9/18/2020 5:18:09 PM

Saint Luke's
EAST HOSPITAL

LAB REMODEL
100 NE ST LUKES BLVD,
LEE'S SUMMIT, MO 64086

P R O J E C T T E A M

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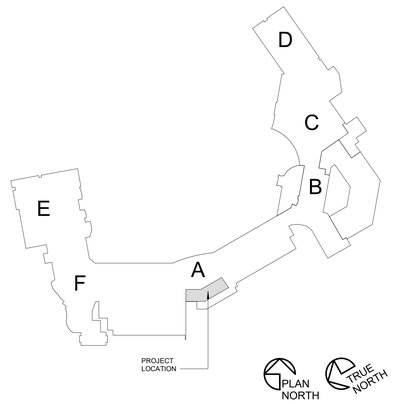
ABBREVIATIONS

AC.	ACOUSTIC/ACOUSTICAL
ADD.	ADDENDUM
ADDN.	ADDITION
ABC	AGGREGATE BASE COURSE
AFF	ABOVE FINISH FLOOR
AGG.	AGGREGATE
A/C	AIR CONDITIONING
AL.	ALUMINUM
ALT.	ALTERNATE
A.B.	ANCHOR BOLT
&	AND
ARCH.	ARCHITECT
ASP.	ASPHALT
@	AT
ACT	ACOUSTIC CEILING TILE/PANEL
∠	ANGLE
BLKG.	BLOCKING
BSMT.	BASEMENT
BM.	BEAM
B.M.	BENCHMARK
BD.	BOARD
B.O.	BOTTOM OF
BLDG.	BUILDING
CABT.	CABINET
C.I.P.	CAST IN PLACE
C.B.	CATCH BASIN
CLG.	CEILING
CEM.	CEMENT/CEMENTITIOUS
CG.	CENTIGRAM
CM	CENTIMETER
CL.	CENTER LINE
CER.	CERAMIC
C.T.	CERAMIC TILE
CHAN.	CHANNEL
C	CHANNEL
CLR.	CLEAR
C.O.	CLEAN OUT
CLOS.	CLOSET
COL.	COLUMN
CONC.	CONCRETE
CONN.	CONNECTION
CONST.	CONSTRUCTION
C.J.	CONTROL JOINT CONSTRUCTION JOINT
CONT.	CONTINUOUS
CONTR.	CONTRACTOR
CORG.	CORRUGATED
CTR.	COUNTER
CTSK.	COUNTERSUNK
C.M.U.	CONCRETE MASONRY UNIT
D.P.	DAMP PROOFING
DB.	DECIBEL
DIAG.	DIAGONAL
DIAM.	DIAMETER
DIM.	DIMENSION
DISP.	DISPENSER
DWL.	DOWEL
DN.	DOWN
D.S.	DOWNSPOUT
DWG.	DRAWING
EA.	EACH
ELEC	ELECTRIC
E.W.C.	ELECTRIC WATER COOLER
EL.	ELEVATION
ELEV.	ELEVATOR
EQ.	EQUAL
EQUIP.	EQUIPMENT
EXH.	EXHAUST
EXPAN.	EXPANSION
E.J.	EXPANSION JOINT
EXIST.	EXISTING
EXT.	EXTERIOR
FT.	FEET / FOOT
FIN.	FINISH
FIXT.	FIXTURE
FL.	FLASHING
FLR.	FLOOR
F.D.	FLOOR DRAIN
FLOR.	FLUORESCENT
FTG.	FOOTING
FND.	FOUNDATION
FR.	FRAME
F.H.C.	FIRE HOSE CAB.
FV.	FIELD VERIFY
GA.	GAUGE
GL.	GLASS / GLAZING
GD.	GRADE
G.	GRAM
GRL.	GRILLE
GRD.	GRID
GND.	GROUND
G.S.	GALVANIZED STEEL
GYP.	GYPSUM
GWB/G.B.	GYPSUM BOARD
H.R.	HAND RAIL
HDN.	HARDENER
HDW.	HARDWARE
HDWD.	HARDWOOD
HTR.	HEATER
HT.	HEIGHT
H.P.	HIGH POINT
H.M.	HOLLOW METAL
HORIZ.	HORIZONTAL
H.B.	HOSE BIB
H.W.	HOT WATER
IN.	INCH / INCHES
I.D.	INSIDE DIAMETER
INSUL.	INSULATION
INT.	INTERIOR
INV.	INVERT
JAN.	JANITOR
JT.	JOINT
JST.	JOIST
K.P.	KICK PLATE
LAM.	LAMINATED
LB.	POUND
LDG.	LANDING
LTH.	LATH
LAV.	LAVATORY
LG.	LENGTH
LOC.	LOCATION
LT.	LIGHT
L.W.C.	LIGHT WEIGHT CONCRETE
LVR.	LOUVER
LOC.	LOCATION
M.O.	MASONRY OPENING
MATL.	MATERIAL
MFR.	MANUFACTURER
MB.	MARKER BOARD
MAX.	MAXIMUM
MECH.	MECHANICAL
MTL.	METAL
M.L.	METAL LATH
M.	METER
MIN.	MINIMUM
MLDG.	MOLDING
MULL.	MULLION
N.G.	NATURAL GRADE
NOM.	NOMINAL
N.I.C.	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
NO. / #	NUMBER
OBS.	OBSCURE
O.C.	ON CENTER
OPN'G.	OPENING
O.A.	OVERALL
O.D.	OUTSIDE DIAMETER
O.F.S.	OVERFLOW SCUPPER
O.F.D.	OVERFLOW DRAIN
O.H.D.	OVERHEAD DOOR
PTD.	PAINTED
PG.	PAGE
PLAM.	PLASTIC LAMINATE
PR.	PAIR
PNL.	PANEL
PTN.	PARTITION
¢	PENNY
PL.	PLATE
PLBG.	PLUMBING
PLYWD.	PLYWOOD
PT.	POINT
P.S.I.	POUNDS PER SQ. IN.
P.S.F.	POUNDS PER SQ. FT.
P.C.	PRECAST
P.L.	PROPERTY LINE
R.	RISER, RISERS
RAD.	RADIUS
R.D.	ROOF DRAIN
RB.	RESILIENT BASE
RE.	REFER TO
REG.	REGISTER
REQ'D.	REQUIRED
REV.	REVISION
RF'G.	ROOFING
RGH.	ROUGH
RM.	ROOM
RND.	ROUND
R.O.	ROUGH OPENING
SCHED.	SCHEDULE
S.C.	SEALED CONCRETE
SCR.	SCREW
SECT.	SECTION
SEL.	SELECT
SHG.	SHEATHING
SHT.	SHEET
SDG.	SIDING
SIM.	SIMILAR
SLDG.	SLIDING
SM.	SMOOTH
SPEC.	SPECIFICATION
SQ.	SQUARE
ST.	STAINED
STD.	STANDARD
S.S. / ST.STL.	STAINLESS STEEL
STRUC.	STRUCTURE
SUSP.	SUSPENDED
SW.BD.	SWITCHBOARD
SYS.	SYSTEM
T.	TREAD
T.C.	TOP OF CURB
T.G.	TEMPERED GLASS
T.O.	TOP OF
T.S.D.	TOP OF STEEL DECK
T.W.	TEACHERS WARDROBE
TYP.	TYPICAL
U.O.N.	UNLESS OTHERWISE NOTED
V.	VENT
VERT.	VERTICAL
V.G.	VERTICAL GRAIN
VEST.	VESTIBULE
V.C.T.	VINYL COMPOSITION TILE
VCP	VITREOUS CLAY PIPE
W.W.M.	WELDED WIRE MESH
W.C.	WATER CLOSET
W.H.	WATER HEATER
W.F.	WIDE FLANGE
W/	WITH
W.O	WITHOUT
WD.	WOOD
WDW.	WINDOW
W.W.	WINDOW WALL

LOCATION PLAN



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A0.3	GENERAL NOTES, LEGENDS, SYMBOLS, & PARTITION TYPES
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EC2.1	COMMUNICATIONS FIRST FLOOR PLAN

NOTE: REFER TO SAINT LUKE'S STANDARD SPECIFICATIONS.
REFER TO SIEMENS & MILLIPORE VENDOR DRAWINGS FOR ADDITIONAL INFORMATION.

STATE OF MISSOURI
SAMUEL K. BECKMAN
A-20110130
ARCHITECT

Issue Date

Samuel K. Beckman - Architect
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Saint Luke's EAST HOSPITAL

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100 NE ST LUKES BLVD,
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Drawn By	BR
Checked By	AD

Revision

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A0.1

COVER SHEET

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CODE SUMMARY

Project Construction Purpose: Lab Renovation

Owner Information
Saint Luke's East Hospital
100 NE Saint Luke's Boulevard
Lee's Summit, MO 64086

Designer Information
ACI Boland Architects
1710 Wyandotte St.
Kansas City, MO 64108
Phone: (816) 763-9600
Fax: (816) 763-9757

Code Information
2018 International Building Code
2018 International Plumbing Code
2018 International Mechanical Code
2017 National Electrical Code (NFPA 70)
2018 International Fire Code
2009 ICC/ANSI A117.1 as amended and adopted by the City of Lee's Summit

State of Missouri Dept. of Health & Environment references the following codes:
2012 NFPA 101 Life Safety Code (LSC)
2014 FGI Guidelines for Design & Construction of Hospitals & Outpatient Facilities

Note: If code requirements overlap, the most stringent shall apply. All code summary references list IBC section numbers. NFPA section numbers are in parentheses after or below.

Local Authority
Responding Fire Service: Lee's Summit Fire Department
Local Building Inspection: Lee's Summit, MO - Codes Administration Department

Type of Construction: Type 1-A - Section 602.2
(Type 1 - 332 Sprinklered - Section 18.1.6.1)

Code Review:
The area of renovation will have no impact on occupant load or egress from the existing space. New egress and occupant load will be routed through existing doors. There are no alterations to the existing life safety plan.

Occupancy Group: Laboratory: Business (B) - Section 304

Occupant Load:
Occupant Load Factor: Business = 100 gross Table 1004.1.2
Total Square Footage = 2,565/100 = 26 Occupants

Required Egress Width Per Occupant Served:
26 Occupants x .15 = 4" Required
2 Doors at 36" Width = 72" Provided

Required Fire Resistance Ratings (in hours)
Per NFPA 101 A.8.2.1.2:

Exterior Bearing Walls	3 HR
Interior Bearing Walls	3 HR
Primary Structural Frame	3 HR
Floor Construction	2 HR
Roof Construction	1 1/2 HR
Interior non-bearing walls	0 HR

Active Fire Safety Features:
- Fire Alarm System - The fire alarm system is specified as an addressable type system. The device type and locations are per the applicable codes as well as ADA requirements.

- Smoke Control System - All ductwork penetrating smoke rated walls will have a smoke or combination fire/smoke damper as indicated on construction documents. These dampers will close upon detection of smoke by the area smoke detectors or duct smoke detectors in the air handling units.

- Fire Sprinkler System - Specified to be per NFPA 13. The sprinkler heads are specified to be quick response type.

- Emergency Lighting and Power - Emergency lighting, life safety and critical loads will receive power from a backup generator located outside the main electrical room.

- Illuminated Exit Signs

Passive Fire Safety Features:

- Smoke Compartments no greater than 22,500 SF

CODE FOOTPRINT LEGEND

PARTITION TYPES

- 0 HR SMOKE PARTITION (SMOKE RESISTIVE)
- 1 HR SMOKE BARRIER
- 1 HR FIRE BARRIER
- 2 HR FIRE BARRIER
- 2 HR FIRE SMOKE BARRIER
- 3 HR FIRE BARRIER

SYMBOLS

- FIRE EXIT
- OCCUPANT LOAD
- EXIT WIDTH PROVIDED
- EXIT WIDTH REQUIRED
- NEW FIRE EXTINGUISHER CABINET
- EXISTING FIRE EXTINGUISHER CABINET
- FE — FIRE EXTINGUISHER
- EXIT SIGN
- FIRE DOOR RATING
- TRAVEL DISTANCE
- STROBE
- STROBE/SPEAKER
- HORN/STROBE
- HORN
- FIRE PULL STATION
- FIRE SPRINKLER ZONE VALVE

A2 PARTIAL FIRST FLOOR LIFE SAFETY PLAN
1/4" = 1'-0"

PLAN NORTH / TRUE NORTH

**THIS DRAWING IS INTENDED TO BE PRINTED IN COLOR. USE BLACK AND WHITE COPIES AT YOUR OWN RISK.*

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A0.2

CODE FOOTPRINT PLAN

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GENERAL NOTES

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH A.D.A. REQUIREMENTS AND ALL APPLICABLE LOCAL, STATE, AND FEDERAL BUILDING CODES AND REGULATIONS.
2. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY BUILDING PERMITS.
3. THE GENERAL CONTRACTOR AND SUBCONTRACTORS SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY THE ARCHITECT OF ANY INCONSISTENCIES OR DISCREPANCIES WTH THE PROJECT DOCUMENTS. ACCESS TO THE SITE AND/OR SPACE UNDER CONSTRUCTION DURING BIDDING AND CONSTRUCTION SHALL BE COORDINATED WITH THE OWNER.
4. DO NOT SCALE DRAWINGS.
5. THE WORD "ALIGN" AS USED IN THESE DOCUMENTS SHALL SUPERSEDE ANY DIMENSIONAL INFORMATION GIVEN.
6. THE GENERAL CONTRACTOR TO PROVIDE ALL REQUIRED LABOR, MATERIAL, AND EQUIPMENT NECESSARY TO MEET AND COMPLETE THE REQUIREMENTS OF THE NEW CONSTRUCTION.
7. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR EXAMINING AND CONFIRMING ALL SUBSTRATE CONDITIONS WHERE NEW MATERIALS ARE APPLIED. THE SUBSTRATE SHALL BE SMOOTH AND FREE OF DEFECTS AND SHALL CONFORM TO THE REQUIREMENTS OF THE FINISHED MATERIAL MANUFACTURERS RECOMMENDATIONS.
8. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR CLEAN-UP.
9. THE GENERAL CONTRACTOR AND SUBCONTRACTORS SHALL NOT CLOSE OR OBSTRUCT WALKWAYS, EXITS, OR OTHER FACILITIES USED BY OCCUPANTS OF THE BUILDING WITHOUT WRITTEN PERMISSION FROM AUTHORITIES HAVING JURISDICTION.
10. THE GENERAL CONTRACTOR SHALL CONDUCT ALL OPERATIONS IN A SAFE WORKING MANNER TO PREVENT DAMAGE OR INJURY TO ADJACENT SPACES, BUILDING, STRUCTURE, OTHER FACILITIES, AND PERSONS.
11. IF MATERIALS SUSPECTED OF CONTAINING HAZARDOUS MATERIALS ARE ENCOUNTERED, DO NOT DISTURB. IMMEDIATELY NOTIFY ARCHITECT AND OWNER. OWNER SHALL COORDINATE WITH CONTRACTOR ON THE REMOVAL OF SUCH ITEMS. WORK MAY PROCEED AFTER HAZARDOUS MATERIAL HAS BEEN REMOVED.
12. THE GENERAL CONTRACTOR SHALL FURNISH AND INSTALL CONCEALED FIRE-TREATED WOOD BLOCKING BEHIND ALL CABINETS, TOILET ACCESSORIES, PLUMBING FIXTURES, AND OTHER WALL-MOUNTED ITEMS AS REQUIRED FOR ADEQUATE SUPPORT.

REMODEL/RENOVATION NOTES

13. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY ARCHITECT OF ANY INCONSISTENCIES OR DISCREPANCIES WITH THE PROJECT DOCUMENTS. ACCESS TO THE SITE AND/OR SPACE UNDER CONSTRUCTION DURING BIDDING AND CONSTRUCTION SALL BE COORDINATED WTH THE OWNER.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EXAMINING AND CONFIRMING ALL SUBSTRATE CONDITIONS WHERE NEW MATERIALS ARE APPLIED. THE SUBSTRATE SHALL BE SMOOTH AND FREE OF DEFECTS AND SHALL CONFORM TO THE REQUIREMENTS OF THE FINISHED MATERIAL MANUFACTURERS RECOMMENDATIONS.
15. UPON VERIFICATION OF THE EXISTING CONDITIONS, THE CONTRACTOR SHALL DETERMINE AND RECOMMEND THE BEST ACTION TO MINIMIZE THE EXTENT OF REMOVAL WORK FOR INSTALLATION OF NEW WORK.

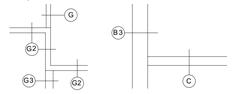
PARTITION GENERAL NOTES

1. UNLESS NOTED OTHERWISE, ALL INTERIOR METAL STUDS ARE 3 5/8" THICK. REFER TO SUFFIX SCHEDULE BELOW FOR LOCATIONS OF METAL STUDS OTHER THAN 3-5/8" THICK. NOTE: STUD THICKNESS (GAUGE) MUST CONFORM TO MANUFACTURER'S RECOMMENDATIONS FOR SPAN (HEIGHT OF STUD)
2. WHERE THE PARTITION TYPE INDICATION IS SHOWN WITH A NUMERICAL SUFFIX, THE METAL STUD THICKNESS SHALL BE AS SCHEDULED BELOW:

SUFFIX	MTL. STUD THICKNESS
1	1-5/8" MTL. STUDS
2	2-1/2" MTL. STUDS
3	6" MTL. STUDS

3. UNLESS NOTED OTHERWISE, ALL INTERIOR DRYWALL PARTITIONS INDICATED ON THE FLOOR PLAN DRAWING ARE TYPE 'A' PARTITIONS. WHERE OCCURS, RATINGS ARE AS INDICATED ON THE LIFE SAFETY PLANS.
4. UNLESS NOTED OTHERWISE, ALL INTERIOR MASONRY PARTITIONS INDICATED ON THE FLOOR PLAN DRAWING ARE TYPE 'B' PARTITIONS. WHERE OCCURS, RATINGS ARE AS INDICATED ON THE LIFE SAFETY PLANS.
5. ALL STUDS ARE CONTINUOUS FROM FLOOR STRUCTURE TO CEILING STRUCTURE UNLESS NOTED OTHERWISE.
6. METAL STUDS ARE SPACED @ 16" O.C. MAX., UNLESS NOTED OTHERWISE.
7. UNLESS NOTED OTHERWISE, ALL GYPSUM BOARD IS TO BE 5/8" THICK "FIRECODE".

THE LOCATION OF A CHANGE IN THE PARTITION TYPE IS INDICATED BY A WALL TAG.



8. THE CORRESPONDING RATED ASSEMBLIES ARE INDICATED BELOW THE PARTITION TYPES.
9. PARTITION TYPE DESIGNATIONS ARE INDICATED ON THE FLOOR PLAN DRAWINGS.
10. PARTITION TYPES DO NOT INCLUDE APPLIED FINISHES CALLED FOR IN THE ROOM FINISH SCHEDULE.
11. AT PARTITION TYPES WHERE MTL. STUDS ARE EXPOSED ON ONE OR BOTH SIDES, CUT STUD 1/4" SHORT AND SCREW BOTH SIDES TO MTL. RUNNER TRACK.

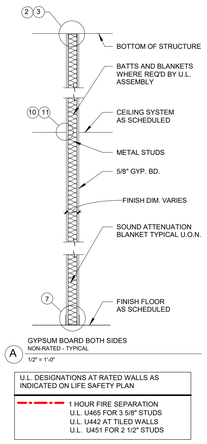
2 TOP ANCHORAGE OF PARTITION TO METAL DECK
1-1/2" = 1'-0"

3 TOP ANCHORAGE OF PARTITION TO CONCRETE STRUCTURE SEE 3A AND 3B FOR ADDITIONAL INFORMATION
1-1/2" = 1'-0"

7 FLOOR ANCHORAGE OF PARTITION
1-1/2" = 1'-0"

10 SUSPENDED GYP. BD. CEILING
1-1/4" = 1'-0"

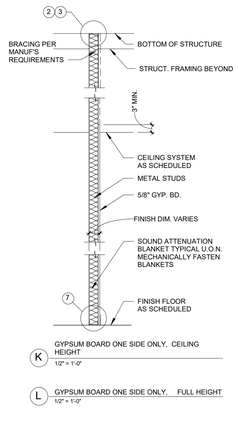
11 CEILING DETAILS FOR GYP. BD. VERTICAL SURFACES
1-1/4" = 1'-0"



A GYPSUM BOARD BOTH SIDES NON-RATED - TYPICAL
1/2" = 1'-0"

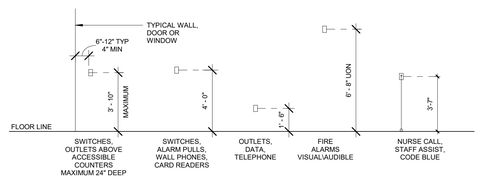
U.L. DESIGNATIONS AT RATED WALLS AS INDICATED ON LIFE SAFETY PLAN

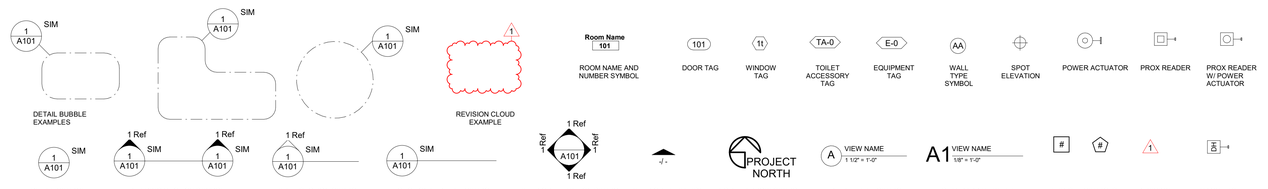
1 HOUR FIRE SEPARATION
U.L. U465 FOR 3 5/8" STUDS
U.L. U442 AT TILED WALLS
U.L. U451 FOR 2 1/2" STUDS



K GYPSUM BOARD ONE SIDE ONLY, CEILING HEIGHT
1/2" = 1'-0"

L GYPSUM BOARD ONE SIDE ONLY, FULL HEIGHT
1/2" = 1'-0"





SYMBOLS
1/4" = 1'-0"

STATE OF MISSOURI
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GENERAL NOTES, LEGENDS, SYMBOLS, & PARTITION TYPES

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ONLINE CERTIFICATIONS DIRECTORY

Design No. U465
BXUV.U465
Fire-resistance Ratings - ANSI/UL 263

Page Bottom

Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

BXUV - Fire Resistance Ratings - ANSI/UL 263

BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

See General Information for Fire-resistance Ratings - ANSI/UL 263

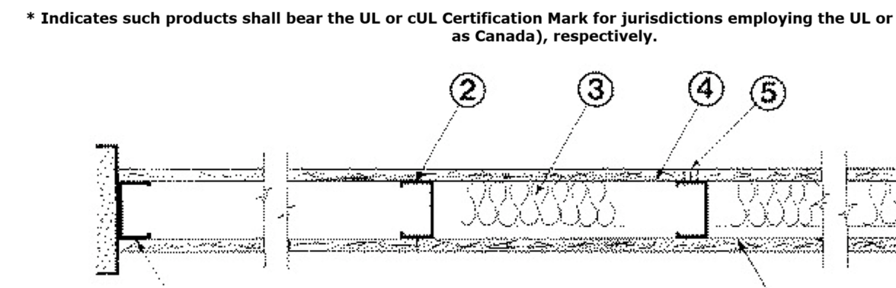
See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

Design No. U465

August 25, 2016

Nonbearing Wall Rating — 1 HR.

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**



1. **Floor and Ceiling Runners —** (Not Shown) — Channel shaped runners, 3-5/8 in. deep (min), 1-1/4 in. legs, formed from min No. 25 MSG galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

1A. **Framing Members* — Floor and Ceiling Runners —** (Not Shown) — As an alternate to Item 1 — Channel shaped, min 3-5/8 in. deep, attached to floor and ceiling with fasteners 24 in. OC. max.

ALLSTEEL & GYPSUM PRODUCTS INC — Type SUPREME Framing System

CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV — Type SUPREME Framing System

QUAIL RUN BUILDING MATERIALS INC — Type SUPREME Framing System

SCAFCO STEEL STUD MANUFACTURING CO — Type SUPREME Framing System

STEEL CONSTRUCTION SYSTEMS INC — Type SUPREME Framing System

UNITED METAL PRODUCTS INC — Type SUPREME Framing System

1B. **Framing Members* — Floor and Ceiling Runners —** Not Shown — In lieu of Item 1 — For use with Item 2B, proprietary channel shaped runners, 1-1/4 in. wide by min 3-5/8 in. deep fabricated from min 0.020 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

CALIFORNIA EXPANDED METAL PRODUCTS CO — Viper20™ Track

CRACO MFG INC — SmartTrack20™

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™ Track

1C. **Floor and Ceiling Runners —** (Not Shown) — For use with Item 2C — Channel shaped, fabricated from min 20 MSG corrosion-protected or galv steel, min depth to accommodate stud size, with min 1 in. long legs, attached to floor and ceiling with fasteners spaced max 24 in. OC.

1D. **Framing Members* — Floor and Ceiling Runners —** Not Shown — In lieu of Items 1 through 1C — For use with Item 2D and 4G only, proprietary channel shaped runners, 1-1/4 in. deep by min 3-5/8 in. wide fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

CLARKDIETRICH BUILDING SYSTEMS — CD ProTRAK

DMFCWBS L L C — ProTRAK

MBA METAL FRAMING — ProTRAK

RAM SALES L L C — Ram ProTRAK

STEEL STRUCTURAL PRODUCTS L L C — Tri-S ProTRAK

1E. **Framing Members* — Floor and Ceiling Runners —** Not Shown — In lieu of Items 1 through 1D — For use with Item 2E and 4I only, proprietary channel shaped runners, 1-1/4 in. deep by min 3-5/8 in. wide fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

TELLING INDUSTRIES L L C — TRUE-TRACK™

1F. **Framing Members* — Floor and Ceiling Runners —** Not Shown — In lieu of Items 1 through 1E — For use with Item 2, channel shaped runners, 1-1/4 in. deep by min 3-5/8 in. wide fabricated from min 25 MSG steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

KIRII (HONG KONG) LTD — Type KIRII

1G. **Framing Members* — Floor and Ceiling Runners —** Not Shown — In lieu of Items 1 through 1F — For use with Item 2, channel shaped runners, 1-1/4 in. deep by min 3-5/8 in. wide, attached to floor and ceiling with fasteners spaced 24 in. OC max.

STUDCO BUILDING SYSTEMS — CROCSTUD Track

1H. **Floor and Ceiling Runners —** (Not Shown) — Channel shaped, fabricated from min 0.02 in. galv steel, min width to accommodate stud size, with min 1 in. long legs, for use with studs specified below and fabricated from min 0.02 in. galv steel or thicker, attached to floor and ceiling with fasteners spaced max 24 in. OC.

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™ Track VT100

1I. **Framing Members* — Floor and Ceiling Runners —** Not Shown — In lieu of Item 1 — For use with Item 2H, proprietary channel shaped runners, 1-1/4 in. wide by min 3-5/8 in. deep fabricated from min 0.020 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

TELLING INDUSTRIES L L C — Viper20™ Track

2. **Steel Studs —** Channel shaped, 3-5/8 in. deep (min), formed from min No. 25 MSG galv steel spaced 24 in. OC max. Studs to be cut 3/4 in. less than assembly height.

2A. **Framing Members* — Steel Studs —** As an alternate to Item 2 — Channel shaped studs, min 3-5/8 in. deep, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height.

ALLSTEEL & GYPSUM PRODUCTS INC — Type SUPREME Framing System

CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV — Type SUPREME Framing System

QUAIL RUN BUILDING MATERIALS INC — Type SUPREME Framing System

SCAFCO STEEL STUD MANUFACTURING CO — Type SUPREME Framing System

STEEL CONSTRUCTION SYSTEMS INC — Type SUPREME Framing System

UNITED METAL PRODUCTS INC — Type SUPREME Framing System

2B. **Framing Members* — Steel Studs —** Not Shown — In lieu of Item 2 — For use with Item 1B, proprietary channel shaped steel studs, 1-1/4 in. wide by min 3-5/8 in. deep fabricated from min 0.020 in. thick galv steel. Studs cut 3/4 in. less in length than assembly height.

CALIFORNIA EXPANDED METAL PRODUCTS CO — Viper20™

CRACO MFG INC — SmartStud20™

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™

2C. **Steel Studs —** (As an alternate to Item 2, For use with Item 4E) — Channel shaped, fabricated from min 20 MSG corrosion-protected or galv steel, 3-1/2 in. min depth, spaced a max of 16 in. OC. Studs friction-fit into floor and ceiling runners. Studs to be cut 5/8 to 3/4 in. less than assembly height.

2D. **Framing Members* — Steel Studs —** As an alternate to Items 2 through 2C — For use with Item 1D and 4G only, channel shaped studs, min 3-5/8 in. wide fabricated from min 0.018 in. thick galv steel, spaced a max of 24 in. OC. Studs to be cut 1/2 in. less than assembly height.

CLARKDIETRICH BUILDING SYSTEMS — CD ProSTUD

DMFCWBS L L C — ProSTUD

MBA METAL FRAMING — ProSTUD

RAM SALES L L C — Ram ProSTUD

STEEL STRUCTURAL PRODUCTS L L C — Tri-S ProSTUD

2E. **Framing Members* — Steel Studs —** As an alternate to Items 2 through 2D — For use with Item 1E and 4I only, channel shaped studs, min 3-5/8 in. wide fabricated from min 0.018 in. thick galv steel, spaced a max of 24 in. OC. Studs to be cut 1/2 in. less than assembly height.

TELLING INDUSTRIES L L C — TRUE-STUD™

2F. **Framing Members* — Steel Studs —** As an alternate to Items 2 through 2E — For use with Item 1F, channel shaped studs, min 3-5/8 in. wide fabricated from min 25 MSG steel, spaced a max of 24 in. OC. Studs to be cut 1/2 in. less than assembly height.

KIRII (HONG KONG) LTD — Type KIRII

2G. **Framing Members* — Steel Studs —** Not Shown — In lieu of Item 2 through 2F — For use with Item 1G. Proprietary channel shaped studs, minimum 3-5/8 in. wide, Studs to be cut 1/2 in. less than the assembly height.

STUDCO BUILDING SYSTEMS — CROCSTUD

2H. **Framing Members* — Steel Studs —** Not Shown — In lieu of Item 2 — For use with Item 1I, proprietary channel shaped steel studs, 1-1/4 in. wide by min 3-5/8 in. deep fabricated from min 0.020 in. thick galv steel. Studs cut 3/4 in. less in length than assembly height.

TELLING INDUSTRIES L L C — Viper20™

2I. **Framing Members* — Steel Studs —** In lieu of Item 2 — For use with Item 1, channel shaped studs, fabricated from min 25 MSG corrosion-protected steel, 3-5/8 in. deep (min), spaced 24 in. OC max. Studs to be cut 3/4 in. less than assembly height.

EB MéTAL INC — EB Stud

2J. **Framing Members* — Steel Studs —** In lieu of Item 2 — For use with Item 1, channel shaped studs, fabricated from min 25 MSG corrosion-protected steel, 3-5/8 in. deep (min), spaced 24 in. OC max. Studs to be cut 3/4 in. less than assembly height.

OLMAR SUPPLY INC — PRIMESTUD

2K. **Framing Members* — Steel Studs —** As an alternate to Item 2 — For use with Item 1B (3-5/8 in. wide track), channel shaped studs, fabricated from min 25 MSG corrosion-protected steel, 1-1/4 in. wide by 3-5/8 in. deep, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

MARINO/WARE, DIV OF WARE INDUSTRIES INC — StudRite™

3. **Batts and Blankets* —** (Optional) — Mineral wool or glass fiber batts partially or completely filling stud cavity.

See **Batts and Blankets** (BZJZ) category for names of Classified companies.

3A. **Fiber, Sprayed* —** As an alternate to Batts and Blankets (Item 3) — (100% Borate Formulation) — Spray applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product with a nominal dry density of 2.7 lb/ft³. Alternate Application Method: The fiber is applied without water or adhesive at a nominal dry density of 3.5 lb/ft³, in accordance with the application instructions supplied with the product.

U S GREENFIBER L L C — INS735& INS745 for use with wet or dry application. INS765LD and INS770LD are to be used for dry application only

3B. **Fiber, Sprayed* —** As an alternate to Batts and Blankets (Item 3) and Item 3A — Spray applied cellulose insulation material. The fiber is applied with water to interior surfaces in accordance with the application instructions supplied with the product. Applied to completely fill the enclosed cavity. Minimum dry density of 4.3 pounds per cubic ft.

NU-WOOL CO INC — Cellulose Insulation

3C. **Fiber, Sprayed* —** As an alternate to Batts and Blankets (Item 3) — Spray applied cellulose fiber. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. The minimum dry density shall be 4.30 lbs/ft³.

INTERNATIONAL CELLULOSE CORP — Celbar-RL

3D. **Batts and Blankets* —** For use with Item 8. Nom 3 in. thick, minimum 3.4 pcf mineral wool batts, friction fit between the studs and floor and ceiling runners.

See **Batts and Blankets** (BZJZ) category for names of manufacturers.

3E. **Batts and Blankets* —** For use with Item 4P. Placed in stud cavities, any min. 3-1/2 in. thick glass fiber insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance.

See **Batts and Blankets** (BKNV or BZJZ) Categories for names of Classified companies.

4. **Gypsum Board* —** 5/8 in. thick, 4 ft wide, attached to steel studs and floor and ceiling track with 1 in. long, Type S steel screws spaced 8 in. OC. along edges of board and 12 in. OC in the field of the board. Joints oriented vertically and staggered on opposite sides of the assembly. When attached to Items 6 (resilient channels) or 6A, 6B or 6C (furring channels), gypsum board is screw attached to furring channels with 1 in. long, Type S steel screws spaced 12 in. OC.

ACADIA DRYWALL SUPPLIES LTD — Type X, 5/8 Type X, Type Blueglass Exterior Sheathing

AMERICAN GYPSUM CO — Types AG-C, AGX-1, M-Glass

BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO — Type DBX-1

CGC INC — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, USGX, WRC or WRX (Joint tape and compound, Item 5, optional for use with Type USGX)

CERTAINTEED GYPSUM INC — Types 1, EGRG, GlasRoc, Type X, Type X-1, Type C, SilentFX, 5/8" Easi-Lite Type X

CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C — Types LGFC2A, LGFC6A, LGFC-C/A, LGFC-WD, LGLLX

GEORGIA-PACIFIC GYPSUM L L C — Types 5, 6, 9, C, DAP, DD, DA, DAPC, DGG, DS, GPFS6, LS, Type X, Veneer Plaster Base - Type X, Water Rated - Type X, Sheathing - Type X, Soffit - Type X, TG-C, GreenGlass Type X, Type X ComfortGuard Sound Deadening Gypsum Board, Type LWX, Veneer Plaster Base-Type LWX, Water Rated-Type LWX, Sheathing Type-LWX, Soffit-Type LWX, Type DGLW, Water Rated-Type DGLW, Sheathing Type- DGLW, Soffit-Type DGLW, Type LW2X, Veneer Plaster Base - Type LW2X, Water Rated - Type LW2X, Sheathing - Type LW2X, Soffit - Type LW2X, Type DGL2W, Water Rated - Type DGL2W, Sheathing - Type DGL2W

NATIONAL GYPSUM CO — Types eXP-C, FSK, FSK-C, FSK-G, FSMR-C, FSW-C, FSW-G, FSW, FSW-3, FSW-5, FSW-6, FSW-8, FSL

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Types PG-C, PG-9, PG-11, PGS-WRS

PANEL REY S A — Types GREX, PRC, PRC2, PRX, RHX, MDX, ETX

SAINT-GOBAIN GYPROC MIDDLE EAST FZE — Type Gyproc FireStop, Gyproc FireStop MR, Gyproc FireStop M2TECH, Gyproc FireStop ACTIV'Air, Gyproc FireStop MR ACTIV'Air, Gyproc FireStop M2TECH ACTIV'Air, Gyproc DuraLine, Gyproc DuraLine MR, Gyproc DuraLine M2TECH, Gyproc DuraLine ACTIV'Air, Gyproc DuraLine MR ACTIV'Air, Gyproc DuraLine M2TECH ACTIV'Air

SIAM GYPSUM INDUSTRY (SARABURI) CO LTD — Type EX-1

THAI GYPSUM PRODUCTS PCL — Type X, Type C

UNITED STATES GYPSUM CO — Type AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC, WRX, USGX (Joint tape and compound, Item 5, optional for use with Type USGX)

USG BORAL ZAWAWI DRYWALL L L C SFZ — Types C, SCX

USG MEXICO S A DE C V — Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, USGX, WRC or WRX (Joint tape and compound, Item 5, optional for use with Type USGX)

4A. **Gypsum Board* —** (As alternate to Item 4) — Nom 5/8 in. thick gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered or backed by steel framing. Panels attached to steel studs and floor runner with 1 in. long Type S steel screws spaced 8 in. OC when applied horizontally, or 8 in. OC along vertical and bottom edges and 12 in. OC in the field when panels are applied vertically. When used in widths other than 48 in., gypsum panels to be installed horizontally.

CERTAINTEED GYPSUM INC — Type X, Type X-1, Type C, Type EGRG/ GlasRoc

CGC INC — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, USGX, WRC or WRX (Joint tape and compound, Item 5, optional for use with Type USGX)

CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C — Types LGFC2A, LGFC6A, LGFC-C/A, LGFC-WD

GEORGIA-PACIFIC GYPSUM L L C — Types DAP, DAPC, DGG, DS

SAINT-GOBAIN GYPROC MIDDLE EAST FZE — Type Gyproc FireStop, Gyproc FireStop MR, Gyproc FireStop M2TECH, Gyproc FireStop ACTIV'Air, Gyproc FireStop MR ACTIV'Air, Gyproc FireStop M2TECH ACTIV'Air, Gyproc DuraLine, Gyproc DuraLine MR, Gyproc DuraLine M2TECH, Gyproc DuraLine ACTIV'Air, Gyproc DuraLine MR ACTIV'Air, Gyproc DuraLine M2TECH ACTIV'Air

THAI GYPSUM PRODUCTS PCL — Type X, Type C

UNITED STATES GYPSUM CO — Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC, WRX, USGX (Joint tape and compound, Item 5, optional for use with Type USGX)

USG BORAL ZAWAWI DRYWALL L L C SFZ — Types C, SCX

USG MEXICO S A DE C V — Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, USGX, WRC or WRX (Joint tape and compound, Item 5, optional for use with Type USGX)

4B. **Gypsum Board* —** (As an alternate to Items 4 or 4A) — Nom 3/4 in. thick, 4 ft wide, installed as described in Item 4A with screw length increased to 1-1/4 in.

CGC INC — Types AR, IP-AR

UNITED STATES GYPSUM CO — Types AR, IP-AR

USG MEXICO S A DE C V — Types AR, IP-AR

4C. **Gypsum Board* —** As an alternate to Items 4, 4A, and 4B — Nom. 5/8 in. thick gypsum panels, with square edges, applied horizontally. Gypsum panels fastened to framing with 1 in. long bugle head steel screws spaced a max 8 in. OC, with last 2 screws 3/4 in. and 4 in. from each edge of board. Horizontal joints need not be backed by steel framing. Horizontal edge joints and horizontal butt joints on opposite sides of studs on interior walls need not be staggered or backed by steel framing.

GEORGIA-PACIFIC GYPSUM L L C — Type DGG, GreenGlass Type X

4D. **Gypsum Board* —** As an alternate to Items 4, 4A, 4B, and 4C — Nom. 5/8 in. thick gypsum panels applied vertically or horizontally. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered or backed by steel framing. Gypsum panels fastened to framing with 1 in. long Type S steel screws 8 in. OC along vertical edges and 12 in. OC in the field when panels are applied vertically. When gypsum panels applied horizontally, fasten to framing with 1 in. long Type S steel screws spaced 8 in. OC along vertical edges and in the field. Screws spaced a max 12 in. along the top and bottom edges of the wall for both vertical and horizontal applications.

NATIONAL GYPSUM CO — Types eXP-C, FSK, FSK-C, FSK-G, FSL, FSW-C, FSW-G, FSW, FSW-3, FSW-5, FSW-6, FSW-8, FSMR-C

4E. **Gypsum Board* —** (As an alternate to Items 4 through 4D) — Installed as described in Item 4. 5/8 in. thick, 4 ft. wide, paper surfaced, applied vertically only and fastened to the studs and plates with 1 in. long, Type S steel screws spaced, 8 in. OC. Not to be used with item 6.

NATIONAL GYPSUM CO — SoundBreak XP Type X Gypsum Board

4F. **Gypsum Board* —** (Not Shown) — (As an alternate to Item 4 when used as the base layer on one or both sides of wall. For direct attachment only to steel studs Item 2C) - Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Gypsum board secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field.

RAY-BAR ENGINEERING CORP — Type RB-LBG

4G. **Gypsum Board* —** (As an alternate to Items 4 through 4F) — For use with Items 1D and 2D only, 5/8 in. thick, 4 ft wide, attached to steel studs and floor and ceiling track with 1 in. long, Type S steel screws spaced 8 in. OC. along edges of board and 12 in. OC in the field of the board. Joints oriented vertically and staggered on opposite sides of the assembly.

CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C — Type LGFC6A, LGFC-C/A

NATIONAL GYPSUM CO — Types FSW

UNITED STATES GYPSUM CO — Type SCX

USG BORAL ZAWAWI DRYWALL L L C SFZ — Type SCX

4H. **Gypsum Board* —** (As an alternate to Items 4 through 4G) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically and secured as described in Item 4.

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock ES

4I. **Gypsum Board* —** (As an alternate to Items 4 through 4F) — For use with Items 1E and 2E only, 5/8 in. thick, 4 ft wide, attached to steel studs and floor and ceiling track with 1 in. long, Type S steel screws spaced 8 in. OC. along edges of board and 12 in. OC in the field of the board. Joints oriented vertically and staggered on opposite sides of the assembly.

UNITED STATES GYPSUM CO — Type SCX

USG BORAL ZAWAWI DRYWALL L L C SFZ — Type SCX

4J. **Gypsum Board* —** (Not Shown) — (As an alternate to Item 4 when used as the base layer on one or both sides of wall. For direct attachment only to steel studs Item 2C) — Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Gypsum board secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. To be used with Lead Batten Strips (see Item 9A) or Lead Discs (see Item 10A).

MAYCO INDUSTRIES INC — Type X-Ray Shielded Gypsum

4K. **Gypsum Board* —** (As an alternate to Item 4 and 4A, not for use with Items 1D, 1E, 2D and 2E) — Nom. 5/8 in. thick gypsum panels with beveled, square or tapered edges installed as described in Item 4 and 4A.

CGC INC — Type ULX

UNITED STATES GYPSUM CO — Type ULX

USG MEXICO S A DE C V — Type ULX

4L. **Gypsum Board* —** (Not Shown) — (As an alternate to Item 4 when used as the base layer on one or both sides of wall. For direct attachment only to steel studs Item 2C). Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws gypsum panel steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 8 ft long with a max thickness of 0.14 in. placed on the face of studs and attached to the stud with construction adhesive and two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, nominal 3/8 in. diam by max 0.085 in. thick. Compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".

RADIATION PROTECTION PRODUCTS INC — Type RPP - Lead Lined Drywall

4M. **Gypsum Board* —** (For use with Item 8) — 5/8 in. thick, 4 ft wide, applied vertically over Mineral and Fiber Board (Item 8) with vertical joints located anywhere over stud cavities. Secured to mineral and fiber boards with 1-1/2 in. Type G Screws spaced 8 in. OC along edges of each vertical joint and 12 in. OC in intermediate field of the Mineral and Fiber Board (Item 8). Secured to outermost studs and floor and ceiling runners with 2 in. long Type S screws spaced 8 in. OC. Gypsum Board joints covered with paper tape and joint compound. Screw heads covered with joint compound.

AMERICAN GYPSUM CO — Type AG-C

CERTAINTEED GYPSUM INC — Type FRPC, Type C

CGC INC — Types C, IP-X2, IPC-AR

CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C — Type LGFC-C/A

GEORGIA-PACIFIC GYPSUM L L C — Types 5, DAPC, TG-C

NATIONAL GYPSUM CO — Types eXP-C, FSK-C, FSW-C

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type PG-C

PANEL REY S A — Types PRC, PRC2

SAINT-GOBAIN GYPROC MIDDLE EAST FZE — Type Gyproc FireStop, Gyproc FireStop MR, Gyproc FireStop M2TECH, Gyproc FireStop ACTIV'Air, Gyproc FireStop MR ACTIV'Air, Gyproc FireStop M2TECH ACTIV'Air, Gyproc DuraLine, Gyproc DuraLine MR, Gyproc DuraLine M2TECH, Gyproc DuraLine ACTIV'Air, Gyproc DuraLine MR ACTIV'Air, Gyproc DuraLine M2TECH ACTIV'Air

THAI GYPSUM PRODUCTS PCL — Type C

UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR

USG BORAL ZAWAWI DRYWALL L L C SFZ — Type C

USG MEXICO S A DE C V — Types C, IP-X2, IPC-AR

4N. **Wall and Partition Facings and Accessories* —** (As an alternate to Item 4) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically and secured as described in Item 4.

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock 527

4O. **Gypsum Board* —** As an alternate to Items 4, 4A, 4B, and 4C — Two layers Nom. 5/16 in. thick gypsum panels applied vertically or horizontally. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered or backed by steel framing. Horizontal joints on the same side need not be staggered. When applied horizontally, both layers of gypsum board fastened to each side of framing with 1 in. long Type S steel screws spaced 8 in. OC and staggered 4 in. OC between layers. When applied vertically, both layers of gypsum board fastened to each side of framing with 1 in. long Type S steel screws spaced 8 in. OC along vertical edges and 12 in. OC in the field, staggered 4 in. OC between layers. Screws spaced a max 12 in. along the top and bottom edges of the wall.

NATIONAL GYPSUM CO — Type FSW

4P. **Gypsum Board* —** As an alternate to Item 4. For use with Item 3E, **Batts and Blankets*** — 5/8 in. thick, 4 ft wide attached to steel studs and floor and ceiling track with 1 in. long, Type S steel screws spaced 8 in. OC. along edges of board and 12 in. OC in the field of the board. Joints oriented vertically and staggered on opposite sides of the assembly. When attached to item 6 (resilient channels) or 6A, 6B or 6C (furring channels), gypsum board is screw attached to furring channels with 1 in. long, Type S steel screws spaced 12 in. OC.

UNITED STATES GYPSUM CO — Types ULIX

5. **Joint Tape and Compound —** Vinyl, dry or premixed joint compound, applied in two coats to joints and screw heads; paper tape, 2 in. wide, embedded in first layer of compound over all joints. As an alternate, nominal 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard. Joints reinforced. Paper tape and joint compound may be omitted when gypsum boards are supplied with square edges.

6. **Resilient Channel —** (Optional — Not Shown) — 25 MSG galv steel resilient channels spaced vertically max 24 in. OC flange portion attached to each intersecting stud with 1/2 in. long type S-12 pan head steel screws. May not be used with Item 4F or 4J.

6A. **Steel Framing Members* —** (Not Shown) — As an alternate to Item 6, furring channels and Steel Framing Member as described below:

a. **Furring Channels —** Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item

b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping No. 6 framing screws, min 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel.

b. **Framing Members* —** Used to attach furring channels (Item a) to studs (Item 2). Clips spaced 48 in. OC., and secured to studs with 1-5/8 in. wafer or hex head Type S steel screw through the center grommet. Furring channels are friction fitted into clips. RSIC-1 clip for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) clip for use with 2-23/32 in. wide furring channels.

PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-1 (2.75)

6B. **Framing Members* —** (Not Shown) — (Optional on one or both sides) — As an alternate to Item 6, furring channel and Steel Framing Members as described below:

a. **Furring Channels —** Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board attached to furring channels as described in Item 4.

b. **Steel Framing Members* —** Used to attach furring channels (Item 6Ba) to studs (Item 2). Clips spaced max. 48 in. OC. GENIECLIPS secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. Furring channels are friction fitted into clips.

PLITEQ INC — Type Genie Clip

6C. **Steel Framing Members* —** (Optional, Not Shown) — Furring channels and Steel Framing Members as described below:

a. **Furring Channels —** Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured together with four self-tapping No. 8x1/2 Self Drilling screws (2 per side 1 in. and 4 in. from overlap edge). Gypsum board attached to furring channels as described in Item 4. Side joint furring channels shall be attached to studs with RESILMOUNT Sound Isolation Clips - Type A237R located approximately 2 in. from each end of length of channel. Both Gypsum Boards at side joints fastened into channel with screws spaced 8 in. OC, approximately 1/2 in. from joint edge.

b. **Steel Framing Members* —** Used to attach furring channels (Item 6Ca) to studs. Clips spaced 24 in. OC., and secured to studs with No. 10 x 2-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.

STUDCO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips - Type A237R

7. **Wall and Partition Facings and Accessories* —** (Optional, Not Shown) — Nominal 1/2 in. thick, 4 ft wide panels, for optional use as an additional layer on one or both sides of the assembly. Panels attached in accordance with manufacturer's recommendations. When the QR-500 or QR-510 panel is installed between the steel framing and the UL Classified gypsum board, the required UL Classified gypsum board layer(s) is/are to be installed as indicated as to fastener type and spacing, except that the required fastener length shall be increased by a minimum of 1/2 in. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board.

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock QR-500 and QR-510

8. **Mineral and Fiber Board* —** (Optional, Not Shown) — For optional use as an additional layer on one side of wall. Nom 1/2 in. thick, 4 ft wide with long dimension parallel and centered over studs. Attached to studs and floor and ceiling runners with 1-5/8 in. long Type S steel screws, spaced 12 in. OC and 24 in. OC along all intermediate framing. The required UL Classified gypsum board layer (Item 4M) is to be installed over the Mineral and Fiber Boards. Batts and Blankets, Item 3D, and Adhesive, Item 11, are required.

HOMASOTE CO — Homasote Type 440-32

9. **Lead Batten Strips —** (Not Shown, For Use With Item 4E) — Lead batten strips, min 1-1/2 in. wide, max 10 ft long with a max thickness of 0.125 in. Strips placed on the interior face of studs and attached from the exterior face of the stud with two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum board (Item 4E) and optional at remaining stud locations. Required behind vertical joints.

9A. **Lead Batten Strips —** (Not Shown, for use with Item 4J) — Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.140 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.5% meeting the Federal specification QQ-L-201f, Grades "B, C or D". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 4J) and optional at remaining stud locations.

10. **Lead Discs or Tabs —** (Not Shown, For Use With Item 4E) — Used in lieu of or in addition to the lead batten strips (Item 8) or optional at other locations - Max 3/4 in. diam by max 0.125 in. thick lead discs compression fitted or adhered over steel screw heads or max 1/2 in. by 1-1/4 in. by max 0.125 in. thick lead tabs placed on gypsum boards (Item 4E) underneath screw locations prior to the installation of the screws. Lead discs or tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".

10A. **Lead Discs —** (Not Shown, for use with Item 4J) — Max 5/16 in. diam by max 0.140 in. thick lead discs compression fitted or adhered over steel screw heads. Lead discs to have a purity of 99.5% meeting the Federal Specification QQ-L-201f, Grades "B, C or D".

11. **Adhesive —** Not Shown — (For use with Item 8) — Construction grade adhesive applied in vertical, serpentine, nominal 3/8 in. wide beads down the length of both vertical edges of Mineral and Fiber Board (Item 8).

12. **Wall and Partition Facings and Accessories* —** (Optional, Not Shown) — For use with Items 1 to 1I, Items 2 to 2J, Item 3, Items 4 to 4I, Item 5 and Item 6. For maximum fire rating of 1 hour. On one side of the wall, over the first layer of Gypsum Board (Item 4 to Item 4I), install RefleXor membrane with the gold side facing outwards. Membrane installed with T50 staples spaced 12 inches on center in both directions as per manufacturer's instructions, seams in membrane to be overlapped by 2 inches. When RefleXor membrane is used an additional layer of Gypsum Board that is identical to the one used in the first layer and as specified in Item 4 to Item 4I shall be installed over the membrane. The additional layer of Gypsum Board to be installed through the membrane to the stud as specified in Item 4 to Item 4I except the fastener length shall be increased by a minimum of 5/8 inch. Install Batts and Blankets in the stud cavity as per Item 3. On the other side of the wall, prior to the installation of the Gypsum Board, install Resilient Channels as per Item 6. Over the Resilient Channels install 3/4 inch thick SONOpan panel secured to the Resilient Channels with drywall screws and washers spaced at 16 in. OC on the perimeter of the panel and 8 in. OC in the field of the panel. Over the SONOpan panel install the same Gypsum Board as specified in Item 4 to Item 4I with the fastener length increased by minimum 3/4 inch. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board.

MSL — RefleXor membrane, SONOpan panel

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

Last Updated on 2016-08-25

ONLINE CERTIFICATIONS DIRECTORY

System No. BW-S-0003
XHBN.BW-S-0003
Joint Systems

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Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

XHBN - Joint Systems

See General Information for Joint Systems

System No. BW-S-0003

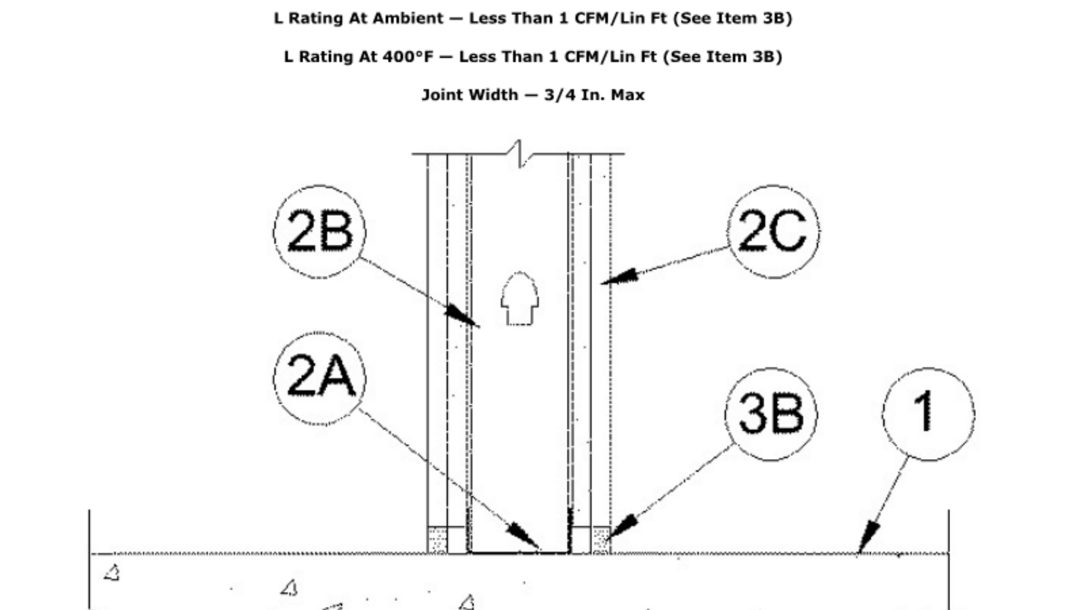
November 18, 2008

Assembly Ratings — 1 and 2 Hr (See Item 2)

L Rating At Ambient — Less Than 1 CFM/Lin Ft (See Item 3B)

L Rating At 400°F — Less Than 1 CFM/Lin Ft (See Item 3B)

Joint Width — 3/4 In. Max



1. **Floor Assembly —** Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) structural concrete. Floor may also be constructed of any 6 in. (152 mm) thick UL Classified hollow-core **Precast Concrete Units*.**

See **Precast Concrete Units** category in the Fire Resistance Directory for names of manufactures.

2. **Wall Assembly —** The 1 or 2 h fire-rated gypsum board/steel stud wall assembly shall be constructed of the materials and in the manner specified in the individual U400 or V400 Series Wall or Partition Design in the UL Fire Resistance Directory. In addition, the wall may incorporate a head-of-wall joint system constructed as specified in the HW Series Joint Systems in the UL Fire Resistance Directory. The wall shall include the following construction features:

A. **Steel Floor Runner —** Floor runners of wall assembly shall consist of min No. 25 gauge galv steel channels sized to accommodate steel studs (Item 2B). Floor runners to be provided with min 1-1/4 in. (32 mm) flanges. Runners secured with steel fasteners spaced 12 in. (305 mm) OC.

B. **Studs —** Steel studs to be min 3-1/2 in. (89 mm) wide. Studs cut 1/2 to 3/4 in. (13 to 19 mm) less in length than assembly height with bottom nesting in, resting on and fastened to floor runner with sheet metal screws. Stud spacing not to exceed 24 in. (610 mm) OC.

C. **Gypsum Board* —** Gypsum board installed to a min total thickness of 5/8 in. (16 mm) or 1-1/4 in. (32 mm) on each side of wall for a 1 or 2 hr fire rated wall, respectively. Wall to be constructed as specified in the individual U400 or V400 Series Design in the UL Fire Resistance Directory except that a max 3/4 in. (19 mm) gap shall be maintained between the bottom of the gypsum board and the top of the concrete floor.

The hourly fire rating of the joint system is equal to the hourly fire rating of the wall.

3. **Joint System — Max separation between top of floor and bottom of gypsum board is 3/4 in. (19 mm).** The joint system consists of a packing material and a fill material, as follows:

A. **Packing Material —** (Optional, Not Shown) - Mineral wool batt insulation, polyethylene backer rod or glass fiber insulation firmly packed into the gap between the bottom of the gypsum board and the top of the concrete floor and recessed from each surface of the wall to accommodate the required thickness of fill material.

B. **Fill, Void or Cavity Material*-Sealant —** Min 1/2 in. (13 mm) thickness of fill material installed on each side of the wall between the bottom of the gypsum board and the top of the concrete floor, flush with each surface of the wall. When mineral wool batt insulation is used as a packing material, min thickness of fill material on each side of the wall is 1/4 in. (6 mm).

SPECIFIED TECHNOLOGIES INC — SpecSeal ES Sealant, SpecSeal LCI Sealant, SpecSeal LC150 Sealant, Pensil 300 Sealant or SpecSeal Series SIL300.

Note: L Ratings apply when SpecSeal ES Sealant is used.

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

Last Updated on 2008-11-18

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ONLINE CERTIFICATIONS DIRECTORY

System No. HW-D-0044
XHBN.HW-D-0044
Joint Systems

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- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

XHBN - Joint Systems

XHBN7 - Joint Systems Certified for Canada

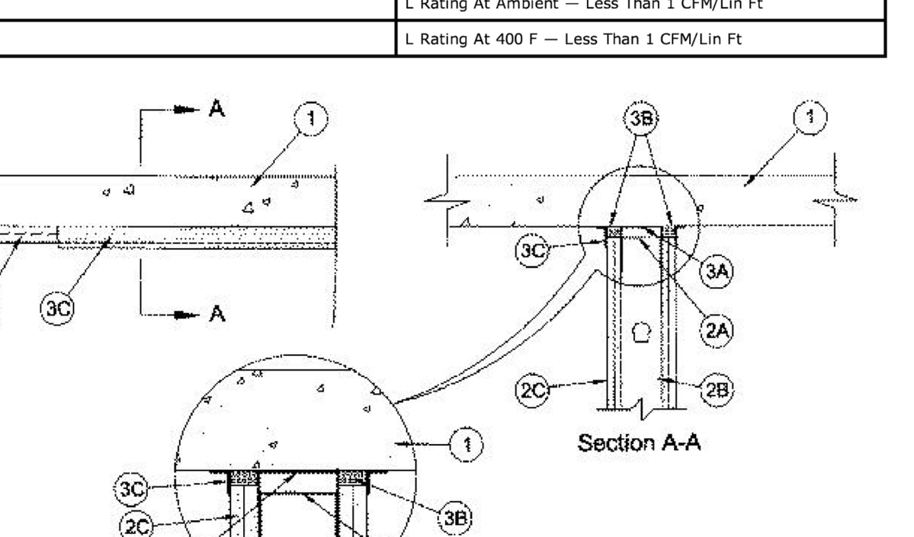
See General Information for Joint Systems

See General Information for Joint Systems Certified for Canada

System No. HW-D-0044

December 08, 2015

ANSI/UL2079	CAN/ULC S115
Assembly Ratings — 1, 2, 3 and 4 Hr (See Item 2)	F Ratings — 1, 2, 3, and 4 Hr (See Item 2)
Nominal Joint Widths — 1-1/2 and 2-1/2 In. (See Item 3)	FT Ratings — 1, 2, 3, and 4 Hr (See Item 2)
Class II Movement Capabilities — 40 or 50% Compression or Extension (See Item 3)	FH Ratings — 1, 2, 3, and 4 Hr (See Item 2)
L Rating At Ambient — Less Than 1 CFM/Lin Ft	FTH Ratings — 1, 2, 3, and 4 Hr (See Item 2)
L Rating At 400 F — Less Than 1 CFM/Lin Ft	Nominal Joint Widths — 1-1/2 and 2-1/2 In. (See Item 3)
	Class II Movement Capabilities — 40 or 50% Compression or Extension (See Item 3)
	L Rating At Ambient — Less Than 1 CFM/Lin Ft
	L Rating At 400 F — Less Than 1 CFM/Lin Ft



1. **Floor Assembly —** Min 4-1/2 in. (114 mm) thick steel-reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) structural concrete.

2. **Wall Assembly —** 1, 2, 3 or 4 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described in the individual U400, V400 or W400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:

A. **Steel Floor and Ceiling Runners —** Floor and ceiling runners of wall assembly shall consist of galv steel channels sized to accommodate steel studs (Item 2B). When deflection channel (Item 3A) is used, flange height of ceiling runner is to be equal to or greater than flange height of deflection channel and the ceiling runner is to nest within the deflection channel with a 3/4 to 1 in. (19 to 25 mm) gap maintained between the top of the ceiling runner and the top of the deflection channel. When deflection channel is not used, flange height of ceiling runner shall be min 3/4 in. (19 mm) greater than nom joint width. Ceiling runner is secured to concrete floor slab with steel masonry anchors spaced max 24 in. (610 mm) OC.

A1. **Light Gauge Framing* - Slotted Ceiling Runner —** When nom joint width is less than or equal to 1-3/4 in. (45 mm), slotted ceiling runner may be used as an alternate to the ceiling runner in Item 2A. Slotted ceiling runner to consist of galv steel channel with slotted flanges sized to accommodate steel studs (Item 2B). Ceiling runner secured to concrete floor slab with steel masonry anchors spaced max 24 in. (610 mm) OC. When slotted ceiling runner is used, deflection channel (Item 3A) shall not be used.

BRADY CONSTRUCTION INNOVATIONS INC, DBA SLIPTRACK SYSTEMS — SLP-TRK

CALIFORNIA EXPANDED METAL PRODUCTS CO — CST

CLARKDIETRICH BUILDING SYSTEMS — Type SLT, SLT-H

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Type SLT

METAL-LITE INC — The System

SCAFCO STEEL STUD MANUFACTURING CO

TELLING INDUSTRIES L L C — True-Action Deflection Track

THE STEEL NETWORK INC — VertiTrack VT series, 250VT, 362VT, 400VT, 600VT and 800VT

A2. **Light Gauge Framing* - Vertical Deflection Ceiling Runner —** When nom joint width is less than or equal to 1 in. (25 mm), vertical deflection ceiling runner may be used as an alternate to the ceiling runner in Items 3A and 3A1., Vertical deflection ceiling runner to consist of galv steel channel with slotted vertical deflection clips mechanically fastened within runner. Slotted clips, provided with step bushings, for permanent fastening of steel studs. Vertical deflection ceiling runner secured to concrete floor slab with steel masonry anchors spaced max 24 in. (610 mm) OC. When vertical deflection ceiling runner is used, deflection channel (Item 4A) shall not be used.

THE STEEL NETWORK INC — VertiTrack VTD362, VTD400, VTD600 and VTD800

A3. **Light Gauge Framing*- Notched Ceiling Runner —** As an alternate to the ceiling runners in Items 2A through 2A3, notched ceiling runners to consist of C-shaped galv steel channel with notched return flanges sized to accommodate steel studs (Item 2B). Notched ceiling runner secured to concrete floor slab with steel masonry anchors spaced max 24 in. (610 mm) OC. When notched ceiling runner is used, deflection channel (Item 3A) shall not be used.

OLMAR SUPPLY INC — Type SCR

A4. **Light Gauge Framing* —Vertical Deflection Clip* —** (Optional) Steel clips can be used in conjunction with steel studs (Item 2B), ceiling runner (Item 2A) or deflection channel (Item 3A). Clips installed over the top of studs and inserted within the ceiling runner or deflection channel. Clip shall be secured to the ceiling runner or deflection channel with No. 8 self drilling, self tapping steel fasteners through holes provided within the clip. Clip may be secured to the stud with No. 6 pan head steel screw through holes provided within the clip. As an alternate, the legs of the clip may be installed over the top of the stud without attachment in accordance with manufacturer's installation instructions.

FLEX-ABILITY CONCEPTS L L C — Three Legged Dog Deflection Clip

A5. **Steel Framing Members* — Sound Isolation Clips —** (Not Shown, For Max 2 Hr Rating) - As an alternate attachment means for the ceiling runner to the underside of the floor when no deflection channel (Item 3A) is used, sound isolation clips installed in accordance with the accompanying installation instructions. Sound isolation clip installed through nom 1 in. (25 mm) diam hole in ceiling runner and attached to top of ceiling runner using four min No. 8 by 1/2 in. (13 mm) long self-tapping galv steel screws. Sound isolation clips to be installed adjacent to every stud location but not more than 24 in. (610 mm) OC and attached to the underside of floor assembly using min 3/16 in. (5 mm) diam by 2-1/2 in. (64 mm) long steel masonry anchors.

PAC INTERNATIONAL L L C — Type RSIC-U-HD

B. **Studs —** Steel studs to be min 3-1/2 in. (89 mm) wide. Studs cut 1/2 to 1 in. (13 to 25 mm) less in length than assembly height with bottom nesting in and secured to floor runner. When deflection channel (Item 3A) is used, steel studs attached to ceiling runner (Item 2A) with sheet metal screws located 1/2 in. (13 mm) below the bottom to the deflection channel. When deflection channel is not used, studs to nest in ceiling runner without attachment. When slotted ceiling runner (Item 2A1) is used, steel studs secured to slotted ceiling runner with No. 8 by 1/2 in. (13 mm) long wafer head steel screws at mid-height of slot on each side of wall. When vertical deflection ceiling runner (Item 2A2) is used, steel studs secured to slotted vertical deflection clips, through the bushings, with steel screws at mid-height of each slot. Stud spacing not to exceed 24 in. (610 mm) OC.

C. **Gypsum Board* —** Gypsum board sheets installed to a min total 5/8 in., 1-1/4 in., 1-1/2 in. or 2 in. (16, 32, 38 or 51 mm) thickness on each side of wall for 1, 2, 3 or 4 hr rated assemblies, respectively. Wall to be constructed as specified in the individual U400, V400 or W400 Series Design in the UL Fire Resistance Directory, except that a max 1 or 2-1/2 in. (25 or 64 mm) gap (See Item 3) shall be maintained between the top of the gypsum board and the lower surface of the floor . The screws attaching the gypsum board to the studs along the top of the wall shall be located 1 in. (25 mm) below the bottom of the ceiling runner. No gypsum board attachment screws shall be driven into the ceiling runner or into the optional deflection channel.

The hourly fire rating of the joint system is equal to the hourly fire rating of the wall.

3. **Joint System — Max separation between bottom of floor and top of gypsum board (at time of installation of joint system) is 2-1/2 in. (64 mm) for 1 and 2 hr ratings and 1 in. (25 mm) for 3 and 4 hr ratings. The joint system is designed to accommodate a max 50 percent compression or extension from its installed width for max 1-1/2 in. (38 mm) wide joints and a max 40 percent compression or extension from its installed width for max 2-1/2 in. (64 mm) wide joints.** The joint system shall consist of forming and fill materials, with or without a deflection channel (Item 3A), as follows:

A. **Deflection Channel —** (Optional) - Max 3 in. (76 mm) deep min 24 gauge galv steel channel sized to accommodate ceiling runner (Item 2A). Deflection channel secured to concrete floor slab with steel masonry anchors spaced max 24 in. (610 mm) OC. The ceiling runner (Item 2A) is installed within the deflection channel to maintain a 1/2 to 3/4 in. (13 to 19 mm) gap

between the top of the ceiling runner and the top of the deflection channel. The ceiling runner nests inside the deflection channel without attachment.

B. **Forming Material* —** Sections of min 4 pcf (64 kg/m³) density mineral wool batt compressed 50 percent in thickness and installed cut edge first to completely fill the gap between the top of the gypsum board and the bottom of the concrete floor. When sound isolation clips (Item 2A6) are used, the space between the top of the ceiling runner and the underside of the floor shall be tightly packed with mineral wool batt insulation. The forming material shall be installed flush with both surfaces of wall.

INDUSTRIAL INSULATION GROUP L L C — MinWool-1200 Safing

ROCK WOOL MANUFACTURING CO — Delta Board

ROCKWOOL MALAYSIA SDN BHD — Safe

ROXUL INC — Safe

THERMAFIBER INC — SAF

C. **Fill, Void or Cavity Material* — Sealant —** Min 1/16 in. (1.6 mm) dry thickness (1/8 in. or 3.2 mm wet thickness) of fill material spray applied on each side of the wall between the top of the wall and the bottom of the floor, and overlap a min 1/2 in. (13 mm) onto gypsum board on both sides of wall. Additional 1/16 in. (1.6 mm) dry thickness (1/8 in. or 3.2 mm wet thickness) of fill material shall overlap a min 1/2 in. (13 mm) onto the floor on both sides of wall.

SPECIFIED TECHNOLOGIES INC — SpecSeal AS200 Elastomeric Spray

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

Last Updated on 2015-12-08

STATE OF MISSOURI
SAMUEL K. BECKMAN
NUMBER A-2011012130
ARCHITECT

09/01/17

Samuel K. Beckman - Architect
License - Missouri #A-2011012130

ACI
BOLAND
ARCHITECTS

ACI/Boland, Inc.
Kansas City | St. Louis
Licensee's Certificate of Authority Number:
Missouri: #000958

MEP CONSULTANT

W.L. Cassell & Associates, Inc. now IMEG
1600 BALTIMORE AVE, SUITE 300
KANSAS CITY, MO 64108
Phone Number: 816.842.8327
Missouri: #00127265

Saint Luke's
EAST HOSPITAL

LAB REMODEL
100 NE ST LUKES BLVD,
LEE'S SUMMIT, MO 64086

Date	09.18.2020
Job Number	3-20030
Drawn By	Author
Checked By	Checker

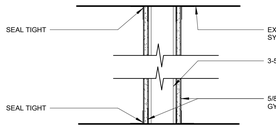
Revision

Number	Date	Description

A0.4

U.L. DESIGN ASSEMBLIES

9/18/2020 5:19:31 PM



WHERE DUST PARTITIONS ARE TO REMAIN THROUGH CONSTRUCTION, THEY SHALL BE CONSTRUCTED OF 3-5/8" METAL STUDS WITH CONTINUOUS TOP AND BOTTOM RUNNERS. PARTITIONS SHALL EXTEND TIGHT FROM FLOOR TO THE EXISTING CEILING OR STRUCTURE ABOVE, AND COPED AROUND DUCTS, PIPES, ETC., THAT PENETRATE THE PARTITION. THE ENTIRE PARTITION SHALL BE COVERED WITH 5/8" FIRE RATED GYP. BOARD SCREWED TO STUDS. ALL JOINTS BETWEEN SHEATHING, AT WALLS, AT FLOORS, CEILINGS, AROUND PIPES, ETC., TAPED AND SEALED TIGHT TO ENSURE DUST-PROOFING.

THE CONTRACTOR SHALL COVER AND SEAL IN A DUST-TIGHT MANNER ALL EXISTING OPENINGS, GRILLES, JOINTS AROUND DOORS AND FRAMES, ETC., WITH FIRE RETARDANT SHEET AND/OR TAPE AS APPROPRIATE WHERE SUCH OPENINGS, ETC., OCCUR IN EXISTING PARTITIONS SEPARATING EXISTING AREAS FROM CONSTRUCTION AREAS. THE CONTRACTOR SHALL MAINTAIN AND REPAIR ANY DUST BARRIERS AS DETERMINED BY, AND TO THE SATISFACTION OF, THE OWNER.

DP SMOKE TIGHT (NON-COMBUSTIBLE CONSTRUCTION PARTITION)
1 1/2" = 1'-0"

DEMOLITION LEGEND

	NOT IN SCOPE
	EXISTING WALL, DOOR, FRAME AND HARDWARE TO REMAIN
	WALLS, DOORS, DOOR/WINDOW FRAMES, EQUIPMENT, FIXTURES, ETC. INDICATED BY DASHED LINES WITHIN THE AREA OF CONSTRUCTION SHALL BE REMOVED. REFER TO THIS SHEET FOR ARCHITECTURAL DEMOLITION NOTES.
DP	DUST PARTITIONS - THE CONTRACTOR SHALL MAKE EVERY EFFORT TO ENSURE THE EXISTING BUILDING TO BE COMPLETELY PROTECTED AGAINST INFILTRATION OF DUST AND MOISTURE DURING THE COURSE OF DEMOLITION/ CONSTRUCTION WITH DUST PARTITIONS ACROSS CORRIDORS AND OPENINGS THRU EXISTING WALLS. ALL CONSTRUCTION WORK CREATING ANY TYPE OF DUST THROUGHOUT THE BUILDING SHALL BE SHIELDED BY DUST PROTECTION. PROVIDE DOOR OPENING AS REQUIRED FOR EMERGENCY EGRESS.
DB	DUST BARRIERS - (2) LAYERS 6 MIL PVC W/ STUDS @ 4'-0" O.C. DUST BARRIER. THE CONTRACTOR SHALL MAKE EVERY EFFORT TO ENSURE THE EXISTING BUILDING TO BE COMPLETELY PROTECTED AGAINST THE INFILTRATION OF DUST & MOISTURE DURING THE COURSE OF DEMOLITION/ CONSTRUCTION. PROVIDE DOOR OPENING AS REQUIRED FOR EMERGENCY EGRESS.

GENERAL DEMOLITION NOTES

1. THE OWNER SHALL VACATE THE EXISTING ROOMS AS INDICATED ON THE PLAN AND BE RESPONSIBLE FOR THE REMOVAL OF ANY EQUIPMENT WHICH IS TO REMAIN THE PROPERTY OF THE OWNER PRIOR TO ANY WORK DONE BY THE CONTRACTOR FOR THIS PORTION OF THE SEQUENCE.
2. INSTALL TEMPORARY DUST PARTITION AND/OR BARRIERS AND OTHER METHODS AS MAY BE REQUIRED/NECESSARY AS INDICATED ON THE PLAN AND AS NECESSARY TO CONTAIN DEMOLITION/ CONSTRUCTION DUST AND DEBRIS WITHIN THE AREA OF CONSTRUCTION. REFER TO DUST PARTITION "DP" ON THIS SHEET FOR ADDITIONAL INFORMATION.
3. IT IS THE INTENT OF THIS DEMOLITION TO REMOVE ALL EXISTING CONSTRUCTION WHICH CONFLICTS WITH THE INTENT OF THE NEW CONSTRUCTION. EVERY DEMOLITION DETAIL MAY NOT NECESSARILY BE COVERED ON THESE DRAWINGS. FIELD VERIFY THE EXTENT OF ALL DEMOLITION.
4. THE CONTRACTOR SHALL USE EXTREME CARE IN THE PROTECTION OF ALL ADJACENT AREAS FOR IT IS IMPERATIVE TO PROVIDE CONTINUOUS OPERATION OF ALL OCCUPIED AREAS DURING THE DEMOLITION, CONSTRUCTION AND RENOVATION.
5. ALL DEMOLITION DESCRIBED IN THESE DOCUMENTS SHALL BE COORDINATED WITH PHASING WORK REQUIRED TO COMPLETE THE WORK.
6. THE CONTRACTOR SHALL COORDINATE ALL DEMOLITION WORK WITHIN OCCUPIED SPACES ABOVE, BELOW AND ADJACENT TO THE WORK. THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE MANAGEMENT OF THE OCCUPIED SPACES ABOVE, BELOW, AND ADJACENT TO THE WORK, TWO WEEKS PRIOR TO COMMENCING WORK. SUCH SPACES ARE TO REMAIN OCCUPIED DURING DEMOLITION AND ALL WORK SHALL BE PERFORMED IN SUCH A MANNER TO MINIMIZE DISRUPTION TO OCCUPIED SPACES. EXISTING FLOOR, WALL AND CEILING FINISHES TO REMAIN SHALL BE PROTECTED AND ANY DAMAGE DONE AS A RESULT OF DEMOLITION WORK SHALL BE REPAIRED.
7. IN AREAS SCHEDULED FOR DEMOLITION, THE CONTRACTOR SHALL REMOVE ALL ACCESSORIES, GRAB BARS, MIRRORS, SOAP AND PAPER TOWEL DISPENSERS, SHELVES, BULLETIN BOARDS, ETC., SHALL BE TURNED OVER TO THE OWNER OR SALVAGED FOR RELOCATION.
8. GENERAL CONTRACTOR AND SUB-CONTRACTORS SHALL TAKE CARE TO MINIMIZE THE DAMAGE TO EXISTING FINISHES, SURFACES, AND FURNISHINGS WHICH REMAIN. IF ANY DAMAGE WHICH OCCURS TO ADJACENT SURFACE OR MATERIALS AS A RESULT OF DEMOLITION OR CONSTRUCTION ACTIVITIES SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO REPAIR AT THEIR COST.
9. WHERE NEW FINISHES ARE CALLED FOR, REMOVE AND DISCARD EXISTING FLOORING, CEILINGS AND WALL COVERING THROUGH-OUT AREA DESIGNATED FOR NEW CONSTRUCTION AND PREP EXISTING FLOOR AND WALL SUBSTRATE TO RECEIVE THE INSTALLATION OF NEW FINISH AS SCHEDULED.
10. SEE NEW WORK PLAN FOR REPAIR AND PREPARATION OF ADJACENT SURFACES.
11. WHERE CEILING IS TO REMAIN, REMOVE ALL DAMAGED CEILING PANELS/ TILES AND REPLACE WITH NEW TO MATCH EXISTING.
12. REMOVE AND RETURN TO THE OWNER ALL EXISTING PLUMBING FIXTURES. CAP ALL SUPPLY AND WASTE LINES AS REQUIRED. REFER TO PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
13. THE CONTRACTOR SHALL PATCH TO MATCH ADJACENT SURFACES OF EXISTING WALLS, FLOOR, AND CEILINGS IN ALL AREAS THAT REQUIRE THE REMOVAL OF GENERAL MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION WORK AND OF EQUIPMENT AND FIXTURES.
14. THE CONTRACTOR SHALL PROVIDE FOR ALL NECESSARY TEMPORARY RELOCATION AND MAINTENANCE OF ALL EXISTING UTILITIES WHICH ARE CURRENTLY IN USE AND WHICH MUST BE TEMPORARILY RELOCATED DURING CONSTRUCTION OF NEW AREAS AND RENOVATION OF EXISTING AREAS.
15. REFER TO MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION DRAWINGS FOR WORK REQUIRED FOR NEW CONSTRUCTION.
16. WHERE REMOVAL OF EXISTING PARTITIONS, EQUIPMENT, ETC. DISTURBS EXISTING MECHANICAL, PLUMBING OR ELECTRICAL SERVICES, THE CONTRACTOR SHALL MAKE PERMANENT REVISIONS/PROVISIONS AS REQUIRED TO MAINTAIN SERVICES AND IF NECESSARY, PROVIDE TEMPORARY SERVICES TO AREAS NOT SCHEDULED FOR DEMOLITION, RENOVATION, AND/OR NEW CONSTRUCTION.
17. WHERE EXISTING WALLS, CEILINGS, OR FLOORS ARE DAMAGED BY THE CONTRACTOR FOR ACCESS TO SERVICES AND NEW CONSTRUCTION WHICH MAY NOT BE INDICATED IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL BE RESPONSIBLE TO PATCH TO MATCH MATERIAL AND FINISHES TO ORIGINAL CONDITIONS. IF EXISTING FINISHES CANNOT BE MATCHED, THE ENTIRE WALL, CEILING, OR FLOOR SHALL BE REFINISHED TO THE NEAREST CORNER OR POSITIVE BREAKING POINT.
18. WHEN DEMOLITION CAUSES DAMAGE TO FLOOR SLAB, WALL, OR CEILING SURFACES WHICH WILL REMAIN EXPOSED IN THE FINISHED WORK, SUCH CONDITIONS SHALL BE REPAIRED AND LEVELED AS REQUIRED TO RECEIVE NEW FINISHES.
19. WHEN DEMOLITION EXPOSES DAMAGE TO FLOOR SLAB, WALL, OR CEILING SURFACES WHICH WILL REMAIN EXPOSED IN THE FINISHED WORK, SUCH CONDITIONS SHALL BE REPORTED TO THE ARCHITECT AND OWNER WITH A RECOMMENDATION FOR RESOLUTION OF THE CONDITIONS.
20. CLEAN AIR GRILLES AND LIGHT FIXTURES THROUGHOUT PROJECT AREA UPON COMPLETION OF WORK.
21. WHERE EXISTING PHONE, DATA, OR PHONE/DATA OUTLETS ARE REMOVED, THE CONTRACTOR SHALL USE EXTREME CARE IN PULLING WIRE THROUGH THE EXISTING CONDUITS, COIL AND WRAP ABOVE EXISTING CEILING FOR REUSE.
22. WHERE EXTERIOR WALLS, WINDOWS, AND/OR DOORS ARE BEING REMOVED, THE CONTRACTOR WILL BE RESPONSIBLE TO CONSTRUCT TEMPORARY PARTITIONS AS REQUIRED TO ENSURE THAT THE EXISTING BUILDINGS REMAIN WATERTIGHT, SECURE, AND WITHOUT DRAFTS DURING DEMOLITION WORK. THESE PARTITIONS SHALL REMAIN IN PLACE DURING THE NEW CONSTRUCTION WORK, OR AS REQUIRED TO MAINTAIN THIS SEPARATION.

KEYNOTES - DEMO PLAN

NUMBER	COMMENTS
1	REMOVE SINK, CABINETS, COUNTERTOP AND ASSOCIATED PLUMBING AND ELECTRICAL ITEMS. RE: MEP DRAWINGS FOR ADDITIONAL INFORMATION.
2	REMOVE EXISTING DOOR AND HARDWARE.
3	REMOVE EXISTING FIRE EXTINGUISHER CABINET AND SALVAGE FOR REUSE. RE: LIFE SAFETY PLAN FOR RELOCATION.
4	COORDINATE REMOVAL OF EXISTING MODULAR CASEWORK, MODULAR WALLS, AND MODULAR PANELS WITH OWNER. TERMINATE AND CAP ALL ELECTRICAL.
5	COORDINATE REMOVAL & RELOCATION OF ALL EXISTING FURNITURE & EQUIPMENT WITH OWNER.
6	PATCH & REPAIR EXISTING FLOOR AS NEEDED.
7	REMOVE EXISTING FLOORING & WALL BASE. PREP SUBFLOOR TO RECEIVE NEW FLOORING.
8	PREP REMAINING WALLS TO RECEIVE NEW WALL BASE. PATCH, REPAIR, AND PAINT REMAINING EXISTING WALLS AS NEEDED.
9	REMOVE EXISTING POWER POLES. CAP ALL WIRES & CONDUIT AS NEEDED. SALVAGE POLES FOR REUSE. RE: MEP
10	REMOVE EXISTING TV AND ASSOCIATED BRACKET. CAP ALL WIRES & CONDUIRT AS NEEDED. SALVAGE TV AND BRACKET FOR REUSE. RE: MEP
11	REMOVE EXISTING COMPUTER, MONITOR, AND ACCESSORIES. SALVAGE FOR REUSE.
12	REMOVE EXISTING ANALYZERS. RE: PHASING PLAN FOR TEMPORARY RELOCATION.
14	REMOVE SINK, CABINETS, COUNTERTOP AND ASSOCIATED PLUMBING AND ELECTRICAL ITEMS. SALVAGE FOR REUSE. RE: FLOOR PLAN & MEP
15	REMOVE EXISTING LIGHT FIXTURE. SALVAGE FOR REUSE. RE: MEP
16	REMOVE EXISTING SUPPLY DIFFUSER. SALVAGE FOR REUSE. RE: MEP
17	MOVE EXHAUST DUCT AND REPLACE CEILING TILE, IF NEEDED, TO ACCOMMODATE FUME HOOD RELOCATION.
18	REMOVE EXISTING POWER POLES. CAP ALL WIRES & CONDUIT AS NEEDED. SALVAGE POLES FOR REUSE. RE: MEP. REPLACE INDIVIDUAL CEILING TILES AS NEEDED AFTER POWER POLES ARE RE-LOCATED.
19	REMOVE EXISTING CEILING GRID AND TILES.

A3 01 - FIRST FLOOR DEMO PLAN - PHASE 2
1/4" = 1'-0"

PLAN NORTH / TRUE NORTH

STATE OF MISSOURI
SAMUEL K. BECKMAN
A-20110
ARCHITECT
08/30/13

Samuel K. Beckman - Architect
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Saint Luke's EAST HOSPITAL

LAB REMODEL
100 NE ST LUKES BLVD,
LEE'S SUMMIT, MO 64086

Date	09.18.2020
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Drawn By	BR
Checked By	AD

Revision

Number	Date	Description

AD2.1

DEMOLITION PLAN

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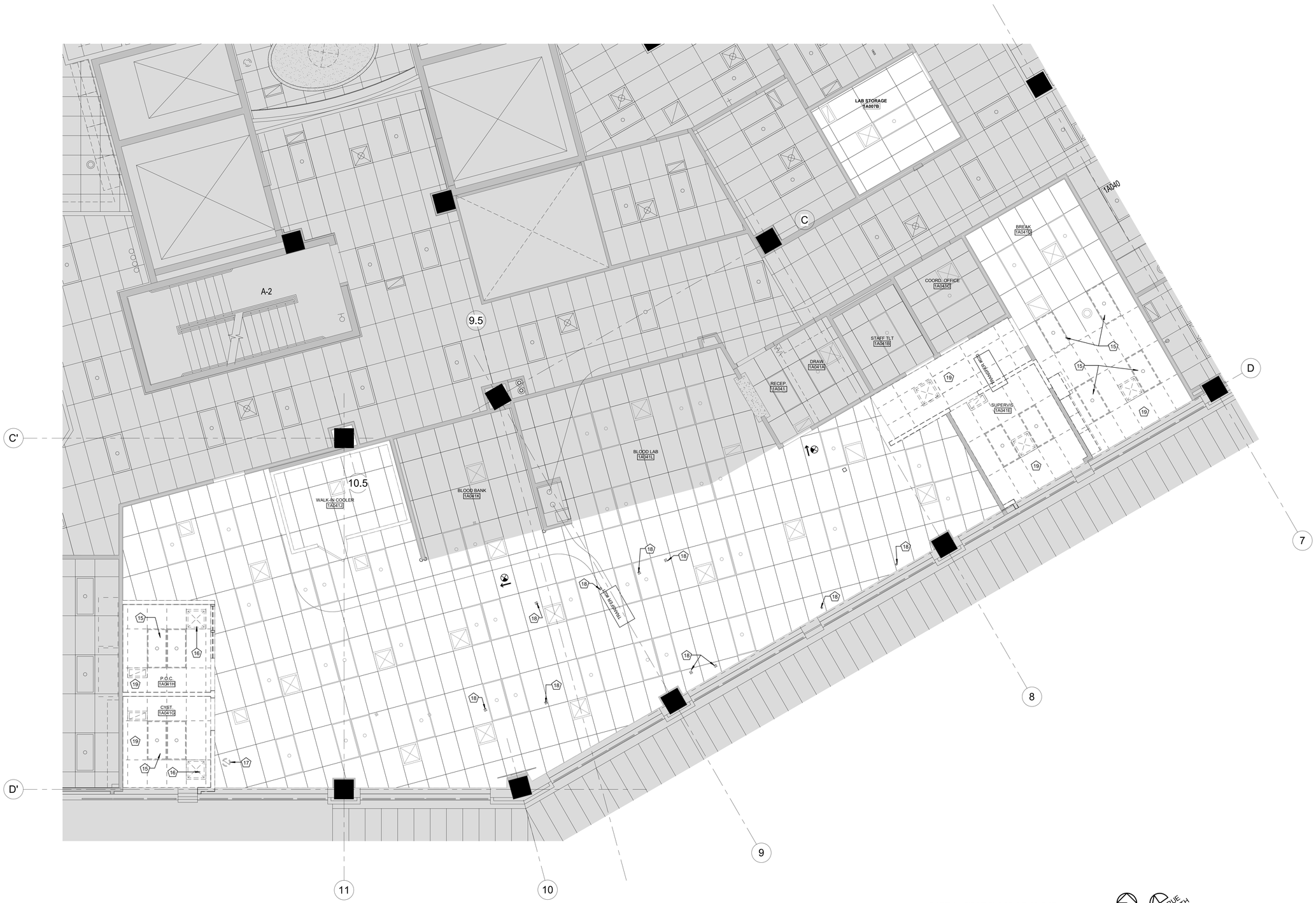
KEYNOTES - DEMO RCP

NUMBER	COMMENTS
15	REMOVE EXISTING LIGHT FIXTURE. SALVAGE FOR REUSE. RE: MEP
16	REMOVE EXISTING SUPPLY DIFFUSER. SALVAGE FOR REUSE. RE: MEP
17	MOVE EXHAUST DUCT AND REPLACE CEILING TILE, IF NEEDED, TO ACCOMMODATE FUME HOOD RELOCATION.
18	REMOVE EXISTING POWER POLES. CAP ALL WIRES & CONDUIT AS NEEDED. SALVAGE POLES FOR REUSE. RE: MEP. REPLACE INDIVIDUAL CEILING TILES AS NEEDED AFTER POWER POLES ARE RE-LOCATED.
19	REMOVE EXISTING CEILING GRID AND TILES.



A2 PARTIAL FIRST FLOOR DEMO RCP
1/4" = 1'-0"

PLAN NORTH / TRUE NORTH

STATE OF MISSOURI
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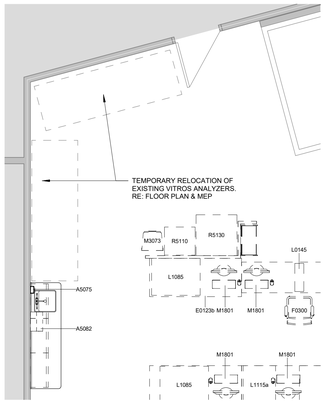
AD2.2

DEMOLITION REFLECTED CEILING PLAN

9/18/2020 5:19:55 PM



D4 TEMP ANALYZERS LOCATION
1/4" = 1'-0"

PLAN NORTH / TRUE NORTH

PHASING NOTES

CONSTRUCTION PHASING SUMMARY

1. THE LAB IS A 24 HOUR/7 DAY PER WEEK OPERATION.
2. INSTALL TEMPORARY CONSTRUCTION PARTITION DURING EACH PHASE OF THE WORK TO CONTAIN CONSTRUCTION DUST AND DEBRIS WITHIN THE CONSTRUCTION AREA. CONTRACTOR TO INSTALL ADDITION PLASTIC DUST PARTITIONS IN CORRIOR OR ELSEWHERE AS NEEDED FOR CONSTRUCTION PHASING.

PHASE 1A

1. COORDINATE REMOVAL & RELOCATION OF ALL EXISTING EQUIPMENT AND FURNITURE IN TRANSPORTER'S OFFICE 1A007B.
2. PERFORM NEW FINISH WORK. (RE: FINISH PLAN & FINISH SCHEDULE)

PHASE 1B

1. COORDINATE REMOVAL & RELOCATION OF ALL WIRE SHELVING TO NEW LAB STORAGE 1A007B (PREVIOUSLY TRANSPORTER'S OFFICE 1A007B).
2. DEMO EXISTING OFFICES P.O.C. 1A041H & CYST 1A041G (RE: DEMO PLAN).
3. PERFORM ALL DEMO & NEW CEILING WORK AT EXISTING OFFICES P.O.C. 1A041H & CYST 1A041G (RE: DEMO RCP & RCP)
4. RELOCATE EXISTING VITROS TO TEMPORARY LOCATION IN LAB. (RE: D4/AP2.1 FOR TEMP LOCATION.)

PHASE 1C

1. COORDINATE RELOCATION OF ALL FURNITURE IN LAB 1A041M (RE: FLOOR PLAN)
2. COORDINATE RELOCATION OF ALL EQUIPMENT IN LAB 1A041M (RE: FLOOR PLAN)
3. PERFORM NEW WORK.
4. NEW SIEMENS CHEMISTRY ANALYZERS TO BE INSTALLED. (RE: FLOOR PLAN, MEP, & VENDOR DRAWINGS).
5. ALL UTILITY WORK REQUIRED FOR BOTH THE NEW SIEMENS CHEMISTRY ANALYZERS AND SIEMENS AUTOMATION LINE TO BE COMPLETED DURING THIS PHASE. (RE: MEP & VENDOR DRAWINGS).

PHASE 2A

1. COORDINATE REMOVAL & RELOCATION OF FURNITURE, EQUIPMENT, AND CASEWORK AS REQUIRED IN BREAK ROOM 1A041D. (RE: DEMO PLAN).
2. PERFORM NEW WORK IN BREAK ROOM 1A041D, CREATING NEW SUPERVISOR'S OFFICE 1A037C.
3. COORDINATE RELOCATION OF FURNITURE FROM EXISTING SUPERVISOR'S OFFICE 1A041E TO NEW SUPERVISOR'S OFFICE 1A037C.
4. PERFORM NEW WORK TO EXISTING SUPERVISOR'S OFFICE 1A041E, CREATING NEW SHARED OFFICE 1A041E.

PHASE 2B

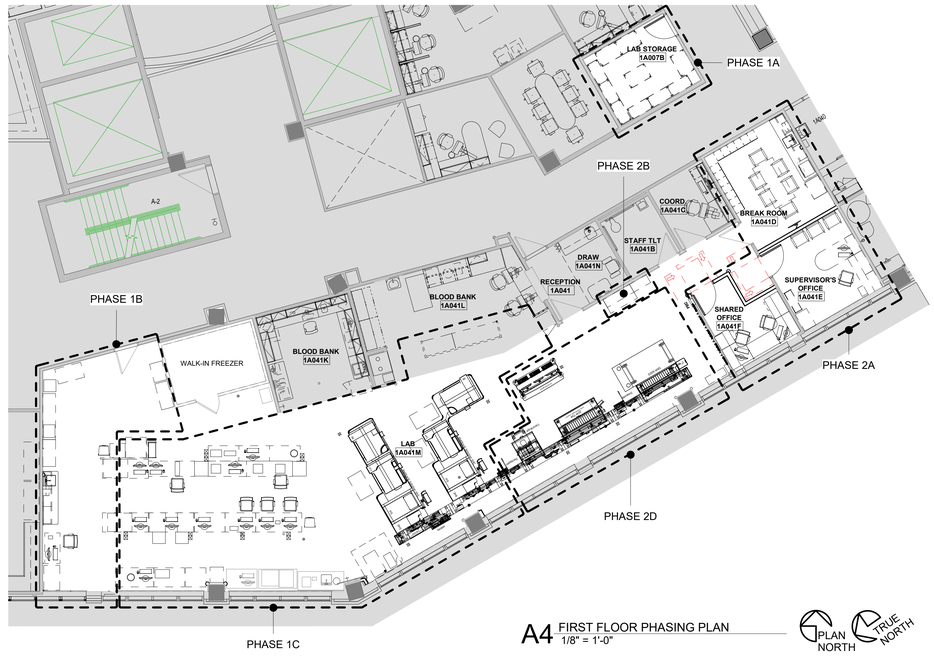
1. COORDINATE RELOCATION OF FURNITURE & EQUIPMENT FROM EXISTING SHARED OFFICE TO NEW SHARED OFFICE 1A041E.
2. DEMO EXISTING SHARED OFFICE. (RE: DEMO PLAN).

PHASE 2C

1. COORDINATE REMOVAL OF TEMPORARILY RELOCATED ANALYZERS.
2. COORDINATE RELOCATION OF ALL FILE STORAGE (RE: FLOOR PLAN).
3. COORDINATE REMOVAL OF EXISTING MODULAR CASEWORK, WALLS, AND PANELS. (RE: DEMO PLAN).
4. PATCH AND REPAIR EXISTING CONSTRUCTION AS REQUIRED.

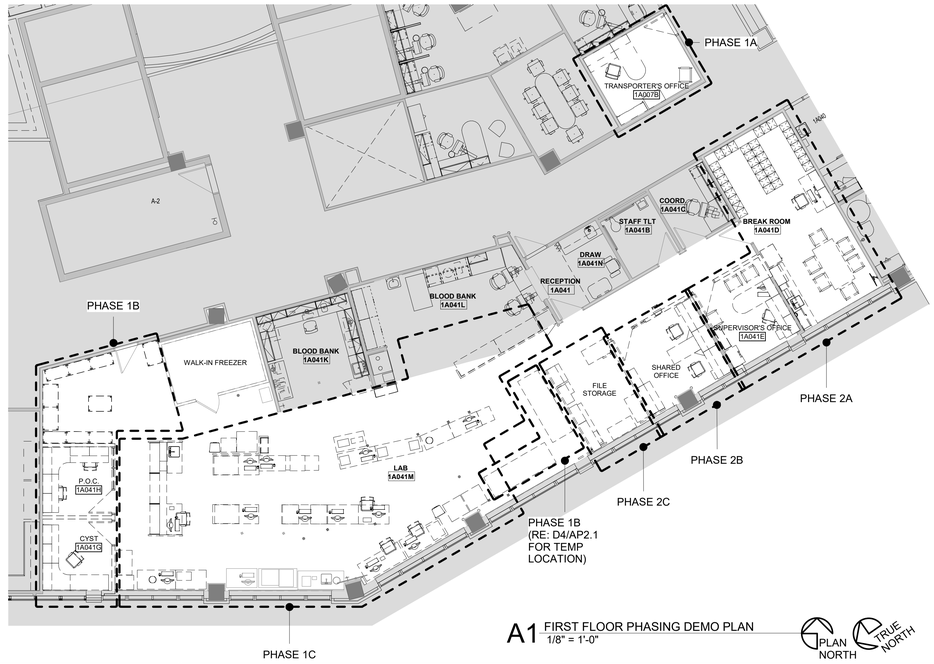
PHASE 2D

1. NEW SIEMENS AUTOMATION LINE TO BE INSTALLED. (RE: VENDOR DRAWINGS).



A4 FIRST FLOOR PHASING PLAN
1/8" = 1'-0"

PLAN NORTH / TRUE NORTH



A1 FIRST FLOOR PHASING DEMO PLAN
1/8" = 1'-0"

PLAN NORTH / TRUE NORTH

STATE OF MISSOURI
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AP2.1

ARCHITECTURAL PHASING PLAN

9/18/2020 5:18:45 PM

FFE SCHEDULE

TYPE MARK	DESCRIPTION	RESPONSIBILITY	COMMENTS
A1030	LOCKER, 3 TIER	VFVI	RELOCATED BY JOHN A. MARSHALL
A5075	SOAP DISPENSER	OFCI	NEW
A5082	PAPER TOWEL DISPENSER	OFCI	NEW
A5145	COAT RACK	OFCI	NEW BY JOHN A. MARSHALL. PROVIDE IN WALL BLOCKING.
A5210	BRACKET, TELEVISION, SWIVEL	OFCI	PROVIDE IN-WALL BLOCKING. COORDINATE FINAL HEIGHT & BRACKET SIZER W/ OWNER.
E0117a	WORKSTATION, MOBILE, 48"W, 24"D	VFVI	RELOCATED BY JOHN A. MARSHALL
E0117b	WORKSTATION, MOBILE, 48"W, 30"D	VFVI	RELOCATED BY JOHN A. MARSHALL
E0117c	WORKSTATION, MOBILE, 48"W, 24"D	VFVI	NEW BY JOHN A. MARSHALL
E0120a	WORKSTATION, MOBILE, 60"W, 24"D	VFVI	RELOCATED BY JOHN A. MARSHALL
E0120b	WORKSTATION, MOBILE, 60"W, 30"D	VFVI	RELOCATED BY JOHN A. MARSHALL
E0123a	WORKSTATION, MOBILE, 72"W, 24"D	VFVI	RELOCATED BY JOHN A. MARSHALL
E0123b	WORKSTATION, MOBILE, 72"W, 30"D	VFVI	RELOCATED BY JOHN A. MARSHALL
E0123c	WORKSTATION, MOBILE, 72"W, 24"D	VFVI	NEW BY JOHN A. MARSHALL
E0945	CART, MOBILE	VFVI	RELOCATED
F0205	SIDE CHAIR, W/ ARMS	VFVI	RELOCATED BY JOHN A. MARSHALL
F0300	CHAIR, TASK, SWIVEL, W/ ARMS	VFVI	RELOCATED BY JOHN A. MARSHALL
F0410a	FILE, LATERAL, HALF HEIGHT	VFVI	RELOCATED BY JOHN A. MARSHALL
F0410b	FILE, LATERAL, HALF HEIGHT	VFVI	RELOCATED BY JOHN A. MARSHALL
F0410c	FILE, LATERAL, HALF HEIGHT	VFVI	RELOCATED BY JOHN A. MARSHALL
F0410d	FILE, LATERAL, HALF HEIGHT	VFVI	RELOCATED BY JOHN A. MARSHALL
F0415	FILE, LATERAL, FULL HEIGHT	VFVI	RELOCATED BY JOHN A. MARSHALL
F0430	CABINET, BBF, MOBILE PEDESTAL	VFVI	RELOCATED BY JOHN A. MARSHALL
F0795	DINING TABLE	VFVI	RELOCATED BY JOHN A. MARSHALL

FFE SCHEDULE GENERAL NOTES

1. ALL ITEMS IN THE FFE SCHEDULE ARE EXISTING AND TO BE RELOCATED, UNLESS OTHERWISE NOTED.

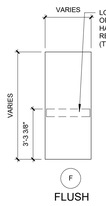
FFE SCHEDULE

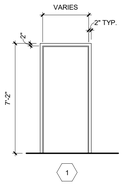
TYPE MARK	DESCRIPTION	RESPONSIBILITY	COMMENTS
F2540	SHRED-IT	OFOI	EXISTING
F3025	TACK BOARD	OFOI	RELOCATED
K4665	MICROWAVE	OFOI	RELOCATED. POWER AS REQUIRED. RE: MEP
L0100	MICROSCOPE	OFOI	RELOCATED. POWER AS REQUIRED. RE: MEP
L0145	MICROSCOPE, DUAL HEAD	OFOI	RELOCATED. POWER AS REQUIRED. RE: MEP
L0990	ANALYZER, URINE	OFOI	RELOCATED. POWER & DATA AS REQUIRED. RE: MEP
L0995a	ANALYZER, URINE (SYSMEX UF-1000i)	OFOI	RELOCATED. POWER & DATA AS REQUIRED. RE: MEP
L0995b	ANALYZER, URINE (SIEMENS CLINITEK NOVUS)	OFOI	RELOCATED. POWER & DATA AS REQUIRED. RE: MEP
L1030	ANALYZER, CHEMISTRY, STAT (GEM PREMIER4S 4000)	OFOI	RELOCATED. POWER & DATA AS REQUIRED. RE: MEP
L1076	BATH, WATER, PLASMA THAWING (HELMER)	OFOI	RELOCATED. POWER AS REQUIRED. RE: MEP
L1085	ANALYZER, COAGULATION (STAGO)	OFOI	RELOCATED. POWER & DATA AS REQUIRED. RE: MEP
L1115a	ANALYZER, HEMATOLOGY (SYSMEX XN-1000)	OFOI	RELOCATED. POWER & DATA AS REQUIRED. RE: MEP
L1115b	ANALYZER, HEMATOLOGY (EXCYTE)	OFOI	RELOCATED. POWER AS REQUIRED. RE: MEP
L1190	OSMOMETER	OFOI	RELOCATED. POWER AS REQUIRED. RE: MEP
L1350	CENTRIFUGE	OFOI	RELOCATED. POWER AS REQUIRED. RE: MEP
L2310	CABINET, BIOSAFETY, F/S, 48"W	OFOI	RELOCATED
L2575	INCUBATOR, PLATELET STORAGE SYSTEM (HELMER)	OFOI	RELOCATED. POWER AS REQUIRED. RE: MEP
M0506	MONITOR	OFOI	EXISTING, RELOCATED.
M1801	COMPUTER	OFOI	RELOCATED. POWER & DATA AS REQUIRED. RE: MEP
M1825	PRINTER	OFOI	RELOCATED. POWER & DATA AS REQUIRED. RE: MEP
M2055a	WIRE SHELVING, 48"Wx18"Dx74"H	OFOI	RELOCATED BY METRO SHELVING
M2055b	WIRE SHELVING, 48"Wx18"Dx74"H	VFVI	RELOCATED BY METRO SHELVING
M3073	BASKET, INFECTIOUS WASTE, STEP-ON	OFOI	RELOCATED
R5100	FREEZER	OFOI	RELOCATED. POWER AS REQUIRED. RE: MEP
R5110	FREEZER, PLASMA, U/C	OFOI	RELOCATED. POWER AS REQUIRED. RE: MEP
R5130	FREEZER, PLASMA	OFOI	RELOCATED. POWER AS REQUIRED. RE: MEP
R6400	REFRIGERATOR, COUNTERTOP	OFOI	RELOCATED. POWER AS REQUIRED. RE: MEP
R7250	REFRIGERATOR	OFOI	RELOCATED. POWER AS REQUIRED. RE: MEP
U1000	VOALTE CABINET	OFOI	RELOCATED. POWER AS REQUIRED. RE: MEP
U1001	ANALYZER, (GENEXPERT)	OFOI	RELOCATED. POWER & DATA AS REQUIRED. RE: MEP
U1002	MILLIPORE CLX UNIT	VFVI	NEW. RE: VENDOR DRAWINGS
U1003	MILLIPORE WATER SOFTENER	VFVI	NEW. RE: VENDOR DRAWINGS
U1004	MILLIPORE CARBON FILTER	VFVI	NEW. RE: VENDOR DRAWINGS
U1005	WIRE CART	VFVI	NEW BY JOHN A. MARSHALL
U1006	UPS RACK	VFVI	NEW BY JOHN A. MARSHALL. RE: SIEMENS DRAWINGS FOR SIZE REFERENCE

DOOR SCHEDULE

DOOR #	ROOM NAME	DOOR INFORMATION WIDTH	HEIGHT	NO. OF LEAVES	UNEQUAL LEAF WIDTH	ELEV.	MATL.	FRAME INFORMATION ELEV.	MATL.	GLAZING	LABEL (MIN)	HARDWARE SET	OPENING DETAIL HEAD	JAMB	REMARKS	REV #
1A007B	LAB STORAGE	3'-0"	7'-0"	1		F	WD	1	HM	--	45 min	01	C1/A2.1	B1/A2.1	CARD READER	
1A037C	SUPERVISOR'S OFFICE	3'-0"	7'-0"	1		F	WD	1	HM	--	--	02	C1/A2.1	B1/A2.1		
1A041E	SHARED OFFICE	3'-0"	7'-0"	1		F	WD	1	HM	--	--	02	C1/A2.1	B1/A2.1		

DOOR ELEVATIONS: FRAME ELEVATIONS:





DOOR HARDWARE

HARDWARE SET: 01
DOOR NUMBER: 1A007B

EACH TO HAVE:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3 EA	HINGE	5BB1HWSC	652	IVE
1 EA	STOREROOM LOCK	ND80LD RHO	626	SCH
1 EA	CYLINDER	BY OWNER	626	SCH
1 EA	ELECTRIC STRIKE	6211 FSE	630	VON
1 EA	SURFACE CLOSER	4040 XP	689	LCN
1 EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1 EA	WALL STOP	WS406/407CCV	630	IVE
1 EA	DOOR CONTACT	679-05	WHT	SCE
1 EA	CARD ACCESS	BY SECURITY		
1 EA	LOW VOLTAGE POWER	BY SECURITY		
1 EA	WIRING DIAGRAM	BY SECURITY		

OPERATION: DOOR NORMALLY CLOSED AND LOCKED. ENTRY VIA VALID CARD READ. ALWAYS FREE FOR EGRESS.

HARDWARE SET: 02
DOOR NUMBER: 1A041E, 1A041F

EACH TO HAVE:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3 EA	HINGE	5BB1HW	652	IVE
1 EA	ENTRANCE LOCK	ND53LD RHO	626	SCH
1 EA	CYLINDER	BY OWNER	626	SCH
1 EA	WALL STOP	WS406/407CCV	630	IVE

DOOR & FRAME MAT'L LEGEND

HM	HOLLOW METAL
WD	SOLID CORE WOOD

GENERAL PLAN NOTES

1. REFER TO GENERAL NOTES, LEGENDS & SYMBOLS SHEET FOR ADDITIONAL GENERAL NOTES AS APPLICABLE.
2. TYPICAL DIMENSIONS ARE TO FACE OF CONCRETE, DRYWALL, CURTAIN WALL, ETC., OR TO COLUMN CENTERLINE. DIMENSIONS AT WINDOWS ARE TYPICALLY TO FACE OF FRAME. REFER TO PLAN DETAILS FOR ADDITIONAL INFORMATION.
3. ALL EXISTING CONSTRUCTION TO REMAIN SHALL BE PATCHED, REPAIRED, AND PREPPED AS REQUIRED FOR NEW FINISH APPLICATION.

KEYNOTES - FLOOR PLAN

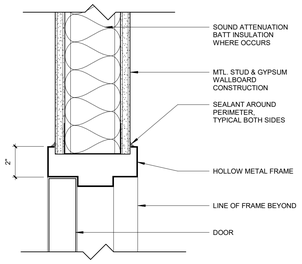
NUMBER	COMMENTS
1	NEW FLOOR DRAIN, RE: MEP. PATCH AND REPAIR FLOORING AS REQUIRED.
2	RELOCATED POWER POLES. FINAL COUNTS AND LOCATIONS TO BE COORDINATED W/ OWNER. RE: MEP & SIEMENS DRAWINGS FOR UTILITY REQUIREMENTS. PATCH AND REPAIR FLOOR AND REPLACE CEILING TILES AS REQUIRED.
3	NEW EQUIPMENT AND AUTOMATION LINE TO BE INSTALLED. RE: VENDOR DRAWINGS
4	RELOCATED FURNITURE & EQUIPMENT. COORDINATE RELOCATION WITH OWNER.
5	RELOCATED CASEWORK. NEW PLUMBING AND ELECTRICAL AS REQUIRED. RE: MEP.
6	NEW LOCKERS BY JOHN A. MARSHALL.
7	NEW WATER SYSTEM AND EQUIPMENT TO BE INSTALLED. RE: MEP & VENDOR DRAWINGS.
8	NEW WORK TABLES AND HALF HEIGHT FURNITURE PANEL, VFVI BY JOHN A MARSHALL. FIELD VERIFY AND COORDINATE FINAL SIZES W/ OWNER.
9	RELOCATED BLOOD DRAW BULLETIN BOARD.
10	NEW COAT HOOKS BY JOHN A. MARSHALL FOR RELOCATED LAB COATS. BLOCKING AS REQUIRED.
11	PROVIDE POWER & DATA FOR TEMPORARY RELOCATION OF LAB ANALYZERS. RE: MEP & ARCHITECTURAL PHASING PLAN.
12	NEW WORKSURFACE & WALL MOUNTED FLIPPER BINS, VFVI BY JOHN A MARSHALL. FIELD VERIFY & COORDINATE FINAL LAYOUT WITH OWNER.
13	NEW POWER POLE DOWN TO HALF HEIGHT FURNITURE PANEL. COORDINATE LOCATION W/ OWNER & FURNITURE VENDOR. RE: MEP.
14	RELOCATED TV AND BRACKET. CONTRACTOR TO PROVIDE IN WALL BLOCKING. POWER & DATA AS REQUIRED. RE: MEP
15	RELOCATED COMPUTER, MONITOR, AND ASSOCIATED ACCESSORIES. POWER & DATA AS REQUIRED. RE: MEP
16	RELOCATED FIRE EXTINGUISHER CABINET.
17	NEW CORNER GUARD. RE: FINISH LEGEND
18	NEW ELECTRICAL PANEL. RE: MEP.
19	RELOCATED CPU HOLDER AND UTILITIES. RE: MEP.
20	NEW GYP FURRING FOR MEP UTILITES. RE: MEP
21	EXISTING MONITOR. DE-INSTALL AND COORDINATE RELOCATION W/ OWNER. RE-INSTALL AFTER CONSTRUCTION IS COMPLETE. RE:MEP
22	ATELLICA UPS. RE: MEP & VENDOR INFORMATION
23	ATELLICA TRANSFORMER. RE: MEP & VENDOR INFORMATION.
24	ATELLICA DISCONNECT SWITCH. RE: MEP & VENDOR INFORMATION

FLOOR PLAN LEGEND

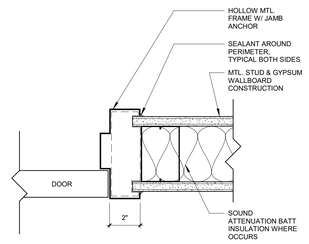
- NOT IN SCOPE
- NOT IN ARCHITECTURAL SCOPE
- CONCRETE SLAB INFILL
- NEW WALL
- EXISTING WALL
- EXPANSION JOINT
- EXISTING EXPANSION JOINT
- DOOR No.
- NEW DOOR
- EXISTING DOOR

A2 FIRST FLOOR PLAN
1/4" = 1'-0"

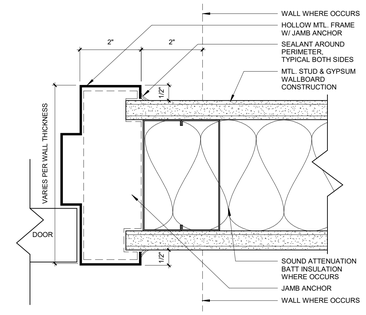
PLAN NORTH / TRUE NORTH



C1 TYPICAL HEAD- HOLLOW METAL DOOR FRAME
3" = 1'-0"



B1 TYPICAL JAMB- HOLLOW METAL DOOR FRAME
3" = 1'-0"



A1 TYPICAL HOLLOW METAL FRAME
6" = 1'-0"

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Saint Luke's EAST HOSPITAL

LAB REMODEL
100 NE ST LUKES BLVD,
LEE'S SUMMIT, MO 64086

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A2.1

FIRST FLOOR PLAN

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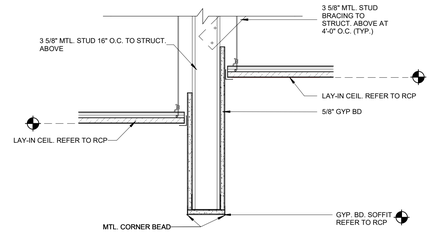

E2 BULKHEAD DETAIL
1 1/2" = 1'-0"

REFLECTED CEILING NOTES

1. THIS PLAN SHALL BE USED TO COORDINATE THE CEILING LAYOUT WITH MECHANICAL AND ELECTRICAL WORK. VERIFY THE EXACT QUANTITY REQUIRED.
2. CONTRACTOR TO REFER TO THE ELECTRICAL PLANS FOR ACTUAL LIGHTING SIZES AND FIXTURE TYPES.
3. REFER TO ARCHITECTURAL FLOOR PLANS FOR MATERIAL LEGEND OF ALL TYPES.
4. ALL CEILINGS ARE EXISTING TO REMAIN UNLESS OTHERWISE NOTED.
5. EXISTING MEPFP DEVICES SHOWN ARE BASED ON EXISTING DRAWINGS AND/OR FIELD OBSERVATIONS. THE OWNER/ARCHITECT DOES NOT GUARANTEE THE ACCURACY/LOCATION OR QUANTITY OF EXISTING DEVICES. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES OR CONFLICTS BETWEEN ARCHITECTURAL & MEP ITEMS PIOR TO INSTALLATION.
6. CONTRACTOR TO PROVIDE ALL REQUIRED LABOR, MATERIAL, AND EQUIPMENT NECESSARY TO MEET AND COMPLETE THE REQUIREMENTS OF THE NEW CONSTRUCTION.
7. SEE FINISH SCHEDULE FOR FINISH LOCATION AND SPECIFICATIONS.
8. PAINT THE UNDERSIDE OF ALL GYPSUM BOARD CEILINGS, BULKHEADS AND SOFFITS P-5, UNLESS NOTED OTHERWISE.

CEILING LEGEND

- RECESSED CAN LIGHT FIXTURE RE: ELECT
- 2X4 RECESSED/SURFACE FLUORESCENT LIGHT FIXTURE RE: ELECT
- 2X2 RECESSED/SURFACE FLUORESCENT LIGHT FIXTURE RE: ELECT
- C2 — GYP BOARD CEILING - PAINTED W/ CONTROL JOINTS PER SPECS
- 2X2/2x4 LAY-IN ACOUSTICAL CEILING
- EXIT LIGHT WITH FIXTURE MARK CEILING MOUNTED RE: ELECT
- EXIT LIGHT WITH FIXTURE MARK WALL BRACKET RE: ELECT
- SUPPLY AIR GRILLE RE: MECH
- RETURN AIR OR EXHAUST GRILLE RE: MECH
- 9'-0" — SOFFIT HEIGHT
- 9'-0" — CEILING HEIGHT

KEYNOTES - RCP

NUMBER	COMMENTS
1	EXTEND NEW CEILING GRID TO ALIGN WITH EXISTING. PROVIDE NEW CEILING TILES TO MATCH EXISTING.
2	EXISTING CEILING, LIGHTS, DIFFUSERS, ETC. TO REMAIN. RE: MEP.
3	EXISTING LIGHT TO BE RELOCATED IN NEW EXTENDED CEILING GRID. RE: MEP.
4	NEW SUPPLY RETURN IN NEW EXTENDED CEILING GRID. RE: MEP
5	NEW POWER POLE LOCATIONS. COORDINATE FINAL LOCATION WITH EQUIPMENT VENDOR DRAWINGS AND MEP. RE: VENDOR DRAWINGS FOR UTILITY REQUIREMENTS AT EACH POWER POLE LOCATION. CUT & REPLACE CEILING TILES AS REQUIRED.
6	EXISTING TUBE LINE (ABOVE CEILING) AND TRANSFER STATION (ABOVE CEILING) TO REMAIN.
7	NEW 2X2 CEILING GRID & TILES, LIGHTS, DIFFUSERS, ETC. RE: MEP & FINISH SCHEDULE.

A2 FIRST FLOOR RCP
1/4" = 1'-0"

PLAN NORTH / TRUE NORTH

STATE OF MISSOURI SAMUEL K. BECKMAN A-2011012130 ARCHITECT

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FIRST FLOOR REFLECTED CEILING PLAN

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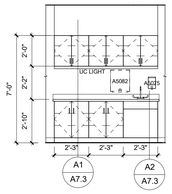
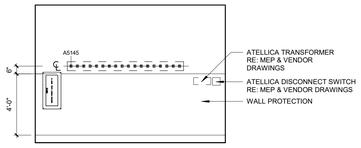
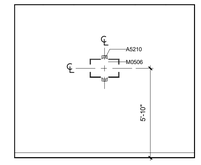


E6 LAB - WEST
1/4" = 1'-0"

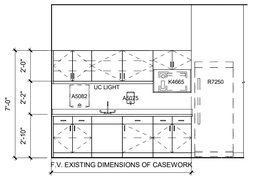
1A041M	
BASE CABINETS	MT-1
WALL CABINETS	MT-1
COUNTERTOPS	CRW-1
SINKS	SST



E5 LAB - EAST
1/4" = 1'-0"



E4 BREAK ROOM - SOUTH
1/4" = 1'-0"



E3 BREAK ROOM - EAST
1/4" = 1'-0"

1A041D	
BASE CABINETS	ETR
WALL CABINETS	ETR
COUNTERTOPS	ETR
SINKS	ETR

INTERIOR FINISH LEGEND

MARK	ITEM	MANUFACTURER	MODEL/ PATTERN	COLOR	SIZE	REMARKS
FLOOR						
CPT-2	CARPET	MANNINGTON	MOSO	SOREL (43333)	24"X24"	INSTALLATION: MONOLITHIC
LVT-1	LUXURY VINYL TILE	AMTICO	REGENCY WALNUT	AROW8200	4-1/2"X36"	STRAIGHT EDGE ONLY; INSTALLATION: RANDOM
LVT-2	LUXURY VINYL TILE	AMTICO	AMTICO STONE	CORINTHIAN MARBLE AROSTV13	18"X18"	STRAIGHT EDGE ONLY; INSTALLATION: RANDOM
BASE						
RWB-2	RESILIENT BASE	ROPPE	PINNACLE	#110 BROWN	4" COVE	-
WALL						
P-1	PAINT - EGGSHELL FINISH	SHERWIN WILLIAMS	-	SW7036 ACCESSIBLE BEIGE	-	FIELD PAINT
P-1A	PAINT - EPOXY FINISH	SHERWIN WILLIAMS	-	SW7036 ACCESSIBLE BEIGE	-	EPOXY PAINT
P-4	PAINT - SEMI-GLOSS FINISH	SHERWIN WILLIAMS	-	SW7509 TIKI HUT	-	HOLLOW METAL DOOR FRAME PAINT
P-5	PAINT - EGGSHELL FINISH	SHERWIN WILLIAMS	-	SW7007 CEILING BRIGHT WHITE	-	CEILING PAINT
CASEWORK						
CRW-1	CHEMICAL RESISTANT WORKSURFACE	DURCON INC.	SOLICORE	DURCON GRAY	1" THICK	-
MT-1	METAL CABINETS	MOTT MANUFACTURER	#601006	WARM GRAY	-	COLOR SHALL MATCH IF USING OTHER MANUFACTURER.
MISC						
CG-1	CORNER GUARD	C/S ACROVYN	SM-20AN-ACROVYN-4000	#585 PUMICE	3" WING	ABOVE BASE TO 48" AFF.
WP-2	WALL PROTECTION	C/S ACROVYN	ACROVYN 4000	#858 PUMICE	.040" THICK, 4X10 SHEETS	INSTALL 48" AFF.
CEILING						
ACT-1	ACOUSTIC CEILING TILE	USG	RADAR CLIMAPLUS #2210	WHITE	24"X24"	SQ EDGE, DONN DX TEE 15/16" GRID SYSTEM

ROOM FINISH SCHEDULE

ROOM NUMBER	ROOM NAME	FLOOR FINISH	BASE FINISH	WALLS NORTH	WALLS EAST	WALLS SOUTH	WALLS WEST	CASEWORK BASE CABINET	CASEWORK COUNTERTOPS	CASEWORK SINK	CASEWORK UPPER CABINETS	CEILING	NOTES
1A007B	LAB STORAGE	LVT-2	RWB-1	P-1/WP-2	P-1/WP-2	P-1/WP-2	P-1/WP-2	-	-	-	-	ETR	
1A041D	BREAK ROOM	LVT-1	RWB-1	P-1	P-1	P-1	P-1	ETR	ETR	ETR	ETR	ETR/PTM	1, 2
1A041E	SUPERVISOR'S OFFICE	CPT-1	RWB-1	P-1	P-1	P-1	P-1	-	-	-	-	ETR	
1A041F	SHARED OFFICE	CPT-1	RWB-1	P-1	P-1	P-1	P-1	-	-	-	-	ETR	-
1A041M	LAB	ETR	ETR	ETR/WP-2	ETR/WP-2	ETR	ETR/WP-2	MT-1	CRW-1	SST	MT-1	ETR	-

ROOM FINISH SCHEDULE NOTES

1	CEILING TO BE EXISTING TO REMAIN. PATCH AND REPAIR AS REQUIRED FOR NEW CONSTRUCTION.
2	EXISTING CASEWORK TO BE RELOCATED. RE: FLOOR PLAN & DEMO PLAN.

A2 01 - FIRST FLOOR FINISH PLAN
1/4" = 1'-0"

PLAN NORTH / TRUE NORTH

FINISH FLOOR PLAN LEGEND

N / W / E / S — ROOM FINISH SCHEDULE DIRECTION

FLOOR FINISH DIRECTION

GENERAL FINISH NOTES

1. SUBMIT SAMPLES OF ALL FINISHES TO ARCHITECT FOR REVIEW PRIOR TO THE ORDERING OF MATERIAL.
2. NO IRREGULARITIES OR IMPERFECTIONS SHALL BE PRESENT IN ANY OF THE MATERIAL BEING INSTALLED. IF SUCH ITEMS ARE IDENTIFIED DURING APPLICATION, WORK SHALL BE STOPPED AND THE ARCHITECT NOTIFIED.
3. PROVIDE ALL MAINTENANCE MANUALS AND WARRANTY INFORMATION FOR EACH FINISH MATERIAL TO OWNER AT COMPLETION OF THE PROJECT.
4. ALL HOLLOW METAL DOOR FRAMES TO BE PAINTED (P-4) UNLESS NOTED OTHERWISE.
5. PAINT THE UNDERSIDE OF ALL GYPSUM BOARD CEILINGS, BULKHEADS AND SOFFITS (P-5) UNLESS NOTED OTHERWISE.
6. FURNISH ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO COMPLETE WORK OF FINISH APPLICATIONS.
7. ALL FINISHES SHALL BE INSTALLED AND MAINTAINED PER MANUFACTURER'S RECOMMENDATION AND INDUSTRY STANDARDS.
8. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR EXAMINING AND CONFIRMING ALL SUBSTRATE CONDITIONS WHERE NEW MATERIALS ARE APPLIED. SUBSTRATE SHALL BE SMOOTH, FREE OF DEFECTS AND SHALL CONFORM TO THE REQUIREMENTS OF THE FINISHED MATERIAL MANUFACTURERS RECOMMENDATIONS.
9. ALL MATERIAL TO COMPLY WITH FLAME SPREAD CLASSIFICATION EITHER CLASS (1) ONE OR CLASS A DEPENDING ON GOVERNING CODE IN EFFECT.
10. SMOKE DEVELOPMENT RATING < 450 FOR ALL FINISHES.
11. RE: MEP FOR ALL SST SINKS.

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FIRST FLOOR FINISH PLAN, FINISH SCHEDULE & LEGEND

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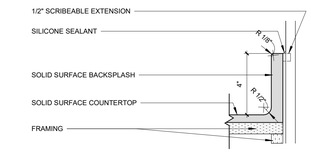
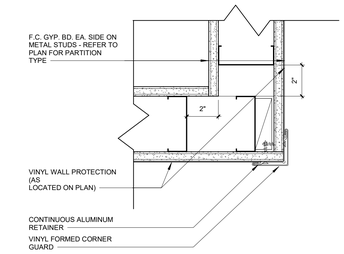
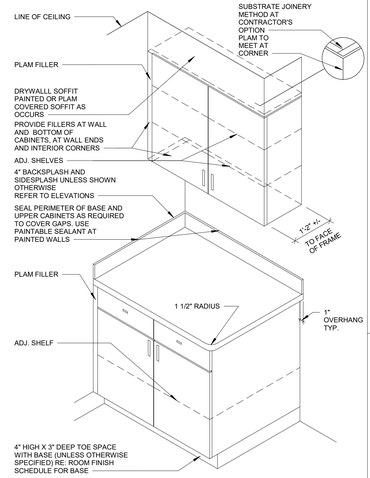


E2 SECTION DETAIL AT SOLID SURFACE BACKSPLASH
3" = 1'-0"



D2 TYPICAL SINGLE VINYL CORNER GUARD
3" = 1'-0"



TYP. CABINET NOTES:

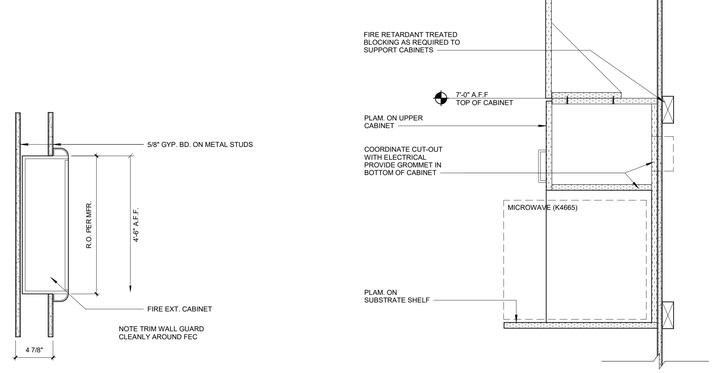
1. PROVIDE PLAM FILLER WHERE CABINETS BUTT UP TO WALLS.

2. ALL COUNTERTOPS HAVE A 4" BACKSPLASH (MATERIAL TO MATCH COUNTERTOP) AND OUTSIDE CORNERS HAVE 1 1/2" RADIUS EXCEPT WHERE NOTED OTHERWISE.

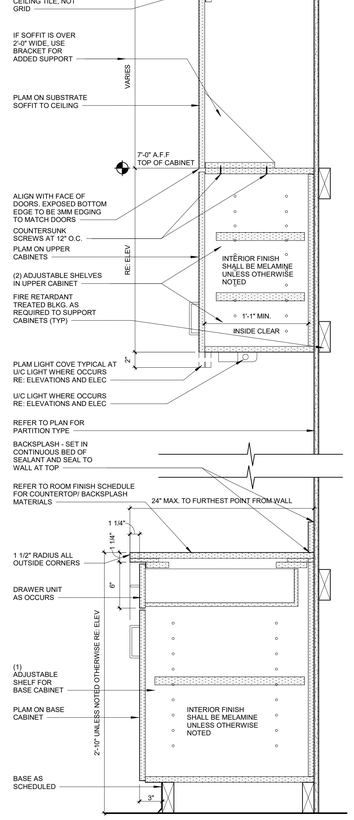
3. CASEWORK MFR. TO SUPPLY (2) - 2" ⌀ GROMMETS PER KNEESPACE. GROMMETS TO BE INSTALLED IN FIELD AS DIRECTED BY OWNER. COLOR TO BE SELECTED BY ARCHITECT.

4. PLASTIC LAMINATE COUNTERTOP EDGES SHALL BE 3 MM PLASTIC. COLOR AS SELECTED BY ARCHITECT)

D1 CASEWORK ISOMETRIC
1 1/2" = 1'-0"

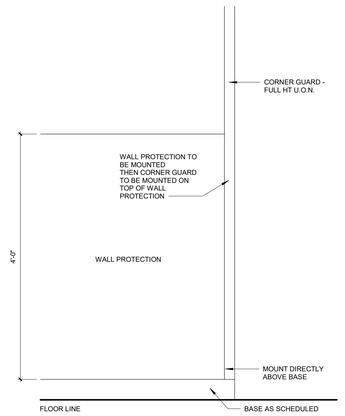


B2 WALL-MOUNTED MICROWAVE SHELF
1 1/2" = 1'-0"

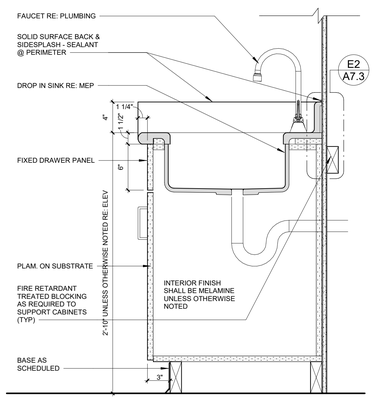


A1 CASEWORK SECTION
1 1/2" = 1'-0"

B3 SECTION - F.E.C. NON-RATED WALL CONDITION
1 1/2" = 1'-0"



A3 TYP. ELEV. OF WALL PROTECTION/CORNER GUARD
1" = 1'-0"



A2 SINK BASE CABINET SECTION
1 1/2" = 1'-0"

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A7.3

INTERIOR DETAILS

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ABBREVIATIONS

ABBREV.	DESCRIPTION
AAV	AUTOMATIC AIR VENT
ABAN	ABANDON
ABV	ABOVE
AC	AIR CONDITIONING UNIT
ACC	AIR COOLED CONDENSER
ACU	AIR COOLED CONDENSING UNIT
AD	ACCESS DOOR
AF	AFTER FILTER
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AMB	AMBIENT
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
AS	AIR SEPARATOR
ATM	ATMOSPHERE
ATMV	ATMOSPHERIC VENT
AWT	AVERAGE WATER TEMPERATURE
BB	BAR BARRIER
BDD	BACKDRAFT DAMPER
BFWP	BOILER FEED WATER PUMP
BFW	BOILER FEED WATER
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BLWDN	BLOWDOWN
BS	BLOWDOWN SEPARATOR
BLR	BOILER
BLW	BELOW
BM	BEAM
BOT	BOTTOM
BOD	BOTTOM OF DUCT
BSMT	BASEMENT
BTU	BRITISH THERMAL UNIT
BTUH	BTU PER HOUR
C	CONVERTER
C/C	CENTER TO CENTER
CO	CEILING OPEN
CF	CUBIC FEET
CFM	CUBIC FEET PER MINUTE
CFP	CHEMICAL FEED PUMP
CHD	CONCEALED HAND DAMPER W/ REMOTE OPERATOR
CH	CHILLER
CJ	CONSTRUCTION JOINT
CL	CENTER LINE
CLG	CEILING
CLR	CLEAR
CO	CLEANOUT
COL	COLUMN
CONC	CONCRETE
COND	CONDENSATE
CONDR	CONDENSOR
CONN	CONNECTION
CONT	CONTINUATION/CONTINUOUS
CONV	CONVECTOR
COP	COEFFICIENT OF PERFORMANCE
CP	CONTROL PANEL
CPF	CHEMICAL POT FEEDER
CRP	CONDENSATE RETURN PUMP
CT	COOLING TOWER
CU FT	CUBIC FEET
CU IN	CUBIC INCHES
DB	DRY BULB
DEG	DEGREE FAHRENHEIT
DEMO	DEMOLITION
DET	DETAIL
DIA	DIAMETER
DIM	DIMENSION
DLV	DOOR LOUVER
DMPR	DAMPER
DN	DOWN
DR	DRAIN
DWG	DRAWING
EX	EXISTING
EA	EACH
EAT	ENTERING AIR TEMPERATURE
EDBT	ENTERING DRY BULB TEMPERATURE
EF	EXHAUST FAN
EFF	EFFICIENCY
EJ	EXPANSION JOINT
ELEC	ELECTRICAL
ELEV	ELEVATION
ENT	ENTERING
EQ	EQUAL
ET	EXPANSION TANK
EXH	EXHAUST
EXP	EXPANSION
EXT	EXTERIOR
EWBT	ENTERING WET BULB TEMPERATURE
EWT	ENTERING WATER TEMPERATURE
FA	FACE AREA
FCV	FLOW CONTROL VALVE
FD	FIRE DAMPER
FF	FINAL FILTER
FFA	FROM FLOOR ABOVE
FFB	FROM FLOOR BELOW
FLA	FULL LOAD AMP
FMD	FLOW MEASURING DEVICE
FPM	FEET PER MINUTE
FSD	FIRE AND SMOKE DAMPER
FSS	FLOW SENSING SWITCH
FT	FEET

ABBREVIATIONS

ABBREV.	DESCRIPTION
FTR	FINNED TUBE RADIATION
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GRD	GROUND
GPM	GALLON PER MINUTE
GRL	GRILLE
GSNK	GOOSENECK
HC	HEATING COIL
HX	HEAT EXCHANGER
HORIZ	HORIZONTAL
HP	HORSEPOWER
HP	HIGH PRESSURE
HPT	HIGH POINT
HTG	HEATING
HZ	HERTZ
IN	INCHES
KW	KILOWATT
LAT	LEAVING AIR TEMPERATURE
LB	POUND
LD	LINEAR DIFFUSER
LDBT	LEAVING DRY BULB TEMPERATURE
LWBT	LEAVING WET BULB TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
M	MOTORIZED DAMPER
MAT	MIXED AIR TEMPERATURE
MAX	MAXIMUM
MBTU	BRITISH THERMAL UNIT (1000)
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL
MEZZ	MEZZANINE
MIN	MINIMUM
MISC	MISCELLANEOUS
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OC	ON CENTER
OD	OUTSIDE DIAMETER
OPNG	OPENING
OPWT	OPERATING WEIGHT
P	PUMP
PA	PIPE ANCHOR
PCF	POUNDS PER CUBIC FOOT
PEN	PENETRATION
PERF	PERFORATOR
PL	PLATE
PRV	PRESSURE REDUCING VALVE
PSIA	POUNDS PER SQUARE INCH (ABSOLUTE)
PSIG	POUNDS PER SQUARE INCH (GAUGE)
RA	RETURN AIR
RD	RETURN DIFFUSER
RET	RETURN
RF	RETURN FAN
RG	RETURN GRILLE
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL
RPM	REVOLUTIONS PER MINUTE
S	STEAM TRAP
SA	SUPPLY AIR
SD	SUPPLY DIFFUSER
SF	SUPPLY FAN
SG	SUPPLY GRILLE
SP	STATIC PRESSURE
SQ.FT	SQUARE FEET
SRV	SAFETY RELIEF VALVE
SS	STEAM SEPARATOR
SST	STAINLESS STEEL
ST	SOUND ATTENUATOR
STL	STEEL
STM	STEAM
STRUCT	STRUCTURAL
TEMP	TEMPERATURE
TFA	TO FLOOR ABOVE
TFB	TO FLOOR BELOW
TG	TRANSFER GRILLE
THK	THICK
TNL	TUNNEL
TYP	TYPICAL
UFD	UNDERFLOOR DUCT
UG	UNDERGROUND
U/ON	UNLESS OTHERWISE NOTED
VAV	VARIABLE AIR VOLUME
VB	VACUUM BREAKER
VD	VOLUME DAMPER
VFD	VARIABLE FREQUENCY DRIVE
VIF	VERIFY IN FIELD
W/	WITH
WB	WET BULB
WC	WATER COLUMN
WF	WATER FILTER
WG	WATER GAUGE
WMS	WIRE MESH SCREEN
W/O	WITHOUT
WT	WEIGHT
WS	WATER SOFTENER

MECHANICAL SHEET METAL SYMBOLS

- EXISTING DUCTWORK TO REMAIN
- EXISTING DUCTWORK TO BE REMOVED
- NEW DUCTWORK
- HAND DAMPER IN DUCT
- HAND DAMPER IN CONCEALED DUCT W/ CONCEALED DAMPER ACTUATOR (HD)
- HUMIDIFIER IN DUCT
- FIRE DAMPER WITH HINGED ACCESS DOOR (B) DENOTES 'B' STYLE DAMPER (B, AD)
- SMOKE DAMPER WITH HINGED ACCESS DOOR (S, AD)
- COMBINATION FIRE/SMOKE DAMPER WITH HINGED ACCESS DOOR (F/S, AD)
- RECTANGULAR TO ROUND BRANCH CONNECTION FROM MAIN DUCT
- RECTANGULAR TO ROUND BRANCH CONNECTION FROM MAIN DUCT WITH HAND DAMPER IN ROUND SECTION
- RECTANGULAR TO ROUND TRANSITION
- RECTANGULAR TO ROUND TRANSITION WITH HAND DAMPER
- CEILING SUPPLY OUTLET (A) DENOTES DIFFUSER TYPE. (300) DENOTES CFM. SEE SCHEDULE FOR SIZE. ARROWS INDICATE DIRECTION OF THROW. NO ARROWS INDICATE 4-WAY THROW. (A) 300
- CEILING SUPPLY OUTLET WITH FLEXIBLE DUCT CONNECTION. (A) DENOTES DIFFUSER TYPE. (300) DENOTES CFM. SEE SCHEDULE FOR FACE SIZE AND FLEXIBLE DUCT (NECK) SIZE. ARROWS INDICATE DIRECTION OF THROW. NO ARROWS INDICATE 4-WAY THROW. (A) 300
- CEILING RETURN OR EXHAUST GRILLE (A) DENOTES GRILLE TYPE. (300) DENOTES CFM. SEE SCHEDULE FOR SIZE. (A) 300
- WALL SUPPLY GRILLE (A) DENOTES GRILLE TYPE. (600) DENOTES CFM. SEE SCHEDULE FOR SIZE. (A) 600
- WALL RETURN OR EXHAUST GRILLE (A) DENOTES GRILLE TYPE. (600) DENOTES CFM. SEE SCHEDULE FOR SIZE. (A) 600
- VARIABLE AIR VOLUME BOX (VAV, 1-7)
- VARIABLE AIR VOLUME BOX WITH REHEAT COIL (VAV, FT)
- RECTANGULAR DUCT TRANSITION IN SINGLE LINE DUCTWORK
- RECTANGULAR TO ROUND TRANSITION IN SINGLE LINE DUCTWORK
- CEILING RETURN GRILLE WITH LINED BOOT ABOVE FINISH CEILING. FREE AREA OF BOOT = 2/3 OF GRILLE FACE. (A) DENOTES GRILLE TYPE. (300) DENOTES CFM. SEE DIFFUSER SCHEDULE FOR SIZE. (A) 300
- LINED RETURN AIR BOOT WITH TURNING VANES ABOVE CEILING - SIZE OF BOOT IS INDICATED ON DRAWINGS
- DUAL DUCT MIXING BOX (DD, 1-7)
- DUAL DUCT MIXING BOX - HIGH PERFORMANCE BLENDING (DD, 1-7)

TEMPERATURE CONTROLS SYMBOLS

- PNEUMATIC PIPING
- ELECTRIC WIRING
- PARALLEL BLADE DAMPER
- OPPOSED BLADE DAMPER
- HUMIDIFIER
- AVERAGE SENSING ELEMENT
- AIR FLOW PROBE
- DAMPER ACTUATOR
- PILOT POSITIONER (M)
- 1-1/2" AIR GAGE
- 3-1/2" DIAL THERMOMETER
- ROOM THERMOSTAT
- MOTOR STARTER
- MAIN AIR SUPPLY 20 PSIG (M)
- DUAL PRESSURE AIR SUPPLY (D)
- WARM UP (WU)
- DIFFERENTIAL PRESSURE SWITCH (DP)
- END SWITCH (ES)
- HIGH LIMIT SWITCH (HL)
- HUMIDITY SENSOR (HS)
- HEAT EXCHANGER (HX)
- SMOKE DETECTOR (SD)
- STATIC PRESSURE SENSOR (SP)
- TEMPERATURE SENSOR (TS)
- VARIABLE FREQUENCY DRIVE (VFD)
- VELOCITY SENSOR (VS)
- LOCATED IN CONTROL CABINET
- LOCATED ON CONTROL CABINET DOOR
- AI ANALOG INPUT
- AO ANALOG OUTPUT
- AO-P ANALOG OUTPUT PNEUMATIC
- C COMMON
- DA DIRECT ACTING
- DDC DIRECT DIGITAL CONTROL
- DI DIGITAL INPUT
- DO DIGITAL OUTPUT
- EP ELECTRIC TO PNEUMATIC SWITCH
- NC NORMALLY CLOSED
- NO NORMALLY OPEN
- PE PNEUMATIC TO ELECTRIC SWITCH
- POF PROOF OF FLOW
- RA REVERSE ACTING
- R-C RECEIVER-CONTROLLER
- S/S START/STOP
- CR CURRENT RELAY
- DI-P DIGITAL INPUT PNEUMATIC
- PN PNEUMATIC

MECHANICAL PIPING SYMBOLS

- EXISTING PIPING TO REMAIN
- EXISTING PIPING TO BE REMOVED
- NEW PIPING
- HWS HOT WATER SUPPLY
- HWR HOT WATER RETURN
- LPS STEAM SUPPLY (LOW PRESSURE)
- LPR STEAM RETURN (LOW PRESSURE)
- MPS STEAM SUPPLY (MEDIUM PRESSURE)
- MPR STEAM RETURN (MEDIUM PRESSURE)
- HPS STEAM SUPPLY (HIGH PRESSURE)
- HPR STEAM RETURN (HIGH PRESSURE)
- SV STEAM RELIEF VENT
- CWS CHILLED WATER SUPPLY
- CWR CHILLED WATER RETURN
- CHS CHILLED/HOT WATER SUPPLY
- CHR CHILLED/HOT WATER RETURN
- SWS SECONDARY WATER SUPPLY
- SWR SECONDARY WATER RETURN
- TS COOLING TOWER SUPPLY
- TR COOLING TOWER RETURN
- RS REFRIGERANT SUCTION PIPING
- RL REFRIGERANT LIQUID PIPING
- HG HOT GAS PIPING
- GS GLYCOL SUPPLY PIPING
- GR GLYCOL RETURN PIPING
- PD PUMP DISCHARGE
- CD CONDENSATE DRAIN PIPING
- CDS CONDENSER WATER SUPPLY
- CDR CONDENSER WATER RETURN
- SMS SNOW MELTING SYSTEM SUPPLY
- SMR SNOW MELTING SYSTEM RETURN
- T THERMOSTAT
- H HUMIDISTAT
- CONNECTION - NEW TO EXISTING
- FLOAT AND THERMOSTATIC TRAP
- SHUT-OFF VALVE
- BALANCING VALVE
- GLOBE VALVE
- CHECK VALVE (SWING OR CUSHION)
- CONTROL VALVE
- LUBRICATED PLUG COCK
- SOLENOID VALVE
- PRESSURE RELIEF VALVE
- PRESSURE REDUCING VALVE
- WYE STRAINER
- UNION
- PIPE ANCHOR
- FLOW ELEMENTS
- DIRECTION OF FLOW IN PIPES
- DIRECTION OF PITCH IN PIPES
- RISE AND DROP IN PIPING
- BRANCH PIPING CONNECTION (TOP OF PIPE)
- BRANCH PIPING CONNECTION (BOTTOM OF PIPE)
- WELDED ELBOW
- EXPANSION JOINT

MEDICAL GAS SYMBOLS

- NO NITROUS OXIDE PIPING
- N NITROGEN PIPING
- O OXYGEN PIPING
- SA SURGICAL AIR PIPING
- A MEDICAL AIR PIPING
- V VACUUM PIPING
- EVAC MEDICAL GAS EVACUATION PIPING
- CVAC LASER SMOKE EXHAUST PIPING
- NOV NITROUS OXIDE VENT PIPING
- NV NITROGEN VENT PIPING
- V V VACUUM VENT PIPING
- SAI SURGICAL AIR INTAKE PIPING
- CA COMPRESSED AIR PIPING
- CO2 CARBON DIOXIDE PIPING
- NO NITROUS OXIDE OUTLET
- N NITROGEN OUTLET
- O OXYGEN OUTLET
- SA SURGICAL AIR OUTLET
- A MEDICAL AIR OUTLET
- V VACUUM OUTLET
- EVAC MEDICAL GAS EVACUATION OUTLET
- CHECK VALVE
- LOCKABLE SERVICE SHUT-OFF VALVE
- PS PRESSURE SWITCH
- MEDICAL GAS ZONE VALVE
- NCP NITROGEN CONTROL PANEL

PLUMBING SYMBOLS

- C COLD WATER PIPING
- H HOT WATER PIPING
- HC HOT WATER CIRCULATING PIPING
- VENT PIPING
- WASTE PIPING
- SW SAFE WASTE PIPING
- DS DOWNSPOUT PIPING
- EDS EMERGENCY DOWNSPOUT PIPING
- G GAS PIPING
- FOS FUEL OIL SUPPLY PIPING
- FOR FUEL OIL RETURN PIPING
- A ACID WASTE PIPING
- A ACID VENT PIPING
- DI DEIONIZED WATER PIPING
- SC SOFT COLD WATER PIPING
- RO REVERSE OSMOSIS WATER PIPING
- ETO ETHYLENE OXIDE PIPING
- PD PUMP DISCHARGE
- TW TEMPERED WATER PIPING
- DW DRINKING WATER PIPING
- CA COMPRESSED AIR PIPING
- CA COMPRESSED AIR OUTLET
- CO CLEANOUT
- FCO FLUSH CLEANOUT
- RD ROOF DRAIN
- ERD EMERGENCY ROOF DRAIN
- FD FLOOR DRAIN
- FFD FLOOR DRAIN WITH FUNNEL
- SFD SAFE WASTE FLOOR DRAIN
- HB HOSE BIBB
- WH WALL HYDRANT
- VTR VENT THRU ROOF
- SHUT-OFF VALVE
- BALANCING VALVE
- GLOBE VALVE
- CHECK VALVE (SWING OR CUSHION)
- CONTROL VALVE
- LUBRICATED PLUG COCK
- SOLENOID VALVE
- PRESSURE RELIEF VALVE
- PRESSURE REDUCING VALVE
- WYE STRAINER
- UNION
- PIPE ANCHOR
- FLOW ELEMENTS
- DIRECTION OF FLOW IN PIPES
- DIRECTION OF PITCH IN PIPES
- RISE AND DROP IN PIPING
- BRANCH PIPING CONNECTION (TOP OF PIPE)
- BRANCH PIPING CONNECTION (BOTTOM OF PIPE)
- WELDED ELBOW
- EXPANSION JOINT

FIRE PROTECTION SYMBOLS

- SP STANDPIPE PIPING (WET TYPE)
- SPD STANDPIPE PIPING (DRY TYPE)
- PSP PRESSURIZED STANDPIPE PIPING
- S SPRINKLER PIPING (WET TYPE)
- SD SPRINKLER PIPING (DRY TYPE)
- F FIRE SERVICE PIPING
- ID INSPECTOR TEST DRAIN
- FPS FIRE PUMP SUCTION PIPING
- FHC FIRE HOSE CABINET
- PIV POST INDICATOR VALVE
- EXISTING SPRINKLER HEAD
- NEW SPRINKLER HEAD
- FV FIRE DEPARTMENT HOSE VALVE
- FS SPRINKLER FLOW INDICATOR SWITCH
- TS TAMPER SWITCH
- FIRE DEPARTMENT CONNECTION

PROJECT MECHANICAL GENERAL NOTES

(THESE NOTES APPY TO ALL MECHANICAL SHEETS)

1. THE LOCATION OF ALL STRUCTURAL OPENINGS SHALL BE AS INDICATED ON THE MECHANICAL, STRUCTURAL AND ARCHITECTURAL DRAWINGS. COORDINATE EXACT SIZES OF OPENINGS REQUIRED.
2. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS. PROVIDE ALL FITTINGS, TRANSITIONS, DAMPERS, VALVES AND OTHER DEVICES REQUIRED FOR A COMPLETE WORKABLE INSTALLATION.
3. CONTRACTOR SHALL FIELD VERIFY CLEARANCE ABOVE THE CEILING AND NOTIFY THE ENGINEER ABOUT POSSIBLE CONFLICTS.
4. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED. FOLLOW DRAWINGS IN LAYING OUT WORK AND CHECK DRAWINGS OF OTHER TRADES RELATING TO WORK TO VERIFY SPACE IN WHICH WORK WILL BE INSTALLED. MAINTAIN HEADROOM AND SPACE CONDITIONS AT ALL TIMES.
5. IT IS THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE ALL WORK WITH ALL OTHER TRADES. THE SHOP DRAWINGS PREPARED BY THIS CONTRACTOR SHALL INDICATE SPACE ALLOWANCES FOR ALL WORK OF ALL OTHER TRADES AND SHALL BE SIGNED OFF BY ALL OTHER CONTRACTORS.
6. CONTRACTOR SHALL VERIFY ON-SITE ALL CONDITIONS AND MEASUREMENTS SHOWN ON CONTRACT DRAWINGS.
7. ALL SUPPORTS FOR MECHANICAL EQUIPMENT ARE BASED ON PRELIMINARY INFORMATION FROM ONE MANUFACTURER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING SIZES FROM CERTIFIED DRAWINGS OF EQUIPMENT BEING SUBMITTED AND SHALL MAKE ANY STRUCTURAL MODIFICATIONS REQUIRED WITHOUT ANY ADDITIONAL COST TO THE OWNER.
8. ALL NEW EQUIPMENT FURNISHED BY THE MECHANICAL CONTRACTOR SHALL BE MANUFACTURED INTO COMPONENTS THAT CAN BE MOVED INTO THE BUILDING THROUGH AVAILABLE BUILDING OPENINGS. IF ADDITIONAL BUILDING OPENINGS ARE REQUIRED, THE MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR AND MAKE ALL PROVISIONS TO MOVE EQUIPMENT INTO FINAL LOCATION.
9. WHERE EQUIPMENT AND/OR PIPING AND/OR DUCTWORK IS NOTED TO BE DEMOLISHED, COORDINATE WITH GENERAL CONTRACTOR PRIOR TO REMOVAL OR ENSURE THAT REMOVAL OR EQUIPMENT FALLS WITHIN PRESENT CONSTRUCTION LIMITS AND SCOPE OF WORK.
10. WHERE REFRIGERANT PIPING OR SYSTEM ARE TO BE DEMOLISHED, RECLAIM ALL REFRIGERANT PER GUIDELINES AND STORE OR DISPOSE OF AS REQUIRED.
11. ALL STORED AND/OR PARTIALLY INSTALLED SHEET METAL, PIPING, AND EQUIPMENT SHALL BE PROTECTED FROM WEATHER. CONTRACTOR SHALL COVER OPEN ENDS AT END OF WORK DAY.
12. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE BUILDING CODE REQUIREMENTS AND PROVIDE ALL REQUIRED CONTROLLED INSPECTIONS FOR HIS WORK.
13. DUCTWORK SHALL BE INSULATED PER SPECIFICATIONS OR AS NOTED ON DRAWINGS. ALL DUCT JOINTS AND SEAMS SHALL BE SEALED PER SPECIFICATIONS.
14. DUCT AND PLENUM SIZES INDICATED ON THE DRAWINGS ARE SHEET METAL DIMENSIONS.
15. MANUAL DAMPERS SHALL BE PROVIDED IN ALL DUCT BRANCHES AND IN ALL BRANCHES TO INDIVIDUAL DIFFUSERS, GRILLES AND REGISTERS.
16. CONTRACTOR SHALL FURNISH AND INSTALL CONCEALED DAMPER ACTUATORS AND DAMPER WHERE DAMPERS ARE INSTALLED IN INACCESSIBLE CEILINGS.
17. EXACT LOCATIONS OF ALL CEILING DIFFUSERS, REGISTERS AND GRILLES DETAILED ON THE ARCHITECTURAL REFLECTIVE CEILING PLAN, AND ARCHITECTURAL ROOM ELEVATIONS.
18. ALL DUCTWORK SHALL BE CONSTRUCTED, ERECTED AND TESTED IN ACCORDANCE WITH THE MOST RESTRICTIVE OF LOCAL REGULATIONS, PROCEDURES DETAILED IN THE ASHRAE HANDBOOK OF FUNDAMENTALS, OR THE APPLICABLE STANDARDS ADOPTED BY THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION (SMACNA).
19. PROVIDE METAL COVER PLATES FOR ALL PIPES LOCATED AT FLOOR LEVEL TO PREVENT PIPE DAMAGE. PLATES SHALL NOT BE DAMAGED BY NORMAL MAINTENANCE TRAFFIC.
20. ALL BRANCH PIPING TO VAV BOXES, FCUS, OR OTHER COMPONENTS SHALL BE MINIMUM OF 3/4" UNLESS NOTED OTHERWISE.
21. PROVIDE MANUAL AIR VENTS, DRAINS AND RELIEF VALVES AS REQUIRED AT THE HIGH AND LOW POINTS IN THE SYSTEM.
22. PROVIDE VALVED AND CAPPED CONNECTIONS FOR DRAINAGE AT ALL LOW POINTS OF PIPING SYSTEM.
23. MINIMUM PITCH SHALL BE SUFFICIENT TO INSURE ADEQUATE VENTING OR DRAINAGE.
24. CONTRACTOR SHALL COORDINATE INSTALLATION OF HORIZONTAL PIPE RUNS IN THE CEILING PLENUMS WITH ALL TRADES.
25. PROVIDE REDUCER FITTINGS FOR CHANGE IN PIPE SIZE AND FOR FINAL CONNECTION AT EQUIPMENT AND AS REQUIRED TO PERMIT DRAINAGE AND VENTING.
26. ALL PIPING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISERS OF RUNS.
27. THERMOSTAT AND/OR HUMIDISTAT LOCATIONS SHALL BE COORDINATED WITH LIGHT SWITCHES. FINAL LOCATIONS OF THERMOSTAT AND/OR HUMIDISTAT SHALL BE COORDINATED WITH ARCHITECT AND ENGINEER.
28. INSTALL BREAK GLASS SWITCHES FOR EMERGENCY SHUTDOWN FOR CHILLER ROOM, BOILER ROOM, AND ALL REQUIRED PRESSURE VESSELS.
29. MECHANICAL CONTRACTOR IS RESPONSIBLE TO FURNISH DISCONNECT SWITCHES AND MOTOR STARTERS FOR ALL HVAC EQUIPMENT. FOR INSTALLATION AND WIRING, MECHANICAL CONTRACTOR SHALL COORDINATE ELECTRICAL CONTRACTOR AND ELECTRICAL SPECIFICATIONS.
30. MECHANICAL CONTRACTOR IS RESPONSIBLE TO INSTALL DUCT MOUNTED SMOKE DETECTOR AS INDICATED ON DESIGN DRAWINGS. DUCT MOUNTED SMOKE DETECTORS ARE FURNISHED AND WIRED BY ELECTRICAL CONTRACTOR PER ELECTRICAL SPECIFICATIONS.
31. PROVIDE ESCUTCHEONS AND SEALING OF ALL PENETRATIONS OF FIRE SEPARATIONS IN ACCORDANCE DETAIL DRAWINGS AND PER APPLICABLE CODES AS REFERENCE ON ARCHITECTURAL CODE SHEETS.
32. THIS IS A 24 HOUR OPERATING FACILITY, SO SOME WORK MAY HAVE TO BE DONE AFTER NORMAL WORKING HOURS OR ON WEEKENDS AT NO ADDITIONAL COST TO OWNER. SYSTEM SHUT DOWNS SHALL BE COORDINATED AND SCHEDULE WITH OWNER AT LEAST TWO WEEKS IN ADVANCE.

PROJECT PLUMBING GENERAL NOTES

(THESE NOTES APPY TO ALL PLUMBING SHEETS)

1. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED. FOLLOW DRAWINGS IN LAYING OUT WORK AND CHECK DRAWINGS OF OTHER TRADES RELATING TO WORK TO VERIFY SPACE IN WHICH WORK WILL BE INSTALLED. MAINTAIN HEADROOM AND SPACE CONDITIONS AT ALL TIMES.
2. COORDINATE PLUMBING SYSTEMS WITH WORK OF ALL OTHER TRADES PRIOR TO ANY FABRICATION OR INSTALLATION. PROVIDE ALL FITTINGS, OFFSETS AND TRANSITIONS AS REQUIRED FOR A COMPLETE WORKABLE INSTALLATION.
3. MAINTENANCE LABEL SHALL BE AFFIXED TO ALL PLUMBING EQUIPMENT AND A MAINTENANCE MANUAL SHALL BE PROVIDED TO OWNER.
4. CONTRACTOR SHALL REFER TO ALL THE ARCHITECTURAL DRAWINGS FOR PLUMBING RELATED WORK.
5. PLUMBING CONTRACTOR IS RESPONSIBLE TO FURNISH DISCONNECT SWITCHES AND MOTOR STARTERS FOR ALL PLUMBING EQUIPMENT. FOR INSTALLATION AND WIRING, PLUMBING CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR AND ELECTRICAL SPECIFICATIONS.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS INCLUDING BUT NOT LIMITED TO ENTERING MANHOLES, USE OF WATER FROM LOW PRESSURE HYDRANTS, DEMOLITION AND NEW WORK, ETC. PRIOR TO COMMENCEMENT OF WORK.
7. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS AND APPLICABLE CODES. PROVIDE ALL FITTINGS, TRANSITIONS, VALVES AND OTHER DEVICES REQUIRED FOR A COMPLETE WORKABLE INSTALLATION.
8. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO ALL APPLICABLE LOCAL CODES AND REGULATIONS AS REFERENCED ON ARCHITECTURAL CODE PLANS.
9. WHERE EQUIPMENT AND/OR PIPING IS NOTED TO BE DEMOLISHED, COORDINATE WITH GENERAL CONTRACTOR PRIOR TO REMOVAL TO ENSURE THAT REMOVAL OF EQUIPMENT FALLS WITHIN PRESENT CONSTRUCTION LIMITS AND SCOPE OF WORK. DEMOLITION PLANS SHOW GENERAL INTENT OF DEMOLITION WORK, NOT ALL DEMO WORK MAY BE SHOWN. CONTRACTOR SHALL DISCONNECT AND REMOVE ALL ITEMS NOT REQUIRED TO REMAIN.

PROJECT FIRE PROTECTION GENERAL NOTES

(THESE NOTES APPY TO ALL FIRE PROTECTION SHEETS)

1. COORDINATE FIRE PROTECTION SYSTEMS WITH WORK OF ALL OTHER TRADES PRIOR TO ANY FABRICATION OR INSTALLATION. PROVIDE ALL FITTINGS, OFFSETS, AND TRANSITIONS AS REQUIRED FOR A COMPLETE WORKABLE INSTALLATION.
2. COMPLETE SPRINKLER INSTALLATION WITH ALL EQUIPMENT, SPRINKLER HEADS, PIPES, FITTINGS, DRAINS AND HANGERS.
3. UNLESS OTHERWISE NOTED, ALL CONTROL VALVES SHALL BE PROVIDED WITH TAMPER SWITCHES.
4. SPRINKLER PIPING SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE. HANGERS AND SUPPORTS SHALL BE UL LISTED APPROVED FOR USE IN SPRINKLER SYSTEMS. WHERE FIELD CONDITIONS DO NOT PERMIT SUPPORTING FROM THE BUILDING STRUCTURE, PROVIDE ADDITIONAL STEEL FRAMING AS REQUIRED. NO SPRINKLER PIPING SHALL BE HUNG FROM THE PIPING OF OTHER TRADES OR MECHANICAL SYSTEMS.
5. MINIMUM OF 18" CLEARANCE SHALL BE MAINTAINED BETWEEN TOP OF STORAGE AND SPRINKLER DEFLECTOR.
6. FIRE SPRINKLER CONTRACTOR SHALL OBTAIN APPROVAL FROM THE FIRE MARSHAL AND AUTHORITIES HAVING JURISDICTION FOR THE SPRINKLER SYSTEM PRIOR TO INSTALLATION.
7. FIRE SPRINKLER CONTRACTOR SHALL PREPARE AND SUBMIT PRIOR TO ANY FABRICATION AND INSTALLATION OF ALL NECESSARY DRAWINGS AND/OR DOCUMENTS FOR THE PROVISION AND INSTALLATION OF A FULLY AUTOMATIC FIRE SPRINKLER SYSTEM THROUGHOUT THE BUILDING, IN ACCORDANCE WITH AND SUBJECT TO THE INTERNATIONAL BUILDING AND FIRE CODES AND THE AUTHORITIES HAVING JURISDICTION.
8. ENTIRE INSTALLATION SHALL CONFORM TO THE REQUIREMENTS OF THE INTERNATIONAL BUILDING AND FIRE CODES, AND ALL LOCAL FIRE DEPARTMENT REQUIREMENTS.
9. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS AND APPLICABLE CODES. PROVIDE ALL FITTINGS, TRANSITIONS, VALVES, AND OTHER DEVICES REQUIRED FOR A COMPLETE WORKABLE INSTALLATION.

STATE OF MISSOURI
BRUCE ELDON HART
NUMBER E-22817
PROFESSIONAL ENGINEER
09/18/2020

Bruce E. Hart
Missouri #E-22817

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LAB REMODEL
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Date	09-18-2020
Job Number	3-20030
Drawn By	MJL
Checked By	BEH

Revision

Number	Date	Description

PM000

SYMBOLS, ABBREVIATIONS, & GENERAL NOTES

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9/18/2020 2:06:12 PM

GENERAL NOTES

1 REFER TO GENERAL NOTES ON SHEET PM000 AND SHEET DP2.1.

KEYED NOTES 0

1 CUT 3" WASTE PIPING AND REMOVE UPSTREAM PIPING THAT SERVED SINK AND/OR FLOOR DRAIN ABOVE, INCLUDING ASSOCIATED VENT PIPING UP THRU FIRST FLOOR SLAB. PATCH SLAB AS SPECIFIED AND PROTECT REMAINING 3" WASTE PIPING FOR NEW CONNECTION, RE: SHEET P2.0.

2 CUT AND CAP 3" WASTE PIPING THAT SERVED FLOOR DRAIN ABOVE.

3 CUT VENT PIPING BELOW SLAB AND REMOVE VENT PIPING BELOW SLAB ASSOCIATED WITH THE FLOOR DRAIN THAT IS BEING REMOVED. PROTECT VENT PIPING RISER FOR A NEW CONNECTION JUST BELOW THE SLAB, RE: SHEET P2.0.

1 BASEMENT PLUMBING DEMOLITION PLAN
1/8" = 1'-0"

PLAN NORTH / TRUE NORTH

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DP2.0

PLUMBING BASEMENT DEMOLITION PLAN

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GENERAL NOTES

1 SEE SHEET PM000 FOR GENERAL NOTES AND SYMBOLS LISTS.

2 THIS PLAN SHOWS GENERAL INTENT OF DEMOLITION WORK. CONTRACTOR SHALL COORDINATE DEMOLITION WITH OWNER. THIS IS A 24-HOUR FACILITY. THEREFORE, WORK MAY NEED TO BE COMPLETED AFTER NORMAL WORKING HOURS OR DURING WEEKENDS AT NO EXTRA COST TO THE OWNER. ALL SHUTDOWNS SHALL BE COORDINATED AND SCHEDULED WITH OWNER A MINIMUM OF TWO WEEKS BEFORE BEGINNING WORK.

3 WORK SHOWN LIGHTLY IS EXISTING TO REMAIN, WORK SHOWN DASHED BOLD IS WORK TO BE REMOVED.

4 REMOVE PLUMBING FIXTURES, PIPING, DRAINS, EQUIPMENT, ETC. AS SHOWN. CAP PIPING BELOW FLOOR, BEHIND WALLS AND PATCH OPENINGS AS REQUIRED. PIPING NOT REQUIRED TO REMAIN TO BE REMOVED TO MAINS AND CAPPED. PATCH FLOOR OPENINGS NOT REQUIRED TO REMAIN TO MATCH EXISTING GRADE.

5 REMOVE SPRINKLER HEADS ASSOCIATED BRANCH PIPING AS REQUIRED IN REMODEL AREAS. RELOCATE SPRINKLER MAINS AS REQUIRED FOR NEW WORK

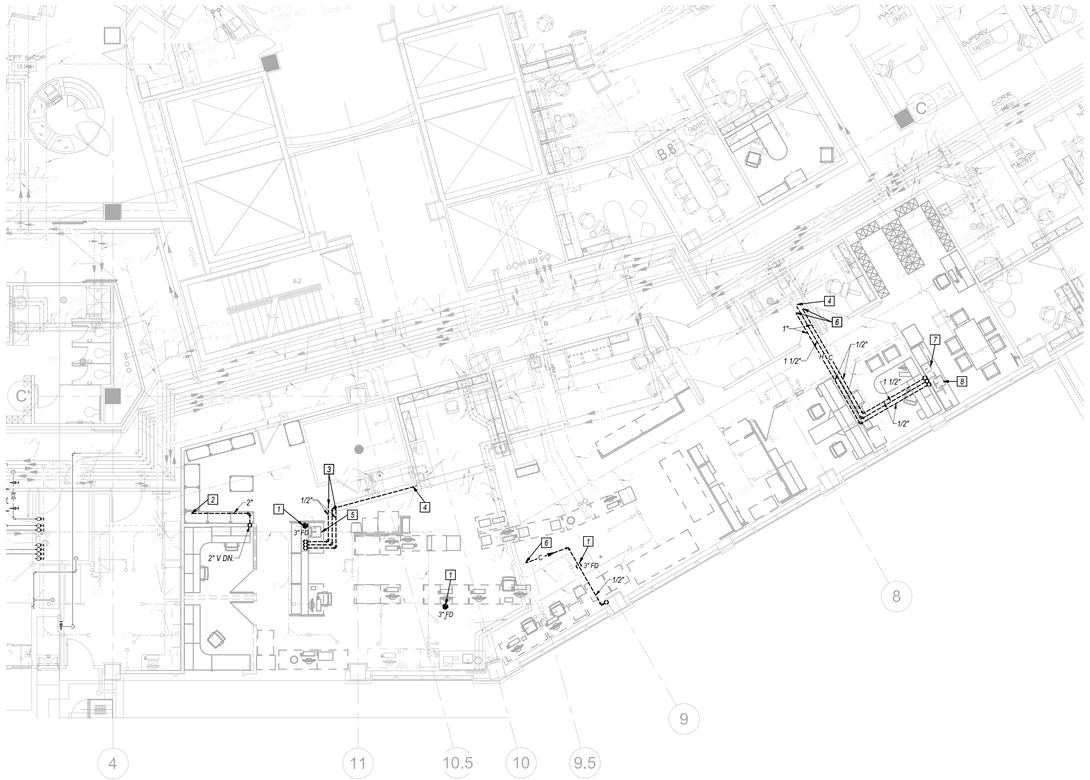
6 CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO DEMOLITION.

7 NOT ALL DEMOLITION WORK MAY BE SHOWN. CONTRACTOR SHALL DISCONNECT AND REMOVE ALL ITEMS NOT REQUIRED TO REMAIN.

8 OWNER SHALL HAVE FIRST RIGHT OF REFUSAL AN ALL EQUIPMENT REMOVED.

KEYED NOTES 0

1 DISCONNECT AND REMOVE FLOOR DRAIN. PATCH SLAB AS SPECIFIED.
2 CUT 2" V AND REMOVE PIPING DOWN THRU SLAB THAT SERVED NEARBY FLOOR DRAIN. PATCH SLAB AS SPECIFIED. PROTECT REMAINING PIPING FOR NEW CONNECTION, RE: SHEET P2.1.
3 CUT ½" C AND ½" H AND REMOVE DOWNSTREAM PIPING TO SINK. PROTECT REMAINING PIPING FOR NEW CONNECTIONS, RE: SHEET P2.1.
4 CUT AND CAP 1 ½" V AND REMOVE PIPING THAT SERVED SINK.
5 DISCONNECT AND REMOVE SINK AND ACCESSORIES. REMOVE WASTE PIPING DOWN THRU SLAB AND PATCH SLAB AS SPECIFIED.
6 CUT AND CAP AND REMOVE DOMESTIC WATER PIPING NOT REQUIRED TO REMAIN.
7 DISCONNECT AND REMOVE PIPING SERVING COFFEE MAKER.
8 DISCONNECT PIPING FROM SINK TO ALLOW SINK AND CASEWORK TO BE RELOCATED, RE: ARCHITECTURAL. REMOVE WASTE PIPING DOWN THRU SLAB AND PATCH SLAB AS SPECIFIED.



1 FIRST FLOOR PLUMBING DEMOLITION PLAN
1/8" = 1'-0"

PLAN NORTH / TRUE NORTH

STATE OF MISSOURI
BRUCE ELDON HART
NUMBER E-22817
PROFESSIONAL ENGINEER
09/18/2020
Bruce E. Hart
Missouri #E-22817

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Saint Luke's
EAST HOSPITAL
LAB REMODEL
100 NE ST LUKES BLVD, LEE'S SUMMIT, MO 64086

Date	09-18-2020
Job Number	3-20030
Drawn By	MJL
Checked By	BEH

Revision

Number	Date	Description

DP2.1

PLUMBING FIRST FLOOR DEMOLITION PLAN

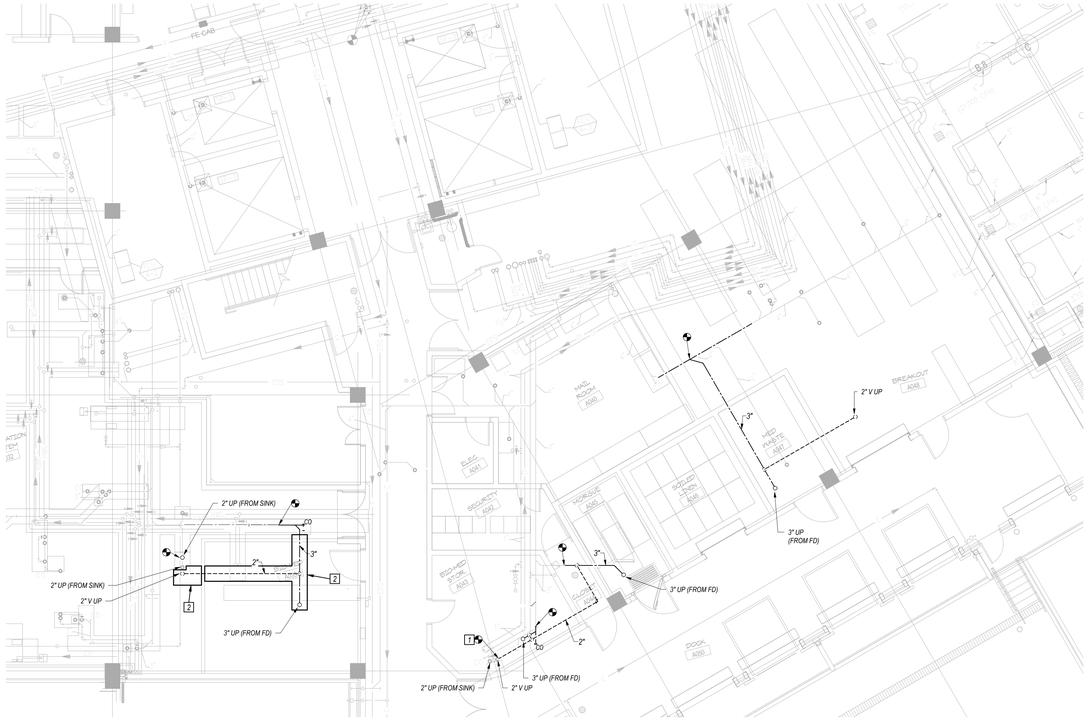
GENERAL NOTES

1 *REFER TO GENERAL NOTES ON SHEET PM000 AND SHEET P2.1.*

KEYED NOTES 0

1 *CONNECT NEW 2" V PIPING TO EXISTING 2" V RISER JUST BELOW SLAB. WHERE IT WAS CUT DURING DEMOLITION.*

2 *SHEET METAL DRIP PAN BELOW NEW PIPING. PAN SHALL BE 24" WIDE BY 3" DEEP. CONNECT NEW SEGMENTS OF DRIP PAN TO EXISTING DRIP PANS AS REQUIRED, AND SLOPE THE NEW SEGMENTS TO DRAIN INTO THE EXISTING DRIP PANS.*



1 BASEMENT PLUMBING PLAN
1/8" = 1'-0"

PLAN NORTH
TRUE NORTH

STATE OF MISSOURI
BRUCE ELDON HART
NUMBER E-22817
REGISTERED PROFESSIONAL ENGINEER
09/18/2020
Bruce E. Hart
Missouri #E-22817

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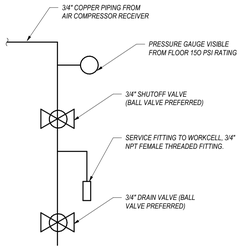
Checked By	BEH

Revision

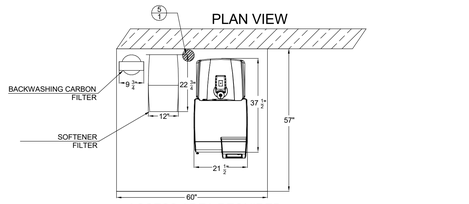
Number	Date	Description

P2.0

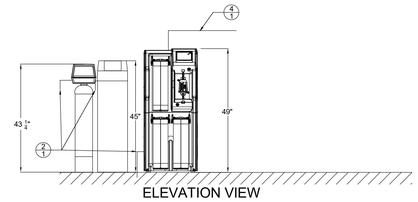
PLUMBING BASEMENT PLAN



3 DETAIL OF COMPRESSED AIR PIPING AT SYSTEM CONNECTION POINT
N.T.S.



ACCESS AREA REQUIRED



ELEVATION VIEW

4 DETAIL OF MILLEPORE WATER PURIFICATION SYSTEM
N.T.S.

INTERFACE CALL-OUT TABLE		
TAG	DESCRIPTION	LOCATION
1-1	Feed water source - provide 3/4" npt male connection with isolation ball valve. 30 LPM at 50 - 85 psi.	On wall, within 5 feet of system. If under a sink, provide 2" Ø hole in counter or casework for tubing for connection to system by MilliporeSigma
2-1	Reject from make-up system and pre-treatment	MilliporeSigma will run tubing from system to floor drain provided by contractor.
3-1	Not used.	
4-1	Distribution recirculating loop -MilliporeSigma will provide & install MAX 60 feet of 16 mm OD (10 mm ID) flexible tubing to feed analyzer(s).	Surface mounted in accessible location.
5-1	Floor drain or stand pipe by others, capable of handling 30LPM flow.	MilliporeSigma will run tubing from system to floor drain provided by contractor.

SPRINKLER NOTE

SPRINKLER CONTRACTOR SHALL DISCONNECT, REMOVE, AND RELOCATE ANY AND/OR ALL SPRINKLER PIPING AND SPRINKLER HEADS AS REQUIRED BY MECHANICAL, ELECTRICAL, AND GENERAL CONTRACTORS. AFTER ALL LARGER DUCTWORK AND PIPING HAVE BEEN INSTALLED. SPRINKLER CONTRACTOR SHALL REINSTALL SPRINKLER PIPING AND HEADS REQUIRED TO SPRINKLER REMODELED SPACE. SPRINKLER CONTRACTOR SHALL ALSO INSTALL NEW SPRINKLER HEADS AND/OR PIPING AS REQUIRED BY REMODEL OF SPACE. ALL SPRINKLER HEADS SHALL BE CONCEALED TYPE.

GENERAL NOTES

1 *SEE SHEET PM000 FOR GENERAL NOTES AND SYMBOLS LISTS.*

2 *WORK SHOWN LIGHTLY IS EXISTING TO REMAIN. ALL NEW WORK SHOWN BOLD AND DARK.*

3 *THIS IS A 24 HOUR FACILITY. THEREFORE, WORK MAY NEED TO BE COMPLETED AFTER NORMAL WORKING HOURS OR DURING WEEKENDS AT NO EXTRA COST TO THE OWNER. ALL SHUTDOWNS SHALL BE COORDINATED AND SCHEDULED WITH OWNER A MINIMUM OF TWO WEEKS BEFORE BEGINNING WORK.*

4 *FIELD VERIFY ALL EXISTING PIPE SIZES AND LOCATIONS PRIOR TO STARTING WORK.*

5 *CAREFULLY COORDINATE NEW WORK WITH EXISTING FIELD CONDITIONS AND OTHER TRADES.*

6 *BEFORE CORE DRILLING ANY HOLES, LOCATE REBAR IN THE SLAB BY X-RAY OR WITH R-METER. IF REBAR IN ENCOUNTERED WITHIN THE PROPOSED LOCATION OF THE HOLE THEN EITHER RELOCATE THE HOLE TO MISS REBAR OR IF THE HOLE CANNOT BE RELOCATED, CONTACT STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO CORING OR DRILLING. DO NOT CORE ANY HOLES THROUGH THE BEAM WITHOUT APPROVAL OF STRUCTURAL ENGINEER*

7 *ALL NEW WASTE PIPING SERVING THE LAB AREA (SERVING SINKS AND FLOOR DRAINS, EXCEPT THE BREAK ROOM SINK) SHALL BE CONSIDERED "CHEMICAL WASTE PIPING". CHEMICAL WASTE PIPING AND FITTINGS SHALL BE ORION "BLUELINE" FIRE RETARDANT POLYPROPYLENE, OR APPROVED EQUAL. NEITHER CAST IRON NOR PVC IS ACCEPTABLE. ADDITIONALLY, VENT PIPING ASSOCIATED WITH THE CHEMICAL WASTE DRAINS AND LOCATED BELOW THE FIRST FLOOR SLAB SHALL BE THE SAME MATERIAL AS THE CHEMICAL WASTE PIPING.*

KEYED NOTES 0

1 *½" C, ½" H AND 1 ½" V DN IN WALL TO NEW SINK. EXTEND 2" WASTE FROM FIXTURE DOWN IN WALL AND CORE DRILL DOWN THRU SLAB.*

2 *COORDINATE EXACT LOCATION OF NEW FLOOR DRAIN WITH OWNER PRIOR TO INSTALLATION.*

3 *COORDINATE EXACT LOCATION OF NEW FLOOR DRAIN WITH OWNER'S WATER PURIFICATION VENDOR (MILLEPORE SIGMA) PRIOR TO INSTALLATION.*

4 *COORDINATE EXACT LOCATION OF NEW FLOOR DRAIN WITH OWNER'S LAB AUTOMATION VENDOR (SIEMENS) PRIOR TO INSTALLATION.*

5 *COORDINATE EXACT LOCATION OF NEW PIPING IN EXIST'G UTILITY CHASE WITH OWNER (MANAGER OF FACILITIES) PRIOR TO INSTALLATION. NEW PIPING SHALL NOT BLOCK ACCESS TO EXIST'G VALVES OR ANY OTHER ITEMS REQUIRING ACCESS. ROUTE PIPING FROM FIRST FLOOR UP THROUGH SECOND FLOOR LEVEL (NOT SHOWN) TO THIRD FLOOR LEVEL.*

6 *3/4" CA DOWN TO LAB AUTOMATION SYSTEM CONNECTION POINT. RE: DETAIL ON THIS SHEET.*

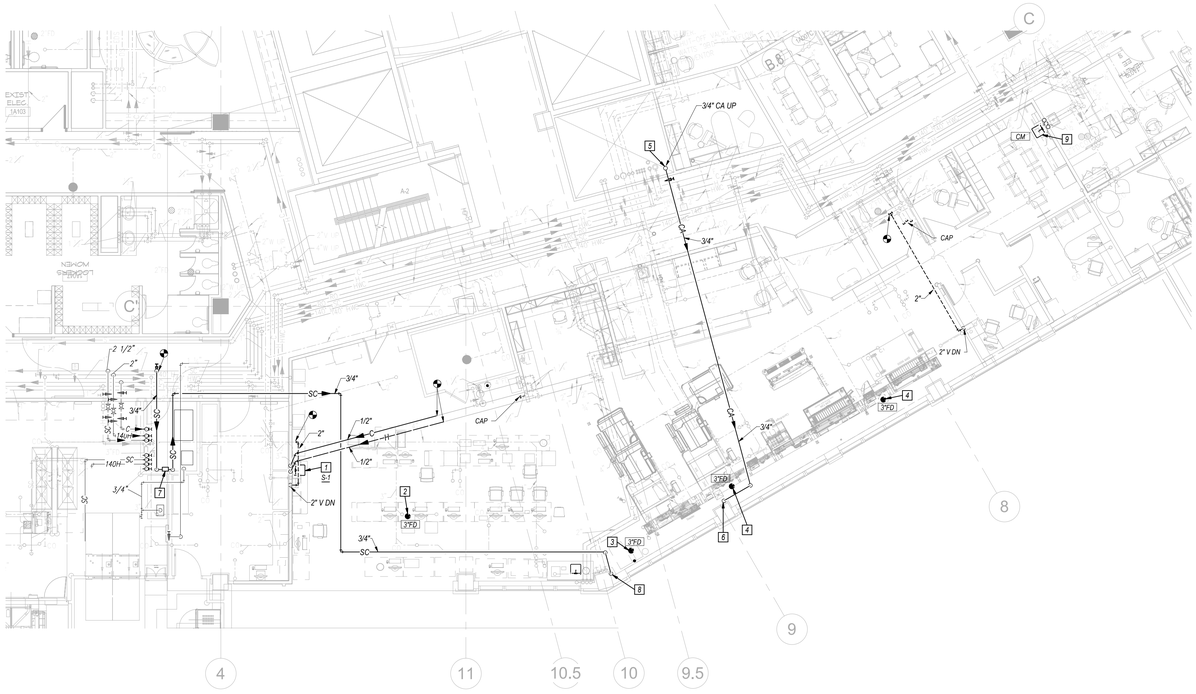
7 *3/4" SOFT COLD WATER DOWN TO NEW 3/4" REDUCED-PRESSURE BACKFLOW PREVENTER MOUNTED IN ACCESSIBLE LOCATION ON WALL. EXTEND DRAIN PIPING FROM BACKFLOW PREVENTER AND TURN DOWN OVER EXIST'G FLOOR DRAIN IN THIS ROOM.*

8 *3/4" SC DOWN TO WATER PURIFICATION SYSTEM CONNECTION POINT. RE: DETAIL ON THIS SHEET.*

9 *NEW LOCATION FOR CASEWORK AND SINK THAT WAS DISCONNECTED DURING DEMOLITION. CONNECT TO EXISTING COLD, HOT AND VENT PIPING IN WALL AND EXTEND NEW BRANCH PIPING TO NEW FIXTURE. EXTEND 2" WASTE FROM FIXTURE AND CONNECT TO EXISTING 2" WASTE PIPING IN WALL ABOVE SLAB. ALSO EXTEND NEW ½" COLD WATER BRANCH PIPING IN CASEWORK TO SERVE NEARBY COFFEE MAKER.*

PLUMBING FIXTURE SCHEDULE

MARK	FIXTURE	DESCRIPTION	ACCESSORIES	MANFR AND MODEL NO.	WASTE	VENT	COLD	HOT
CM	COFFEE	ROUGH IN 1/2" COLD WATER	CUTOFF VALVE AND WATTS "9BD" BACK FLOW PREVENTER ON COLD SUPPLY.	----------	0"	0"	1/2"	0"
S-1	LABORATORY CRITICAL AREA SINK	17"x20" 18 GAUGE NO. 302 STAINLESS STEEL SINGLE COMPARTMENT SINK WITH COVED CORNERS. SELF-RIMMED, LK-6K-H SATIN FINISH. UNDERSIDE FULLY SOUND DEADENED.	ELKAY NO. LK-S.C.P. BRASS GRID STRAINER AND 1-1/2" C.P. BRASS TAILPIECE. CHICAGO FAUCET NO. 895-317XKCPR FAUCET, 4" CENTERS, NO. GN2A 5-3/8" SPOUT, NO. 317.4" WRIST BLADE HANDLES AND "FC" FLOW CONTROL DEVICE. DEARBORN NO. 510-17 GAUGE 1-1/2" "P" TRAP WITH CLEANOUT AND ESCUTCHEON. DEARBORN NO. 2712 KCW HOT AND COLD WATER COMPRESSION INLET SUPPLIES WITH STOPS.	ELKAY NO. LR-1720	2"	1 1/2"	1/2"	1/2"



1 PLUMBING FIRST FLOOR PLAN
1/8" = 1'-0"

PLAN NORTH / TRUE NORTH

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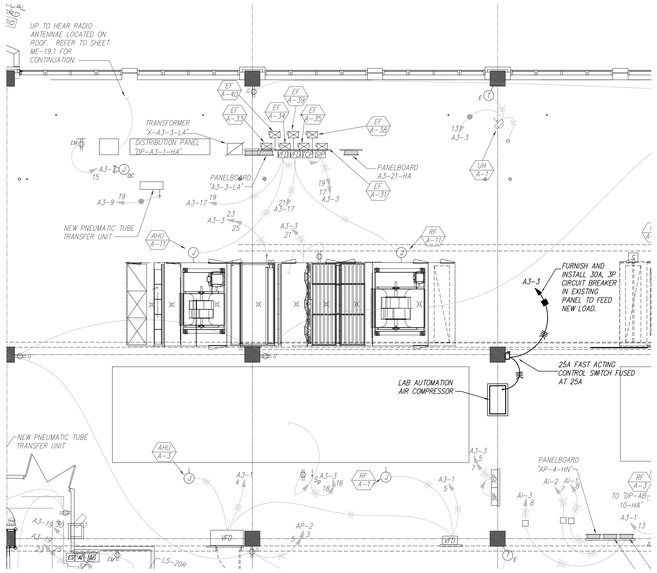
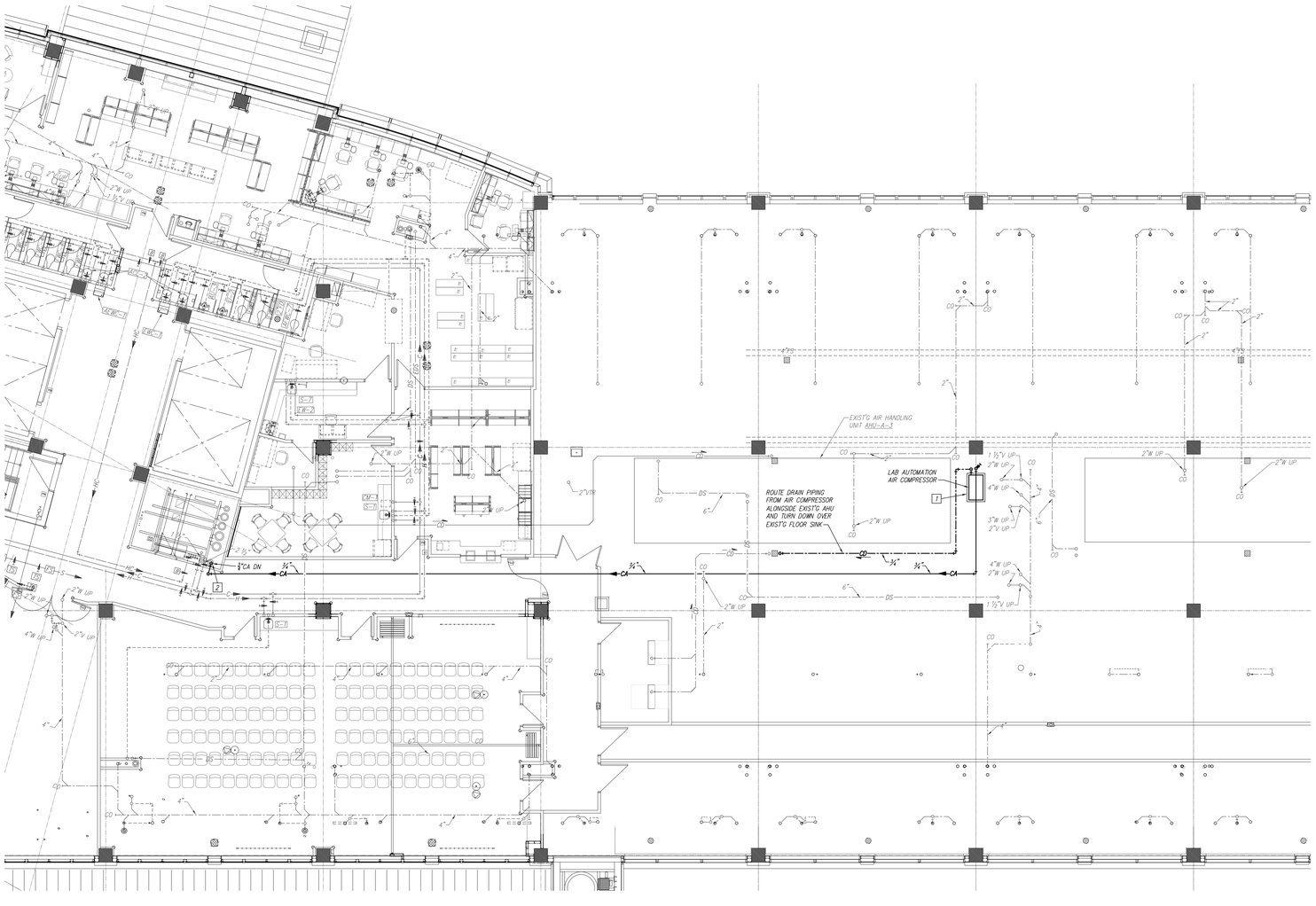
P2.1

PLUMBING FIRST FLOOR PLAN, SCHEDULE & DETAILS



THIRD FLOOR ELECTRICAL PLAN

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



THIRD FLOOR PLUMBING PLAN

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

GENERAL NOTES:

1. REFER TO GENERAL NOTES ON SHEETS PM000, E000 AND P2.1.

KEYED NOTES:

1 INSTALL NEW COMPRESSOR ON NEW 4" THICK CONCRETE HOUSEKEEPING PAD. COMPRESSOR IS BEING FURNISHED BY OWNER (THROUGH THEIR LAB AUTOMATION VENDOR) AND IS EXPECTED TO BE ATLAS COPCO MODEL SF4, WITH INTEGRATED RECEIVER, REFRIGERATED AIR DRYER AND CONTROLS. COORDINATE EXACT LOCATION OF EQUIPMENT WITH OWNER (MANAGER OF FACILITIES) PRIOR TO INSTALLATION.

2 COORDINATE EXACT LOCATION OF NEW PIPING IN EXISTING UTILITY CHASE WITH OWNER (MANAGER OF FACILITIES) PRIOR TO INSTALLATION. NEW PIPING SHALL NOT BLOCK ACCESS TO EXISTING VALVES OR ANY OTHER ITEMS REQUIRING ACCESS. ROUTE PIPING FROM THIRD FLOOR DOWN THROUGH SECOND FLOOR LEVEL (NOT SHOWN) TO FIRST FLOOR LEVEL.

STATE OF MISSOURI
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Date	09-18-2020
Job Number	3-20030
Drawn By	MJL/LLD
Checked By	BEH

Revision

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PE2.3

PLUMBING AND ELECTRICAL THIRD FLOOR PLANS

GENERAL NOTES

1 *REFER TO GENERAL NOTES ON SHEET PM000.*

2 *PRIOR TO PERFORMING DEMOLITION, TAKE AIRFLOW READINGS AT THE FOLLOWING LOCATIONS AND SUBMIT THOSE READINGS IN A WRITTEN REPORT TO THE ENGINEER:*

•FAN SOURCE READINGS AT THE AHU-A-3 SUPPLY FAN, DUCT TRAVERSE OF THE MEDIUM-PRESSURE SUPPLY AIR MAIN DUCT, OUTSIDE AIR DUCT, AND RELIEF AIR DUCT. ALSO PROVIDE TOTAL UNIT STATIC PRESSURE, STATIC PRESSURE ACROSS EACH AHU SECTION/COMPONENT, FAN SPEED, MOTOR NAMEPLATE DATA, VFD FREQUENCY, MOTOR AMP READING, AND A DIAGRAM OF AHU & DUCTWORK SHOWING WHERE READINGS WERE TAKEN.

•FAN SOURCE READINGS AT THE ASSOCIATED RETURN FAN, DUCT TRAVERSE FOR THE RETURN AIR MAIN DUCT. ALSO PROVIDE STATIC PRESSURE, FAN SPEED, MOTOR NAMEPLATE DATA, VFD FREQUENCY, AND MOTOR AMP READING.

•FAN SOURCE READINGS AT THE EF-A-13 GENERAL LABORATORY EXHAUST FAN (LOCATED ON HIGH ROOF, BETWEEN THE ELEVATORS). PROVIDE FAN NAMEPLATE DATA & SERIAL NUMBER, AIRFLOW RATE, STATIC PRESSURE, FAN SPEED, MOTOR NAMEPLATE DATA, VFD FREQUENCY (IF APPLICABLE), AND MOTOR AMP READING.

•FAN SOURCE READINGS AT THE EF-A-14 BIOSAFETY CABINET EXHAUST FAN (LOCATED ON HIGH ROOF, BETWEEN THE ELEVATORS). PROVIDE FAN NAMEPLATE DATA & SERIAL NUMBER, AIRFLOW RATE, STATIC PRESSURE, FAN SPEED, MOTOR NAMEPLATE DATA, VFD FREQUENCY (IF APPLICABLE), AND MOTOR AMP READING.

•GRILLE, REGISTER, AND DIFFUSER (GRD) READINGS AT ALL EXISTING GRDS SERVING THE ENTIRE LABORATORY AREA, INCLUDING THE OPEN LAB AREA, ASSOCIATED OFFICES, BLOOD BANK AREAS, RECEPTION/DRAW, BREAK ROOM, AND TOILET ROOM. TAKE READINGS AT ALL EXISTING GRDS, WHETHER THEY ARE SHOWN ON THESE PLANS OR NOT.

•BIOSAFETY CABINET (BSC) EXHAUST AIRFLOW READING, FROM THE EXISTING BSC IN THE LAB AREA.

3 *THIS PLAN SHOWS GENERAL INTENT OF DEMOLITION WORK. CONTRACTOR SHALL COORDINATE DEMOLITION WITH OWNER. THIS IS A 24 HOUR OPERATING FACILITY, SO SOME WORK MAY NEED TO BE COMPLETED AFTER NORMAL WORKING HOURS OR ON WEEKENDS AT NO EXTRA COST TO OWNER. SYSTEM SHUT DOWNS SHALL BE COORDINATED AND SCHEDULED WITH OWNER.*

4 *WORK SHOWN LIGHTLY IS EXISTING TO REMAIN. WORK SHOWN DASHED BOLD IS WORK TO BE REMOVED.*

5 *CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO DEMOLITION.*

6 *NOT ALL DEMOLITION WORK MAY BE SHOWN. CONTRACTOR SHALL DISCONNECT AND REMOVE ALL ITEMS NOT REQUIRED TO REMAIN.*

7 *DUE TO CONTINUED OPERATION OF EXISTING FACILITY, DEMOLITION MAY HAVE TO BE COMPLETED IN PHASES. COORDINATE PHASING OF WORK WITH OWNER.*

8 *MOST DIFFUSERS AND GRILLES IN PROJECT AREA ARE SHOWN LIGHTLY, AS EXISTING TO REMAIN. HOWEVER, WHERE REQUIRED FOR GENERAL CONTRUCTION, OR OTHER WORK ABOVE CEILINGS, CONTRACTOR SHALL TEMPORARILY DISCONNECT DIFFUSERS/GRILLES AND/OR COVER OPENINGS, THEN CLEAN AND RE-INSTALL IN CEILING GRIDS PRIOR TO OCCUPANCY. PROVIDE NEW FLEXIBLE DUCTS AS REQUIRED.*

KEYED NOTES 0

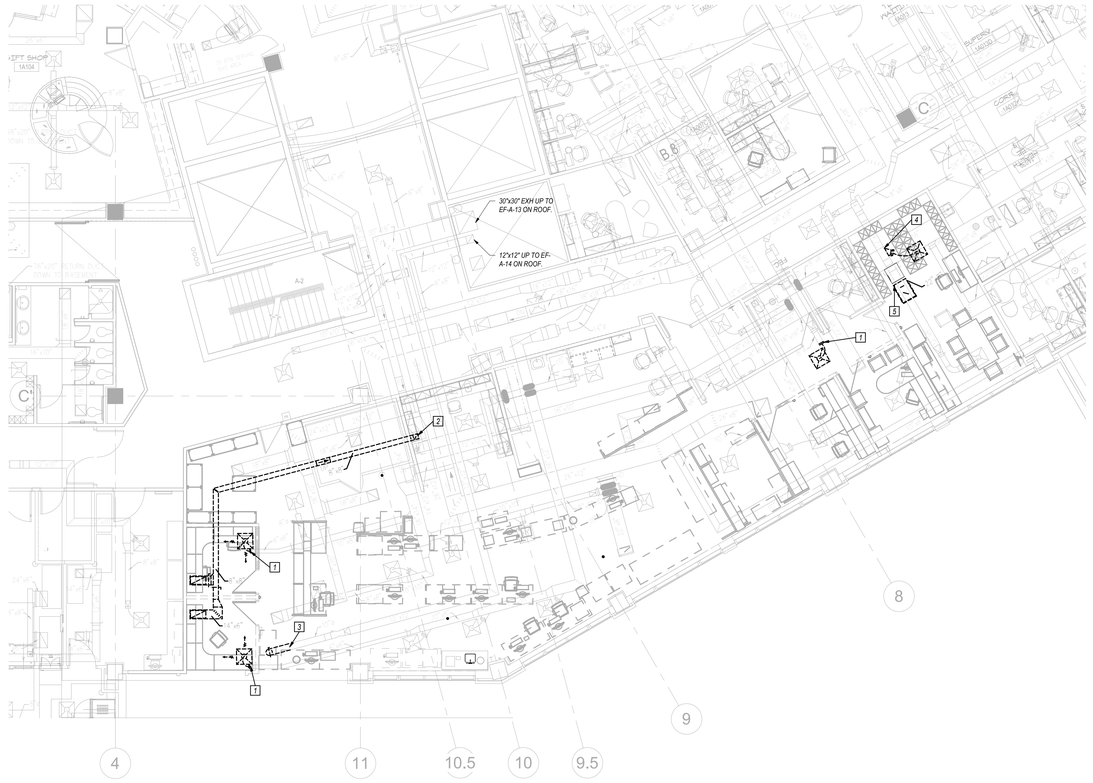
1 *DISCONNECT AND REMOVE FLEX DUCT SERVING SUPPLY DIFFUSER. CLEAN DIFFUSER AND RE-LOCATE AS INDICATED ON SHEET M2.1. PROTECT REMAINING DUCT FOR NEW CONNECTION. RE: SHEET M2.1.*

2 *DISCONNECT RETURN AIR BRANCH CUDT AND CAP MAIN DUCT AIR TIGHT. REMOVE RETURN DUCTWORK AND GRILLES SHOWN DARK & DASHED.*

3 *CUT 10" ROUND EXHAUST DUCT AND REMOVE UPSTREAM DUCTWORK FROM BIOSAFETY CABINET(BSC). PROTECT THE SHEET METAL TRANSITION BELOW THE CEILING FOR RE-LOCATION AND RE-USE AT NEW LOCATION OF BSC. PROTECT REMAINING DUCTWORK FOR NEW CONNECTION. RE: SHEET M2.1.*

4 *DISCONNECT AND REMOVE SUPPLY DIFFUSER AND CAP ASSOCIATED SUPPLY AIR DUCT AIR TIGHT.*

5 *CUT RETURN AIR DUCT AND REMOVE GRILLE AS INDICATED. PROTECT REMAINING DUCT FOR NEW CONNECTION, RE: SHEET M2.1*



1 FIRST FLOOR MECHANICAL DEMOLITION PLAN
1/8" = 1'-0"

PLAN NORTH / TRUE NORTH

STATE OF MISSOURI
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DM2.1

MECHANICAL FIRST FLOOR DEMOLITION PLAN

GENERAL NOTES

1 *SEE SHEET PM000 FOR GENERAL NOTES AND SYMBOLS LISTS.*

2 *THIS PLAN SHOWS GENERAL INTENT OF DEMOLITION WORK. CONTRACTOR SHALL COORDINATE DEMOLITION WITH OWNER. THIS IS A 24-HOUR FACILITY. THEREFORE, WORK MAY NEED TO BE COMPLETED AFTER NORMAL WORKING HOURS OR DURING WEEKENDS AT NO EXTRA COST TO THE OWNER. ALL SHUTDOWNS SHALL BE COORDINATED AND SCHEDULED WITH OWNER A MINIMUM OF TWO WEEKS BEFORE BEGINNING WORK.*

3 *WORK SHOWN LIGHTLY IS EXISTING TO REMAIN. WORK SHOWN DASHED BOLD IS WORK TO BE REMOVED.*

4 *CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO DEMOLITION.*

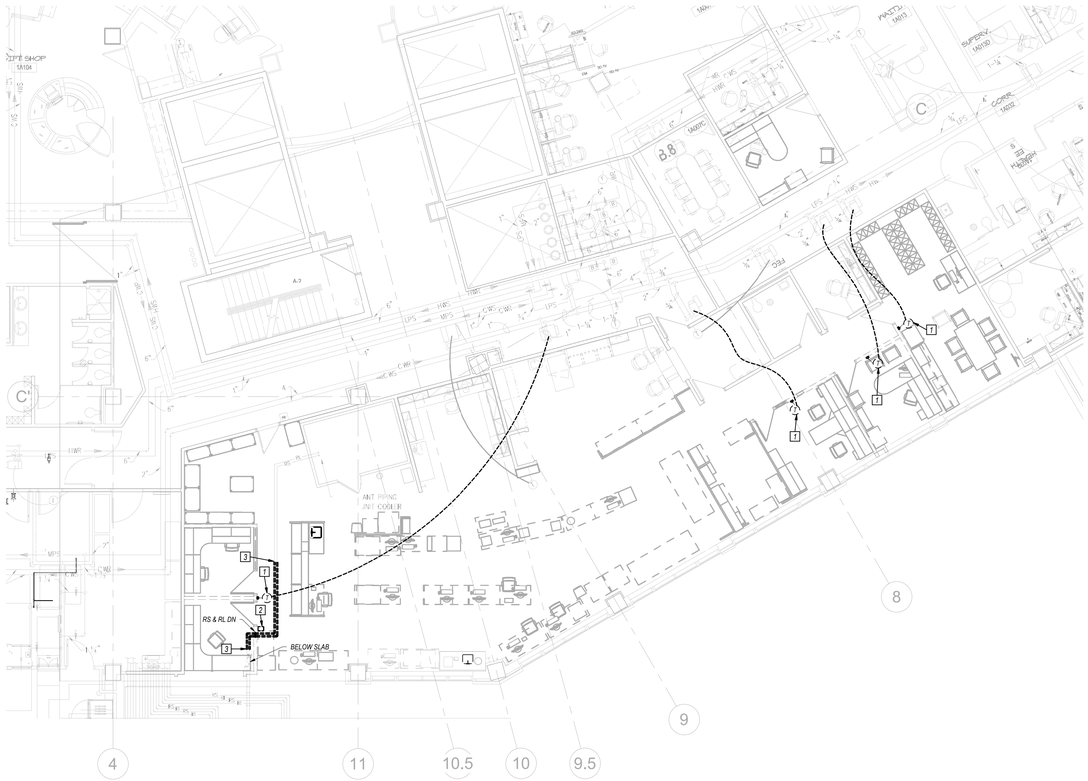
5 *NOT ALL DEMOLITION WORK MAY BE SHOWN. CONTRACTOR SHALL DISCONNECT AND REMOVE ALL ITEMS NOT REQUIRED TO REMAIN.*

KEYED NOTES 0

1 *DISCONNECT THERMOSTAT AND RELOCATE AS INDICATED ON SHEET MP2.1. REMOVE ANY CONTROL WIRING THAT CANNOT BE RE-USED.*

2 *DISCONNECT FUME HOOD MONITOR FOR BIOLOGICAL SAFETY CABINET AND RELOCATE AS INDICATED ON SHEET MP2.1. REMOVE ANY CONTROL WIRING THAT CANNOT BE RE-USED.*

3 *CUT REFRIGERANT PIPING THAT SERVES LAB COOLER AND REMOVE VERTICAL RISERS IN WALL AND A PORTION OF HORIZONTAL PIPING BOTH ABOVE CEILING AND BELOW SLAB. PATCH SLAB AS SPECIFIED. PROTECT REMAINING PIPING FOR NEW CONNECTIONS, RE: SHEET MP2.1.*



1 FIRST FLOOR MECHANICAL PIPING DEMOLITION PLAN
1/8" = 1'-0"

PLAN NORTH / TRUE NORTH

STATE OF MISSOURI
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DMP2.1

MECHANICAL PIPING FIRST FLOOR DEMOLITION PLAN

9/18/2020 2:12:25 PM

GENERAL NOTES

1. *REFER TO GENERAL NOTES ON SHEET PM000 AND DM1.*
2. *THIS IS A 24 HOUR OPERATING FACILITY, SO SOME WORK MAY NEED TO BE COMPLETED AFTER NORMAL WORKING HOURS OR ON WEEKENDS AT NO EXTRA COST TO OWNER. SYSTEM SHUTDOWNS SHALL BE COORDINATED AND SCHEDULED WITH OWNER.*
3. *DUE TO CONTINUED OPERATION OF EXISTING FACILITY, NEW WORK MAY HAVE TO BE COMPLETED IN PHASES. COORDINATE PHASING OF WORK WITH OWNER.*
4. *WORK SHOWN LIGHTLY IS EXISTING TO REMAIN. WORK SHOWN BOLD IS NEW WORK.*
5. *TEST, ADJUST AND BALANCE EXISTING AIR HANDLING UNIT AHU-A-3 AND ITS RETURN FAN, AND MAKE ADJUSTMENTS TO THE SUPPLY AIR STATIC PRESSURE SETPOINT AND THE RETURN FAN AIRFLOW OFFSET VALUE AS REQUIRED. COORDINATE WITH ENGINEER AS REQUIRED.*
6. *TEST, ADJUST AND BALANCE EXISTING LABORATORY EXHAUST FAN EF-A-13 TO NEW DESIGN AIRFLOW RATE OF 4100 CFM. PROVIDE AND INSTALL NEW BELTS AND SHEAVES ON FAN AS REQUIRED TO ACHIEVE THE NEW DESIGN AIRFLOW RATE.*
7. *TEST, ADJUST, AND BALANCE ALL SUPPLY DIFFUSERS, RETURN GRILLES, AND EXHAUST GRILLES IN THE LAB AREA AND SUBMIT A WRITTEN REPORT TO THE ENGINEER. THIS INCLUDES SUPPORTING SPACES SUCH AS OFFICES, BLOOD BANK AREAS, RECEPTION/DRAW, BREAKROOM, AND TOILET ROOM. INCLUDE A PLAN IN THE REPORT SHOWING LOCATION OF EACH INDIVIDUAL DIFFUSER/GRILLE AND ITS AIRFLOW READING.*
8. *UPGRADE THE EXISTING BUILDING MANAGEMENT SYSTEM (BMS) WITH NEW GRAPHICS TO SHOW THE NEW FLOOR PLAN AND NEW THERMOSTAT LOCATIONS.*

KEYED NOTES 0

1. *NEW LOCATION FOR DIFFUSER THAT WAS DISCONNECTED DURING DEMOLITION. BALANCE TO AIRFLOW RATE (CFM) INDICATED.*
2. *TURN 10"DIA. RIGID EXHAUST DUCT DOWN THRU CEILING AND RE-INSTALL THE SHEET METAL TRANSITION THAT WAS DISCONNECTED DURING DEMOLITION, TO SERVE THE RELOCATED BIOLOGICAL SAFETY CABINET(BSC). INSTALL THE TRANSITION DIRECTLY ABOVE THE TOP OUTLET OF THE BSC, WITH AS SMALL AIR GAP TO MAKE AN "INDIRECT" CONNECTION.*
3. *ADJUST EXIST'G EXHAUST AIR VALVE TO AIRFLOW RATE AS REQUIRED FOR THE EXIST'G BSC (300 CFM OR AS REQUIRED BY BSC MANUFACTURER).*
4. *ADJUST EXIST'G SINGLE DUCT BOX TO NEW MAX. AIRFLOW RATE OF 635 CFM.*
5. *ADJUST EXIST'G SINGLE DUCT BOX TO NEW MAX. AIRFLOW RATE OF 300 CFM.*
6. *ADJUST EXIST'G SINGLE DUCT BOX TO NEW MAX. AIRFLOW RATE OF 650 CFM.*

DIFFUSER AND GRILLE SCHEDULE

PLAN MARK	SERVICE	MANUFACTURER	MODEL	STYLE	FACE SIZE (IN.)	NECK SIZE (IN.)	BORDER TYPE	FINISH	REMARKS
AA	RETURN	TITUS	23RL	LOUVERED FACE 45 DEGREE DEFLECTION	24x12	22x10	LAY-IN	COLOR AS DIRECTED BY ARCHITECT	

1 MECHANICAL FIRST FLOOR PLAN
1/8" = 1'-0"

PLAN NORTH / TRUE NORTH

BRUCE ELDON HART NUMBER E-22817 PROFESSIONAL ENGINEER
09/18/2020
Bruce E. Hart
Missouri #E-22817

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Missouri: #000958

Saint Luke's EAST HOSPITAL

LAB REMODEL
100 NE ST LUKES BLVD, LEE'S SUMMIT, MO 64086

Date	09-18-2020
Job Number	3-20030
Drawn By	MJL
Checked By	BEH

Revision

Number	Date	Description

M2.1

MECHANICAL FIRST FLOOR PLAN AND SCHEDULE

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GENERAL NOTES

1 SEE SHEET PM000 FOR GENERAL NOTES AND SYMBOLS LISTS.

2 WORK SHOWN LIGHTLY IS EXISTING TO REMAIN. ALL NEW WORK SHOWN BOLD AND DARK.

3 THIS IS A 24-HOUR FACILITY. THEREFORE, WORK MAY NEED TO BE COMPLETED AFTER NORMAL WORKING HOURS OR DURING WEEKENDS AT NO EXTRA COST TO THE OWNER. ALL SHUTDOWNS SHALL BE COORDINATED AND SCHEDULED WITH OWNER A MINIMUM OF TWO WEEKS BEFORE BEGINNING WORK.

4 FIELD VERIFY ALL EXISTING PIPE SIZES AND LOCATIONS PRIOR TO STARTING WORK.

5 CAREFULLY COORDINATE NEW WORK WITH EXISTING FIELD CONDITIONS AND OTHER TRADES.

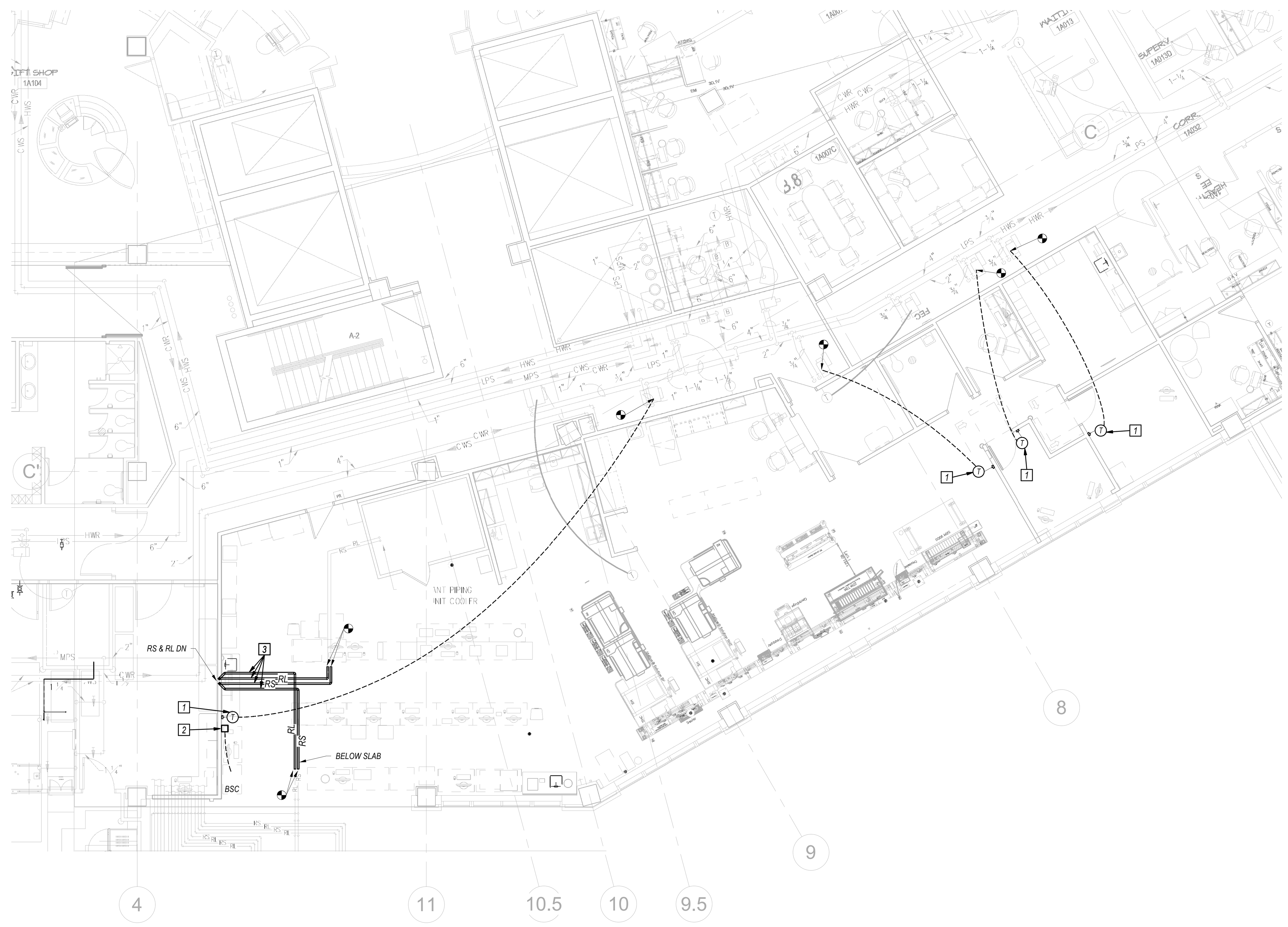
6 BEFORE CORE DRILLING ANY HOLES, LOCATE REBAR IN THE SLAB BY X-RAY OR WITH R-METER. IF REBAR IN ENCOUNTERED WITHIN THE PROPOSED LOCATION OF THE HOLE THEN EITHER RELOCATE THE HOLE TO MISS REBAR OR IF THE HOLE CANNOT BE RELOCATED, CONTACT STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO CORING OR DRILLING. DO NOT CORE ANY HOLES THROUGH THE BEAM WITHOUT APPROVAL OF STRUCTURAL ENGINEER

KEYED NOTES 0

1 NEW LOCATION FOR THERMOSTAT THAT WAS DISCONNECTED DURING DEMOLITION. COORDINATE EXACT LOCATION WITH ARCHITECT. PROVIDE AND INSTALL NEW CONTROL WIRING AS REQUIRED. TEST DEVICE FOR ACCURACY NAD CALIBRATE OR REPLACE AS REQUIRED.

2 NEW LOCATION FOR FUME HOOD MONITOR THAT WAS DISCONNECTED DURING DEMOLITION. COORDINATE EXACT LOCATION WITH ARCHITECT. PROVIDE AND INSTALL NEW CONTROL WIRING AS REQUIRED. TEST DEVICE FOR PROPER OPERATION AND REPAIR OR REPLACE AS REQUIRED. DEVICE SHALL SIGNAL A LOCAL ALARM UPON LOSS OF EXHAUST AIRFLOW AT NEARBY BIOLOGICAL SAFETY CABINET (BSC).

3 SIZE NEW REFRIGERANT PIPING PER EQUIPMENT MANUFACTURER RECOMMENDATIONS. INSULATE PIPING USING ¾" THICK FLEXIBLE ELASTOMERIC PIPE INSULATION WITH VAPOR BARRIER. CHARGE REFRIGERATION SYSTEM WITH NEW REFRIGERANT AS REQUIRED.



1 FIRST FLOOR MECHANICAL PIPING PLAN
1/8" = 1'-0"

STATE OF MISSOURI
BRUCE ELDON HART
NUMBER E-22817
PROFESSIONAL ENGINEER

09/18/2020

Bruce E. Hart
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MECHANICAL PIPING FIRST FLOOR PLAN

ELECTRICAL SYMBOLS LIST

(ALL MAY NOT APPLY)

POWER SYMBOLS

- HOMERUN TO SOURCE AS NOTED
- CONDUIT IN WALL OR CEILING CONSTRUCTION WITH ONE PHASE WIRE, ONE NEUTRAL WIRE AND ONE GROUND WIRE. CONDUIT IN FLOOR OR BELOW GRADE CONSTRUCTION WITH ONE PHASE WIRE, ONE NEUTRAL WIRE AND ONE GROUND WIRE
- CONDUIT WITH WIRING (TWO PHASE WIRES, NEUTRAL AND GROUND WIRE)
- CONDUIT WITH #10 WIRE THROUGHOUT ENTIRE CIRCUIT
- PARTIAL CIRCUIT, HOMERUN TO SOURCE AS NOTED
- LOW VOLTAGE WIRING
- EXISTING CONDUIT WITH NEW WIRE
- PANELBOARD (DOUBLE LINE INDICATES FRONT OF PANELBOARD)
- DISCONNECTING SWITCH
- COMB. MOTOR STARTER AND DISC. SWITCH
- NF — NF DENOTES NON-FUSED
- VFD — VARIABLE FREQUENCY DRIVE
- VFD — VARIABLE FREQUENCY DRIVE WITH DISCONNECTING MEANS
- TCP — TEMPERATURE CONTROL PANEL
- MOTOR CONNECTION
- MECHANICAL VAV BOX
- MECHANICAL MIXING BOX
- TRANSFORMER
- SINGLE RECEPTACLE
- DUPLEX CONVENIENCE RECEPTACLE
- FOURPLEX CONVENIENCE RECEPTACLE
- HEAVY DUTY OUTLET - WITH NEMA CONFIGURATION — 6-20R
- CONVENIENCE RECEPTACLE - TOP HALF SWITCHED
- GROUND FAULT CIRCUIT INTERRUPTER — G
- ISOLATED GROUND RECEPTACLE — IG
- CONVENIENCE RECEPTACLE - MOUNTED HORIZONTALLY — H
- NUMBER INDICATES MOUNTING HEIGHT OF DEVICE. (CENTER LINE ABOVE FLOOR) IF OTHER THAN SPECIFIED HEIGHT — 48
- ELECTRIC WATER COOLER — EWC
- JUNCTION BOX FOR ELECTRIC WATER COOLER — EWC
- FLOOR OUTLET - DUPLEX RECEPTACLE
- FLOOR OUTLET - FOURPLEX RECEPTACLE — 4
- CEILING DROP
- FLOOR POKE THROUGH - DUPLEX RECEPTACLE — FPT
- JUNCTION BOX
- WALL MOUNTED JUNCTION BOX — J
- JUNCTION BOX MOUNTED OVER CEILING — JC
- FLOOR JUNCTION BOX — F
- ELECTRIC THERMOSTAT - WALL MOUNTED — T
- PUSHBUTTON - WALL MOUNTED
- PUSHBUTTON WITH PILOT LIGHT — P
- BELL OR BUZZER
- P — SINGLE CIRCUIT PLUGMOLD
- P_2 — TWO CIRCUIT PLUGMOLD
- SR — SURFACE RACEWAY
- BUSHING AT END OF CONDUIT

CM — INDICATES DEVICE THAT SHALL BE MOUNTED ABOVE OR OTHER THAN SPECIFIED HEIGHT REFER TO ARCHITECTURAL DETAILS AND ELEVATIONS AND COORDINATE EXACT LOCATION OF DEVICE. WHERE DEVICES ARE NOT SHOWN IN ARCHITECTURAL DETAILS, CONTRACTOR SHALL CONFIRM EXACT MOUNTING LOCATION WITH ARCHITECT.

EM — INDICATES LIGHT OR DEVICE CONNECTED TO EMERGENCY POWER OR FURNISHED WITH A BATTERY PACK CONNECTED TO A NON-SWITCHED HOT WIRE

EX — EXISTING DEVICE, LIGHT, OR CONDUIT & WIRE TO REMAIN

N — NEW DEVICE IN EXISTING OUTLET BOX

NL — INDICATES NIGHT LIGHT FIXTURE CONNECTED TO A NON-SWITCHED HOT WIRE

R — EXISTING DEVICE, LIGHT, OR CONDUIT & WIRE TO BE REMOVED

RB — EXISTING DEVICE OR LIGHT TO BE REMOVED WITH BLANK COVER ON OUTLET BOX

RL — EXISTING DEVICE OR LIGHT RELOCATED

RN — EXISTING DEVICE OR LIGHT TO BE REMOVED AND OUTLET BOX REUSED FOR NEW DEVICE OR LIGHT

RT — RAINTIGHT DEVICE - NEMA 3R

TP — TAMPER-PROOF DEVICE

WP — WEATHER-PROOF DEVICE

VUH — VERTICAL UNIT HEATER. REFER TO DETAIL FOR ALL WIRING REQUIRED. REFER TO FLOOR PLANS FOR LOCATIONS.

LK — DEVICE WITH LOCKABLE COVERPLATE

USB — RECEPTACLE FURNISHED WITH (1) TYPE-A AND (1) TYPE-C USB OUTLET.

LIGHTING SYMBOLS

- CEILING MOUNTED LIGHT FIXTURE
- CEILING MOUNTED WALL WASH LIGHT FIXTURE
- WALL MOUNTED LIGHT FIXTURE
- WALL MOUNTED LIGHT FIXTURE
- CEILING MOUNTED FLUORESCENT LIGHT FIXTURE
- WALL MOUNTED FLUORESCENT LIGHT FIXTURE
- TRACK LIGHT FIXTURE — X
  X - INDICATES TYPE OF AIMABLE LIGHT FIXTURE
  Y - INDICATES TYPE OF TRACK
- POLE MOUNTED LIGHT FIXTURE
- CEILING MOUNTED EXIT LIGHT
- WALL MOUNTED EXIT LIGHT
- CEILING MOUNTED EXIT LIGHT W/DIRECTIONAL ARROW
- WALL MOUNTED EXIT LIGHT W/DIRECTIONAL ARROW
- SHADING DENOTES FACE DIRECTION OF EXIT LIGHT
- BATTERY OPERATED EMERGENCY LIGHT - WALL MOUNTED
- BATTERY OPERATED EMERGENCY LIGHT - CEILING MOUNTED
- SINGLE POLE SWITCH
- S_2 — DOUBLE POLE SWITCH
- S_3 — THREE WAY SWITCH
- S_4 — FOUR WAY SWITCH
- S_K — KEYED SWITCH
- S_M — MOMENTARY SWITCH
- S_P — SWITCH WITH PILOT LIGHT
- S_T — THERMAL MOTOR PROTECTION SWITCH
- S_{LV} — LOW VOLTAGE SWITCH
- D_X — DIMMER - NUMBER (X 100) EQUALS WATTAGE
- D_F — FLUORESCENT DIMMER
- D_{LV} — LOW-VOLTAGE DIMMER
- D_{3W} — 3-WAY DIMMER
- X- S_Y — MULTIPLE SWITCHES
  X - INDICATES HOW MANY
  ? - INDICATES WHAT TYPE OF SWITCH
- X- D_Y — MULTIPLE DIMMERS
  X - INDICATES HOW MANY
  ? - INDICATES WHAT TYPE OF DIMMER
- S_{MS} — WATTSTOPPER DIGITAL TIME SWITCH: TS-400
- CS_{XX} — WATTSTOPPER DIFITAL LIGHTING MANAGEMENT CONTROL STATION KEYPAD WITH PROGRAMMABLE FUNCTION BUTTONS. REFER TO DETAILS FOR ADDITIONAL REQUIREMENTS.
  XX INDICATES TYPE:
  - S1: ONE BUTTON KEYPAD
  - S2: TWO BUTTON KEYPAD
  - S3: THREE BUTTON KEYPAD
  - S4: FOUR BUTTON KEYPAD
  - S8: EIGHT BUTTON KEYPAD
  - D1: ONE ROCKER BUTTON KEYPAD
- S_{MS} — WATTSTOPPER DUAL TECHNOLOGY LINE VOLTAGE WALL OCCUPANCY SENSOR: DSW-301
- OS — WATTSTOPPER DUAL TECHNOLOGY CEILING OCCUPANCY SENSOR WITH POWER PACK: DT-300 AND BZ-150
- S_{MS-D} — WATTSTOPPER DUAL TECHNOLOGY 0-10 VOLT DIMMING WALL SWITCH OCCUPANCY SENSOR: DW-311
- PC — WATTSTOPPER DLM SYSTEM PHOTO CELL: LMLS-500
- MS — WATTSTOPPER DLM SYSTEM DUAL TECHNOLOGY CEILING MOTION SENSOR: LMDC-100
- WY_{EM} — WATTSTOPPER EMERGENCY LIGHTING CONTROL UNIT. UPON LOSS OF NORMAL POWER, EMERGENCY LIGHTING SHALL BE BROUGHT TO FULL BRIGHTNESS REGARDLESS OF SWITCH POSITION. PROVIDE ALL LOW VOLTAGE CABLINGS AS REQUIRED: ELCU-200
- WY_{BMS} — WATTSTOPPER DIGITAL LIGHTING MANAGEMENT INPUT/OUTPUT INTERFACE FOR BMS CONTROL OF LIGHTING. PROVIDE ALL LOW VOLTAGE CABLING AS REQUIRED: LMIN-104
- RC_X — WATTSTOPPER DIGITAL LIGHTING MANAGEMENT ROOM CONTROLLER. REFER TO DETAILS FOR SYSTEM INTERCONNECTION REQUIREMENTS.
  X INDICATES TYPE:
  - A: ONE RELAY SWITCHING CONTROLLER: LMRC-101
  - B: TWO RELAY SWITCHING CONTROLLER: LMRC-102
  - C: ONE RELAY SWITCHING OR 0-10V DIMMING CONTROLLER: LMRC-211
  - D: TWO RELAY SWITCHING OR 0-10V DIMMING CONTROLLER: LMRC-212
  - E: THREE RELAY SWITCHING OR 0-10V DIMMING CONTROLLER: LMRC-213

HOSPITAL SYMBOLS

- N — NURSE CALL PATIENT STATION - SINGLE
- N_2 — NURSE CALL PATIENT STATION - DOUBLE
- N_M — NURSE CALL MASTER
- N_D — NURSE CALL DOME LIGHT
- N_Z — NURSE CALL ZONE LIGHT
- N_{DS} — NURSE CALL DUTY STATION
- N_{SS} — NURSE CALL STAFF STATION
- N_E — NURSE CALL EMERGENCY STATION
- N_{EC} — NURSE CALL EMERGENCY PULL CORD STATION
- N_{CB} — NURSE CALL CODE BLUE STATION
- N_{SL} — NURSE CALL STAFF LOCATOR
- N_{AA} — NURSE ASSISTANCE CALL STATION
- U — PATIENT MONITORING OUTLET
- G — EQUIPOTENTIAL GROUNDING MODULE
- TA — TIME AND ATTENDANCE STATION
- XVB — X-RAY VIEW BOX

COMMUNICATION SYMBOLS

- TELEPHONE OUTLET WITH 3/4" CONDUIT INTO ACCESSIBLE CEILING SPACE
- DATA OUTLET WITH 3/4" CONDUIT INTO ACCESSIBLE CEILING SPACE
- TELEPHONE/DATA OUTLET WITH 3/4" CONDUIT INTO ACCESSIBLE CEILING SPACE
- 48 — WALL MOUNTED TELEPHONE OUTLET - NUMBER INDICATES HEIGHT ABOVE FINISHED FLOOR
- FLOOR OUTLET - TELEPHONE
- FLOOR OUTLET - DATA
- FLOOR OUTLET - TELEPHONE/DATA
- FPT_T — FLOOR POKE THROUGH - TELEPHONE
- FPT_D — FLOOR POKE THROUGH - DATA
- FPT_{TD} — FLOOR POKE THROUGH - TELEPHONE/DATA
- S — CEILING SPEAKER
- S — WALL MOUNTED SPEAKER
- S — HORN TYPE SPEAKER
- V — VOLUME CONTROL
- TV — TELEVISION OUTLET WITH 3/4" CONDUIT INTO ACCESSIBLE CEILING SPACE
- INTERCOM STAFF STATION
- I_M — INTERCOM MASTER STATION
- CLOCK OUTLET
- DOUBLE DIAL CLOCK - CEILING MOUNTED
- DOUBLE DIAL CLOCK - WALL MOUNTED
- I_{MC} — MICROPHONE OUTLET WITH 3/4" CONDUIT INTO ACCESSIBLE CEILING SPACE

SECURITY SYMBOLS

- TV — FIXED CCTV CAMERA
- TV — CCTV CAMERA WITH MOTORIZED DOME — MD
- TV — CCTV CAMERA WITH PAN/TILT/ZOOM — PTZ
- MD — SECURITY MOTION DETECTOR
- PR — PROXIMITY READER (CARD READER)
- IA — INTRUSION ALARM
- ES — ELECTRIC DOOR STRIKE

FIRE ALARM SYMBOLS

- B — MANUAL PULL STATION
- WALL MOUNTED FIRE ALARM SPEAKER
- B — COMBINATION PULLSTATION/HORN
- S — SMOKE DETECTOR
- S — SMOKE DETECTOR - DUCT MOUNTED
- S_E — SMOKE DETECTOR - ELEVATOR LOBBY
- S_C — SMOKE DETECTOR WITH AUXILIARY CONTACTS FOR USE IN PATIENT ROOMS AND TREATMENT ROOMS, INCLUDING NURSE CALL RELAY LOCATED AT NURSE CALL LIGHT
- H — HEAT DETECTOR
- DH — DOOR HOLDER - WALL MOUNTED
- DH_F — DOOR HOLDER - FLOOR MOUNTED
- DC — DOOR CLOSER
- FR — FAN SHUT-DOWN RELAY
- FS — SPRINKLER FLOW SWITCH
- TS — SPRINKLER VALVE TAMPER SWITCH
- VA — VISUAL/AUDIBLE ALARM - NUMBER INDICATES CANDELA OUTPUT, LACK OF NUMBER INDICATES 15/75 CANDELA OUTPUT — 75
- VA — VISUAL ALARM - NUMBER INDICATES CANDELA OUTPUT, LACK OF NUMBER INDICATES 15/75 CANDELA OUTPUT — 75
- R — AREA OF RESCUE STATION
- R_M — AREA OF RESCUE - MASTER STATION
- PIV — POST INDICATOR VALVE
- FACP — FIRE ALARM CONTROL PANEL (DOUBLE LINE INDICATES FRONT OF PANEL)
- FAA — FIRE ALARM ANNUNCIATOR (DOUBLE LINE INDICATES FRONT OF PANEL)
- AI — ADDRESSABLE INTERFACE MODULE
- AI — ADDRESSABLE INTERFACE MODULE WITH RELAY — R

TEMPERATURE CONTROLS SYMBOLS

- IR — INTER RELAY
- EP — ELECTRIC TO PNEUMATIC SWITCH
- PE — PNEUMATIC TO ELECTRIC SWITCH
- DP — DIFFERENTIAL PRESSURE SWITCH
- T1 — THERMOSTAT - SEE TEMP. CONT. DRAWING
- T2 — THERMOSTAT - SEE TEMP. CONT. DRAWING

ELECTRICAL ABBREVIATIONS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
A	AMPERES(AMPS)	LTG	LIGHTING
AFF	ABOVE FINISHED FLOOR		
AFG	ABOVE FINISHED GRADE	MCB	MAIN CIRCUIT BREAKER
AG	ABOVE GRADE	MECH	MECHANICAL
AIC	AMPS INTERRUPTING CURRENT	MERC (MV)	MERCURY VAPOR
APPROX.	APPROXIMATE	MH	METAL HALIDE
ARCH	ARCHITECTURAL	MISC	MISCELLANEOUS
ATS	AUTOMATIC TRANSFER SWITCH	MLO	MAIN LUGS ONLY
		MTD	MOUNTED
BLDG	BUILDING	MTG	MOUNTING
		MV	MEDIUM VOLTAGE
C	CONDUIT		
CB	CIRCUIT BREAKER	N	NEUTRAL
CKT	CIRCUIT	NC	NORMALLY CLOSED
CL	CENTER LINE	NEC	NATIONAL ELECTRICAL CODE
CLG	CEILING	NEMA	NAT'L ELEC MFR ASSOCIATION
CM	COORDINATE MOUNTING	NF	NON-FUSED
CO	CONDUIT ONLY	NIC	NOT IN CONTRACT
CT	CURRENT TRANSFORMER	NL	NIGHT LIGHT (NON-SWITCHED LIGHT)
CU	COPPER	NO	NORMALLY OPEN
		NO.	NUMBER
DISC	DISCONNECT	NTS	NOT TO SCALE
DP	DISTRIBUTION PANEL		
DPDT	DOUBLE POLE DOUBLE THROW	PB	PULL BOX
DPST	DOUBLE POLE SINGLE THROW	PF	POWER FACTOR
DWG	DRAWING	PH	PHASE
		PNL	PANEL, PANELBOARD
EM	INDIC. LIGHT OR DEVICE IS ON EMERG. POWER	PRI	PRIMARY
EMT	ELECTRICAL METALIC TUBING	PVC	POLYVINYL CHLORIDE CONDUIT
EQUIP	EQUIPMENT	PWR	POWER
ETR	EXISTING TO REMAIN		
		RGS	RIGID GALVANIZED STEEL CONDUIT
F	FUSED		
FC	FOOTCANDLE	SEC	SECONDARY
FDR	FEEDER	SPEC	SPECIFICATION
FLA	FULL LOAD AMPS	SPST	SINGLE POLE SINGLE THROW
FLR	FLOOR	STD	STANDARD
FLUOR	FLUORESCENT	SPKR	SPEAKER
FT	FOOT, FEET	SWT	SWITCH
		SWBD	SWITCH BOARD
G.GFI.GFCI	GROUND FAULT CIRCUIT INTERRUPTER	SWGR. SG	SWITCH GEAR
GEC	GROUNDING ELECTRODE CONDUCTOR		
GND	GROUND	TELE	TELEPHONE
		TEMP	TEMPERATURE
HID	HIGH INTENSITY DISCHARGE	T'STAT	THERMOSTAT
HMC	HAZARDOUS MATERIAL CONTRACTOR	TV	TELEVISION
HPS	HIGH PRESSURE SODIUM	TYP	TYPICAL
HZ	HERTZ		
		UG	UNDERGROUND
IG	ISOLATED GROUND	UL	UNDERWRITERS LABORATORY
IN	INCHES	UON	UNLESS OTHERWISE NOTED
INC	INCANDESCENT	UPS	UNINTERRUPTABLE POWER SUPPLY
ISC (AIC)	SHORT CIRCUIT CURRENT		
		V	VOLTS
J, JB	JUNCTION BOX	VA	VOLTAMPERES
		VFD	VARIABLE FREQUENCY DRIVE
KA	KILOAMPS		
KV	KILOVOLTS	W	WATTS (OR WIRE)
KVA	KILOVOLT AMPS	W/	WITH
KW	KILOWATTS	W/O	WITHOUT
KWH	KILOWATT HOURS	WP	WEATHERPROOF
		WT	WATERTIGHT
		XFMR	TRANSFORMER

GENERAL NOTES

(THESE NOTES APPY TO ALL ELECTRICAL SHEETS)

1. A MAXIMUM OF SIX(6) CURRENT - CARRYING WIRES SHALL BE INSTALLED IN ANY ONE(1) CONDUIT. ALL BRANCH CIRCUITS EXCEPT MOTOR CIRCUITS SHALL BE INSTALLED WITH A DEDICATED NEUTRAL WIRE.
2. COORDINATE ALL WORK WITH OTHER TRADES. OFFSET PANELS, LIGHTS, RECEPTACLES AND CONDUIT AS REQUIRED. APPROVAL MUST BE OBTAINED FROM ARCHITECT PRIOR TO OFFSETTING ANY DEVICE OR EQUIPMENT.
3. CONTRACTOR SHALL COORDINATE ALL SHUT DOWNS WITH OWNER. NO SHUT DOWNS SHALL BE PERFORMED WITHOUT RECEIVING PRIOR APPROVAL FROM OWNER.
4. COORDINATE WITH ALL OTHER TRADES AND DISCONNECT OR REMOVE ELECTRICAL WIRING, EQUIPMENT, ETC. TO MAKE SITE SAFE FOR DEMOLITION BY OTHER CONTRACTORS. REFER TO CIVIL PLANS FOR SITE DEMOLITION THAT MAY NOT BE SHOWN ON ELECTRICAL SHEETS.
5. CONTRACTOR SHALL COORDINATE ALL PRIMARY VOLTAGE UTILITY WORK WITH OWNER AND ELECTRICAL UTILITY.
6. NO CONDUIT OR DEVICES IN FINISHED AREAS SHALL BE SURFACE MOUNTED. CONTRACTOR SHALL RECESS OR CONCEAL CONDUITS AND DEVICES AS REQUIRED. WHERE WALL TRENCHING IS REQUIRED, SAME SHALL BE APPROVED BY ARCHITECT.
7. CONTRACTOR SHALL GAIN APPROVAL FROM ARCHITECT PRIOR TO INSTALLING ANY SURFACE MOUNTED DEVICES.
8. WHERE FLOOR TRENCHING IS REQUIRED, THE CONTRACTOR SHALL TRENCH TO NEAREST WALL AS REQUIRED. FLOOR SHALL BE PATCHED TO MATCH ADJACENT SURFACES. COORDINATE WITH ARCHITECT FOR ANY TRENCHING REQUIRED.
9. ALL LOW-VOLTAGE CABLING SHALL BE PLENUM RATED. THIS IS NOT LIMITED TO, BUT SHOULD INCLUDE, ALL FIRE ALARM CABLING.
10. CONTRACTOR SHALL RE-LABEL AND UPDATE SCHEDULES IN ALL EXISTING-TO-REMAIN PANELBOARDS AT THE COMPLETION OF THE PROJECT. PROVIDE NEW TYPED DIRECTORIES FOR EXISTING PANELBOARDS TO REFLECT ALL WORK DONE AS PART OF THIS PROJECT.
11. ALL EXISTING CONDUIT AND WIRING BEING CONNECTED TO NEW WORK THAT IS NOT IN COMPLIANCE WITH THE NEC SHALL BE CORRECTED AS REQUIRED.
12. AFTER COMPLETION OF NEW WORK, REMOVE ALL TEMPORARY EQUIPMENT, CONDUIT, AND WIRING NOT REQUIRED TO REMAIN.
13. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO BEGINNING ANY WORK.
14. ALL EXISTING ITEMS REMOVED DURING DEMOLITION SHALL BE TURNED OVER TO OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MOVING THE ITEMS TO A STORAGE LOCATION AS DETERMINED BY THE OWNER. ANY ITEMS THAT ARE NOT TO BE KEPT BY THE OWNER SHALL BE DISPOSED OF BY THE CONTRACTOR. COORDINATE AS REQUIRED.
15. ELECTRICAL SERVICE SHALL BE GROUNDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
16. ALL CONDUITS SHALL BE HELD AS HIGH AND AS TIGHT AS POSSIBLE TO THE STRUCTURE SUPPORTING THE FLOOR ABOVE AREA WHERE INSTALLATION OCCURS. COORDINATE WITH OTHER TRADES AS REQUIRED.
17. COORDINATE THE ROUTING OF ALL CONDUITS WITH OTHER TRADES. MAKE OFFSETS AS REQUIRED. FURNISH AND INSTALL JUNCTION AND PULL BOXES AS REQUIRED. ROUTING SHOWN ON PLANS IS DIAGRAMMATIC.
18. CONTRACTOR SHALL REROUTE, RELOCATE, OR REMOVE ANY CONDUIT, FIXTURES, OR OTHER EXISTING ELECTRICAL DEVICES AS REQUIRED FOR NEW WORK. MAINTAIN AND RESTORE POWER TO ALL EXISTING DEVICES BEING SERVED IN UNDISTURBED AREAS, AND DEVICES THAT ARE SHOWN AS EXISTING TO REMAIN.
19. ALL CIRCUITS FROM EXISTING-TO-REMAIN PANELBOARDS THAT HAVE THEIR ENTIRE LOAD REMOVED AND ARE NOT REQUIRED TO BE REUSED TO SERVE NEW LOADS, AS SHOWN ON NEW WORK DRAWINGS, SHALL HAVE THEIR CONDUIT AND WIRE REMOVED BACK TO THEIR PANELBOARD AND THEIR ASSOCIATED BREAKER SHALL BE LABELED AS A SPARE. CONDUIT THAT IS LOCATED IN THE FLOOR SLAB OR ABOVE INACCESSIBLE CEILING SHALL BE ABANDONED IN PLACE; HOWEVER, ALL CONDUCTORS SHALL BE REMOVED.
20. DISCONNECT AND REMOVE ALL EXISTING ELECTRICAL DEVICES, LIGHT FIXTURES, ELECTRICAL EQUIPMENT SHOWN DARK AND DASHED ON THE DEMOLITION PLANS. DEVICES SHOWN LIGHT ARE EXISTING TO REMAIN.
21. THE CONTRACTOR SHALL VERIFY THE OPERATION OF ALL DEVICES THAT ARE EXISTING TO REMAIN. ALL NON-OPERATIONAL DEVICES SHALL BE CORRECTED OR REPLACED AS REQUIRED. REPLACE ALL DAMAGED AND MISSING COVERPLATES IN AREAS OF NEW WORK AS REQUIRED.
22. COORDINATE REMOVAL OF ALL COMMUNICATION WIRING WITH OWNER. ALL ABANDONED COMMUNICATION CABLING SHALL BE REMOVED AS REQUIRED. COORDINATE REMOVAL WITH OWNER.
23. ALL CONDUIT, WIRING, DEVICES AND EQUIPMENT TO BE REMOVED MAY NOT BE SHOWN. HOWEVER, ALL ITEMS NOT REQUIRED TO REMAIN SHALL BE REMOVED.
24. THE CONTRACTOR SHALL MATCH THE RATINGS AND CHARACTERISTICS OF ALL NEW CIRCUIT BREAKERS BEING FURNISHED TO THOSE OF THE EXISTING BREAKERS IN EXISTING PANELBOARDS.
25. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN AND ELEVATIONS FOR EXACT LOCATION OF LIGHT FIXTURES.
26. ALL RECEPTACLES INSTALLED IN BATHROOMS OR WITHIN SIX FEET OF ANY SINK SHALL BE GFI PROTECTED.
27. ALL LOW-VOLTAGE ELECTRICAL CONNECTIONS ON THE SITE, EXTERIOR OF BUILDING, OR IN TUNNELS SHALL BE MADE USING WATERPROOF CONNECTORS.

STATE OF MISSOURI
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PROFESSIONAL ENGINEER
09/18/2020

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Saint Luke's EAST HOSPITAL
LAB REMODEL
100 NE ST LUKES BLVD, LEE'S SUMMIT, MO
64086

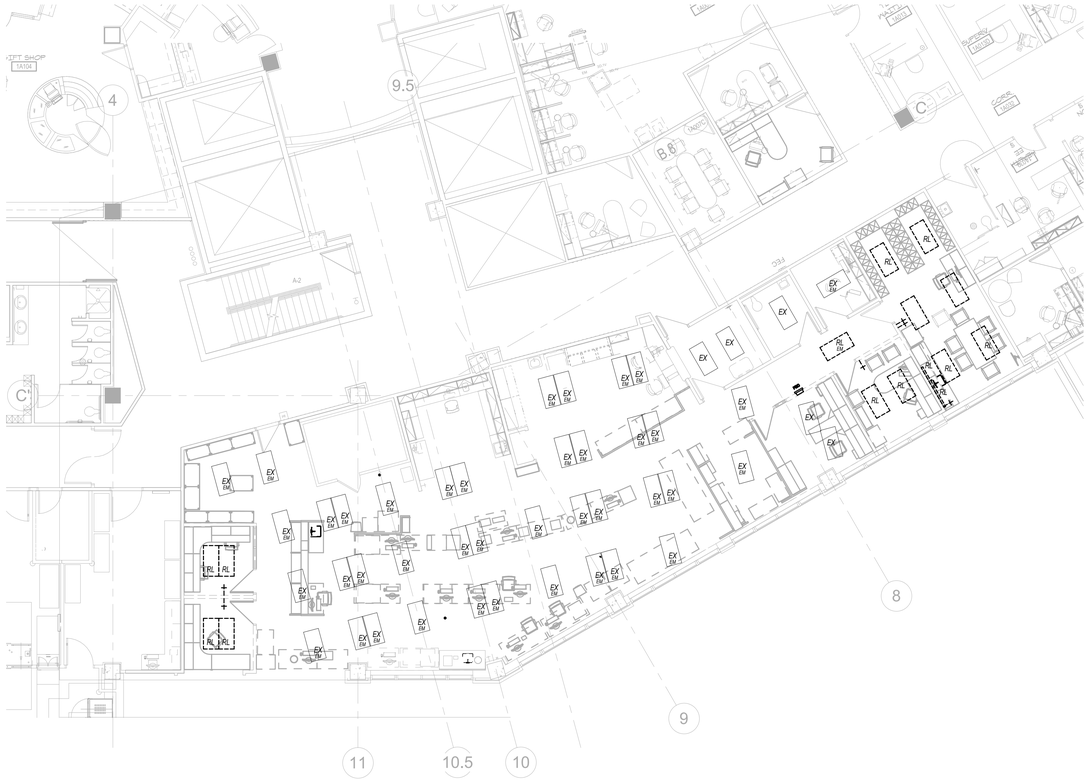
Date	09-18-2020
Job Number	3-20030
Drawn By	Author
Checked By	Checker

Revision

Number	Date	Description

E000

SYMBOLS, ABBREVIATIONS AND GENERAL NOTES



1 FIRST FLOOR LIGHTING DEMOLITION PLAN
1/8" = 1'-0"

PLAN NORTH

TRUE NORTH

ELECTRICAL LIGHTING DEMOLITION GENERAL NOTES

1 *REFER TO SHEET E000 FOR GENERAL NOTES. NOT ALL GENERAL NOTES MAY APPLY TO THIS SHEET.*

2 *WORK SHOWN LIGHTLY IS EXISTING TO REMAIN. DISCONNECT, REMOVE, RELOCATE AND RECONNECT ALL FIXTURES SHOWN DARK AND DASHED ON DEMOLITION PLAN. DISCONNECT AND REMOVE ASSOCIATED SWITCHES, CONDUIT AND WIRING NO LONGER NECESSARY TO REMAIN.*

3 *THIS IS A 24 HOUR OPERATIONAL FACILITY THEREFORE SOME WORK MAY NEED TO OCCUR AFTER HOURS OR ON WEEKENDS AT NO EXTRA COST TO THE OWNER.*

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Checked By	BEH

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DEL2.1

LIGHTING FIRST FLOOR DEMOLITION PLAN

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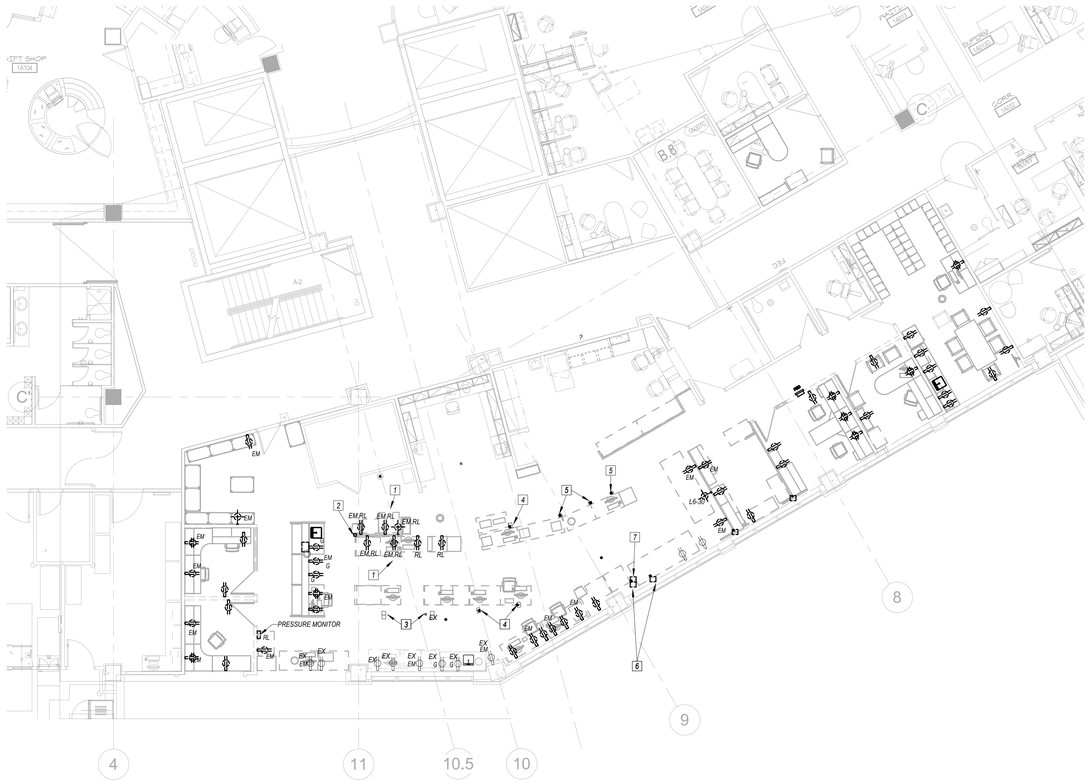

FIRST FLOOR POWER DEMOLITION PLAN
1/8" = 1'-0"

PLAN NORTH / TRUE NORTH

ELECTRICAL POWER DEMOLITION GENERAL NOTES

1 *REFER TO SHEET E000 FOR GENERAL NOTES. NOT ALL GENERAL NOTES MAY APPLY TO THIS SHEET.*

2 *WORK SHOWN LIGHTLY IS EXISTING TO REMAIN. ALL NEW WORK IS SHOWN DARK AND BOLD.*

3 *IT IS THE INTENT TO REUSE EXISTING CIRCUITS TO THE EXTENT POSSIBLE. CIRCUIT NUMBERS ARE BASED UPON AS BUILT DRAWINGS AND SHOULD BE FIELD VERIFIED BY THE ELECTRICAL CONTRACTOR.*

4 *RELOCATED POWER POLES ARE TO BE FED OVERHEAD.*

5 *THIS IS A 24 HOUR OPERATIONAL FACILITY THEREFORE SOME WORK MAY NEED TO OCCUR AFTER HOURS OR ON WEEKENDS AT NO EXTRA COST TO THE OWNER.*

KEYED NOTES

1 *DEVICES MOUNTED IN SYSTEM FURNITURE TO BE RELOCATED WITH FURNITURE. DISCONNECT EXISTING CIRCUITING FOR RELOCATION. EXISTING CIRCUIT TO BE EXTENDED AND RECONNECTED TO DEVICES IN NEW LOCATION. REFER TO NEW WORK PLAN FOR FURTHER INFORMATION.*

2 *THREE SECTION POWER POLE TO BE RELOCATED TO NEW EQUIPMENT LOCATION. REFER TO ARCHITECTURAL PLANS AND NEW WORK ELECTRICAL PLANS FOR FURTHER INFORMATION.*

3 *EXISTING POWER POLE TO REMAIN.*

4 *DISCONNECT AND RELOCATE TWO(2) EXISTING POWER POLES. ONE POLE WITH TWO(2) NORMAL DUPLEX RECEPTACLES AND TWO(2) DATA DROPS AND ONE POLE WITH TWO(2) EMERGENCY DUPLEX RECEPTACLES. REFER TO NEW WORK ELECTRICAL PLAN FOR FURTHER INFORMATION.*

5 *DISCONNECT AND RELOCATE EXISTING POWER POLE WITH TWO(2) EMERGENCY DUPLEX RECEPTACLES AND TWO(2) DATA DROPS. REFER TO NEW WORK ELECTRICAL PLAN FOR FURTHER INFORMATION.*

6 *DISCONNECT AND RECONNECT TWO(2) EXISTING POWER POLES. ONE POLE WITH ONE(1) EMERGENCY NEMA L6-20 RECEPTACLE AND ONE POLE WITH TWO(2) EMERGENCY DUPLEX RECEPTACLES. REFER TO NEW WORK ELECTRICAL PLAN FOR FURTHER INFORMATION.*

7 *DISCONNECT AND RELOCATE EXISTING POWER POLE WITH ONE(1) EMERGENCY L6-30 RECEPTACLE. REFER TO NEW WORK ELECTRICAL PLAN FOR FURTHER INFORMATION.*

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Checked By	BEH

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DEP2.1

POWER FIRST FLOOR DEMOLITION PLAN

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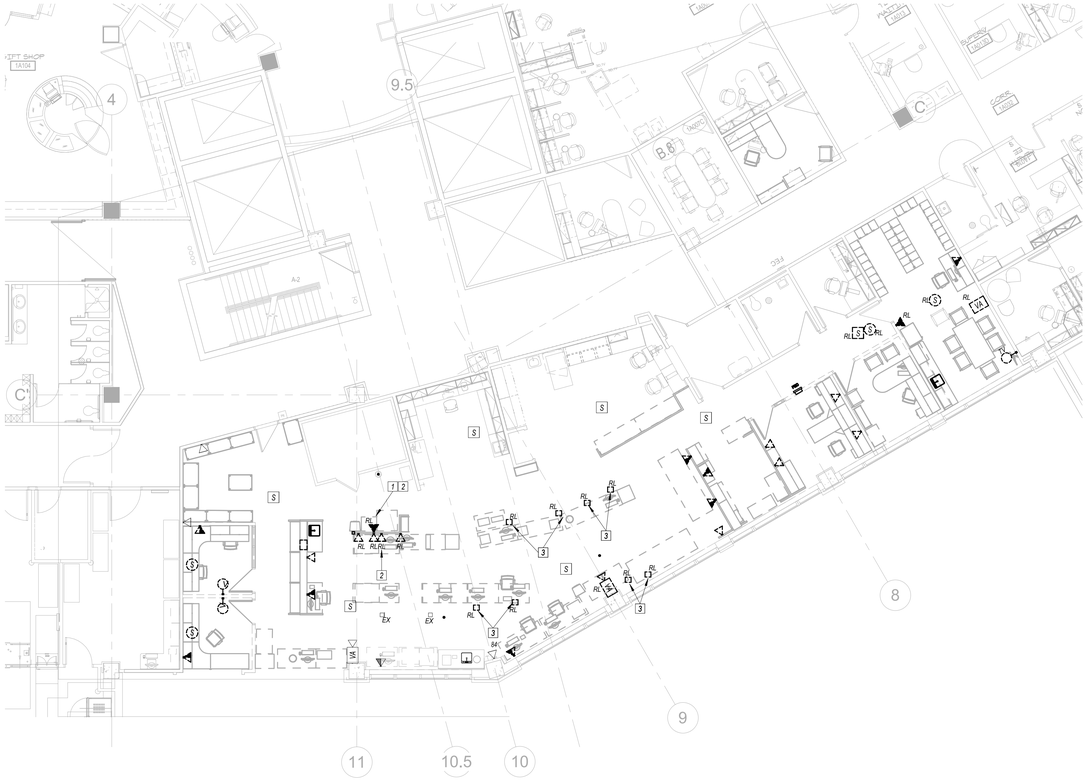

1 FIRST FLOOR COMMUNICATIONS DEMOLITION PLAN
1/8" = 1'-0"

PLAN NORTH
TRUE NORTH

ELECTRICAL COMMUNICATIONS DEMOLITION GENERAL NOTES

1 *REFER TO SHEET E000 FOR GENERAL NOTES. NOT ALL GENERAL NOTES MAY APPLY TO THIS SHEET.*

2 *WORK SHOWN LIGHTLY IS EXISTING TO REMAIN. ALL DEMOLITION WORK IS SHOWN DARK AND DASHED ON DEMOLITION PLAN.*

3 *NOT ALL EXISTING DEVICES ARE SHOWN. CONTRCATOR SHALL MAINTAIN SERVICE TO ALL DEVICES NOT BEING REMOVED AS PART OF THIS PROJECT.*

4 *THIS IS A 24 HOUR OPERATIONAL FACILITY THEREFORE SOME WORK MAY NEED TO OCCUR AFTER HOURS OR ON WEEKENDS AT NO EXTRA COST TO THE OWNER.*

KEYED NOTES 0

1 *DISCONNECT AND RELOCATE SENSAPHONE ALARM, MONITORING BLOOD BANK FREEZER AND REFRIGERATOR, TO NEW FREEZER AND REFRIGERATOR LOCATION. REFER TO NEW WORK PLAN FOR RECONNECTION OF CIRCUITS.*

2 *DEVICES MOUNTED IN SYSTEM FURNITURE TO BE RELOCATED WITH FURNITURE. REFER TO NEW WORK PLAN FOR FURTHER INFORMATION.*

3 *DISCONNECT, REMOVE AND RELOCATE EXISTING COMMUNICATIONS POWER POLE WITH TWO(2) DATA CONNECTIONS.*

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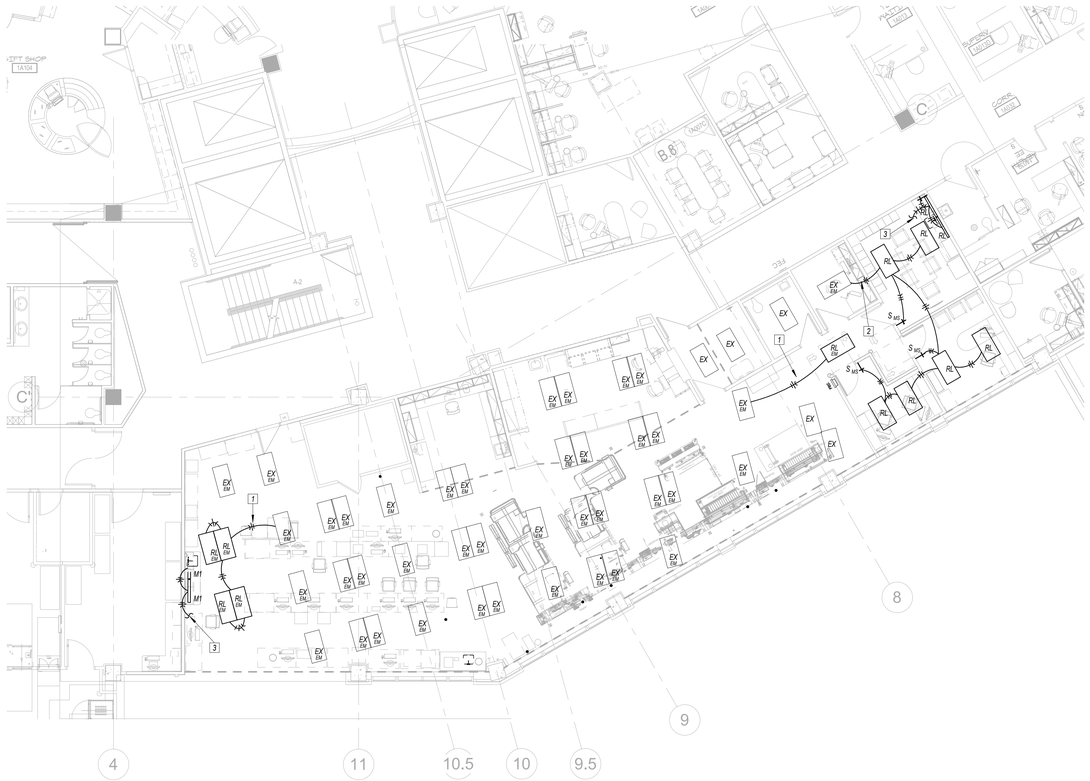
DEC2.1

COMMUNICATIONS FIRST FLOOR DEMOLITION PLAN



1 FIRST FLOOR LIGHTING PLAN
1/8" = 1'-0"

PLAN NORTH / TRUE NORTH

ELECTRICAL LIGHTING GENERAL NOTES

1 *REFER TO SHEET E000 FOR GENERAL NOTES. NOT ALL GENERAL NOTES MAY APPLY TO THIS SHEET.*

2 *WORK SHOWN LIGHTLY IS EXISTING TO REMAIN. DISCONNECT, REMOVE, RELOCATE AND RECONNECT ALL FIXTURES SHOWN DARK AND DASHED ON DEMOLITION PLAN. DISCONNECT AND REMOVE ASSOCIATED SWITCHES, CONDUIT AND WIRING NO LONGER NECESSARY TO REMAIN. ALL NEW WORK IS SHOWN DARK AND BOLD ON NEW WORK PLAN.*

3 *THIS IS A 24 HOUR OPERATIONAL FACILITY THEREFORE SOME WORK MAY NEED TO OCCUR AFTER HOURS OR ON WEEKENDS AT NO EXTRA COST TO THE OWNER.*

KEYED NOTES

1 *EXTEND AND CONNECT TO EXISTING EMERGENCY LIGHTING CIRCUIT.*
2 *EXTEND AND CONNECT TO EXISTING NON-SWITCHED LEG OF NORMAL POWER LIGHTING CIRCUIT.*
3 *EXTEND AND CONNECT TO COUNTERTOP RECEPTACLE CIRCUIT.*

Lighting Fixture Schedule

TYPE	MANUFACTURER/MODEL	FIXTURE DESCRIPTION	MOUNTING	DRIVER/BALLAST	LAMP	VOLTAGE	WATTS
M1	WILLIAMS 1SF LED SERIES	3' UNDERCABINET FIXTURE WITH SOLID FRONT AND BOTTOM ACRYLIC LENS DIFFUSER. INTEGRAL ROCKER SWITCH.	SURFACE	INTEGRAL LED DRIVER	INTEGRAL 3500K CCT, 1200 LUMENS DELIVERED. MIN 80 CRI LED	120V	21 W

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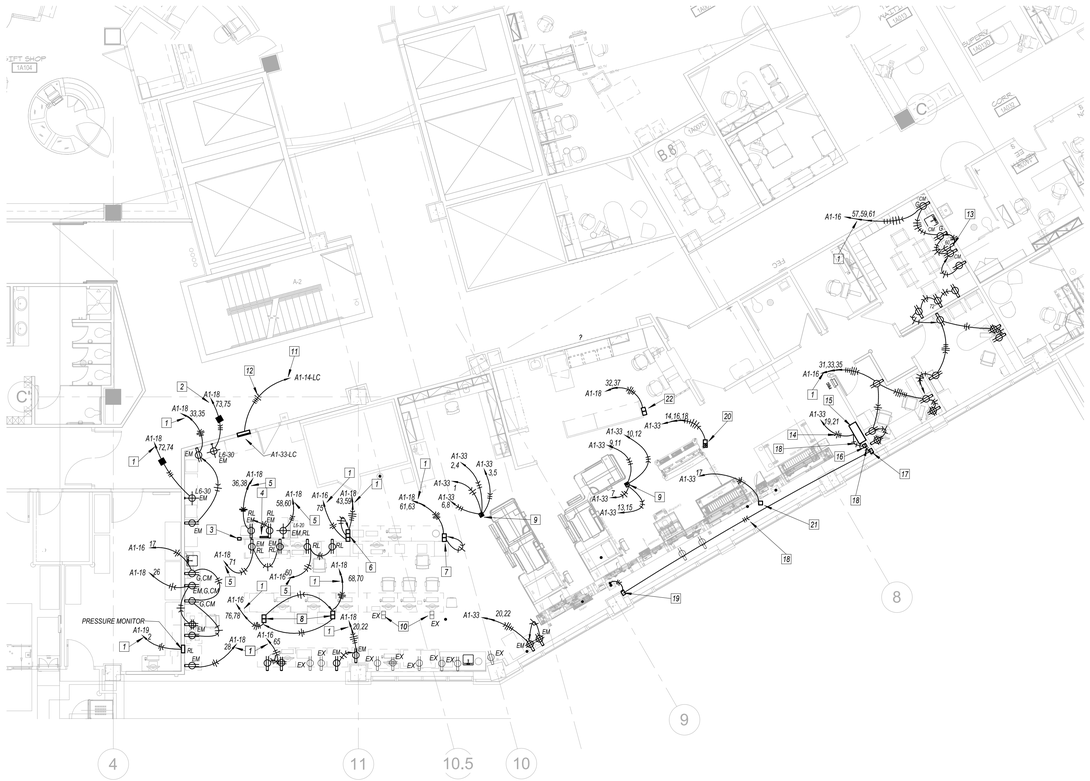
EL2.1

LIGHTING FIRST FLOOR PLAN



1 FIRST FLOOR POWER PLAN
1/8" = 1'-0"

PLAN NORTH / TRUE NORTH

ELECTRICAL POWER GENERAL NOTES

1 *REFER TO SHEET E0(X) FOR GENERAL NOTES. NOT ALL GENERAL NOTES MAY APPLY TO THIS SHEET.*

2 *WORK SHOWN LIGHTLY IS EXISTING TO REMAIN. ALL NEW WORK IS SHOWN DARK AND BOLD.*

3 *IT IS THE INTENT TO REUSE EXISTING CIRCUITS TO THE EXTENT POSSIBLE. CIRCUIT NUMBERS ARE BASED UPON AS BUILT DRAWINGS AND SHOULD BE FIELD VERIFIED BY THE ELECTRICAL CONTRACTOR.*

4 *RELOCATED POWER POLES ARE TO BE FED OVERHEAD.*

5 *THIS IS A 24 HOUR OPERATIONAL FACILITY THEREFORE SOME WORK MAY NEED TO OCCUR AFTER HOURS OR ON WEEKENDS AT NO EXTRA COST TO THE OWNER.*

KEYED NOTES 0

1 *EXTEND AND CONNECT TO 20A, 1P CIRCUIT BREAKER(S) MADE AVAILABLE DURING DEMOLITION PORTION OF PROJECT.*

2 *EXTEND AND CONNECT TO 30A, 2P CIRCUIT BREAKER MADE AVAILABLE DURING DEMOLITION PORTION OF PROJECT.*

3 *RELOCATED THREE SECTION POWER POLE FOR ROUTING OF CIRCUITING AND DATA OF SYSTEM MOUNTED DEVICES.*

4 *RELOCATED SENSAPHONE MONITORING ALARM. MAKE ALL CONNECTIONS TO REFRIGERATOR AND FREEZER AS REQUIRED.*

5 *DROP CIRCUITING DOWN IN RELOCATED POWER POLE FOR CONNECTION TO DEVICES MOUNTED IN SYSTEM FURNITURE. EXTEND AND CONNECT TO EXISTING CIRCUIT BREAKER MADE SPARE DURING DEMOLITION PHASE OF PROJECT.*

6 *RELOCATE AND RECONNECT THREE(3) EXISTING POWER POLES. ONE POLE WITH TWO(2) NORMAL DUPLEX RECEPTACLES AND TWO(2) DATA DROPS, ONE POLE WITH TWO(2) EMERGENCY DUPLEX RECEPTACLES AND ONE POLE WITH TWO(2) EMERGENCY DUPLEX RECEPTACLES AND TWO(2) DATA DROPS.*

7 *RELOCATE AND RECONNECT TWO(2) EXISTING POWER POLES, EACH WITH TWO(2) EMERGENCY DUPLEX RECEPTACLES AND TWO(2) DATA DROPS).*

8 *RELOCATE AND RECONNECT TWO(2) EXISTING POWER POLES. ONE POLE WITH TWO(2) NORMAL DUPLEX RECEPTACLES AND TWO(2) DATA DROPS AND ONE POLE WITH TWO(2) EMERGENCY DUPLEX RECEPTACLES.*

9 *FURNISH AND INSTALL 6"x6" SEPARATED POWER COLUMN FOR ROUTING OF EMERGENCY POWER, DATA AND WATER. THE FRONT SIDE SHALL CONSIST OF THREE(3) 208V, L6-20R RECEPTACLES, ONE(1) 120V EMERGENCY DUPLEX RECEPTACLE AND CAT6 NETWORK DROP. REFER TO SIEMENS HEALTHINEER DRAWINGS FOR ADDITIONAL INFORMATION.*

10 *EXISTING POWER POLE TO REMAIN.*

11 *FURNISH AND INSTALL NEW 100A, 3P CIRCUIT BREAKER IN EXISTING PANEL TO FEED NEW PANEL. REFER TO PANEL LOCATION PLAN ON THIS SHEET FOR EXISTING PANEL LOCATION.*

12 *4-81W, 1-M8 GND IN 1-1.2'C.*

13 *FURNISH AND INSTALL RECESSED RECEPTACLE AT 60" A.F.F IN MICROWAVE CABINET.*

14 *2-82W, 1-M8 GND IN 1'C.*

15 *EATON 9155, 1-PH 12kVA UPS. REFER TO SIEMENS HEALTHINEERS DRAWINGS FOR FURTHER INFORMATION. EXACT LOCATION IN ROOM TO BE FIELD VERIFIED.*

16 *12kVA, 208 TO 230VAC STEP UP TRANSFORMER. REFER TO SIEMENS HEALTHINEERS DRAWINGS FOR FURTHER INFORMATION. EXACT LOCATION IN ROOM TO BE FIELD VERIFIED.*

17 *FURNISH AND INSTALL 40A,1PH, 230VAC PHASE-TO-NEUTRAL CIRCUIT BREAKER IN NEMA 1 ENCLOSURE. REFER TO SIEMENS HEALTHINEERS DRAWINGS FOR FURTHER INFORMATION.*

18 *2-81W, 1-#10 GND IN 1"C.*

19 *FURNISH AND INSTALL 40A, 3PH, 230VAC PHASE-TO-NEUTRAL DISCONNECT SWITCH AND MAKE ALL CONNECTIONS TO APTIO AS REQUIRED. REFER TO SIEMENS HEALTHINEERS DRAWINGS FOR FURTHER INFORMATION.*

20 *REVISE RELOCATED POWER POLE TO HAVE THREE(3) EMERGENCY RECEPTACLES AND CONNECT TO NEW CIRCUIT AS SPECIFIED.*

21 *RELOCATE AND EXISTING POWER POLE WITH TWO(2) EMERGENCY DUPLEX RECEPTACLES AND EXTEND AND CONNECT TO NEW CIRCUIT AS SPECIFIED.*

22 *FURNISH AND INSTALL NEW TWO COMPARTMENT POWER POLE FOR EMERGENCY POWER AND DATA. FURNISH WITH FOUR(4) EMERGENCY DUPLEX RECEPTACLES , TWO(2) WIRED PER CIRCUIT, AND WITH FOUR(4) DATA PORTS.*

2 EXISTING ELECTRICAL PANEL PLAN
1/16" = 1'-0"

PLAN NORTH / TRUE NORTH

Branch Panel: A1-33

Location: LAB 1A041M
Supply From: A1-14-LC
Mounting: Surface
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10K
Mains Type: MCB
Mains Rating: 100 A
MCB Rating: 100 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	ATELLICA ACCESSORY POWER	20 A	1	0 VA	1200...					2	20 A	ATELLICA SAMPLER HANDLER POWER	2
3						1200...	1200...						4
5	ATELLICA CHEMISTRY ANALYZER POWER	20 A	2					1200...	1200...	2	20 A	ATELLICA IMMUNOASSY POWER	6
7	ATELLICA ACCESSORY POWER	20 A	1	0 VA	1200...								8
9	ATELLICA SAMPLER HANDLER POWER	20 A	2			1200...	1200...			2	20 A	ATELLICA CHEMISTRY ANALYZER POWER	10
11								1200...	1200...				12
13	ATELLICA SYSTEM POWER	20 A	2	1200...	0 VA					1	20 A	AUTOMATION WORKSTATION	14
15						1200...	0 VA			1	20 A	AUTOMATION WORKSTATION	16
17	ACCESSORY POWER	20 A	1					0 VA	0 VA	1	20 A	AUTOMATION WORKSTATION	18
19	APTIO UPS	100 A	2	0 VA	180 VA					1	20 A	MILLIPORE SYSTEM RECEPTACLE	20
21						0 VA	180 VA			1	20 A	MILLIPORE SYSTEM RECEPTACLE	22
23	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	24
25	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	26
27	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	28
29	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	30
31	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	32
33													34
35													36
37													38
39													40
41													42
			Total Load:	3780 VA		6180 VA		4800 VA					
			Total Amps:	32 A		53 A		41 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Other	14400 VA	100.00%	14400 VA	
Receptacle	360 VA	100.00%	360 VA	**Total Conn. Load:** 14760 VA
				Total Est. Demand: 14760 VA
				Total Conn. Current: 41 A
				Total Est. Demand Current: 41 A

Notes:

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EP2.1

POWER FIRST FLOOR PLAN & SCHEDULE

1 FIRST FLOOR COMMUNICATIONS PLAN
1/8" = 1'-0"

PLAN NORTH

TRUE NORTH

ELECTRICAL COMMUNICATIONS GENERAL NOTES

1 REFER TO SHEET E000 FOR GENERAL NOTES. NOT ALL GENERAL NOTES MAY APPLY TO THIS SHEET.

2 WORK SHOWN LIGHTLY IS EXISTING TO REMAIN. ALL NEW WORK IS SHOWN DARK AND BOLD.

3 THIS IS A 24 HOUR OPERATIONAL FACILITY THEREFORE SOME WORK MAY NEED TO OCCUR AFTER HOURS OR ON WEEKENDS AT NO EXTRA COST TO THE OWNER.

KEYED NOTES 0

1 DEDICATED ANALOG TELEPHONE LINE FOR CONNECTION TO REFRIGERATOR/FREEZER ALARM.

2 DROP CABLING DOWN IN POWER POLE AND EXTEND AND CONNECT TO SYSTEM FURNITURE MOUNTED DEVICE(S).

3 DEVICE MOUNTED IN SYSTEM FURNITURE. EXTEND CABLING THROUGH FURNITURE RACEWAY TO POWER POLE CONNECTION POINT.

4 DROP CABLING DOWN IN RELOCATED POWER POLE AND RECONNECT TO TWO(2) EXISTING POLE MOUNTED DATA DROPS.

5 CAT6 NETWORK DROP MOUNTED IN 6"x6" SEPARATED POWER COLUMN. REFER TO SIEMENS HEALTHINEER DRAWINGS FOR ADDITIONAL INFORMATION.

6 FURNISH AND INSTALL SIX(6) CAT 6 CABLES BETWEEN APTIO WORKSTATION AND APTIO UTILITY LOCATION. REFER TO SIEMENS HEALTHINEERS DRAWINGS FOR FURTHER INFORMATION.

7 REVISE RELOCATED POWER POLE WITH THREE(3) NETWORK DATA DROPS AND CONNECTION POINT FOR SIX(6) CAT6 CABLES TO APTIO. REFER TO SIEMENS HEALTHINEERS DRAWINGS FOR FURTHER INFORMATION.

8 REVISE RELOCATED POWER POLE WITH ONE(1)NETWORK DATA DROPS AND CONNECTION POINT FOR SIX(6) CAT6 CABLES FROM APTIO WORKSTATION. REFER TO SIEMENS HEALTHINEERS DRAWINGS FOR FURTHER INFORMATION.

9 DATA DROPS MOUNTED IN NEW POWER POLE. REFER TO ELECTRICAL POWER PLAN FOR ADDITIONAL POWER POLE INFORMATION.

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EC2.1

COMMUNICATIONS FIRST FLOOR PLAN