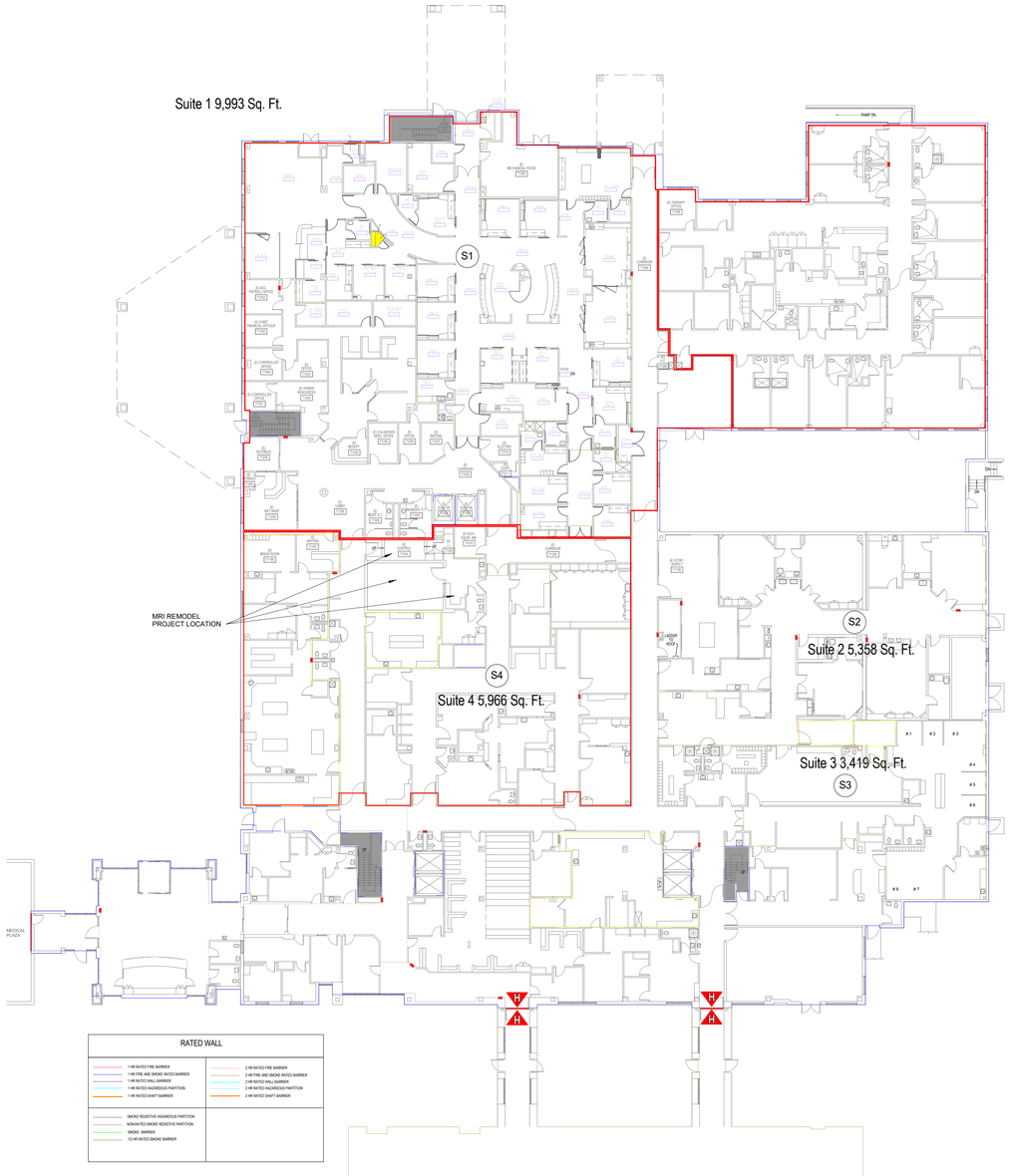


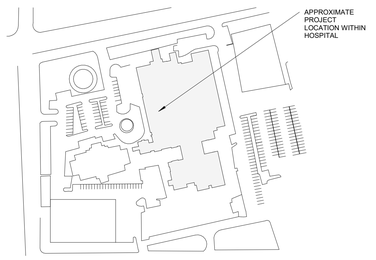
01 LIFE SAFETY PLAN - EXISTING HOSPITAL

1" = 20'-0"

PLAN NORTH

RATED WALL

1 HR RATED FIRE BARRIER	2 HR RATED FIRE BARRIER
1 HR FIRE AND SMOKE RATED BARRIER	2 HR FIRE AND SMOKE RATED BARRIER
1 HR RATED WALL BARRIER	2 HR RATED WALL BARRIER
1 HR RATED HAZARDOUS PARTITION	2 HR RATED HAZARDOUS PARTITION
1 HR RATED SHAFT BARRIER	2 HR RATED SHAFT BARRIER
SMOKE RESISTIVE HAZARDOUS PARTITION	
NON-RATED SMOKE RESISTIVE PARTITION	
SMOKE BARRIER	
1/2 HR RATED SMOKE BARRIER	



02 SITE PLAN

1" = 200'-0"

NORTH

LEGEND

MATERIALS

- CONCRETE/ PRECAST CONCRETE
- SOIL
- SAND, EIFS FINISH COAT, OR CEMENT PLASTER
- BRICK
- CMU
- STONE
- FIBERGLASS BATT INSULATION
- FIBERGLASS SEMI RIGID INSULATION
- MINERAL WOOL SEMI RIGID INSULATION
- EXPANDED POLYSTYRENE RIGID INSULATION
- EXTRUDED POLYSTYRENE RIGID INSULATION
- POLYISOCYANURATE RIGID INSULATION
- GYPSUM BOARD
- EXTERIOR GYPSUM SHEATHING
- EXTERIOR CEMENT BOARD
- COATED GLASS MAT WATER RESISTANT GYP BD
- PLYWOOD
- COVER BOARD

DRAWING SYMBOLS

- ROOM NAME/NUMBER (ROOM NAME XXXXX)
- EXISTING COLUMN CENTERLINE
- COLUMN CENTERLINE
- ACCESSORY
- DEMOLITION NUMBERED NOTES
- BUILDING WALL SECTION (01 / A0.X)
- ELEVATION (01 / A2.01)
- SECTION DETAIL (01 / A0.X)
- PLAN, BLOW-UP DETAIL (01 / A0.X)
- INTERIOR ELEVATION INDICATOR
- DIRECTION INDICATOR
- EDGE OF SLAB
- FACE OF BUILDING
- +9'-0" CEILING HEIGHT
- MEDICAL GAS
- 001 MEDICAL EQUIPMENT
- CORNER GUARDS
- CR - 3 CRASH RAIL
- BG BUMPER RAIL
- HR HAND RAIL
- BL BED LOCATOR
- WALL PROTECTION
- IV TRACK
- CUBICLE CURTAIN TRACK
- A3 / AAA 3 PARTITION TYPE WITH NO SOUND ATTENUATION
- A3 / AAA 3 PARTITION TYPE WITH SOUND ATTENUATION
- BUILDING EXPANSION JOINT
- CMU WALL
- NEW WALL
- EXISTING WALL
- DEMO WALL
- 1 HOUR FIRE WALL
- 2 HOUR FIRE WALL
- 3 HOUR FIRE WALL
- 4 HOUR FIRE WALL
- NON-RATED SMOKE WALL
- 1 HOUR SMOKE WALL
- 2 HOUR SMOKE WALL
- 1 HOUR SHAFT WALL
- 2 HOUR SHAFT WALL

DRAWING ABBREVIATIONS

A

AB	ANCHOR BOLT
AD	AREA DRAIN
AC	AIR CONDITIONING
ACT	ACOUSTICAL CEILING TILE
ADD	ADDENDUM
ADD'L	ADDITIONAL
ADJ	ADJACENT
AFF	ABOVE FINISHED FLOOR
AGGR	AGGREGATE
AL ALUM	ALUMINUM
ALT	ALTERNATE
ANOD	ANODIZED
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL

B

B.M.	BENCH MARK
BD	BOARD
BETW	BETWEEN
BF	BACKFACE
BG	BUMPER GUARD
BL	BED LOCATOR
BL	BUILDING LINE
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM
BOT	BOTTOM
BR	BUMPER RAIL
BRG	BEARING
BSMT	BASEMENT
BU ROD	BACK-UP ROD
BUR	BUILT-UP ROOF
BW	BEARING WALL

C

C	COMPACT PARKING SPACE
CC	CUBICK CURTAIN
CDR	CARD READER
CEM	CEMENT
CER	CERAMIC
CG	CORNER GUARD
CIP	CAST IN PLACE
CJ	CONTROL JOINT
CJ	CONSTRUCTION JOINT
CL	CENTER LINE
CLG	CEILING
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
COMM	COMMUNICATIONS
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
COORD	COORDINATE
CPE	CHLORINATED POLYETHYLENE
COOR	CORRIDOR
CR	COLD ROLLED
CR	CRASH RAIL
CSK	COUNTERSUNK
CT	CERAMIC TILE
CTD	CENTERED
CTR	CENTER
CW	CURTAIN WALL

D

D	DEPTH
DBA	DEFORMED BAR ANCHOR
DET	DETAIL
DF	DECORATIVE FILM
DIA	DIAMETER
DIAPH	DIAPHRAGM
DIM	DIMENSION
DJ	DEFLECTION JOINT
DL	DEAD LOAD
DN	DOWN
DRG	DRAWING
DS	DOWN SPOUT
DWGS	DRAWINGS
DWLS	DOWELS

E

EA	EACH
EF	EACH FACE
EFG	ENTRANCE FLOOR GRILLE
EIFS	EXTERIOR INSULATION AND FINISH SYSTEM
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRIC
ELEV	ELEVATOR
EOS	EDGE OF SLAB
EQ	EQUAL
EQUIP	EQUIPMENT
ESC	ESCALATOR
EW	EACH WAY
EWC	ELECTRIC WATER COOLER
EXIST	EXISTING
EXP BLT	EXPANSION BOLT
EXT	EXTERIOR

F

FD	FLOOR DRAIN
FDN	FOUNDATION
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FF	FINISH FLOOR
FHC	FIRE HOSE CABINET
FIB	FIBERGLASS
FIN	FINISH
FLR	FLOOR
FS	FAR SIDE
FT	FOOT
FT	FLOOR TRANSITION
FTG	FOOTING
FV	FIELD VERIFY
FVC	FIRE VALVE CABINET

G

GA	GAUGE
GALV	GALVANIZED
GB	GRADE BEAM
GEN	GENERAL
GFRC	GLASS-FIBER REINFORCED CONCRETE
GI	GALVANIZED IRON
GL	GLASS
GM	GLAZED MASONRY UNIT
GND	GROUND
GR	GRADE
GRG	GLASS-REINFORCED GYPSUM
GYP BD	GYPSUM BOARD

H

HB	HOSE BIB
HDW	HARDWARE
HDWD	HARDWOOD
HK	HOOK
HM	HOLLOW METAL
HOR	HORIZONTAL
HP	HIGH POINT
HR	HOUR
HS	HEADED STUD
HSKP	HOUSEKEEPING
HT	HEIGHT
HW	HAND WASH
HW	HEAD OF WALL

I

IBC	INTERNATIONAL BUILDING CODE
ID	INSIDE DIAMETER
INSUL	INSULATION
INT	INTERIOR

J

K

K	KIPS (1000 LB)
KO	KNOCK-OUT
KP	KICKPLATE
KPD	KEYPAD
KSF	KIPS PER SQUARE FOOT

L

L	ANGLE
LAV	LAVATORY
LG	LONG
LKB	LOCKABLE
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LOC	LOCATION
LP	LOW POINT
LT	LIGHT
LWC	LIGHTWEIGHT CONCRETE

M

MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MEMB	MEMBRANE
MEP	MECHANICAL, ELECTRICAL AND PLUMBING
MFG	MANUFACTURER
MGO	MEDICAL GAS OUTLET
MIN	MINIMUM
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MOB	MEDICAL OFFICE BUILDING
MOD BIT	MODIFIED BITUMEN
MOD	MODIFIED
MSL	MEAN SEA LEVEL
MTL	METAL

N

NA	NOT AVAILABLE
NIC	NOT IN CONTRACT
NOA	NOTICE OF ACCEPTANCE
NOM	FLORIDA GOVERNING AUTHORITY
NS	NOMINAL
NTS	NEAR SIDE
NWC	NOT TO SCALE
	NORMAL WEIGHT CONCRETE

O

OA	OVER ALL
OC	ON CENTER
OD	OUTSIDE DIAMETER
OD	OVERFLOW DRAIN
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED, OWNER INSTALLED
OH	OPPOSITE HAND
OPNG	OPENING
OPP	OPPOSITE
OSF	OUTSIDE FACE

P

P LAM	PLASTIC LAMINATE
PC	PRECAST CONCRETE
PCF	POUNDS PER CUBIC FOOT
PCP	PORTLAND CEMENT PLASTER
PENT	PENTHOUSE
PL	PROPERTY LINE
PL	PLATE
PLUMB	PLUMBING
PLYWD	PLYWOOD
PP	PUSH PLATE
POL	POLISHED
PORT CEM	PORTLAND CEMENT
PR	PAIR
PREFAB	PREFABRICATED
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT
PT	PNEUMATIC TUBE
PTD	PAINTED

R

R	RISER
RAD	RADIUS
RAF	RUBBERIZED ASPHALT FLASHING
RAM	RUBBERIZED ASPHALT MEMBRANE
RAU	RUBBERIZED ASPHALT UNDERLAYMENT
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
REBAR	REINFORCING BAR
RECP	RECEPTACLE
REF	REFER OR REFERENCE
REINF	REINFORCING
RELOC	RELOCATE/RELOCATED
REQD	REQUIRED
RFVC	RECESSED FIRE VALVE CABINET
RM	ROOM
RO	ROUGH OPENING

S

SAB	SOUND ATTENUATION BLANKET
SBC	STANDARD BUILDING CODE
SCHED	SCHEDULE
SDL	SUPERIMPOSED DEAD LOAD
SECT	SECTION
S/H	SINGLE HUNG
SHWR	SHOWER
SIM	SIMILAR
SO	STRUCTURAL OPENING
SOG	SLAB ON GRADE
SP	STAND PIPE
SPA	SPACE, SPACING
SPEC	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
SSF	SOLID SURFACE
STA	STATION
STC	SOUND TRANSMISSION CLASS
STD	STANDARD
STIFF	STIFFENER
STIR	STIRRUP
STL	STEEL
STRUC	STRUCTURAL
SYM	SYMMETRICAL
SYS	SYSTEM

T

T	TREAD
T&B	TOP AND BOTTOM
TC	TOP OF CURB
TEL	TELEPHONE
TEMP	TEMPERATURE
THK	THICK
TLT	TOILET
TO	TOP OF
TOB	TOP OF BEAM
TOC	TOP OF CONCRETE
TOF	TOP OF FOOTING
TOP	TOP OF PARAPET
TOS	TOP OF SLAB
TOSTL	TOP OF STEEL
TRSH CH	TRASH CHUTE
TW	TOP OF WALL
TYP	TYPICAL

U

U/C	UNDER COUNTER
U/G	UNDERGROUND
UNO	UNLESS NOTED OTHERWISE

V

VAR	VARIES
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VEST	VESTIBULE
VWC	VINYL WALL COVERING

W

W/	WITH
W/C	WHEEL CHAIR
W/O	WITHOUT
W	WIDTH
WP	WATERPROOF(ING)
WD	WOOD
WF	WIDE FLANGE
WL	WIND LOAD
WP	WORK POINT
WPO	WORK POINT - POINT OF ORIGIN
WP1	WORK POINT - NUMBERED
WWF	WELDED WIRE FABRIC

BUILDING SUMMARY

PROJECT INFORMATION

PROJECT NAME: MOUNTAIN VIEW HOSPITAL

ADDRESS: 1000 EAST 100 NORTH, PAYSON, UTAH

PROPOSED USE: HOSPITAL MRI RENOVATION

OWNER-CONTACT PERSON: SHANE FRANK, MOUNTAIN VIEW HOSPITAL, 801-465-7304

ARCHITECT-CONTACT PERSON: GARY BLAZZARD, HKS ARCHITECTS, 801-532-2393

APPLICABLE CODES

- BUILDING CODE: 2018 IBC
- MECHANICAL: 2018 IMC
- PLUMBING: 2018 IPC
- ELECTRICAL: 2017 NEC
- FIRE CODE: 2018 IFC
- STATE/CITY AMENDMENTS: UTAH STATE
- LIFE SAFETY CODE: NFPA 101, 2001 EDITION, CMS REQUIREMENT
- ACCESSIBILITY CODE: 2003 ICC/ANSI 117.1
- ENERGY CODE: 2018 INTERNATIONAL ENERGY CONSERVATION CODE
- SIGN CODE: PAYSON CITY
- FM INSURED: NO

BUILDING PLANNING

OCCUPANCY: I-2

MIXED OCCUPANCY? YES / (NO)

REQUIRED FIRE SEPARATION: N/A

TYPE OF CONSTRUCTION

CONSTRUCTION TYPE: II-B

ESSENTIAL FACILITY (CHAPTER 16, IBC)

ESSENTIAL FACILITY? (YES) / NO

GENERAL BUILDING LIMITATIONS

- HEIGHT OF BUILDING: EXISTING
- NUMBER OF STORIES: 3
- MAXIMUM SINGLE FLOOR AREA: EXISTING — 851 GSF REMODELED AREA
- TOTAL AREA OF BUILDING: EXISTING (NO FOOTAGE BEING ADDED)
- PENTHOUSE AND ROOF STRUCTURE: NO
- HIGH RISE: YES / (NO)
- PARKING SPACES PROVIDED: EXISTING
- PARKING SPACES REQUIRED: EXISTING
- ACCESSIBLE PARKING SPACES PROVIDED: EXISTING

FIRE PROTECTION SYSTEMS

- FIRE EXTINGUISHING SYSTEM: (YES) / NO — TYPE: EXISTING
- STANDPIPE SYSTEM: (YES) / NO — CLASS: EXISTING
- SMOKE CONTROL: YES / (NO)

FIRE RESISTANT CONSTRUCTION/FIREPROOFING SCHEDULE

ITEM	REQ'D RATING / HR	UL/FM # WHERE APPLICABLE
- EXTERIOR WALLS: LOAD BEARING	NOT RATED	X
NON-LOAD BEARING	NOT RATED	X
- FIRE/PARTY WALLS	2 HOUR TO HOSPITAL	X
- SHAFTS	N/A	X
- TENANT SEPARATION	N/A	X
- INTERIOR WALL: LOAD BEARING	NOT RATED	X
NON-LOAD BEARING	NOT RATED	X
- COLUMNS	NOT RATED	X
- BEAMS	NOT RATED	X
- FLOOR/CEILING	NOT RATED	X
- ROOF/CEILING	NOT RATED	X

SPECIAL INSPECTIONS REQUIREMENTS

1. PROVIDE SPECIAL INSPECTIONS AS REQUIRED BY ICC 1705.3.4 FOR SUSPENDED CEILING SYSTEMS AND ANCHORAGES

INDEX OF DRAWINGS

INDEX OF DRAWINGS

Sheet Number	SHEET NAME	9/20/21 - PERMIT ISSUE
A0.01	PROJECT INFORMATION	■
A2.01	PLANS	■
A3.00	PARTITION / DOOR INFORMATION	■
A3.50	MILLWORK INFORMATION / INTERIOR ELEVATIONS	■
A3.51	FINISH PLAN / ROOF PLAN / INFORMATION	■
A6.01	SECTIONS / DETAILS	■
M0.00	MECHANICAL SYMBOLS AND LEGEND	■
M0.01	MECHANICAL GENERAL NOTES	■
M1.01	MECHANICAL FLOOR PLANS	■
M2.01	MECHANICAL PIPING PLANS	■
M5.01	MECHANICAL DETAILS	■
M5.02	MECHANICAL DETAILS	■
M5.03	MECHANICAL DETAILS	■
M6.01	MECHANICAL SCHEDULES	■
P1.01	PLUMBING FLOOR PLANS	■
P2.01	MEDICAL GAS FLOOR PLANS	■
EE001	SHEET INDEX, ABBREVIATIONS, AND GENERAL NOTES	■
EE501	ELECTRICAL DETAILS	■
EE701	TYPICAL MOUNTING HEIGHT DETAILS	■
ED101	LEVEL 1 ELECTRICAL DEMOLITION PLAN	■
EP100	LEVEL 1 OVERALL POWER PLAN	■
EP101	LEVEL 1 ELECTRICAL PLANS	■
EP601	PARTIAL ONE-LINE DIAGRAM	■
EP701	GE VENDOR DRAWINGS	■
EP702	GE VENDOR DRAWINGS	■
EL601	INTERIOR LIGHTING FIXTURE SCHEDULE	■
EL602	LIGHTING CONTROL SCHEDULES	■
ET501	TELECOM DETAILS	■
ET601	TELECOM RISER DIAGRAM	■

HKS

ARCHITECT
HKS ARCHITECTS, INC.
90 SOUTH 400 WEST, SUITE 110
SALT LAKE CITY, UT. 84101

STRUCTURAL ENGINEER
DUNN ASSOCIATES, INC.
380 WEST 800 SOUTH
SALT LAKE CITY, UT 84101

MECHANICAL ENGINEER
VBFA, INC.
181 EAST 5600 SOUTH, SUITE 200
MURRAY, UTAH 84107

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
324 SOUTH STATE STREET
SALT LAKE CITY, UT 84111

Mountain View Hospital MRI Replacement

1000 EAST 100 NORTH, PAYSON, UTAH 84651

STATE OF UTAH — GARY LYNN BLAZZARD — 12353 — LICENSED ARCHITECT

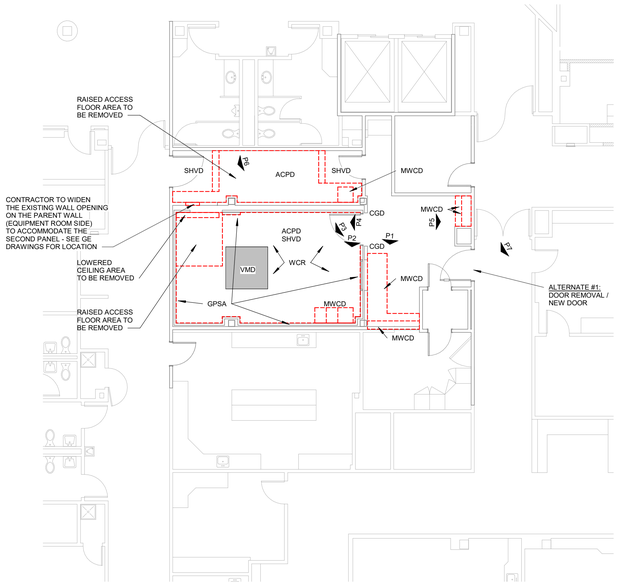
REVISION

NO.	DESCRIPTION	DATE

HKS PROJECT NUMBER
24805.000
DATE
9/13/2021
ISSUE
CONSTRUCTION DOCUMENTS
SHEET TITLE
PROJECT INFORMATION

SHEET NO.
A0.01

PLOT DATE: 9/20/2021 7:41:48 AM TEMPLATE VERSION: 3.0.0.20170823



DEMOLITION LEGEND

INDICATES WALLS TO BE REMOVED (WALLS EXTEND TO ABOVE CEILING TYP)

MILLWORK, DOORS, ETC. TO BE REMOVED, TYP SEE DEMOLITION NOTES FOR SPECIFIC INFORMATION CONCERNING ITEMS INDICATED

DOOR AND/OR FRAME TO BE REMOVED. SEE DEMOLITION NOTES FOR SPECIFIC INFORMATION ABOUT OPENINGS

DEMOLITION NOTES

1. DEMOLITION SHALL INCLUDE REMOVAL OF ALL FLOORING ADHESIVES DOWN TO CONCRETE SLAB ON GRADE OR RF SHIELDING SUBFLOOR, READY FOR FINAL FLOOR FINISH
2. OWNER SHALL REMOVE ALL EQUIPMENT AND ACCESSORIES FROM AREAS BEING REMODELED THIS INCLUDES, BUT IS NOT LIMITED TO, MEDICAL EQUIPMENT, CHART HOLDERS, SIGNAGE, BROCHURE RACKS, TOILET ACCESSORIES (EXCEPT AS NOTED), PICTURES, COMPUTER EQUIPMENT, ETC.
3. ITEMS TO BE SALVAGED ARE DESIGNATED ON THE PLANS OR AS NOTED BELOW. (REFER TO UTILITY DRAWINGS FOR ITEMS UNDER VARIOUS DISIPLINES TO BE SALVAGED)
4. DEMOLITION SHALL FOLLOW OWNER'S ICRA REQUIREMENTS. TEMPORARY WALLS SHALL SEAL AGAINST EXISTING ROOF DECK OR ANOTHER SURFACE, ACCEPTABLE TO THE OWNER
5. REFER TO FINISH PLAN FOR FLOORING REMOVAL EXTENTS WHERE PARTIAL REMOVAL IS REQUIRED
6. EXISTING INTERIOR WALL FRAMING IN EXISTING MAGNET ROOM IS 2X4 WOOD STUDS, FLAT, ANCHORED TO THE MRI SHIELDING PANELS (WINDOW WALL IS 2X4 STUDS FRAMED NORMALLY). REMOVE GYPSUM BOARD AND ACOUSTICAL FINISH AS INDICATED, WITHOUT DISTURBING THE WOOD STUD FRAMING OR PANELS AND INSULATION BEHIND. SEE WALL TYPE M58 AND RF VENDOR DRAWINGS IN SPECIFICATIONS

DEMOLITION KEYED NOTES

1. 'ACPD' - ACOUSTICAL PANEL CEILING SYSTEM TO BE REMOVED

'GPSA' - GYPSUM BOARD AND ACOUSTICAL WALL COVERING MATERIAL SHALL BE REMOVED ON THE WALLS IN THIS ROOM. DOWN TO THE 2X4 FLAT WOOD STUD FRAMING (FULL HEIGHT OF INTERIOR WALL (INTERIOR OF RF SHIELDING). WOOD STUD FRAMING IS TO REMAIN. REFER TO THE LINDGREN DRAWINGS IN THE SPECIFICATIONS, UNDER 'AVAILABLE PROJECT INFORMATION

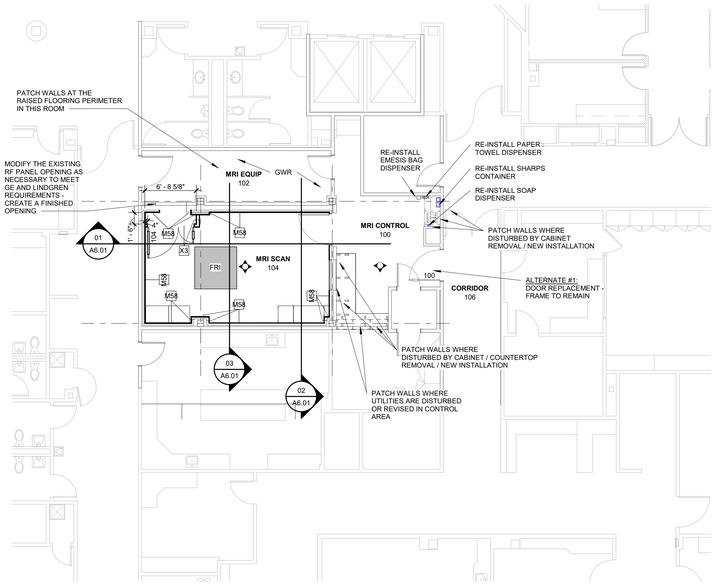
'SHVD' - SHEET VINYL FLOORING WITH RUBBER BASE TO BE REMOVED COORDINATE EXTENT AT EXISTING ROOMS WITH FINISH PLAN

'WCR' - WALL CARPET / WOOD RAILING SHALL BE REMOVED FROM ALL WALLS IN THIS ROOM.

'VMD' - 1" THICK GE VIBROMAT AND 1/2" STEEL PLATE IN CONCRETE RECESS TO BE REMOVED NO SALVAGE

'CGRD' - VINYL CORNER GUARD AND RETAINERS TO BE REMOVED. SALVAGE FOR RE-INSTALLATION

'MWCD' - MILLWORK CABINETS AND COUNTERTOP TO BE REMOVED - NO SALVAGE



FLOOR PLAN NOTES / KEYED NOTES

1. PARTITIONS SHALL BE AS TAGGED. REFER TO SHEET A3.00 FOR PARTITION INFORMATION
2. PROVIDE NEW ACOUSTICAL GYPSUM BOARD AND FINISH AT ALL PERIMETER WALLS IN THE MRI MAGNET ROOM, AS NOTED FOR PARTITION TYPE M58
3. DESIGNATION ◇ INDICATES INTERIOR ELEVATIONS OF MILLWORK OR OTHER CONDITIONS IN THIS ROOM. SEE SHEET A3.50 FOR ELEVATIONS
4. PATCH WALLS WHICH REMAIN WHERE CORNER GUARDS, COVED SHEET VINYL, CARPET BASE OR OTHER MATERIALS ARE REMOVED BY DEMOLITION THAT DISTURB THE WALL SURFACE. REPAIR TO MATCH ADJACENT EXISTING FINISH.
5. CONTRACTOR TO PATCH EXISTING MINERAL WOOD BATTS IN THE RF SHIELDING CAVITY WHERE THEY ARE DISTURBED OR MODIFIED FOR NEW UTILITIES

'PW' LOCATIONS INDICATE WALL AREAS AFFECTED BY DEMOLITION OR REMODEL AND SHALL BE PROVIDED WITH NEW MATERIALS TO INTEGRATE INTO EXISTING ADJACENT MATERIALS AND FINISHES. COORDINATE WITH UTILITY DRAWINGS. NOT ALL LOCATIONS ARE INDICATED

'GWR' DESIGNATIONS IN ROOMS INDICATE GYPSUM BOARD HAS BEEN REMOVED FOR UTILITY WORK ON WALLS IN THIS ROOM AND SHALL BE PATCHED TO MATCH ADJACENT CONSTRUCTION

'FRI' INDICATES THE FLOOR RECESS AREA WHERE THE MAT AND STEEL PLATE ARE REMOVED. RF SHIELDING VENDOR WILL FILL IN THIS FLOOR RECESS WITH NEW SHIELDING AND GROUT CONTRACTOR TO PROVIDE FINAL FLOOR PREPARATION

02 LEVEL 1 DEMOLITION PLAN

1/8" = 1'-0"

PLAN NORTH

03 DEMO PICT 1

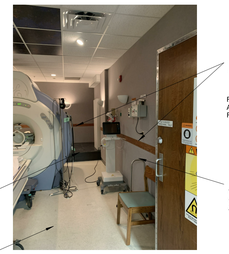
1/4" = 1'-0"

04 DEMO PICT 2

1/4" = 1'-0"

05 DEMO PICT 3

1/4" = 1'-0"

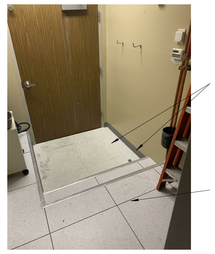


06 DEMO PICT 4

1/4" = 1'-0"

07 DEMO PICT 5

1/4" = 1'-0"



08 DEMO PICT 6

1/4" = 1'-0"

09 DEMO PICT 7

1/4" = 1'-0"

01 LEVEL 1 REMODEL PLAN

1/8" = 1'-0"

PLAN NORTH

RF SHIELDING WORK - VENDOR TO PERFORM WORK EXCEPT WHERE NOTED

Below is the scope of work with the information we have so far: (This does include any MEP changes or adds)

- ETS-Lindgren to conduct initial diagnostic RF test to determine the present baseline performance of the RF shield.
- Remove and replace access panels to facilitate magnet removal/delivery.
- **General contractor to remove the acoustical panel ceiling system for access to the RF panels
- **General contractor to remove the necessary RF ceiling panels, as directed by Lindgren, for the magnet removal
- **General contractor to remove the steel floor plate and vibromat at the location indicated on the demolition drawing
- RF floor modification to eliminate existing Vibro-Mat depression in ETS-Lindgren Monolithic system.
- Infill depression with Ardex K301 self-leveling underlayment.
- **General contractor to remove existing acoustical treatment and gypsum board on all walls in the MRI room, as noted on the demolition drawing.
- Interior finishes by others. General contractor to provide new acoustic gypsum board on walls, new acoustical ceiling system, as indicated
- Provide and install additional shield support hangers in area of new overhead cable trays. (Cable trays by others - see the GE drawings for responsibility matrix)
- Provide and install GE cryogen waveguide shield penetration. (Maybe able to reuse and relocate.)
- Modify penetration panel area for new GE 1.5 T MR450W double panel interface system.
- Provide interface opening for SPW panel.
- Provide two (2) temporary blank shielded penetration panels. (For testing purposes.)
- Provide and install two (2) 2x30 amp filters for GE exhaust fan switch and EPO system.
- Provide and install GE Magnet anchoring bolts.
- Provide and install GE Patient table docking bolt.
- Provide and install one (1) 24" x 24" waveguide air vent for GE exhaust fan. (Need to confirm if existing)
- Provide and install one (1) 24" x 24" waveguide air vent for pressure equalization.
- Provide and install one (1) 20" x 20" access hatch for GE blower box access.
- Provide and install seismic anchoring for GE magnet. (Brackets provided by GE.) (If required.)
- Repair/infill old magnet penetrations.
- Provide door maintenance of existing RF door.
- Provide final RF verification test of the completed installation to confirm RF shield performs equal to or better than the initial RF diagnostic baseline test.
- All labor associated with the RF components to be re-worked/installed consisting of open shop technician and three (3) visits to site.

1. Pre-Test (Open shield by others)
2. Modifications.
3. Close shield and final test.

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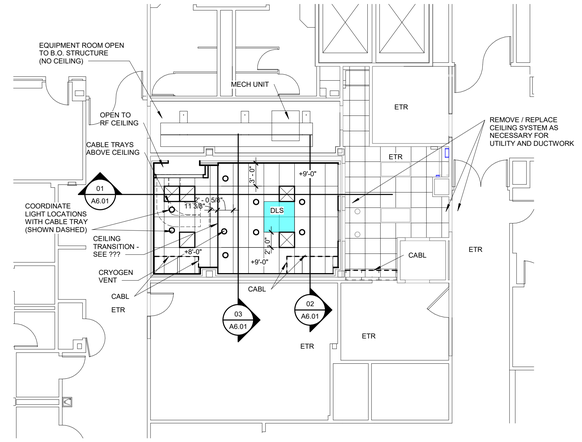
REFLECTED CEILING PLAN NOTES / KEYED NOTES

1. CEILING HEIGHTS ARE NOTED WITH +#-#
2. PROVIDE ALUMINUM CEILING GRID IN MRI ROOM
3. SEE A6.01/05 FOR CEILING ASSEMBLY BRACING REQUIREMENTS

'CABL' - CABINET LINE OCCURING BELOW CEILING LEVEL. SHOWN FOR CEILING COORDINATION. INDICATED WITH HEAVY DASHED LINE - SEE A3.50 CABINET DETAIL 'V' FOR CONDITION



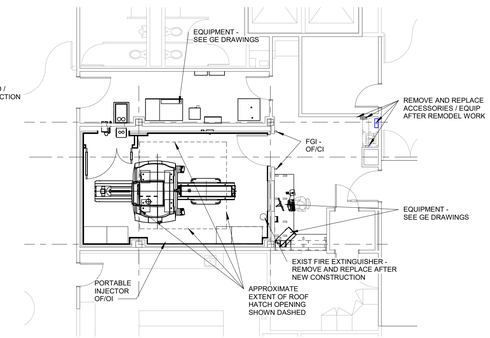
01A LEVEL 1 REFLECTED CEILING PLAN

1/8" = 1'-0"

PLAN NORTH

EQUIPMENT PLAN NOTES / KEYED NOTES

'FGI' - FERROGUARD RAILS / SYSTEM. SYSTEM IS OWNER FURNISHED / CONTRACTOR INSTALLED. SEE DIAGRAM IN SPECIFICATION SECTION 11 7000 MEDICAL EQUIPMENT



NOTE: GE EQUIPMENT LAYOUT IS SHOWN DARK

20 LEVEL 1 EQUIPMENT PLAN

1/8" = 1'-0"

PLAN NORTH

ARCHITECT
HKS ARCHITECTS, INC.
90 SOUTH 400 WEST, SUITE 110
SALT LAKE CITY, UT. 84101

STRUCTURAL ENGINEER
DUNN ASSOCIATES, INC.
380 WEST 800 SOUTH
SALT LAKE CITY, UT 84101

MECHANICAL ENGINEER
VBFA, INC.
181 EAST 5600 SOUTH, SUITE 200
MURRAY, UTAH 84107

ELECTRICAL ENGINEER
SPECTRUM ENGINEERS
324 SOUTH STATE STREET
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Mountain View Hospital MRI Replacement

1050 EAST 100 NORTH, PAYSON, UTAH 84651

STATE OF UTAH — GARY LYNN BLAZZARD — 12353 — LICENSED ARCHITECT

REVISION NO. | DESCRIPTION | DATE

HKS PROJECT NUMBER
24805.000
DATE
9/13/2021
ISSUE
CONSTRUCTION DOCUMENTS
SHEET TITLE
PLANS

SHEET NO.
A2.01

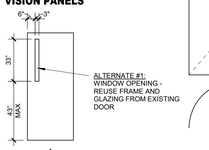
PLOT DATE: 9/28/2021 7:47:57 AM TEMPLATE VERSION 3.0.0.20170823

DOOR LEGEND

DOOR NOTES

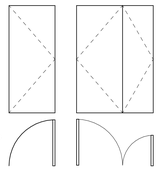
1. CONTRACTORS TO USE THE ARCHITECT'S FLOOR PLAN DESIGNATION DOOR NUMBER IN ADDITION TO THE ROOM NUMBER ON ALL SHOP DRAWING SCHEDULE SUBMITTALS.

VISION PANELS



1
RATED OR NON-RATED
100 SQ IN MAX

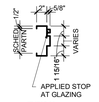
DOOR TYPES



A1
FLUSH SINGLE

A3
FLUSH UNEQUAL DOUBLE

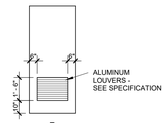
DOOR FRAME TYPES



TYPICAL - HOLLOW METAL

1

LOUVER TYPES



5
NON-RATED

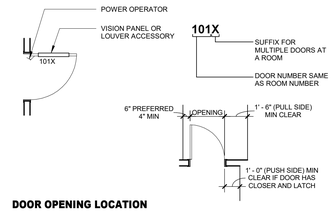
DOOR HARDWARE

DESIGN INTENT:
INTENT IS TO MATCH EXISTINGHARDWARE IN FACILITY (FIELD VERIFY)

GROUP 01: DOOR 104
- 6 - BUTT HINGES, HEAVY DUTY
- 1 - OFFICE LOCKSET
- 1 - CYLINDER
- 1- AUTO FLUSHBOLT
- 1 - WALL STOP
- 1 - OVERHEAD STOP

GROUP 02: DOOR 100 (ALTERNATE #1)
- 3 - SWING CLEAR BUTT HINGES, HEAVY DUTY (NEW)
- 1 - KEYPAD LOCKSET (RELOCATED TO NEW DOOR)
- 1 - CLOSER / STOP (RELOCATED TO NEW DOOR)
- 1 - KICKPLATE (NEW, ON CORRIDOR SIDE OF DOOR)
- 1 - WINDOW / GLASS (RELOCATED TO NEW DOOR)

DOOR PLAN DESIGNATION



DOOR OPENING LOCATION

A. DOORS SHOWN ADJACENT TO A FLANKING WALL OR OTHER FIXED OBSTRUCTION, SHALL BE LOCATED AS SHOWN ABOVE.

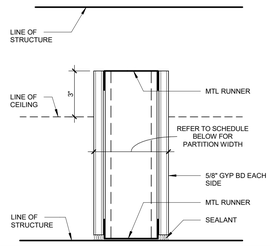
B. OTHER LOCATIONS SHALL BE ON CENTERLINE OF ROOM OR AS SPECIFICALLY DIMENSIONED.

DOOR SCHEDULE

DOOR NUMBER	WIDTH	HEIGHT	DOOR TYPE	FRAME TYPE	MATERIALS AND FINISHES: DOOR MATERIAL	MATERIALS AND FINISHES: FRAME MATERIAL	DOOR RATING	DETAILS: HEAD	DETAILS: JAMB	DETAILS: SILL	GLAZING TYPE	Vision_Panel_&_Louver_Type	HARDWARE	COMMENTS
100	4' - 0"	7' - 0"	A1	1	WOOD / PLAM	HOLLOW METAL	-	ETR	ETR	-	GLASS - TEMPERED	2	02	EXISTING FRAME TO REMAIN - NEW DOOR
104	6' - 0"	7' - 0"	A3	1	WOOD / PLAM	HOLLOW METAL	-	A3.00/09	A3.00/08		-	5	01	

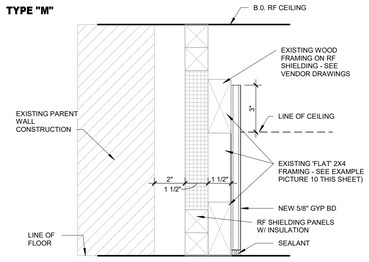
LEGEND:
ETR - EXISTING TO REMAIN

TYPE "X"



FLOOR PLAN DESIGNATION NO SOUND ATTENUATION	FLOOR PLAN DESIGNATION WITH SOUND ATTENUATION	STUD SIZE	PART WIDTH	FIRE RATING	UL LISTING	SOUND TRANS. CLASS	LABORATORY TEST REPORT & REMARKS
X2	N/A	2 1/2"	3 3/4"	NON-RATED	N/A	N/A	
X3	N/A	3 5/8"	4 7/8"	NON-RATED	N/A	N/A	
X6	N/A	6"	7 1/4"	NON-RATED	N/A	N/A	

TYPE "M"



FLOOR PLAN DESIGNATION NO SOUND ATTENUATION	FLOOR PLAN DESIGNATION WITH SOUND ATTENUATION	STUD SIZE	PART WIDTH	FIRE RATING	UL LISTING	SOUND TRANS. CLASS	LABORATORY TEST REPORT & REMARKS
M56	N/A	EXIST	EXIST	NON-RATED	N/A	N/A	

PARTITION NOTES

1. PARTITIONS ARE DISTINGUISHED ON FLOOR PLANS BY SYMBOL DESIGNATION, GRAPHIC DESIGNATION OR A COMBINATION OF BOTH DESIGNATIONS.

2. THERE ARE TWO TYPES OF SYMBOL DESIGNATIONS, ONE FOR PARTITONS NOT REQUIRING SOUND ATTENUATION AND ANOTHER FOR PARTITIONS WHICH REQUIRE SOUND ATTENUATIONS. REFER TO PARTITION MATRICES FOR SOUND ATTENUATION BLANKET (SAB) MINIMUM THICKNESS FOR STC INDICATED.

X# — SYMBOL DESIGNATION (NO SOUND ATTENUATION)
X#◇ — SYMBOL DESIGNATION (WITH SOUND ATTENUATION)

3. THE SYMBOL DESIGNATION HAS TWO CHARACTERS, THE FIRST CHARACTER IS A LETTER INDICATING THE PARTITION TYPE. THE SECOND CHARACTER IS A NUMERIC INDICATING THE STUD OR CMU WIDTH. REFER TO LEGEND BELOW.

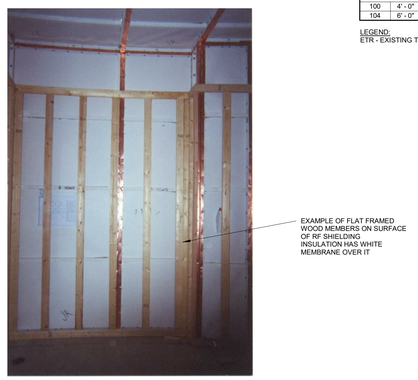
NUMERIC CHARACTER	STUD WIDTH
1	1 5/8"
2	2 1/2"
3	3 5/8"
4	4"
6	6"

4. IF NO SYMBOL DESIGNATION IS PROVIDED, THE STUD SIZE WILL BE 3 5/8".
5. THE GRAPHIC DESIGNATION IS INCORPORATED FOR PARTITIONS REQUIRED TO BE SMOKE RESISTANT, FIRE RESISTANT, OR BOTH FIRE AND SMOKE RESISTANT. REFER TO NOTE 17.
6. "LINE OF STRUCTURE" INDICATED FOR EACH PARTITION IS DIAGRAMMATIC ONLY AND DOES NOT INDICATE EXACT CONSTRUCTION CONDITIONS OR GEOMETRY.
7. ALL DIMENSIONS ARE FROM FACE OF GYPSUM BOARD TO FACE OF GYPSUM BOARD. REFER TO PARTITION MATRICES FOR PARTITION WIDTH DIMENSIONS UNLESS INDICATED TO BE SHOWN ON PLAN.
8. SEALANT:
   1. FIRE RESISTANCE RATED PARTITIONS SHALL USE RATED FIRE/SMOKE FIRE STOPPING SYSTEM.
   2. NON-RATED PARTITIONS AND NON-RATED SMOKE RESISTANT PARTITIONS SHALL USE ACOUSTICAL SEALANT.
9. INSULATION: - HEAD CONDITIONS AT FLOOR/ROOF DECK
   1. FIRE RESISTANCE RATED PARTITIONS SHALL USE MINERAL WOOL INSULATION.
   2. NON-RATED PARTITIONS REQUIRING SOUND ATTENUATION SHALL USE SOUND ATTENUATION BLANKETS (SAB).
10. REFER TO SPECIFICATIONS FOR MINIMUM STUD THICKNESS, MAXIMUM SPACING AND ALLOWABLE LIMITING HEIGHTS DEFLECTION CRITERIA FOR GYPSUM BOARD ASSEMBLIES.
11. FOR PARTITIONS INDICATED TO RECEIVE SOUND ATTENUATION BLANKETS (SAB), EXTEND SAB TO FULL HEIGHT OF PARTITION UNLESS OTHERWISE INDICATED. FLOOR TRACK TO BE SET IN A CONT BED OF SEALANT.
12. FIRE RESISTANT AND FIRE RESISTANT SMOKE BARRIER RATINGS ARE TO SURROUND ALL OPENINGS IN RATED PARTITIONS.
13. EACH PARTITION SHOWN ON THE DRAWINGS TO HAVE A FIRE AND OR SMOKE RESISTANT RATING SHALL BE IDENTIFIED AS SUCH WITH A LABEL ABOVE THE CEILING ON EACH SEGMENT OF THE WALL AND 20'-0" OC MAX EACH SIDE OR AS REQUIRED BY THE AHJ. SEE SPECIFICATION SECTION 09 9100.
14. REFER TO TOILET ACCESSORIES SHEET AND CASEWORK SHEET FOR MOUNTING DETAIL INFORMATION
15. GRAPHIC DESIGNATION:

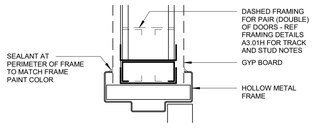
	PRIORITY
2 HR SMOKE BARRIER	1 HIGHEST
2 HR FIRE BARRIER	2
2 HR FIRE BARRIER/SHAFT WALL	3
1 HR SMOKE BARRIER	4
1 HR FIRE BARRIER	5 LOWEST
1 HR FIRE BARRIER/SHAFT WALL SMOKE PARTITION (NON RATED)	

NOTE:
1. NOT ALL PARTITION TYPES SHOWN ON THIS SHEET ARE USED ON THIS PROJECT.
2. THE SHADED PORTIONS OF A PARTITION TYPE ARE NOT INCLUDED IN THE SCOPE OF THE WORK.
3. THE UN-SHADED PORTIONS OF ALL PARTITION TYPES ARE INTENDED TO BE IN THE SCOPE OF THE WORK.

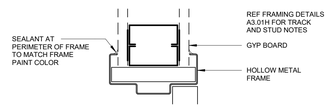
HATCHING:
- PARTITION TYPE INCLUDED IN SCOPE OF WORK
- PARTITION TYPE NOT INCLUDED IN SCOPE OF WORK



10 RF FRAMING PICT
1/4" = 1'-0"

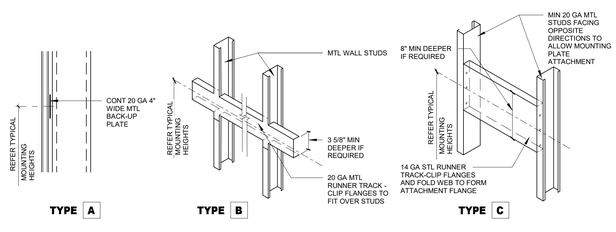


08 HEAD DETAIL - HOLLOW METAL
3" = 1'-0"

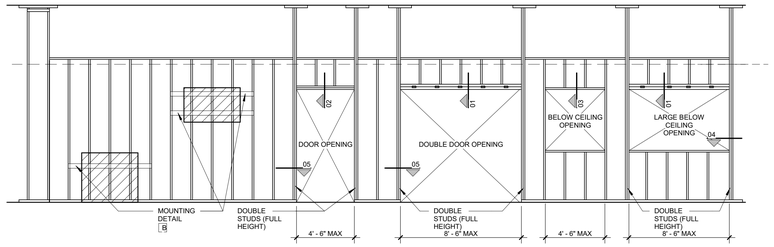


09 JAMB DETAIL - HOLLOW METAL
3" = 1'-0"

ACCESSORY/EQUIPMENT MOUNTING DETAILS

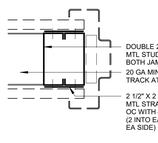


TYPICAL INTERIOR PARTITION FRAMING

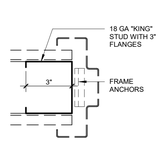


NOTES:
1. ALL STUDS ARE SPACED 16" OC MAXIMUM.
2. ALL STUDS SHALL BE "C" STUDS WITH 1/4" FLANGE MINIMUM.
3. ▨ DENOTES SHELVING OR CABINETRY.
4. IN NO CASE SHALL DOUBLE STUDS AT SIDES OF OPENING BE CUT FOR DUCTWORK OR OTHER MECHANICAL SYSTEMS.

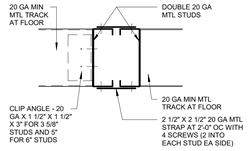
PARTITION FRAMING DETAILS



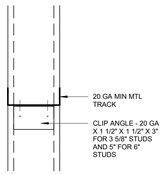
OPTION 2 DOOR OPENING
06 JAMB STUDS
3" = 1'-0"



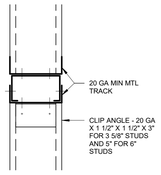
OPTION 1 DOOR OPENING
05 JAMB STUDS
3" = 1'-0"



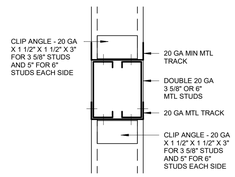
LARGE OPENING JAMB STUDS
04
3" = 1'-0"



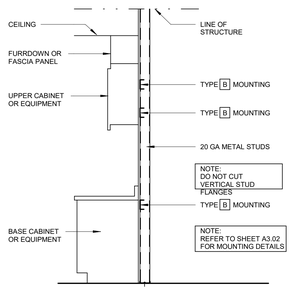
03 OPENING HEADER
3" = 1'-0"



DOOR OPENING HEADER
02
3" = 1'-0"



DOUBLE DOOR/LARGE OPENING HEADER
01
3" = 1'-0"



TYPICAL STUD WALL SUPPORTING EQUIPMENT AND CABINETRY
07
1/4" = 1'-0"

HKS

ARCHITECT
HKS ARCHITECTS, INC.
90 SOUTH 400 WEST, SUITE 110
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STRUCTURAL ENGINEER
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Mountain View Hospital MRI Replacement

1050 EAST 100 NORTH | PAYSON, UTAH 84651

STATE OF UTAH — GARY LYNN BLAZZARD — 12353 — LICENSED ARCHITECT

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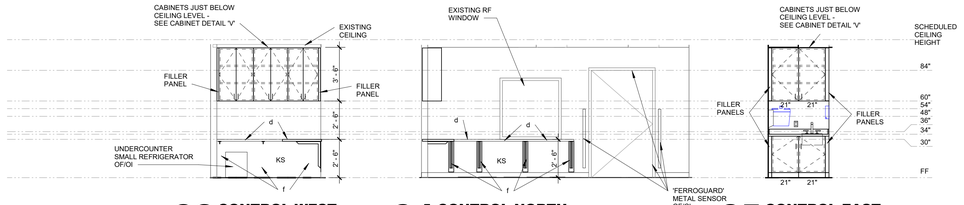
PARTITION / DOOR INFORMATION

SHEET NO.
A3.00

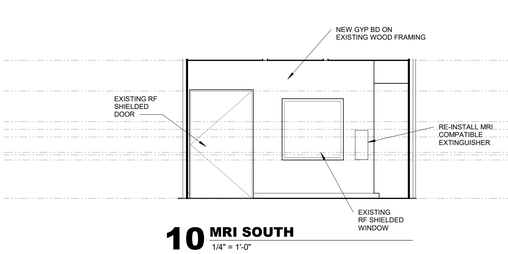
PLOT DATE: 9/28/2021 7:41:54 AM TEMPLATE VERSION: 3.0.0.20170623



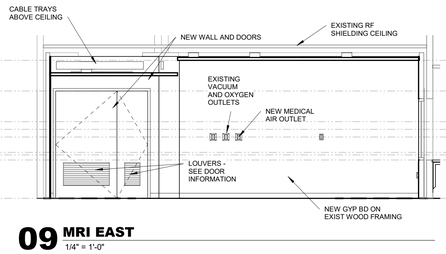
06 CONTROL WEST 1/4" = 1'-0"

04 CONTROL NORTH 1/4" = 1'-0"

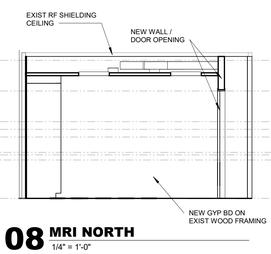
05 CONTROL EAST 1/4" = 1'-0"



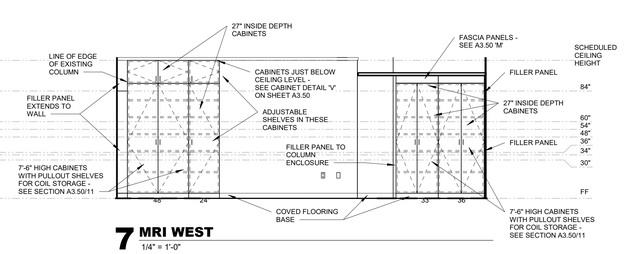
10 MRI SOUTH 1/4" = 1'-0"



09 MRI EAST 1/4" = 1'-0"

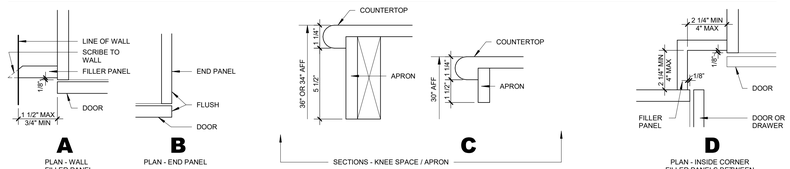


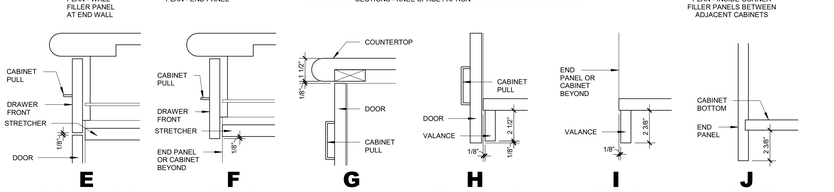
08 MRI NORTH 1/4" = 1'-0"

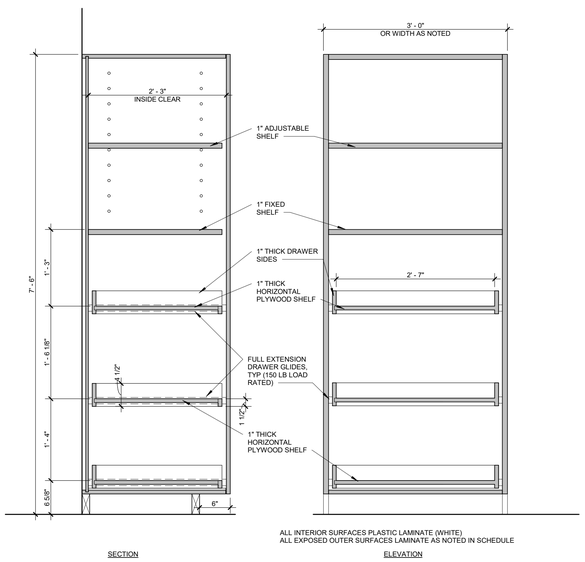


7 MRI WEST 1/4" = 1'-0"

ARCHITECTURAL CABINET TYPICAL DETAILS (NOT ALL DETAILS MAY BE APPLICABLE)



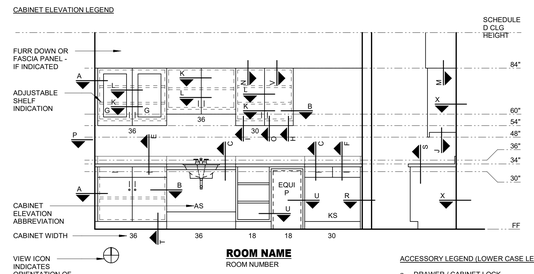




11 COIL STORAGE SECTION 1" = 1'-0"

CABINET LEGEND (NOT ALL DETAILS/CONDITIONS MAY BE APPLICABLE)

CABINET ELEVATION LEGEND



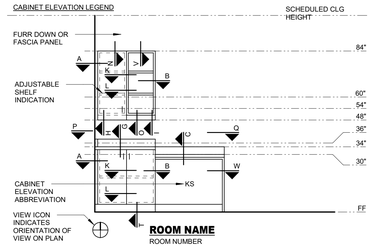
ACCESSORY LEGEND (LOWER CASE LETTERS ONLY)

a - DRAWER / CABINET LOCK
d - GROMMET
f - KNEEBRACE - SEE ELEVATION AND SECTION 'Y' ON THIS SHEET

ELEVATION ABBREVIATION LEGEND

AS - ACCESSIBLE SINK
F - FILE DRAWER
FS - FIXED SHELF
KS - KNEE SPACE

CABINET ELEVATION LEGEND

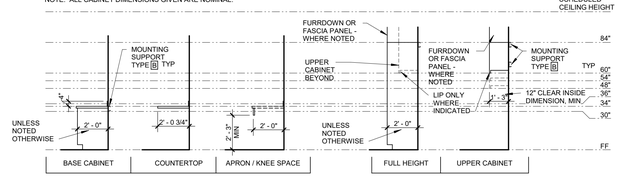


CABINET GENERAL NOTES

1. CABINET WIDTHS TO BE BASED ON MODULE INCREMENTS OF 3" UNO.
2. PROVIDE FILLER PANELS TO FINISH OUT TO SCRIBE CABINETS TO WALL.
3. PROVIDE FILLER PANELS AND TRIM WHERE EQUIPMENT IS LOCATED WITHIN CABINETS.
4. PROVIDE FINISHED END PANELS END RETURNS AT OPEN ENDED CABINETS, KNEE SPACES, AND ACCESSIBLE SINKS.
5. PROVIDE 1 1/2" THICK FINISHED END PANEL AT FREE STANDING END OF ACCESSIBLE SINKS AND KNEE SPACES, UNLESS INDICATED OTHERWISE.
6. WHEN FILLER PANELS ARE REQUIRED AT BOTH ENDS OF CASEWORK TERMINATION, BOTH FILLER PANELS SHALL BE EQUAL WIDTH.
7. PROVIDE WALL BRACKET SUPPORTS AT 36" OC MAX TO SUPPORT COUNTERTOP AT CONTINUOUS KNEE SPACE - SEE SECTION AND PLAN IN ARCHITECTURAL CABINET TYPICAL DETAILS 'Y'.
8. PROVIDE END SPLASH WHEN COUNTERTOP IS ADJACENT TO WALL AT SIDES.
9. PROVIDE HOLES FOR GROMMETS IN COUNTERTOPS WHERE INDICATED.
10. PROVIDE ADJUSTABLE SHELVES IN CABINETS AT THE FOLLOWING LOCATIONS UNO ON ELEVATIONS:
    - BASE CABINET - 1 SHELF
    - FULL HEIGHT CABINET - 5 SHELVES, 1 FIXED.
    - FULL HEIGHT CABINET (2 SECTIONS) 4 SHELVES.
    - WALL CABINET - 1 SHELF AT 24" HIGH, 2 SHELVES AT TALLER CABINETS
    NOTE: ALL SHELVES SHALL BE 1" THICK
11. CABINET/DRAWER KEYING:
    KEY "A" UNLESS NOTED OTHERWISE (ALL THE SAME KEYWAY)
    "A2" = DIFFERENT KEYWG, "A3" = DIFFERENT KEYING
12. COUNTERTOPS SHALL BE SOLID SURFACE, WITH A BACKSPLASH THAT IS RADIUSED TO THE COUNTERTOP (NOT SQUARE) TO FORM A COVED INTERSECTION TO THE COUNTERTOP
    NOTE:
    COUNTERTOPS AT SINK LOCATIONS SHALL BE CONSTRUCTED WITH A MARINE GRADE PLYWOOD SUBSTRATE, OR EQUIVALENT

TYPICAL CABINET DIMENSIONS

NOTE: ALL CABINET DIMENSIONS GIVEN ARE NOMINAL.



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STATE OF UTAH
GARY LYNN BLAZZARD
12353
LICENSED ARCHITECT

REVISION NO. | DESCRIPTION | DATE

HKS PROJECT NUMBER
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9/13/2021

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SHEET TITLE
MILLWORK INFORMATION / INTERIOR ELEVATIONS

A3.50

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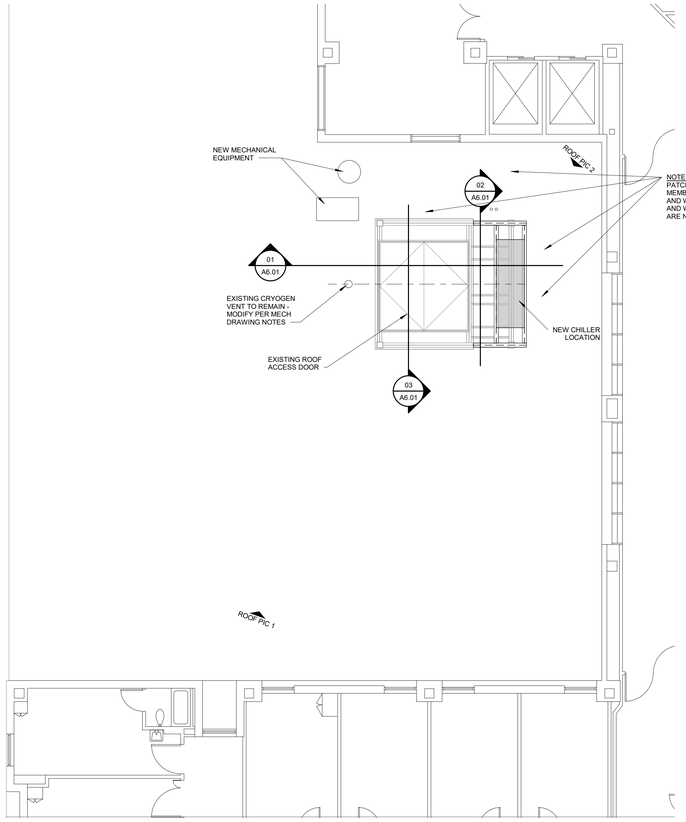
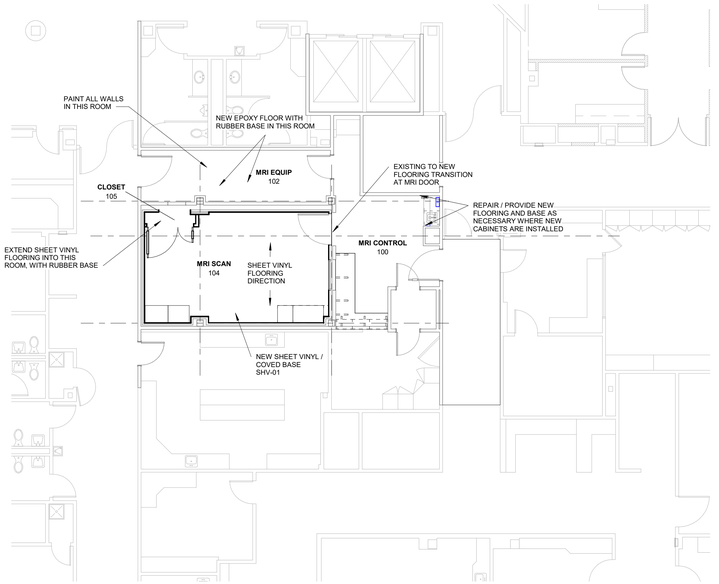
03 ROOF PIC 1
1/4" = 1'-0"

04 ROOF PIC 2
1/4" = 1'-0"



02 LEVEL 1 ROOF PLAN
1/8" = 1'-0"

PLAN NORTH



01 LEVEL 1 FINISH PLAN
1/8" = 1'-0"

PLAN NORTH

PLASTIC LAMINATE ON DOOR TO MATCH ON NEW DOORS AND ON REPLACEMENT DOOR

06 DOOR LAMINATE
1/4" = 1'-0"

05 COUNTERTOP / CABINETS
1/4" = 1'-0"

FINISH NOTES

1. FLOORING TRANSITIONS SHALL OCCUR UNDER DOORS.
2. FLOORING TRANSITIONS SHALL BE A BUTT JOINT BETWEEN THE 2 MATERIALS. NO TRANSITION STRIP
4. SEALANTS SHALL MATCH ADJACENT FINISHES UNLESS PAINTED

FINISH INFORMATION

IPT-01: WALL PAINT,
BEHR, BOTANY BEIGE (SATIN FINISH) 0032909

SHV-01: SHEET VINYL FLOORING
TOLI, MATURE SELECT (WOOD GRAINED LOOK)
COVE 4" UP WALLS

EPF-01: EPOXY FLOOR PAINT
SEE SPECIFICATIONS, COLOR: GREY

RB-01: RUBBER BASE, COVED TOE
SEE SPECIFICATIONS, COLOR: GREY TO MATCH EXISTING BASE

ACP-01: ACOUSTICAL CEILING PANEL, FACILITY STANDARD
24"X48", STRAIGHT EDGE. ARMSTRONG 755B, WHITE - 1"-GRID, WHITE

VL-01: VERTICAL PLASTIC LAMINATE
WOOD WORKS, STYLE: EURO (SEE PICTURE 05)

WD-01: PLASTIC LAMINATE ON ALL NEW WOOD DOORS
MATCH LAMINATE ON CATH LAB DOOR (RIGHT ACROSS THE HALL - SEE PICTURE 06)

SS-01: SOLID SURFACE COUNTERTOP - MRI CONTROL ROOM
MATCH COUNTERTOPS AT RADIOLOGY RECEPTION DESK (SEE PICTURE 05)

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FINISH PLAN / ROOF PLAN / INFORMATION
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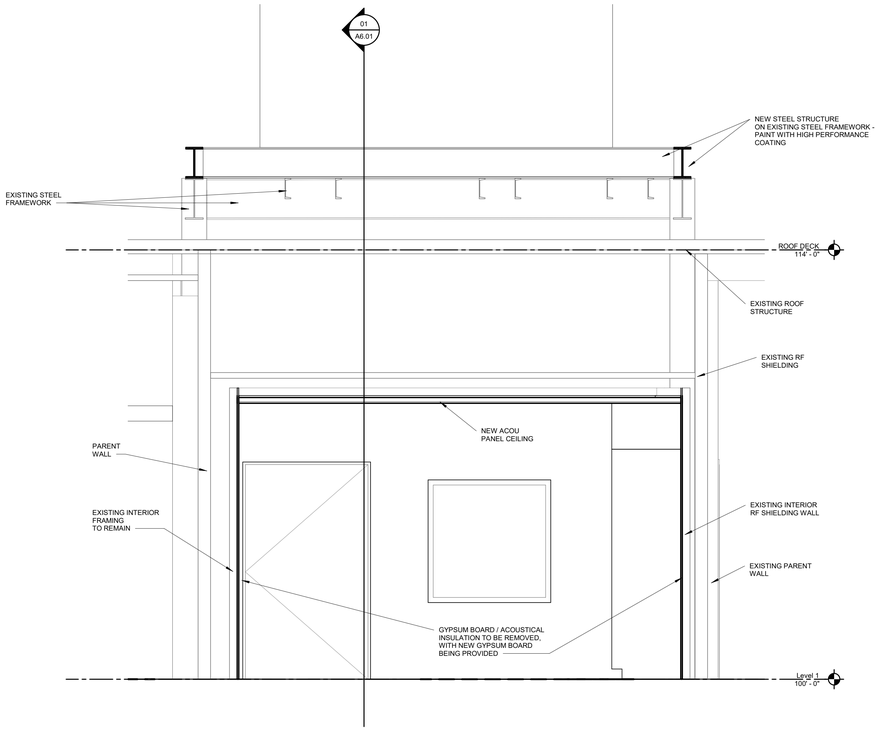
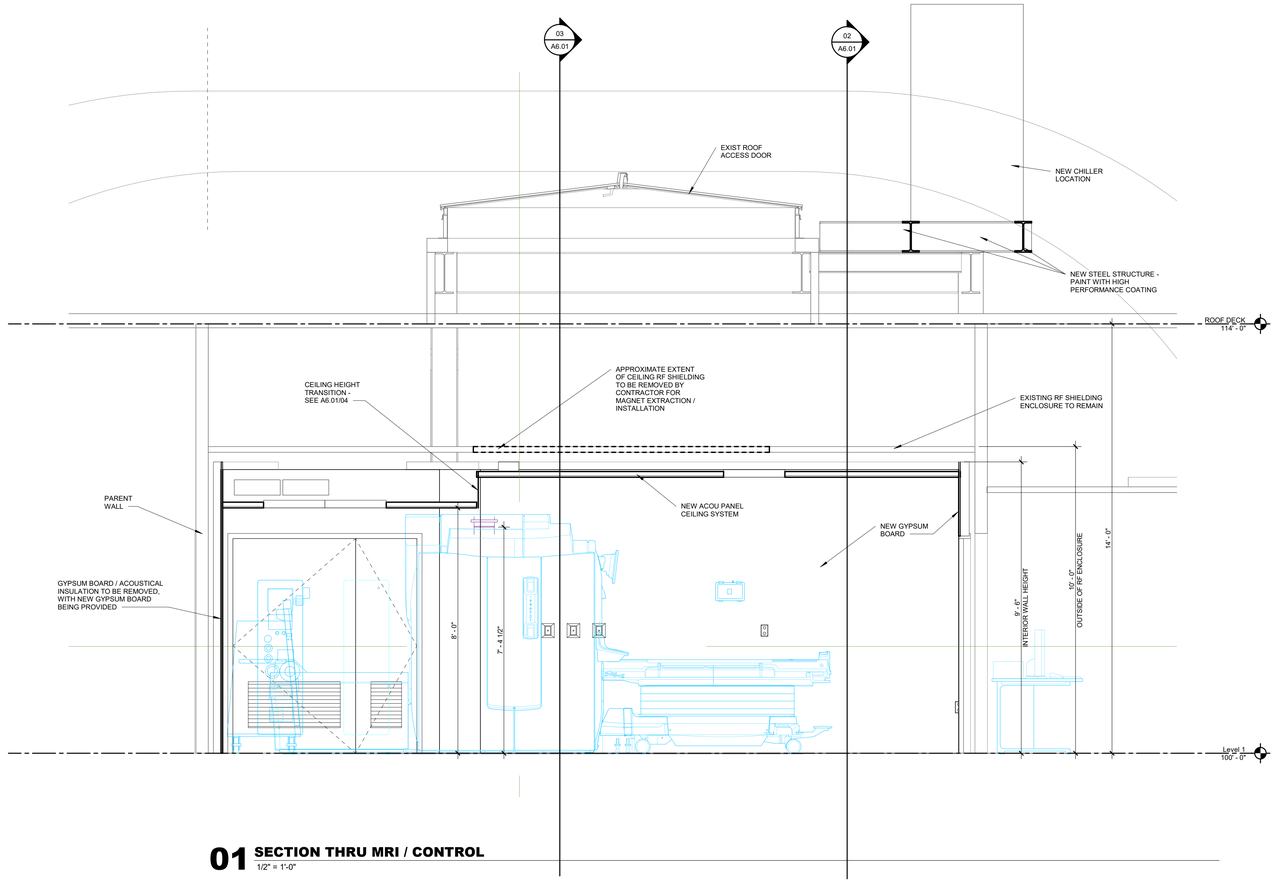
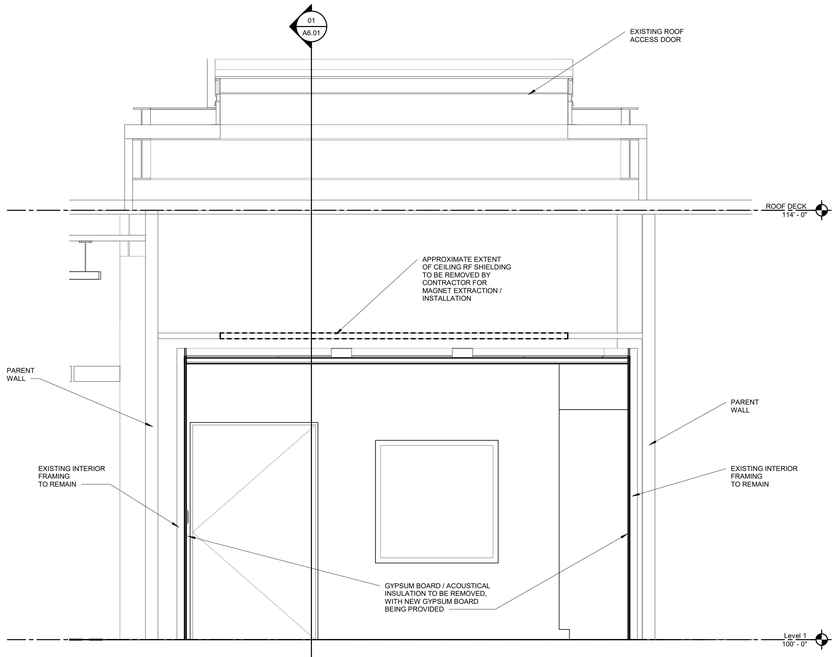


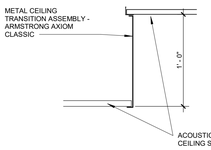
02 SECTION THRU MRI / HATCH
1/2" = 1'-0"



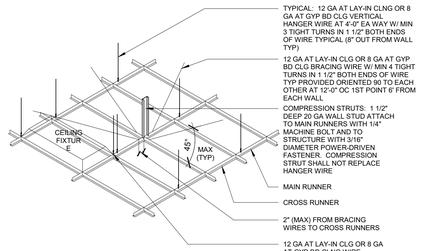
01 SECTION THRU MRI / CONTROL
1/2" = 1'-0"



03 SECTION THRU MRI / STRUCTURE
1/2" = 1'-0"



04 CEILING HEIGHT TRANSITION
1 1/2" = 1'-0"



NOTES

1. PROVIDE CEILING GRID SYSTEMS IN ACCORDANCE WITH ICC-ES-1222 (OR OTHER MANUFACTURER'S EQUAL REPORT) FOR STEEL GRID CEILING SYSTEMS, AND PROVISIONS OF ASTM C635 AND ASTM C636, AND MANUFACTURER'S RECOMMENDATIONS FOR SEISMIC ZONE
2. ALL LATERAL SUPPORTS MUST BE LOCATED A MIN OF 6" (152mm) FROM HORIZONTAL UNBRACED PIPES AND DUCTWORK.
3. VERTICAL STRUTS FASTENED TO THE MAIN RUNNER SHALL BE EXTENDED TO AND FASTENED TO THE STRUCTURAL MEMBERS SUPPORTING THE ROOF OR FLOOR ABOVE. THE STRUT SHALL BE ADEQUATE TO RESIST THE VERTICAL LOAD INDUCED BY THE BARRIER WIRES.
4. THE VERTICAL STRUTS AT HORIZONTAL RESTRAINT POINTS SHALL BE PLACED 12'-0" (3658mm) OC IN BOTH DIRECTIONS, WITH THE FIRST POINT WITHIN 6'-0" (1830mm) FROM EACH WALL.

05 CEILING GRID ATTACHMENT FOR SEISMIC CONDITION
1 1/2" = 1'-0"

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LEGEND OF MECHANICAL SYMBOLS AND ABBREVIATIONS

DUCTWORK/GRILLES

- POSITIVE PRESSURE DUCT - RISE
- POSITIVE PRESSURE DUCT - DROP
- NEGATIVE PRESSURE DUCT - RISE
- NEGATIVE PRESSURE DUCT - DROP
- ROUND DUCT - RISE
- ROUND DUCT - DROP
- UNDER FLOOR DUCT
- TURNING VANES
- 12X12 200 — CEILING SUPPLY DIFFUSER
- 22X22 200 — CEILING RETURN REGISTER
- 12X12 200 — CEILING EXHAUST REGISTER. (BALANCE TO MATCH SUPPLY IF RETURN CFM IS NOT SHOWN)
- 24X10 200 — SIDEWALL SUPPLY REGISTER
- 24X10 200 — SIDEWALL EXHAUST OR RETURN REGISTER
- 12X12 200 — CEILING SUPPLY DIFFUSER WITH FLEXIBLE DUCT
- 12X12 200 — CEILING AIR GRILLE WITH FLEXIBLE DUCT

  TOP FIGURES INDICATE NECK SIZE. BOTTOM FIGURE INDICATES CFM.

- CEILING RETURN AIR GRILE W/ SOUND BOOT
- FLEXIBLE DUCT CONNECTION
- FLEXIBLE DUCT
- 12/8 FO — FLAT OVAL DUCT WITH NET INSIDE DIMENSIONS SHOWN IN INCHES.
- 12/8 — RECTANGULAR DUCT WITH NET INSIDE DIMENSIONS SHOWN IN INCHES.
- 12ø — ROUND DUCT WITH NET INSIDE DIMENSIONS SHOWN IN INCHES.
- UP — INCLINED RISE
- DN — INCLINED DROP

  WITH RESPECT TO AIR FLOW 15° NOMINAL INCLINE WITH RADIUS TURNS=DEPTH OF DUCT.

- W, R — R/W=1. ROUND DUCT SIMILAR TO RECTANGULAR
- 12/12, 8/8 — RECTANGULAR TO RECTANGULAR OR ROUND TO ROUND DUCT TRANSFORMATION MAXIMUM 15° INCLUDED ANGLE EXCEPT WHERE SHOWN OTHERWISE.
- 12/12, 12ø — RECTANGULAR TO ROUND DUCT TRANSFORMATION
- R, 6 — BRANCH DUCT SPLIT WITH 6" WIDTH AND MIN. R=WIDTH OF BRANCH DUCT DOWNSTREAM. ELBOW TURNING VANE OPTIONAL
- 1.5D, 1.25D, 45°, D, D — TAP ENTRY AREA EQUALS 150% OF BRANCH AREA
- 12ø, 12/12 — HIGH EFFICIENCY FITTING
- MANUAL VOLUME DAMPER
- FD — FIRE DAMPER IN DUCT, W/ ACCESS PANEL REQD.
- FSD — COMBINATION FIRE/SMOKE DAMPER W/ ACCESS PANEL
- SD — SMOKE DAMPER W/ ACCESS PANEL
- BDD — BACK DRAFT DAMPER
- ATC, OR — ATC DAMPER
- AD — ACCESS PANEL IN DUCT OR PLENUM
- HEATING OR COOLING COIL IN DUCT
- SINGLE DUCT AIR TERMINAL BOX VARIABLE OR CONSTANT VOLUME. MIN. 1-1/2 TERMINAL INLET SIZE STRAIGHT DUCT AT TERMINAL INLET.
- 4-WAY BLOW PATTERN
- 3-WAY BLOW PATTERN
- 2-WAY BLOW PATTERN
- 2-WAY BLOW PATTERN
- 1-WAY BLOW PATTERN

PLUMBING

- ARROW INDICATES DIRECTION OF FLOW IN PIPE
- ATC - 2 WAY VALVE
- BRANCH - BOTTOM CONNECTION
- BRANCH - TOP CONNECTION
- BRANCH - SIDE CONNECTION
- C — RISE OR DROP
- C — RISER - DOWN (ELBOW)
- RISER - UP (ELBOW)
- VTR — VENT THRU ROOF
- WATER HAMMER ARRESTOR
- CLEAN-OUT
- OR — BALL VALVE (PIPE SIZES 2" AND SMALLER) BUTTERFLY VALVE (PIPE SIZES 2-1/2" AND LARGER)
- VALVE IN RISE
- HOSE BIBB
- PIPE CAP
- (NAME) — FIXTURE FROM LEVEL ABOVE
- F&T — STEAM TRAP, F&T=FLOAT & THERMOSTATIC B=BUCKET, T=THERMOSTATIC
- OR — 90° ELBOW
- 45° ELBOW
- DEMOLITION
- THERMOSTATIC MIXING VALVE

SYMBOLS

- P-1 — PLUMBING FIXTURES
- POINT OF CONNECTION
- EF 1 — EQUIPMENT IDENTIFICATION
- 1 — KEYED NOTE IDENTIFICATION
- T — THERMOSTAT

FIRE

- SPRINKLER HEAD

LINETYPES

- DOMESTIC COLD WATER (DCW)
- DOMESTIC HOT WATER (DHW)
- DOMESTIC HOT WATER RETURN (DHWR)
- SEWER (BELOW GRADE)
- SEWER (ABOVE GRADE)
- VENT (SEWER)
- E (NAME) — EXISTING PIPING
- (NAME) — EXISTING PIPING TO BE REMOVED
- GCHWR — GLYCOL CHILLED WATER RETURN
- GCHWS — GLYCOL CHILLED WATER SUPPLY
- HPC — HIGH PRESSURE CONDENSATE
- HPS — HIGH PRESSURE STEAM
- HWR — HEATING HOT WATER RETURN
- HWS — HEATING HOT WATER SUPPLY
- O2 — MEDICAL OXYGEN
- MA — MEDICAL AIR
- MV — MEDICAL VACUUM

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REGISTERED PROFESSIONAL ENGINEER — No. 354088 — JAMES E. NIGHTINGALE — 9-24-2021 — STATE OF UTAH

Mountain View Hospital MRI Replacement

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REVISION

NO.	DESCRIPTION	DATE

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MECHANICAL SYMBOLS AND LEGEND

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GENERAL NOTES

1. ALL WORK SHALL BE DONE WITH WATER CONTROL IN MIND. CONTAINMENT OF WATER IS NECESSARY TO PREVENT WATER FROM DAMAGING OTHER AREAS OF THE BUILDING.

2. NEW DUCTWORK, PIPING AND EQUIPMENT SHALL BE COORDINATED WITH STRUCTURE, LIGHTS, REFLECTED CEILING PLANS, CABLE TRAY, ELECTRICAL CONDUIT, PLUMBING, MECHANICAL AND FIRE PROTECTION PIPING, ALL OTHER TRADES AND ALL OTHER EXISTING CONDITIONS.

3. THE CONTRACTOR SHALL INFORM THE DESIGNER OF ANY PROPOSED DEVIATIONS FROM THE CONTRACT DOCUMENTS.

4. NOT ALL INFORMATION IS SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING INFORMATION ON ALL OTHER CONSTRUCTION DOCUMENTS INCLUDING ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS. THE CONTRACTOR WILL BE FAMILIAR WITH THE DRAWINGS, SPECIFICATIONS, AND ADDENDUMS.

5. THE WORKING DRAWINGS ARE DIAGRAMMATIC (DRAWINGS ARE NOT TO BE SCALED). BECAUSE OF THE SMALL SCALE OF THE DRAWINGS, THEY DO NOT SHOW EVERY OFFSET, BEND OR ELBOW NECESSARY FOR THE COMPLETE INSTALLATION IN THE SPACE PROVIDED. ALL LOCATIONS FOR EQUIPMENT SHALL BE CHECKED AND COORDINATED WITH THE ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS.

6. SPACE ABOVE ALL CEILINGS IS EXTREMELY LIMITED. CAREFUL COORDINATION IS REQUIRED WITH ALL TRADES BEFORE ANY PIPE, DUCT, OR EQUIPMENT IS ORDERED AND/OR INSTALLED. ANY CONFLICTS AND/OR CHANGES FOUND DURING INSTALLATION THAT RESULT FROM LACK OF COORDINATION BY THE CONTRACTORS DURING THE SHOP DRAWING PROCESS ARE THE RESPONSIBILITY OF THE CONTRACTOR

7. THE DRAWINGS AND SPECIFICATION HAVE BEEN PREPARED TO SUPPLEMENT EACH OTHER AND THEY SHALL BE INTERPRETED AS AN INTEGRAL UNIT WITH THE ITEMS SHOWN ON ONE AND NOT THE OTHER BEING FURNISHED AND INSTALLED AS THOUGH SHOWN AND CALLED OUT IN BOTH.

8. ANY PART OF THIS INSTALLATION THAT FAILS, IS UNFIT, OR BECOMES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

9. THE CONTRACTOR IS RESPONSIBLE FOR ALL EQUIPMENT (INCLUDED IN THIS BID) CHECK-IN, SAFEKEEEPING, AND DAMAGE.

10. IF FOR ANY REASON THE ROUTING OF PIPE OR DUCTWORK DEVIATED FROM THAT SHOWN ON THE DRAWING THE BLDG AND MECHANICAL CONTRACTOR AND OR TIER SUBS SHALL BE RESPONSIBLE FOR ANY ADDITIONAL COST RELATED TO EXTRA HANGERS OR SEISMIC SUPPORTS.

MEDICAL GAS GENERAL NOTES

1. MEDICAL GAS PIPING IS TO BE RUN ABOVE THE CEILING, UNLESS NOTED OTHERWISE. COORDINATE PIPING ROUTING WITH ALL OTHER POSSIBLE CONFLICTS SUCH AS DUCTWORK, DIFFUSERS, OTHER PIPING, LIGHTS, CONDUIT, STRUCTURE, ETC.

2. ALL PIPE AND DUCT SIZES SHALL REMAIN THE SAME SIZE SHOWN, IN THE DIRECTION OF FLOW, UNTIL SHOWN OTHERWISE.

3. SLEEVE PIPING THRU WALLS/FOUNDATIONS WHERE REQUIRED.

4. MEDICAL GAS PIPING IS SCHEMATIC IN NATURE. FIELD VERIFY EXACT PIPE ROUTING AND COORDINATE WITH ALL OTHER TRADES.

5. NO PIPING TO RUN OVER ELECTRICAL PANELS, VFD'S OR MCC'S. PROTECT EQUIPMENT WITH A 42" DEEP ZONE IN FRONT OF PANELS, VFD'S, AND MCC'S.

6. MOUNT ALL SERVICE VALVES NEAR CEILING HEIGHT FOR ACCESSIBILITY.

FIRE PROTECTION GENERAL NOTES

1. DRAWING SHOULD NOT BE CONSIDERED AS A SHOP DRAWING. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS AND COORDINATE ALL PIPING WITH STRUCTURAL, MECHANICAL AND ELECTRICAL. SUBMIT SHOP DRAWINGS FOR FINAL REVIEW.

2. OFFSETS ARE TO BE ANTICIPATED IN BRANCH LINES AND ARE TO BE COORDINATED BY THE CONTRACTOR WITH EXISTING CONDITIONS AND OTHER TRADES. MAKE ADDITIONAL OFFSETS AS REQUIRED.

3. HANGERS AND BRACING ARE NOT SHOWN ON THIS DRAWING. REFER TO THE SPECIFICATION REQUIREMENTS AND INSTALL ACCORDINGLY.

4. ALL HEADS ARE TO BE STANDARD RESPONSE SPRINKLERS.

5. CONTRACTOR IS TO DEVELOP SHOP DRAWINGS CONFORMING TO NFPA 16. ADDITIONAL HEADS AND/OR PIPING REQUIRED TO MEET SAID STANDARDS IS THE RESPONSIBILITY OF THE CONTRACTOR. LOCATION OF ADDITIONAL HEADS ARE TO BE COORDINATED WITH ARCHITECT AND ENGINEER AND SUBMITTED FOR THEIR REVIEW. PIPE SIZES SHOWN ON DRAWING ARE FOR ILLUSTRATION PURPOSES ONLY FOR GENERAL COORDINATION.

6. NO FIRE PROTECTION LINE SHALL BE DESIGNED OR INSTALLED PRIOR TO CLOSE COORDINATION WITH ALL OTHER DISCIPLINES. DUCTWORK, MECHANICAL PIPING AND PLUMBING TAKE SPACE PRECEDENCE OVER FIRE PROTECTION PIPING. FAILURE TO COMPLY WILL RESULT IN THE FIRE PROTECTION REMOVAL AND REINSTALLATION AT THE FIRE PROTECTION CONTRACTORS EXPENSE.

7. FIRE SPRINKLER CONTRACTOR TO PROVIDE DESIGN FOR OCCUPANCIES SHOWN ON THE PLAN PER NFPA 16.

8. ALL WORK DONE SHALL BE PERFORMED WITH WATER CONTROL IN MIND. CONTAINMENT OF WATER IS NECESSARY TO PREVENT WATER FROM DAMAGING SURROUNDING AREA.

9. COORDINATE EXACT LOCATION OF PIPING WITH STRUCTURAL MEMBERS, LIGHTS, REFLECTED CEILING PLANS, CABLE TRAY, ELECTRICAL CONDUITS, DUCTWORK, MECHANICAL AND PLUMBING PIPING, AND ALL OTHER TRADES AND ALL EXISTING CONDITIONS.

10. FIRE SPRINKLERS TO BE INSTALLED TO MEET NFPA-13-2016 EDITION REQUIREMENTS.

11. IF MECHANICAL TEES ARE USED, THEY ARE TO BE VICTAULIC 920 OR 920N SERIES OR ENGINEER APPROVED EQUAL.

12. MATERIAL AND SHOP DRAWINGS OF THE REMODELED AREA ARE TO BE SUBMITTED FOR REVIEW BY THE ENGINEER.

13. ALL NEW STEEL SPRINKLER PIPE SHALL BE SCHEDULE 40, UNLESS OTHERWISE NOTED.

14. A WARRANTY, FOR PRODUCT AND SYSTEM OPERATION SHALL BE PROVIDED FOR ONE YEAR, UPON SYSTEM ACTIVATION AND ACCEPTANCE.

PLUMBING GENERAL NOTES

1. UNLESS OTHERWISE NOTED, SLOPE PIPE AS FOLLOWS: WASTE BRANCHES: 1/4" PER FOOT; WASTE MAINS: 1/4" PER FOOT.

2. ALL WORK DONE SHALL BE PERFORMED WITH WATER CONTROL IN MIND. CONTAINMENT OF WATER IS NECESSARY TO PREVENT WATER FROM DAMAGING AREAS ON FLOORS BELOW.

3. PLUMBING DRAWINGS ARE SCHEMATIC IN NATURE. FIELD VERIFY EXACT PIPE ROUTING AND COORDINATE WITH ALL OTHER TRADES.

4. NO PIPING TO RUN OVER ELECTRICAL PANELS, VFD'S OR MCC'S. PROTECT EQUIPMENT WITH A 42" DEEP ZONE IN FRONT OF PANELS, VFD'S, AND MCC'S.

5. CONTRACTOR TO PROVIDE VALVE IDENTIFICATION AND LOCATION ON ALL CEILING TILES WHERE VALVES ARE LOCATED.

6. PIPING AND ROUTING SHOWN, INCLUDING ALL BELOW FLOOR DECK PIPING, IS APPROXIMATE. IT IS UP TO THE CONTRACTOR TO FIELD VERIFY THE EXACT LOCATION AND SIZE OF ALL PIPING.

7. INSTALL ALL DOMESTIC WATER LINES BELOW DUCTWORK.

8. INSTALL A 24" X 24" ACCESS DOOR BELOW ALL ISOLATION VALVES, BALANCING VALVES AND WATER HAMMER ARRESTORS WHERE MOUNTED ABOVE HARD CEILINGS.

9. MOUNT ALL ISOLATION VALVES, CONTROL VALVES, BALANCING VALVES, ETC. NEAR CEILING HEIGHT FOR ACCESSIBILITY.

10. INSTALL ALL EQUIPMENT WITH SUFFICIENT CLEARANCE FOR MAINTENANCE PER MANUFACTURERS RECOMMENDATION.

11. COORDINATE EXACT LOCATION OF PLUMBING WITH STRUCTURAL MEMBERS, LIGHTS, REFLECTED CEILING, CABLE TRAY, DUCTWORK, MECHANICAL PIPING, FIRE PROTECTION AND OTHER TRADES, TYPICAL.

12. SEE PLUMBING FIXTURE SCHEDULE FOR PIPE SIZES OF WASTE, VENT AND DOMESTIC WATER TO/FROM SINGLE FIXTURE.

13. COORDINATE EXACT LOCATION OF PLUMBING PIPING WITH STRUCTURAL MEMBERS, LIGHTS, REFLECTED CEILING PLANS, CABLE TRAY, ELECTRICAL CONDUITS, DUCTWORK, MECHANICAL AND FIRE PROTECTION PIPING, AND ALL OTHER TRADES AND ALL EXISTING CONDITIONS.

14. ALL PIPE AND DUCT SIZES SHALL REMAIN THE SAME SIZE SHOWN, IN THE DIRECTION OF FLOW, UNTIL SHOWN OTHERWISE.

15. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PERTAINING TO THE PLUMBING SYSTEMS AND COORDINATE ALL DEMOLITION WORK WITH THE OWNER PRIOR TO ANY SYSTEM SHUT-DOWN.

16. EXISTING SYSTEMS TO REMAIN SHOWN LIGHT.

17. PATCH AND REPAIR ALL EXISTING FLOORS DAMAGED BY DEMOLITION TO MATCH EXISTING, OR SUBCONTRACTOR TO COORDINATE REPAIRS WITH GENERAL CONTRACTOR.

MECHANICAL PIPING GENERAL NOTES

1. PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE PIPING SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS REQUIRED BY CODE.

2. UNLESS OTHERWISE NOTED: ALL MECHANICAL PIPING IS OVERHEAD TO RUN ABOVE DUCTWORK AND TIGHT TO UNDERSIDE OF STRUCTURE.

3. WHERE VALVING OR EQUIPMENT IS LOCATED ABOVE HARD CEILINGS PROVIDE AN ACCESS DOOR IN CEILING. MINIMUM ACCESS DOOR SIZE OF 24"X24".

4. NO PIPING TO RUN OVER ELECTRICAL PANELS, VFD'S OR MCC'S. PROTECT EQUIPMENT WITH A 42" DEEP ZONE IN FRONT OF PANELS, VFD'S, AND MCC'S.

5. SLEEVE PIPING THRU WALLS/FOUNDATIONS WHERE REQUIRED.

6. INSTALL PIPING SO THAT ALL VALVES, STRAINERS, UNIONS, TRAPS, FLANGES, AND OTHER APPURTENANCES REQUIRING ACCESS ARE ACCESSIBLE.

7. ALL VALVES SHALL BE INSTALLED SO THAT VALVE REMAINS IN SERVICE WHEN EQUIPMENT OR PIPING ON EQUIPMENT SIDE OF VALVE IS REMOVED.

8. PROVIDE AN AIR VENT AT THE HIGH POINT OF EACH DROP IN THE HEATING AND CHILLED WATER PIPING SYSTEM.

9. INSTALL ALL PIPING WITHOUT FORCING OR SPRINGING.

10. ALL VALVES SHALL BE ADJUSTED FOR SMOOTH AND EASY OPERATION.

11. PROVIDE ISOLATION VALVES AT EACH EXIT/ENTRANCE INTO SHAFT WHETHER OR NOT SHOWN.

12. ALL PIPE AND DUCT SIZES SHALL REMAIN THE SAME SIZE SHOWN, IN THE DIRECTION OF FLOW, UNTIL SHOWN OTHERWISE.

13. MOUNT THERMOSTAT AT HEIGHT OF 42".

14. CONTRACTOR TO PROVIDE VALVE IDENTIFICATION AND LOCATION ON ALL CEILING TILES WHERE VALVES ARE LOCATED.

MECHANICAL GENERAL NOTES

1. PROVIDE BALANCING DAMPER AT ALL BRANCH DUCTS SERVING SINGLE DIFFUSER, REGISTER OR GRILLE, TYPICAL.

2. COORDINATE EXACT PLACEMENT OF DIFFUSERS, GRILLES AND REGISTERS WITH ARCHITECTURAL REFLECTED CEILING PLAN, TYPICAL.

3. SEE DETAIL FOR DIFFUSER CONNECTIONS TO DUCTWORK, TYPICAL.

4. BRANCH DUCTWORK SHALL BE SIZED TO MATCH THE NECK SIZE OF THE DIFFUSERS, REGISTER OR GRILLE IT SERVES UNLESS NOTED OTHERWISE, TYPICAL.

5. COORDINATE EXACT LOCATION OF DUCTWORK WITH STRUCTURAL MEMBERS, LIGHTS, REFLECTED CEILING, CABLE TRAY, PLUMBING, MECHANICAL PIPING, FIRE PROTECTION AND OTHER TRADES, TYPICAL.

6. CONTRACTOR TO CAULK ALL PENETRATIONS IN FIRE WALLS AND SMOKE WALLS TO MAINTAIN RATING. SEE SPECIFICATION, TYPICAL.

7. INSTALL TURNING VANES IN ALL SQUARE LOW PRESSURE DUCTWORK AT ELBOWS OR TEES, TYPICAL.

8. FIELD VERIFY THE FIT OF ALL DUCTWORK BEFORE FABRICATION, TYPICAL.

9. CONTRACTOR SHALL OFF-SET DUCTWORK AS REQUIRED WHERE STRUCTURE, LIGHTING OR PIPING CONFLICTS EXIST, TYPICAL.

10. DUCTWORK SIZES ARE FREE AREA SIZES, TYPICAL.

11. IN HARD CEILING AREAS, INSTALL REMOTE DAMPER OPERATOR IN CEILING, SEE SPECIFICATION, TYPICAL.

12. VERIFY ALL DUCT ROUTING WITH MECHANICAL PLAN AND SPACE LIMITATIONS PRIOR TO INSTALLING DUCTS. INFORM MECHANICAL DESIGNER OF ALL NECESSARY DEVIATIONS TO DESIGN, TYPICAL.

13. FOR ALL FIRE RATED WALLS WHERE THERE ARE DUCT PENETRATIONS THE CONTRACTOR SHALL FILL ANNULAR SPACE AROUND THE DUCTWORK WITH NON COMBUSTIBLE MATERIAL PER LISTED THROUGH PENETRATION FIRE STOP ASSEMBLY.

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REVISION

NO.	DESCRIPTION	DATE

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MECHANICAL GENERAL NOTES

SHEET NO.
M0.01

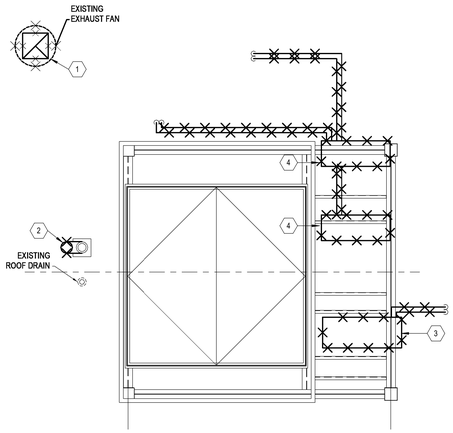
PLOT DATE: 9/21/2021 4:22:54 PM TEMPLATE VERSION: 3.0 0.20170623

DEMO KEYED NOTES

1. EXISTING MRI MAGNET ROOM EXHAUST FAN TO BE REPLACED WITH NEW DIRECT DRIVE FAN.
2. DISCHARGE DUCTWORK OF CRYOGEN VENT TO BE MODIFIED TO MATCH G.E. DISCHARGE DETAIL.
3. EXISTING MRI PROCESS CHILLER TO BE DEMOLISHED, INCLUDING PIPING, HANGERS, AND ALL OTHER ACCESSORIES. COORDINATE WITH MEDICAL EQUIPMENT CONTRACTOR SO NO GAPS ON EQUIPMENT REMOVAL OCCURS.
4. EXISTING CONDENSING UNITS AND REFRIGERANT LINE SETS TO BE DEMOLISHED AND REPLACED WITH NEW.
5. ALL EXISTING SUPPLY DIFFUSERS, RETURN GRILLES, AND EXHAUST GRILLES TO BE REMOVED AND REPLACED WITH NEW. EXISTING DUCTWORK BOTH ABOVE AND BELOW SHIELDING TO BE REMOVED TO MAKE WAY FOR MAGNET TO BE REMOVED THROUGH ROOF HATCH.
6. EXISTING SUPPLY DUCTWORK HAS FLANGED CONNECTIONS TO ALLOW FOR MAGNET REMOVAL.
7. PRE-READ SUPPLY AIR VOLUMES FOR EXISTING VAV TERMINAL BOX AND ANY SUPPLY DIFFUSERS DOW STREAM OF MRI MAGNET ROOM.
8. EXISTING RETURN DUCTWORK / EXHAUST DUCTWORK HAS (2) CONTROL DAMPERS THAT OPEN OR CLOSE AS EXHAUST FAN IS SWITCHED ON. THIS SYSTEM IS TO BE REMOVED AND REPLACED WITH DEDICATED RETURN AND DEDICATED EXHAUST PER G.E. REQUIREMENTS.
9. EXISTING EXHAUST DUCTWORK HAS FLANGED CONNECTIONS TO ALLOW FOR MAGNET REMOVAL.

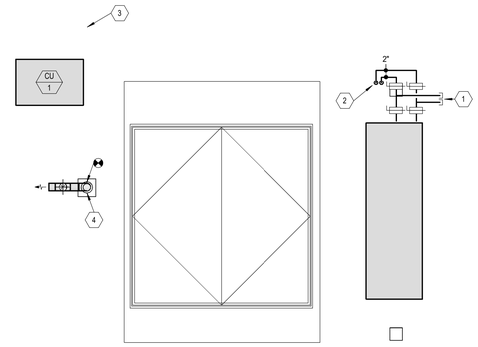
KEYED NOTES

1. PROVIDE AUXILLIARY PIPING CONNECTIONS ON ROOF AT CHILLER WITH BLIND FLANGES AND ISOLATION VALVES.
2. 2" COPPER CHILLER WATER PIPINGTO PENETRATE ROOF OVER EQUIPMENT ROOM. NOT MAGNET ROOM AND CONNECT TO HEAT EXCHANGER CABINET BELOW.
3. NEW DIRECT DRIVE EXHAUST FAN. NO BELTS TO BREAK/FAIL DURING TIMES OF NO USE. PROVIDE NEW STARTER/ DISCONNECT FOR USER WALL SWITCH CONTROL. CURB AND ROOF FLASHING TO REMAIN.
4. MODIFIED CRYOGEN DISCHARGE TO G.E. REQUIREMENTS.
5. NEW CEILING HUNG INDOOR COOLING UNIT TO BE INSTALLED IN MRI EQUIPMENT ROOM, INCLUDING THERMOSTATS. CONNECT UNITS TO BMS FOR MONITORING STATUS AND ALARM.
6. PROVIDE ALL NEW SUPPLY DIFFUSERS, RETURN GRILLES, AND EXHAUST GRILLES. SEE SPECS FOR MATERIALS REQUIRED FOR MAGNET ROOM. NEW ALUMINUM DUCTWORK WILL BE REQUIRED FOR SUPPLY, RETURN, AND EXHAUST THAT IS ABOVE THE CEILING BUT UNDER RF SHIELDING. SEE G.E. DRAWINGS FOR PENETRATION DETAILS OF SHIELDING.
7. COORDINATE DUCT PENETRATIONS THROUGH SHIELDING FOR QUANTITY AND LOCATION.
8. EXTEND/MODIFY EXISTING EXHAUST DUCTWORK FOR MAGNET ROOM PURGE FAN, 1200 CFM, ON ROOF.
9. INTERLOCK FAN SWITCH IN MRI AND CONTROL ROOM WITH MAGNET ROOM PURGE EXHAUST FAN AND ATC DAMPER IN MAGNET RETURN DUCT. ATC DAMPER TO CLOSE WHEN EXHAUST FAN IS ENERGIZED. SEE G.E. DETAIL AS REFERENCE.
10. CONTRACTOR TO ORDER FILTER BOX WITH COMPUTER ROOM UNIT.
11. REPLACE ALL DUCTWORK, FIRE SPRINKLER HEADS, AND CEILING COMPONENTS AFTER NEW MAGNET IS INSTALLED.
12. INSTALL NEW CRAC-1 AS HIGH AS POSSIBLE IN MRI EQUIPMENT ROOM.
13. CONTRACTOR TO INSTALL 24"X24" PERFORATED GRILLE AT CEILING LEVEL FOR PRESSURE EQUALIZATION VENTING. CONTRACTOR TO INSTALL SECOND PRESSURE EQUALIZATION GRILLE/WAVE GUIDE IN SHIELDING.
14. 24"X24" DAMPER TO BE INTERLOCKED WITH MAGNET ROOM PURGE EXHAUST FAN SWITCH. THIS WILL ALLOW A PATHWAY FOR PRESSURE EQUALIZATION VENTING FROM MAGNET ROOM TO THE PLENUM ABOVE THE SHIELDING AND THROUGH THE DAMPER TO BE DISPERSED AS REQUIRED BY DEPARTMENT OF HEALTH. CONTROLS CONTRACTOR IS TO INTERLOCK BOTH "RELIEF DAMPER" WITH MAGNET ROOM EXHAUST FAN FUNCTION. NORMALLY CLOSED DAMPERS ARE TO BE POWERED OPEN WHEN OXYGEN MONITOR ALARMS OR MANUAL FAN SWITCH IS ON POSITION.
15. CONTRACTOR TO REPLACE REMOVABLE SECTION OF SUPPLY DUCT AFTER NEW MAGNET IS INSTALLED.
16. RE-BALANCE NEW VAV TERMINAL BOX TO INCLUDE EXISTING SUPPLY DUCT OUT OF THE SCOPE OF WORK. SEE RESULTS FROM PRE-READ.
17. CONTRACTOR TO REPLACE REMOVABLE SECTION OF EXHAUST DUCT AFTER NEW MAGNET IS INSTALLED.



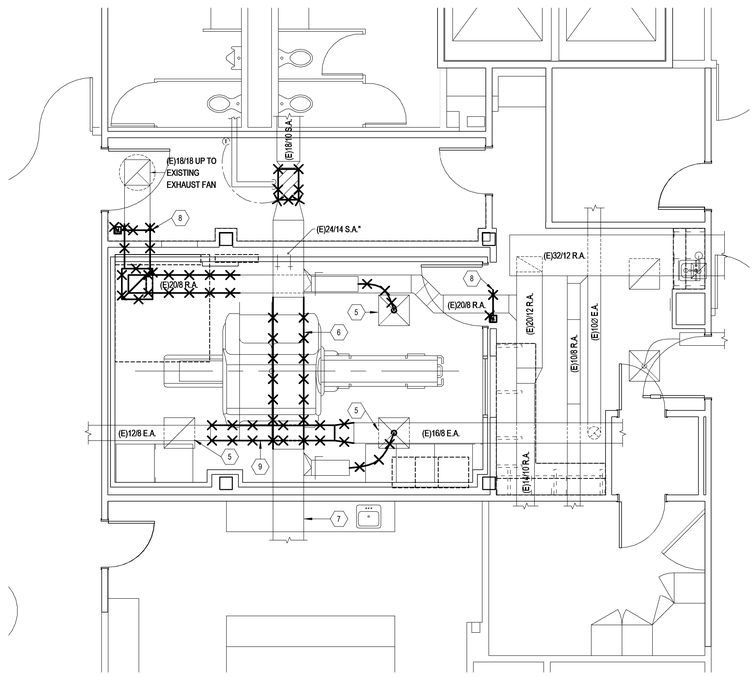
1 ROOF LEVEL MECHANICAL DEMOLITION PLAN
1/4" = 1'-0"

PLAN NORTH



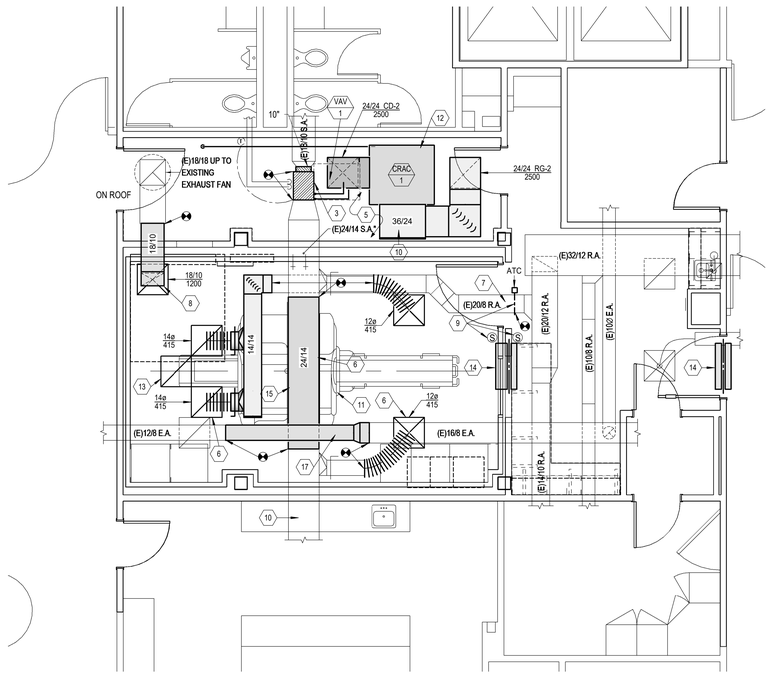
2 ROOF LEVEL MECHANICAL PLAN
1/4" = 1'-0"

PLAN NORTH



3 LEVEL 1 MECHANICAL DEMOLITION PLAN
1/4" = 1'-0"

PLAN NORTH



4 LEVEL 1 MECHANICAL REMODEL PLAN
1/4" = 1'-0"

PLAN NORTH

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REVISION
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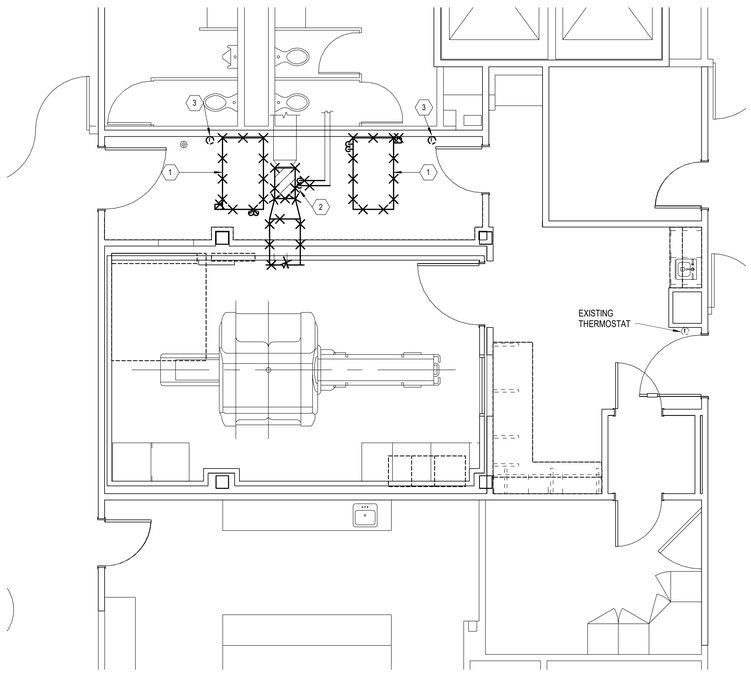
DEMO KEYED NOTES

1. EXISTING CEILING HUNG INDOOR COOLING UNITS TO BE DEMOLISHED, INCLUDING REFRIGERANT LINE SETS AND REPLACED WITH NEW.
2. EXISTING VAV TERMINAL BOX TO BE DEMOLISHED, CAP SUPPLIES TO EXTEND UNDER NEW CONSTRUCTION PHASE.
3. DEMOLISH THERMOSTATS FOR EXISTING INDOOR COOLING UNITS. REPLACE WITH NEW.

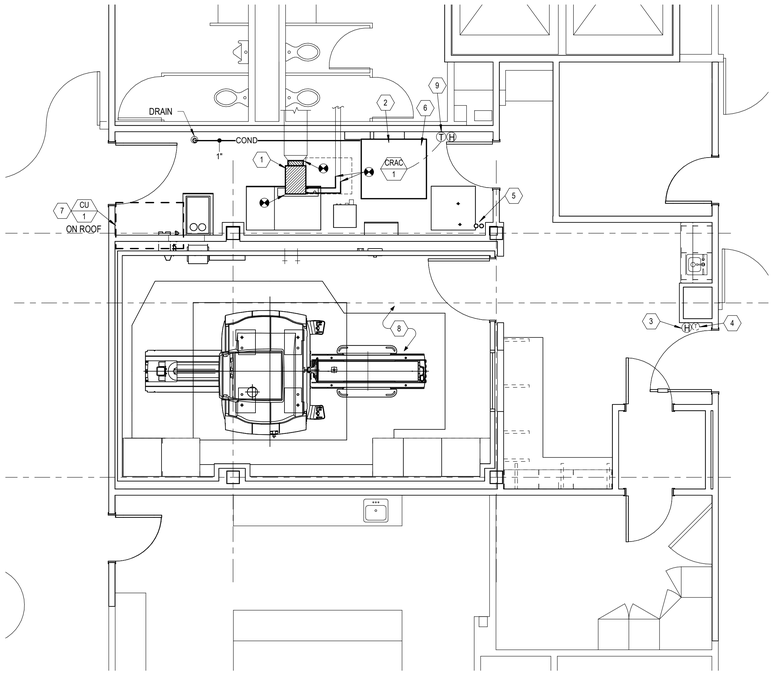


1 LEVEL 1 MECHANICAL PIPING DEMOLITION PLAN
1/4" = 1'-0"

PLAN NORTH

KEYED NOTES

1. EXTEND NEW HEATING PIPING FROM EXISTING SOURCE. PROVIDE NEW CONTROL VALVE AND ALL OTHER ACCESSORIES. REFER TO DETAIL. PROVIDE NEW DDCVAV. UPGRADE FROM PNEUMATIC CONTROLS.
2. INSTALL NEW REFRIGERANT PIPING FROM NEW INDOOR COOLING UNITS TO NEW ROOFTOP CONDENSING UNIT. ALSO CONNECT CONDENSATE DRAINS. FULLY INSULATE 1" CONDENSATE FROM SOURCE TO 25'. PROVIDE 3" INDIRECT GAP AT EXISTING FUNNEL AND DRAIN.
3. LOCATION FOR NEW HUMIDITY DISPLAY THAT SERVES MRI ROOM. MOUNTING HEIGHT FOR HUMIDITY DISPLAY TO BE 42".
4. LOCATION FOR EXISTING THERMOSTAT. SEE ARCHITECTURAL DRAWINGS FOR HEIGHT. MOUNTING HEIGHT FOR THERMOSTAT TO BE 42".
5. CONNECT 2" COPPER GLYCOL CHILLED WATER SUPPLY AND RETURN PIPING TO MRI HEAT EXCHANGER CABINET IN ACCORDANCE WITH MRI MANUFACTURER'S REQUIREMENTS. PROVIDE ISOLATION VALVES FOR SHUT-OFF BOTH IN THE EQUIPMENT ROOM AT THE ROOF TOP CHILLER. VENDOR PROVIDING EQUIPMENT ONLY. INSTALLING CONTRACTOR PROVIDES COMPLETE PIPING SYSTEM.
6. CONTRACTOR TO PROVIDE SECONDARY PAN AND WATER BUG FOR COMPUTER ROOM UNIT. CONNECT TO BMS AND ALARM IF WATER IS DETECTED.
7. CONTRACTOR TO PIPE REFRIGERANT PIPING TO CONDENSING UNIT ON ROOF. USE MANUFACTURER'S RECOMMENDATIONS FOR PIPING SIZE.
8. NEW THERMOSTATIC SENSOR FOR MRI ROOM IS CONTAINED IN THE RETURN DUCTWORK ON THE EXTERIOR OF THE MRI SHIELDING 68 DEGREE TEMPERATURE ADJUSTABLE. CONNECT TO EXISTING JCI BUILDING MANAGEMENT SYSTEM.
9. PROVIDE NEW THERMOSTAT FOR CRAC-1. CONNECT CRAC-1 UNIT TO BMS SYSTEM FOR STATUS AND ALARM. MOUNTING HEIGHT TO BE 42" A.F.F.
10. PROVIDE NEW HUMIDITY DISPLAY THAT SERVES MRI EQUIPMENT ROOM. MOUNTING HEIGHT TO BE 42" A.F.F.



2 LEVEL 1 MECHANICAL PIPING REMODEL PLAN
1/4" = 1'-0"

PLAN NORTH

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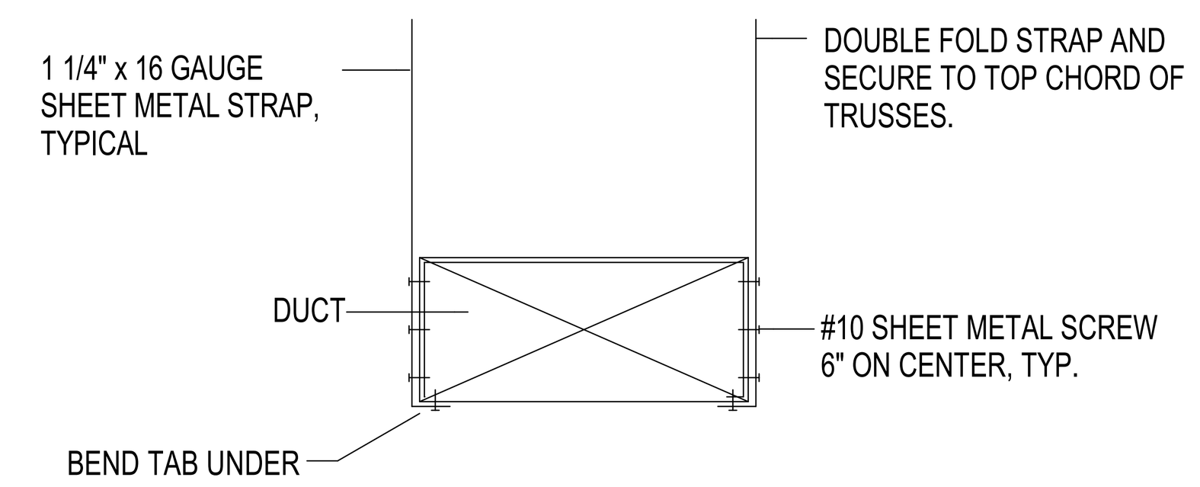
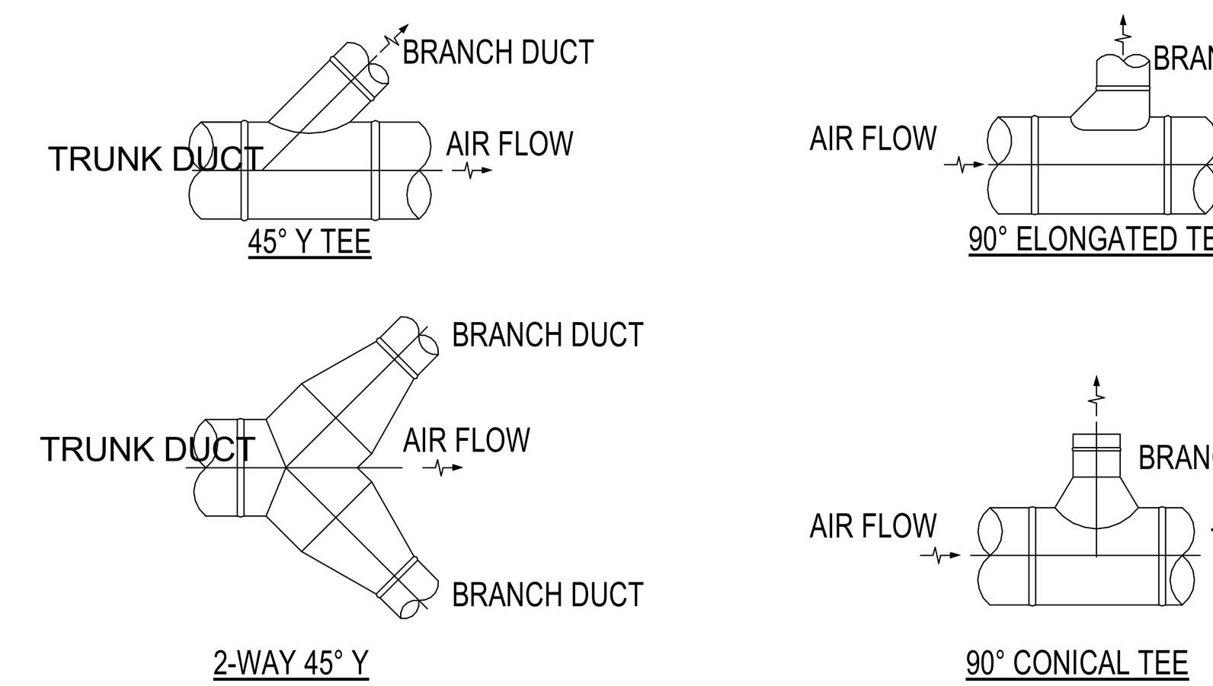
9 RECTANGULAR DUCT SUPPORT



NOTE:
USE SPECIFIED SPACING AND NOT LESS THAN ONE SUPPORT PER BRANCH.

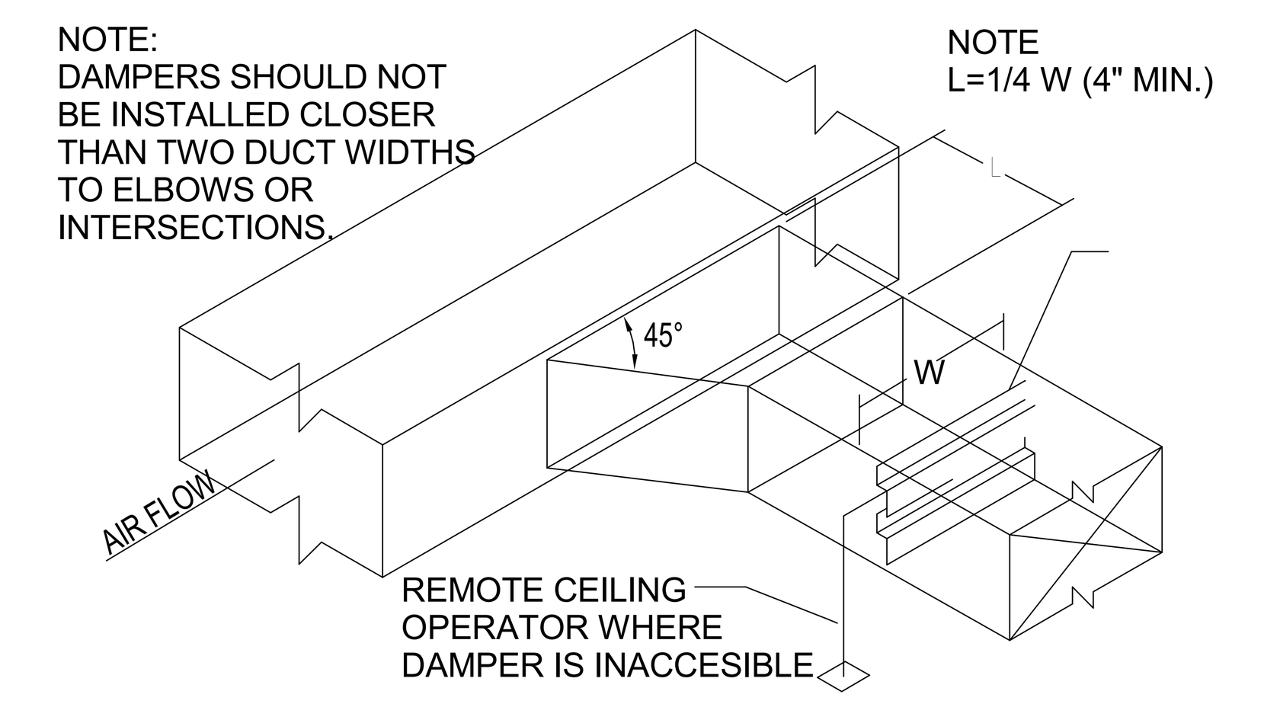
9 / M5.01 RECTANGULAR DUCT SUPPORT
NO SCALE

5 ROUND DUCT BRANCH TAKE-OFF DETAILS



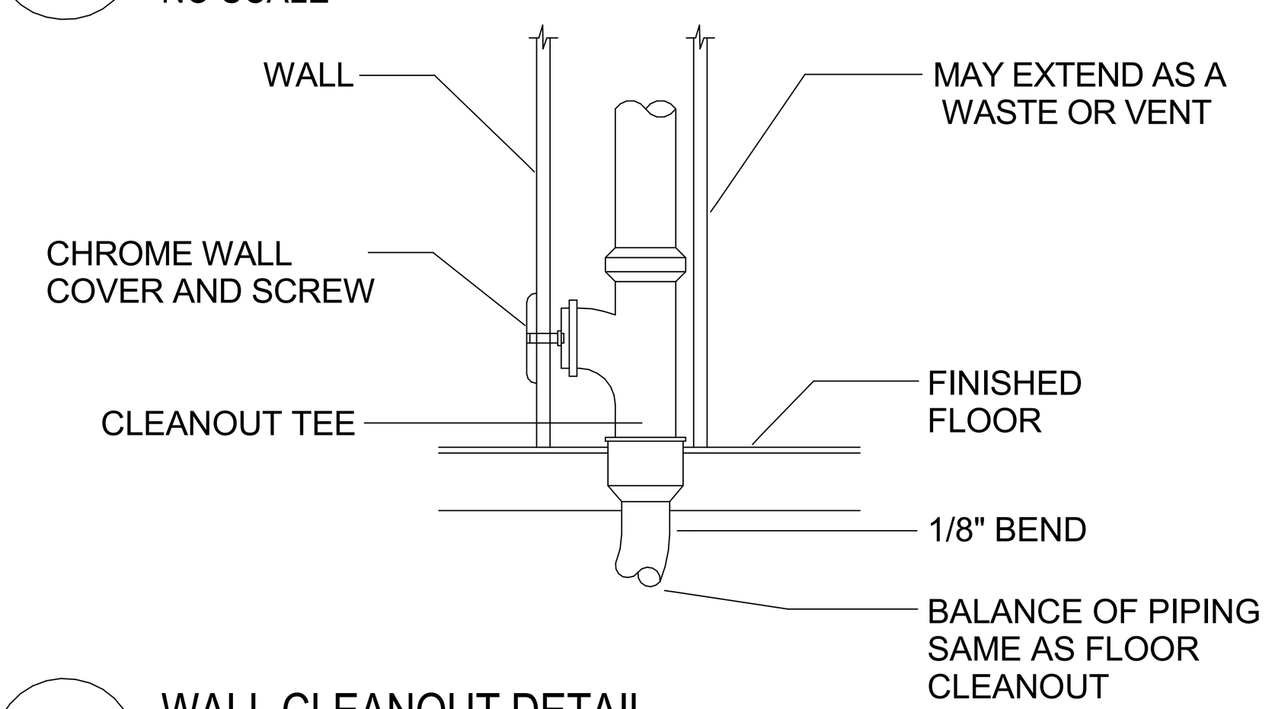
5 / M5.01 ROUND DUCT BRANCH TAKE-OFF DETAILS
NO SCALE

1 BRANCH DUCT TAKE-OFF & DAMPER DETAIL



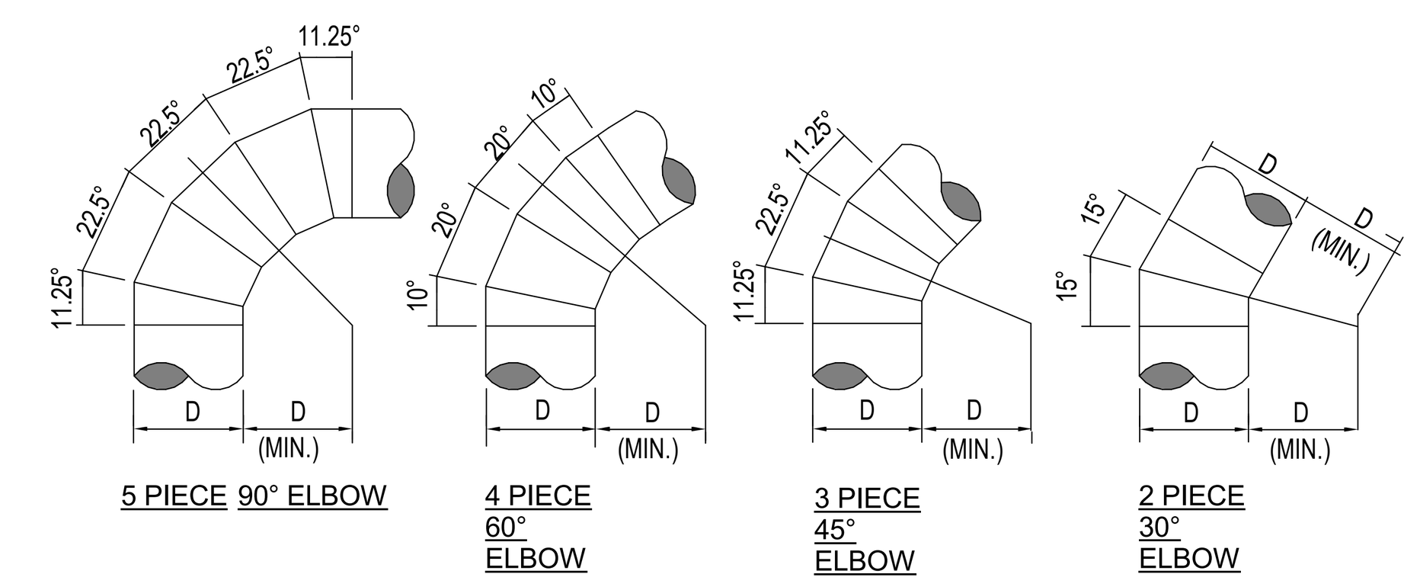
1 / M5.01 BRANCH DUCT TAKE-OFF & DAMPER DETAIL
NO SCALE

10 WALL CLEANOUT DETAIL



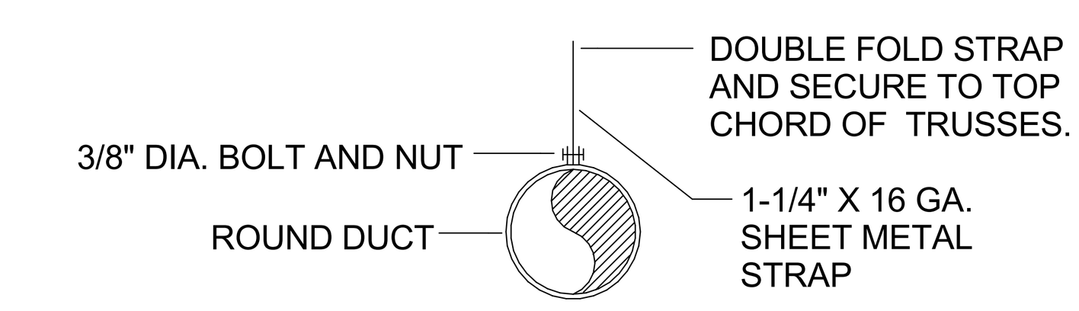
10 / M5.01 WALL CLEANOUT DETAIL
NO SCALE

6 ROUND DUCT ELBOW DETAILS



6 / M5.01 ROUND DUCT ELBOW DETAILS
NO SCALE

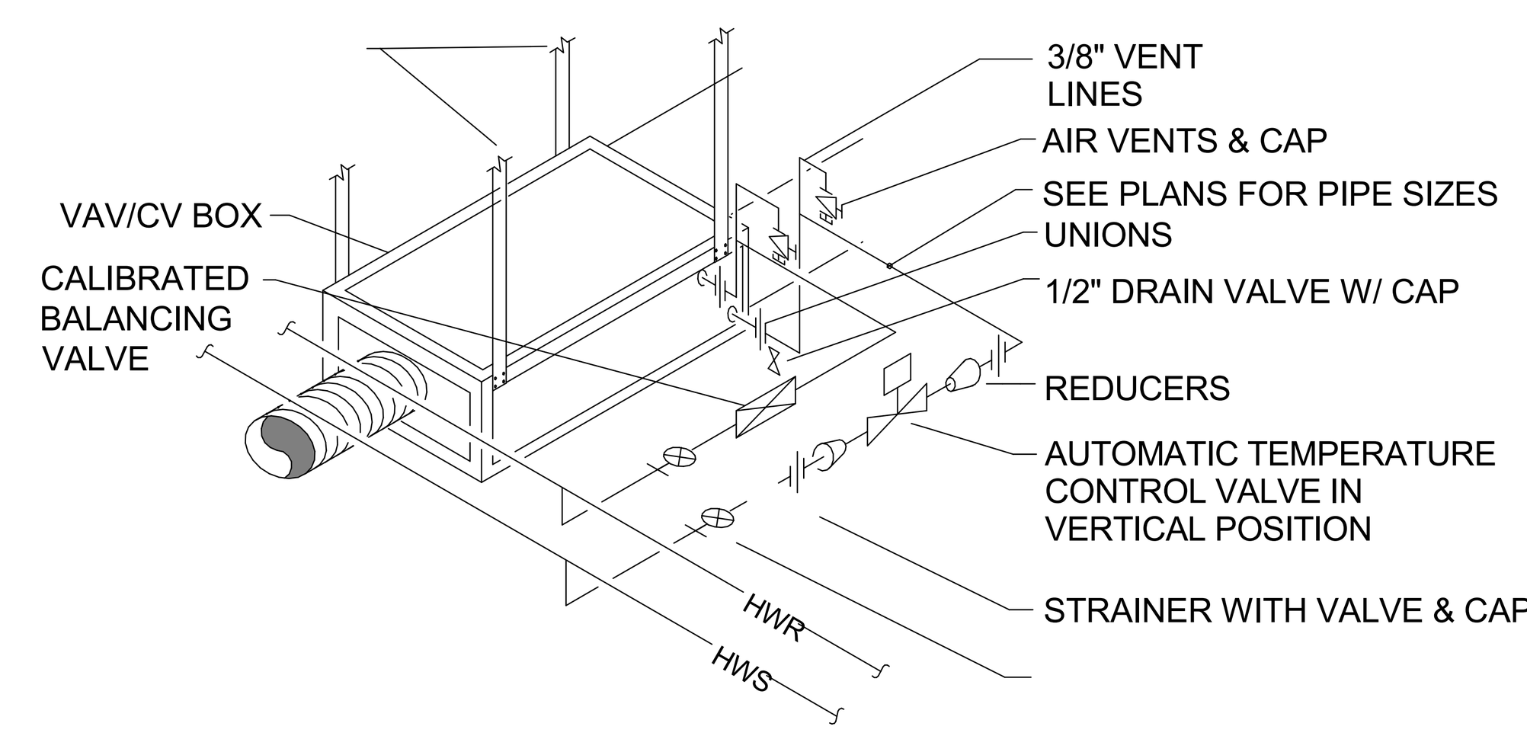
2 ROUND DUCT SUPPORT DETAIL



NOTE:
USE SPECIFIED SPACING AND NOT LESS THAN
ONE SUPPORT PER BRANCH.

2 / M5.01 ROUND DUCT SUPPORT DETAIL
NO SCALE

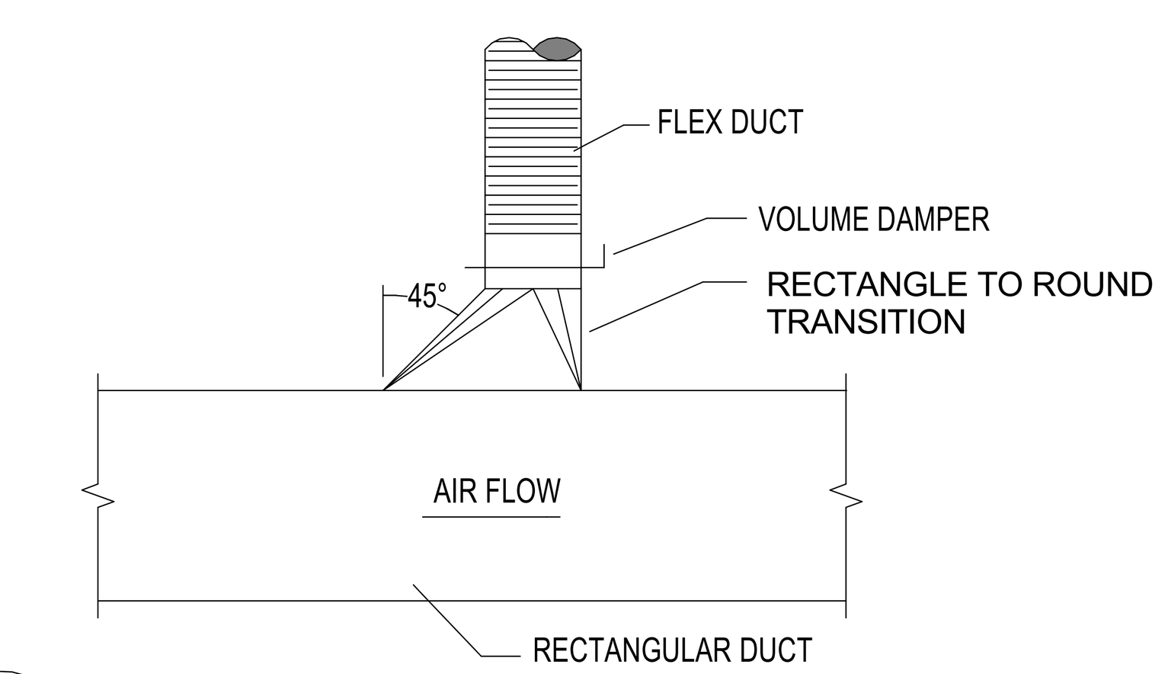
7 VAV & CV BOX PIPING DETAIL WITH 2-WAY AUTO-VALVE



NOTE:
1. REDUCE AT UNIT CONNECTIONS IF NECESSARY.
2. SEE PLANS FOR PIPE SIZES

7 / M5.01 VAV & CV BOX PIPING DETAIL WITH 2-WAY AUTO-VALVE
NO SCALE

3 HIGH EFFICIENCY TAKE-OFF DETAIL



3 / M5.01 HIGH EFFICIENCY TAKE-OFF DETAIL
NO SCALE

12 CRYOGEN VENT SYSTEM PRESSURE DROP MATRIX (A)

(THIS TABLE MUST BE USED FOR CRYOGENIC VENT SYSTEM DESIGN)

CRYOGENIC VENT SYSTEM PRESSURE DROP MATRIX FOR A MAGNET WITH 8" [203mm] VENT.			PRESSURE DROP PER ELBOW USED ANYWHERE WITHIN 20 ft. VENT SEGMENT			
INSIDE DIAMETER OF VENT PIPE in.(mm)	DISTANCE OF VENT SYSTEM COMPONENT FROM MAGNET ft.(m)	PRESSURE DROP STRAIGHT VENT PIPE WITH SMOOTH INSIDE SURFACE psi/ft (KPa/m)	STANDARD SWEEP 45° ELBOW psi (KPa)	STANDARD SWEEP 90° ELBOW psi (KPa)	LONG SWEEP 45° ELBOW psi (KPa)	LONG SWEEP 90° ELBOW psi (KPa)
8(203)	0-20 (0-6.1)	0.10 (2.26)	1.10 (7.58)	2.06 (14.20)	0.55 (3.79)	1.03 (7.10)
	20-40 (6.1-12.2)	0.21 (4.75)	2.10 (14.48)	3.70 (25.51)	1.03 (7.10)	1.85 (12.76)
	40-60 (12.2-18.3)	0.30 (6.79)	2.88 (19.86)	5.21 (35.92)	1.44 (9.93)	2.60 (17.92)
	60-80 (18.3-24.4)	0.38 (8.60)	3.70 (25.51)	6.71 (46.27)	1.85 (12.76)	3.36 (23.17)
	80-100 (24.4-30.5)	0.47 (10.63)	4.52 (31.17)	8.22 (56.68)	2.26 (15.58)	4.11 (28.34)
10(254)	0-20 (0-6.1)	0.03 (0.68)	0.55 (3.79)	0.82 (5.56)	0.27 (1.86)	0.41 (2.83)
	20-40 (6.1-12.2)	0.07 (1.58)	0.82 (5.56)	1.51 (10.41)	0.41 (2.83)	0.75 (5.17)
	40-60 (12.2-18.3)	0.10 (2.26)	1.23 (8.48)	2.19 (15.10)	0.62 (4.27)	1.10 (7.58)
	60-80 (18.3-24.4)	0.12 (2.71)	1.51 (10.41)	2.74 (18.89)	0.75 (5.17)	1.37 (9.45)
	80-100 (24.4-30.5)	0.16 (3.62)	1.92 (13.24)	3.43 (23.65)	0.96 (6.62)	1.71 (11.79)
12(305)	0-20 (0-6.1)	0.013 (0.29)	0.27 (1.86)	0.41 (2.83)	0.14 (0.97)	0.21 (1.45)
	20-40 (6.1-12.2)	0.027 (0.61)	0.41 (2.83)	0.82 (5.65)	0.21 (1.45)	0.41 (2.83)
	40-60 (12.2-18.3)	0.041 (0.93)	0.55 (3.79)	1.10 (7.58)	0.27 (1.86)	0.55 (3.79)
	60-80 (18.3-24.4)	0.054 (1.22)	0.69 (4.76)	1.37 (9.45)	0.34 (2.34)	0.69 (4.76)
	80-100 (24.4-30.5)	0.069 (1.56)	0.96 (6.62)	1.51 (10.41)	0.48 (3.31)	0.75 (5.17)
	100-120 (30.5-36.6)	0.08 (1.81)	1.09 (7.52)	1.77 (12.20)	0.55 (3.79)	0.88 (6.07)
	120-140 (36.6-42.7)	0.10 (2.26)	1.27 (8.76)	2.07 (14.27)	0.63 (4.34)	1.04 (7.17)
	140-160 (42.7-48.8)	0.11 (2.49)	1.43 (9.86)	2.36 (16.27)	0.72 (4.96)	1.19 (8.20)
	160-180 (48.8-54.9)	0.12 (2.71)	1.60 (11.03)	2.53 (17.44)	0.80 (5.52)	1.27 (8.76)
	180-200 (54.9-61.0)	0.17 (3.85)	1.75 (12.07)	2.93 (20.20)	0.88 (6.07)	1.47 (10.14)

NOTE 1: ELBOWS WITH ANGLES GREATER THAN 90 ° MUST NOT BE USED.

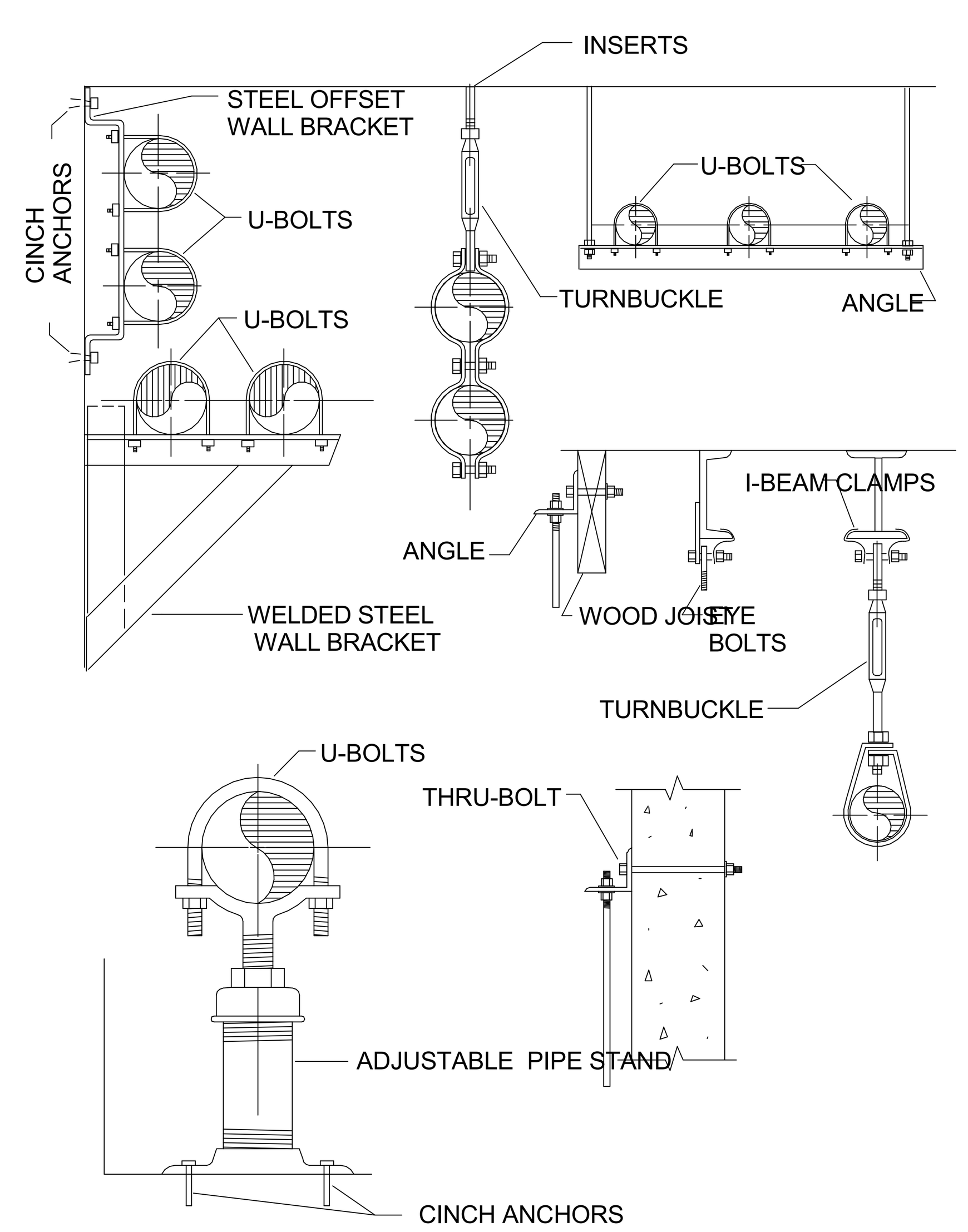
NOTE 2: THE TABLE DATA IS BASED ON THE FOLLOWING:
A. INITIAL FLOW CONDITIONS AT MAGNET INTERFACE.
B. GAS TEMPERATURE STARTING AT 4.5 KELVIN (-452° F OR -268° C).
C. HELIUM GAS FLOW RATE OF 2,737 CUBIC FEET (77.5 CUBIC METERS) PER MINUTE
D. 45° STANDARD SWEEP ELBOW K = 15 F_t
E. 90° STANDARD SWEEP ELBOW K = 30 F_t
F. 45° LONG SWEEP ELBOW K = 7.5 F_t
G. 90° LONG SWEEP ELBOW K = 15 F_t

NOTE 3: THE TOTAL PRESSURE DROP OF THE ENTIRE CRYOGENIC VENT SYSTEM MUST BE LESS THAN 17 PSI (117.2 KPa). THE CALCULATION STARTS AT THE MAGNET VENT INTERFACE AND ENDS AT THE TERMINATION POINT OUTSIDE THE BUILDING.

NOTE 4: FOR 14 IN. [356mm] AND 16 IN. [406mm] VENT PIPE DIAMETERS REFER TO PRE-INSTALLATION MANUAL REFERENCED ON SHEET C1.

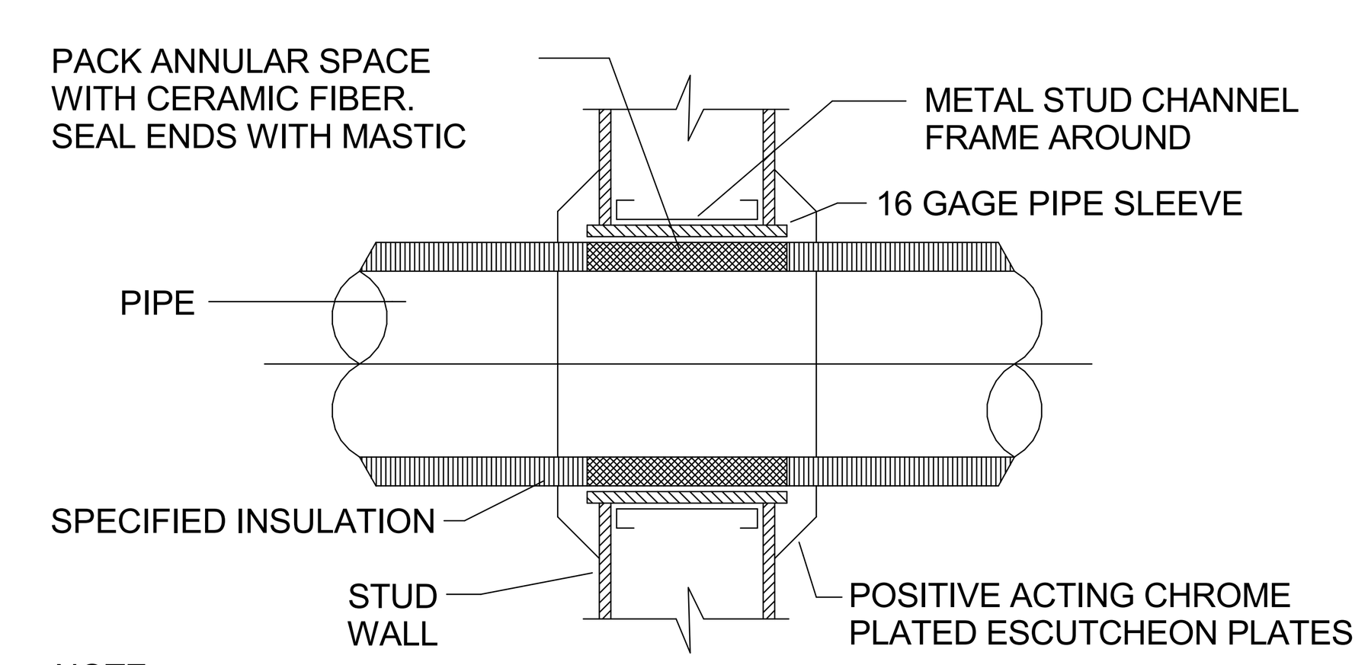
12 / M5.01 CRYOGEN VENT SYSTEM PRESSURE DROP MATRIX (A)
NO SCALE

11 TYPICAL PIPE SUPPORT DETAIL



11 / M5.01 TYPICAL PIPE SUPPORT DETAIL
NO SCALE

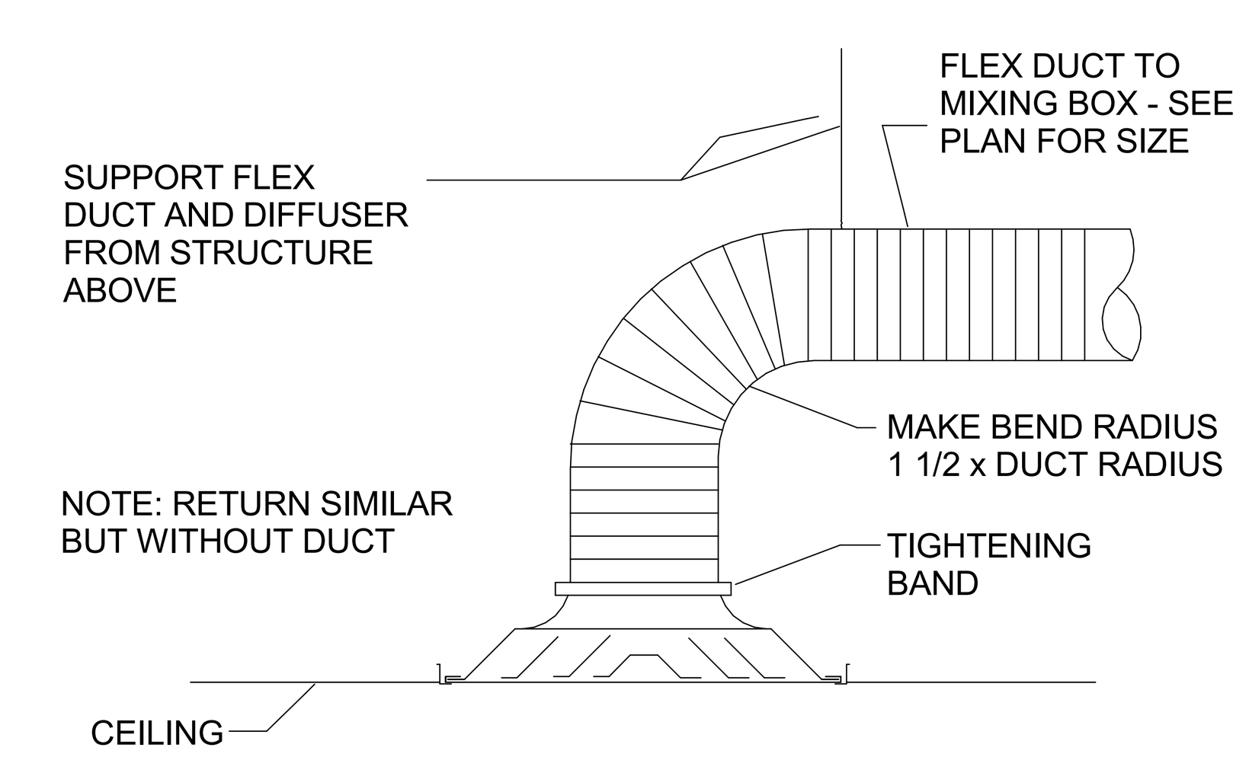
8 PIPE THROUGH STUD WALL DETAIL



NOTE:
OMIT ESCUTCHEON PLATES FOR CONCEALED PIPES.

8 / M5.01 PIPE THROUGH STUD WALL DETAIL
NO SCALE

4 DIFFUSER CONNECTION DETAIL



4 / M5.01 DIFFUSER CONNECTION DETAIL
NO SCALE

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SPECTRUM ENGINEERS
324 SOUTH STATE STREET
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Mountain View Hospital
MRI Replacement

1000 EAST 100 NORTH, PAYSON, UTAH 84651

REVISION
NO.	DESCRIPTION	DATE

HKS PROJECT NUMBER
24805.000
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SHEET TITLE
MECHANICAL DETAILS
SHEET NO.
M5.01

PLOT DATE: 9/21/2021 4:22:59 PM TEMPLATE VERSION: 3.0.0.20170623

REHEAT BOX CABLE BRACING SCHEDULE

BOX WEIGHT	BOLT SIZE	*CABLE DIA.	**CABLE DESIGN	ANCHOR CONN. TYPE
UP TO 300#	3/8"	1/8"	7 X 19 GALV	I
400#	3/8"	1/8"	7 X 19 GALV	I
600#	3/8"	3/16"	7 X 19 GALV	II
800#	3/8"	3/16"	7 X 19 GALV	II

1. *FOUR CABLES REQUIRED, ONE AT EACH CORNER. EACH CABLE TO BE INSTALLED 45 TO HORIZONTAL AND 45 TO LONGITUDINAL DIRECTION.

2. **CABLE SYSTEMS TO BE EQUAL TO AMBER BOOT C/W THIMBLES, CLAMPS AND GROMMETS.

NOTE: THE SEISMIC DETAILS SHOWN HERE ARE FOR REFERENCE ONLY TO ILLUSTRATE TYPICAL SEISMIC REQUIREMENTS. REFER TO SPECIFICATIONS FOR REQUIRED SEISMIC DESIGN AND APPLICATION.

PIPE BRACING GENERAL NOTES

1 DETAILS SHOWN PROVIDE GENERAL GUIDELINES FOR A LATERAL BRACING SYSTEM. A TYPICAL VERTICAL SUPPORT SYSTEM MUST ALSO BE USED.

2 BRACE ALL PIPES 1-1/2" I.D. AND LARGER.

3 CABLE RESTRAINTS AND BRACING NOT TO EXCEED 30'-0" CENTERS AND SHALL BE PROVIDED AT ALL CHANGES IN DIRECTION OF PIPE. ALL DROPS TO EQUIPMENT, AND ON EACH SIDE OF FLEXIBLE CONNECTIONS. BRACE POINTS SHALL NOT EXCEED 15'-0" FROM FLEXIBLE CONNECTION.

4 ALL HOLES IN ANGLES ARE TO BE 1/16 INCH OVERSIZED. PLACE STANDARD CUT WASHERS BETWEEN SHEET METAL ANGLES AND NUT.

5 EQUIPMENT WHICH ATTACHES TO THE PIPING SYSTEM SHALL BE BRACED INDEPENDENTLY OF THE PIPES.

6 ALL SHEET METAL FOR BRACING TO BE FY=33 KSI MINIMUM. GAUGE FOR SHEET METAL BRACING SHALL BE AS FOLLOWS:

16 GA = (0.0598 INCH)
14 GA = (0.0747 INCH)
12 GA = (0.1046 INCH)

7 MINIMUM DISTANCE FROM EDGE OF ANGLE TO BOLTS SHALL BE AS FOLLOWS:

BOLT DIAMETER	DISTANCE FROM EDGE
1/4" TO 1/2"	1"
5/8"	1 1/8"
3/4"	1 1/4"
7/8"	1 1/2"

8 DO NOT FASTEN RESTRAINT SYSTEM TO TWO DISSIMILAR PARTS OF A BUILDING THAT MAY RESPOND IN A DIFFERENT MODE DURING AN EARTHQUAKE. FOR EXAMPLE, A WALL AND A ROOF.

9 PROVIDE LARGE ENOUGH PIPE SLEEVES THROUGH WALLS OR FLOORS TO ALLOW FOR ANTICIPATED DIFFERENTIAL MOVEMENTS.

10 DO NOT FASTEN ONE RIGID PIPING SYSTEM TO TWO DISSIMILAR PARTS OF A BUILDING THAT MAY RESPOND IN A DIFFERENT MODE DURING AN EARTHQUAKE. FOR EXAMPLE, A WALL AND A ROOF.

11 BRACING DETAILS, SCHEDULE AND NOTES ARE TO BE USED WITH THE FOLLOWING TYPES OF PIPE: STEEL PIPE SCHEDULE 40 AND 80, COPPER PIPE TYPE K,L,M (ONLY SILVER SOLDERED BRAZED JOINTS TO BE USED WITH COPPER PIPE).

12 FOR GAS PIPING, THE BRACING DETAILS, SCHEDULES AND NOTES MAY BE USED EXCEPT THAT RESTRAINTS SHALL BE INSTALLED AT EVERY 20'-0" O.C. ALSO ALL PIPE 1 INCH AND LARGER SHALL BE BRACED.

13 WASTE, VENT AND ROOF DRAINAGE PIPING SYSTEMS ARE EXCLUDED FROM THE RESTRAINT GUIDELINES.

14 ALTERNATE EVERY OTHER CABLE RESTRAINT IN OPPOSITE DIRECTION (SHOWN DOTTED).

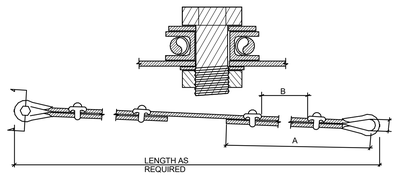
NOTE: THE SEISMIC DETAILS SHOWN HERE ARE FOR REFERENCE ONLY TO ILLUSTRATE TYPICAL SEISMIC REQUIREMENTS. REFER TO SPECIFICATIONS FOR REQUIRED SEISMIC DESIGN AND APPLICATION.

DUCT CABLE BRACING LIST

DUCT SIZE (MAX.)	"WT/ LIN FT" (MAX)	BOLT SIZE	HORIZONTAL ANGLE	VERTICAL ANGLE	CABLE DIA.**	CABLE DES.	ANCHOR CONN. TYPE
12"	5#	3/8"	2 X 2 X 16 GA	2 X 2 X 12 GA	1/8"	7x19 GALV	I
18"	8#	3/8"	2 X 2 X 16 GA	2-1/2 X 2-1/2 X 12 GA	1/8"	7x19 GALV	I
24"	10#	3/8"	2 X 2 X 16 GA	2-1/2 X 2-1/2 X 12 GA	1/8"	7x19 GALV	I
30"	13#	3/8"	2 X 2 X 16 GA	2-1/2 X 2-1/2 X 12 GA	1/8"	7x19 GALV	I
42"	20#	3/8"	2-1/2 X 2-1/2 X 16 GA	4 X 4 X 12 GA	3/16"	7x19 GALV	II
54"	27#	3/8"	2-1/2 X 2-1/2 X 16 GA	4 X 4 X 12 GA	3/16"	7x19 GALV	II
60"	36#	3/8"	3 X 3 X 16 GA	4 X 4 X 12 GA	3/16"	7x19 GALV	II
84"	53#	3/8"	4 X 4 X 14 GA	4 X 4 X 1/4	1/4"	7x19 GALV	III
96"	80#	1/2"	4 X 4 X 12 GA	5 X 3 X 1/4	5/16"	7x19 GALV	IV

* MAXIMUM WEIGHT OF DUCTS OR COMBINATIONS OF DUCTS PER LINEAR FOOT. THE DUCTS MAXIMUM DIMENSION SHALL GOVERN WHAT BRACING IS REQUIRED. FOR ANCHOR CONNECTIONS SEE LIST. SEE DUCT BRACING DETAILS.

** TWO CABLES REQUIRED AT EACH RESTRAINT POINT, EACH CABLE TO BE INSTALLED 45~ TO HORIZONTAL AND 45~ TO LONGITUDINAL DIRECTION OF DUCT.



NOTES:
1. CABLES, THIMBLES, CLIPS, GROMMETS & FLAT WASHERS ARE TO BE FURNISHED BY RESTRAINT MANUFACTURER. ALL OTHER HARDWARE TO BE PROVIDED BY CONTRACTOR.

2. ENTIRE SYSTEM TO BE EQUAL TO AMBER BOOTH.

3. CABLE CLIPS MUST BE ORIENTED AS SHOWN WITH SHORT END OF CABLE ON THE CURVED PART OF THE CLIP.

CABLE SCHEDULE

CABLE DIA.	CABLE DESIGN	A	B	C	BOLT SIZE	ALLOWABLE LOAD (lbf)	BREAKING STRENGTH (lbf)
1/8"	7X19 GALV.	5-1/4"	1-5/8"	5/8"	3/8"	660	2000
3/16"	7X19 GALV.	5-3/4"	1-7/8"	5/8"	3/8"	1400	4200
1/4"	7X19 GALV.	6-3/4"	2-3/8"	11/16"	3/8"	2330	7000
5/16"	7X19 GALV.	7-3/8"	2-5/8"	13/16"	5/8"	3260	9800
3/8"	7X19 GALV.	8-7/8"	3-1/4"	1"	5/8"	4800	14400
7/16"	6X19 IWRC	17"	3-5/8"	1"	5/8"	5920	17800
1/2"	6X19 IWRC	18"	3-7/8"	1-1/8"	3/4"	7660	23000

PIPE SEISMIC BRACING SCHEDULE

PIPE SIZE	HANGER ROD SIZE	MAX. ROD LENGTH	HANGER TYPE	BOLTS TO ANGLE	ANGLE CLIP	ANGLE BRACE	ANCHOR CONN. TYPE	ANCHOR BOLT OR INSERT
1-1/2"	1/2"	25"	CLEVIS	3/8"	3x3x1/4	2x2x16GA	I	3/8"
2"	1/2"	25"	CLEVIS	3/8"	3x3x1/4	2x2x16GA	I	3/8"
2-1/2"	5/8"	31"	CLEVIS	3/8"	3x3x1/4	2x2x16GA	I	3/8"
3"	5/8"	31"	CLEVIS	3/8"	3x3x1/4	2-1/2x2-1/2x 16 GA	II	1/2"
3-1/2"	5/8"	31"	CLEVIS	3/8"	3x3x1/4	2-1/2x2-1/2x 16 GA	II	1/2"
4"	3/4"	37"	CLEVIS	3/8"	3x3x1/4	2-1/2x2-1/2x 16 GA	II	1/2"
5"	3/4"	37"	CLEVIS	1/2"	5x3x1/2	2-1/2x2-1/2x 16 GA	III	3/4"
6"	3/4"	37"	CLEVIS	5/8"	5x3x1/2	2-1/2x2-1/2x 16 GA	IV	3/4"
8"	7/8"	43"	CLEVIS	5/8"	2-5x3x1/2	3x3x12 GA	V	2-5/8"
10"	7/8"	43"	CLEVIS	3/4"	2-5x3x1/2	3x3x12 GA	VI	2-5/8"

FOR ANCHOR CONNECTIONS SEE LIST.
SEE PIPE BRACING DETAIL
*1-5/8"x1-5/8"x12 GA CHANNEL MAY BE USED

DUCT BRACING GENERAL NOTES

1 DETAILS SHOWN PROVIDE GENERAL GUIDELINES FOR A LATERAL BRACING SYSTEM. A TYPICAL VERTICAL SUPPORT SYSTEM MUST ALSO BE USED.

2 BRACE ALL RECTANGULAR DUCTS OF AREA 6 SQ. FT. AND LARGER. BRACE ALL ROUND DUCTS 28" IN DIAMETER AND LARGER.

3 CABLE RESTRAINTS AND BRACING NOT TO EXCEED 30'-0" CENTERS AND SHALL BE PROVIDED AT EACH TURN, AT THE END OF EACH DUCT RUN, AND ON EACH SIDE OF FLEXIBLE CONNECTIONS. BRACE POINTS SHALL NOT EXCEED 15'-0" FROM FLEXIBLE CONNECTION.

4 WHEN COMBINING DUCT GROUPS ON COMMON BRACING SYSTEMS, USE WEIGHTS AND DIMENSIONS FROM BRACING LIST.

5 ALL HOLES IN ANGLES ARE TO BE 1/16 INCH OVERSIZED. PLACE STANDARD CUT WASHERS BETWEEN SHEET METAL ANGLES AND NUT.

6 DUCTS NOT BRACED SHALL BE INSTALLED WITH A 6" MIN. CLEARANCE TO VERTICAL CEILING HANGER WIRES.

7 REHEAT BOXES AND OTHER ITEMS WHICH ATTACH TO THE DUCT SYSTEM SHALL BE BRACED INDEPENDENTLY OF THE DUCTS.

8 ALL SHEET METAL FOR BRACING TO BE FY = 33 KSI MINIMUM. GAUGE FOR SHEET METAL BRACING SHALL BE AS FOLLOWS:
16 GA =(0.0598 INCH)
14 GA = (0.0747INCH)
12 GA= (0.1046 INCH)

9 MINIMUM DISTANCE FROM EDGE OF ANGLE TO BOLTS SHALL BE AS FOLLOWS:

BOLT DIAMETER	DISTANCE FROM EDGE
1/4" TO 1/2"	1"
5/8"	1 1/8"
3/4"	1 1/4"
7/8"	1 1/2"

10 DO NOT FASTEN RESTRAINT SYSTEM TO TWO DISSIMILAR PARTS OF A BUILDING THAT MAY RESPOND IN A DIFFERENT MODE DURING AN EARTHQUAKE. FOR EXAMPLE, A WALL AND A ROOF.

11 ALTERNATE EVERY OTHER CABLE RESTRAINT IN OPPOSITE DIRECTION (SHOWN DOTTED).

NOTE:
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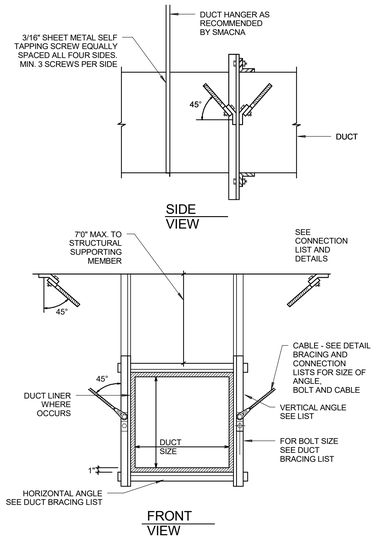
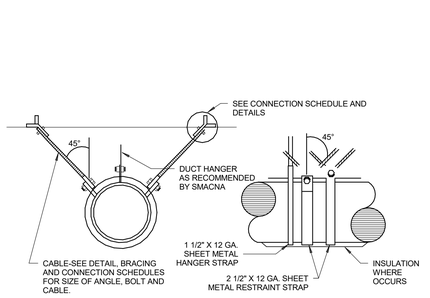


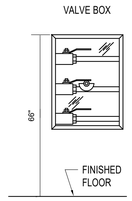
4 / M5.02 CABLE BRACING FOR RECTANGULAR DUCTS

NO SCALE



5 / M5.02 CABLE BRACING FOR ROUND OVAL DUCTS

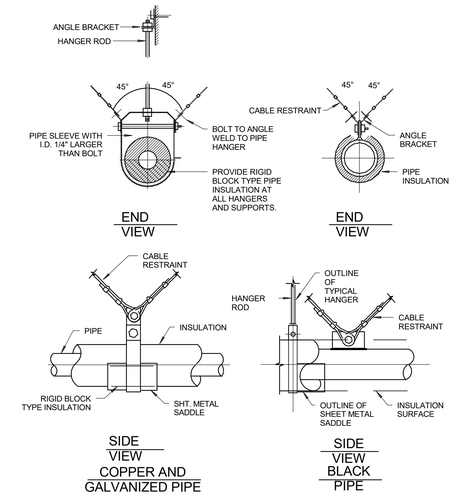
NO SCALE



MOUNTING HEIGHTS UNLESS NOTED OTHERWISE

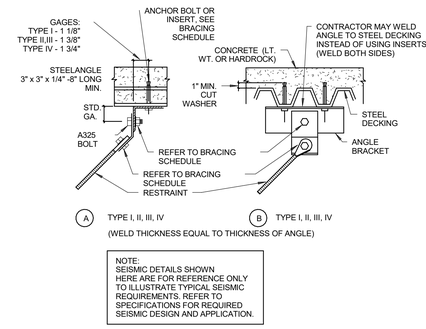
6 / M5.02 MEDICAL GAS VALVE BOX MOUNTING HEIGHT DETAIL

NO SCALE



1 / M5.02 PIPING RESTRAINT DETAIL

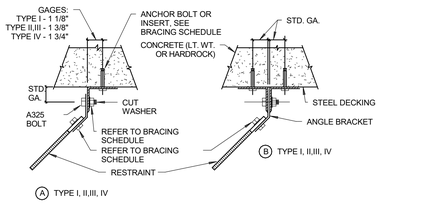
NO SCALE



NOTE:
SEISMIC DETAILS SHOWN HERE ARE FOR REFERENCE ONLY TO ILLUSTRATE TYPICAL SEISMIC REQUIREMENTS. REFER TO SPECIFICATIONS FOR REQUIRED SEISMIC DESIGN AND APPLICATION.

2 / M5.02 RESTRAINT CONNECTIONS TO STEEL

NO SCALE



3 / M5.02 RESTRAINT CONNECTIONS TO CONCRETE

NO SCALE

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REGISTERED PROFESSIONAL ENGINEER
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9-24-2021
STATE OF UTAH

Mountain View Hospital MRI Replacement

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REVISION NO. | DESCRIPTION | DATE

HKS PROJECT NUMBER
24805.000

DATE
09/24/21

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CONSTRUCTION DOCUMENTS

SHEET TITLE
MECHANICAL DETAILS

SHEET NO.
M5.02

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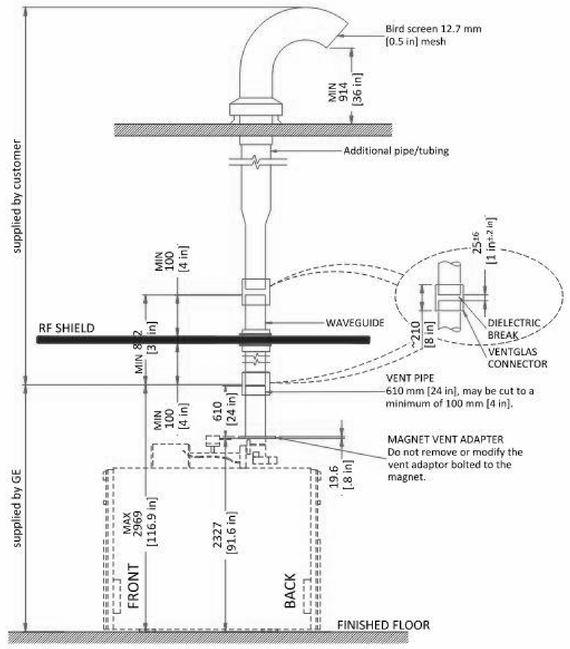
TYPICAL CRYOGENIC VENT PIPE DETAIL



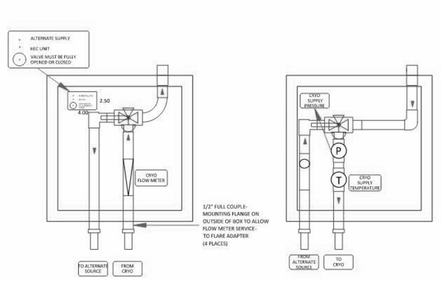
Waveguide is contractor supplied. Minimum 812 mm [32 in]. Must extend at least 100 mm [4 in] on magnet room side of the wall/ceiling and 25±6 mm [1±0.25 in] from the GE supplied pipe below isolation joint. Magnet room end must not be more than 2969 mm [117 in]above finished floor.

1. The 203 mm [8 in] OD vent material must be one of the following materials with the wall thickness indicated:
a. SS 304: Minimum 0.89 mm [0.035 in]; Maximum 3.18 mm [0.125 in]
b. AL 6061-T6: Minimum 2.11 mm [0.083 in]; Maximum 3.18 mm [0.125 in]
c. CU DWV, M or L: Minimum 2.11 mm [0.083 in]; Maximum 3.56 mm [0.140 in]
2. Either tubes or pipes may be used and must be seamless or have welded seams

NOTE
All welds on the pipe must be ground down to a smooth 203 mm [8 in] diameter so that it can be clamped to the Ventglas with enough force.

3. Corrugated pipe or spiral duct must not be used
4. If required, bellows pipe less than 300 mm [12 in] in length may be used as a thermal expansion joint
5. The vent pipe must withstand the maximum pressure listed in the Pre-Installation Manual
6. Waveguide vent material must match the outside diameter of the magnet flanged vent adapter

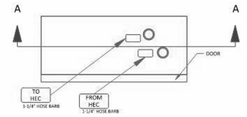
MANUAL CITY WATER BACKUP SYSTEM (SAMPLE-DIMPLEX)



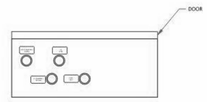
FRONT VIEW

SECTION A-A

THIS PIPING IS LOCATED
BEHIND THE PIPING
SHOWN IN "FRONT VIEW"



TOP VIEW



BOTTOM VIEW

HEC = MAIN (NORMAL) COOLING SOURCE
ALTERNATE SUPPLY = BACKUP COOLING SOURCE
CRYO = EQUIPMENT TO BE COOLED

VALVE HANDLES WILL BE
CONNECTED BY A MECHANICAL
LINKAGE
COVER THREADED ROD WITH HEAT
SHRINK TUBING.

DETAIL NOT TO SCALE

MAGNET ROOM VENTING REQUIREMENTS

HVAC VENT REQUIREMENTS

- HVAC vendor must comply with Magnet room temperature and humidity specifications and RF shielding specifications.
- RF Shield vendor must install open pipe or honeycomb HVAC waveguides.
- All serviceable parts in the Magnet room (e.g.: diffusers) must be non-magnetic.
- Waveguides must be nonmagnetic and electrically isolated.
- Incoming air must contain at least **5% air** from outside the Magnet room (inside or outside the facility) to displace residual helium.

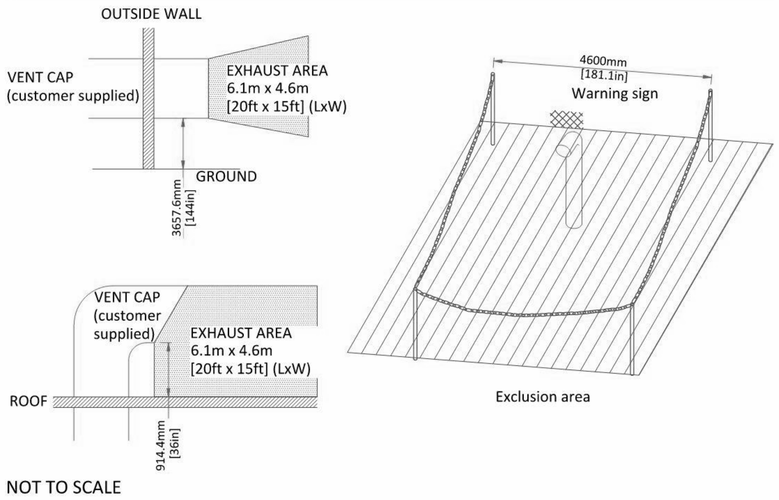
EMERGENCY VENT REQUIREMENT

- Exhaust vent system is supplied by the customer.
- All items within the RF enclosure must be non-magnetic.
- The exhaust vent system must be tested and operational before the magnet is installed.
- The exhaust intake vent must be located near the magnet cryogenic vent at the highest point on the finished or drop ceiling.
- The Magnet room exhaust fan and exhaust intake vent must have a capacity of at least **1200 CFM (34 m^3/min)** with a minimum of **12 room air exchanges per hour.**
- The exhaust fan must be placed above RF shielding located outside 10 gauss (1mT) and with appropriate waveguide.
- The system must have a manual exhaust fan switch near the Operator Workspace and in the Magnet room near the door (the switches must be connected in parallel).
- All system components must be accessible for customer inspection, cleaning and maintenance

PRESSURE VENT REQUIREMENT

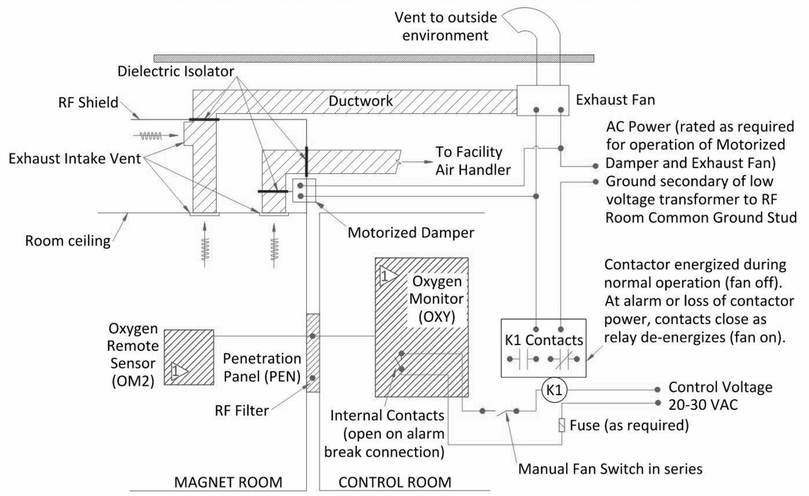
- A **pressure equalizing vent is required** in the magnet room ceiling or in the wall, at the highest point possible.
- The **vent minimum size** must be (**610 mm x 610 mm [24 in x 24 in]**) or equivalent.
- The pressure equalization vent must be located so any Helium gas is not vented into occupied areas.
  Note: Location may affect acoustic noise transmission into occupied spaces.

CRYOGENIC VENTING (EXTERIOR)



NOT TO SCALE

MAGNET ROOM EXHAUST FAN SCHEMATIC



1 GE option: equipment supplied and installed by GE. All other items supplied and installed by customer or contractors.

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M5.03

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GRILLES, REGISTERS AND DIFFUSERS

CD-1	EH PRICE	SPD	FACE STYLE: SQUARE PLAQUE DIFFUSER FACE SIZE: 12" x 12", 24" x 24" AS REQUIRED TO FIT CEILING TILE SPACE AVAILABLE APPLICATION: ENGINEERED FAN COIL SYSTEM MATERIAL: STEEL/ALUMINUM CONSTRUCTION FOR MRI FINISH: COORDINATE COLOR WITH ARCHITECT	MOUNTING-FRAME: LAY-IN, SURFACE MOUNTED (C/W CEILING TYPE.) PATTERN: 360° RADIAL HORIZONTAL AIR PATTERN DAMPER: OPPOSED BLADE MAX NC - 30 DAMPER: NONE REMOVABLE FACE
RG-1 EG-1	EH PRICE	PDDR	FACE STYLE: PERFORATED RETURN AIR UNIT FACE SIZE: 12" x 12", 24" x 24" AS REQUIRED TO FIT CEILING TILE SPACE AVAILABLE. APPLICATION: AIR RETURN MATERIAL: STEEL/ALUMINUM CONSTRUCTION FOR MRI FINISH: COORDINATE COLOR WITH ARCHITECT	MOUNTING-FRAME: LAY-IN, SURFACE MOUNTED (C/W CEILING TYPE.) DAMPER: NONE MAX NC - 30 REMOVABLE FACE & CORE
CD-2	EH PRICE	80	FACE STYLE: CRATE SUPPLY AIR UNIT FACE SIZE: 24" x 24" AS REQUIRED TO FIT CEILING TILE SPACE AVAILABLE APPLICATION: PRESSURIZED AIR SUPPLY MATERIAL: ALUMINUM FINISH: COORDINATE COLOR WITH ARCHITECT	MOUNTING-FRAME: RIDGID DUCT CONNECTION (C/W CEILING TYPE.) DAMPER: OPPOSED BLADE MAX NC - 30 REMOVABLE FACE & CORE
RG-2	EH PRICE	80	FACE STYLE: CRATE RETURN AIR UNIT FACE SIZE: 24" x 24" AS REQUIRED TO FIT CEILING TILE SPACE AVAILABLE APPLICATION: PRESSURIZED AIR RETURN MATERIAL: ALUMINUM FINISH: COORDINATE COLOR WITH ARCHITECT	MOUNTING-FRAME: RIDGID DUCT CONNECTION (C/W CEILING TYPE.) DAMPER: OPPOSED BLADE MAX NC - 30 REMOVABLE FACE & CORE
SWR-1	EH PRICE	635	FACE STYLE: SIDE WALL RETURN AIR GRILLE ARRANGEMENT: STATIONARY HORIZONTAL BLADE ORIENTATION: 45 DEG DEFLECTION VANES SPACED AT 1/2 INCH CENTERS. FRONT BLADES PARALLEL TO SHORT DIMENSION. MATERIAL: ALUMINUM CONSTRUCTION FOR MRI FINISH: COORDINATE COLOR WITH ARCHITECT	FRAME: 1.25 INCH FLAT / BORDER MOUNTING: SURFACE PATTERN: PERMANENT 45 DEGREE DEFLECTION DAMPER: OPPOSED BLADE MAX NC - 30

1. DEFAULT SUPPLY AND RETURN GRILLES ARE LISTED AS CD-1 & RG-1.

VAV BOX SCHEDULE

			AIR							FLUID (2)				COIL				
ID	MANUFACTURER AND MODEL NUMBER	INLET SIZE (IN)	COOLING MAXIMUM AIR (5) (CFM)	HEATING MAXIMUM AIR (CFM)	MINIMUM AIR (3) (CFM)	ENTERING AIR TEMP. DB (DEG. F)	LEAVING AIR TEMP. DB (DEG. F)	S.P. LOSS AT MAX CFM (4) (IN H20)	NC AT 1" H2O (1) S.P.	HEAT LOAD (MB)	TOTAL FLUID FLOW (GPM)	ENT. FLUID TEMP (DEG. F)	WORKING FLUID	MAX. FLUID PRESSURE DROP (FT)	MIN. COIL ROWS	PIPE SIZE (IN)	BALANCING VALVE SIZE (IN)	REMARKS
VAV-1	TITUS-ESV-3	10	950	570	550	52	95		28	5.8		110	H. WATER	1	2	3/4	1/2	1,2,3,4,5,6,7

1. MAXIMUM DISCHARGE NC AT BOX DIFFENTIAL PRESSURE BASED ON ARI STANDARD 880-89
2. COIL HEATING CAPACITY BASED ON HEATING MAIXIMUM AIR FLOW (60% OF MAXIMUM COOLING CFM).
3. MINIMUM CFM IS LOWEST CONTROLLABLE CFM SETTING (BASED ON 400 FPM INLET VELOCITY).
4. MAXIMUM STATIC PRSSURE DROP PERMISSABLE ACROSS BOX AND COIL AT MAXIMUM COOLING CFM.
5. BOX COOLING MAXIMUM IS THE SUM OF DIFFUSERS CFM VALUES AS SHOWN IN THE DRAWINGS. BOX MINIMUM CFM TO BE SET AT 30% OF THIS MAXIMUM. BOX HEATING CFM TO BE SET AT 60% OF THIS SAME MAXIMUM. TYPICAL UNLESS OTHERWISE NOTED.
6. PRESSURE INDEPENDENT TYPE BOX.
7. THESE TERMINAL BOXES REQUIRE THE CONTROL CONTRACTOR TO EXTEND 24VAC POWER FROM THE EXISTING SOURCE TO EACH VAV BOX.

FAN SCHEDULE

					AIR		FAN				ELECTRICAL			PHYSICAL	
ID	MANUFACTURER AND MODEL NUMBER	LOCATION	TYPE	AIR TYPE	MAXIMUM AIRFLOW RATE (CFM)	STATIC PRESSURE (IN. WATER)	OUTLET VELOCITY (FPM)	FAN SPEED (RPM)	FAN WHEEL DIAMETER (IN)	STATIC EFFICIENCY (%)	MOTOR SIZE (HP)	MOTOR BHP (HP)	VOLT/PH/HZ	WIDTH/ HEIGHT (IN)	NOTES
DEF-1	COOK ACRUD 135R15D	ROOF	DIRECT	UPBLAST	1200	0.4	774	1071	13.5	56	0.5	0.13	120/1/60	31/29	1-3

1. CONTRACTOR TO PROVIDE FAN SPEED CONTROLER.
2. PROVIDE A DISCONNECT.
3. INTERLOCK SWITCH IN CONTROL ROOM AND MAGNET ROOM WITH DEF-1. WHEN SWITCH IS ACTIVATED IT WILL TURN ON/OFF FAN.

COMPUTER ROOM UNIT SCHEDULE

			SUPPLY FAN		COOLING				HUMID	FILTERS	ELECTRICAL					
ID	MANUFACTURER AND MODEL NUMBER	LOCATION	AIR FLOW RATE (CFM)	EXTERNAL STATIC PRESSURE DROP (IN H20)	SENSIBLE MINIMUM COOLING LOAD (BTUH)	ROOM AIR TEMPERATURE DB/% RH (DEG. F)	LEAVING AIR TEMPERATURE DB/WB (DEG. F)	WORKING FLUID	CAPACITY (LB/HR)	FILTER EFFICIENCY	FLA / WSA / OPD	SUPPLY FAN MOTOR (HP)	V/PH	HEIGHT/ LENGTH/ WIDTH (IN)	WEIGHT (LBS)	NOTES
CRAC-1	LIEBERT MMD60E	EQUIPMEN TROOM	2500	0.05	51,500	75/44.6	51.6	R-407C	8	MERV 8	7.2/9/15	1.5	460/3	24/46.5/51	498	1-6

1. SELECTION BASED ON 4735 FT
2. UNIT WITH CONDENSATE PUMP, PIPE TO NEAREST FLOOR DRAIN
3. SEE SPECIFICATIONS FOR REQUIRED COMPONENTS & INFARED HUMIDIFIER
4. UNIT ON EMERGENCY POWER
5. PROVIDE DIGITAL-SCROLL COMPRESSOR & EC PLUG FANS
6. 18" DISCHARGE SUPPLY BOX WITH GRILLE

CONDENSING UNIT SCHEDULE - AIR COOLED

							ELECTRICAL						
ID	MANUFACTURER AND MODEL NUMBER	REFRIGERANT	TOTAL CAPACITY (BTUH)	AMBIENT AIR TEMP. DB/WB (°F)	PAIRED INDOOR UNIT	NO. CIRCUITS	WIRE SIZE AMPS (WSA)	MCA (AMPS)	CONDENSER FAN FULL LOAD AMPS (FLA)	OVERLOAD PROTECTION DRAW (OPD)	VOLTS/ PHASE	HEIGHT / WIDTH / DEPTH (IN)	WEIGHT (LBS)	NOTES
CU-1	LIEBERT PFH087A-YH7	R-407C	51,500	105	CRAC-1	1	14.2	-.-	11.7	20	460/3	41.75/36/53	488	1-3

1. PERFORMANCE AT DESIGN ELEVATION OF 4,735' ASL.
2. UNIT SHALL BE CAPABLE OF LOW AMBIENT OPERATION DOWN TO-20°F
3. PROVIDE 18" LEG STANDS MOUNTED ON ROOF CURB

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PLUMBING FIXTURE SCHEDULE

ID	FIXTURE	CW (IN)	HW (IN)	W (IN)	V (IN)	DESCRIPTION	NOTES
S-1	WORK SINK	1/2	1/2	2	2	COUNTER MOUNTED, STAINLESS STEE, WITH WRISTBLADES	SINK (STAINLESS STEEL, COUNTER MOUNTED, SINGLE COMPARTMENT): JUST SL-2119-A-GR 18 GA. TYPE 304 STAINLESS STEEL SINK, 16" X 16" X 7 1/2" DEEP BASIN, SELF RIMMING, WITH INTEGRA DRAIN AND 8" CENTERS DRILLING. CHICAGO 786-GN8FCXKABCP FAUCET, WITH WRISTBLADE HANDLES. GN8FC RIGID/SWING GOOSENECK SPOUT WITH 1.5 LAMINAR FLOW CONTROL IN SPOUT. FLEXIBLE STAINLESS STEEL SUPPLIES WITH WITH LOOSE KEY ANGLE STOPS. CAST BRASS P-TRAP WITH CLEAN OUT PLUG, AND JUST J-35-FS OPEN GRID STRAINER MOUNTED FLUSH WITH SINK BOTTOM.

DEMO KEYED NOTES

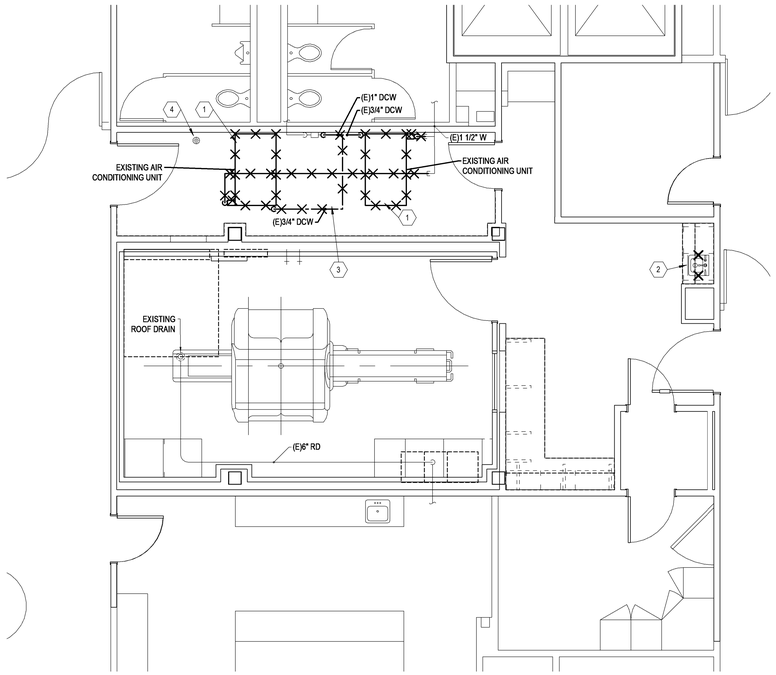
1. CUT EXISTING CONDENSATE CONNECTIONS TO CEILING HUNG INDOOR COOLING UNITS.
2. REMOVE HANDWASH SINK AND FAUCET WHEN CABINET IS DEMOLISHED CAP UTILITIES, WASTE, AND VENT PIPING.
3. DEMOLISH DOMESTIC WATER FEED BACK TO RPBP IN EQUIPMENT ROOM.
4. EXISTING INDIRECT DRAIN WITH FUNNEL ASSEMBLY TO REMAIN.

KEYED NOTES

1. EXTEND CONDENSATE AND DOMESTIC COLD WATER TO NEW CEILING HUNG INDOOR COOLING UNITS.
2. PROVIDE NEW HAND WASHING SINK IN NEW CABINET AND COUNTERTOP. SEE FIXTURE SCHEDULE FOR DETAILS.
3. ALL FIRE SPRINKLER MATERIALS IN MRI ROOM INCLUDING PIPE, FITTINGS, HANGERS, AND SPRINKLER HEADS SHALL BE LISTED AND OF NON-FERROUS MATERIAL.
4. CONTRACTOR TO ADD WATER BUG IN EQUIPMENT ROOM. CONNECT TO BMS AND ALARM IF WATER IS DETECTED. CONTROLS CONTRACTOR TO EXTEND 24V POWER FROM NEAREST VAV BOX.
5. SPRINKLERS SHALL BE STANDARD RESPONSE TO MATCH EXISTING HEADS IF BEING REPLACED OR RELOCATED. IF A SPRINKLER HEAD IS REMOVED, IT MUST BE REPLACED WITH NEW. SPRINKLER HEADS CANNOT BE REUSED, TYPICAL.
6. MEW G.E. WATER BYPASS CABINET TO BE PIPED FOR DOMESTIC COLD WATER AND DRAIN. SEE DETAIL.

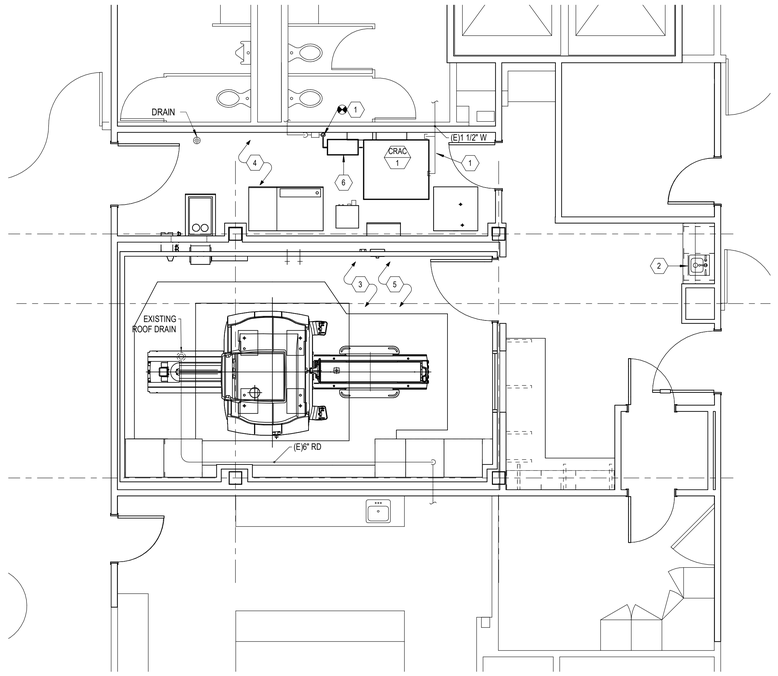
GENERAL NOTES

1. HYDRAULIC RECALCULATION REQUIRED WHEN REPLACING HARD PIPE DROPS WITH FLEXDROPS.
2. FOLLOW STANDARDS FOR SPRINKLER HEAD CLEARANCES WITH WALLS AND OBSTRUCTIONS PER NFPA 13.
3. MAINTAIN EXISTING FIRE SPRINKLER SYSTEMS, REPLACE ALL PIPE, FITTINGS, HANGERS, DROPS, AND SPRINKLER HEADS TO THE EXTENT SHOWN ON THE DRAWINGS.
4. PRESSFIT OR PROPRESS FITTINGS NOT ALLOWED ON FIRE SPRINKLER PIPING.
5. INSTALL SPRINKLERS ACCORDING TO NFPA 13.



PLAN NORTH

1 LEVEL 1 PLUMBING DEMOLITION PLAN
1/4" = 1'-0"



PLAN NORTH

2 LEVEL 1 PLUMBING REMODEL PLAN
1/4" = 1'-0"

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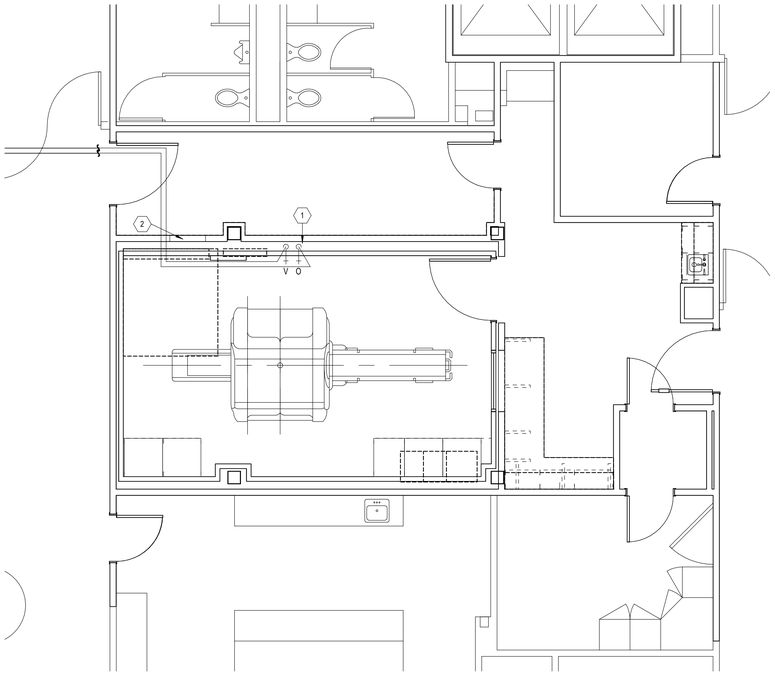
DEMO KEYED NOTES

1. EXISTING MEDICAL VACUUM AND OXYGEN OUTLETS TO REMAIN. REMOVE AND REINSTALL COVERS AS NEEDED FOR REFINISH OF ROOM.
2. PENETRATION PANEL LOCATION.

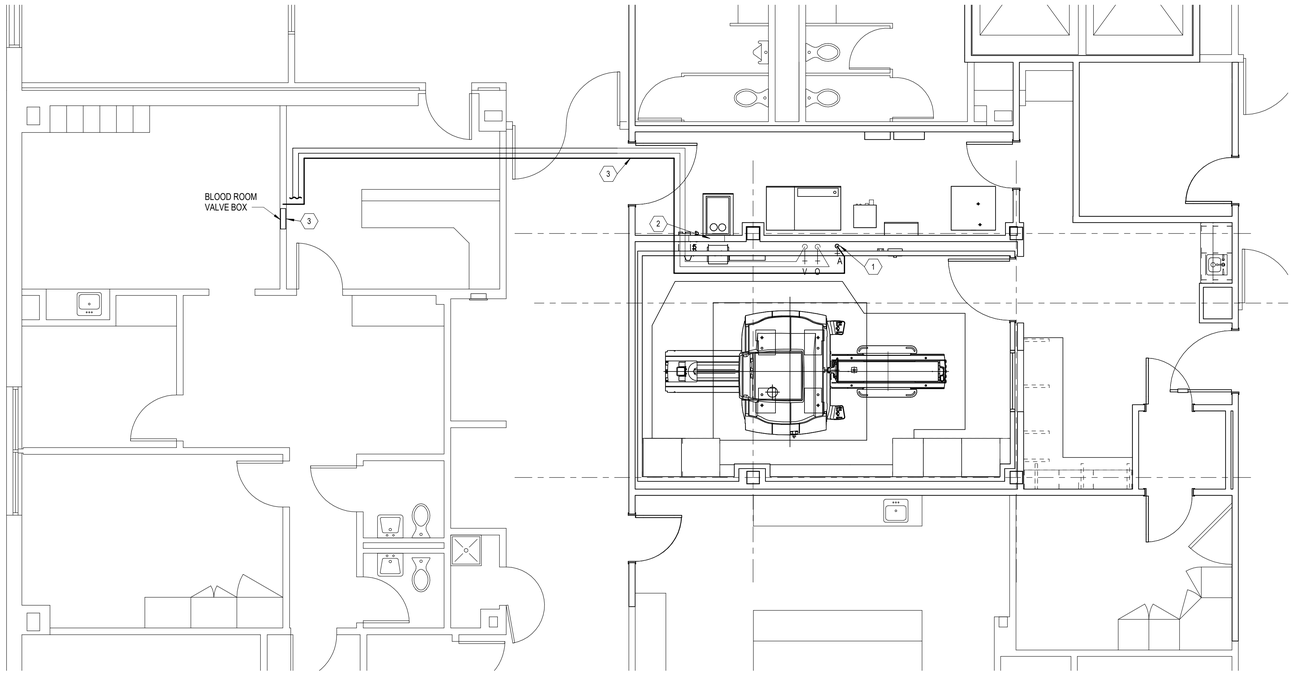
KEYED NOTES

1. MEDICAL AIR OUTLET TO BE ADDED TO MRI MAGNET ROOM. REFER TO G.E. FOR PENETRATION PANEL CONNECTION FOR EXISTING OR NEW SHIELDING. MATCH EXISTING MANUFACTURER AND TYPE/STYLE OF OUTLET USED IN HOSPITAL.
2. PENETRATION PANEL LOCATION.
3. ROUTE NEW 1/2" MEDICAL GRADE COPPER PIPING TO BLOOD ROOM VALVE BOX. THIS VALVE BOX IS SOURCE FOR OXYGEN AND VACUUM ALREADY. ADD CONNECTION DOWN STREAM OF ISOLATION VALVE AND RECERTIFY AS NEEDED.



PLAN NORTH

1 LEVEL 1 MEDICAL GAS DEMOLITION PLAN
1/4" = 1'-0"



PLAN NORTH

2 LEVEL 1 MEDICAL GAS REMODEL PLAN
1/4" = 1'-0"

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SYMBOLS LEGEND

SYMBOL	DESCRIPTION
00	**REFERENCE AND LINE SYMBOLS**
01 A5 E-501	DETAIL INDICATOR: A5 INDICATES DETAIL NUMBER, E-501 INDICATES DRAWING SHEET WHERE DETAIL IS SHOWN.
02 A5 E-201	ELEVATION OR SECTION INDICATOR, EXTERIOR: A5 INDICATES ELEVATION OR SECTION NUMBER, E-201 INDICATES DRAWING SHEET WHERE ELEVATION OR SECTION IS SHOWN.
03 A5 E-201	ELEVATION OR SECTION INDICATOR, INTERIOR: A5 INDICATES ELEVATION OR SECTION NUMBER, E-201 INDICATES DRAWING SHEET WHERE ELEVATION OR SECTION IS SHOWN.
ROOM NAME 04 100	ROOM IDENTIFIER WITH ROOM NAME AND NUMBER.
05 1	KEYNOTE INDICATOR.
06 1	REVISION INDICATOR.
07 CU-1	EQUIPMENT INDICATOR.
09	BREAK, STRAIGHT: TO BREAK PARTS OF DRAWING
10	BREAK, ROUND
12	NEW LINE: MEDIUM LINE.
13	HIDDEN FEATURES LINE: HIDDEN, THIN LINE
14	EXISTING TO REMAIN LINE: THIN LINE.
15	DEMOLITION LINE: DASHED, MEDIUM LINE
16	PROPERTY LINE: DASHED, WIDE LINE.
17	CONTRACT LIMIT LINE: DASHDOT, WIDE LINE.
00	**WIRING METHODS**
01	WIRING.
04 A-1,3,5	BRANCH CIRCUIT HOME RUN TO PANELBOARD: NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS. LETTER AND NUMBER NOTATIONS IDENTIFY PANEL AND CIRCUIT NUMBERS. USE #12 CONDUCTORS, EXCEPT #10 CONDUCTORS SHALL BE INSTALLED IF DISTANCES EXCEED THOSE SPECIFIED IN THE ELECTRICAL SPECIFICATIONS.
05 1 A-1,3,5	BRANCH CIRCUIT HOME RUN TO PANELBOARD: NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS. LETTER AND NUMBER NOTATIONS IDENTIFY PANEL AND CIRCUIT NUMBERS. NUMBER IN BOX REFERS TO THE CONDUCTOR AND CONDUIT SCHEDULE. FOR BRANCH WIRING USE #12 CONDUCTORS, EXCEPT #10 CONDUCTORS SHALL BE INSTALLED IF DISTANCES EXCEED THOSE SPECIFIED IN THE ELECTRICAL SPECIFICATIONS.
07	FLEXIBLE WIRING.
08 — X —	WIRING AND/OR RACEWAY: THIN LINE. WHERE "X" = : CATV = CABLE TELEVISION; NC = NURSE CALL CCTV = CLOSED CIRCUIT TELEVISION; P = POWER RC = RIGID CONDUIT FA = FIRE ALARM; S = SOUND FO = FIBER OPTICS; T = TELEPHONE I = INTERCOM; TV = TELEVISION OTHERS AS NOTED IN OTHER SCHEDULES. RACEWAYS AND WIRING SHALL BE SIZED AS SHOWN AND/OR SPECIFIED.
09	LOW VOLTAGE WIRING: DIVIDE, MEDIUM LINE.
10	CONDUIT STUB. DIMENSION RECORD DRAWINGS AND MARK.
11 1	CONDUCTOR & CONDUIT ("CC") SCHEDULE INDICATOR. REFER TO ONE-LINE DIAGRAM.
12 HC	ADA ACCESS PUSH PLATE
13	JUNCTION BOX.
14 SC	JUNCTION BOX, SYSTEMS FURNITURE COMMUNICATION CONNECTION.
15 SP	JUNCTION BOX, SYSTEMS FURNITURE POWER CONNECTION.
19 C C	CABLE TRAY ABOVE ACCESSIBLE CEILING.
20 W W	WIREWAY.
21	EARTH GROUND (ONE-LINE DIAGRAM).
22 C	JUNCTION BOX, CEILING.
25	MECHANICAL EQUIPMENT CONNECTION. REFER TO EQUIPMENT SCHEDULE FOR REQUIREMENTS.
00	**LIGHTING**
01 (W-3)	FIXTURE IDENTIFICATION: (W-3) INDICATES FIXTURE TYPE AS SCHEDULED.
02 (W-3)	FIXTURE IDENTIFICATION, EMERGENCY WITH BATTERY PACK, CONNECTED TO GENERATOR AS INDICATED: (W-3) INDICATES FIXTURE TYPE AS SCHEDULED.
05	EGRESS DIRECTION ARROW (EXIT SIGNS).
07	EXIT SIGN: SINGLE FACE; CEILING MOUNTED
08	EXIT SIGN: SINGLE FACE; WALL MOUNTED
09	EXIT SIGN: DOUBLE FACE; CEILING MOUNTED
10	EXIT SIGN: DOUBLE FACE; WALL MOUNTED
00	**LIGHTING CONTROL**
01	OCCUPANCY SENSOR, DUAL TECHNOLOGY, OMNI-DIRECTIONAL, CEILING.
02	OCCUPANCY SENSOR, DUAL TECHNOLOGY, WALL.
03	OCCUPANCY SENSOR, DUAL TECHNOLOGY, DIRECTIONAL.
04 U	OCCUPANCY SENSOR, ULTRASONIC, OMNI-DIRECTIONAL, CEILING.
05 R	OCCUPANCY SENSOR CONTROL RELAY.
06	VACANCY SENSOR, DUAL TECHNOLOGY, OMNI-DIRECTIONAL, CEILING.
07	VACANCY SENSOR, DUAL TECHNOLOGY, WALL.
08 P	PHOTOCELL.
18 a,b $	LOW VOLTAGE DIGITAL LIGHTING CONTROL SWITCH: LETTER "a,b" INDICATES ZONING WHERE SHOWN (REFER TO PLANS, SCHEDULES, AND DETAILS FOR EXACT BUTTON CONFIGURATION AND PROGRAMMING REQUIREMENTS)
19 DC	DIGITAL LIGHTING DIMMING CONTROLLER
20 LC	DIGITAL PLUG LOAD CONTROLLER
21 LS	LIGHTING NETWORK SWITCH.
22 NR	LIGHTING NETWORK ROUTER.
23 RC	DIGITAL LIGHTING ROOM CONTROLLER
26 L X	LIGHTING SPACE CONTROL TYPE. X INDICATES TYPE. SEE SCHEDULE / DIAGRAM.

SYMBOLS LEGEND

SYMBOL	DESCRIPTION
00	**WIRING DEVICES**
01	RECEPTACLE, SINGLE: NEMA 5-20R.
02	RECEPTACLE, DUPLEX: NEMA 5-20R.
03 A	RECEPTACLE, DUPLEX, ABOVE COUNTER: NEMA 5-20R.
04 C	RECEPTACLE, DUPLEX, CEILING: NEMA 5-20R.
05 D	RECEPTACLE, DUPLEX, DEDICATED CIRCUIT: NEMA 5-20R.
06 DF	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, DRINKING FOUNTAIN: CONCEAL WATER COOLER RECEPTACLE BEHIND WATER COOLER. SEE MECHANICAL/PLUMBING SHOP DRAWINGS FOR INSTALLATION REQUIREMENTS.
07 IG	RECEPTACLE, DUPLEX, ISOLATED GROUND: NEMA 5-20R.
08 S	RECEPTACLE, DUPLEX, SWITCHED: NEMA 5-20R.
09 UC	RECEPTACLE, DUPLEX, FLOOR, UNDER CARPET: NEMA 5-20R.
10 W	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, WET LABEL, "WEATHERPROOF IN USE": NEMA 5-20R.
11 WP	RECEPTACLE, DUPLEX, WEATHERPROOF: NEMA 5-20R.
12	RECEPTACLE, DUPLEX, HOSPITAL GRADE: NEMA 5-20R.
13	RECEPTACLE, DUPLEX ON EMERGENCY POWER: NEMA 5-20R.
14	RECEPTACLE, DUPLEX, HOSPITAL GRADE ON EMERGENCY POWER: NEMA 5-20R.
16	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER: NEMA 5-20R.
17	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, HOSPITAL GRADE: NEMA 5-20R.
18	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, HOSPITAL GRADE ON EMERGENCY POWER: NEMA 5-20R.
19 WP	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, WEATHERPROOF: NEMA 5-20R.
22	RECEPTACLE, QUADRAPLEX: NEMA 5-20R.
23	RECEPTACLE, QUADRAPLEX ON EMERGENCY POWER: NEMA 5-20R.
24	RECEPTACLE, QUADRAPLEX, HOSPITAL GRADE: NEMA 5-20R.
25	RECEPTACLE, QUADRAPLEX, HOSPITAL GRADE ON EMERGENCY POWER: NEMA 5-20R.
27	RECEPTACLE, QUADRAPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER: NEMA 5-20R.
28	RECEPTACLE, SPECIAL PURPOSE. PROVIDE RECEPTACLE TO MATCH EQUIPMENT PLUG.
29	RECEPTACLE, SPECIAL PURPOSE ON EMERGENCY POWER. PROVIDE RECEPTACLE TO MATCH EQUIPMENT PLUG.
32 C	RECEPTACLE, CLOCK HANGER: NEMA 5-15R.
33	MULTI-OUTLET ASSEMBLY: NEMA 5-20R.
36 FB#	FLUSH FLOOR BOX. "#" SHOWN ON DRAWINGS. REFER TO WIRING DEVICE SCHEDULE IN THE ELECTRICAL SPECIFICATIONS FOR CONFIGURATION AND DEVICES.
37 PP#	POWER POLE. "#" SHOWN ON DRAWINGS. REFER TO WIRING DEVICE SCHEDULE IN THE ELECTRICAL SPECIFICATIONS FOR CONFIGURATION AND DEVICES.
38 PT#	FLUSH FIRE RATED POKE THRU. "#" SHOWN ON DRAWINGS. REFER TO WIRING DEVICE SCHEDULE IN THE ELECTRICAL SPECIFICATIONS FOR CONFIGURATION AND DEVICES.
39	SWITCH, DIMMER.
40 X $	SWITCH, SINGLE POLE ("x" INDICATES FIXTURES CONTROLLED).
41 X $2	SWITCH, DOUBLE POLE ("x" INDICATES FIXTURES CONTROLLED).
42 X $3	SWITCH, THREE-WAY ("x" INDICATES FIXTURES CONTROLLED).
43 X $4	SWITCH, FOUR-WAY ("x" INDICATES FIXTURES CONTROLLED).
44 $DS	SWITCH, DOOR.
45 $K	SWITCH, KEY OPERATED.
47 $M	SWITCH, MOMENTARY.
52 T	RECEPTACLE, DUPLEX, TAMPER RESISTANT: NEMA 5-20R.
53	RECEPTACLE, QUADRAPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, HOSPITAL GRADE: NEMA 5-20R.
54	RECEPTACLE, QUADRAPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, HOSPITAL GRADE ON EMERGENCY POWER: NEMA 5-20R.
56	RECEPTACLE, SINGLE PLEX, WITH USB OUTLET
57	RECEPTACLE, DULEX, RECESSED, NEMA 5-20R, AUTOMATICALLY CONTROLLED THROUGH TIME OR OCCUPANCY BASED CONTROLS (REFER TO PLANS FOR CONTROL METHOD)
58	RECEPTACLE, QUADRAPLEX, RECESSED, NEMA 5-20R, AUTOMATICALLY CONTROLLED THROUGH TIME OR OCCUPANCY BASED CONTROLS (REFER TO PLANS FOR CONTROL METHOD)
59	INDICATES A RECEPTACLE IS AUTOMATICALLY CONTROLLED THROUGH TIME OR OCCUPANCY BASED CONTROLS (REFER TO PLANS FOR CONTROL METHOD)
00	**STRUCTURED CABLING**
01	COMMUNICATIONS DEVICE (1 DATA).
02	COMMUNICATIONS DEVICE (1 DATA / 1 ANALOG).
03	COMMUNICATIONS DEVICE (1 DATA WALL PHONE).
04	COMMUNICATIONS DEVICE (2 DATA).
05 3	COMMUNICATIONS DEVICE (3 DATA).
06 4	COMMUNICATIONS DEVICE (4 DATA).
07 6	COMMUNICATIONS DEVICE (6 DATA).
08 M	COMMUNICATIONS DEVICE PHYSIOLOGICAL MONITOR (1 DATA).
02	DATA CONNECTION: WIRELESS ACCESS POINT (WAP). REQUIRES (2) DATA DROPS PER DEVICE
07	TELEPHONE TERMINAL BOARD, FIRE TREATED PLYWOOD PAINTED.
08	LAN RACK, FLOOR STANDING.
00	**TECHNOLOGY SYSTEMS**
02 S #	SPEAKER, CEILING MOUNTED.
03 S #	SPEAKER, WALL MOUNTED.
40 CP#	CONNECTION PANEL.

SYMBOLS LEGEND

SYMBOL	DESCRIPTION
00	**ELECTRICAL POWER AND DISTRIBUTION**
01	FUSE WITH RATING (ONE-LINE DIAGRAM).
02	DISCONNECT, FUSED (ONE-LINE DIAGRAM).
03	DISCONNECT, NONFUSED (ONE-LINE DIAGRAM).
04	DISCONNECT WITH FUSE AND MOTOR STARTER COMBINATION (ONE-LINE DIAGRAM).
05	OVERLOAD RELAY (ONE-LINE DIAGRAM).
06	STARTER (ONE-LINE DIAGRAM).
07	CIRCUIT BREAKER, MOLDED CASE (ONE-LINE DIAGRAM).
08	CIRCUIT BREAKER, MOLDED CASE WITH SHUNT TRIP (ONE-LINE DIAGRAM).
09 MCP	CIRCUIT BREAKER, MOTOR CIRCUIT PROTECTION (ONE-LINE DIAGRAM).
10	CIRCUIT BREAKER, SOLID STATE (ONE-LINE DIAGRAM).
11 GFP	CIRCUIT BREAKER, SOLID STATE WITH GROUND FAULT PROTECTION (ONE-LINE DIAGRAM).
12	MOTOR.
15	HEATER, ELECTRIC RESISTANCE.
16	TRANSFORMER (ONE-LINE DIAGRAM).
17	TRANSFORMER, CURRENT (ONE-LINE DIAGRAM).
18	BATTERY (ONE-LINE DIAGRAM).
19	CAPACITOR (ONE-LINE DIAGRAM).
20	DELTA CONNECTION (ONE-LINE DIAGRAM).
21	WYE CONNECTION (ONE-LINE DIAGRAM).
22 "1H"	PANELBOARD (ONE-LINE DIAGRAM).
23 225/3 "1H"	PANELBOARD WITH MAIN LUGS ONLY. BUS SIZE AND PHASE AS SHOWN (ONE-LINE DIAGRAM).
24 225/3 "1H"	PANELBOARD WITH MAIN CIRCUIT BREAKER. SIZE AND PHASE AS SHOWN (ONE-LINE DIAGRAM).
25 225/3 "1H" 60/3	PANELBOARD WITH MAIN AND SUB FEED CIRCUIT BREAKER (ONE-LINE DIAGRAM).
26 225/3 "1H" 25/3	PANELBOARD WITH MAIN LUGS ONLY AND SURGE PROTECTION WITH CIRCUIT BREAKER (ONE-LINE DIAGRAM).
00	**NURSE CALL**
01	JUNCTION BOX.
02	CORRIDOR LIGHT.
03 B	BATHROOM PULL CORD STATION.
04 D	DUTY STATION.
05 E	EMERGENCY ASSISTANCE CALL STATION.
06 E CB	EMERGENCY ASSISTANCE CODE BLUE CALL STATION.
07 P	PATIENT STATION.
08 S	STAFF STATION.
09 NCM	TOUCH SCREEN NURSE CALL MASTER STATION.
10 ZLC	ZONE LIGHT CONTROLLER.
11 CU	NURSE CALL AREA CONTROL UNIT & POWER SUPPLIES.
00	**CCTV**
01 P	CCTV CABLE, POWER.
02 V	CCTV CABLE, VIDEO SIGNAL.
03 CCTV	CCTV HEADEND EQUIPMENT.
04 M	CCTV MONITOR.
05	CCTV CAMERA/ENCLOSURE WITH LENS, TYPICAL. SEE SCHEDULE.
06 PTZ	CCTV CAMERA WITH PAN, TILT AND ZOOM.
07 360°	PANNING CAMERA TRANSVERSE ANGLE.

SYMBOLS LEGEND

SYMBOL	DESCRIPTION
00	**FIRE ALARM**
01 FSA	FIRE SYSTEM ANNUNCIATOR.
02 FCP	FIRE ALARM CONTROL PANEL, SEMI-RECESSED.
03 FPS	FIRE ALARM NOTIFICATION POWER SUPPLY.
04 FTR	FIRE ALARM TRANSPONDER OR TRANSMITTER.
05 HVA	SMOKE CONTROL PANEL.
06 C	AUTOMATIC DOOR CLOSERS: DOOR CLOSERS SHALL BE FURNISHED WITH DOOR HARDWARE AND CONNECTED TO BY FIRE ALARM INSTALLERS.
07 CM	CONTROL MODULE.
08 MM	MONITOR MODULE.
09 P	FIRE ALARM MANUAL PULL STATION.
10 R	SHUT DOWN RELAY: INSTALL RELAY IN CONTROL CIRCUIT OF EQUIPMENT TO BE CONTROLLED IN THE EVENT OF A FIRE.
11	MAGNETIC DOOR HOLDER.
12 A	FIRE SERVICE OR EMERGENCY TELEPHONE STATION, ACCESSIBLE.
13 H	FIRE SERVICE OR EMERGENCY TELEPHONE STATION, HANDSET.
14 J	FIRE SERVICE OR EMERGENCY TELEPHONE STATION, JACK.
15	DETECTOR, SMOKE.
16 A	DETECTOR, SMOKE WITH AUXILIARY CONTACT.
17 BR	DETECTOR, SMOKE, BEAM RECEIVER.
18 BT	DETECTOR, SMOKE, BEAM TRANSMITTER.
19 E	DETECTOR, SMOKE, ELEVATOR RECALL DESIGNATION.
20 G	DETECTOR, SMOKE WITH GUARD.
21 R	DETECTOR, SMOKE, RESIDENTIAL.
22	DETECTOR, SMOKE, DUCT WITH HOUSING AND SAMPLING TUBE.
23	DETECTOR, HEAT.
24	INDICATOR LAMP.
25	STROBE.
26 75	STROBE. SUBSCRIPT INDICATES CANDELA RATING.
27 WP	ALARM, HORN/SPEAKER, WEATHERPROOF.
28	ALARM, HORN/STROBE, ONE ASSEMBLY.
29 75	ALARM, HORN/STROBE, ONE ASSEMBLY. SUBSCRIPT INDICATES CANDELA RATING.
30 C	ALARM, CHIME/STROBE, ONE ASSEMBLY.
31 G	ALARM, HORN/STROBE WITH GUARD, ONE ASSEMBLY.
32 M	ALARM, MINI HORN/STROBE, ONE ASSEMBLY.
33 E	SPEAKER, EVACUATION.
34 E	SPEAKER, EVACUATION, COMBINATION STROBE.
35	DETECTOR, FLOW SWITCH: FLOW SWITCHES SHALL BE PROVIDED AND INSTALLED WITH FIRE SPRINKLER SYSTEM AND SHALL BE CONNECTED TO LOCATIONS SHOWN ON THE FIRE SPRINKLER SHOP DRAWINGS.
36	DETECTOR, TAMPER SWITCH WITH VALVE: TAMPER SWITCHES SHALL BE PROVIDED AND INSTALLED WITH FIRE SPRINKLER SYSTEM AND SHALL BE CONNECTED TO LOCATIONS SHOWN ON THE FIRE SPRINKLER SHOP DRAWINGS.
37 SD	SMOKE DAMPER.
38 FSD	FIRE AND SMOKE DAMPER.
39	BELL (GONG).
40 CO	DETECTOR, CARBON MONOXIDE.
42 75	ALARM, HORN/STROBE, ONE ASSEMBLY, CEILING MOUNTED. SUBSCRIPT INDICATES CANDELA RATING.
43 75	ALARM, HORN, CEILING MOUNTED. SUBSCRIPT INDICATES CANDELA RATING.
44 75	ALARM, STROBE, CEILING MOUNTED. SUBSCRIPT INDICATES CANDELA RATING.
00	**SECURITY**
01 X	SECURITY CABLE. SEE EQUIPMENT SCHEDULE FOR CABLE TYPE.
02 ACC	ACCESS CONTROL HEADEND EQUIPMENT.
03 CTR	SECURITY CONTROL PANEL.
04 SEC	INTRUSION DETECTION HEADEND EQUIPMENT.
05 #1	CARD ACCESS DOOR TYPE #1 OR AS NOTED. SEE SCHEDULE.
06 CR	CARD READER.
07 KCR	KEYPAD/CARD READER COMBINATION.
21 P	PANIC DURESS SWITCH.
00	**TV DISTRIBUTION**
01 T	TV DISTRIBUTION CABLE, INDIVIDUAL DROPS.
02 TR	TV DISTRIBUTION CABLE, TRUNK.
03 CMB	COMBINER.
04 DC	DIRECTIONAL COUPLER.
05 DA	DISTRIBUTION AMPLIFIER (ONE-LINE DIAGRAM).
06 SPL	SPLITTER (ONE-LINE DIAGRAM).
07	TV OUTLET.
08	SATELLITE ANTENNA.
09	TV ANTENNA (ONE-LINE DIAGRAM).
10	TERMINATOR, 75 OHM (TV DISTRIBUTION).

ABBREVIATIONS

NOTE: ALL ABBREVIATIONS MAY NOT BE USED.

1P	SINGLE POLE
1PH	SINGLE-PHASE
1WAY	ONE-WAY
2/C	TWO-CONDUCTOR
2WAY	TWO-WAY
3/C	THREE-CONDUCTOR
3WAY	THREE-WAY
4OUT	QUADRUPLE RECEPTACLE OUTLET
4PDT	FOUR-POLE DOUBLE THROW
4PST	FOUR-POLE SINGLE THROW
4W	FOUR-WIRE
4WAY	FOUR-WAY
A	ABOVE COUNTER
AC	ARMORED CABLE
ADA	AMERICANS WITH DISABILITIES ACT
ADJ	ADJACENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPERE INTERRUPTING CAPACITY
ALUM	ALUMINUM
AMP	AMPERE
ANN	ANNUNCIATOR
AP	ACCESS POINT (WIRELESS DATA)
AR	AS REQUIRED
ASC	AMPS SHORT CIRCUIT
ATS	AUTOMATIC TRANSFER SWITCH
AV	AUDIO VISUAL
AWG	AMERICAN WIRE GAGE
BB XFMR	BUCK-BOOST TRANSFORMER
C	CEILING MOUNTED
CATV	COMMUNITY ANTENNA TELEVISION
CB	CIRCUIT BREAKER
CCBA	CUSTOM COLOR AS SELECTED BY ARCHITECT
CCTV	CLOSED CIRCUIT TELEVISION
CF/CI	CONTRACTOR FURNISHED/ CONTRACTOR INSTALLED
CF/OI	CONTRACTOR FURNISHED/ OWNER INSTALLED
CFBA	CUSTOM FINISH AS SELECTED BY ARCHITECT
CKT	CIRCUIT
CM	CONSTRUCTION MANAGER
CND	CONDUIT
CO	CONVENIENCE OUTLET
COR	CONTRACTING OFFICER'S REPRESENTATIVE
CP	CONTROL PANEL
CT	CURRENT TRANSFORMER
CTV	CABLE TELEVISION
CU	COPPER
dBA	UNIT OF SOUND LEVEL
DPDT	DOUBLE POLE, DOUBLE THROW
DS	DISCONNECT SWITCH
EA	EACH
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ENT	ELECTRIC NONMETALLIC TUBING
EPO	EMERGENCY POWER OFF
EQUIP	EQUIPMENT
EX	EXISTING
F	FURNITURE MOUNTED
FA	FIRE ALARM
FCP	FIRE ALARM CONTROL PANEL
FLA	FULL LOAD AMPS
FMC	FLEXIBLE METAL CONDUIT
FOB	FREIGHT ON BOARD
FVNR	FULL VOLTAGE NON-REVERSING
FVR	FULL VOLTAGE REVERSING
GEN	GENERATOR
GFCI	GROUND FAULT INTERRUPTER
GFP	GROUND FAULT PROTECTION
GND	GROUND
HD	HEAVY DUTY
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTOMATIC
HP	HORSE POWER
HPF	HIGH POWER FACTOR
HPS	HIGH PRESSURE SODIUM
HV	HIGH VOLTAGE
HZ	HERTZ
I/O	INPUT/ OUTPUT
IG	ISOLATED GROUND
IMC	INTERMEDIATE METAL CONDUIT
IN/IS	INSULATED/ ISOLATED
IR	INFRARED
J-BOX	JUNCTION BOX
kV	KILOVOLT
kVA	KILOVOLT AMPERE
kVAR	KILOVOLT AMPERE REACTIVE
kW	KILOWATT
kWh	KILOWATT HOUR
LED	LIGHT EMITTING DIODE
LFMC	LIQUID TIGHT FLEXIBLE METAL CONDUIT
LFNC	LIQUID TIGHT FLEXIBLE NONMETALLIC CONDUIT
LPS	LOW PRESSURE SODIUM
LRA	LOCKED ROTOR AMPS
LTG	LIGHTING
LV	LOW VOLTAGE
MATV	MASTER ANTENNA TELEVISION SYSTEM
MAX	MAXIMUM
MC	METAL CLAD
MCA	MINIMUM CIRCUIT AMPS
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTION
MDP	MAIN DISTRIBUTION PANEL
MG	MOTOR GENERATOR
MH	MANHOLE
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MOCP	MAXIMUM OVERCURRENT PROTECTION
MTS	MANUAL TRANSFER SWITCH
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NFC	NATIONAL FIRE CODE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OC	ON CENTER
OCP	OVER CURRENT PROTECTION
OF/CI	OWNER FURNISHED/ CONTRACTOR INSTALLED
OF/OI	OWNER FURNISHED/ OWNER INSTALLED
OFP	OBTAIN FROM PLANS
OH DR	OVERHEAD (COILING) DOOR
OL	OVERLOAD
PB	PUSHBUTTON
PF	POWER FACTOR
PH	PHASE
PNL	PANEL
PT	POTENTIAL TRANSFORMER
PTZ	PAN/TILT/ZOOM
QTY	QUANTITY
R	REMOVE
RCP	REFLECTED CEILING PLAN
RMC	RIGID METAL CONDUIT
RNC	RIGID NONMETAL CONDUIT
RPM	REVOLUTIONS PER MINUTE
RR	REMOVE AND RELOCATE
S/S	START/STOP
SCA	SHORT CIRCUIT AMPS
SCBA	STANDARD COLOR AS SELECTED BY ARCHITECT
SF	SQUARE FOOT (FEET)
SFBA	STANDARD FINISH AS SELECTED BY ARCHITECT
SPD	SURGE PROTECTIVE DEVICE
SPDT	SINGLE POLE, DOUBLE THROW
SPEC	SPECIFICATION
SPST	SINGLE POLE, SINGLE THROW
ST	SINGLE THROW
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TL	TWIST LOCK
TP	TELEPHONE POLE
TP	TWISTED PAIR
TTB	TELEPHONE TERMINAL BOARD
TV	TELEVISION
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSER
TYP	TYPICAL
UF	UNDERFLOOR
UGND	UNDERGROUND
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLTS
VA	VOLT AMPERE
VFC/VFD	VARIABLE FREQUENCY MOTOR CONTROLLER
W/	WITH
W/O	WITHOUT
WP	WEATHERPROOF
XFMR	TRANSFORMER

GENERAL ELECTRICAL NOTES

1. CLARIFICATION METHODS: AT THE TIME OF BIDDING, BIDDERS SHALL FAMILIARIZE THEMSELVES WITH THE DRAWINGS AND SPECIFICATIONS. ANY QUESTIONS, MISUNDERSTANDINGS, CONFLICTS, DELETIONS, DISCONTINUED PRODUCTS, CATALOG NUMBER DISCREPANCIES, DISCREPANCIES BETWEEN THE EQUIPMENT SUPPLIED AND THE INTENT OR FUNCTION OF THE EQUIPMENT, ETC, SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER IN WRITING FOR CLARIFICATION PRIOR TO ISSUANCE OF THE FINAL ADDENDUM AND BIDDING OF THE PROJECT. WHERE DISCREPANCIES OR MULTIPLE INTERPRETATIONS OCCUR, THE MOST STRINGENT (WHICH IS GENERALLY RECOGNIZED AS THE MOST COSTLY) THAT MEETS THE INTENT OF THE DOCUMENTS SHALL BE ENFORCED.

2. OWNER FURNISHED ITEMS: THE OWNER WILL FURNISH MATERIAL AND EQUIPMENT AS INDICATED IN THE CONTRACT DOCUMENTS TO BE INCORPORATED INTO THE WORK. THESE ITEMS ARE ASSIGNED TO THE INSTALLER AND COSTS FOR RECEIVING, HANDLING, STORAGE, IF REQUIRED, AND INSTALLATION ARE INCLUDED IN THE CONTRACT SUM.

   A. THE INSTALLER'S RESPONSIBILITIES ARE THE SAME AS IF THE INSTALLER FURNISHED THE MATERIALS OR EQUIPMENT.

   B. THE OWNER WILL ARRANGE AND PAY FOR DELIVERY OF OWNER FURNISHED ITEMS FREIGHT ON BOARD JOB SITE AND THE INSTALLER WILL INSPECT DELIVERIES FOR DAMAGE. IF OWNER FURNISHED ITEMS ARE DAMAGED, DEFECTIVE OR MISSING, DOCUMENT DAMAGED ITEMS WITH THE TRANSPORT COMPANY AND THE OWNER WILL ARRANGE FOR REPLACEMENT. THE OWNER WILL ALSO ARRANGE FOR MANUFACTURER'S FIELD SERVICES, AND THE DELIVERY OF MANUFACTURER'S WARRANTIES AND BONDS TO THE INSTALLER.

   C. THE INSTALLER IS RESPONSIBLE FOR DESIGNATING THE DELIVERY DATES OF OWNER FURNISHED ITEMS AND FOR RECEIVING, UNLOADING AND HANDLING OWNER FURNISHED ITEMS AT THE SITE.THE INSTALLER IS RESPONSIBLE FOR PROTECTING OWNER FURNISHED ITEMS FROM DAMAGE, INCLUDING DAMAGE FROM EXPOSURE TO THE ELEMENTS, AND TO REPAIR OR REPLACE ITEMS DAMAGED AS A RESULT OF HIS OPERATIONS.

3. EXPOSED STRUCTURE AREAS (EXCLUDING MECHANICAL, ELECTRICAL, AND COMMUNICATION SPACES): INSTALL RACEWAYS BETWEEN DECK AND STRUCTURE WHEREVER POSSIBLE IN EXPOSED STRUCTURE CEILING AREAS. ROUTE RACEWAYS IN CONCEALED AREAS WHEREVER POSSIBLE. REFER ALL CONDITIONS WHERE RACEWAYS MUST BE INSTALLED WHICH CANNOT COMPLY WITH THESE REQUIREMENTS TO THE ARCHITECT.

4. SUBMITTALS: PROVIDE ORIGINAL ELECTRONIC PDF FORMAT, BOUND, BOOKMARKED (EACH SECTION AND PRODUCT), AND HIGHLIGHTED. JOB NAME AND SUBCONTRACTOR SHALL BE ON THE FRONT COVER. PREPARE INDEX OF EQUIPMENT SUBMITTED IN EACH TAB.

5. REFLECTED CEILING PLANS: COORDINATE THE LOCATION OF LIGHT FIXTURES WITH THE ARCHITECTURAL REFLECTED CEILING PLANS. REFER ALL DISCREPANCIES TO THE ARCHITECT AND ENGINEER.

6. ALL WORK SHALL BE DONE ACCORDING TO THE CURRENT NATIONAL ELECTRIC CODE (NEC), IBC, NFPA, AND IFC. COMPLIANCE AND FINAL APPROVAL IS SUBJECT TO THE ON SITE FIELD INSPECTION OF THE AHJ.

DEFINITIONS

NOTE: ALL DEFINITIONS MAY NOT BE USED.

INDICATED: THE TERM "INDICATED" REFERS TO GRAPHIC REPRESENTATIONS, NOTES, OR SCHEDULES ON THE DRAWINGS, OTHER PARAGRAPHS OR SCHEDULES IN THE SPECIFICATIONS, AND SIMILAR REQUIREMENTS IN THE CONTRACT DOCUMENTS. WHERE TERMS SUCH AS "SHOWN", "NOTED", "SCHEDULED", AND "SPECIFIED" ARE USED, IT IS TO HELP THE READER LOCATE THE REFERENCE, NO LIMITATION ON LOCATION IS INTENDED.

DIRECTED: TERMS SUCH AS "DIRECTED", "REQUESTED", AUTHORIZED", "SELECTED", "APPROVED", "REQUIRED", AND "PERMITTED" MEAN "DIRECTED BY THE ENGINEER", "REQUESTED BY THE ENGINEER", AND SIMILAR PHRASES.

APPROVED: THE TERM "APPROVED", WHERE USED IN CONJUNCTION WITH THE ENGINEER'S ACTION ON THE CONTRACTOR'S SUBMITTALS, APPLICATIONS, AND REQUESTS, IS LIMITED TO THE ENGINEER'S DUTIES AND RESPONSIBILITIES AS STATED IN GENERAL AND SUPPLEMENTARY CONDITIONS.

FURNISH: THE TERM "FURNISH" IS USED TO MEAN "SUPPLY AND DELIVER TO THE PROJECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY, INSTALLATION, AND SIMILAR OPERATIONS."

INSTALL: THE TERM "INSTALL" IS USED TO DESCRIBE OPERATIONS AT PROJECT SITE INCLUDING THE ACTUAL "UNLOADING, UNPACKING, ASSEMBLY, ERECTION, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR OPERATIONS."

PROVIDE: THE TERM "PROVIDE" MEANS "TO FURNISH AND INSTALL, COMPLETE AND READY FOR THE INTENDED USE."

INSTALLER: AN "INSTALLER" IS THE CONTRACTOR OR AN ENTITY ENGAGED BY THE CONTRACTOR, EITHER AS AN EMPLOYEE, SUBCONTRACTOR, OR SUB-SUBCONTRACTOR, FOR PERFORMANCE OF A PARTICULAR CONSTRUCTION ACTIVITY, INCLUDING INSTALLATION, ERECTION, APPLICATION, AND SIMILAR OPERATIONS. INSTALLERS ARE REQUIRED TO BE EXPERIENCED IN THE OPERATIONS THEY ARE ENGAGED TO PERFORM.

TECHNOLOGY SYSTEMS: THE TERM "TECHNOLOGY SYSTEMS" IS USED TO DESCRIBE ALL LOW VOLTAGE SYSTEMS GENERALLY REFERRED TO AS "SPECIAL SYSTEMS". THESE SYSTEMS INCLUDE BUT ARE NOT NECESSARILY LIMITED TO ALL SYSTEMS WHICH UTILIZE VOLTAGES OF LESS THAN 71 VOLTS SUCH AS SOUND SYSTEMS, VIDEO SYSTEMS, TV SYSTEMS, SECURITY SYSTEMS, VOICE AND DATA CABLING SYSTEMS, ETC...

ELECTRICAL SHEET INDEX

HKS

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SALT LAKE CITY, UT. 84101

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Mountain View Hospital
MRI Replacement
1000 EAST 100 NORTH, PAYSON, UTAH 84651

PROFESSIONAL ENGINEER
No. 11783731-2202
JASON R. WORTHEN
STATE OF UTAH
09/20/21

REVISION
NO. DESCRIPTION DATE

HKS PROJECT NUMBER
24805.000
DATE
08/12/11
ISSUE

SHEET TITLE
SHEET INDEX, ABBREVIATIONS, AND GENERAL NOTES

EE001

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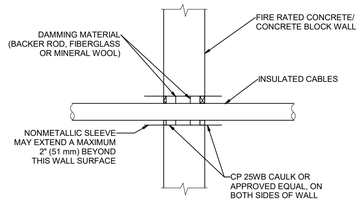
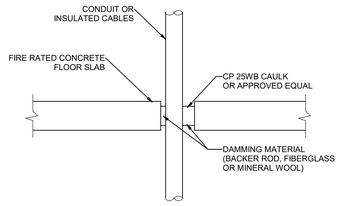


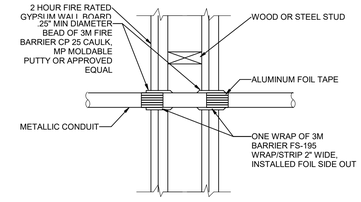
TYPICAL FIRE STOP FOR CABLES/CONDUIT THROUGH CONCRETE WALLS

5 SCALE: NTS



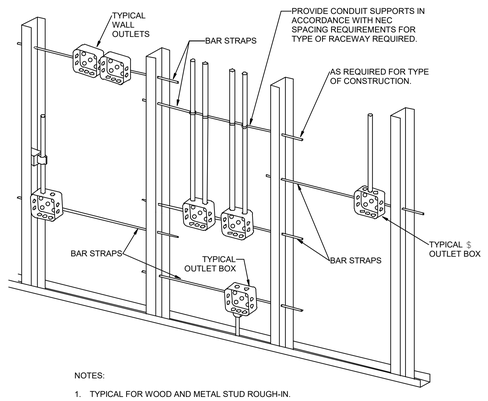
TYPICAL FIRE STOP FOR CABLES/CONDUIT THROUGH CONCRETE FLOORING

6 SCALE: NTS



FIRE STOP FOR METAL CONDUIT THROUGH GYPSUM WALL BOARD

7 SCALE: NTS

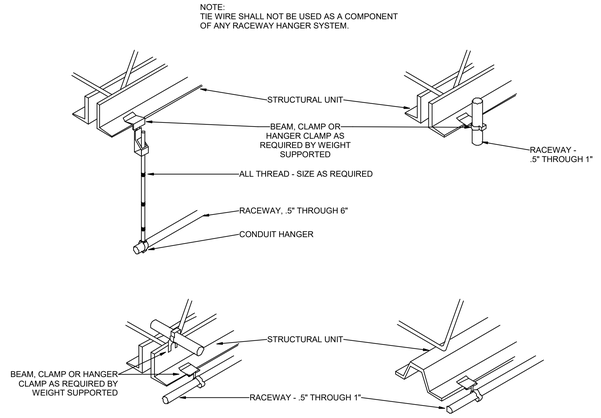


NOTES:

1. TYPICAL FOR WOOD AND METAL STUD ROUGH-IN.
2. PLASTER RINGS NOT SHOWN.
3. LOCATE ALL OUTLET BOXES IN ACCORDANCE WITH ARCHITECTURAL AND MECHANICAL DRAWINGS AND WITH ALL APPLICABLE SHOP DRAWINGS.
4. IN ACCORDANCE WITH IBC 714.3.2 EXCEPTION 1, OUTLETS ON OPPOSITE SIDES OF WALLS OR PARTITIONS IN THE SAME STUD SPACE IN A RATED FIRE SEPARATION WALL MUST BE SEPARATED BY A MINIMUM OF 24" HORIZONTAL DISTANCE OR LISTED, SOUND AND FIRE RATED PUTTY PADS SHALL BE USED ON THE OUTLET BOXES.
5. IN NON-RATED WALLS, OUTLETS ON OPPOSITE SIDES OF WALLS OR PARTITIONS MUST BE SEPARATED BY 16" FOR SOUND ATTENUATION.

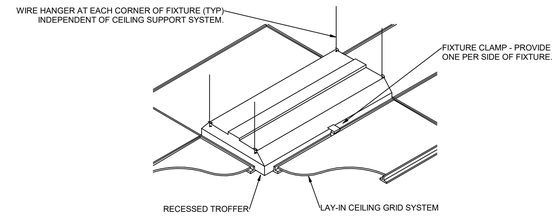
TYPICAL ROUGH-IN REQUIREMENTS DETAIL

1 SCALE: NTS



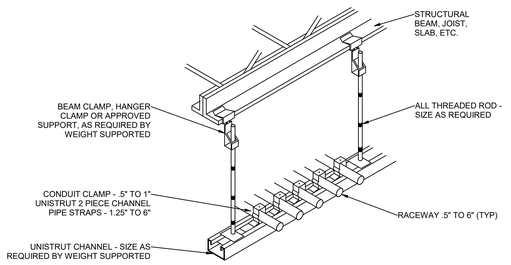
TYPICAL RACEWAY SUPPORT METHODS DETAIL

2 SCALE: NTS



RECESSED FIXTURE MOUNTING DETAIL

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



TYPICAL CONDUIT RACK DETAIL

3 SCALE: NTS

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REVISION

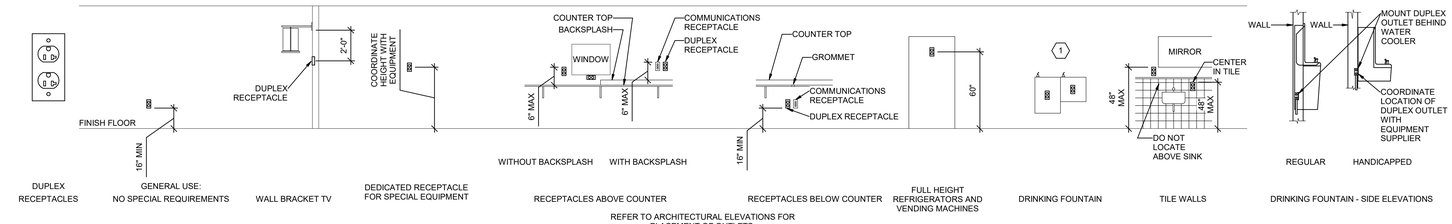
NO.	DESCRIPTION	DATE

HKS PROJECT NUMBER
24805.000
DATE
02/24/15
ISSUE

SHEET TITLE
ELECTRICAL DETAILS

SHEET NO.
EE501

PLOT DATE: 9/20/2021 7:29:20 PM TEMPLATE VERSION: 3.0 (5/2017/0823)

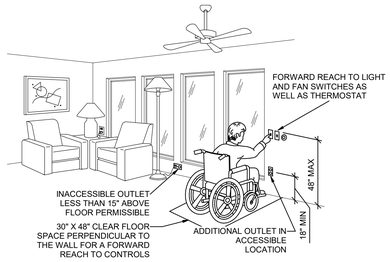


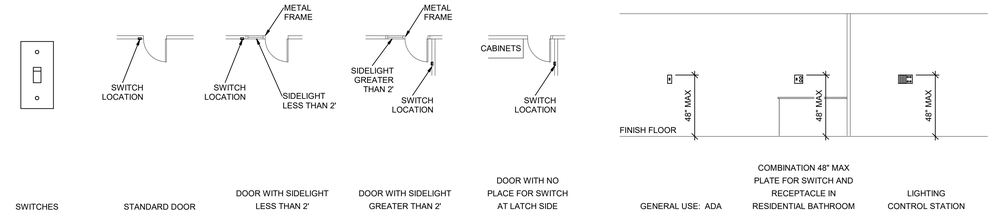
DUPLEX RECEPTACLES | GENERAL USE: NO SPECIAL REQUIREMENTS | WALL BRACKET TV | DEDICATED RECEPTACLE FOR SPECIAL EQUIPMENT | RECEPTACLES ABOVE COUNTER (WITHOUT BACKSPLASH | WITH BACKSPLASH) | RECEPTACLES BELOW COUNTER | FULL HEIGHT REFRIGERATORS AND VENDING MACHINES | DRINKING FOUNTAIN | TILE WALLS | DRINKING FOUNTAIN - SIDE ELEVATIONS (REGULAR | HANDICAPPED)

REFER TO ARCHITECTURAL ELEVATIONS FOR PLACEMENT OF OUTLETS.

9 RECEPTACLE MOUNTING DETAILS

SCALE: NTS

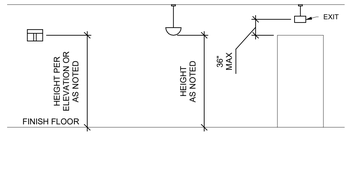




SWITCHES | STANDARD DOOR | DOOR WITH SIDELIGHT LESS THAN 2' | DOOR WITH SIDELIGHT GREATER THAN 2' | DOOR WITH NO PLACE FOR SWITCH AT LATCH SIDE | GENERAL USE: ADA | COMBINATION 48" MAX PLATE FOR SWITCH AND RECEPTACLE IN RESIDENTIAL BATHROOM | LIGHTING CONTROL STATION

7 ADA DETAIL

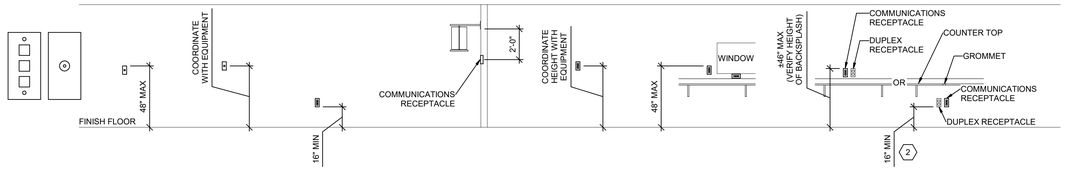
SCALE: NTS



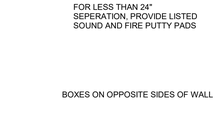
WALL MOUNTED LIGHT FIXTURE | PENDANT LIGHT FIXTURE | PENDANT EXIT SIGNS

8 SWITCH MOUNTING DETAILS

SCALE: NTS



COMMUNICATION RECEPTACLES | WALL PHONE | PAY PHONE | GENERAL USE: NO SPECIAL REQUIREMENTS | WALL BRACKET TV | DEDICATED RECEPTACLE FOR SPECIAL EQUIPMENT | ABOVE COUNTER - TYPICAL | RECEPTACLES ABOVE OR BELOW COUNTER



NOTE: ALL DEVICES SHALL BE INSTALLED AND LOCATED IN THE BLOCK CONSISENTLY THROUGH OUT THE BUILDING.

4 CMU DEVICE MOUNTING ALIGNMENT DETAIL

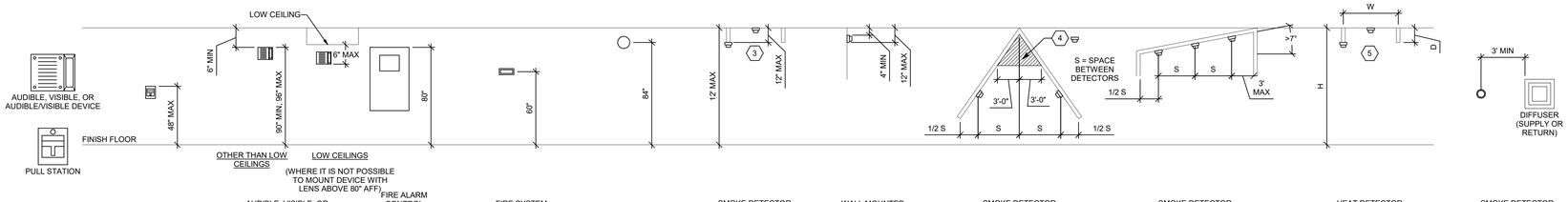
SCALE: NTS

FOR LESS THAN 24" SEPERATION, PROVIDE LISTED SOUND AND FIRE PUTTY PADS

BOXES ON OPPOSITE SIDES OF WALL

5 LIGHTING MOUNTING DETAILS

SCALE: NTS



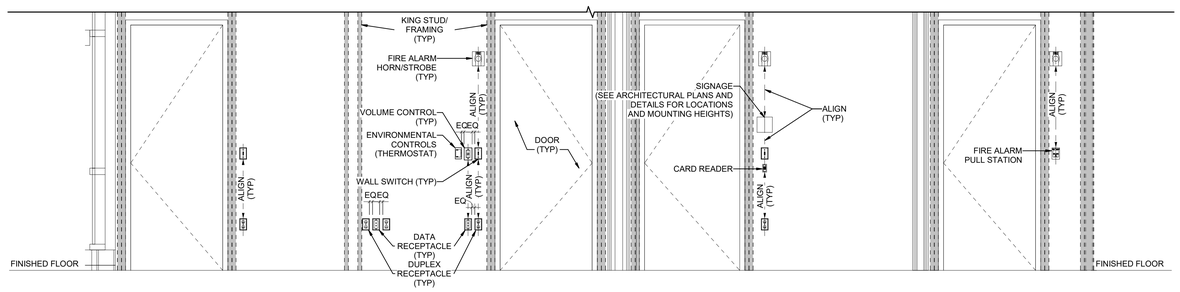
FIRE ALARM | PULL STATION | AUDIBLE, VISIBLE, OR AUDIBLE/VISIBLE DEVICE | FIRE ALARM CONTROL PANEL "FCP" | FIRE SYSTEM ANNUNCIATOR "FSA" | BELL | SMOKE DETECTOR BETWEEN BEAMS | WALL MOUNTED SMOKE DETECTOR | SMOKE DETECTOR ON SLOPED CEILING (PEAKED) | SMOKE DETECTOR ON SLOPED CEILING (SHED) | HEAT DETECTOR BETWEEN BEAMS | SMOKE DETECTOR ADJACENT TO SUPPLY AIR

6 COMMUNICATIONS MOUNTING DETAILS

SCALE: NTS

3 FIRE ALARM MOUNTING DETAILS

SCALE: NTS



1 BOX MOUNTING DETAILS

SCALE: NTS

2 TYPICAL WALL MOUNTED DEVICES ALIGNMENT DETAIL

SCALE: NTS

GENERAL SHEET NOTES

1. DETERMINE MOUNTING HEIGHTS OF ELECTRICAL AND ELECTRONIC EQUIPMENT IN THE FOLLOWING ORDER OF PRIORITY:
   1 - ELEVATIONS (ARCHITECTURAL, ELECTRICAL, MECHANICAL, ETC).
   2 - EQUIPMENT SHOP DRAWINGS.
   3 - FIELD INSTRUCTIONS.
2. LOCATE RECEPTACLES SERVING THE SAME TYPE OF USE AT A UNIFORM HEIGHT UNLESS DIRECTED OTHERWISE.
3. MECHANICAL, ELECTRICAL, AND COMMUNICATION ROOMS: COORDINATE LOCATION OF LIGHTING AND POWER RECEPTACLES WITH EQUIPMENT, PIPING, AND DUCTWORK. DO NOT INSTALL RECEPTACLES BEHIND EQUIPMENT OR WHERE OTHERWISE INACCESSIBLE. POSITION LIGHTING REGARDLESS OF WHERE SHOWN ON DRAWING TO PROVIDE PROPER ILLUMINATION.
4. MOUNT RECEPTACLE BOXES FOR SWITCHES AND RECEPTACLES WITH LONG AXIS OF THE DEVICE VERTICAL UNLESS OTHERWISE INDICATED.
5. SET BOXES WITH PLASTER RINGS FLUSH WITH FINISHED SURFACE.
6. LOCATE BOX COVERS OR DEVICE PLATES SO THEY WILL NOT SPAN DIFFERENT TYPES OF BUILDING FINISHES EITHER VERTICALLY OR HORIZONTALLY.
7. VERIFY ALL DOOR CONDITIONS ON ARCHITECTURAL DRAWINGS PRIOR TO INSTALLING SWITCHES.
8. LOCATE WIRING DEVICES WHICH ARE ADJACENT AND ARE COMPATIBLE VOLTAGES IN ONE PLATE.
9. WHERE DEVICES ARE LOCATED IN CLOSE PROXIMITY OF THE SAME VERTICAL PLANE, ALIGN DEVICES VERTICALLY PER THE TYPICAL WALL MOUNTED DEVICES ALIGNMENT DETAIL, UNLESS OTHERWISE INDICATED.

SHEET KEYNOTES

1. LOCATE RECEPTACLES BEHIND DRINKING FOUNTAINS.
2. REFER TO ARCHITECTURAL ELEVATIONS FOR PLACEMENT OF OUTLETS.
3. LOCATE AT BOTTOM OF BEAMS (OR JOISTS) OR AT CEILING. (REDUCE SPACING BY .5 PERPENDICULAR TO BEAM OR JOIST DIRECTION.) FOR OTHER CONDITIONS, REFER TO NFPA 72.
4. LOCATE DETECTOR ANYWHERE IN SHADED AREA BUT NOT IN TOP 4" OF PEAK.
5. LOCATE AT BOTTOM OF BEAMS IF D/H < .1 OR W/H < .4; OTHERWISE, LOCATE IN BEAM POCKET. FOR D > 4 REDUCE SPACING .33 PERPENDICULAR TO BEAMS.

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Mountain View Hospital MRI Replacement

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No. 11780731-2202
JASON R. WORTHEN
STATE OF UTAH
PROFESSIONAL ENGINEER
09/20/21

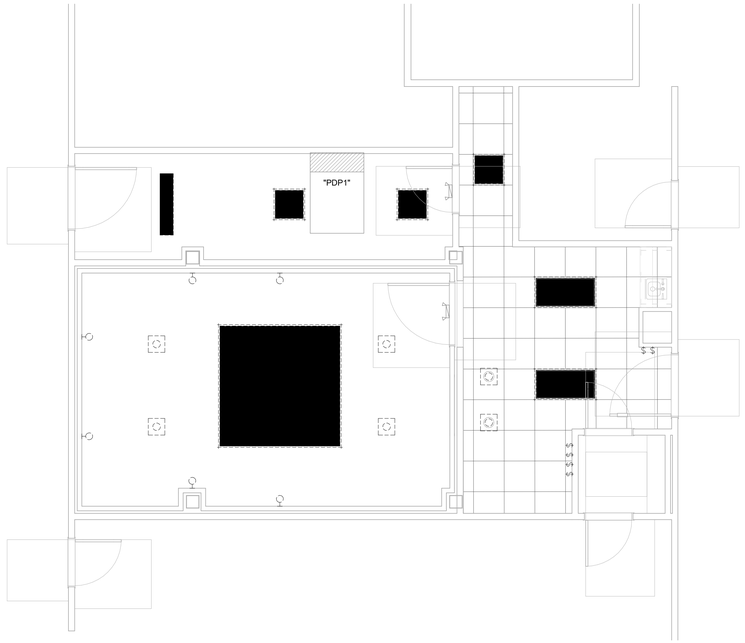
REVISION

NO.	DESCRIPTION	DATE

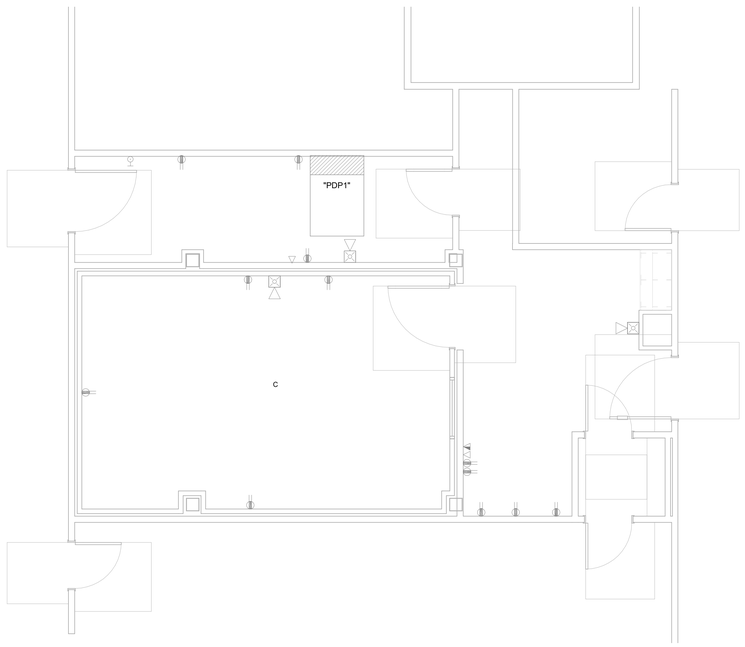
HKS PROJECT NUMBER
24805.000
DATE
07/30/09
ISSUE

SHEET TITLE
TYPICAL MOUNTING HEIGHT DETAILS
SHEET NO.
EE701

PLOT DATE: 9/20/2021 7:29:29 PM TEMPLATE VERSION: 3.0.0.20170823



2 LEVEL 1 CEILING DEMOLITION PLAN
SCALE: 1/4" = 1'-0"



1 LEVEL 1 ELECTRICAL DEMOLITION PLAN
SCALE: 1/4" = 1'-0"

GENERAL SHEET NOTES

1 UNLESS NOTED OTHERWISE REMOVE ALL LIGHTING FIXTURES DEVICES AND EQUIPMENT SHOWN DASHED. REMOVE CONDUIT AND WIRING BACK TO PANELBOARD OF ORIGIN OR TO FIRST ACTIVE DEVICE THAT REMAINS.

2 SALVAGE ALL LIGHT FIXTURES, TWIST-LOCK RECEPTACLES AND WALLPLATES, CEILING SPEAKERS AND SECURITY AND FIRE ALARM DEVICES TO OWNER. PROTECT SALVAGED EQUIPMENT FROM DAMAGE.

3 PRIOR TO SUBMITTING BID, VISIT THE SITE AND FIELD VERIFY THE EXTENT OF ELECTRICAL DEMOLITION WORK TO MEET THE INTENT OF THE BID DOCUMENTS AND INCLUDE ALL COSTS IN BID.

4 PRIOR TO REMOVAL OF ANY ELECTRICAL EQUIPMENT OR WIRING, FIELD VERIFY THAT THE EQUIPMENT OR WIRING IS INACTIVE OR NO LONGER IN USE.

5 REMOVE ALL DEVICES, RACEWAYS AND WIRING FROM WALLS TO BE REMOVED. WHERE ACTIVE RACEWAYS OCCUR IN WALLS TO BE REMOVED, RE-ROUTE THE RACEWAY WITH ASSOCIATED WIRING TO KEEP THE CIRCUIT OPERATIONAL.

6 REMOVE ALL FIRE ALARM DEVICES WHERE EXISTING WALLS AND CEILINGS ARE BEING REMOVED, WITH ASSOCIATED CONDUIT AND WIRING. EXISTING FIRE ALARM DEVICES AND SYSTEM NOT INDICATED FOR REMOVAL SHALL REMAIN ACTIVE THROUGHOUT DEMOLITION AND CONSTRUCTION UNTIL THE NEW SYSTEM IS TESTED AND OPERATIONAL. MAINTAIN ALL CLASS A FIRE ALARM INITIATING AND INDICATING LOOPS WHERE EXISTING DEVICES ARE REMOVED.

7 REMOVE ALL ABANDONED RACEWAY, CONDUIT, WIRING AND CABLING WHETHER ABANDONED PREVIOUS TO THIS PROJECT OR AS A RESULT OF THIS PROJECT. NOT ALL ABANDONED ITEMS ARE SHOWN ON THESE PLANS AND FIELD VERIFICATION OF DEMOLITION SCOPE EXTENT IS REQUIRED.

8 DEVICES MARKED "RR" ARE TO BE REMOVED AND RELOCATED PER NEW PLANS. EXTEND CIRCUITING AS REQUIRED FOR RELOCATION.

9 REMOVE FEEDERS FOR ALL DEMOLISHED PANELS, DISCONNETS, ETC. BACK TO SOURCE

10 ALL ITEMS INDICATED TO REMAIN SHALL BE PROTECTED DURING ALL PHASES OF CONSTRUCTION.

⎔ SHEET KEYNOTES

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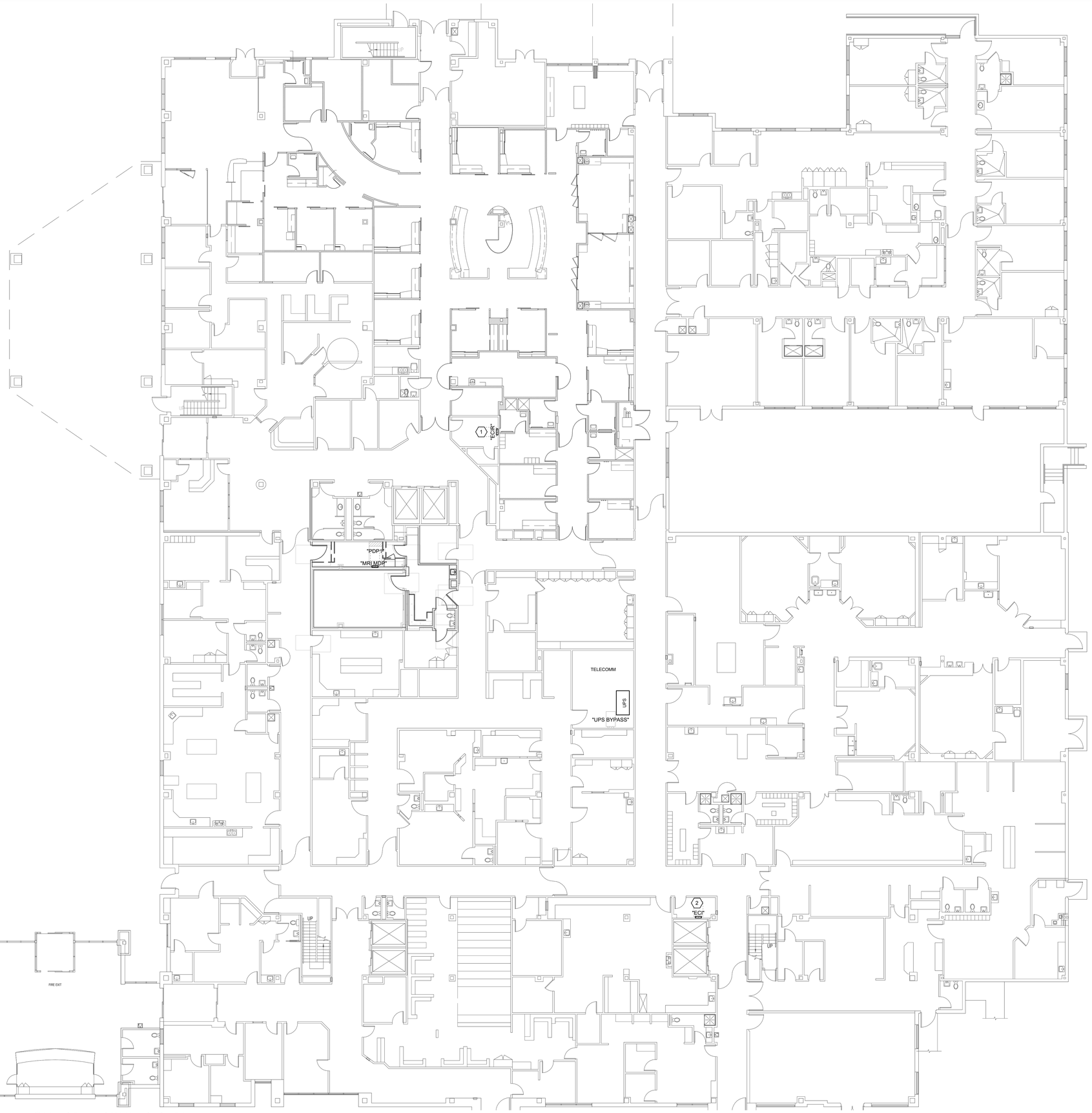
PROFESSIONAL ENGINEER
No. 11783731-2202
JASON R. WORTHEN
STATE OF UTAH
09/20/21

REVISION
NO. DESCRIPTION DATE

HKS PROJECT NUMBER
24805.000
DATE
02/20/15
ISSUE

SHEET TITLE
LEVEL 1 ELECTRICAL DEMOLITION PLAN
SHEET NO.
ED101

PLOT DATE:
9/20/2021 7:29:03 PM TEMPLATE VERSION: 3.0.0.20170623



1 LEVEL 1 OVERALL POWER PLAN
SCALE: 3/32" = 1'-0"

GENERAL SHEET NOTES

1 AS PART ADD ALTERNATE #1, REMOVE ALL EXISTING ELECTRICAL DEVICES IN THE MRI ROOM AND REINSTALL IN THE NEW SHEILDED WALL. REUSE ALL EXISTING CIRCUITING.

2 PROVIDED DEDICATED NUETRALS FOR ALL BRANCH CIRCUITS.

3 PROVIDE NEW TYPED PANEL SCHEDULES FOR ALL PANELS AFFECTED BY THE PROJECT.

4 AUXILI ARY PLAN SHOWN FOR REFERENCE ONLY, NO EXPECTED SCOPE FOR NURSE CALL, FIRE ALARM OR SECURITY SYSTEMS. CONTRACTOR TO PROTECT ALL EXISTING DEVICES DURING CONSTRUCTION.

5 CONTRACTOR TO REFER TO GE DRAWINGS FOR ADDITIONAL CONTRACTOR RESPONSIBILITIES.

SHEET KEYNOTES

1 PROVDIE NEW 20A BREAKER IN EXISTING SQUARE D PANELBOARD.

2 PROVIDE NEW 20A BREAKER IN EXISTING GE PANELBOARD.

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STATE OF UTAH
09/20/21

REVISION
NO. DESCRIPTION DATE

HKS PROJECT NUMBER
24805.000
DATE
09/16/21
ISSUE

SHEET TITLE
LEVEL 1 OVERALL POWER PLAN

SHEET NO.
EP100

PLOT DATE: 9/20/2021 7:29:04 PM TEMPLATE VERSION: 3.0.0.20170623

GENERAL SHEET NOTES

1 AS PART ADD ALTERNATE #1, REMOVE ALL EXISTING ELECTRICAL DEVICES IN THE MRI ROOM AND REINSTALL IN THE NEW SHEILDED WALL. REUSE ALL EXISTING CIRCUITING.

2 PROVIDED DEDICATED NUETRALS FOR ALL BRANCH CIRCUITS.

3 PROVIDE NEW TYPED PANEL SCHEDULES FOR ALL PANELS AFFECTED BY THE PROJECT.

4 AUXILI ARY PLAN SHOWN FOR REFERENCE ONLY. NO EXPECTED SCOPE FOR NURSE CALL, FIRE ALARM OR SECURITY SYSTEMS. CONTRACTOR TO PROTECT ALL EXISTING DEVICES DURING CONSTRUCTION.

5 CONTRACTOR TO REFER TO GE DRAWINGS FOR ADDITIONAL CONTRACTOR RESPONSIBILITIES.

SHEET KEYNOTES

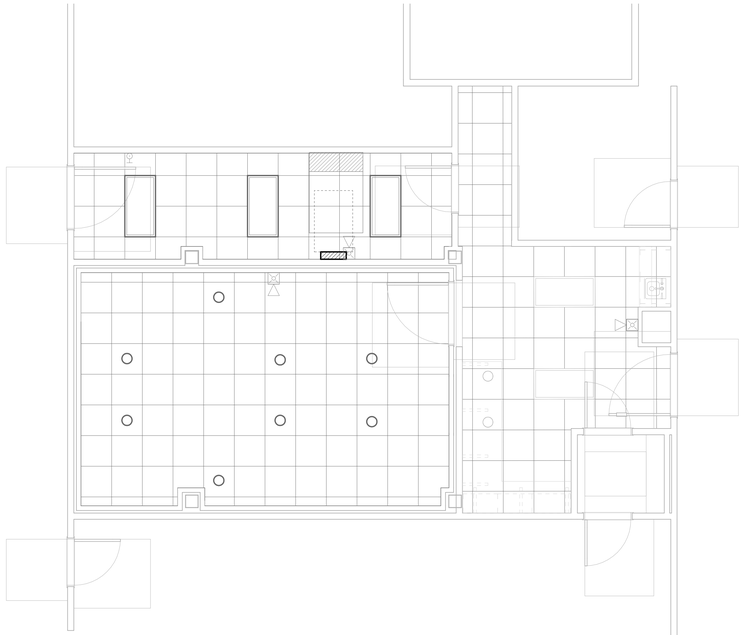
1

2 CIRCUIT LIGHTING TO THE EXISTING LIGHTING CIRCUIT THAT PREVIOUSLY FED LIGHTING IN THIS AREA.

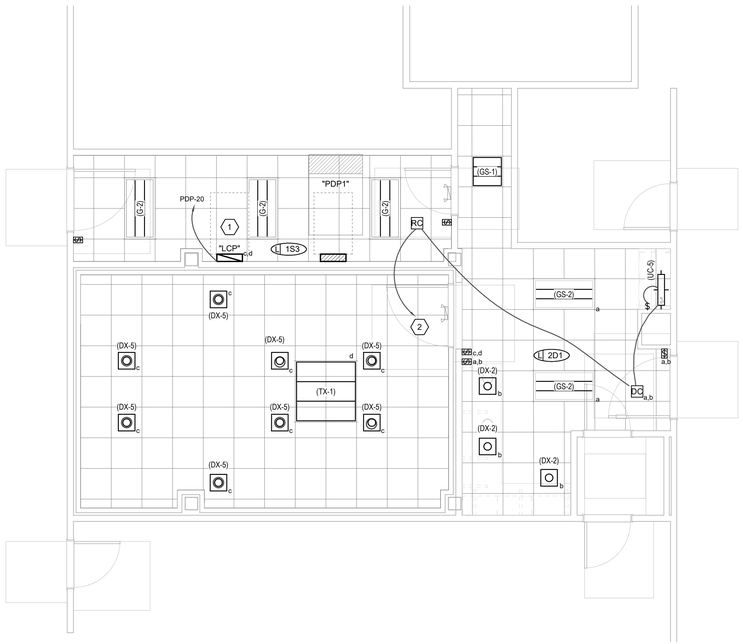
3 PROVIDE A SINGLE POLE SWITCH FOR CRYOGEN FANS.

4 PROVIDE 120V CIRCUIT FOR FERROGUARD DOOR SYSTEM REFER TO FERROGUARD INSTALLATION REQUIREMENTS FOR ADDITIONAL CONTRACTOR RESPONSIBILITIES.

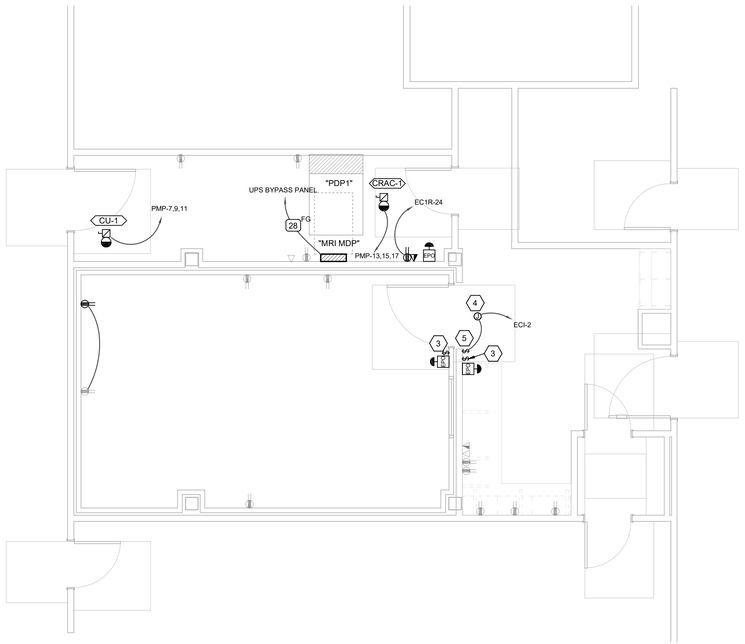
5 REFER TO FERROGUARD DRAWINGS FOR SWITCH MOUNTING HEIGHT.



3 LEVEL 1 AUXILIARY PLAN
SCALE: 1/4" = 1'-0"



2 LEVEL 1 LIGHTING PLAN
SCALE: 1/4" = 1'-0"



1 LEVEL 1 POWER PLAN
SCALE: 1/4" = 1'-0"

HKS

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PROFESSIONAL ENGINEER
No. 11783731-2202
JASON R. WORTHEN
STATE OF UTAH
09/20/21

REVISION
NO. DESCRIPTION DATE

HKS PROJECT NUMBER
24805.000
DATE
12/23/09
ISSUE

SHEET TITLE
LEVEL 1 ELECTRICAL PLANS
SHEET NO.
EP101

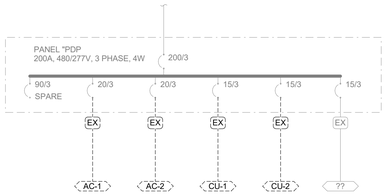
PLOT DATE:
9/20/2021 7:30:08 PM TEMPLATE VERSION: 3.0.0.20170623

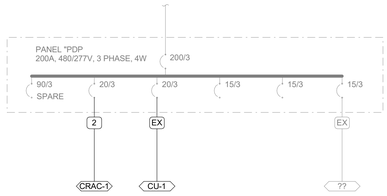
EQUIPMENT SCHEDULE

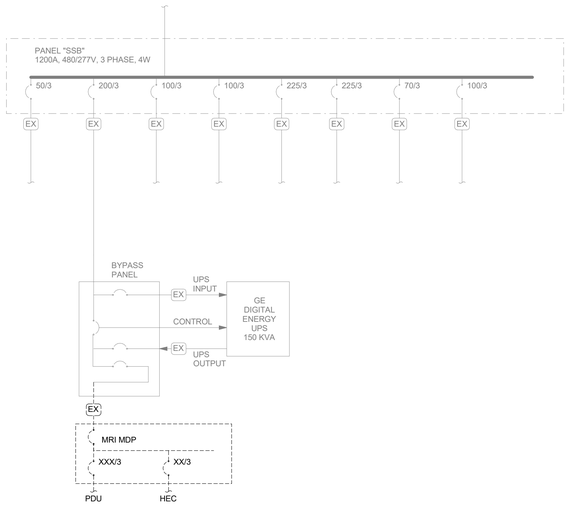
MARK	ITEM DESCRIPTION	LOAD DATA							WIRE AND CONDUIT SIZE	COND. AND CONDUIT SCHED.	OVERCURRENT PROTECTION			DISCONNECT			STARTER DATA																NOTES	MARK
		HP	kW	MCA	FLA	VOLT	PH	Hz			FURN BY	DEVICE	LOCATION	FURN BY	DEVICE	LOCATION	FURN BY	DEVICE	LOCATION	SIZE	SPEED	CTRL VOLT	SELECTOR SWITCH	PUSH BUTTON	PILOT LAMP	NORMALLY OPEN CONTACTS	NORMALLY CLOSED CONTACTS	PHASE FAILURE RELAY	SCHEMATIC REFERENCE	REMOTE CTRL	EMG PWER		
DEF-1	EXHASUT FAN	1/2			9.8	120	1	60	2 #12, #12 GR 0.75" CND	1	E	20A/1P CB	PANEL	E	20A/1P SWITCH	ADJ TO EQUIP																	DEF-1
CRAC-1	COMPUTER ROOM AC INDOOR UNIT	1.5			3	480	3	60	3 #12, #12 GR 0.75" CND	2	E	20A/1P CB	PANEL	Q	30A/3P FRN-6	ADJ TO EQUIP	Q																	CRAC-1
CU-1	CONDENSOR OUTDOOR UNIT				11.7	480	3	60	3 #12, #12 GR 0.75" CND	2	E	20A/2P CB	PANEL	Q	30A/3P FRN-20	ADJ TO EQUIP	Q																	CU-1

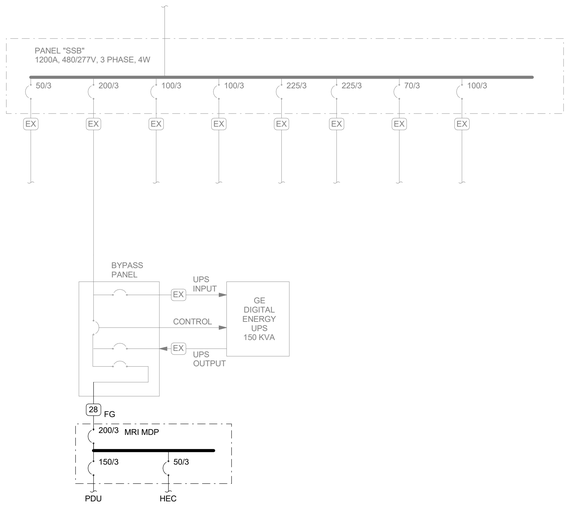
EQUIPMENT SCHEDULE KEY

E	DIVISION 26
Q	FURNISHED WITH THE EQUIPMENT









1 DEMOLITION ONE LINE DIAGRAM

SCALE: NTS

2 NEW ONE LINE DIAGRAM

SCALE: NTS

GENERAL SHEET NOTES

1. UPS UNITS AND PDU'S FOR TDR ROOMS AND THE TEC ROOM WILL BE OFCI.
2. ALL GROUND FAULT PROTECTION DEVICES MUST BE FIELD TESTED IN ACCORDANCE WITH NEC 230.95(C) PRIOR TO BEING PUT INTO SERVICE.
3. ALUMINUM FEEDER ARE ACCEPTABLE FOR SIZES 1/0 OR GREATER WITH THE FOLLOWING EXCEPTIONS: USE COPPER FEEDERS FOR RADIOLOGY EQUIPMENT AND MECHANICAL HEATING/COOLING EQUIPMENT.
4. THE CALCULATED FAULT CURRENTS PROVIDED TO EQUIPMENT MUST BE FIELD MARKED AS REQUIRED BY NEC 110.24(A).

SHEET KEYNOTES

COPPER CONDUCTOR AND CONDUIT SCHEDULE

SCHEDULE NUMBER
SUBSCRIPT (NOTE 5)
(E.G.) 5 IG

SYM	AMP	CONDUIT SIZE	CONDUCTOR(NOTE 1) QTY	SIZE	G	IG/HH	SE	NOTES
1	20	.75	2	12	12	12	8	2
2	20	.75	3	12	12	12	8	2,3
3	20	.75	4	12	12	12	8	2,3
4	30	.75	2	10	10	10	8	2
5	30	.75	3	10	10	10	8	2
6	30	.75	4	10	10	10	8	2
7	40	1	2	8	10	8	6	2
8	40	1	3	8	10	8	6	2
9	40	1	4	8	10	8	6	2
10	55	1	2	6	10	8	4	2
11	55	1	3	6	10	8	4	2
12	55	1.25	4	6	10	8	4	2
13	70	1	2	4	8	4	2	2
14	70	1.25	3	4	8	4	2	2
15	70	1.25	4	4	8	4	2	2
16	85	1.25	2	3	8	3	2	2
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18	85	1.25	4	3	8	3	2	2
19	95	1.25	3	2	8	2	2	2
20	95	1.50	4	2	8	2	2	2
21	130	1.50	3	1	6	2	2	2
22	130	1.50	4	1	6	2	2	2
23	150	2	3	1/0	6	2	1/0	2
24	150	2	4	1/0	6	2	1/0	2
25	175	2	3	2/0	6	2	2/0	2
26	175	2	4	2/0	6	2	2/0	2
27	200	2	3	3/0	6	2	2/0	2
28	200	2.50	4	3/0	6	2	2/0	2
29	230	2.50	3	4/0	4	2	2/0	2
30	230	2.50	4	4/0	4	2	2/0	2
31	255	2.50	3	250	4	1	2/0	2
32	255	2.50	4	250	4	1	2/0	2
33	310	3	3	350	3	1/0	3/0	2
34	310	3	4	350	3	1/0	3/0	2
35	380	3.50	3	500	3	3/0	3/0	2
36	380	4	4	500	3	3/0	3/0	2
37	400	2 EA 2	3	3/0	3	3/0	3/0	2
38	400	2 EA 2.50	4	3/0	3	3/0	3/0	2
39	510	2 EA 2.50	3	250	1	4/0	3/0	2
40	510	2 EA 3	4	250	1	4/0	3/0	2
41	620	2 EA 3	3	350	1/0	4/0	3/0	2,4
42	620	2 EA 3	4	350	1/0	4/0	3/0	2,4
43	760	2 EA 3.50	3	500	1/0	4/0	3/0	2,4
44	760	2 EA 4	4	500	1/0	4/0	3/0	2,4
45	855	3 EA 3	3	300	2/0	4/0	3/0	2,4
46	855	3 EA 3	4	300	2/0	4/0	3/0	2,4
47	1000	3 EA 3.50	3	400	2/0	4/0	3/0	4
48	1000	3 EA 3.50	4	400	2/0	4/0	3/0	4
49	1140	3 EA 4	3	500	3/0	4/0	3/0	4
50	1140	3 EA 4	4	500	3/0	4/0	3/0	4
51	1240	4 EA 3	3	350	3/0	4/0	3/0	4
52	1240	4 EA 3	4	350	3/0	4/0	3/0	4
53	1675	5 EA 4	4	400	4/0	4/0	4/0	4
54	2010	6 EA 4	4	400	250	250	250	4
55	2660	7 EA 4	4	500	350	350	350	4
56	3040	8 EA 4	4	500	500	500	500	4
57	4180	11 EA 4	4	500	500	500	500	4
58		5 EA 4						6
59		5						6
60		10 EA 4						6

CONDUCTOR AND CONDUIT SCHEDULE NOTES

1. CONDUCTORS SHOWN ARE SHOWN FOR EACH CONDUIT WITH MODIFICATIONS AS NOTED IN NOTE 5. ALL CONDUCTORS SHOWN ARE THWN UNLESS OTHERWISE NOTED.
2. PROVIDE EQUIPMENT GROUND CONDUCTORS PER TABLE 250-122 WHEN CIRCUIT BREAKERS ARE SIZED GREATER THAN AMPERE RATING SHOWN IN TABLE.
3. PROVIDE #10 NEUTRALS FOR MULTIWIRE BRANCH CIRCUITS SERVING COMPUTERS.
4. GROUND (G) CONDUCTOR MAY BE DELETED ON SERVICE ENTRANCE CONDUCTORS.
5. SYMBOL SUBSCRIPTS:

   "2N": INCLUDE TWO NEUTRAL CONDUCTORS, SIZED AS SCHEDULED FOR PHASED AND NEUTRAL CONDUCTORS.

   "FG": FULL SIZE GROUND, SIZE EQUIPMENT GROUNDING CONDUCTOR TO BE THE SAME SIZE AS THE PHASE CONDUCTORS.

   "HH": NEUTRAL CURRENTS EXIST DUE TO HIGH HARMONIC "NONLINEAR" LOADS. CURRENT CARRYING CONDUCTORS DERATED ACCORDINGLY. PROVIDE THE IG/HH SIZE FOR THE EQUIPMENT GROUNDING CONDUCTOR.

   "IG": INCLUDE IG (INSULATED/ISOLATED GROUND CONDUCTOR) SCHEDULED ALONG WITH GROUND OF EQUIPMENT GROUND CONDUCTOR.

   "SE": SUBSTITUTE "SE" CONDUCTOR FOR "G" CONDUCTOR SHOWN, WHICH IS SIZED FOR THE GROUNDING OF THE SECONDARY OF THE SEPARATELY DERIVED SYSTEM.
6. RACEWAY ONLY. CONDUCTORS PROVIDED BY UTILITY.

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LIGHTING REQUIREMENTS

- All lighting fixtures and associated components must meet all RF shielded room and RF grounding requirements (e.g., track lighting is not recommended due to possible RF noise).
- All lighting must use direct current (the DC must have less than 5% ripple).
- 300 lux must be provided at the front of the magnet for patient access and above the magnet for servicing.
- Fluorescent lighting must not be used in the magnet room.
- Lighting must be adjusted using a discrete switch or a variable DC lighting controller.
- Scr dimmers or rheostats must not be used.
- DC led lighting may be used if the power source is located outside the magnet room RF.
- Battery chargers (e.g., used for emergency lighting) must be located outside the magnet RF room.
- Short filament length bulbs are recommended.
- Linear lamps are not recommended due to the high burnout rate.

CONNECTIVITY REQUIREMENTS

Broadband Connections are necessary during the installation process and going forward to ensure full support from the Engineering Teams for the customers system. Maximum performance and availability for the customers system is maintained and closely monitored during the lifetime of the system. Proactive and reactive maintenance is available utilising the wide range of digital tools using the connectivity solutions listed below:

- Site-to-Site VPN/GE Solution
- Site-to-Site VPN/Customer Solution
- Connection through Dedicated Service Network
- Internet Access - connectivity for InSite 2.0

The requirements for these connectivity solutions are explained in the broadband solutions catalogue (separate document).

ELECTRICAL NOTES

1. All wires specified shall be copper stranded, flexible, thermo-plastic, color coded, cut 10 foot long at outlet boxes, duct termination points or stubbed conduit ends. All conductors, power, signal and ground, must be run in a conduit or duct system. Electrical contractor shall ring out and tag all wires at both ends. Wire runs must be continuous copper stranded and free from splices.

1.1. Aluminum or solid wires are not allowed.

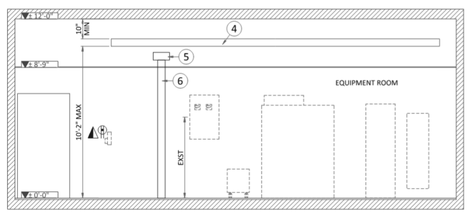
2. Wire sizes given are for use of equipment. Larger sizes may be required by local codes.
3. It is recommended that all wires be color coded, as required in accordance with national and local electrical codes.
4. Conduit sizes shall be verified by the architect, electrical engineer or contractor, in accordance with local or national codes.
5. Convenience outlets are not illustrated. Their number and location are to be specified by others. Locate at least one convenience outlet close to the system control, the power distritbution unit and one on each wall of the procedure room. Use hospital approved outlet or equivalent.
6. General room illumination is not illustrated. Caution should be taken to avoid excessive heat from overhead spotlights. Damage can occur to ceiling mounting components and wiring if high wattage bulbs are used. Recommend low wattage bulbs no higher than 75 watts and use dimmer controls (except mr). Do not mount lights directly above areas where ceiling mounted accessories will be parked.
7. Routing of cable ductwork, conduits, etc., must run direct as possible otherwise may result in the need for greater than standard cable lengths (refer to the interconnection diagram for maximum usable lengths point to point).
8. Conduit turns to have large, sweeping bends with minimum radius in accordance with national and local electrical codes.
9. A special grounding system is required in all procedure rooms by some national and local codes. It is recommended in areas where patients might be examined or treated under present, future, or emergency conditions. Consult the governing electrical code and confer with appropriate customer administrative personnel to determine the areas requiring this type of grounding system.
10. The maximum point to point distances illustrated on this drawing must not be exceeded.
11. Physical connection of primary power to GE equipment is to be made by customers electrical contractor with the supervision of a GE representative. The GE representative would be required to identify the physical connection location, and insure proper handling of GE equipment.
12. GEHC conducts power audits to verify quality of power being delivered to the system. The customer's electrical contractor is required to be available to support this activity.

- All junction boxes, conduit, duct, duct dividers, switches, circuit breakers, cable tray, etc., are to be supplied and installed by customers electrical contractor.
- Conduit and duct runs shall have sweep radius bends
- Conduits and duct above ceiling or below finished floor must be installed as near to ceiling or floor as possible to reduce run length.
- Ceiling mounted junction boxes illustrated on this plan must be installed flush with finished ceiling.
- All ductwork must meet the following requirements:
  1. Ductwork shall be metal with dividers and have removable, accessible covers.
  2. Ductwork shall be certified/rated for electrical power purposes.
  3. Ductwork shall be electrically and mechanically bonded together in an approved manner.
  4. PVC as a substitute must be used in accordance with all local and national codes.
- All openings in access flooring are to be cut out and finished off with grommet material by the customers contractor.
- General contractor to insert pull cords for all cable run conduits between the equipment room and the operators control room.
- 10 foot pigtails at all junction points.
- Grounding is critical to equipment function and patient safety. Site must conform to wiring specifications shown on this plan.

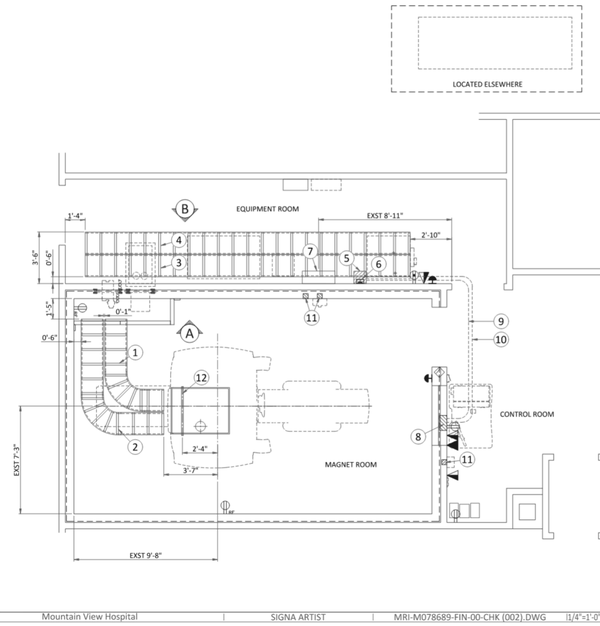
A

* * * EXISTING ROOM * * *

NOTE: ALL OTHER JUNCTION POINTS IN ELEVATIONS ARE EXISTING, AND THUS ARE NOT SHOWN.



B



ITEM	QTY	DESCRIPTION (CONTRACTOR SUPPLIED & INSTALLED)
1		Non-ferrous cable ladder 18" x 6" for gradient cables
2		Non-ferrous cable ladder 18" x 6"
3		Cable ladder 18" x 6" for gradient cables
4		Cable ladder 18" x 6"
5		EXST Box above ceiling size per local code
6		EXST 6" x 3 1/2" Surface wall duct
7		Main disconnect panel
8		EXST 12" x 8" x 6" J-Box
9		EXST 2" cnd above RF screen
10		EXST 3" cnd above RF screen
11		EXST 4" x 4" x 4" J-Box
12		Non-ferrous unistrut cable support

ITEM	QTY	Outlet Legend for GE Equipment
		System emergency off (SEO), (recommended height 1.2m [48"] above floor)
		Door interlock switch
		Emergency exhaust fan switch 1.2m [48"] height recommended)
		Duplex hospital grade, dedicated wall outlet 120-v, single phase power
		Network outlet
		Dedicated telephone lines/network connection
		Duplex hospital grade, dedicated outlet 120-v emergency, single phase power, 15a
		Duplex hospital grade, dedicated outlet 120-v, single phase outlet routed through RF filter

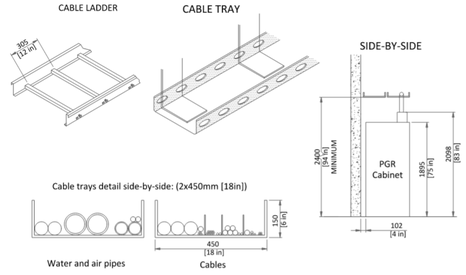
Existing Electrical Note:
Use existing duct/conduits where possible. Additional duct/conduit runs may be necessary if existing system is inadequate in size and/or location for this installation. Verify existing size and location.

Existing Access Floor Note:
Due to the weight of the cabinets all access floor needs to be removed below the cabinets and along the delivery route.

Additional Conduit Runs
(Contractor Supplied and Installed)

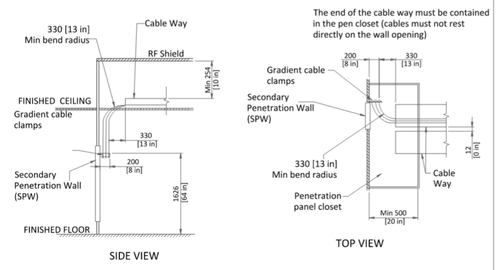
From	To	Qty	Size (in)	Size (mm)
Main Disconnect Panel	Facility power	1	as Req'd	
Main Disconnect Panel	Power, Gradient, RF cabinet	1	as Req'd	
	Heat Exchange Cabinet	1	as Req'd	
	System emergency off	1	1/2	16
System emergency off	Secondary Penetration Wall	1	1/2	16
Door Switch	Power, Gradient, RF cabinet	1	3/4	20
System emergency off	Secondary Penetration Wall	1	3/4	20
Magnet Rundown Unit	Magnet	1	1	25
	RF filter	1	as Req'd	
RF filter	120-V 1ϕ Power	1	as Req'd	
Room Light	RF filter	1	as Req'd	
RF filter	Facility emergency power	1	as Req'd	
Chiller	Remote graphic display	1	3/4	20
	Facility power	1	as Req'd	
Door Switch (1)	Door Switch	1	1	25
EXST Oxygen Sensor	Waveguide or RF filter	1	3/4	20
EXST Oxygen Monitor		1	3/4	20
	120-V Emergency power	1	as Req'd	

CABLE WAYS IN EQUIPMENT ROOM

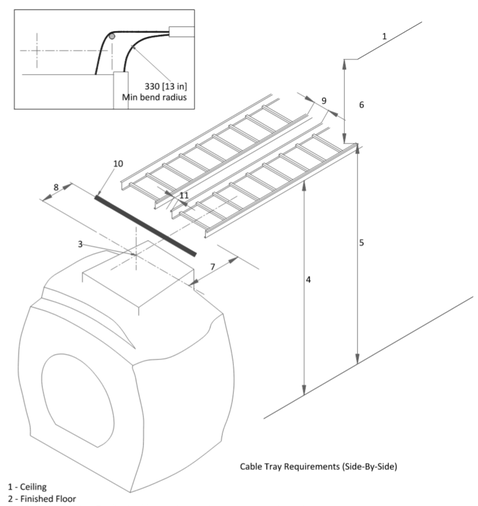


CABLE WAY TO PENETRATION PANEL

CABLE WAY TO PENETRATION PANEL REQUIREMENTS IN THE EXAM ROOM SIDE VIEW



CABLE WAYS REQUIREMENTS IN MAGNET ROOM



Cable Tray Requirements (Side-By-Side)

1 - Ceiling
2 - Finished Floor
3 - Magnet isocenter. Gradient cables must be centered on magnet isocenter.
4 - Minimum cable tray height required at back of Magnet: 2581 mm [101.5 in].
Tray height may be lower at other points to avoid obstructions.
5 - Maximum height from floor to top of tray (anywhere in Magnet room): 3251 mm [128 in].
6 - Minimum distance from top of cable tray to ceiling or other obstruction: 254 mm [10 in].
7 - Tray end to isocenter: 1099 ±12 mm [43.25 ±0.5 in].
8 - Other cable termination to isocenter: 718 ±12 mm [28.25 ±0.5 in].
9 - Minimum distance between trays: 12 mm [0.5 in].
10 - Non-ferrous cable support
11 - Distance from isocenter to edge of right cable tray 60mm [2.36 in].

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POWER REQUIREMENTS

SPECIFICATIONS OF MAIN POWER INPUT

POWER SUPPLY	380/400/415/480V ±10%, THREE-PHASE + N + G
FREQUENCIES	50/60Hz ± 3Hz
POWER FACTOR	0.9
MAXIMUM INPUT POWER (5 sec MAX)	123kVA
INSTALLED LOAD	99kVA
STAND-BY POWER	< 17kVA

- Power input must be separated from any others which may generate transients (elevators, air conditioning, radiology rooms equipped with high speed film changers....).
- Total harmonic distortion less than 2.5%.
- Phase imbalance must not exceed 2%.

SPECIFICATIONS OF BACK-UP POWER SUPPLY

FOR MAGNET MONITOR	
POWER INPUT	EMERGENCY POWER SUPPLY, SINGLE PHASE + GROUND
POWER DEMAND	2kVA
VOLTAGE	110V / 220V
FREQUENCY	50/60Hz ± 3Hz

FOR CRYOCOOLER COMPRESSOR	
POWER INPUT	380/400/415/480V, THREE-PHASE + G
POWER REQUIREMENT	MIN 9kVA
POWER CONSUMPTION	MAX 7.2kW / STEADY STATE 6.5kW at 50Hz MAX 8.3kW / STEADY STATE 7.5kW at 60Hz
FREQUENCY	50/60Hz ± 3Hz

CABLES

- Power and cable installation must comply with the distribution diagram.
- Size of the Main power input cable is determined by the customer, taking its length and admissible voltage drops into consideration.
- All cables must be isolated and flexible, cable color codes must comply with standards for electrical installation.
- The cables from signaling and remote control (Y,Emergency Off Buttons,L...) will go to Main Panel with a pigtail length of 1.5m [60in], and will be connected during installation.
- Each conductor will be identified and isolated (screw connector).

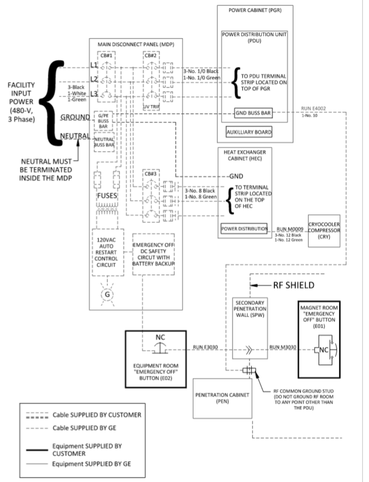
GROUND SYSTEM

- The equipotential link will be by means of an equipotential bar.
- The grounding point of MDP is directly connected to the building's ground by an isolated copper cable.
- The impedance of the earth bar should be less than or equal to 2 ohms.

FEEDER TABLE								
MIN. FEEDER WIRE SIZE, AWG OR MCM (sq. M)/VAC	MINIMUM FEEDER WIRE LENGTH - ft (m)							
	100 (30.5)	150 (46)	200 (61)	250 (76)	300 (92)	350 (107)	400 (122)	450 (137)
480 VAC	3/0 (85)	3/0 (85)	3/0 (85)	3/0 (85)	3/0 (85)	3/0 (85)	3/0 (85)	3/0 (85)
GROUND REQ'D	4	4	4	4	4	4	2	2

GENERAL NOTES
In all cases qualified personnel must verify that the feeder (at the point of take-off) and the run to the MR system meet all the requirements stated in the PIM
For a single unit installation, the minimum transformer size is 225kVa. Regulated transformer is not required unless voltage changes exceed +/- 10% over a period of 1 hour or longer
Grounding conductor will run from the equipment back to the power source/main grounding point and always travel in the same conduit with the feeders

POWER DISTRIBUTION

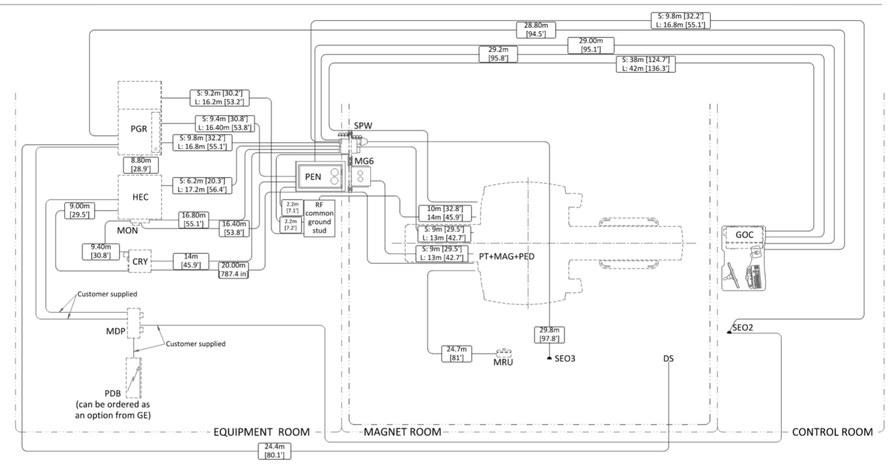


CB	MDP
1	200 AMPS
2	150 AMPS
3	50 AMPS

NOTE:

- THE HEAT EXCHANGER CABINET (HEC) PROVIDES POWER TO THE CRYOCOOLER COMPRESSOR (CRY) WHICH MUST OPERATE 24 HOURS PER DAY, 7 DAYS PER WEEK TO MAXIMIZE PROPER UNINTERRUPTED MAGNET OPERATION.
- RUNS E3030, M0009, M3030 AND E4002 ARE GE SUPPLIED CABLES. ALL OTHER WIRING IS CUSTOMER SUPPLIED.
- TWO REMOTE FLUSH WALL MOUNTED EMERGENCY OFF BUTTONS ARE SUPPLIED WITH THE MDP.
- MDP PROVIDES CIRCUIT BREAKERS FOR PDU (LOCATED IN THE POWER CABINET (PGR)) AND THE HEAT EXCHANGER CABINET (HEC).
- ALL MDP OUTPUT CIRCUITS DROP OUT ON LOSS OF POWER. THE HEC CIRCUIT WILL AUTOMATICALLY RESTART UPON RESTORATION OF POWER. EMERGENCY OFF LOCKS OUT ALL CONTRACTORS.
- GE MDP SHORT CIRCUIT CURRENT RATING IS 25,000 AMPERES AT 480 VAC.
- GE MDP IS UL AND cUL LABELED.
- ALL CIRCUITS REQUIRE GROUND WIRES.
- THE WIRE SIZE FOR THE EMERGENCY-OFF CIRCUIT IS 12-22 AWG CUSTOMER SUPPLIED

INTERCONNECTIONS



CABLES ROUTING FOR OPTIONS			
OPTION	FROM	TO	CABLE LENGTH
BW	PEN	Brainwave cabinet	18.3m [60']
MRE	MRE	Magnet Isocenter	Nominal: 7.3m [24'] Maximum: 10.1m [33']
	MRE	PEN cabinet	15.2m [50']
	MRE	Ethernet Hub in PGR	15.2m [50']
	MRE	Customer Supplied Outlet	60Hz: 6.1m [20'] 50Hz: 7.6m [25']

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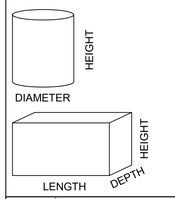
INTERIOR LIGHTING FIXTURE SCHEDULE

ABBREVIATIONS

MOUNTING

B - BASE
C - CEILING
F - FLANGE
G - GRID
P - PENDANT
PL - POLE
R - RECESSED
S - SURFACE
W - WALL



LUMINAIRE OPTIONS

ARHR - AIR RETURN AND HEAT REJECTION
DL - DAMP LOCATION
EQC - EARTHQUAKE CLIPS
F - FUSING
HLD - HINGED AND LATCHED DOOR
HS - HOUSE SIDE SHIELD
PS - PHOTOCELL SWITCH
QRS - QUARTZ RESTRIKE
ST - STATIC
WG - WIRE GUARD
WL - WET LOCATION

FINISH

MW - MATTE WHITE
BL - BLACK
SL - SILVER
GL - GOLD
CL - CLEAR
PW - PAINTED WHITE
EA - EXTRUDED ALUMINUM
S - STEEL
GS - GALVANIZED STEEL
C - CAST
CBA - COLOR BY ARCHITECT
SCBA - STANDARD COLOR BY ARCHITECT
CCA - CUSTOM COLOR BY ARCHITECT
FS 209D - MEETS FEDERAL STANDARD 209D
TP - THERMALLY PROTECTED
FL - FLUSH
R - REGRESS
M - MITERED

DIFFUSER/LENS

#A - ACRYLIC #THICK
#OA - ACRYLIC #THICK (OPAL)
GC - GLASS (CLEAR)
GO - GLASS (OPAL)
GF - GLASS (FROSTED)
SGL - SOFT GLOW LENS
HPL - HIGH PERFORMANCE LENS
DO - DROP OPAL
CGL - CONVEX GLASS LENS
S - SATIN LENS

REFLECTOR

OP - NONE/OPEN
SP - SPECULAR
SS - SEMI-SPECULAR
D - DIFFUSE (WHITE ENAMEL)
SC - SPECULAR (COLORED)
PR - PRISMATIC
FDR - FULL DEPTH REFLECTOR
DS - DIFFUSE (SEMI SPECULAR) SILVER
LI - LOW IRIDESCENT
IR - IRIDESCENT
SL - SILVER
GL - GOLD
CA - CLEAR ALZAK

NOTES

GENERAL NOTES

1. PROVIDE UNIT PRICES AND FIXTURE BRAND SELECTED FOR ADD/DELETE CHANGES FOR EACH FIXTURE TYPES SHOWN WITHIN 48 BUSINESS HOURS OF THE BID DATE. FAILURE TO COMPLY WITH THIS REQUIREMENT MAY DISQUALIFY THE PRODUCTS AND EMPOWER THE ENGINEER TO DETERMINE FAIR VALUE FOR FIXTURE AND INSTALLATION CHANGES, WITHOUT FURTHER INPUT FROM THE CONTRACTOR OR INSTALLER.
2. CONTRACTOR ALLOWANCE PRICES ARE ACCURATE WHEN THIS JOB WAS SPECIFIED, CONTRACTOR AND ELECTRICAL DISTRIBUTOR SHALL VERIFY THIS ALLOWANCE AND REPORT ANY PROBLEMS TO THE ENGINEER BEFORE THE BID. ALLOWANCE PRICE MAY OR MAY NOT INCLUDE LAMP(S) OR FREIGHT AS NOTED, AND DO NOT INCLUDE ANY TAXES.
3. SUBSTITUTIONS AND/OR EQUAL FIXTURES MUST RECEIVE APPROVAL PRIOR TO BIDDING, THEY MUST BE SUBMITTED TO THE ENGINEER NO LESS THAN 2 WEEKS PRIOR TO BID OPENING.
4. SAMPLES MUST BE PROVIDED FOR ANY AND ALL FIXTURES UPON A/E REQUEST PRIOR TO RELEASING FIXTURES.
5. ALL FIXTURES SHALL BE LISTED AND APPROVED FOR THEIR INTENDED USE AND LOCATION.
6. VERIFY THE PROPER MOUNTING KITS OR ACCESSORIES TO FACILITATE INSTALLATION AS SHOWN AT EACH LOCATION ON THE DRAWINGS.
7. COMPLY WITH THE "INTERIOR LIGHTING" SECTION OF THE SPECIFICATIONS.
8. REFER TO SPECIFICATIONS FOR IMPORTANT TECHNICAL REQUIREMENTS FOR LIGHTING FIXTURES, DRIVERS, AND LAMPS.
9. ALL LIGHT FIXTURES TO BE EITHER "DLC" OR "LIGHTING FACTS" LISTED OR TO BE APPROVED BY ARCHITECT/ENGINEER AND OWNER.

		NOMINAL SIZE																MANUFACTURER (CATALOG SERIES)		
ID	DESCRIPTION	LENGTH	DEPTH	HEIGHT	DIAMETER/ APERTURE	MOUNTING	TYPE	COLOR TEMP	CRI	DRIVER CONFIGURATION	VOLTAGE	WATTS	FINISH	FIXTURE LUMENS	DIFFUSER/LENS	REFLECTOR	OPTIONS	NOTES	OPTION 1	OPTION 2	OPTION 3
(DX-2)	6" ROUND, RECESSED LED DOWNLIGHT, SEMI-SPECULAR REFLECTOR, WHITE TRIM FINISH	-	-	-	0' - 6"	CR	LED	3500K		0-10V DIMMING (10%)	120/277	23	-	2000			-		GOTHAM (EVO-35/20-6AR-W/D-LSS-MVOLT-EZ10-TWR)	LITON (LHALD625CO71-D10/ LRALD6SWF151-B60-T35)	PORTFOLIO (LD6B20D010/EU6B10208 035/6LBW2H HB26)
(DX-5)	6" ROUND, LED MRI DOWNLIGHT, NON-FEROUS, REMOTE DIMMING DRIVERS	-	-	-	0' - 6"	CR	LED	3500K		0-10V DIMMING (<1%)	120/277	32	-	2000			-		KURTZON (MLIBD-4-8-DL-H35-UNV-W BWT)	KIRLIN (MRR-06420-RFI-3100D-LP S-1220A)	KENALL (MRIDL6-FF-PAFW-31L-35 K8-M-CS-T-RIMRI6-24V-DI M1)
(G-2)	2' X 4' LED FLAT PANEL, GRID LAY-IN	4' - 0"	2' - 0"	-	-	CR	LED	3500K		0-10V DIMMING (10%)	120/277	50	-	4300			-		TRULY GREEN (88)	PHILLIPS (FXP)	LITHONIA (EPANL)
(GS-1)	2' X 2' LED TROFFER, EDGE LIT PANELS, GRID LAY-IN	2' - 0"	2' - 0"	-	-	CR	LED	3500K		0-10V DIMMING (10%)	120/277	29	-	3400			-		METALUX (22EN)	PINNACLE (AD22)	
(GS-2)	2' X 4' LED TROFFER, EDGE LIT PANELS, GRID LAY-IN	4' - 0"	2' - 0"	-	-	CR	LED	3500K		0-10V DIMMING (10%)	120/277	38	-	4300			-		METALUX (24EN)	PINNACLE (AD24)	
(TX-1)	2' X 4' LED FLAT PANEL, GRID LAY-IN	4' - 0"	2' - 0"	-	-	CR	LED	3500K		0-10V DIMMING (10%)	120/277	50	-	4300			-		FOLIO (ZERO-100)	SOFTFORM	
(UC-5)	24" LED UNDERCABINET LIGHT	2' - 0"	-	-	-		LED	3500K		ELV DIMMING	120/277	8		600					DAY-BRITE (LINCS100E-L28-935-UNV-WHG-DIM)	KENALL (AUCLED-1-MW-11L35K-2 4-277)	KEVLIX (UC)

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PROFESSIONAL ENGINEER
No. 11783731-2202
JASON R. WORTHEN
STATE OF UTAH
09/20/21

REVISION
NO. DESCRIPTION DATE

HKS PROJECT NUMBER
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SHEET TITLE
INTERIOR LIGHTING FIXTURE SCHEDULE
SHEET NO.
EL601

PLOT DATE: 9/20/2021 7:25:39 PM TEMPLATE VERSION: 3.0 0.20170623

LIGHTING/SPACE CONTROL TYPE SCHEDULE

WIRING LEGEND

- LINE VOLTAGE WIRING
- 0-10V WIRING
- CAT5E CABLING
- WIRING BY OTHERS
- TMP SEGMENT NETWORK CABLING

APPROVED MANUFACTURERS

1. WATTSTOPPER (BASIS OF DESIGN)
2. NLIGHT
3. HUBBELL BUILDING AUTOMATION
4. GREENGATE

LIGHTING CONTROL ID

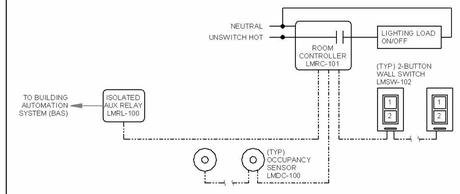
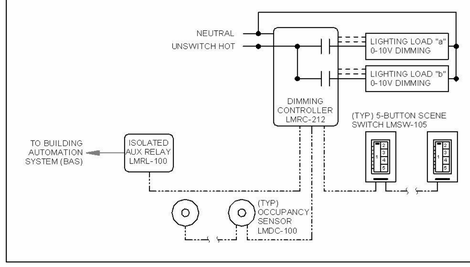
1. # = NUMBER OF ZONES
2. D = DIMMING, S = SWITCHING
3. P = DAYLIGHT PHOTOCELL
4. L = PLUG LOAD CONTROLLER
5. # = INSTANCE

GENERAL NOTES

1. COORDINATE INITIAL PROGRAMMING WITH OWNER AND MODIFY CONTROL TIMES AND OPERATION AS REQUESTED BY OWNER.
2. PROVIDE FINE TUNING PROGRAMMING AND ADJUSTMENTS UPON REQUEST BY OWNER WITHIN FIRST 6 MONTHS AFTER SUBSTANTIAL COMPLETION.
3. PROVIDE CUSTOMIZED ENGRAVED PERMANENT BUTTON LABELS ON EACH SWITCH, LABEL TO MATCH BUTTON LABEL ID OR AS DIRECTED BY OWNER.
4. PART NUMBERS SHOWN ARE BASED ON WATTSTOPPER AS THE BASIS OF DESIGN. ALL APPROVED MANUFACTURERS ARE SUBJECT TO MEETING ALL FUNCTIONS AND CAPABILITIES OF THE BASIS OF DESIGN SYSTEM AND PRODUCTS. FAILURE TO MEET THESE SHALL REQUIRE THE CONTRACTOR TO PROVIDE A SYSTEM THAT DOES AT NOT ADDITIONAL COST.

GENERAL NOTES

5. REFER TO PLANS FOR LOCATIONS AND QUANTITIES OF DEVICES.
6. INSTALL ONE OF EACH CONTROL TYPE WITH PROGRAMMING, ADJUST, AND OBTAIN OWNERS APPROVAL PRIOR TO PROGRAMMING THE REMAINING CONTROLS.
7. WIRING MAY VARY BETWEEN MANUFACTURERS. CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE REQUIRED WIRING THAT WILL BOTH MEET THE MANUFACTURERS REQUIREMENTS AND MATCH WITH THE SHOWN SYSTEM.
8. PROVIDE COMPLETE SHOP DRAWING SUBMITTALS INCLUDING OCCUPANCY SENSOR LAYOUT AND COVERAGE PATTERNS. PROVIDE ADDITIONAL SENSORS AS REQUIRED FOR 100% COVERAGE OF SPACES WITH OCCUPANCY SENSOR CONTROL.

ID / DETAIL	LIGHTS ON CONTROL	LIGHTS OFF CONTROL	LIGHTING CONTROL TYPE	DAYLIGHT SENSOR SETTING (FC)	TIME DELAY TO OFF (MIN.)	BAS AUX RELAY SIGNAL	PLUG LOAD CONTROLLER	NETWORKED CONTROLS	BUTTON 1	BUTTON 2	BUTTON 3	BUTTON 4	BUTTON 5	BUTTON 6	BUTTON 7	BUTTON 8	BUTTON 9	NOTES
1S3 	MANUAL & OCCUPANCY	MANUAL OR OCCUPANCY	ON/OFF	-	15	RELAY CLOSED ON OCCUPANCY	-	-	FUNCTION: PRESS-ON LABEL ID: "ON"	FUNCTION: PRESS-OFF LABEL ID: "OFF"	-	-	-	-	-	-	-	
2D1 	MANUAL & OCCUPANCY	MANUAL OR OCCUPANCY	DIMMING 0-10V	-	15	RELAY CLOSED ON OCCUPANCY	-	-	TOGGLE PRESS TOP-ON, PRESS BOTTOM-OFF, HOLD TOP-RAISE, HOLD BOTTOM-"OFF/ LOWER"	FUNCTION: PRESS-PRESET SCENE #01 ZONE "a" 75% ZONE "b" 75% LABEL ID: "PRE #1"	FUNCTION: PRESS-PRESET SCENE #02 ZONE "a" 0% ZONE "b" 50% LABEL ID: "PRE #2"	FUNCTION: PRESS-SELECT ZONE "a" FOR DIMMING LABEL ID: "ZONE a"	FUNCTION: PRESS-SELECT ZONE "b" FOR DIMMING LABEL ID: "ZONE b"	-	-	-	-	

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09/20/21

REVISION

NO.	DESCRIPTION	DATE

HKS PROJECT NUMBER
24805.000
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12/22/16
ISSUE

SHEET TITLE
LIGHTING CONTROL SCHEDULES
SHEET NO.
EL602

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CABLE/OUTLET COLOR SCHEDULE

COLOR	TYPE
BLACK	TV COAX

ABBREVIATIONS

NOTE: ALL ABBREVIATIONS MAY NOT BE USED.

A	AUGMENTED
CAT	CATEGORY
E	ENHANCED
EA	EACH
ER	EQUIPMENT ROOM
FPP	FIBER PATCH PANEL
GIG	GIGA HERTZ
HWM	HORIZONTAL WIRE MANAGEMENT
NIC	NOT IN CONTRACT
OE	OWNER ELECTRONICS
PNM	PLENUM
PR	PAIR
PS	POWER SUPPLY
RPP	RISER PATCH PANEL
SPP	STATION PATCH PANEL
TC	TELECOMMUNICATIONS ROOM
TYP	TYPICAL
VWM	VERTICAL WIRE MANANGEMENT

DEFINITIONS

NOTE: ALL DEFINITIONS MAY NOT BE USED.

INDICATED: THE TERM "INDICATED" REFERS TO GRAPHIC REPRESENTATIONS, NOTES, OR SCHEDULES ON THE DRAWINGS, OTHER PARAGRAPHS OR SCHEDULES IN THE SPECIFICATIONS, AND SIMILAR REQUIREMENTS IN THE CONTRACT DOCUMENTS. WHERE TERMS SUCH AS "SHOWN", "NOTED", "SCHEDULED", AND "SPECIFIED" ARE USED, IT IS TO HELP THE READER LOCATE THE REFERENCE, NO LIMITATION ON LOCATION IS INTENDED.

DIRECTED: TERMS SUCH AS "DIRECTED", "REQUESTED", AUTHORIZED", "SELECTED", "APPROVED", "REQUIRED", AND "PERMITTED" MEAN "DIRECTED BY THE ENGINEER", "REQUESTED BY THE ENGINEER", AND SIMILAR PHRASES.

APPROVE: THE TERM "APPROVED", WHERE USED IN CONJUNCTION WITH THE ENGINEER'S ACTION ON THE CONTRACTOR'S SUBMITTALS, APPLICATIONS, AND REQUESTS, IS LIMITED TO THE ENGINEER'S DUTIES AND RESPONSIBILITIES AS STATED IN GENERAL AND SUPPLEMENTARY CONDITIONS.

FURNISH: THE TERM "FURNISH" IS USED TO MEAN "SUPPLY AND DELIVER TO THE PROJECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY, INSTALLATION, AND SIMILAR OPERATIONS."

INSTALL: THE TERM "INSTALL" IS USED TO DESCRIBE OPERATIONS AT PROJECT SITE INCLUDING THE ACTUAL "UNLOADING, UNPACKING, ASSEMBLY, ERECTION, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR OPERATIONS."

PROVIDE: THE TERM "PROVIDE" MEANS "TO FURNISH AND INSTALL, COMPLETE AND READY FOR THE INTENDED USE."

INSTALLER: AN "INSTALLER" IS THE CONTRACTOR OR AN ENTITY ENGAGED BY THE CONTRACTOR, EITHER AS AN EMPLOYEE, SUBCONTRACTOR, OR SUB-SUBCONTRACTOR, FOR PERFORMANCE OF A PARTICULAR CONSTRUCTION ACTIVITY, INCLUDING INSTALLATION, ERECTION, APPLICATION, AND SIMILAR OPERATIONS. INSTALLERS ARE REQUIRED TO BE EXPERIENCED IN THE OPERATIONS THEY ARE ENGAGED TO PERFORM.

ELECTRONIC SYSTEMS: THE TERM "ELECTRONIC SYSTEMS" IS USED TO DESCRIBE ALL LOW VOLTAGE SYSTEMS GENERALLY REFERRED TO AS "SPECIAL SYSTEMS". THESE SYSTEMS INCLUDE BUT ARE NOT NECESSARILY LIMITED TO ALL SYSTEMS WHICH UTILIZE VOLTAGES OF LESS THAN 71 VOLTS SUCH AS SOUND SYSTEMS, VIDEO SYSTEMS, TV SYSTEMS, SECURITY SYSTEMS, VOICE AND DATA CABLING SYSTEMS, ETC...

EQUIPMENT/CABLE LIST

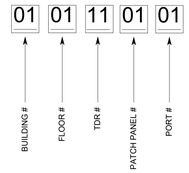
THE ITEMS INDICATED BELOW SHALL NOT BE CONSTRUED AS A "BILL OF MATERIALS". THIS LIST IDENTIFIES ITEMS OF SIGNIFICANCE USED DURING THE DESIGN OF THE CABLING INSTALLATION. WHERE THE ITEMS INDICATED ARE ONE PORTION OF AN ASSEMBLY, THE ENTIRE ASSEMBLY SHALL BE PROVIDED UNLESS SPECIFIED OTHERWISE. PROVIDE ALL MISCELLANEOUS HARDWARE AND SUPPORTS WHICH MAY NOT BE LISTED HERE, FOR A COMPLETE INSTALLATION. COMPARE CATALOG NUMBERS WITH DESCRIPTIONS AND NOTIFY ENGINEER OF DISCREPANCIES PRIOR TO BID. IF CATALOG NUMBERS DO NOT MATCH DESCRIPTIONS, THE DESCRIPTIONS TAKE PRECEDENCE. PROVIDE COMPLETE SUBMITTAL FOR APPROVAL PRIOR TO PURCHASING ANY EQUIPMENT OR CABLE. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

SYMBOL	ITEM DESCRIPTION	ACCEPTABLE TYPES
	STATION CABLE, DATA - CATEGORY 6 UTP, PLENUM, BLACK, DATA	BELDEN 2413010
	DATA OUTLET, SINGLE GANG FACEPLATE, WHITE, 4 POSITION	BELDEN AX102249
▽	CATEGORY 6 JACK - DATA, BLACK	BELDEN RV6MJKUBL-S1
	BLANK INSERT, WHITE	BELDEN AX102262
▽▼	DATA OUTLET, SINGLE GANG FACEPLATE, WHITE, 4 POSITION	BELDEN AX102249
	CATEGORY 6 JACK - DATA, BLACK	BELDEN RV6MJKUBL-S1
	BLANK INSERT, WHITE	BELDEN AX102262
4 ▼	DATA OUTLET, SINGLE GANG FACEPLATE, WHITE, 4 POSITION	BELDEN AX102249
	CATEGORY 6 JACK - DATA, BLACK	BELDEN RV6MJKUBL-S1
SPP1	48 PORT, 2RU PATCH PANEL WITH OUTLETS	BELDEN RV6PPF2U48K
HWM	HORIZONTAL WIRE MANAGERS, 2RU	BELDEN BHH192UR

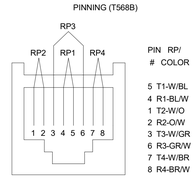
NOTE: ALL RACKS, LADDER, PATCH PANELS AND ACCESSORIES SHALL BE BLACK IN COLOR.

GENERAL PROJECT NOTES

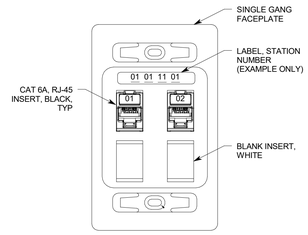
1. UNLESS OTHERWISE NOTED, INSTALL ALL CABLE INSIDE RACEWAY SYSTEMS. WHERE RACEWAY SYSTEMS HAVE NOT BEEN PROVIDED OR SPECIFIED, INSTALL CABLE THROUGH THE SPECIFIED "CADDY" CLIPS AT THE MINIMUM INTERVALS IDENTIFIED IN THE SPECIFICATIONS. SUPPORT "CADDY" CLIPS DIRECTLY FROM THE BUILDING STRUCTURE, NOT FROM OTHER BUILDING SYSTEM SUPPORT WIRES OR CABLE.
2. PROVIDE PLENUM RATED CABLE IN ALL AIR PLENUMS. IF A PLENUM RATED CABLE IS NOT SPECIFIED, PROVIDE THE PLENUM RATED EQUIVALENT TO THE SPECIFIED CABLE.
3. LABEL ALL CABLE INSTALLED UNDER THIS CONTRACT REGARDLESS OF LENGTH.
4. THE EQUIPMENT LABELING IDENTIFIED ON DETAILS IN THESE DRAWINGS ARE EXAMPLES ONLY OF THE ACTUAL LABELING WHICH IS REQUIRED AS PART OF THIS CONTRACT. PRIOR TO FABRICATION, SUBMIT THE NOMENCLATURE FOR ALL LABELS TO THE OWNER FOR REVIEW. THIS REQUIREMENT INCLUDES BUT IS NOT LIMITED TO ALL CABLE LABELING, AND ALL EQUIPMENT LABELING.
5. IF OUTLET IS TERMINATED IN CEILING SPACE, LABEL THE T-BAR GRID WITH THE OUTLET NUMBER FOR EASY LOCATION AND IDENTIFICATION.
6. GROUND ALL EQUIPMENT RACKS INSTALLED UNDER THIS CONTRACT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS.
7. FOR EVERY CABLE PULL SPECIFIED, COIL 15' OF EXCESS CABLE AT THE STATION END FOR FUTURE USE. NEATLY COIL 15' ABOVE THE CEILING OR BELOW FLOOR WHERE APPLICABLE.
8. PROVIDE THE QUANTITY OF PATCH PANELS REQUIRED +20% FOR THE TOTAL DATA OUTLETS SHOWN ON FLOOR PLANS FOR THE PARTICULAR LEVEL.
9. ALL DATA LOCATIONS ARE NOT SHOWN IN ET SHEETS. REFER TO ENLARGED POWER PLANS FOR DATA LOCATIONS IF NOT SHOWN ON ET SHEETS.



8 CABLE ID EXAMPLE DETAIL
NO SCALE



5 TYPICAL VOICE-DATA OUTLET PINNING DETAIL
NO SCALE



9 TYPICAL 2-PORT DATA OUTLET
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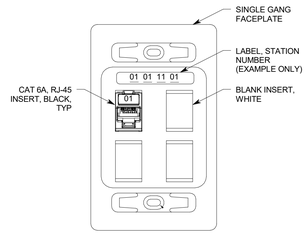
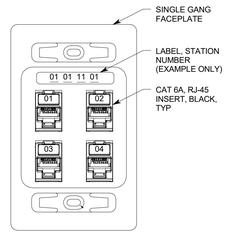
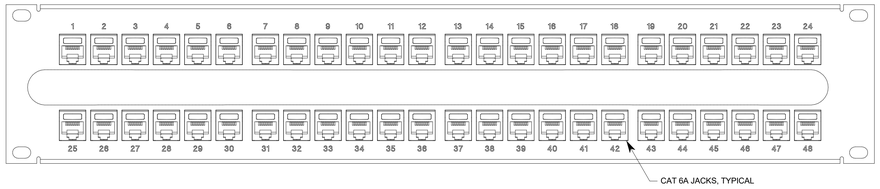


6 TYPICAL 1-PORT DATA OUTLET
NO SCALE ▽



3 TYPICAL 4-PORT DATA OUTLET
NO SCALE ▽▼



1 STATION PATCH PANEL, (SPP1)
NO SCALE

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09/20/21

REVISION NO. | DESCRIPTION | DATE

HKS PROJECT NUMBER
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DATE
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SHEET TITLE
TELECOM DETAILS

SHEET NO.
ET501

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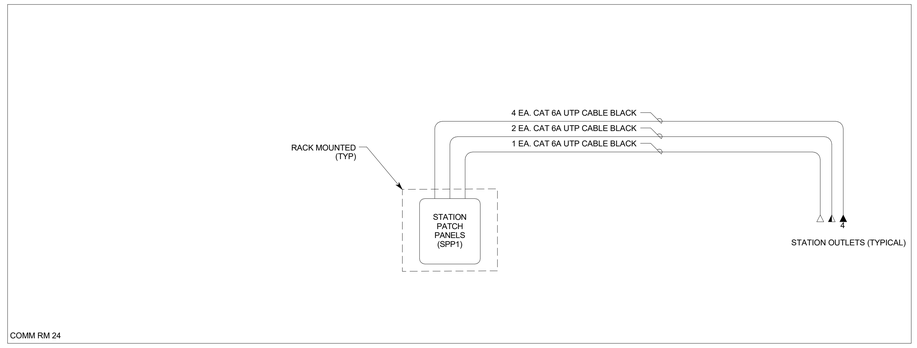
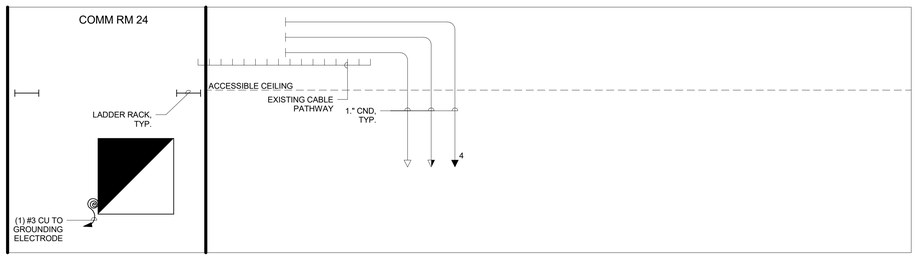


2 TELECOM CABLE RISER DIAGRAM

NO SCALE



1 TELECOM CONDUIT RISER DIAGRAM

NO SCALE

HKS

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SHEET TITLE
TELECOM RISER DIAGRAM

SHEET NO.
ET601

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