIO	OMPLY WI EATER TH ON OF 100	TH ASHRAE IAN 90% OF 00 FT. STAT	E 90.1. ⁻ THE MOTO FIC PRESSU	OR H.P. IRE AT SE	A LEVEL.	FAN T PRE -	Y PES: Power I	ROOF EXHA	USTER.				STARTER MAG-X-L - ACROSS	TYPES / AC COMBINAT THE LINE ST	CCESS: TION MAGN TARTER. DR STARTE	IETIC ER.	ACCESSO 1. WEATH 2. HOUSIN 3. OUTLET	DRIES: IERPROOF NG DRAIN. T SCREEN	DF HOUSIN I. N.	IG.			Remarks A. Alumin B. Tefc M	S: NUM WHEEL / MOTOR.	AND HOUS	ING.	
																4. F A T(5. F A 2(AN EFFICIE T DESIGN F OTAL FAN I AN EFFICIE MCA 208. F 08 ANNEX (ENCY GRAI Point of C Efficienc' Ency inde Fei for fa C.	de (feg) deratio y. X (fei) at N array:	PER AMCA : IN SHALL BI THE DESIC S SHALL BE	205. TOTAL E WITHIN 15 GN POINT OI E CALCULAT	_ FAN EFF 5% OF THI DF OPERA TED PER <i>F</i>	FICIENCY IE MAX ATION PER AMCA								VFD - VAF EP - EMEI	RIABLE FREG RGENCY PO	QUENCY DI WER.	PRIVE.	4. MOTOR 5. ROOF C 7. SOLID S 8. ELECTF 9. CONTRO	RIZED OUT CURB (18" STATE SPI RONICALL	TLET DAM " HIGH). PEED CON LY COMMU JIT TRANS	IPERS. TROLLER (PF JNICATED MC SFORMER IN N	RE-WIR OTOR (MOTOR	RED). ECM). R STARTER.					
																																							,						
																DE	SIGNATION	N SERV		MANUFACT	URER	MODEL	L NUMBER	יד	YPE	CFM	ESP (IN. WG)	DRIVE	BHP	MIN. HP	RPM V		PHASE S	TARTER	EP	N S(MAX. SONES	ROOF / WA	ALL C G WI	PERATING EIGHT (LBS	5) A	CCESSORIES	6	REM	MARKS
																	EF-1-1	GENE	RAL	GREENHE	ECK	G-1	100-VG	P	RE	1580	0.5	DIRECT	0.35	1/2	1456	115	1	MMS	 N		13.5	12x12		100	,	1,3,5,8,10	A	A,B	
																	EF-1-2	GENE	RAL	GREENHE	ECK	G-0	090-VG	P	PRE	600	0.5	DIRECT	0.08	1/4	1595	115	1	MMS	N		7.7	10x10		100		1,3,5,8,10	ŀ	A,B	
																	EF-2-1	GENE	RAL	GREENHE	ECK	G-1	100-VG	P	PRE	1580	0.5	DIRECT	0.35	1/2	1456	115	1	MMS	N		13.5	12x12		100		1,3,5,8,10	ŀ	A,B	
																	EF-2-2	GENE	RAL	GREENHE	ECK	G-0	090-VG	P	PRE	500	0.5	DIRECT	0.08	1/4	1595	115	1	MMS	N		7.7	10x10		100		1,3,5,8,10	ļ	A,B	

ROOFTOP A/C UNIT SCHEDULE

9. REFRIGERANT FOR ALL DX UNITS SHALL BE R410A. 10. ALL FANS IN AIR HANDLING UNITS ARE MEDIUM PRESSURE.

11. ALL AIR HANDLING UNITS ARE MEDIUM PRESSURE.

12. COOLING COIL (DX) LAT INCLUDES FAN HEAT. 13. COOLING COIL (DX) CAPACITIES INCLUDE FAN HEAT.

14. FILER LOSS BASED OFF AIR FILTER SCHEDULE MID-LIFE RESISTANCE. 15. 65 KA RMS SYMETRICAL SCCR RATING

REMARKS: A. TSP INCLUDES DIRTY FILTER LOSS.

- B. VARIABLE SPEED COMPRESSORS WITH 15% MIN TURNDOWN. C. ECONOMIZER WITH FAN/DAMPER MODULATION.
- D. SINGLE POINT PWR W/ INTEGRAL FUSED DISCONNECT
- E. UNIT MOUNTED CONTROL PANEL. F. VFD ON SUPPLY AND RELIEF FAN(S).
- G. 120V CONVENIENCE RECEPTACLE H. 2" MERV-8 PREFILTER.

I. 4" MERV-14 FINAL FILTER.

J. SUPPLY FAN WITH FACTORY MOUNTED VFD AND SHAFT GROUNDING KIT. K. RELIEF FAN EQUIPPED WITH SHAFT GROUNDING KITS. L. OA MEASURING STATION.

M. NATURAL GAS PREHEAT WITH MAXITROL BURNER CONTROL.

N. 3'-0" SPRING ISOLATION ROOF CURB FOR SEISMIC DESIGN CATEGORY "D". REFER TO SPECIFICATION 23-0549. O. PIEZOMETER RING AIRFLOW MEASUREMENT ON SUPPLY FAN

PROJECT DESIGN CONDITIONS

ABBREVIATIONS DB = DRY BULB TEMPERATURE

WB = WET BULB TEMPERATURE MCDB = MEAN COINCIDENT DRY BULB TEMPERATURE **GENERAL NOTES**

(1) BASED ON ASHRAE 2021 HANDBOOK - FUNDAMENTALS (2) DESIGN WINTER OUTDOOR AIR TEMPERATURE IS 99.6% VALUE MINUS 10 DEG F.

MCWB = MEAN COINCIDENT WET BULB TEMPERATURE									
					COOLING		EVAPOF	ATION	HEAT
			ELEVATION	0.4%			0.4	5-YEAR	
WEATHER STATION	LATITODE	LONGITUDE	(FT.)	HOTTEST MONTH	DB (°F)	MCWB (°F)	WB (°F)	MCDB (°F)	COLDEST MONTH
ROBINSON, IL, USA	39.016N	87.65W	462	JULY	92.8	75.5	79.8	88.3	JANUARY

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Section # & Req.ID	Plumbing Rough-In Inspection	Complies?	Comments/Assumptions	Section # & Req.ID	
7.4.3 [PL1] ²	Service hot-water piping systems insulated. Where piping is installed in or under a slab, verification may need to occur during Foundation Inspection.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.	6.4.1.4, 6.4.1.5 [ME1] ²	HVA ver equ 90.
7.4.4.1 [PL2] ³	Temperature controls installed on service water heating systems (<=120°F to maximum temperature for intended use).	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.	6.4.3.4.1 [ME3] ³	Stai hav aut
7.4.4.2 [PL3] ¹	Automatic time switches installed to automatically switch off the recirculating hot-water system or heat trace.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.	6.4.3.4.2, 6.4.3.4.3, 6.4.3.4.4 [ME4] ³	Out hav aut use rate

Additional Comments/Assumptions:

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 1
 High Impact (Tier 1)
 2
 Medium Impact (Tier 2)
 3
 Low Impact (Tier 3)

Report date: 03/01/24 Project Title: Data filename: T:\Team42\2023\23420970 - SCCH MOB Shell and Buildout\Discipline Design\Comcheck\Sulliva Page 5 of 12 ComCheck.cck

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Section # & Req.ID	Plan Review	Complies?	Comm
4.2.2, 6.4.2 [PR2] ¹	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the mechanical systems and equipment and document where exceptions to the standard are claimed. Load calculations per acceptable engineering standards and handbooks.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
4.2.2, 7.4.1 [PR3] ¹	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the service water heating systems and equipment and document where exceptions to the standard are claimed. Hot water system sized per manufacturer's sizing guide.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
6.7.2.4 [PR5] ¹	Detailed instructions for HVAC systems commissioning included on the plans or specifications for projects >=50,000 ft2.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.

	1High Impact (Tier 1)2Medium Impact (Tier 2)3Low Impact (Tier 3)	1High Impact (Tier 1)2Medium Impact (Tier 2)3Low Impact (Tier 3)
Project Title: Data filename: T:\Team42\2023\23420970 - SCCH MOB Shell and Buildout\Discipline Design\Comcheck\Sulliva Page 2 of 12 ComCheck.cck	Project Title: Project Title: Data filename: T:\Team42\2023\23420970 - SCCH MOB Shell and Buildout\Discipline Design\Comcheck\Sulliva Page 3 of 12 ComCheck.cck	Project Title: Project Title: Data filename: T:\Team42\2023\23420970 - SCCH MOB Shell and Buildout\Discipline Design\Comcheck\Sulliva Page 4 of 12 ComCheck.cck

6.4.1.4, 6.4.1.5 v [ME1] ² e 9 6.4.3.4.1 S [ME3] ³ h a 6.4.3.4.2, C 6.4.3.4.3, h 6.4.3.4.4 a [ME4] ³ v 6.4.3.4.5 V [ME5] ³ a	HVAC equipment efficiency verified. Non-NAECA HVAC equipment labeled as meeting 20.1. Stair and elevator shaft vents have motorized dampers that automatically close. Dutdoor air and exhaust systems have motorized dampers that automatically shut when not in use and meet maximum leakage rates. Check gravity dampers where allowed. Ventilation fans >0.75 hp have automatic controls to shut off fan when not required.	Efficiency:	Efficiency:	Complies Does Not Not Observable Complies Does Not Not Observable Not Observable Not Applicable Complies Does Not Not Observable Not Observable Not Observable	See the Mechanical Systems list for values. Exception: Requirement does not apply. Requirement will be met.
6.4.3.4.1 [ME3] ³ h a 6.4.3.4.2, C 6.4.3.4.3, h 6.4.3.4.4 [ME4] ³ u 6.4.3.4.5 V [ME5] ³ a	Stair and elevator shaft vents have motorized dampers that automatically close. Dutdoor air and exhaust systems have motorized dampers that automatically shut when not in use and meet maximum leakage rates. Check gravity dampers where allowed. /entilation fans >0.75 hp have automatic controls to shut off fan when not required.			Complies Does Not Not Observable Not Applicable Complies Does Not Not Observable Not Observable Not Applicable	Exception: Requirement does not apply.
6.4.3.4.2, C 6.4.3.4.3, h 6.4.3.4.4 a [ME4] ³ u r, w 6.4.3.4.5 V [ME5] ³ a	Dutdoor air and exhaust systems have motorized dampers that automatically shut when not in use and meet maximum leakage rates. Check gravity dampers where allowed. /entilation fans >0.75 hp have automatic controls to shut off fan when not required.			Complies Does Not Not Observable	Requirement will be met.
6.4.3.4.5 V [ME5] ³ a w	/entilation fans >0.75 hp have automatic controls to shut off fan when not required.			_	
				☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.4.3.9 [[ME6] ¹ p ME6] ¹ p d w n c c	Demand control ventilation provided for spaces >500 ft2 and >40 people/1000 ft2 occupant density and served by systems with air side economizer, auto modulating outside air damper control, or design airflow >3,000 cfm.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
6.4.4.1.1 Ir [ME7] ³ p Ir c w r	nsulation exposed to weather protected from damage. nsulation outside of the conditioned space and associated with cooling systems is vapor retardant.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
6.4.4.1.2 H [ME8] ² ir	HVAC ducts and plenums nsulated.	R	R	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
6.4.4.1.3 H [ME9] ²	HVAC piping insulation thickness.	in.	in.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
6.4.4.2.1 D [ME10] ² o	Ducts and plenums sealed based on static pressure and location.			Complies Does Not Not Observable Not Applicable	Requirement will be met.
6.4.4.2.2 D [ME11] ³ c t	Ductwork operating >3 in. water column requires air leakage resting.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
6.4.4.2.2 D [ME11] ³ c t	Ductwork operating >3 in. water column requires air leakage cesting.			Complies Does Not Not Observable	Requirement will be met.
6.4.4.2.2 D [ME11] ³ c to	Ductwork operating >3 in. water column requires air leakage esting.			□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement does not apply.
	1 High Impact (Tier	1) 2 Medium	Impact (Tier 2)	3 Low Impact (Ti	er 3)

Section # & Reg.ID	Mechanical Rough-In Inspection	Plans Verified Value	Field Verified Value	Cor
6.5.2.3 [ME19] ³	Dehumidification controls provided to prevent reheating, recooling, mixing of hot and cold airstreams or concurrent heating and cooling of the same airstream.			Comp Does Not C Not A
6.5.3.1.2 [ME21] ²	HVAC fan motors not larger than allowable limits.	bhp:	bhp:	Comp Does Not C
6.5.3.1.2 [ME21] ²	HVAC fan motors not larger than allowable limits.	bhp:	bhp:	Comp Does Not C
6.5.3.2.1 [ME22] ²	VAV fan motors >=10 hp to be driven by variable speed drive, have a vane-axial fan with variable pitch blades, or have controls to limit fan motor demand.	☐ VSD ☐ Vane axial fan ☐ Other	 VSD Vane axial fan Other 	Comp Does Not C
6.5.3.2.1 [ME22] ²	VAV fan motors >=10 hp to be driven by variable speed drive, have a vane-axial fan with variable pitch blades, or have controls to limit fan motor demand.	□ VSD □ Vane axial fan □ Other	□ VSD □ Vane axial fan □ Other	Comp Does Not C Not A
6.5.3.2.2 [ME23] ²	VAV fans have static pressure sensors positioned so setpoint <=1/3 total design pressure.			Comp Does Not C
6.5.3.2.2 [ME23] ²	VAV fans have static pressure sensors positioned so setpoint <=1/3 total design pressure.			Comp Does Not C
6.5.3.2.3 [ME24] ²	Reset static pressure setpoint for DDC controlled VAV boxes reporting to central controller based on the zones requiring the most pressure.			Comp Does Not C
6.5.3.2.3 [ME24] ²	Reset static pressure setpoint for DDC controlled VAV boxes reporting to central controller based on the zones requiring the most pressure.			Comp Does Not C
6.5.4.1 [ME25] ³	HVAC pumping systems >10 hp designed for variable fluid flow.			Comp Does Not C
6.5.6.1 [ME30] ¹	Exhaust air energy recovery on systems >=5,000 cfm and 70% of design supply air.			Comp Does Not C
6.5.7.1 [ME32] ²	Kitchen hoods >5,000 cfm have make up air >=50% of exhaust air volume.			Comp Does Not C
	1 High Impact (Tier	1) 2 Medium	Impact (Tier 2)	3 Lov

Section # & Req.ID	Footing / Foundation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
.4.3.8 FO9] ³	Freeze protection and snow/ice melting system sensors for future connection to controls.			Complies Does Not Not Observable Not Applicable	Exception: Requirement does not apply.
dditiona	al Comments/Assumptions:				

Icheck Requirements screen. For each t is documented, or that an exception to that table is provided. omments/Assumptions met

nplies?	Comments/Assumptions
olies Not Observable	Requirement will be met.
Applicable	
olies Not	Requirement will be met.
Observable	
olies	Requirement will be met.
Not	
observable Applicable	
olies	Requirement will be met.
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pplicable	
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Not	requirement will be met.
Observable	
vplicable	
olies	Requirement will be met.
Not	
Applicable	
olies Not	Requirement will be met.
Observable	
Applicable	Requirement will be met
Not	
Observable	
olies	Requirement will be met.
Not	
observable Applicable	
olies	Requirement will be met.
Not)bservable	
Applicable	
olies Not	Exception: Requirement does not apply.
Observable	,
Applicable	Excention: Requirement
Not	does not apply.
Observable	
vphilcaple	i
v Impact (Ti	er 3)
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Section # & Req.ID	Mechanical Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
6.5.7.2 [ME33] ¹	Fume hoods exhaust systems >=15,000 cfm have VAV hood			□Complies □Does Not	Exception: Requirement does not apply.
	direct make-up air or heat recovery.			□Not Observable □Not Applicable	
6.5.8.1 [ME34] ³	Unenclosed spaces that are heated use only radiant heat.			□Complies □Does Not	Exception: Requirement does not apply.
				□Not Observable □Not Applicable	
6.5.9 [ME35] ¹	Hot gas bypass limited to: <=240 kBtu/h - 50% >240 kBtu/h - 25%			□Complies □Does Not	Requirement will be met.
				□Not Observable □Not Applicable	
6.5.9 [ME35] ¹	Hot gas bypass limited to: <=240 kBtu/h - 50% >240 kBtu/h - 25%			□Complies □Does Not	Requirement will be met.
				□Not Observable □Not Applicable	
7.4.2 [ME36] ²	Service water heating equipment meets efficiency requirements.			□Complies □Does Not	
				□Not Observable □Not Applicable	
Addition	al Comments/Assumptions:				

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Section			Section			
# Rough-In Ele & Reg.ID	ctrical Inspection Complies?	Comments/Assumptio	ons # & Reg.ID	Final Inspection	Complies?	Comments/Assumpt
10.4.1 Electric motors r [EL9] ² where applicable	neet requirements	Requirement will be met.	6.4.3.1.1 [FI2] ²	Heating and cooling to each zone is controlled by a thermostat control.	Complies	Requirement will be met.
	Not Observable				Not Observable	
Additional Comments//		1	6.4.3.1.2,	Thermostatic controls have a 5 °F	$\Box Not Applicable \\ \Box Complies$	Requirement will be met.
			6.4.3.2, 6.4.3.3,	deadband.	□Does Not □Not Observable	
			6.4.3.3.1, 6.4.3.3.2		□Not Applicable	
			6.4.3.3.3 [FI4] ²	Systems with air capacity >10,000 cfm include optimum start controls.	□Complies □Does Not	Requirement will be met.
					□Not Observable	
			6.4.3.3.3 [FI4]2	Systems with air capacity >10,000		Requirement will be met.
			[11+]	cim include optimum start controls.	□Does Not □Not Observable	
			6.4.3.7	When humidification and	□Not Applicable □Complies	Requirement will be met.
			[FI6] ³	dehumidification are provided to a zone, simultaneous operation is	Does Not	
				prohibited.	Not Observable	
			6.7.2.1 [FI7] ³	Furnished HVAC as-built drawings submitted within 90 days of system	□Complies □Does Not	Requirement will be met.
				acceptance.	□Not Observable	
			6.7.2.2 [FI8] ³	Furnished O&M manuals for HVAC		Requirement will be met.
			[110]	acceptance.	□Does Not □Not Observable	
			6.7.2.3	An air and/or hydronic system	□Not Applicable □Complies	Requirement will be met.
			[FI9] ¹	balancing report is provided for HVAC systems serving zones >5,000 ft2 of	Does Not	
				conditioned area.		
			6.7.2.4 [FI10] ¹	HVAC control systems have been tested to ensure proper operation,	⊔Complies □Does Not	Requirement will be met.
				canoration and adjustment of controls	□Not Observable □Not Applicable	
			7.4.4.3 [FI11] ³	Public lavatory faucet water temperature <=110°F.	Complies	Requirement will be met.
					□Not Observable	
			7.4.4.4	Controls are installed that limit the	⊔Not Applicable □Complies	Requirement will be met.
			[FI12] ³	operation of a recirculation pump installed to maintain temperature of a	□Does Not □Not Observable	
			C 4 2 2	storage tank.		Dequirement will be rest
			[6.4.3.2 [FI20] ¹	overlap restrictions.		Requirement will be met.
					□Not Observable □Not Applicable	
	High Impact (Tier 1) 2 Modium Imp	act (Tier 2) 3 Low Impact (Tier 2)		1 High Impact (Tior 1)	2 Medium Imp	act (Tier 2) 3 Low Impact (Tier 2)
		S LOW IMPACT (THE 3)				

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
6.4.3.3.1 [FI21] ¹	HVAC systems equipped with at least one automatic shutdown control.	□Complies □Does Not	Requirement will be met.
		□Not Observable □Not Applicable	
6.4.3.3.2 [FI22] ¹	Setback controls allow automatic restart and temporary operation as required for maintenance.	□Complies □Does Not	Requirement will be met.
		□Not Observable □Not Applicable	
6.4.3.3.4 [FI23] ¹	Zone isolation devices and controls.	□Complies □Does Not	Exception: null.
		□Not Observable □Not Applicable	
6.4.3.3.4 [FI23] ¹	Zone isolation devices and controls.	□Complies □Does Not	Exception: null.
		□Not Observable □Not Applicable	

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Section # & Reg.ID	Mechanical Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
6.5.6.1 [ME56] ¹	Exhaust air energy recovery on systems meeting Table 6.5.6.1.			Complies	Exception: Requirement does not apply.
				□Not Observable □Not Applicable	
6.5.7.1.1 [ME32] ²	Kitchen hoods >5,000 cfm have make up air >=50% of exhaust			□Complies □Does Not	Exception: Requirement does not apply.
	an volume.			□Not Observable □Not Applicable	
6.5.7.1.2 [ME46] ³	Conditioned supply air to space with a kitchen hood shall not			□Complies □Does Not	Exception: Requirement does not apply.
	flow required to meet space heating or cooling, or b) hood exhaust flow minus the available air transfer from available spaces.			□Not Observable □Not Applicable	
6.5.7.1.2 [ME46] ³	Conditioned supply air to space with a kitchen hood shall not			□Complies □Does Not	Exception: Requirement does not apply.
	flow required to meet space heating or cooling, or b) hood exhaust flow minus the available air transfer from available spaces.			□Not Observable □Not Applicable	
6.5.7.1.2 [ME46] ³	Conditioned supply air to space with a kitchen hood shall not			□Complies □Does Not	Exception: Requirement does not apply.
	flow required to meet space heating or cooling, or b) hood exhaust flow minus the available air transfer from available spaces.			□Not Observable □Not Applicable	
6.5.7.1.5 [ME49] ³	Approved field test used to evaluate design air flow rates			□Complies □Does Not	Exception: Requirement does not apply.
	and demonstrate proper capture and containment of kitchen exhaust systems.			□Not Observable □Not Applicable	
6.5.7.2 [ME33] ¹	Fume hoods exhaust systems >=15,000 cfm have VAV hood			□Complies □Does Not	Exception: Requirement does not apply.
	exhaust and supply systems, direct make-up air or heat recovery.			□Not Observable □Not Applicable	
6.5.8.1 [ME34] ²	Unenclosed spaces that are heated use only radiant heat.			□Complies □Does Not	Exception: Requirement does not apply.
				□Not Observable □Not Applicable	
6.5.9 [ME35] ¹	Hot gas bypass limited to: <=240 kBtu/h - 50% >240 kBtu/h - 25%			□Complies □Does Not	Requirement will be met.
				□Not Observable □Not Applicable	
6.5.9 [ME35] ¹	Hot gas bypass limited to: <=240 kBtu/h - 50% >240 kBtu/h - 25%			□Complies □Does Not	Requirement will be met.
				□Not Observable □Not Applicable	
7.4.2 [ME36] ²	Service water heating equipment meets efficiency requirements.			□Complies □Does Not	
				□Not Observable □Not Applicable	

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Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
6.7.2.3 [FI9] ¹	An air and/or hydronic system balancing report is provided for HVAC systems serving zones >5,000 ft2 of conditioned area.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
6.7.2.4 [FI10] ¹	HVAC control systems have been tested to ensure proper operation, calibration and adjustment of controls.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
7.4.4.3 [FI11] ³	Public lavatory faucet water temperature <=110°F.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
7.4.4.4 [FI12] ³	Controls are installed that limit the operation of a recirculation pump installed to maintain temperature of a storage tank.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
10.4.3 [FI24] ²	Elevators are designed with the proper lighting, ventilation power, and standby mode.	□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement does not apply.

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Additional Comments/Assumptions:

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
8.4.2 [EL10] ²	At least 50% of all 125 volt 15- and 20-Amp receptacles are controlled by	□Complies □Does Not	Requirement will be met.
	an automatic control device.	□Not Observable □Not Applicable	
10.4.1 [EL9] ²	Electric motors meet requirements where applicable.	□Complies □Does Not	Requirement will be met.
		□Not Observable □Not Applicable	

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Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
6.4.3.1.1 [FI2] ²	Heating and cooling to each zone is controlled by a thermostat control.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
6.4.3.1.1 [FI2] ²	Heating and cooling to each zone is controlled by a thermostat control.	Complies Does Not	Requirement will be met.
6.4.3.1.2 [FI3] ³	Thermostatic controls have a 5 °F deadband.	Not Applicable Complies Does Not	Requirement will be met.
		□Not Observable □Not Applicable	
6.4.3.2 [FI20] ³	Temperature controls have setpoint overlap restrictions.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
6.4.3.3.1 [FI21] ³	HVAC systems equipped with at least one automatic shutdown control.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
6.4.3.3.2 [FI22] ³	Setback controls allow automatic restart and temporary operation as required for maintenance.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
6.4.3.3.3 [FI4] ³	Systems with air capacity >10,000 cfm include optimum start controls.	Complies Does Not Not Observable	Requirement will be met.
6.4.3.3.3 [FI4] ³	Systems with air capacity >10,000 cfm include optimum start controls.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
6.4.3.3.4 [FI23] ³	Zone isolation devices and controls.	Complies Does Not Not Observable Not Applicable	Exception: Zones and systems intended to operate continuously or are inoperative when all other zones are inoperative.
6.4.3.3.4 [FI23] ³	Zone isolation devices and controls.	□Complies □Does Not □Not Observable □Not Applicable	Exception: Zones and systems intended to operate continuously or are inoperative when all other zones are inoperative.
6.4.3.7 [FI6] ³	When humidification and dehumidification are provided to a zone, simultaneous operation is prohibited.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
6.7.2.1 [FI7] ³	Furnished HVAC as-built drawings submitted within 90 days of system acceptance.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
6.7.2.2 [FI8] ³	Furnished O&M manuals for HVAC systems within 90 days of system acceptance.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.

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	SHEET KEYED NOTES
1	ROOFTOP UNIT ON SPRING ISOLATION CURB. REFER TO SPECIFICATION 23-0549. COORDINATE EXACT LOCATION WITH STRUCTURAL FRAMING PLAN.
2	30"x78" SUPPLY DUCT DOWN FROM RTU ON ROOF INTO SHELL SPACE BELOW. EXTEND A MINIMUM OF 2' BELOW ROOF DECK. OFFSET DUCT AS NECESSARY WITHIN CURB TO ALIGN WITH FRAMED OPENING. EXTERNALLY INSULATE WITH 1-1/2" FIBERGLASS INSULATION.
3	38"x74" RETURN DUCT DOWN FROM RTU ON ROOF INTO SHELL SPACE BELOW. EXTEND A MINIMUM OF 2' BELOW ROOF DECK. OFFSET DUCT AS NECESSARY WITHIN CURB TO ALIGN WITH FRAMED OPENING. EXTERNALLY INSULATE WITH 1-1/2" FIBERGLASS FOR NOISE ATTENUATION.
4	18"x16" EXHAUST DOWN FROM EF-1-1 INTO SHELL SPACE BELOW. EXTEND A MINIMUM OF 2' BELOW ROOF DECK. COORDINATE EXACT DROP WITH STRUCTURAL FRAMING.
5	12"X10" EXHAUST DOWN FROM EF-1-2 INTO SHELL SPACE BELOW MINIMUM 2' BELOW ROOF DECK. COORDINATE EXACT DROP WITH STRUCTURAL FRAMING.
6	16"X16" EXHAUST DOWN FROM EF-2-1 INTO SHELL SPACE BELOW MINIMUM 2' BELOW ROOF DECK. COORDINATE EXACT DROP WITH STRUCTURAL FRAMING.
7	12"X12" EXHAUST DOWN FROM EF-2-2 INTO SHELL SPACE BELOW MINIMUM 2' BELOW ROOF DECK. COORDINATE EXACT DROP WITH STRUCTURAL FRAMING.

 \bigcirc (7) <u>EF-2-2</u>

0 <u>EF-1-2</u> 5

GENERAL REQUIREMENTS FOR	
CONTROL SYSTEMS	

. ALL SETPOINTS, ALARM VALUES, POLLING QUANTITIES/SELECTIONS, TIME DURATIONS AND OTHER CONTROL PARAMETERS SHALL BE USER ADJUSTABLE VIA GRAPHIC DISPLAY AND NOT FROM THE PROGRAM OR THROUGH LAYERS OF SOFTWARE NAVIGATION.

- 2. ALL DAMPERS AND VALVES SHALL BE ABLE TO ACCEPT MANUAL OVERRIDE OF POSITION VIA GRAPHIC DISPLAY.
- 3. ALL POINTS LISTED IN THE SIGNAL LEGEND SHALL BE SHOWN ON GRAPHICAL DISPLAY.

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- 4. PROVIDE WEB BASED CONTROL SYSTEM WITH OWNER LOGIN AND 8 HOURS MINIMUM TRAINING. 5. IF ANY PIECE OF EQUIPMENT IS COMMANDED ON AND FAILS TO START, THE BAS SHALL SEND A FAILURE ALARM.
- IF THERE ARE MULTIPLE PIECES OF SAME EQUIPMENT TYPE, BAS SHALL START THE NEXT EQUIPMENT IN ROTATION.
- . ALL PID LOOPS ASSOCIATED WITH ANY OF THE SEQUENCES SHOULD BE TUNED AND ABLE TO ACHIEVE STEADY STATE IN 5 MINUTES OR LESS WITH MAXIMUM NOISE (OSCILLATION) OF 2% - 4%. DAMPERS WILL BE POSITIONED SUCH THAT 0% IS FULLY CLOSED AND 100% IS FULLY OPEN. SEE SPECIFIC SEQUENCES TO DETERMINE POSITION FEEDBACK REQUIREMENTS.
- 8. FAN VFDS WILL BE CONTROLLED SUCH THAT 0% = 0 HZ AND 100% = DESIGN FLOW. TAB SHALL DETERMINE, SET AND DOCUMENT FAN VFD SPEED AND HZ THAT CORRESPONDS TO 100% DESIGN FLOW.

UNIT OPERATIO
ECONOMIZER
HEATING
ZONE CONTROL
COMMUNICATIO
CONTROL FEAT

SAFETIES

FIRE ALARM CON (COORDINATE W

SEQUENCE OF OPERATION

FOR RTU-1-1 AND RTU-2-2

CONTROL OVERVIEW CONTROL SYSTEM SHALL BE FULLY-SELF CONTAINED. UNIT CONTROLLER SHALL CONNECT TO WIFI AND ALLOW ALL SETPOINTS TO BE ADJUSTED AT THE INTEGRAL SCREEN OR ON A BAS WEBSITE LOGIN PROVIDED TO THE OWNER.

UNIT SHALL OPERATE IN MULTI-ZONE MODE WITH AIR TERMINAL UNITS AS LISTED ON SCHEDULES SHEET. OCCUPIED MODE TO BE DETERMINED BY USER ADJUSTABLE SCHEDULE BASED ON OWNER PROVIDED OPERATING HOURS. PROVIDE WARM UP AND COOL DOWN

PER OPTIMAL START BASED ON ZONE TEMPERATURE AND OCCUPIED TEMPERATURE SETPOINT. PROVIDE COAST FUNCTION TO ALLOW OF 1 HOUR (ADJ) PRIOR TO THE TRANSITION FROM OCCUPIED TO UNOCCUPIED. OPERATIONAL COOLING AND HEATING SETPOINTS SHALL BEGIN TO INCREASE OR DECREASE LINEARLY AT 1 DEG F PER HOUR TOWARDS UNOCCUPIED COOLING AND HEATING SETPOINTS.

- SENSORS TO BE PROVIDED WITH UNIT: 1. DISCHARGE AIR TEMPERATURE
- 2. DISCHARGE AIR HUMIDITY **3. RETURN AIR TEMPERATURE** 4. RETURN AIR HUMIDITY

THE BAS.

- 5. OUTSIDE AIR TEMPERATURE 6. OUTSIDE AIR HUMIDITY
- 7. OUTSIDE AIR FLOW MEASURING STATION 8. MIXED AIR TEMPERATURE
- 9. SUPPLY DUCT STATIC PRESSURE 10. SUPPLY FAN PIEZOMETER AIRFLOW MEASURING
- 11. BUILDING PRESSURE (FOR EXHAUST FAN) 12. SMOKE DETECTOR
- 13. CARBON DIOXIDE (FOR DEMAND CONTROL VENTILATION, TO BE INSTALLED DURING TENANT BUILD OUT) 14. ZONE LEVEL TEMPERATURE SENSORS (TO BE INSTALLED DURING TENANT BUILD OUT)

SUPPLY FAN SHALL CIRCULATE AIR TO CONDITION THE TEMPERATURE OF THE SPACE AND PROVIDE VENTILATION. 1. SUPPLY FAN SHALL RUN CONTINUOUSLY DURING OCCUPIED MODE. 2. SUPPLY FAN SHALL RUN INTERMITTENTLY DURING UNOCCUPIED.

WHEN THE FAN ENERGIZES, THE OUTPUT FROM THE CONTROLLER SHALL MAINTAIN THE SUPPLY DUCT PRESSURE TO THE DUCT PRESSURE SETPOINT AS DETERMINED BY THE TEST AND BALANCE CONTRACTOR. 1. IF THE DUCT PRESSURE IS GREATER THAN THE DUCT PRESSURE SETPOINT, THE SUPPLY FAN OUTPUT SHALL DECREASE. 2. IF THE DUCT PRESSURE IS LESS THAN THE DUCT PRESSURE SETPOINT, THE SUPPLY FAN OUTPUT SHALL INCREASE. 3. IF THE DUCT PRESSURE REACHES THE DUCT PRESSURE SHUTDOWN SETPOINT, THE FAN AND OTHER OUTPUTS OF THE UNIT SHALL DE-ENERGIZE AND ALARM

DISCHARGE AIR TEMPERATURE SETPOINT SHALL RESET BASED ON OUTDOOR AIR TEMPERATURE. IN COOLING MODE, THE UNIT SHALL DISCHARGE AIR AT 55 DEG F WHEN OUTDOOR AIR IS 95 DEGREES AND LINEARLY ADJUST TO DISCHARGE AIR AT 65 DEG F WHEN OUTDOOR AIR IS AT 65 DEG F. THE UNIT SHALL STAGE/MODULATE COMPRESSORS TO MAINTAIN DISCHARGE AIR SETPOINT. IN HEATING MODE, THE UNIT SHALL DISCHARGE AIR AT 65 DEG F AT WHEN OUTDOOR AIR IS 25 DEGREES AND LINEARLY ADJUST TO DISCHARGE. IN HEATING MODE, THE UNIT SHALL STAGE/MODULATE GAS HEATING AS NECESSARY TO MAINTAIN DISCHARGE AIR SETPOINT.

ECONOMIZER AND POWERED RELIEF FAN SHALL PROVIDE FREE COOLING AT OUTDOOR AIR TEMPERATURES BELOW 65 DEG F DRY BULB. UNIT SHALL MODULATE ECONOMIZER DAMPER, RETURN DAMPER AND RELIEF FAN AS NECESSARY TO SATISFY ALL ZONE COOLING DEMANDS. ECONOMIZER SHALL BE DE-ENERGIZED AT OUTDOOR AIR TEMPERATURES OF 55 DEG F AND LESS. IF THE ECONOMIZER IS ENERGIZED WITH THE DAMPER OPEN TO 100% AND ZONES ARE NOT SATISFIED, UNIT SHALL STAGE/MODULATE COMPRESSORS TO MAINTAIN ZONE COOLING SETPOINT.

DEMAND CONTROL VENTILATION SHALL BE PROGRAMMED DURING THE TENANT BUILD OUT. THE UNIT CONTROLLER SHALL MONITOR CO2 LEVELS IN ZONES WITH CO2 SENSORS. IF THE CO2 LEVEL RISES ABOVE THE CO2 SETPOINT, THE UNIT SHALL TEMPORARILY INCREASE THE MINIMUM OA DAMPER POSITION TO INCREASE VENTILATION. IF THE CO2 LEVEL DROPS BELOW THE CO2 SETPOINT, THE UNIT SHALL DECREASE THE MINIMUM OA DAMPER POSITION TO MINIMIZE VENTILATION. REFER TO TENANT CONTROLS ON M7.2 FOR CO2 SETPOINTS.

UNIT CONTROLLER SHALL MONITOR DIFFERENTIAL PRESSURE ACROSS FILTER BANKS AND INITIATE AN ALARM IF PRESSURE DROP EXCEEDS HIGH LIMIT SETPOINTS. ALL FIRE ALARM CONTROLS SHALL BE INSTALLED DURING THE TENANT BUILD OUT.

		HVAC C	(
SEE SHEET M0.1 FOR G	ENERAL REQUIREMENTS FOR CONTROL SYSTEMS		_
TAG	DEVICE	ACTION	
PHYSICAL POINTS			
CR-EF	CURRENT RELAY - EXHAUST FAN	В	Γ
SS-EF	START/STOP - EXHAUST FAN	В	

DX AC UNIT CONTROLS SCHEDULE (27-50 TONS)

TO MAINTAIN DISCHARGE AIR TEMP SETPOINT
I OAT < DISCHARGE AIR TEMP SETPOINT, MOD
RETURN AIR TEMP SETPOINT (SINGLE ZONE) (
S AT VAV BOXES; SEE VAV BOX CONTROL.
USES MODULATING HOT GAS IN REHEAT POS
CATION EQUIPMENT.
CATION EQUIPMENT.
CATION EQUIPMENT.
CTIVATION; PROVIDE ALARM NOTIFICATION TH
CATION EQUIPMENT.
GNAL BY FIRE ALARM.
S BETWEEN UNIT AND DETECTOR.
S BETWEEN UNIT AND DETECTOR.
GN/ IS E

NTROL SIGNAL LEGEND - FANS						
			DIRECT CONTROL BY FIRE	NOTES		
FAIL PUSITION	BAS VALUE	BAS ALARM		NOTES		
	ON/OFF	MOTOR FAILURE		ALARM IF MOTOR STATUS NOT EQUAL TO COMMAND		

FAN INTERLOCK SCHEDULE			
FAN ID	FAN LOCATION	AREA SERVED	INTERLOCKED WITH AHU
EF-1-1	ROOF	MOB NORTH EAST	RTU-1-1
EF-1-2	ROOF	MOB SOUTH EAST	RTU-1-1

FAN RUNS VARIABLE SPEED TO MAINTAIN SUPPLY DUCT STATIC PRESSURE SETPOINT; SP SENSOR BY A/C MFR.

LATES RETURN, RELIEF AND OUTSIDE AIR DAMPERS TO MAINTAIN DISCHARGE AIR TEMP SETPOINT, MODULATES SUPPLY AND RELIEF FAN SPEEDS TO MAINTAIN BLDG PRESSURE. R DISCHARGE AIR TEMP SETPOINT (MULTIZONE). ON TO MAINTAIN SPACE HUMIDITY MAX SETPOINT; SPACE HUMIDITY SENSOR BY A/C MFR. U COMMUNICATION EQUIPMENT

EXHAUST FAN INTERLOCKED WITH AIR HANDLING UNIT

		NOT ALL SYMBOLS	MAY BE USED			
SYMBOL	ABB.	DESCRIPTION	SYME	30L	ABB.	DESCRIPTION
	CW	DOMESTIC COLD WATER	+5			PIPE TURN DOWN
CW {CW}	CW	DOM. COLD WATER (BELOW)	+0	O		PIPE TURN UP
W (W	WASTE (BELOW)	•	<u>ř</u>		BALL VALVE
F F	F	FIRE MAIN (UNDERGROUND)	⊼	<u> </u>		GATE VALVE
— G — G G	G	NATURAL GAS	N	<u>_</u>		CHECK VALVE
— F — F — F	F	FIRE MAIN (ABOVE)	 Ø			BALANCING VALVE
			bi bi			BUTTERFLY VALVE
			Å	Å	PRV	PRESSURE REGULATING VALVE
			X			SOLENOID VALVE
SW-X (LIP/DN)	:	STORM WATER STACK ID	5	母		STRAINER
X" X S.F. X GPM		SIZE SYSTEM-STACK ID (UP/DN) SQUARE FEET GPM	D	4		REDUCER
	(OVERFLOW DRAIN STACK ID	÷	<u></u>		PIPE GUIDE
X X S.F. X GPM		SIZE SYSTEM-STACK ID (UP/DN) SQUARE FEET GPM		X		ANCHOR
	-	FIRE RISER ID	Ŷ	Ŷ		PRESSURE GAUGE
[X"[F-X (UP/DN)]		SIZE SYSTEM-RISER ID (UP/DN)		Ψ		PRESSURE SWITCH WITH DEMANE CHECK FITTING
		ACID WASTE/VENT STACK ID	Ŷ	ļ		THERMOMETER
[X*] AW-X (UP/DN)] [X*] AV-X (UP/DN)]		SIZE SYSTEM-STACK ID (UP/DN)	C	ŀ		CAP/PLUG
		SANITARY WASTE STACK ID		Ţ.	со	CLEANOUT (ABOVE CEILING)
X" X-DFU, X GPM		SIZE SYSTEM-STACK ID (UP/DN) DRAINAGE FIXTURE UNITS GPM				UNION
0	(CEILING SPRINKLER - UPRIGHT	<u>k</u>	⊨Ūj	PR	PRESSURE RELIEF VALVE
•	(CEILING SPRINKLER - CONCEALED	.			SHOCK ARRESTOR
۲		CEILING SPRINKLER - RECESSED PENDANT	+			HOSE BIBB / WALL HYDRANT
4	:	SIDEWALL SPRINKLER	O ^{FCO}		FCO	FLOOR CLEAN OUT
٩		SIDEWALL EXTENDED COVERAGE SPRINKLER			WCO	WALL CLEAN OUT
•		WALL HUNG FIRE EXTINGUISHER			FD	FLOOR DRAIN
		FIRE EXTINGUISHER CABINET			VTR	VENT THRU ROOF
ц\$		FIRE DEPARTMENT CONNECTION			I.E.	INVERT ELEVATION
WC		WATER COLUMN			AFF	ABOVE FINISHED FLOOR
ECO/GCO		EXTERIOR CLEANOUT/GRADE CLEANOUT			DCVA	DOUBLE CHECK VALVE ASSEMBLY
					DDCVA	DOUBLE DETECTOR CHECK VALVE ASSEMBLY

F	PIPING MATERIALS SCHEDULE
GENERAL NOTES: 1. SEE SPECIFICATIONS FOR ADDITIONAL REQU	JIREMENTS AND ACCESSORIES.
PLUMBING SYSTEM	PLUMBING MATERIAL DESCRIPTION
SANITARY DRAIN PIPING	STANDARD WEIGHT CAST IRON PIPE, BELL & SPIGOT JOINTS (BELOW SLAB)
SANITARY DRAIN PIPING	STANDARD WEIGHT CAST IRON PIPE, WITH NO HUB JOINTS (ABOVE SLAB)
VENT PIPING	STANDARD WEIGHT CAST IRON PIPE, WITH NO HUB JOINTS (ABOVE SLAB)
DOMESTIC WATER PIPING (ABOVE SLAB)	TYPE "L". COPPER TUBING, WITH WROUGHT COPPER FITTINGS (ASTM B88).
DOMESTIC WATER PIPING (BELOW SLAB)	TYPE "K". COPPER TUBING, WITH BRAZED WROUGHT COPPER FITTINGS (ASTM B88).
FIRE PROTECTION PIPING	SCHEDULE 40 BLACK STEEL PIPE, WITH CAST IRON FITTINGS (PIPE SIZES 2" AND SMALLER)
FIRE PROTECTION PIPING	SCHEDULE 40 BLACK STEEL PIPE, WITH CUT GROOVE FITTINGS (PIPE SIZES 2 1/2" AND LARGER) SCHEDULE 10 BLACK STEEL PIPE, WITH ROLL GROOVE FITTINGS (PIPE SIZES 4" AND LARGER)

1 PLUMBING PLAN - SUB SURFACE DRAINAGE SYSTEM - SHELL

SHEET GENERAL NOTES

A. SEE SHEET P0.0 FOR GENERAL NOTES, LEGENDS AND INDEX. B. SEE ARCHITECTURAL FOR EXACT LIMIT OF ALTERNATE 1.

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- 5. 6" WASTE STUB UP 12" AFF. AND CAP.

- 8. SEE CIVIL ENGINEERING SITE PLAN FOR CONTINUATION.

-				
RECEPTACLES				
Θ_{XX}^{11}	DUPLEX RECEPTACLE - STANDARD MOUNTING HEIGHT11 = CIRCUIT NUMBER (TYPICAL) XX= RECEPTACLE DESIGNATOR (TYPICAL)			
+	DUPLEX RECEPTACLE - ABOVE COUNTER OR SPECIAL MOUNTING HEIGHT			
₽	DOUBLE-DUPLEX RECEPTACLE			
+	DOUBLE-DUPLEX RECEPTACLE - ABOVE COUNTER OR SPECIAL MOUNTING HEIGHT			
∉	DUPLEX GFCI RECEPTACLE			
—	DUPLEX GFCI RECEPTACLE - ABOVE COUNTER OR SPECIAL MOUNTING HEIGHT			
₽	SWITCHED DUPLEX RECEPTACLE - STANDARD MOUNTING HEIGHT			
e	DUPLEX RECEPTACLE, BACKUP POWER - STANDARD MOUNTING HEIGHT			
9	DUPLEX RECEPTACLE, BACKUP POWER - ABOVE COUNTER OR SPECIAL MOUNTING HEIGHT			
\$ =	DOUBLE-DUPLEX RECEPTACLE, BACKUP POWER - STANDARD MOUNTING HEIGHT			
+	DOUBLE-DUPLEX RECEPTACLE, BACKUP POWER - ABOVE COUNTER OR SPECIAL MOUNTING HEIGHT			
₽	DUPLEX GFCI RECEPTACLE, BACKUP POWER - STANDARD MOUNTING HEIGHT			
¢-	DUPLEX GFCI RECEPTACLE, BACKUP POWER - ABOVE COUNTER OR SPECIAL MOUNTING HEIGHT			
¢	SPECIAL CONFIGURATION RECEPTACLE (TYPE AS NOTED)			
ଡ଼	SPECIAL CONFIGURATION RECEPTACLE, BACKUP POWER (TYPE AS NOTED)			
() XX	FLOOR BOX / POKE-THRU XX - DEVICE TYPE			
	FLOOR BOX / POKE-THRU, BACKUP POWER XX - DEVICE TYPE			
	SURFACE WIREWAY OR RACEWAY WITH RECEPTACLES AS NOTED			

	LIGHTING
<u>XX</u> 1	LIGHTING FIXTURE ANNOTATIONS (LOCATION OF DESIGNATORS MAY VARY)
[X]	FIXTURE TYPE: XX CIRCUIT NUMBER: 1 CONTROL DESIGNATION: [x]
	SURFACE, SUSPENDED, OR RECESSED LUMINAIRES (TYPE DETERMINES MOUNTING)
0	RECESSED OR SURFACE DOWNLIGHT LUMINAIRE
÷	PENDANT MOUNTED LUMINAIRE
\diamond	WALLWASH LUMINAIRE
<u> </u>	WALL MOUNTED LUMINAIRES
	NO SHADING INDICATES CONNECTION TO NORMAL BRANCH CIRCUIT
	HALF SHADING INDICATES CONNECTION TO OPTIONAL STANDBY BRANCH CIRCUIT
	SHADING INDICATES CONNECTION TO LIFE SAFETY OR EMERGENCY BRANCH CIRCUIT
• •	ILLUMINATED EXIT SIGNS, PROVIDE DIRECTIONAL ARROWS AND MOUNTING AS INDICATED ON PLANS
¢	BATTERY POWERED EMERGENCY LIGHT
$\nabla \nabla \nabla$	TRACK LIGHTING
•	POLE MOUNTED SITE LIGHTING LUMINAIRES
\triangleleft	GROUND OR POLE MOUNTED FLOODLIGHT
⊕ €€	FAA SPECIALTY LIGHTING (TYPE DETERMINES MOUNTING)

		SWITCHES AND LIGHTING CONTROLS
NORMAL	RED	
S	\$	SINGLE POLE SWITCH
S2	\$2	DOUBLE POLE, SINGLE THROW SWITCH
S₃	\$ ₃	THREE-WAY SWITCH
S4	\$4	FOUR-WAY SWITCH
Sк	\$к	SINGLE POLE SWITCH - KEY OPERATED
Sd	\$□	DIMMER SWITCH
Slv	\$lv	LOW VOLTAGE SWITCH
Sp	\$p	SINGLE POLE SWITCH WITH PILOT LIGHT
Soc	\$oc	OCCUPANCY SENSOR SWITCH, WALL MOUNT
Svd	\$ _{VD}	VACANCY DIMMER
Svc	\$vc	VACANCY SENSOR SWITCH
Sм	\$м	MOTOR RATED SWITCH WITH THERMAL OVERLOAD
Sт	\$т	TIMER SWITCH
Sv	\$∨	VARIABLE INTENSITY SWITCH
Sj	\$J	JOG SWITCH
(PC)	H€)	PHOTOCELL - CEILING / WALL MOUNT
Û Û	Н <u></u>	OCCUPANCY SENSOR - CEILING / WALL MOUNT
(DS)	୍ଟେ)	DAYLIGHT SENSOR - CEILING / WALL MOUNT
(VC)	H(Ŝ)	VACANCY SENSOR - CEILING / WALL MOUNT
×	\sim	LIGHTING CONTROL DESIGNATION - REFER TO LIGHTING CONTROL SCHEDULE

r	
	CIRCUITS AND RACEWAYS
	CIRCUIT OR RACEWAY CONCEALED OR EXPOSED
	CIRCUIT OR RACEWAY BELOW OR IN FLOOR SLAB OR BELOW GRADE
0	CONDUIT OR RACEWAY TURNING UP
•	CONDUIT OR RACEWAY TURNING DOWN
	CAPPED CONDUIT OR RACEWAY
\frown	CIRCUIT OR CONDUIT CONTINUATION
	HOMERUN TO PANELBOARD - REFER TO SPECIFICATIONS FOR MINIMUM CONDUIT SIZES.

	FIRE ALARM
\boxtimes	FIRE ALARM VISUAL DEVICE - STROBE ONLY
8	FIRE ALARM CEILING MOUNT VISUAL DEVICE - STROBE ONLY
þ	FIRE ALARM AUDIO DEVICE
S	FIRE ALARM AUDIO DEVICE WITH STROBE
$\Box_{\mathbf{X}}$	FIRE ALARM HORN
\boxtimes	FIRE ALARM HORN WITH STROBE
\bigotimes	FIRE ALARM CEILING MOUNT HORN WITH STROBE
(©)^	FIRE ALARM CEILING MOUNT AUDIO DEVICE WITH STROBE
FS	FIRE ALARM CEILING MOUNT SPEAKER
F	FIRE ALARM MANUAL PULL STATION
(S) ^{xx}	FIRE ALARM SMOKE DETECTOR NO SUBSCRIPT= IONIZATION TYPE; P= PHOTOELECTRIC; SS= SINGLE STATION SMOKE ALARM
H	FIRE ALARM HEAT DETECTOR SUBSCRIPT AS FOLLOWS: R=RATE OF RISE; T=FIXED TEMPERATURE
SD	FIRE ALARM DUCT SMOKE DETECTOR
\bigcirc	GAS DETECTOR
\bigotimes	FLAME DETECTOR
H®	BEAM DETECTOR SUBSCRIPT AS FOLLOWS: T=TRANSMITTER; R=RECEIVER
	FIRE ALARM CONTROL MODULE
	FIRE ALARM MONITOR MODULE
	FIRE ALARM RELAY MODULE
FS	FLOW SWITCH
TS	TAMPER SWITCH
F	FIREFIGHTER'S TELEPHONE JACK
	MAGNETIC DOOR HOLDER
RI	SMOKE DETECTOR REMOTE INDICATOR / TEST SWITCH
[FACU]	FIRE ALARM CONTROL UNIT
[FAAP]	FIRE ALARM ANNUNCIATOR PANEL
FEP	FIRE ALARM EXTENDER PANEL
[SCPP]	SMOKE CONTROL AND PRESSURE PANEL

	ABBREVIA
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
CLG	CEILING
CR	CONTROLLED RECEPTACLE
CS	CONTROLLED RECEPTACLE - SPLIT WIRED
DC	DIGITAL CLOCK
E	EMERGENCY POWER
EPO	EMERGENCY POWER OFF
ETR	EXISTING TO REMAIN
FBO	FURNISHED BY OTHERS
FLR	FLOOR MOUNTED
FSD	FIRE/SMOKE DAMPER
GFCI	GROUND FAULT CIRCUIT INTURRUPTER
IG	ISOLATED GROUND
NEX	REMOVE EXISTING ELECTRICAL DEVICE AND II BOX. REFER TO NEW FLOOR PLANS FOR NEW NEW COVERPLATE
RD	NEW LOCATION OF RELOCATED DEVICE
REX	REMOVE EXISTING ELECTRICAL DEVICE ALON
RR	REMOVE AND RELOCATE EXISTING ELECTRICA
TR	TAMPER RESISTANT
VFD	VARIABLE FREQUENCY DRIVE
WP	WEATHERPROOF

	MISCELLANEOUS
	NON-FUSED SAFETY SWITCH, SIZE AS NOTED (AMP RATING/POLES)
4	FUSED/CIRCUIT BREAKER SAFETY SWITCH, SIZE AS NOTED (AMP RATING/POLES/FUSE SIZE)
Ŕ	COMBINATION MOTOR STARTER
	FACTORY WIRED CONTROLLER OR EQUIPMENT
/X/	MOTOR CONNECTION
	DUCT HEATER CONNECTION
(J)	JUNCTION BOX - WALL MOUNTED UNLESS OTHERWISE NOTED
	PANELBOARD
RX	X-RAY ISOLATION PANEL LINE ISOLATION MONITOR
(R)	ISOLATION PANEL LINE ISOLATION MONITOR
C	CLOCK, SINGLE FACE - CLOCK AND RECEPTACLE AS SPECIFIED
(<u>C</u> 2)	CLOCK, DOUBLE FACE - CLOCK AND RECEPTACLE AS SPECIFIED
C _{et}	ELAPSED TIMER - DIGITAL TYPE
Ē	ELAPSED TIMER CONTROL - DIGITAL TYPE
AAP	MEDICAL GAS AREA ALARM PANEL
BAS	BUILDING AUTOMATION SYSTEM CONTROL PANEL
CAP	MEDICAL GAS COMPRESSED AIR CONTROL PANEL
GRA	GENERATOR REMOTE ANNUNCIATOR PANEL
MAP	MEDICAL GAS MASTER ALARM PANEL
NCP	MEDICAL GAS NITROGEN CONTROL PANEL
[SP]	SECURITY SYSTEM CONTROL PANEL
DC	DOOR SWITCH MOUNTED IN DOOR JAMB
DR	DOOR RELEASE PUSH BUTTON
	CARD READER
[KP	ELECTRONIC KEY PAD
	PUSH BUTTON STATION
VFD	VARIABLE FREQUENCY DRIVE
Ρ	PUSH PLATE (DOOR OPERATOR)
(J) <u>X-###</u>	SPECIALTY/MECHANICAL EQUIPMENT TAG
$\bigtriangledown \Diamond \oslash \oslash$	COMMUNICATIONS OUTLET - STANDARD MOUNTING HEIGHT, SPECIAL MOUNTING HEIGHT, CEILING
▼	WALL PHONE
ŢV	CATV OUTLET

	SHEET IND
NUMBER	
E0.1	ELECTRICAL LEGENDS, INDEX, AND
E0.2	ELECTRICAL SCHEDULES - SHELL
ES1.1	SITE PLAN - SHELL
E1.1	ELECTRICAL PLAN - SHELL
E5.1	ELECTRICAL DETAILS - SHELL
E6.1	ONE LINE DIAGRAM - SHELL

IATIONS
D INSTALL NEW ELECTRICAL DEVICE IN EXISTING OUTLET EW DEVICE TYPE AND WIRING REQUIREMENTS. PROVIDE
ONG WITH RELATED CONDUIT AND WIRING, UON
ICAL DEVICE AS INDICATED OR AS NOTED ON DRAWINGS

GENERAL NOTES

ELECTRICAL GENERAL NOTES:

- A. WORK SHALL CONFORM TO LOCAL CODES AND ORDINANCES AS WELL AS APPLICABLE INDUSTRY STANDARDS. EQUIPMENT SHALL BE LISTED/LABELED BY NATIONALLY RECOGNIZED TESTING AGENCY FOR THE INTENDED USE. B. COORDINATE FINAL LOCATIONS AND INSTALLATION REQUIREMENTS OF LIGHT FIXTURES, EQUIPMENT AND DEVICES WITH ARCHITECTURAL DRAWINGS, EXISTING CONDITIONS, AND OTHER TRADES PRIOR TO ROUGH-IN. PROVIDE
- NECESSARY ACCESSORIES FOR COMPLETE AND PROPER OPERATION IN ACCORDANCE WITH MANUFACTURER INSTRUCTIONS. C. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC IN NATURE AND REPRESENT GENERAL SCOPE OF WORK. IT IS NOT THE INTENT OF THESE DRAWINGS TO SHOW EVERY ITEM/DETAIL REQUIRED FOR COMPLETED INSTALLATION.
- D. NOTES ON FLOOR PLANS AND SITE PLAN APPLY ONLY TO THE WORK SCOPE WITHIN THE BOUNDARY OF THE SHEET ON WHICH THEY APPEAR, UNLESS INDICATED OTHERWISE.
- E. WHERE EQUIPMENT GROUND BUS BARS ARE SPECIFIED OR INDICATED ON DRAWINGS, INSTALL IN LOCATION WHICH WILL ALLOW ADEQUATE ACCESS FOR FUTURE CONNECTIONS.
- . PROVIDE FIRE PROOFING AT PENETRATIONS THROUGH RATED WALLS TO MEET OR EXCEED WALL RATING USING UL LISTED PRODUCTS IN ACCORDANCE WITH MANUFACTURE INSTRUCTION/UL PENETRATION DETAILS.
- G. RACEWAYS SHALL BE CONCEALED FROM VIEW WHEREVER POSSIBLE. WHERE EXPOSED, RACEWAYS MUST BE INSTALLED IN NEAT AND WORKMANLIKE MANNER AND PARALLEL/PERPENDICULAR TO WALLS IN ASSOCIATED SPACE.
- H. NUMBER OF BENDS SHALL NOT EXCEED THE EQUIVALENT OF FOUR 90 DEGREE BENDS (360 DEGREES TOTAL) BETWEEN PULL POINTS IN ACCORDANCE WITH NEC ARTICLES 342, 344, 358. WHERE REQUIRED, PULL POINTS SHALL BE SIZED IN ACCORDANCE WITH NEC ARTICLE 314.
- CONDUIT ROUTING, AND WIRE COUNTS ARE NOT INDICATED ON FLOOR PLANS. CONTRACTOR TO PROVIDE RACEWAYS IN ACCORDANCE WITH SPECIFICATIONS AND WIRE COUNTS AS REQUIRED TO ACHIEVE CIRCUITING AND CONTROL OPERATION AS INDICATED.
- INSTALL ELECTRICAL EQUIPMENT SUCH THAT MANUFACTURER'S VENTILATION REQUIREMENTS AND NEC REQUIRED CLEARANCES ARE MAINTAINED.
- K. PROVIDE PULL LINE OR TAPE IN EACH EMPTY CONDUIT LEFT FOR FUTURE USE OR FOR OTHER DISCIPLINE USE. PROVIDE GFCI PROTECTION FOR OUTLETS WHERE INDICATED AND WHERE REQUIRED BY CODE. WHERE DEVICES ARE MOUNTED BEHIND FIXED EQUIPMENT, GFCI BREAKERS SHALL BE PROVIDED WHERE COMMERCIALLY AVAILABLE. WHERE BOTH GFCI PROTECTION AND SHUNT TRIP FUNCTION ARE REQUIRED, OR, WHERE GFCI BREAKERS ARE NOT AVAILABLE, PROVIDE IN-LINE GFCI MODULE IN FLUSH OUTLET BOX OR FLUSH MOUNTED HINGED ENCLOSURE MOUNTED ADJACENT TO PANEL CONTAINING SHUNT TRIP BREAKER FOR THE ASSOCIATED
- CIRCUIT/OUTLET. LABEL ASSOCIATED RECEPTACLES AS 'GROUND FAULT PROTECTED'. M. WHERE WIRE AND CONDUITS SIZES ARE SHOWN ON ONE PART OF A FEEDER OR BRANCH CIRCUIT, USE THE SAME WIRE AND RACEWAY FOR THE ENTIRE FEEDER OR BRANCH CIRCUIT UNLESS OTHERWISE NOTED ON THE DRAWINGS.

SITE GENERAL NOTES:

- A. CAP AND RECORD LOCATIONS OF CONDUITS STUBBED OUT UNDERGROUND AND LEFT FOR FUTURE USE. B. MINIMUM CONDUIT SIZE FOR EXTERIOR CIRCUITS SHALL BE 1". MINIMUM CONDUCTOR SIZE FOR EXTERIOR
- CIRCUITS SHALL BE #10 AWG. . PROVIDE SPLICE/PULL BOXES WHERE REQUIRED TO SERVE SITE LIGHTING FIXTURES. LOCATE IN LANDSCAPE/PLANTER AREAS. BOXES SHALL BE MINIMUM 12"X12"X12" WITH OPEN BOTTOM AND COVER WITH IDENTIFICATION 'ELECTRICAL'. PROVIDE CLOSED BOTTOM WHERE OPEN BOTTOM IS DISALLOWED BY LOCAL AHJ.
- D. COORDINATE ELECTRICAL SERVICE ENTRANCE DUCTBANK WITH OTHER SITE SERVICES AND MAINTAIN SEPARATIONS FROM OTHER SERVICES PER NESC REQUIREMENTS.

E. COORDINATE SITE POLE LOCATIONS WITH CIVIL DRAWINGS.

EX - SHELL	
SHEET NAME	
IOTES - SHELL	

GENERAL NOT	TES:	
1. REFER TO N CHARACTERS	MOTOR CONNECTIO (E.G. "AA") ARE US	DN S ED
TAG	DESCRIPTION	,
TAG EF-1-1	DESCRIPTION EXHAUST FAN	,
TAG EF-1-1 EF-1-2	DESCRIPTION EXHAUST FAN EXHAUST FAN	,
TAG EF-1-1 EF-1-2 RTU-1-1	DESCRIPTIONEXHAUST FANEXHAUST FANROOF TOP UNIT	,
TAG EF-1-1 EF-1-2 RTU-1-1 RTU-1-2	DESCRIPTIONEXHAUST FANEXHAUST FANROOF TOP UNITROOF TOP UNIT	
TAG EF-1-1 EF-1-2 RTU-1-1 RTU-1-2 EF-2-2	DESCRIPTIONEXHAUST FANEXHAUST FANROOF TOP UNITROOF TOP UNITEXHAUST FAN	
TAG EF-1-1 EF-1-2 RTU-1-1 RTU-1-2 EF-2-2 EF-2-1	DESCRIPTIONEXHAUST FANEXHAUST FANROOF TOP UNITROOF TOP UNITEXHAUST FANEXHAUST FAN	

		LUM	INAI	RE SC	HEC)UL	E				
 GENERAL NOTES: 1. REFER TO AND COORDINATE WITH ARCHITECTURAL REFLECTED CEILING PLANS AND ELEVATIONS FOR FINAL FIXTURE LOCATIONS, CEILING TYPES, MOUNTING TYPES, ETC. PROVIDE REQUIRED MOUNTING KITS (I.E. FLANGE KITS, FLANGELESS FRAMES, ETC.) AS REQUIRED FOR CICLING COORDINATE ALL FIXTURE FINISHES WITH ARCHITECT PRIOR TO ORDERING. 2. WHERE FIXTURES EQUIPPED WITH OTHER FIXTURES. 3. WHERE FIXTURES EQUIPPED WITH BATTERY PACKS, OR BUG-EYE UNITS, ARE INDICATED. THE BATTERY UNIT SHALL BE CONNECTED TO THE UNSWITCHED PORTION OF THE CIRCUIT. 4. CONFIRM LED DRIVER DIMMING COMPATIBILITY. (E. 6. 107). ELV, ETC., FOR ALL FIXTURES PRIOR TO ORDERING. REFER TO LIGHTING FLANS, LIGHTING CONTROLS SPECIFICATIONS, AND LIGHTING CONTROL DIAGRAMS FOR ADDITIONAL INFORMATION. 5. REFER TO ELECTRICAL SITE PLANS FOR QUANTITY AND DRIENTATION OF FIXTURE HEADS FOR EACH POLE LOCATION. PROVIDE CORRESPONDING MOUNTING ARMS AND ADAPTERS AS NEEDED. 6. WHERE SUSPENDED ON PENDANT MOUNTED FIXTURES ARE DECIFIED, REFER TO ARCHITECT AND OWNER PRIOR TO ORDERING. 6. COORDINATE MILED COLOR TEMPERATURE (WHERE APPLICABLE) FOR ALL LUMINARE TYPES WITH ARCHITECT AND OWNER PRIOR TO ORDERING. 9. PROVIDE NEUTRAL CONDUCTOR TO WALL MOUNTED LINE SARE SWITCHED PEND. 9. PROVIDE NEUTRAL CONDUCTOR TO WALL MOUNTED LINE SARE SWITCHED PEND. 9. PROVIDE NEUTRAL CONDUCTOR TO WALL MOUNTED LINE VOLTAGE SWITCHER DON THE FRAME AND CENTERED ON THE DOOR, UNLESS INDICATED OTHERWISE. WHERE PENDANT MOUNTING IS REQUIRED DUE TO EXPOSED STRUCTURE OR HIGH CEILING, MOUNTED LINE SARE SUTCHES DIMMERS AS REQUIRED ON THE DOOR, UNLESS INDICATED OTHERWISE. WHERE PENDANT MOUNTING IS REQUIRED DUE TO EXPOSED STRUCTURE OR HIGH CEILING, MOUNT FIXTURE SICK THAT BOTTOM OF FIXTURE IS 12' AFF. 											
TYPE	DESCRIPTION	MANUFACTURER/SERIES	LAMPS	MIN. LUMENS	COLOR	INPUT WATTS	VOLTAG E	BALLAST/DRIVER	MOUNTING	REMARKS	
SLP1	21-5/8"x21-3/4"x3-15/16" DEEP LUMINAIRE WITH ALUMINUM HOUSING, 7" ARM, TYPE IV FORWARD THROW DISTRIBUTION, SPILL LIGHT OPTICAL CONTROL, 600mA, INTEGRAL PHOTOCELL, AND BRONZE FINISH. POLE SHALL BE 30' IN HEIGHT, ROUND TAPERED ALUMINUM WITH MATCHING FINISH. LUMINAIRE AVAILABLE WITH INTEGRAL PHOTOCELL, AND INTEGRAL DIMMING FOR ASHRAE COMPLIANCE.	MC-GRAW EDISON GLEON-SA3-A-740-2-T4FT-BZ-AHD245-BPC LITHONIA DSX2.LED BEACON VPL	LED	14312	4000K	96	208	0-10V	POLE		
SLP2	21-5/8"x21-3/4"x3-15/16" DEEP LUMINAIRE WITH ALUMINUM HOUSING, (2) HEADS, 7" ARM, TYPE IV FORWARD THROW DISTRIBUTION, SPILL LIGHT OPTICAL CONTROL, 600mA, INTEGRAL PHOTOCELL, AND BRONZE FINISH. POLE SHALL BE 30' IN HEIGHT, ROUND TAPERED ALUMINUM WITH MATCHING FINISH. LUMINAIRE AVAILABLE WITH INTEGRAL PHOTOCELL, AND INTEGRAL DIMMING FOR ASHRAE COMPLIANCE.	MC-GRAW EDISON GLEON-SA3-A-740-2-T4FT-BZ-AHD245-BPC LITHONIA DSX2.LED BEACON VPL	LED	286241	4000K	192	208	0-10V	POLE		

MECHANICAL EQUIPMENT CONNECTION SCHEDULE

REMARKS:

N SCHEDULE IN THIS DRAWING SET WHEN ALPHA ED IN DISCONNECT, WIRE SIZE, AND CONDUIT SIZE COLUMNS. NONE. CSD = COMBINATION MOTOR STARTER/DISCONNECT SWITCH DC = DIRECT CONNECTION - EQUIPMENT PROVIDED WITH INTEGRAL MEANS OF DISCONNECT,

DISCONNECT, PROVIDE JUNCTION BOX AND SEALTITE CONNECTION DS = NON-FUSED DISCONNECT SWITCH ECM = ELECTRONICALLY COMMUTATED MOTOR FDS = FUSED DISCONNECT SWITCH MMS = MANUAL MOTOR STARTER WITH THERMAL OVERLOAD VFD = VARIABLE FREQUENCY DRIVE FURNISHED BY MECHANICAL CONTRACTOR, INSTALLED INSTALLED

AND WIRED BY ELECTRICAL CONTRACTOR TG = MOTOR RATED TOGGLE SWITCH...

		ЦВ	EL A		CVT]	DISCONNECT		DEMARKS
	FRASE	п.г.	FLA	PANEL	CKI.	DISC. TYPE	AMP RATING / FUSE SIZE	WIRE SIZE	REWIARKS
120 V	1		9.8 A	MECH-A	1	ECM		2#12, 1#12GND, 3/4"C	LOCATED ON ROOF
120 V	1		5.8 A	MECH-A	3	ECM		2#12, 1#12GND, 3/4"C	LOCATED ON ROOF
208 V	3		256 A	MSB	1	DC		3#500, 1#2GND, 4"C	LOCATED ON ROOF
208 V	3		256 A	MSB	2	DC		3#500, 1#2GND, 4"C	LOCATED ON ROOF
120 V	1		9.8 A	MECH-A	5	ECM		2#12, 1#12GND, 3/4"C	LOCATED ON ROOF
120 V	1		5.8 A	MECH-A	7	ECM		2#12, 1#12GND, 3/4"C	LOCATED ON ROOF
120 V	1		10 A	MECH-A	82	DS	30AS NEMA 3R	2#10. 1#10GND.1"C	LOCATED IN FIRE VAULT

ABBREVIATIONS:

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1 ELECTRICAL PLAN - SHELL

RTU-1-2

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SHEET KEYED NOTES \otimes

1. EQUIPMENT/DEVICE LOCATED ON ROOF.

PROVIDE 3/4" SLEEVE FOR EXTERIOR WALL MOUNTED FIXTURES AND CANOPY LIGHTS. LIGHTS SHALL BE INSTALLED IN BUILDOUT PACKAGE.

	Name: MECH-A
	Enclosure: NEMA 1
	Notes:
СКТ	Circuit Description
1	EF-1-1
3	EF-1-2
5	EF-2-1
7	EF-2-2
9	
11	SPARE
13	
15	
17	SPARE
19	
21	SPARE
23	SPARE
25	
27	SPARE
29	
31	SPARE
33	
35	SPARE
37	
20	
39	SDADE
41	SPARE
43	
45	SPARE
4/	
49	
51	SPARE
53	
55	
57	SPARE
59	
61	SDADE
63	SFARE
65	SPARE
67	SPARE
69	SPARE
71	SPARE
73	SPARE
75	SPARE
77	SPARE
79	SPARE
81	SPARE
83	SPARE
	· · · · -
	Classifiestian
Load	Classification
HVAC	;
Rec	
MISC	;
Notes	5:

	Location: Supply From: MSB Mounting: SURFACE Enclosure: NEMA 1 Notes:				Feed	P I Thru	Volts: hases: Wires: Lugs:	120/2 3 4 No	208 Wy	e			A.I.C. F Mains Bus F MCB F	Rating: 42 Type: ML Rating: 22 Rating:	kA .O 5 A	
СКТ	Circuit Description	Notes	Trip	Poles	Α(VA)	В (VA)	C (VA)	Poles	Trip	Notes	Circu	it Description	СКІ
1			20	2	768	0					1	20		SPARE		2
3				_			768	0			1	20		SPARE		4
5			20	1	4000				1200	0	1	20		SPARE		6
/			20	1	1200	0	0	0			1	20		SPARE		8
9	SPARE SDADE		20	1			0	0	0	0	1	20		SPARE		10
13	SPARE		20	1	0	0			0	0	1	20		SPARE		14
15	SPARE		20	1	•		0	0			1	20		SPARE		16
17	SPARE		20	1					0	0	1	20		SPARE		18
19	SPARE		20	1	0	0					1	20		SPARE		20
21	SPARE		20	1			0	0			1	20		SPARE		22
23	SPARE		20	1					0	0	1	20		SPARE		24
25	SPARE		20	1	0	0					1	20		SPARE		26
27	SPARE		20	1			0	0			1	20		SPARE		28
29	SPARE		20	1					0	0	1	20		SPARE		30
31	SPARE		20	1	0	0	_				1	20		SPARE		32
33	SPARE		20	1			0	0			1	20		SPARE		34
35	SPARE		20	1	0	0			0	0	1	20		SPARE		36
3/	SPARE		20	1	0	0	0	0			1	20		SPARE		38
<u> </u>	SPARE		20	1			0	0	0	0	1	20		SPARE		40
43	SPARE		20	1	0	0				0	1	20		SPARE		42
45	SPARE		20	1	Ū		0	0			1	20		SPARE		46
47	SPARE		20	1					0	0	1	20		SPARE		48
49	SPARE		20	1	0	0					1	20		SPARE		50
51	SPARE		20	1			0	0			1	20		SPARE		52
53	SPARE		20	1					0	0	1	20		SPARE		54
55	SPARE		20	1	0	0					1	20		SPARE		56
57	SPARE		20	1			0	0			1	20		SPARE		58
59	SPARE		20	1					0	0	1	20		SPARE		60
61	SPARE		20	1	0	0		-			1	20		SPARE		62
63	SPARE		20	1			0	0	0	0	1	20		SPARE		64
65	SPARE		20	1	0	0			0	0	1	20		SPARE		60
60			20	1	0	0	0	0			1	20		SPARE		70
71	SPARE		20	1			0	0	0	0	1	20		SPARE		70
73	SPARE		20	1	0	0					1	20		SPARE		74
75	SPARE	1	20	1	-	,	0	0			1	20		SPARE		76
77	SPARE		20	1					0	0	1	20		SPARE		78
79	SPARE		20	1	0	0					1	20		SPARE		80
81	SPARE		20	1			0	0			1	20		SPARE		82
83	SPARE		20	1					0	0	1	20		SPARE		84
			Tota	Load:	1968	B VA	768	VA	120	D VA						
			Total	Amps:	17	ΎΑ	6	A	11	А						
Load	Classification		Cor	nected	Load	Den	nand F	actor	Der	nand	Load			Panel	Totals	
Ltg-S	ite			1536 V	A		100.00	%		1536 \	/A					
Rec				2400 V	A		100.00	%		2400 \	/A		Fotal Co	nn. Load:	3936 VA	
													Total	Demand:	3936 VA	
												Tot	al Conn	. Current:	11 A	
												Total	Demano	d Current:	11 A	
Note	s:		1												1	
1																

			Feed	Pi Thru	hases: Wires: Lugs:	3 4 No					A.I.C. R Mains Bus R MCB R	ating: 42 Type: ML ating: 400 ating:	kA .O D A	
Notes	Trip	Poles	A (\	/A)	В (VA)	C (VA)	Poles	Trip	Notes	Circu	it Description	СКТ
	20	1	1176	0						· ·			· ·	2
	20	1			696	0			3	20		SPARE		4
	20	1					1176	0	_					6
	20	1	696	0	0	0			-	00				8
	30	3			0	0	0	0	3	20		SPARE		10
	30	5	0	0			0	0	-					12
					0	0			3	20		SPARE		16
	20	3					0	0	1					18
			0	0										20
	20	2			0	0			3	25		SPARE		22
		-		-			0	0						24
	20	2	0	0	0	0				45				26
					0	0	0	0	3	15		SPARE		28
	20	2	0	0			0	0	-					32
			•	<u> </u>	0	0			2	15		SPARE		34
	15	3					0	0						36
			0	0					3	20	SPARE			38
					0	0								40
	20	3					0	0	_					42
			0	0	0				3	20		SPARE		44
	20	2			0	0	0	0	_				46	
			0	0			0	0	3	20	SPARE			40
	60	3	•	•	0	0			Ŭ					52
		-					0	0						54
			0	0					3	20	SPARE			56
	60	3			0	0								58
							0	0	2	20		SPARE		60
	20	2	0	0	_									62
	20	1			0	0	0	0	2	20		SPARE		64
	20	1	0	0			0	0	1	20		SPARE		68
	20	1	0		0	0			1	20		SPARE		70
	20	1					0	0	1	20		SPARE		72
	20	1	0	0					1	20		SPARE		74
	20	1			0	0			1	20		SPARE		76
	20	1					0	0	1	20		SPARE		78
	20	1	0	0					1	20		SPARE		80
	20	1			0	1200	0	1000	1	20	1		JLT, SP-FV	82
	ZU Total	l oad:	1071	> \/A	100		0	6 \/A	1	20		ROUF; RI	EC	04
	Total		10/2	2 VA	109		231							
	Con	Amps.	beel	A Dom	and E	actor		nand I	load			Danal	Totala	
	Con		LUau	Den	100.00		Der	2744 V				Fallel	TOLAIS	
		3744 VI	۹ ۸		100.00	70 0/_	•	1200 V	/A /A		Cotal Ca	nn Loadi	6144 \/A	
		1200 V	۹ ۸		70.00	70		040 V	^A		Total	Domondu	6144 VA	
		1200 07	۹		70.00%	/0		840 V	A	Tat	Total	Demand:	5764 VA	
										Total		Current:		
										Total		Current:		

⊗ PANEL SCHEDULE NOTES

1. PROVIDE GECI CIRCUIT BREAKER FOR EQUIPMENT PROTECTION.

	LE	GEND					
SYMBOL	MBOL DESCRIPTION MOUNTING HEIGHT TO CENTER LINE BACK BOX AND PLASTER						
	SE	CURITY					
HCR	SECURITY CARD READER	46" AFF OR PER ARCH. WALL ELEVATIONS	4" x 4" x 2 1/2" WITH SINGLE GANG MUD RING	3/4"			
	VIDEO SURVEILL	ANCE - CORE	/SHELL				
CM _{FIX}	SECURITY CAMERA - FIXED	CEILING MOUNTED	4" x 4" x 2 1/2" WITH SINGLE GANG MUD RING (FOR HARD CEILING ONLY)	1" IF HARD CEILING			
HCM180	SECURITY CAMERA - MULTI-SENSOR - 180 DEGREES	REFER TO ARCH DWGS	4" x 4" x 2 1/2" WITH SINGLE GANG MUD RING ONLY WHEN WALL MOUNTED	1"			
HC 270	SECURITY CAMERA - MULTI-SENSOR - 270 DEGREES	REFER TO ARCH DWGS	4" x 4" x 2 1/2" WITH SINGLE GANG MUD RING ONLY WHEN WALL MOUNTED	1"			

	PA	THWAY		
J	COMMUNICATIONS JUNCTION BOX	ABOVE CEILING (AC), OR AS NOTED	4" x 4" x 2 1/2" WITH SINGLE GANG MUD RING (FOR HARD CEILING ONLY)	1" IF HARD CEILING
Ю	COMMUNICATIONS JUNCTION BOX - WALL MOUNTED	18" OR AS NOTED	4" x 4" x 2 1/2" WITH SINGLE GANG MUD RING	1"
J	COMMUNICATIONS JUNCTION BOX - FLOOR MOUNTED	FLUSH IN FLOOR	POKE THRU OR CAST IN PLACE BY DIVISION 26	1"
⊂-X"-⊐	X" CONDUIT SLEEVE	N/A	N/A	N/A
X"	SLEEVE/CONDUIT	N/A	N/A	N/A
	CABLE TRAY	AS NOTED OR SEE SPECIFICATIONS	N/A	N/A
	LADDER RACK	AS NOTED OR SEE SPECIFICATIONS	N/A	N/A
0	CONDUIT UP	N/A	N/A	N/A
•	CONDUIT DOWN	N/A	N/A	N/A
\frown	CONDUIT IN WALL OR CEILING	N/A	N/A	N/A
	CONDUIT IN SLAB OR BELOW GRADE	N/A	N/A	N/A
_J_J_J_	J-HOOKS	N/A	N/A	N/A

GENERAL CONSTRUCTION NOTES

- A. DRAWINGS ARE SCHEMATIC IN NATURE AND ARE NOT DRAWN TO SCALE. CONTRACTOR IS RESPONSIBLE FOR COORDINATING EXACT ROUTING OF ALL SERVICES AND DISTANCES WITH EXISTING CONDITIONS AND WITH ALL OTHER TRADES.
- B. CONDUITS ARE TO HAVE A MAXIMUM 40% FILL RATIO.
- C. IN THE INSTALLATION OF THIS WORK, THE CONTRACTOR IS TO COMPLY WITH THE REQUIREMENTS OF LOCAL LAWS AND ORDINANCES, APPLICABLE STATE LAWS, THE NATIONAL BOARD OF FIRE UNDERWRITERS, AND THE NATIONAL ELECTRIC CODE. D. CAREFULLY EXAMINE THE PREMISES TO DETERMINE THE EXTENT OF WORK AND THE CONDITION UNDER
- WHICH IT MUST BE DONE. IF THERE ARE ANY QUESTIONS REGARDING THE PROJECT, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING CLARIFICATIONS FROM THE ENGINEER OR DESIGNATED REPRESENTATIVE BEFORE PROCEEDING WITH WORK OR RELATED WORK IN QUESTION.
- E. ANY DISCREPANCIES BETWEEN THE PLANS AND ACTUAL FIELD CONDITIONS MUST BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER OR DESIGNATED REPRESENTATIVE FOR CLARIFICATION. F. ALL WORK IS TO BE DONE IN A THOROUGH AND PROFESSIONAL MANNER ACCORDING TO INDUSTRY AND MANUFACTURERS' STANDARDS AND WILL BE SUBJECT TO INSPECTION AND ACCEPTANCE. WORK THAT IS DEEMED SUB-STANDARD WILL BE SUBJECT TO REPLACEMENT OR REPAIR AT NO ADDITIONAL COST TO
- THE OWNER OR GENERAL CONTRACTOR. G. THE CONTRACTOR IS REQUIRED TO PROPERLY FIRE-STOP ANY WALL OR FLOOR PENETRATIONS UTILIZED FOR THE PLACEMENT OF COMMUNICATIONS CABLING WITH APPROVED FIRE-STOPPING COMPOUND AND ACCORDING TO LOCAL AND NATIONAL CODES.
- H. ALL PENETRATED STRUCTURES ARE TO BE RETURNED TO ORIGINAL CONDITION AND FIRE RATING.
- I. REPRESENTATION OF OUTSIDE PLANT CABLE, PATHWAY, AND FACILITIES IS APPROXIMATE AND SCHEMATIC IN NATURE. DO NOT RELY ON PLANS FOR DETERMINATION AND COORDINATION OF EXACT LOCATIONS. VERIFY ALL PERTINENT CONDITIONS AND LOCATIONS WITH THE CIVIL ENGINEER AND UTILITY LOCATION SERVICES PRIOR TO PERFORMING WORK.
- J. A PULL BOX SHALL BE PLACED IN A CONDUIT RUN WHEN ANY OF THE FOLLOWING CONDITIONS EXIST: 1. THE LENGTH OF THE CONDUIT RUN IS OVER 100 FEET. 2. THERE ARE MORE THAN TWO 90 DEGREE BENDS IN THE CONDUIT RUN. 3. THERE IS A REVERSE BEND IN THE CONDUIT RUN.
- K. PULL BOXES AND JUNCTION BOXES SHALL BE PLACED IN EASILY ACCESSIBLE LOCATIONS. PULL BOX SIZES SHALL BE AS DEFINED BY THE NATIONAL ELECTRICAL CODE.
- L. PULL BOXES SHALL BE PLACED IN STRAIGHT SECTION OF CONDUIT AND NOT USED TO REPLACE A BEND. CONDUITS ENTERING AND EXITING PULL BOXES SHALL BE ALIGNED WITH ONE ANOTHER TO ALLOW FOR EASE OF CABLE INSTALLATION.

LOW VOLTAGE RESPO	NSIB	ILITY	MATF	RIX
DESCRIPTION	DIVISION 26	DIVISION 27	DIVISION 28	OWNER
CONDUIT, BACKBOXES AND PLYWOOD BACKBOARDS (ALL LOW VOLTAGE SYSTEMS)	Х			
OUTSIDE PLANT CONDUITS AND PULLBOXES	Х			

	SHEET INDEX - CORE/SHELL						
NUMBER	SHEET NAME						
T0.0	TECHNOLOGY LEGENDS, INDEX, AND NOTES - SHELL						
T1.0	TECHNOLOGY PLAN - SHELL						
T3.0	TECHNOLOGY LARGE SCALE PLANS - SHELL						
T5.0	TECHNOLOGY DETAILS - SHELL						

SHEET KEYED NOTES

- 1. (2) 4" OSP UNDERGROUND CONDUITS TO STUB UP INTO I.T. ROOM.
- 2. PROVIDE AND INSTALL QUAZITE 24" X 36" PG STYLE POLYMER HANDHOLE WITH TIER 8 COVER WITH "TELECOMMUNICATIONS" LABEL (OR EQUIVALENT) FOR CONDUITS TO STUB INTO FROM BUILDING AND FOR INCOMING SERVICE PROVIDER CONDUITS TO STUB INTO. COORDINATE EXACT LOCATION WITH ELECTICAL AND CIVIL
- PROVIDE ROUGH-IN ONLY FOR SHELL. REFER TO ARCHITECTURAL PLANS FOR MOUNTING HEIGHTS.
- (2) 4" OSP UNDERGROUND CONDUITS TO EASEMENT. REFER TO CIVIL SITE PLAN FOR EXACT ROUTING.
- 6. (1) 4" OSP UNDERGROUND CONDUIT TO STUB UP INTO I.T. ROOM.

LEVEL 1

SHEET KEYED NOTES

- (3) 4" OSP CONDUITS FROM UNDERGROUND TO SUB UP INSIDE OF I.T. ROOM FOR INCOMING SERVICE PROVIDERS.
- (2) 4" SITE SECURITY CONDUITS. REFER TO ELECTRICAL SITE PLAN FOR OSP ROUTING.
- (2) 2" CONDUITS FOR FUTURE EV CHARING STATIONS. REFER TO ELECTRICAL SITE PLAN FOR OSP ROUTING.

PROVIDE 6"X6" JUNCTION BOX FOR SECURITY CONDUIT AND CABLING CONSOLIDATION

THEORY OF OPERATION:

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DOOR POSITION SWITCH CONTACT INSTALLED IN DOOR HEADER.

ROUTE 1" CONDUIT TO TELECOM ROOM OR NEAREST ACCESSIBLE CEILING SPACE.

