KELLEY ENGINEERING CENTER PARTIAL REMODEL

OREGON STATE UNIVERSITY

ISSUED FOR PERMIT AND BID / 07/27/2023
19-0016
OSU PROJECT NUMBER: 2214-20

COMPILED WITH ADDENDUM 1 DATED 09/06/2023 ⚠1

INTEGRUS
A COLLABORATION OF YGH & INTEGRUS ARCHITECTURE

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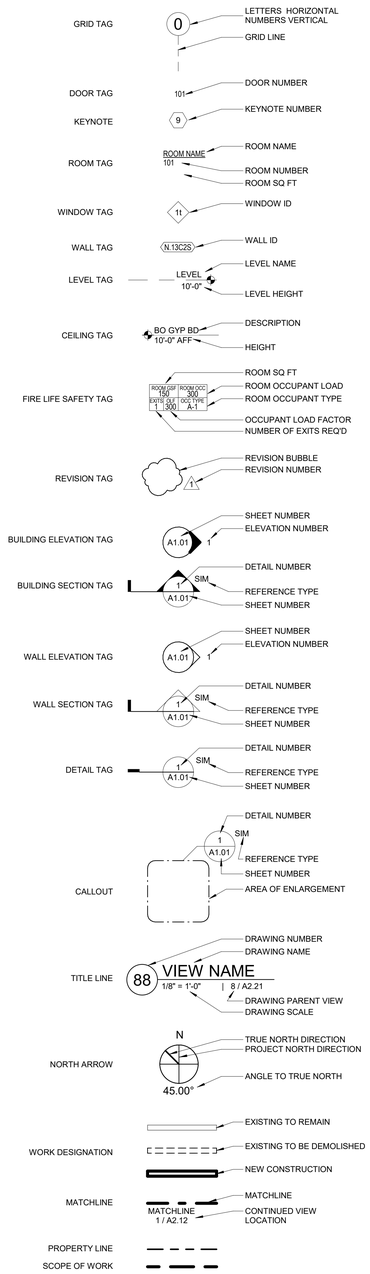
SYMBOLS LEGEND



ABBREVIATIONS

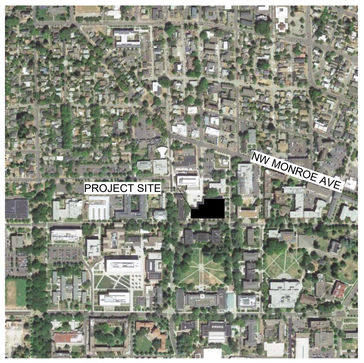
&	AND
∠	ANGLE
@	AT
CL	CENTERLINE
Ø	DIAMETER
±	PLUS OR MINUS
°	DEGREE
#	POUND OR NUMBER
(E)	EXISTING
AB	ANCHOR BOLT
A/C	AIR CONDITIONING
ACST	ACOUSTICAL
ACM	ALUMINUM COMPOSITE MATERIAL PANELS
ACT	ACOUSTICAL CEILING TILE
ACW	ALUMINUM CURTAIN WALL
AD	AREA DRAIN
ADJ	ADJUSTABLE OR ADJACENT
AF	ACCESS FLOOR
AFF	ABOVE FINISHED FLOOR
AGGR	AGGREGATE
AHU	AIR HANDLING UNIT
ALUM	ALUMINUM
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
ASF	ALUMINUM STOREFRONT
ASPH	ASPHALT
AWP	ACOUSTICAL WALL PANEL
BCS	BABY CHANGING STATION
BD	BOARD
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM
BOT	BOTTOM
CAB	CABINET
CB	CATCH BASIN OR CHALKBOARD
CBB	CEMENT BACKER BOARD
CEM	CEMENT
CER	CERAMIC
CFCI	CONTRACTOR FURNISHED CONTRACTOR INSTALLED
CG	CORNER GUARD
CI	CAST IRON
CIP	CAST-IN-PLACE
CJ	CONSTRUCTION OR CONTROL JOINT
CLG	CEILING
CLO	CLOSET
CLR	CLEAR
CMP	COMPOSITE METAL PANEL
CMU	CONCRETE MASONRY UNIT
CNTR	COUNTER
CO	CLEANOUT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONSTR	CONSTRUCTION
CONT	CONTINUOUS
CORR	CORRIDOR
CPT	CARPET OR CARPET TILE
CSK	COUNTERSUNK
CT	CERAMIC TILE
CTR	CENTER
CV	CONDOM VENDOR
DBL	DOUBLE
DEPT	DEPARTMENT
DET	DETAIL
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIM	DIMENSION
DISP	DISPENSER
DIV	DIVISION OR DIVIDE
DN	DOWN
DR	DOOR
DS	DOWNSPOUT
DWG	DRAWING
DWR	DRAWER
EA	EACH
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
ELEV	ELEVATOR
EOS	EDGE OF SLAB
EP	ELECTRICAL PANEL
EQ	EQUAL
EQUIP	EQUIPMENT
ESCAL	ESCALATOR
EST	ESTIMATE
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EXH	EXHAUST
EXIST	EXISTING
EXP	EXPOSED OR EXPANSION
EXT	EXTERIOR
FA	FIRE ALARM
FB	FLAT BAR
FD	FLOOR DRAIN
FDTN	FOUNDATION
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FHC	FIRE HOSE CABINET
FIN	FINISH
FIN FLR	FINISH FLOOR
FLR	FLOOR
FLOUR	FLUORESCENT
FMT	FORMED METAL TRIM
FOC	FACE OF CONCRETE OR CURB
FOF	FACE OF FINISH
FOS	FACE OF STUD
FP	FIREPROOF
FT	FOOT OR FEET
FTG	FOOTING
FUS	FOLDING UTILITY SHELF
G	GROUND
GA	GAGE
GALV	GALVANIZED
GB	GRAB BAR
GL	GLASS
GL BLK	GLASS BLOCK
GLZ CMU	GLAZED CMU
GR	GRADE
GWB	GYPSUM WALL BOARD
GWB-AR	GYPSUM WALL BOARD - ABUSE RESISTANT
GWB-IR	GYPSUM WALL BOARD - IMPACT RESISTANT
GWB-WR	GYPSUM WALL BOARD - WATER RESISTANT
HB	HOSE BIBB
HC	HOLLOW CORE
HD	HAND DRYER
HDWD	HARDWOOD
HGT	HEIGHT
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HR	HOUR
HVAC	HEATING, VENTILATION, AIR CONDITIONING

ABBREVIATIONS

ID	INSIDE DIAMETER
INSUL	INSULATION
INT	INTERIOR
JS	JOINT SEALANT
JT	JOINT
LAB	LABORATORY
LAM	LAMINATE
LAV	LAVATORY
LINO	LINOLEUM
LKR	LOCKER
LS	INTERIOR LIGHT SHELF ASSEMBLY
LT	LIGHT
MATL	MATERIAL
MAX	MAXIMUM
MB	MARKER BOARD
MECH	MECHANICAL
MEMB	MEMBRANE
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MIRR	MIRROR
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MTD	MOUNTED
MTL	METAL
MU	MIRROR UNIT
MULL	MULLION
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
OA	OVERALL
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFD	OVER FLOW DRAIN
OFF	OFFICE
OFOI	OWNER FURNISHED OWNER INSTALLED
OPNG	OPENING
OPP	OPPOSITE
P-?	PAINT COLOR
PBD	PARTICLEBOARD
PCC	PRECAST CONCRETE
PERF	PERFORATED
PL	PROPERTY LINE
PLAM	PLASTIC LAMINATE
PLAS	PLASTER
PLYWD	PLYWOOD
PNL	PANEL
PR	PAIR
PS	PROJECTION SCREEN
PT	POINT
PTD	PAPER TOWEL DISPENSER
PTN	PARTITION
QT	QUARRY TILE
R	RADIUS OR RISER
RA	RETURN AIR
RB	RESILIENT BASE
RB HK	ROBE HOOK
RD	ROOF DRAIN
REF	REFRIGERATOR - FREEZER
REINF	REINFORCED
REQD	REQUIRED
RESIL	RESILIENT
RM	ROOM
RO	ROUGH OPENING
RVS	REVERSED
RWL	RAIN WATER LEADER
SC	SOLID CORE
SCD	SEAT COVER DISPENSER
SCHED	SCHEDULE
SD	STORM DRAIN OR SOAP DISPENSER
SECT	SECTION
SHR	SHOWER
SHT	SHEET
SIM	SIMILAR
SKLT	SKYLIGHT
SNDU	SANITARY NAPKIN DISPOSAL UNIT
SNV	SANITARY NAPKIN VENDOR
SPEC	SPECIFICATION
SQ	SQUARE
SS	EXTERIOR SUNSCREEN ASSEMBLY
SST	STAINLESS STEEL
ST	STONE
STA	STATION
STD	STANDARD
STL	STEEL
STOR	STORAGE
STRUCT	STRUCTURAL
SUSP	SUSPEND
SYMM	SYMMETRICAL
T	TREAD
T&G	TONGUE & GROOVE
TB	TACK BOARD
TEL	TELEPHONE
THX	THICKNESS
THRU	THROUGH
TO	TOP OF
TOC	TOP OF CURB
TOL	TOLERANCE
TOS	TOP OF STEEL
TOW	TOP OF WALL
TPD	TOILET PAPER DISPENSER
TPTN	TOILET PARTITION
TYP	TYPICAL
UNFIN	UNFINISHED
UOI	UNLESS OTHERWISE INDICATED
UR	URINAL
US	UTILITY SHELF
VERT	VERTICAL
VEST	VESTIBULE
VIF	VERIFY IN FIELD
W/	WITH
WC	WATER CLOSET or WOOD CEILING
WD	WOOD
WDF	WOOD FLOORING
WDP	WOOD VENEER FACED PANELING
WM	WIRE MESH
WR	WASTE RECEPTACLE
W/O	WITHOUT
WOM	WALK OFF MAT
WP	WATERPROOF
WS	WINDOW SHADE
WSCT	WAINSCOT
WWF	WELDED WIRE FABRIC

LOCATION MAP

SITE ADDRESS: 110 SW PARK TERRACE
CORVALLIS, OR 97331



VICINITY MAP

TEAM DIRECTORY

CLIENT

OREGON STATE UNIVERSITY - CAPITAL PLANNING AND DEVELOPMENT
850 SW 35th Street
Corvallis, Oregon 97333 USA
Tel: 503-313-8401
Contact: Julie Drolet

ARCHITECT:

INTEGRUS ARCHITECTURE

707 SW Washington St, Suite 1200
Portland, OR. 97205 USA
Tel: 503-221-0150
Contact: Steve Neiger

BUILDING/PLANNING AUTHORITY

CITY OF CORVALLIS
501 SW Madison Ave.
Corvallis, OR. 97333 USA
Tel: 541-766-6900

MEP ENGINEER

GLUMAC ENGINEERS
900 SW Fifth Ave. Suite 1600
Portland, OR. 97204 USA
Tel: 503-227-5280
Contact: Phillip Cunningham

PROJECT DESCRIPTION

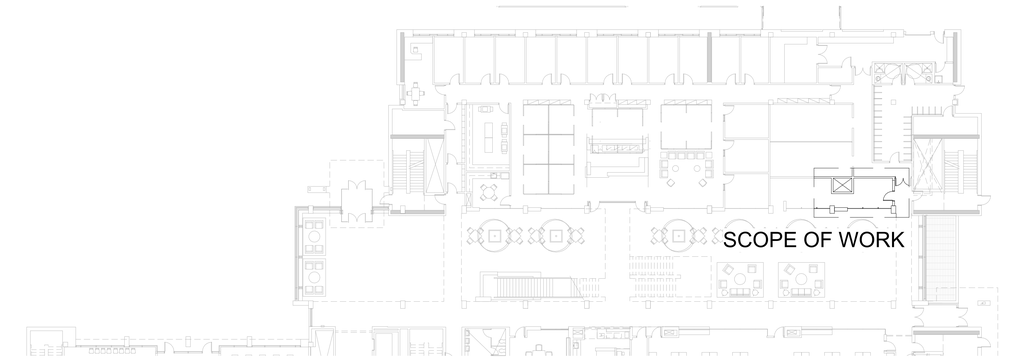
MINOR REMODEL ON THE SECOND FLOOR, ADDING A DRY LAB.

MINOR REMODEL ON THE FIRST FLOOR, ADDING A SINGLE-USER TOILET ROOM.

GENERAL NOTES

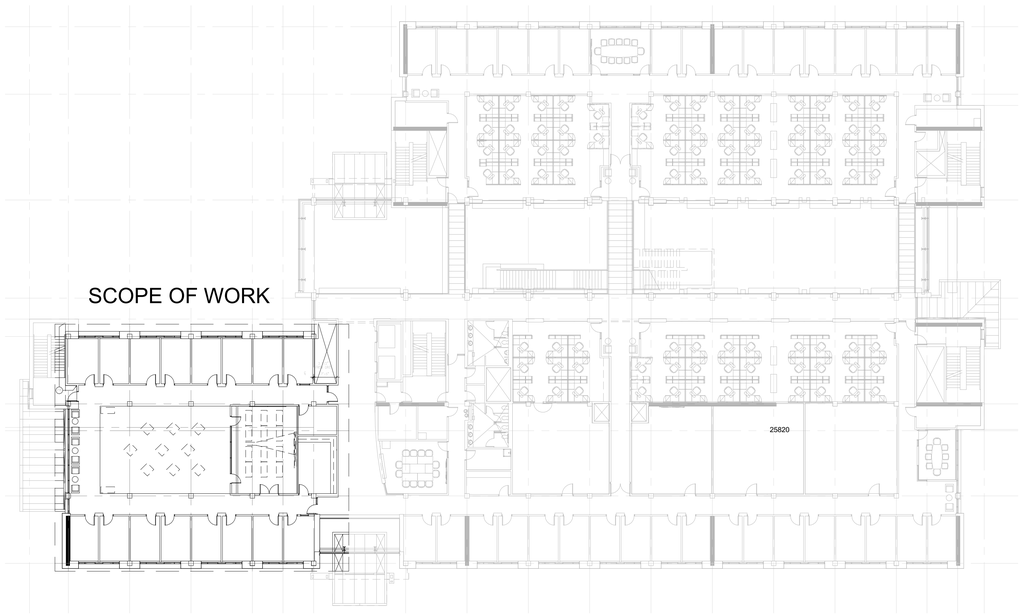
DESIGN AND DOCUMENTS BASED ON OSU DESIGN AND CONSTRUCTION STANDARDS VERSION REV. 2023.05

DRAWING LIST



LEVEL 1 - SCOPE OF WORK

1" = 20' - 0"



LEVEL 2 - SCOPE OF WORK

1" = 20' - 0"

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9/6/2023 11:47:21 AM

REGISTERED ARCHITECT
THOMAS ROBBINS
Portland, OR
6448
STATE OF OREGON

Consultant

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Owner
OREGON STATE UNIVERSITY

Project
KELLEY ENGINEERING CENTER PARTIAL REMODEL
110 SW Park Terrace
Corvallis, OR 97330

MARK	DATE	DESCRIPTION

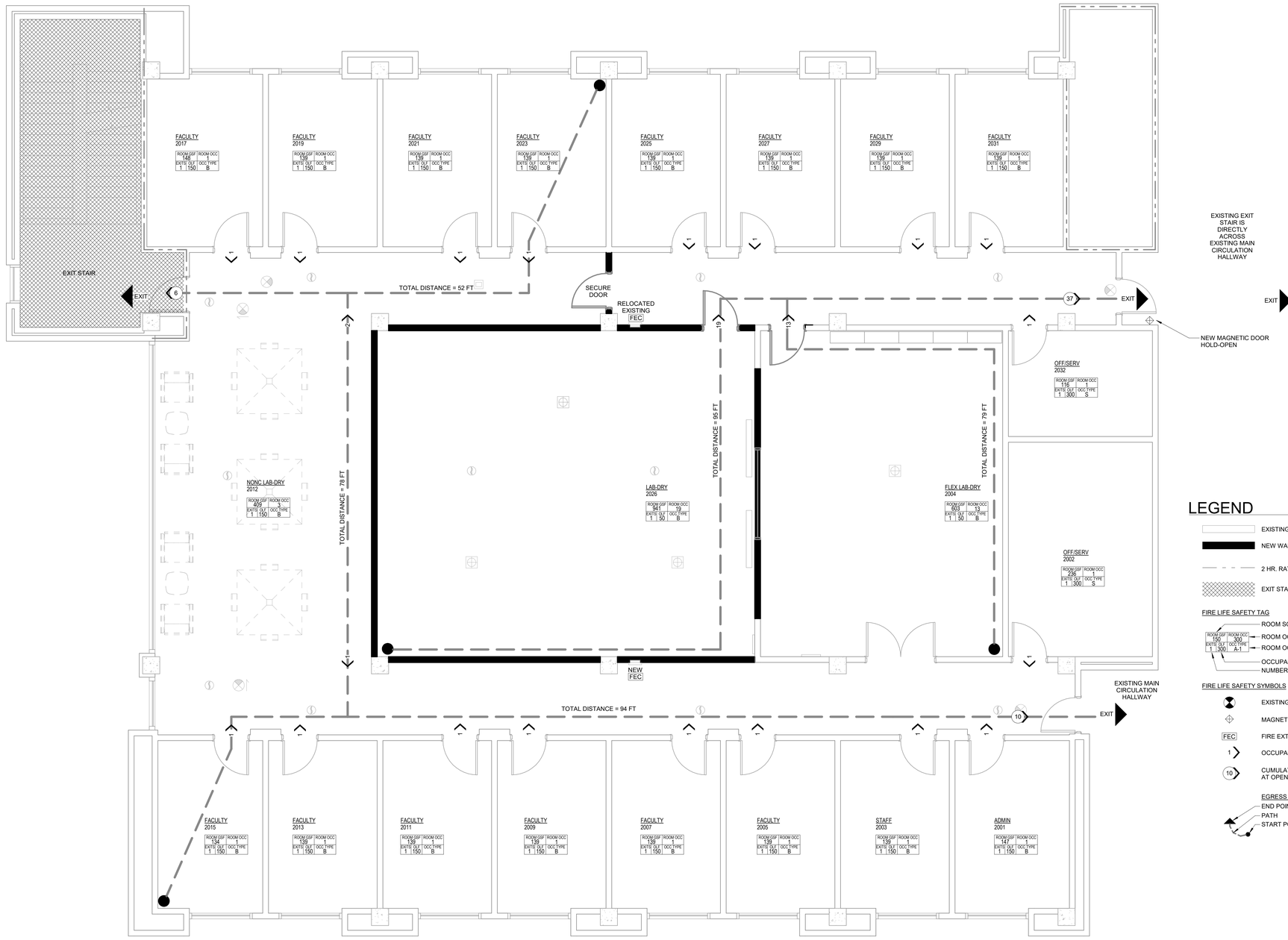
Sheet Title
DRAWING INDEX, SYMBOLS, ABBREVIATIONS

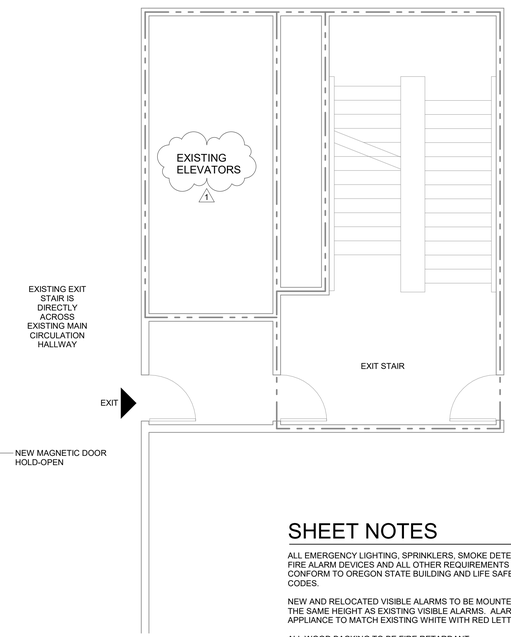
Drawing No.
G0.10

Scale	As indicated
Date	07/27/2023
Project No.	19-0016

THIS MINOR INTERIOR REMODEL IS DESIGNED UNDER THE 2019 OSSC.
THERE ARE NO CHANGES TO THE FOLLOWING:
- BUILDING AREA
- OCCUPANCY TYPE
- RATED WALLS
- BUILDING STRUCTURE
- BUILDING ENVELOPE

MINOR INTERIOR REMODEL SCOPE CONSISTS OF:
- ADDING 3 WALLS TO CREATE A NEW INTERIOR SPACE, WITHIN AN EXISTING OPEN OFFICE SPACE.
- ADDITION OF 2 NEW DOORS. ONE INTO THE NEW SPACE, AND ONE NEW SECURITY DOOR.
- REMOVAL OF AN EXISTING INTERIOR WINDOW AND 2 DOORS, AND REPLACING IT WITH A NEW INTERIOR WINDOW.
- ASSOCIATED PATCHING AND REPAIRING OF FLOOR, WALLS, CEILING, LIGHTING AND MECHANICAL SYSTEMS.
- ADDING A SINGLE-USER TOILET ROOM ON THE FIRST FLOOR, WHICH WILL ADD ONE TOILET AND ONE LAVATORY.





2 PARTIAL 2ND FLOOR LIFE SAFETY PLAN
1/4" = 1'-0"

GRAPHIC SCALE: 1/4" = 1'-0"
0' 2' 4' 8' 16'

GENERAL NOTES

1. CODE REVIEW IS BASED ON 2019 OREGON STRUCTURAL SPECIALTY CODE.
2. GENERAL CONTRACTOR IS TO MAINTAIN THE INTEGRITY OF ALL FIRE RESISTIVE AREA AND OCCUPANCY SEPARATIONS.
3. PROVIDE ONE NEW PORTABLE FIRE EXTINGUISHER FOR LIGHT HAZARD OCCUPANCY TO MATCH EXISTING EXTINGUISHERS WITHIN THE EXISTING SPACE.

SHEET NOTES

ALL EMERGENCY LIGHTING, SPRINKLERS, SMOKE DETECTORS, FIRE ALARM DEVICES AND ALL OTHER REQUIREMENTS TO CONFORM TO OREGON STATE BUILDING AND LIFE SAFETY CODES.

NEW AND RELOCATED VISIBLE ALARMS TO BE MOUNTED AT THE SAME HEIGHT AS EXISTING VISIBLE ALARMS. ALARM APPLIANCE TO MATCH EXISTING WHITE WITH RED LETTERS.

ALL WOOD BACKING TO BE FIRE RETARDANT.

MAINTAIN MEANS OF EGRESS LIGHTING PER OSSC SECTION 1008.

MAINTAIN FULL SMOKE DETECTION, FIRE SPRINKLER AND ALARM COVERAGE.

REWORK OF VISIBLE ALARMS SHALL BE IN ACCORDANCE WITH OSSC SECTION 907.

MODIFICATIONS TO SPRINKLER HEAD LAYOUT ARE TO BE BIDDER DESIGNED IN ACCORDANCE WITH OSSC SECTION 903.

THIS REMODEL MAKES NO MODIFICATIONS TO EXISTING PLUMBING SYSTEMS OR RATED ASSEMBLIES.

LEGEND

- EXISTING WALL
- NEW WALL
- 2 HR. RATED CONSTRUCTION
- EXIT STAIR

FIRE LIFE SAFETY TAG
- ROOM SQ FT
- ROOM OCCUPANT LOAD
- ROOM OCCUPANT TYPE
- OCCUPANT LOAD FACTOR
- NUMBER OF EXITS REQ'D

FIRE LIFE SAFETY SYMBOLS
- EXISTING EXIT SIGN
- MAGNETIC HOLD-OPENS
- FEC — FIRE EXTINGUISHER CABINET
- 1 — OCCUPANT LOAD AT OPENING
- 10 — CUMULATIVE OCCUPANT LOAD AT OPENING

EGRESS PATH
- END POINT
- PATH
- START POINT

ORIGINAL BUILDING

ORIGINAL BUILDING CONSTRUCTOIN WAS PERMITTED UNDER THE 1998 OSSC. CONSTRUCTION WAS COMPLETED IN 2006.

OCCUPANCY TYPES	B	EDUCATION ABOVE THE 12TH GRADE
	B	ADMINISTRATION, OFFICES
	A-3	ASSEMBLY
CONSTRUCTION TYPE		TYPE II FR
FIRE EXTINGUISHERS		LIGHT HAZARD OCCUPANCY
FULLY SPRINKLERED		

OCCUPANT LOAD

EXISTING DEPARTMENT

EDUCATION	(20 OLF)	31 OCCUPANTS
BUSINESS	(150 OLF)	25 OCCUPANTS
STORAGE	(300 OLF)	2 OCCUPANTS
TOTAL:		**58 OCCUPANTS**

PROPOSED REMODELED DEPARTMENT

EDUCATION	(20 OLF)	31 OCCUPANTS
BUSINESS	(150 OLF)	26 OCCUPANTS
STORAGE	(300 OLF)	2 OCCUPANTS
TOTAL:		**59 OCCUPANTS**

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MARK	DATE	DESCRIPTION
1	09.06.23	ADD 1

Sheet Title
PARTIAL 2ND FLOOR LIFE SAFETY PLAN

Drawing No.
A0.02

Scale	As indicated
Date	07/27/2023
Project No.	19-0016

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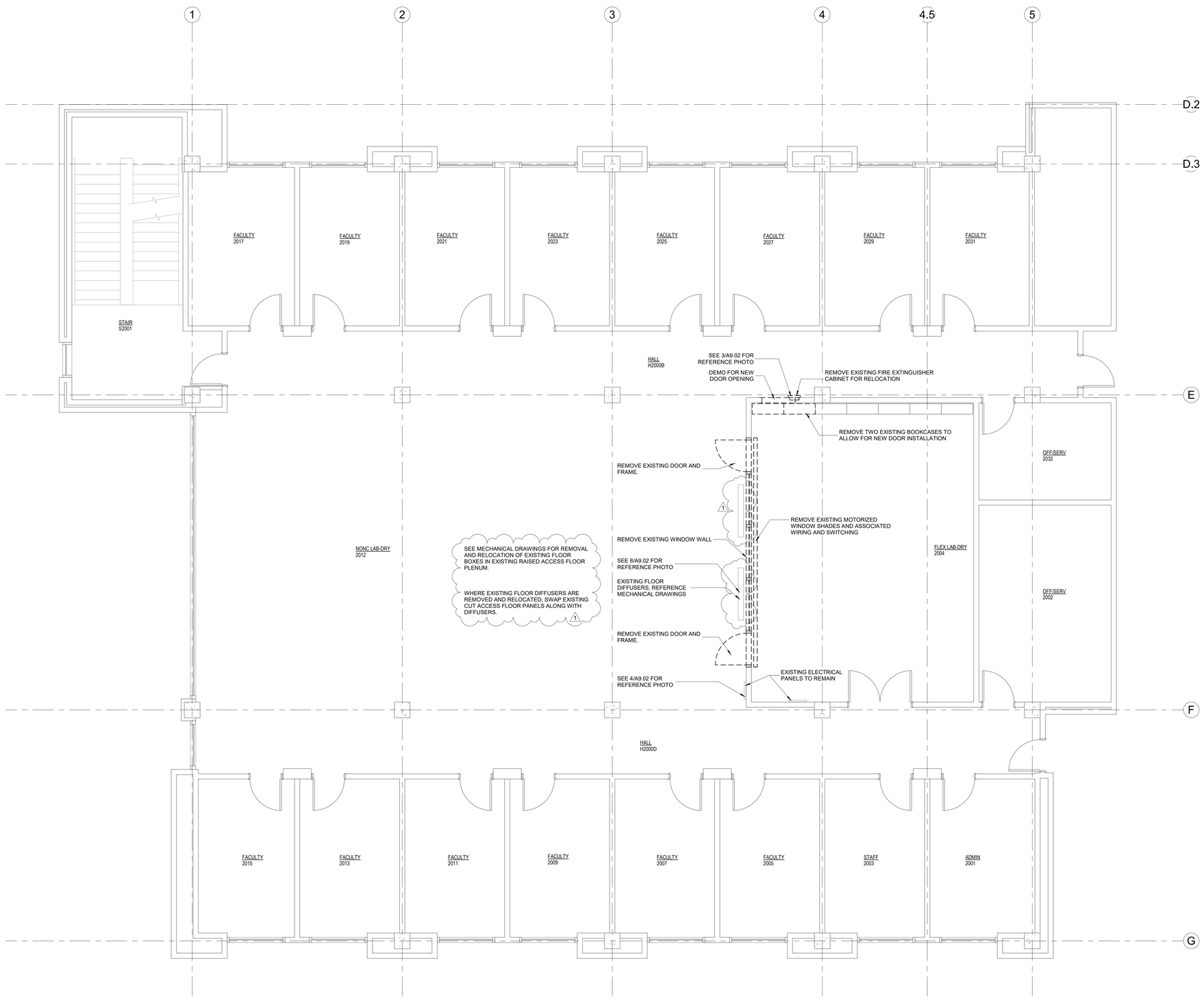

1 PARTIAL 2ND FLOOR DEMOLITION PLAN
1/4" = 1'-0"

N

GRAPHIC SCALE: 1/4" = 1'-0"
0' 2' 4' 8' 16'

SHEET NOTES

1. PARTITIONS, DOORS, FRAMES, RELITES, CASEWORK AND ITEMS SHOWN DASHED ARE TO BE REMOVED OR RELOCATED AS NOTED.
2. DEMOLITION ACTIVITIES SHALL PREP FOR A SMOOTH TRANSITION WHERE DEMO WORK ABUTS OR TERMINATES IN A FLUSH CONDITION WITH EXISTING WORK. WHERE EXISTING FINISHES MUST BE CUT OR REMOVED, METHODS WHICH TERMINATE SURFACES IN A STRAIGHT, NEAT LINE SHALL BE USED. TERMINATION OF AN EXISTING SURFACE SHALL BE MADE IN A LOCATION WHICH SERVES AS A NATURAL POINT OF DIVISION. REPAIRS OR PATCHES TO EXISTING WORK SHALL MATCH ADJACENT EXISTING CONDITION IN TEXTURE AND FINISH AND MAINTAIN ANY EXISTING FIRE RATING.
3. REMOVE ALL POWER, LOW VOLTAGE, PLUMBING, HVAC AND OTHER PERTINENT ITEMS FROM WALLS TO BE DEMOLISHED. ABANDONED WIRING SHALL BE REMOVED BACK TO THE SOURCE.
4. DEMOLITION IS NOT NECESSARILY LIMITED TO WHAT IS SHOWN ON THE DEMOLITION PLAN. THE INTENT IS TO INDICATE THE GENERAL SCOPE OF DEMOLITION REQUIRED TO COMPLETE THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. GENERAL ITEMS FOR DEMOLITION ARE INDICATED ON DRAWINGS. ALL ITEMS NOT SPECIFICALLY SHOWN THAT ARE LOCATED IN AREAS OR WALLS INDICATED TO BE DEMOLISHED ARE TO BE REMOVED AND/OR RELOCATED AS REQUIRED.
5. CONTRACTOR IS TO COORDINATE WITH THE OWNER ANY INTERRUPTIONS OF TELEPHONE AND COMMUNICATIONS, ELECTRICAL, MECHANICAL, PLUMBING OR FIRE PROTECTION SERVICES WHICH AFFECT THE OPERATION OF THE REMAINING PORTION OF THE FACILITY. ANY INTERRUPTIONS TO THESE SERVICES ARE TO BE SCHEDULED IN ADVANCE AND THE DURATION IS TO BE HELD TO THE ABSOLUTE MINIMUM.
6. GC TO COORDINATE WITH OWNER, WHETHER OWNER DESIRES TO RETAIN ANY OF THE EXISTING DOOR, DOOR HARDWARE, FIXTURES, CASEWORK, WINDOW SHADES, CARPET, OR CEILING TILES IDENTIFIED FOR DEMOLITION, IF NOT NOTED IN DRAWINGS. ANY MATERIALS NOT RETURNED TO THE OWNER SHALL BE DELIVERED TO AN APPROPRIATE FACILITY FOR RECYCLING.
7. REMOVE ALL CARPET, PAD AND RUBBER BASE WHERE INDICATED. SALVAGE EXISTING REMOVED CARPET FOR USE INFILLING AROUND NEW WALLS. REPAIR AND PREPARE EXISTING FLOORS AS SPECIFIED TO RECEIVE NEW FINISH. REPAIR GWB WALLS AS NECESSARY WHERE RUBBER BASE IS REMOVED.
8. CONTRACTOR TO INSPECT ALL EXISTING ITEMS FOR REUSE PRIOR TO RELOCATION. MODIFY ITEMS AS REQUIRED FOR NEW LOCATION AND VERIFY WITH ARCHITECT PRIOR TO PROCEEDING. RELOCATED ITEMS SHALL MATCH EXISTING CONDITION U.O.I.
9. REMOVE ALL EXISTING WALL DOOR STOPS WHERE DOORS ARE INDICATED TO BE REMOVED. IF REMAINING, PATCH AND PREPARE WALL FOR NEW SCHEDULED FINISH.
10. PROTECT ALL CONSTRUCTION AND FINISHES NOT INDICATED FOR DEMOLITION.

1

OSU SITE SECURITY PROTOCOLS

Site security & temporary walls.

- Where temporary barricade walls are indicated provide the following:
- Barricade walls shall be erected, maintained, and removed by contractor
- Temporary barricade walls are non-rated and non-structural and shall not be used to support personnel, materials, or other structures in any way
- Height shall be from floor to ceiling unless indicated otherwise
- Locks for Doors within Temporary Walls and Temporary Barricade Walls:
- Locks shall be of the type that remain locked so that when the doors are shut they are automatically locked and are openable from the inside with the knob, latch, or handle and from the outside with a key.
- Coordinate core inserts and the timing with the OSU Access, Lock and Key Shop and project management team.

1

Interior Dust Control

- Submit a dust control plan when work includes demolition, removal of materials, or other building interior activities that could create dust or other small airborne particles.
- The dust control plan shall include, but not be limited to, the following:
- Measures to be implemented before, during, and after any dust generating activity for the duration of the work.
- Measures to ensure there are no visible dust emissions in the air or collecting on surfaces outside the work area.
- Measures to prevent tracking of dust into non-work areas by feet or equipment.
- Measures for clean-up of settled or tracked dust found outside the work area.
- Do not proceed with the work until the OSU project management team has approved the plan. Perform dust control in accordance with the approved plan.
- Excessive airborne particles within the work area may require that the Contractor cover smoke detectors during that portion of the work and then uncover them when opening the area for use at the end of the work shift.
- If plastic sheeting is used for containment of dust, it shall be fire-retardant treated sheeting.
- Do not allow general nuisance dust outside the work area to exceed the American Conference of Governmental Industrial Hygienists guideline of 10 mg/m3. OSU reserves the right to perform dust level monitoring to ensure there is no violation of this limit.

Noise and Vibration

All activities that produce noise in excess of 60 dB and/or vibrations shall occur before 8am, after 5pm, Saturday or Sunday and in coordination with the OSU project management team.

Utility panel shutdowns

All utility including electrical panels shutdowns will be minimized and will be coordinated with the OSU project management team at least 72 hours before the event during the Monday through Friday work week. In the event that the work is to occur on a Monday or Tuesday, coordination will be completed by Thursday of the previous week.

Normal Business Hours
M-F 7 am to 5 pm.

1

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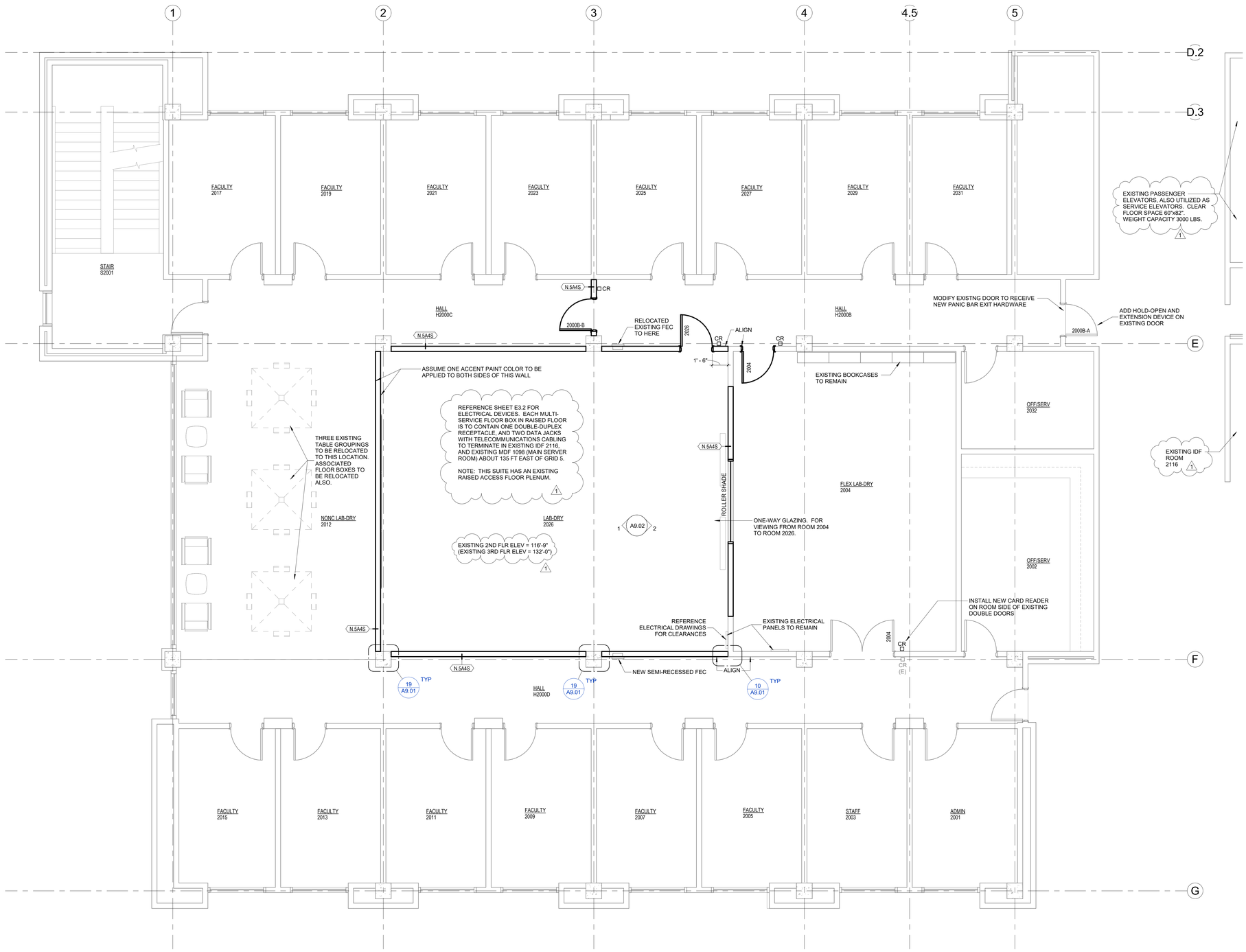
MARK	DATE	DESCRIPTION
1	09.06.23	ADD 1

Sheet Title
PARTIAL 2ND FLOOR DEMO PLAN

Drawing No.
A1.02

Scale	1/4" = 1'-0"
Date	07/27/2023
Project No.	19-0016



1 PARTIAL 2ND FLOOR PLAN
1/4" = 1'-0"

N

GRAPHIC SCALE: 1/4" = 1'-0"
0' 2' 4' 8' 16'

SHEET NOTES

1. ALL WOOD BLOCKING SHALL BE FIRE RETARDANT TREATED.
2. PROVIDE BIDDER-DESIGNED BLOCKING AND BACKING AS NECESSARY TO SUPPORT WALL AND CEILING MOUNTED EQUIPMENT, BOTH CFCI AND OFCI. APPLICATIONS INCLUDING, BUT NOT LIMITED TO, VIDEO DISPLAYS, AND OTHER WALL MOUNTED FIXTURES.
3. PROVIDE CONTINUOUS ACOUSTICAL SEALANT, ACOUSTICAL INSULATION AND/OR SOUND ATTENUATION BLANKETS AROUND ALL PENETRATIONS IN GYPSUM BOARD ASSEMBLIES, AT BOTH SIDES, INCLUDING BUT NOT LIMITED TO PENETRATIONS FOR CONDUIT, DUCTWORK, PIPING AND STRUCTURAL MEMBERS.
4. PAINT ALL GWB SURFACES THROUGHOUT SCOPE OF WORK. COLORS AND FINISHES ARE AS SPECIFIED ON FINISH SCHEDULE OR IN DRAWINGS.
5. PROVIDE PRODUCT DATA AND SHOP DRAWINGS FOR ALL NEW FINISHES, MATERIALS AND ASSEMBLIES PRIOR TO PROCUREMENT INCLUDING, BUT NOT LIMITED TO: CARPET, RUBBER BASE, PAINT, ACOUSTICAL CEILING TILE, SIGNAGE, LIGHTING, ETC.
6. NEW EQUIPMENT ITEMS ARE TO MATCH EXISTING ITEM COLOR SCHEMES: SWITCHES, RECEPTACLES, COVER PLATES, PULL-STATIONS, EXIT SIGNS, ROOM SIGNAGE, SPRINKLER HEADS, MECHANICAL FLOOR GRILLES, OCCUPANCY SENSORS, ACCESS CONTROL PADS, FIRE ALARM STROBES, ETC.
7. OWNER FURNISHED/OWNER INSTALLED: MOVABLE FURNITURE.
8. OWNER FURNISHED/CONTRACTOR INSTALLED: WALL-MOUNTED VIDEO MONITORS, MONITOR MOUNTING BRACKETS, AV BACK BOXES BEHIND MONITORS.

FINISHES
CARPET TILE: USE SALVAGED CARPET TILE TO PATCH AROUND NEW WALL LOCATIONS ON HALLWAY SIDE. INSTALL NEW CPT-1 IN LAB-DRY 2026 ONLY. TRANSITION CARPET UNDER CENTER OF CLOSED DOOR. NEW CARPET TILE TO BUTT JOINT AGAINST EXISTING CARPET TILE WITH NO TRANSITION PRODUCTS. 1/1

RUBBER BASE RB-1: CONTINUOUS ROLL GOODS TO MATCH EXISTING JOHNSONITE 4" THERMOSET RUBBER TOELESS BASE - BURNT UMBER COLOR. UTILIZE FIELD-MADE INSIDE AND OUTSIDE CORNERS PER MANUFACTURERS INSTALLATION INSTRUCTIONS.

ACOUSTICAL CEILING TILE AND GRID:
MATCH EXISTING PRELUDE 15/16 GRID. USE EXISTING RECLAIMED DUNE SECOND-LOOK II ANGLED TEGULAR TILE 2712 TO INFILL AROUND NEW WALLS ON HALLWAY SIDE OF LAB-DRY 2026.
INSIDE LAB-DRY 2026, PROVIDE NEW ACT-1, ULTIMA HIGH NRC 15/16" BEVELED TEGULAR 1944 24x48x7/8" OR EQUAL, NRC OF 0.80 OR BETTER.
OVERSTOCK: PROVIDE 5% ADDITIONAL CEILING TILE FOR OWNER'S STOCK.

PAINT: ALL PAINT TO BE ZERO VOC
P-1 TO MATCH EXISTING "NATURAL ECHO" W/ EGGSHELL FINISH.
P-2: ACCENT PAINT COLOR.

SOLID WOOD DOORS: TWO EXISTING DOORS CAN BE REMOVED AND REINSTALLED IN NEW LOCATIONS. NEW SOLID WOOD DOOR TO HAVE EASTERN HARD MAPLE VENEER TO MATCH EXISTING DOORS. NEW DOOR TO CONTAIN NO ADDED UREA-FORMADEHYDE.

PAINTED HOLLOW METAL DOOR FRAMES: P-1 TO MATCH EXISTING "NATURAL ECHO" W/ SEMI-GLOSS FINISH.

PAINTED HOLLOW METAL WINDOW FRAME: P-1 TO MATCH EXISTING "NATURAL ECHO" W/SEMI-GLASS FINISH.

FIRE EXTINGUISHER CABINET: SEMI-RECESSED TO MATCH EXISTING. WHITE STEEL CABINET WITH NARROW VERTICAL GLASS DOOR, NON-LOCKING, WITH VERTICAL RED "FIRE EXTINGUISHER" TEXT. PHOTO OF EXISTING CABINET SHOWN ON SHEET A9.02

WALL INSULATION: 4" OF ROCKWOOL AFB SEMI-RIGID BATT.

MANUAL ROLLER SHADE: MECHOSHADE BRAND

1/1 NEW FLOOR BOXES: MATCH MEDIUM GREY COLOR OF EXISTING FLOOR BOXES AS CLOSELY AS POSSIBLE.

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REGISTERED ARCHITECT
THOMAS ROBBINS
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Owner
OREGON STATE UNIVERSITY

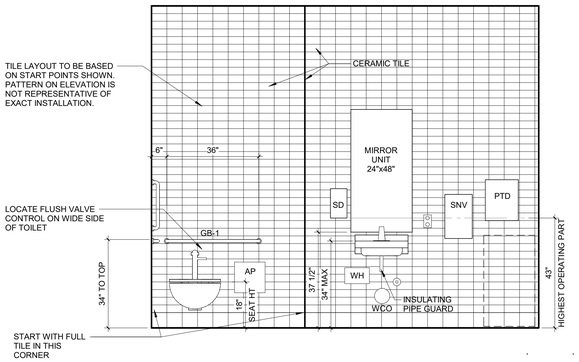
Project
KELLEY ENGINEERING CENTER PARTIAL REMODEL
110 SW Park Terrace
Corvallis, OR 97330

MARK	DATE	DESCRIPTION
1	09.06.23	ADD 1

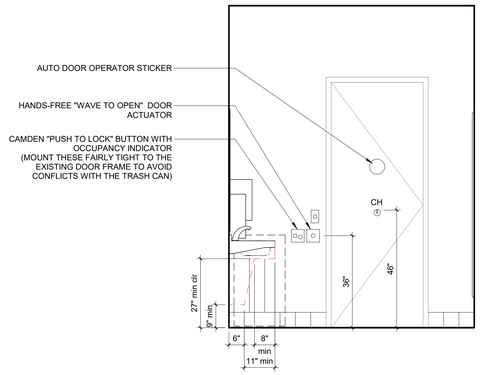
Sheet Title
PARTIAL 2ND FLOOR PLAN

Drawing No.
A2.02

Scale	1/4" = 1'-0"
Date	07/27/2023
Project No.	19-0016



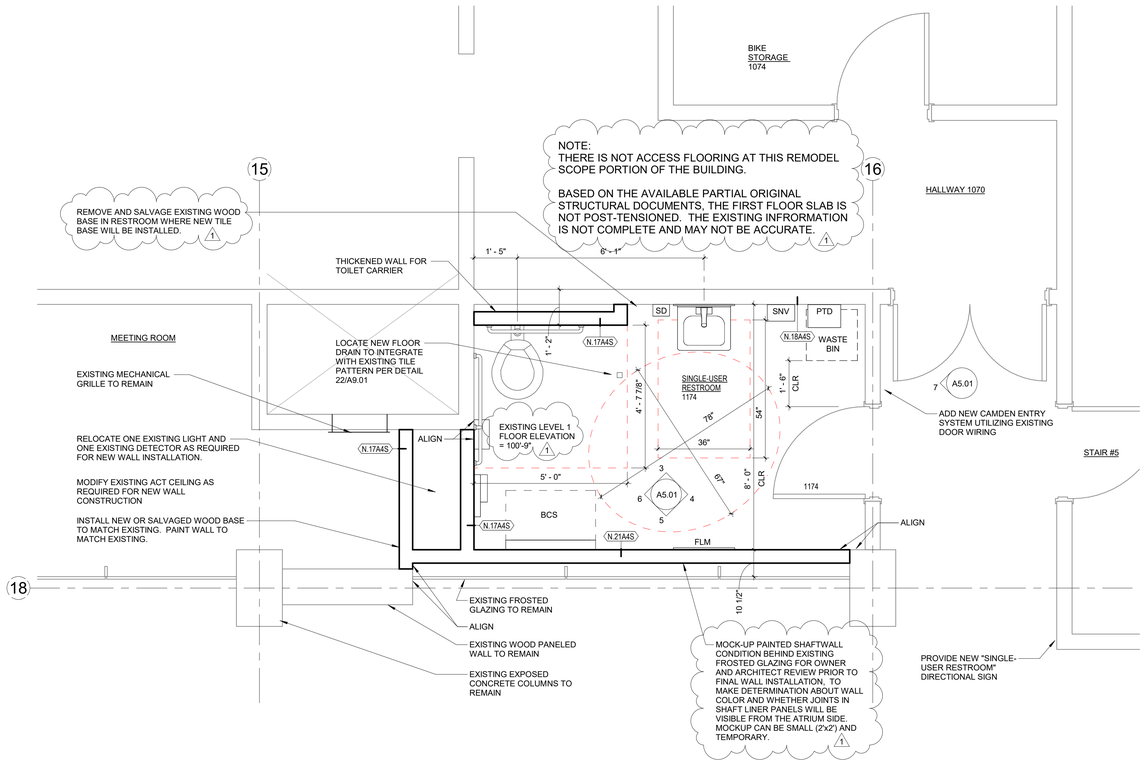
3 SINGLE-USER RESTROOM 1174 - NORTH
1/2" = 1'-0"



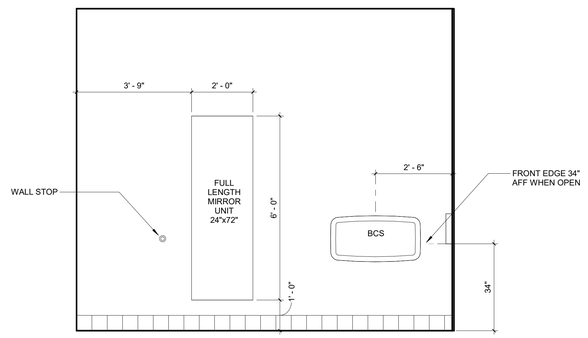
4 SINGLE-USER RESTROOM 1174 - EAST
1/2" = 1'-0"

LEGEND

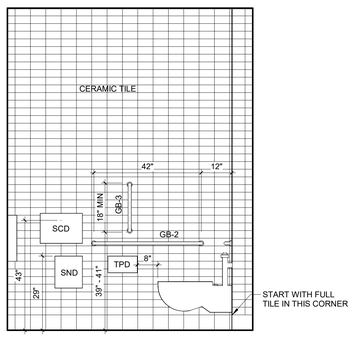
PTD	PAPER TOWEL DISPENSER
SNV	SANITARY NAPKIN DIPENSER
SD	SOAP DISPENSER
GB-1	GRAB BAR 36"
GB-2	GRAB BAR 42"
GB-3	GRAB BAR 18"
BCS	BABY CHANGING STATION
FLM	FULL LENGTH MIRROR
SCD	SEAT COVER DISPENSER
SND	SANITARY NAPKIN DISPOSAL
TPD	TOILET PAPER DISPENSER
AP	12"x12" SST ACCESS PANEL
WCO	WALL CLEAN OUT (SEE PLUMBING DWGS) (SST OR CHROME)
WH	WATER HEATER (SEE PLUMBING DWGS)
CH	CLOTHES HOOK



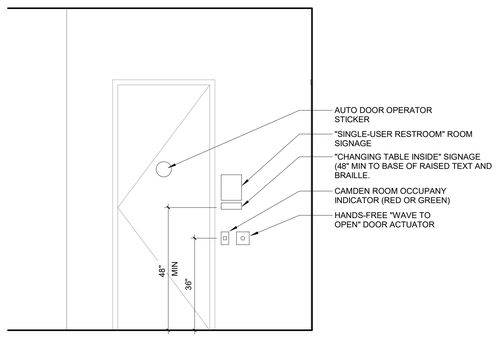
1 PARTIAL 1ST FLOOR PLAN
1/2" = 1'-0"



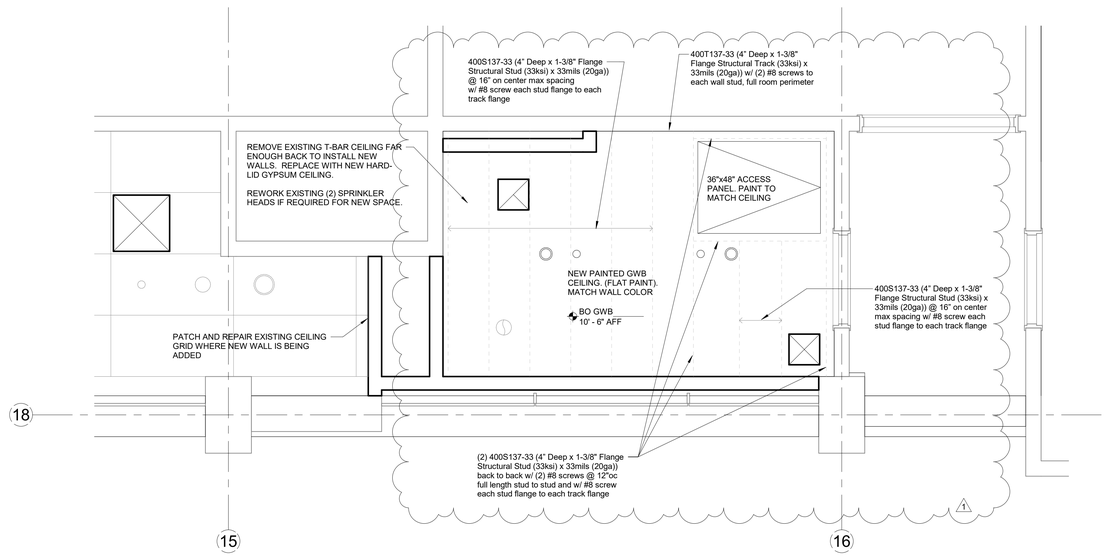
5 SINGLE-USER RESTROOM 1174 - SOUTH
1/2" = 1'-0"



6 SINGLE-USER RESTROOM 1174 - WEST
1/2" = 1'-0"



7 OUTSIDE SINGLE-USER RESTROOM
1/2" = 1'-0"



2 PARTIAL 1ST FLOOR CEILING PLAN
1/2" = 1'-0"

ISSUED FOR PERMIT AND BID

REGISTERED ARCHITECT
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Project
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110 SW Park Terrace
Corvallis, OR 97330

MARK	DATE	DESCRIPTION
1	09.06.23	ADD 1

Sheet Title
SINGLE-USER RESTROOM

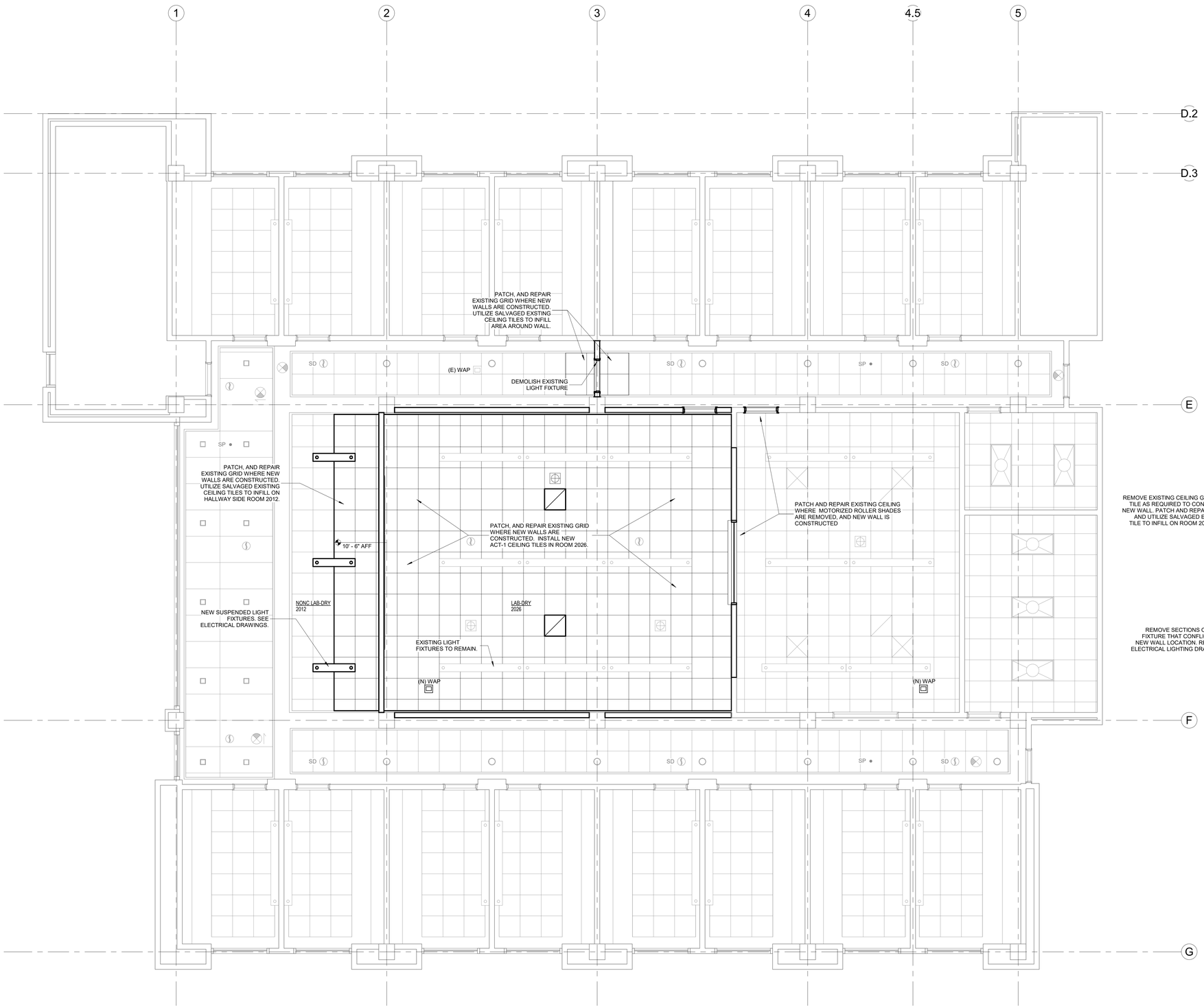
Drawing No.
A5.01

Scale	1/2" = 1'-0"
Date	07/27/2023
Project No.	19-0016

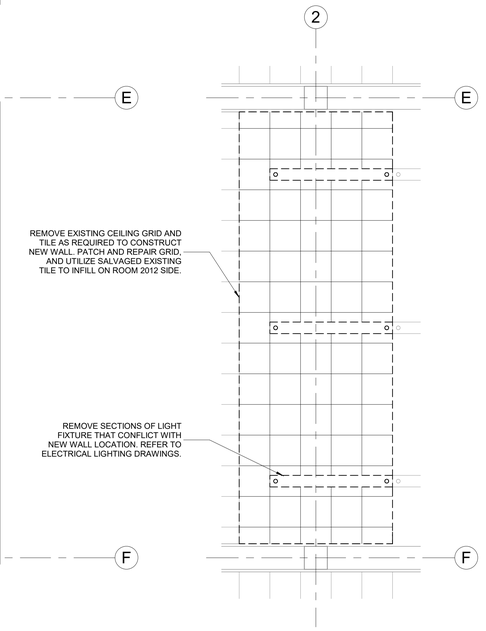
9/6/2023 11:47:16 AM

LEGEND

- EXISTING LIGHT FIXTURE
- EXISTING PENDANT LIGHT FIXTURE
- NEW PENDANT LIGHT FIXTURE
- EXISTING DIFFUSER
- EXISTING SUPPLY
- NEW DIFFUSER, SEE MECHANICAL
- EXISTING ACOUSTIC CEILING TILE
- NEW ACOUSTIC CEILING TILE
- EXISTING GYPSUM WALLBOARD CEILING
- SP — EXISTING SPRINKLER
- SD — EXISTING SMOKE DETECTOR
- OS — EXISTING OCCUPANCY SENSOR
- OS — NEW OCCUPANCY SENSOR, SEE ELECTRICAL DRAWINGS
- WAP — WIRELESS ACCESS POINT



1 PARTIAL 2ND FLOOR REFLECTED CEILING PLAN
1/4" = 1'-0"



2 PARTIAL 2ND FLOOR DEMOLITION RCP
1/4" = 1'-0"

N
GRAPHIC SCALE: 1/4" = 1'-0"
0' 2' 4' 8' 16'

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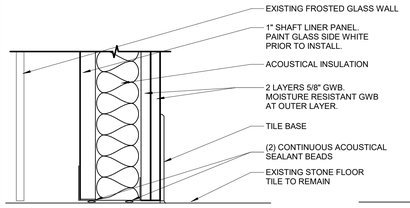
MARK	DATE	DESCRIPTION

Sheet Title
PARTIAL 2ND FLOOR CEILING PLAN

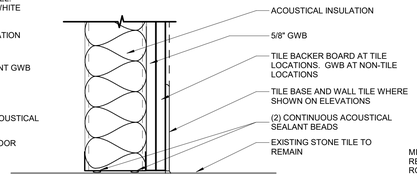
Drawing No.
A7.02

Scale	As indicated
Date	07/27/2023
Project No.	19-0016

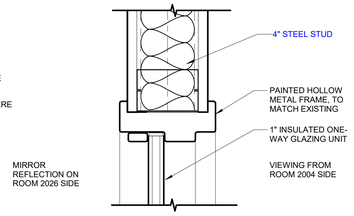
THE INTENT IS TO UTILIZE SHAFTWALL NEXT TO THE EXISTING GLAZING SO THE STUDS AND DRYWALL CAN BE PRE-PAINTED AND INSTALLED FROM THE SINGLE-USER RESTROOM SIDE. AND UTILIZE A MOCKUP TO CONFIRM THE PRE-PAINTED SHAFTWALL STUDS AREN'T VISIBLE THROUGH THE EXISTING FROSTED GLAZING. 1



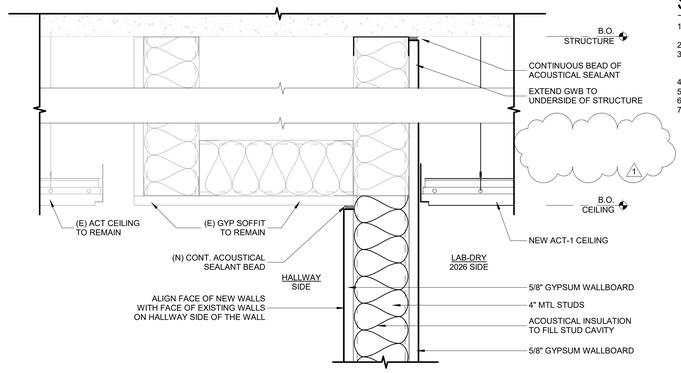
21 PARTITION TYPE - SHAFTWALL
3" = 1'-0"



17 PARTITION TYPE
3" = 1'-0"



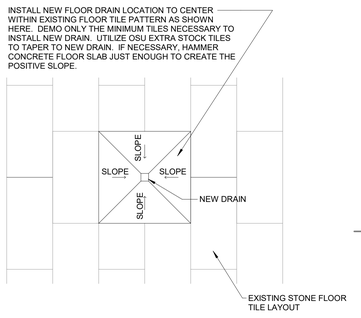
13 WINDOW HEAD/JAMB/SILL
3" = 1'-0"



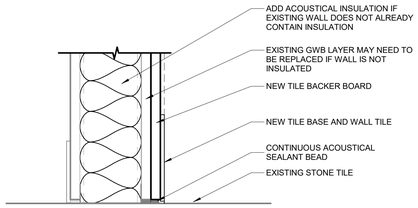
5 HEAD CONDITION TYPE A
3" = 1'-0"

SHEET NOTES

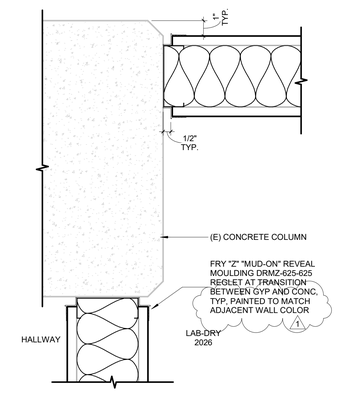
1. PERMANENT PARTITIONS ARE TO BE ONE HOUR RATED IN ACCORDANCE WITH OSSC TABLE 601 FOR TYPE I AND TYPE II FR CONSTRUCTION.
2. PARTITION TYPE SYMBOLS ARE INDICATED ON PLANS.
3. STUD SIZE, GAGE AND SPACING INDICATED IN THE SPAN TABLE SUPERCEDE SIZES INDICATED IN THE PARTITION TYPE SYMBOL. VERIFY ALL VERTICAL STUD SPANS.
4. ALL GWB TO BE 5/8" TYPE "X" UNLESS OTHERWISE INDICATED.
5. ALL STEEL HEAD TRACKS 20 GA UNLESS OTHERWISE INDICATED.
6. ALL DOOR AND RELIGHT JAMBS TO BE (1) 20 GA STUD OR (2) 25 GA STUDS.
7. ALL INTERIOR WALL AND CEILING FINISHES TO BE MINIMUM OF CLASS II FLAME SPREAD.



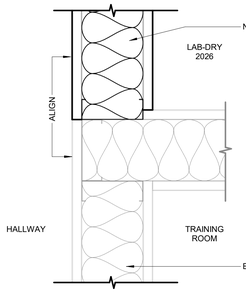
22 FLOOR DRAIN LOCATION
3/4" = 1'-0"



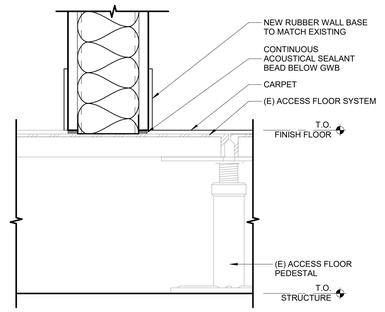
18 PARTITION TYPE - AT EXISTING PARTITION
3" = 1'-0"



14 COLUMN TO WALL CORNER TRANSITION
3" = 1'-0"



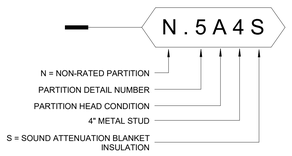
10 EXISTING TO NEW WALL TRANSITION
3" = 1'-0"



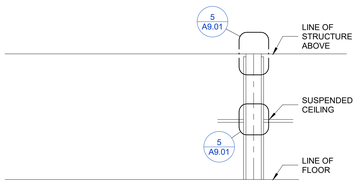
6 BASE CONDITION W/ ACCESS FLOOR
3" = 1'-0"

PARTITION TYPE SYMBOL

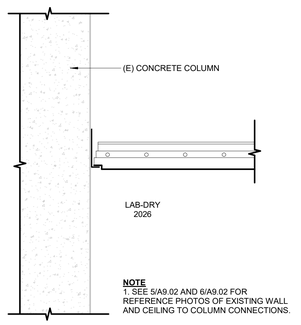
SEE PLAN FOR LOCATIONS



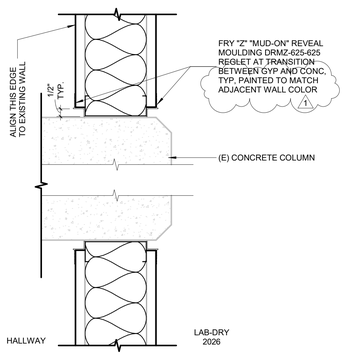
PARTITION HEAD CONDITION



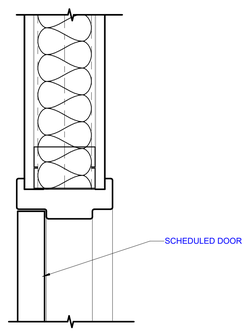
A



23 COLUMN TO CEILING TRANSITION
3" = 1'-0"



19 COLUMN TO WALL TRANSITION
3" = 1'-0"



15 DOOR HEAD/JAMB CONDITION
3" = 1'-0"

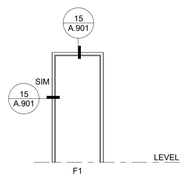
FINISH SCHEDULE

ROOM IDENTITY			WALL						
NUMBER	NAME	FLOOR	BASE	NORTH	EAST	SOUTH	WEST	CEILING	COMMENTS
LEVEL 1									
1174	SINGLE-USER RESTROOM	EXISTING TILE	TILE	TILE	P-1	P-1	TILE	P-1	
LEVEL 2									
2001	ADMIN	-	-	-	-	-	-	-	THERE ARE NO MODIFICATIONS IN THIS SPACE
2002	OFF/SERV	-	-	-	-	-	-	-	THERE ARE NO MODIFICATIONS IN THIS SPACE
2003	STAFF	-	-	-	-	-	-	-	THERE ARE NO MODIFICATIONS IN THIS SPACE
2004	FLEX LAB-DRY	EXISTING CPT	RB-1 / EXISTING	P-1 / EXISTING	EXISTING	EXISTING	P-1	EXISTING	REMOVE AND REINSTALL EXISTING CARPET AND CEILING WHERE NEW WALLS ARE INSTALLED. MATCH EXISTING RUBBER BASE
2005	FACULTY	-	-	-	-	-	-	-	THERE ARE NO MODIFICATIONS IN THIS SPACE
2007	FACULTY	-	-	-	-	-	-	-	THERE ARE NO MODIFICATIONS IN THIS SPACE
2009	FACULTY	-	-	-	-	-	-	-	THERE ARE NO MODIFICATIONS IN THIS SPACE
2011	FACULTY	-	-	-	-	-	-	-	THERE ARE NO MODIFICATIONS IN THIS SPACE
2012	NONC LAB-DRY	EXISTING CPT	RB-1 / EXISTING	EXISTING	P-2	EXISTING	EXISTING	EXISTING	REMOVE AND REINSTALL EXISTING CARPET AND CEILING WHERE NEW WALLS ARE INSTALLED. MATCH EXISTING RUBBER BASE
2013	FACULTY	-	-	-	-	-	-	-	THERE ARE NO MODIFICATIONS IN THIS SPACE
2015	FACULTY	-	-	-	-	-	-	-	THERE ARE NO MODIFICATIONS IN THIS SPACE
2017	FACULTY	-	-	-	-	-	-	-	THERE ARE NO MODIFICATIONS IN THIS SPACE
2019	FACULTY	-	-	-	-	-	-	-	THERE ARE NO MODIFICATIONS IN THIS SPACE
2021	FACULTY	-	-	-	-	-	-	-	THERE ARE NO MODIFICATIONS IN THIS SPACE
2023	FACULTY	-	-	-	-	-	-	-	THERE ARE NO MODIFICATIONS IN THIS SPACE
2025	FACULTY	-	-	-	-	-	-	-	THERE ARE NO MODIFICATIONS IN THIS SPACE
2026	LAB-DRY	CPT-1	RB-1	P-1	P-1	P-1	P-2	ACT-1	
2027	FACULTY	-	-	-	-	-	-	-	THERE ARE NO MODIFICATIONS IN THIS SPACE
2029	FACULTY	-	-	-	-	-	-	-	THERE ARE NO MODIFICATIONS IN THIS SPACE
2031	FACULTY	-	-	-	-	-	-	-	THERE ARE NO MODIFICATIONS IN THIS SPACE
2032	OFF/SERV	-	-	-	-	-	-	-	THERE ARE NO MODIFICATIONS IN THIS SPACE
H2000B	HALL	EXISTING CPT	RB-1 / EXISTING	EXISTING	EXISTING	P-1 / EXISTING	P-1 / EXISTING	EXISTING	REMOVE AND REINSTALL EXISTING CARPET AND CEILING WHERE NEW WALLS ARE INSTALLED. MATCH EXISTING RUBBER BASE
H2000C	HALL	EXISTING CPT	RB-1 / EXISTING	EXISTING	P-1 / EXISTING	P-1 / EXISTING	EXISTING	EXISTING	REMOVE AND REINSTALL EXISTING CARPET AND CEILING WHERE NEW WALLS ARE INSTALLED. MATCH EXISTING RUBBER BASE
H2000D	HALL	EXISTING CPT	RB-1 / EXISTING	P-1	EXISTING	EXISTING	EXISTING	EXISTING	REMOVE AND REINSTALL EXISTING CARPET AND CEILING WHERE NEW WALLS ARE INSTALLED. MATCH EXISTING RUBBER BASE
S2001	STAIR	-	-	-	-	-	-	-	THERE ARE NO MODIFICATIONS IN THIS SPACE

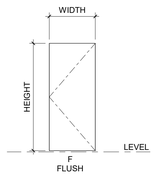
DOOR SCHEDULE

			DOOR					FRAME			
MARK	TO ROOM	TYPE	WIDTH	HEIGHT	MATERIAL	FINISH	RATING	HARDWARE	TYPE	MATERIAL	FINISH	COMMENTS
LEVEL 1												
1174	SINGLE-USER RESTROOM	F	3' - 0"	8' - 0"	WD	EXISTING CLEAR FINISH	NR	E-05	F1	HM	EXISTING	EXISTING DOOR AND FRAME. ADD NEW AUTO DOOR OPERATOR. REMOVE EXISTING CARD ACCESS AND ADD NEW CAMDEN ENTRY SYSTEM.
LEVEL 2												
2000B-A	HALL	-	3' - 0"	8' - 0"	WD EXISTING	EXISTING CLEAR FINISH	-	E-01	-	HM	EXISTING	EXISTING DOOR AND FRAME, ADD NEW MAGNETIC HOLD OPEN AND EXTENSION
2000B-B	HALL	F	3' - 0"	8' - 0"	WD	CLEAR FINISH	NR	E-02	F1	HM	PAINT TO MATCH EXISTING	NEW WOOD DOOR AND HOLLOW METAL FRAME TO MATCH EXISTING
2004	FLEX LAB-DRY	F	3' - 0"	8' - 0"	WD	CLEAR FINISH	NR	E-04	F1	HM	PAINT TO MATCH EXISTING	NEW WOOD DOOR AND HOLLOW METAL FRAME TO MATCH EXISTING
2026	HALL	F	3' - 0"	8' - 0"	WD	CLEAR FINISH	NR	E-03	F1	HM	PAINT TO MATCH EXISTING	NEW WOOD DOOR AND HOLLOW METAL FRAME TO MATCH EXISTING. PROVIDE RESILIENT CARPET TO CARPET ADAPTER.

NOTES: EXISTING HIRSCH/VELOCITY ACCESS CONTROL PANEL IS LOCATED IN ROOM KEC 2116. 1



LEGEND - DOOR FRAME TYPE
1/4" = 1'-0"



LEGEND - DOOR PANEL TYPE
1/4" = 1'-0"

ISSUED FOR PERMIT AND BID

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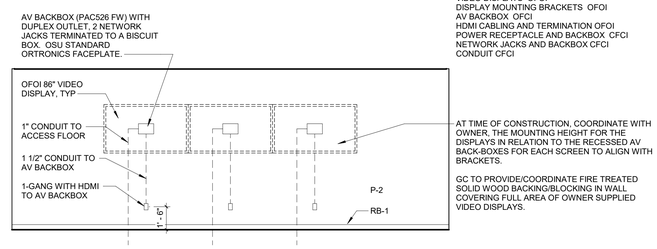
1	09.06.23	ADD 1

Sheet Title
DETAILS, ELEVATIONS, SCHEDULES

Drawing No.
A9.01

Scale	As indicated
Date	07/27/2023
Project No.	19-0016



1 LAB-DRY 2026 - MONITOR WALL
1/4" = 1'-0"

2 LAB-DRY 2026 - EAST WALL
1/4" = 1'-0"

ISSUED FOR PERMIT AND BID

9/6/2023 11:47:19 AM

REGISTERED ARCHITECT
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INTEGRUS
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Owner
OREGON STATE UNIVERSITY

Project
KELLEY ENGINEERING CENTER PARTIAL REMODEL
110 SW Park Terrace
Corvallis, OR 97330

MARK	DATE	DESCRIPTION

Sheet Title
DETAILS

Drawing No.
A9.02

Scale	1/4" = 1'-0"
Date	07/27/2023
Project No.	19-0016

NOTE:

THIS SHEET CONTAINS PHOTOS OF THE EXISTING SPACE THAT ARE BEING PROVIDED AS REFERENCE ONLY AND ARE NOT FOR CONSTRUCTION. THE PURPOSE OF THESE PHOTOS IS TO CLARIFY EXISTING CONDITIONS AND TO SHOW EXISTING ACCESSORIES FOR THE PURPOSE OF MATCHING NEW ACCESSORIES.

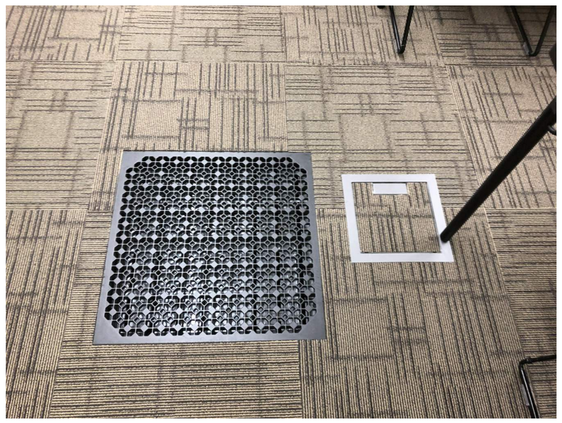
4 EXISTING ELECTRICAL PANEL
3" = 1'-0"

3 EXISTING FIRE EXTINGUISHER CABINET
3" = 1'-0"

2 EXISTING ROOM NAME SIGNAGE
3" = 1'-0"

1 EXISTING ROOM NUMBER SIGNAGE
3" = 1'-0"

8 EXISTING FLOOR VENT
3" = 1'-0"



7 EXISTING FLOOR GRATE AND RECEPTACLE
3" = 1'-0"

6 EXISTING COLUMN CONNECTION 2
3" = 1'-0"

5 EXISTING COLUMN CONNECTION 1
3" = 1'-0"

ISSUED FOR PERMIT AND BID

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110 SW Park Terrace
Corvallis, OR 97330

MARK	DATE	DESCRIPTION

Sheet Title
EXISTING PHOTOS

Drawing No.
A9.03

Scale	3" = 1'-0"
Date	07/27/2023
Project No.	19-0016

ABBREVIATIONS

AAV	AUTOMATIC AIR VENT	HWP	HEATING WATER PUMP
ABV	ABOVE	HWR	HEATING WATER RETURN
AC	AIR CONDITIONING	HWS	HEATING WATER SUPPLY
ACCEPT	ACCEPTANCE	HX	HEAT EXCHANGER
ACU	AIR CONDITIONING UNIT	HZ	FREQUENCY (HERTZ)
AD	ACCESS DOOR	ID	INSIDE DIAMETER
ADD	ADDITION	IN	INCH(ES)
AF	AFTER FILTER	INPLV	INTEGRATED PART LOAD VALUE
AFF	ABOVE FINISHED FLOOR	JB	JUNCTION BOX
AFMS	AIR FLOW MEASURING STATION	KW	KILOWATT
AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY	KWH	KILOWATT HOUR
AG	AIR GAP	L	LENGTH
AHJ	AUTHORITY HAVING JURISDICTION	LAT	LEAVING AIR TEMPERATURE
AHU	AIR HANDLING UNIT	LBS	POUNDS
AMB	AMBIENT	LDB	LEAVING DRY BULB
A	AMPERE	LF	LINEAR FEET
AP	ACCESS PANEL	LP	LOW PRESSURE
APPROX	APPROXIMATELY	LPC	LOW PRESSURE CONDENSATE
ARCH	ARCHITECT	LPS	LOW PRESSURE STEAM
ARI	AMERICAN REFRIGERATION INSTITUTE	LWB	LEAVING WET BULB
AS	AIR SEPARATOR	LWT	LEAVING WATER TEMPERATURE
AUTO	AUTOMATIC	M	MOTOR
AUX	AUXILIARY	MA	MIXED AIR
B	BOILER	MAD	MIXED AIR DAMPER
BAS	BUILDING MANAGEMENT SYSTEM	MAX	MAXIMUM
BDD	BACKDRAFT DAMPER	MBH	THOUSAND BTU PER HOUR
BEL	BELOW	MC	MECHANICAL CONTRACTOR
BHP	BRAKE HORSEPOWER	MCA	MINIMUM CIRCUIT AMPACITY
BOD	BOTTOM OF DUCT	MCC	MOTORIZED CONTROL CENTER
BOP	BOTTOM OF PIPE	MD	MOTORIZED DAMPER
BFP	BACKFLOW PREVENTER	MECH	MECHANICAL
BSMT	BASEMENT	MERV	MINIMUM EFFICIENCY RATING VALUE
BTU	BRITISH THERMAL UNIT	MFR	MANUFACTURER
BTUH	BTU PER HOUR	MIN	MINIMUM
BV	BALL VALVE OR BALANCING VALVE	MOCP	MINIMUM OVER CURRENT PROTECTION
BYV	BUTTERFLY VALVE	MPC	MEDIUM PRESSURE CONDENSATE
C	COMMON, CONDENSATE OR CONDUIT	MPS	MEDIUM PRESSURE STEAM
CA	CONTROL AIR	MV	MANUAL AIR VENT
CAP	CAPACITY	(N)	NEW
CAV	CONSTANT AIR VOLUME	N/A	NOT APPLICABLE
CB	CHILLED BEAM	NC	NORMALLY CLOSED
CC	COOLING COIL OR CONTROLS CONTRACTOR	NIC	NOT IN CONTRACT
CEG	CEILING EXHAUST GRILLE	NO	NORMALLY OPEN OR NUMBER
CER	CEILING EXHAUST REGISTER	NOM	NOMINAL
CFF	CAP FOR FUTURE	NPSH	NET POSITIVE SUCTION HEAD
CFM	CUBIC FEET PER MINUTE	NTS	NOT TO SCALE
CFS	CUBIC FEET PER SECOND	OA	OUTSIDE AIR
CHWP	CHILLED WATER PUMP	OAD	OUTSIDE AIR DAMPER
CHWR	CHILLED WATER RETURN	OAT	OUTSIDE AIR TEMPERATURE
CHWS	CHILLED WATER SUPPLY	OBD	OPPOSED BLADE DAMPER
CH	CHILLER	OC	ON CENTER
CHV	CHECK VALVE	OD	OUTSIDE DAMPER
CL	CENTERLINE	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
CLG	CEILING	OFOI	OWNER FURNISHED OWNER INSTALLED
CO	CLEANOUT	OPER	OPERATING
COL	COLUMN	OV	OUTLET VELOCITY
COMP	COMPRESSOR	P	PUMP OR PRESSURE OR POLE
CONC	CONCRETE	PC	PUMPED CONDENSATE
COND	CONDENSATE	PD	PRESSURE DROP
CONN	CONNECTION	PF	PREFILTER
CONT	CONTINUATION	PG	PIPE GUIDE OR PRESSURE GAUGE
CONTR	CONTRACTOR	PH	PHASE (ELECTRICAL)
COP	COEFFICIENT OF PERFORMANCE	PHC	PREHEAT COIL
CP	CONTROL PANEL OR CONDENSATE PUMP	PLBG	PLUMBING
CR	CONDENSATE RETURN	POC	POINT OF CONNECTION
CRG	CEILING RETURN GRILLE	POD	POINT OF DISCONNECTION
CRR	CEILING RETURN REGISTER	PRESS	PRESSURE
CSD	CEILING SUPPLY DIFFUSER	PRV	PRESSURE REDUCING VALVE
CTE	CONNECT TO EXISTING	PS	PRESSURE SENSOR
CUFT	CUBIC FEET	PSI	POUNDS PER SQUARE INCH
CUIN	CUBIC INCHES	PSIA	PSI ABSOLUTE
CV	CONSTANT VOLUME OR CONTROL VALVE	PSIG	PSI GAUGE
CW	COLD WATER	QTY	QUANTITY
CWP	CONDENSER WATER PUMP	R	RELOCATE, RISE, RISER
CWR	CONDENSER WATER RETURN	RA	RETURN AIR
CWS	CONDENSER WATER SUPPLY	RAD	RETURN AIR DAMPER
D	DROP OR DRAIN	RD	REFRIGERANT DISCHARGE OR ROOF DRAIN
DBT	DRY BULB TEMPERATURE	REF	ROOFTOP EXHAUST FAN
DDC	DIRECT DIGITAL CONTROL	REFRIG	REFRIGERATION
DEFL	DEFLECTION	REJ	REJECTION
DIA	DIAMETER	REQ'D	REQUIRED
DIFF	DIFFERENCE	REV	REVISE, REVISION OR REVOLUTIONS
DN	DOWN	RF	RETURN FAN
DP	DIFFERENTIAL PRESSURE	RH	RELATIVE HUMIDITY
DPT	DEW POINT TEMPERATURE	RHC	REHEAT COIL
DSD	DUCT SMOKE DETECTOR	RHT	RADIANT HEATER
DV	DIAPHRAGM VALVE	RM	ROOM
DWG(S)	DRAWINGS(S)	RPM	REVOLUTIONS PER MINUTE
DX	DIRECT EXPANSION	RS	REFRIGERANT SUCTION
(E)	EXISTING	RTU	ROOFTOP UNIT
EA	EXHAUST AIR OR EACH	S	SUPPLY OR SLOPE
EAD	EXHAUST AIR DAMPER	SA	SUPPLY AIR
EAT	ENTERING AIR TEMPERATURE	SCFM	CFM, STANDARD CONDITIONS
EC	ELECTRICAL CONTRACTOR	SD	SMOKE DAMPER
ECON	ECONOMIZER	SEER	SEASONAL ENERGY EFFICIENCY RATING
EDB	ENTERING DRY BULB TEMPERATURE	SEN	SENSIBLE
EWT	ENTERING WATER TEMPERATURE	SF	SUPPLY FAN OR SQUARE FEET
EER	ENERGY EFFICIENCY RATING	SHC	SQUARE HEAD COCK
EF	EXHAUST FAN	SIU	SPLIT INDOOR UNIT
EFF	EFFICIENCY	SOU	SPLIT OUTDOOR UNIT
EJ	EXPANSION JOINT	SP	STATIC PRESSURE
EL	ELEVATION	SPD	SPLITTER DAMPER
ELEC	ELECTRICAL	SPEC	SPECIFICATIONS
EQUIP	EQUIPMENT	SQ IN	SQUARE INCH
(ER)	EXISTING RELOCATED	ST	STRAINER OR SOUND TRAP
ESP	EXTERNAL STATIC PRESSURE	STD	STANDARD
ET	EXPANSION TANK	STRUCT	STRUCTURAL
EWB	ENTERING WET BULB TEMPERATURE	SV	STEAM VENT
EXH	EXHAUST	T	THERMOSTAT OR THERMOMETER
EXT	EXTERNAL	TCP	TEMPERATURE CONTROL PANEL
F	FAHRENHEIT	TDH	TOTAL DYNAMIC HEAD
FPB	FAN POWERED BOX	TEMP	TEMPERATURE
FC	FLEXIBLE CONNECTION OR FAIL CLOSED	TFA/TFB	TO FLOOR ABOVE/BELOW
FCU	FAN COIL UNIT	TI	TENANT IMPROVEMENT
FD	FIRE DAMPER	TRG	TRANSFER GRILLE
FF	FINAL FILTER OR FINISHED FLOOR	TS	TEMPERATURE SENSOR
FFA/FFB	FROM FLOOR ABOVE/BELOW	TSP	TOTAL STATIC PRESSURE
FLR	FLOOR	TT	TEST TAP OR TEST TEE
FO	FAIL OPEN	TXV	THERMAL EXPANSION VALVE
FPI	FINS PER INCH	(TYP)	TYPICAL
FPM	FEET PER MINUTE	U	HEAT TRANSFER COEFFICIENT
FPS	FEET PER SECOND	UC	UNDER CUT DOOR
FSD	FIRE/SMOKE DAMPER	UG	UNDERGROUND
FT	FOOT OR FEET	UH	UNIT HEATER
G	GAS	UON	UNLESS OTHERWISE NOTED
GA	GAUGE, GAGE	V	VENT OR VOLUME OR VELOCITY
GAL	GALLONS	VAV	VARIABLE AIR VOLUME
GALV	GLAVANIZED	VB	VACUUM BREAKER
GC	GAS COCK OR GENERAL CONTRACTOR	VD	VOLUME DAMPER
GLV	GLOBE VALVE	VEL	VELOCITY
GN	GENERAL NOTE	VERT	VERTICAL
GPM	GALLONS PER MINUTE	VFD	VARIABLE FREQUENCY DRIVE
GND	GROUND	VFM	VENTURI FLOW METER
GV	GATE VALVE	VOL	VOLUME
H	HEIGHT	VTR	VENT THROUGH ROOF
HB	HOSE BIBB	W	WASTE OR WIDTH OR WATTS
HC	HEATING COIL	W/	WITH
HD	HEAD	W/O	WITHOUT
HOR	HORIZONTAL	WB	WET BULB TEMPERATURE
HP	HIGH PRESSURE	WC	WATER COLUMN
HP	HORSEPOWER	WEG	WALL EXHAUST GRILLE
HP	HEAT PUMP	WG	WATER GAUGE
HPC	HIGH PRESSURE CONDENSATE	WP	WORKING PRESSURE
HPS	HIGH PRESSURE STEAM	WPD	WATER PRESSURE DROP
HR	HOUR(S)	WRR	WALL RETURN REGISTER
HRU	HEAT RECOVERY UNIT	WSHP	WATER-SOURCE HEAT PUMP
HS	HUMIDITY SENSOR	WSR	WALL SUPPLY REGISTER
HTR	HEATER	WT	WEIGHT
HV	HOSE VALVE	XFMR	TRANSFORMER
HVAC	HEATING, VENTILATING AND AIR CONDITIONING	Z	ZONE
HW	HEATING WATER	ZD	ZONE DAMPER

HVAC LEGEND

NOTE: NOT ALL SYMBOLS OR ABBREVIATIONS ARE APPLICABLE TO THIS PROJECT. REFER TO DETAILS AND NOTES FOR MOUNTING HEIGHTS.

GENERAL

SYMBOL	DESCRIPTION
	NEW WORK
(E)	EXISTING WORK TO REMAIN
(D)	EXISTING WORK TO BE REMOVED
(F)	FUTURE WORK
(ER)	EXISTING RELOCATED
℄	CENTER LINE
	POINT OF CONNECTION OR POINT OF DISCONNECTION
1 / M-1	DETAIL 1, DRAWING M-1
A / M-1	SECTION A, DRAWING M-1
1 / M-1	ELEVATION 1, DRAWING M-1
EXH / 1	RISER IDENTIFICATION EXHAUST #1
HP / 1	EQUIPMENT IDENTIFICATION HEAT PUMP UNIT #1
1	KITCHEN EQUIPMENT TAG
#	KEYED NOTE
150	DIRECTION OF TRANSFER AIRFLOW (150 CFM)
78°F	78 DEGREES FAHRENHEIT

CONTROLS

	SYMBOL	DESCRIPTION
WALL / CEILING MOUNTED DEVICE	TS	TEMPERATURE SENSOR
	T	THERMOSTAT OR THERMOMETER
	CO2	CARBON DIOXIDE SENSOR
	OS	OCCUPANCY SENSOR
	H	HUMIDITY SENSOR OR HUMIDISTAT
	SP	STATIC PRESSURE SENSOR
	RS	REFRIGERANT SENSOR
	CO	CARBON MONOXIDE SENSOR
	H	HYDROGEN SENSOR
EQUIPMENT / SYSTEM MOUNTED DEVICE	DSD	DUCT SMOKE DETECTOR
	TS	TEMPERATURE SENSOR
	SP	STATIC PRESSURE SENSOR
	PS	PRESSURE SENSOR OR SWITCH
	DPS	DIFFERENTIAL PRESSURE SENSOR
	AFMS	AIR FLOW MEASURING STATION
	HS	HUMIDITY SENSOR
	FS	FLOW SENSOR OR SWITCH
	FM	FLOW METER
	CS	CURRENT SENSOR
	M	MOTOR
	A	ACTUATOR
	HM	HYDROGEN MONITOR
	RM	REFRIGERANT MONITOR
	AI	ANALOG INPUT
	AO	ANALOG OUTPUT
	DI	DIGITAL INPUT
	DO	DIGITAL OUTPUT
	BAS	BUILDING AUTOMATION SYSTEM
	PI	PULSING INPUT

DUCTWORK

SYMBOL	DESCRIPTION
AD/AP	ACCESS DOOR / ACCESS PANEL
	FLEXIBLE CONNECTION
	FLEXIBLE DUCT RUNOUT TO DIFFUSER
12x6	RECTANGULAR DUCT SIZE (WIDTH x DEPTH IN INCHES)
18ø	ROUND DUCT SIZE (DIAMETER IN INCHES)
24x12ø	OVAL DUCT SIZE (WIDTH x DEPTH IN INCHES)
	DUCT THROUGH BEAM PENETRATION
R D	DUCT OFFSET (RISE OR DROP)
VD RVD	VOLUME DAMPER OR REMOTE VOLUME DAMPER
FD SD FSD	FIRE, SMOKE OR FIRE/SMOKE DAMPER
	SUPPLY DUCT UP
	SUPPLY DUCT DOWN
	EXHAUST DUCT UP
	EXHAUST DUCT DOWN
	RETURN DUCT UP
	RETURN DUCT DOWN
	CROSS SECTION OF SUPPLY DUCT
	CROSS SECTION OF EXHAUST AIR DUCT
	CROSS SECTION OF RETURN AIR DUCT
	CROSS SECTION OF ROUND DUCT
	DUCT ELBOW WITH TURNING VANES
	SMOOTH RADIUS DUCT ELBOW WITHOUT TURNING VANES
	CONICAL BRANCH FITTING
	45 DEGREE BOOT LO-LOSS BRANCH FITTING
	WYE BRANCH FITTING
12x6	ACOUSTICAL LINING DUCT (DIMENSION IS INSIDE DIMENSION)
M	MOTORIZED DAMPER INSIDE DUCT
TAG NECK SIZE-CFM	TRANSFER DUCT (WITH LINER)
8' - 11" BOD	INDICATES 8'11" TO BOTTOM OF DUCT
TAG NECK SIZE-CFM	RECTANGULAR OR ROUND SUPPLY DIFFUSER OR REGISTER (SEE SCHEDULE). 4-WAY THROW UNLESS INDICATED OTHERWISE. EXAMPLE: SB12X12-400 REFERS TO TAG SB WITH 12"X12" NECK AND 400 CFM
TAG NECK SIZE-CFM	RECTANGULAR OR ROUND EXHAUST GRILLE OR REGISTER (SEE SCHEDULE)
TAG NECK SIZE-CFM	RECTANGULAR OR ROUND RETURN GRILLE OR REGISTER (SEE SCHEDULE)
TAG NECK SIZE-CFM	WALL SUPPLY GRILLE OR REGISTER (SEE SCHEDULE)
TAG NECK SIZE-CFM	WALL RETURN OR EXHAUST GRILLE OR REGISTER (SEE SCHEDULE)
TAG NECK SIZE-LENGTH-CFM	LINEAR SLOT DIFFUSER (SEE SCHEDULE FOR NUMBER OF SLOTS). 2-WAY THROW UNLESS NOTED OTHERWISE. EXAMPLES: SN10-48-250 REFERS TO TAG SN WITH 10" ROUND NECK, 48" SLOT LENGTH AND 250 CFM.
	VARIABLE AIR VOLUME TERMINAL UNIT
	VARIABLE AIR VOLUME TERMINAL UNIT W/ REHEAT
	FAN POWERED TERMINAL UNIT
	FAN POWERED TERMINAL UNIT W/ REHEAT

GENERAL NOTES

A. GENERAL NOTES APPLY TO ALL SHEETS.
B. CONTRACTOR SHALL VISIT SITE AND VERIFY ALL CONNECTIONS TO EXISTING WORK PRIOR TO BIDDING AND CONSTRUCTION. THE CONTRACTOR SHALL PAY FOR AND REPAIR ALL DAMAGES CAUSED BY FAILURE TO EXACTLY LOCATE AND PRESERVE ANY UNDERGROUND UTILITIES UNLESS OTHERWISE INDICATED.
C. PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE MECHANICAL SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS REQUIRED BY CODE.
D. CONTRACT DOCUMENT DRAWINGS FOR MECHANICAL WORK (HVAC, PLUMBING, AND FIRE PROTECTION) ARE DIAGRAMMATIC AND ARE INTENDED TO CONVEY SCOPE AND GENERAL ARRANGEMENT ONLY.
E. INSTALL ALL MECHANICAL EQUIPMENT AND APPURTENANCES IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS, CONTRACT DOCUMENTS, AND APPLICABLE CODES AND REGULATIONS.
F. COORDINATE CONSTRUCTION OF ALL MECHANICAL WORK WITH ARCHITECTURAL, STRUCTURAL, CIVIL, ELECTRICAL WORK, ETC., SHOWN ON OTHER CONTRACT DOCUMENT DRAWINGS.
G. ALL TESTS SHALL BE COMPLETED BEFORE ANY MECHANICAL EQUIPMENT OR PIPING INSULATION IS APPLIED.
H. LOCATE ALL TEMPERATURE, PRESSURE, AND FLOW MEASURING DEVICES IN ACCESSIBLE LOCATIONS WITH STRAIGHT SECTION OF PIPE OR DUCT UP- AND DOWNSTREAM AS RECOMMENDED BY THE MANUFACTURER FOR GOOD ACCURACY.
I. TESTING, ADJUSTING, AND BALANCING AGENCY SHALL BE A MEMBER OF THE ASSOCIATED AIR BALANCE COUNCIL (AABC) OR THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB). TESTING, ADJUSTING, AND BALANCING SHALL BE PERFORMED IN ACCORDANCE WITH THE AABC STANDARDS.
J. WHERE TWO OR MORE ITEMS OF THE SAME TYPE OF EQUIPMENT ARE REQUIRED, THE PRODUCT OF ONE MANUFACTURER SHALL BE USED.
K. COORDINATE ALL EQUIPMENT CONNECTIONS WITH MANUFACTURERS' CERTIFIED DRAWINGS. COORDINATE AND PROVIDE ALL DUCT AND PIPING TRANSITIONS REQUIRED FOR FINAL EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DUCT AND PIPING DIMENSIONS BEFORE FABRICATION.
L. ALL CONTROL WIRE AND CONDUIT SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE AND DIVISION 16 OF THE SPECIFICATION.
M. WHEN MECHANICAL WORK (HVAC, PLUMBING, SHEET METAL, FIRE PROTECTION, ETC.) IS SUBCONTRACTED, IT SHALL BE THE MECHANICAL CONTRACTOR'S RESPONSIBILITY TO COORDINATE SUBCONTRACTORS AND THE ASSOCIATED CONTRACTS. WHEN DISCREPANCIES ARISE PERTAINING TO WHICH CONTRACTOR PROVIDES A PARTICULAR ITEM OF THE MECHANICAL CONTRACT OR WHICH CONTRACTOR PROVIDES FINAL CONNECTIONS FOR A PARTICULAR ITEM OF THE MECHANICAL CONTRACT, IT SHALL BE BROUGHT TO THE ATTENTION OF THE MECHANICAL CONTRACTOR, WHOSE DECISION SHALL BE FINAL.
N. THE LOCATIONS OF ALL ITEMS SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS THAT ARE NOT DEFINITELY FIXED BY DIMENSIONS ARE APPROXIMATE ONLY. THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS MUST BE DETERMINED BY THE PROJECT SITE CONDITIONS AND SHALL HAVE THE APPROVAL OF THE ENGINEER BEFORE BEING INSTALLED. DO NOT SCALE DRAWINGS.
O. PROVIDE ACCESS PANELS FOR INSTALLATION IN WALLS AND CEILINGS, WHERE REQUIRED, TO SERVICE DAMPERS, VALVES, SMOKE DETECTORS, AND OTHER CONCEALED MECHANICAL EQUIPMENT.ACCESS PANELS SHALL BE TURNED OVER TO GENERAL CONTRACTOR FOR INSTALLATION.
P. ALL EQUIPMENT, PIPING, DUCTWORK, ETC., SHALL BE SUPPORTED AS DETAILED, SPECIFIED, AND REQUIRED TO PROVIDE A VIBRATION FREE INSTALLATION.
Q. MECHANICAL EQUIPMENT, DUCTWORK, AND PIPING SHALL NOT BE SUPPORTED FROM METAL DECK.
R. LOCATIONS AND SIZES OF ALL FLOOR, WALL, AND ROOF OPENINGS SHALL BE COORDINATED WITH ALL OTHER TRADES INVOLVED.
S. ALL OPENINGS IN FIRE WALLS DUE TO DUCTWORK, PIPING, CONDUIT, ETC., SHALL BE FIRE STOPPED WITH A PRODUCT SIMILAR TO 3M OR APPROVED EQUAL.
T. REFER TO TYPICAL DETAILS FOR DUCTWORK, PIPING, AND EQUIPMENT INSTALLATION.
U. EXISITNG EQUIPMENT, LOCATION, AND SIZE ARE APPROXIMATE. CONTRACTOR TO VERIFY FIELD CONDITIONS
V. RESTORE ALL DAMAGE RESULTING FROM YOUR WORK AND LEAVE PREMISES IN CLEAN CONDITION..
W. INSTALL VOLUME DAMPERS WHERE SHOWN AND AS REQUIRED FOR PROPER BALANCING OF EACH DIFFUSER/GRILLE. PROVIDE EXTENDED REGULATORS, WITH CONCEALED COVER PLATES, TO OPERATE DAMPERS LOCATED ABOVE INACCESSIBLE CEILINGS.
X. INDIVIDUAL RUNS OF FLEXIBLE DUCT SHALL NOT EXCEED 5 FEET.
Y. EXISTING DUCTWORK TO REMAIN SHALL BE INTERNALLY CLEANED AND PRESSURE TESTED. REFER TO TAB SPEC.
Z. CONTRACTOR TO PRETEST ENTIRE FLOOR AND REPORT BACK EXISTING CONDITIONS.
AA. COORDINATE ALL CEILING MOUNTED EQUIPMENT AND APPURTENANCES (GRILLES, REGISTERS, LIGHTS, AREA DETECTORS, LIGHTING CONTROLS, ETC) WITH THE CEILING GRID, SUPPORTS, STRUCTURAL ELEMENTS, AND SPRINKLER HEADS. ANY MODIFICATIONS TO SPRINKLER HEAD LAYOUT, IF REQUIRD, SHALL BE PERFORMED BY A QUALIFIED DESIGN BUILD CONTRACTOR.

BASIS OF DESIGN

MECHANICAL BASIS OF DESIGN

A. THIS PROJECT INVOLVES A PARTIAL RENOVATION OF THE FIRST AND SECOND FLOORS OF THE KELLEY ENGINEERING CENTER ON THE CAMPUS OF OREGON STATE UNIVERSITY. THE RENOVATION INCLUDES:
   1. REPROGRAMMING OF 114 SF OF SPACE FROM SHARED OFFICE TO AN ENCLOSED SPACE WITH FUNCTION OF ALL USER TOILET ROOM. SHARED OFFICE REDUCED TO 215 SF.
   2. REPROGRAMMING OF 940 SF OF OPEN SPACE FROM ROOM 2012 TO AN ENCLOSED SPACE WITH THE FUNCTION OF DRY LAB.

B. CODES AND STANDARDS (LATEST EDITIONS UNLESS OTHERWISE REQUIRED BY AHJ)
   1. AMERICANS WITH DISABILITIES ACT (ADA).
   2. NFPA 90A: STANDARD FOR THE INSTALLATION OF AIR-CONDITIONING AND VENTILATING SYSTEMS.
   3. NFPA 90B: STANDARD FOR THE INSTALLATION OF WARM AIR HEATING AND AIR-CONDITIONING SYSTEMS.
   4. NFPA 101: LIFE SAFETY CODE.
   5. ASHRAE 2022 HANDBOOK, REFRIGERATION.
   6. ASHRAE 2021 HANDBOOK, FUNDAMENTALS.
   7. ASHRAE 2022 HANDBOOK, HVAC SYSTEMS AND EQUIPMENT.
   8. ASHRAE 2019 HANDBOOK, HVAC APPLICATIONS.
   9. ASHRAE 55-2020 THERMAL ENVIRONMENTAL CONDITIONS FOR HUMAN OCCUPANCY.
   10. ASHRAE 62.1-2022 VENTILATION FOR ACCEPTABLE INDOOR AIR QUALITY.
   11. ASHRAE 90.1-2019 ENERGY STANDARD FOR BUILDINGS EXCEPT LOW-RISE RESIDENTIAL BUILDINGS.
   12. OREGON BUILDING CODES ENFORCED BY THE AUTHORITY HAVING JURISDICTION (AHJ):
      A. 2022 OREGON STRUCTURAL SPECIALTY CODE (OSSC) BASED ON THE 2021 INTERNATIONAL BUILDING CODE (IBC).
      B. 2022 OREGON MECHANICAL SPECIALTY CODE (OMSC) BASED ON THE 2021 INTERNATIONAL MECHANICAL CODE (IMC) AND THE 2021 INTERNATIONAL FUEL GAS CODE (IFGC) WITH STATE AMENDMENTS.
      C. 2021 OREGON PLUMBING SPECIALTY CODE (OPSC) BASED ON THE 2021 UNIFORM PLUMBING CODE (UPC).
      D. 2021 OREGON ELECTRIC SPECIALTY CODE (BASED ON THE 2020 NATIONAL ELECTRIC CODE (NEC) WITH STATE AMENDMENTS.
      E. 2021 OREGON ENERGY EFFICIENCY SPECIALTY CODE (OEESC)
   13.

C. EXISTING EQUIPMENT AND CONDITIONS ASSUMPTIONS BASED ON:
   1. PROJECT 76601, 07.01.03, KELLEY ENGINEERING CENTER, GLUMAC CONSTRUCTION DRAWINGS
   2. 2019-09-25 OSU KELLEY ENG 2ND FL REMODEL FP_REV00.DOCX
   3. SITE VISIT PHOTOS 01.10.2020

D. OUTDOOR DESIGN CONDITIONS:
   1. LOCATION: CORVALLIS, OR (WMO:726945)
   2. SUMMER: 96°F DB/67°F WB
   3. WINTER: 17°F
   4. ELEVATION: 250 FEET ABOVE SEA LEVEL.
   5. CLIMATE ZONE: 4C

E. INDOOR DESIGN CONDITIONS
   1. ALL CONDITIONED AREAS:
      A. COOLING: 76°F
      B. HEATING: 68°F
   2. HUMIDITY CONTROL
      A. ALL AREAS, UNLESS OTHERWISE NOTED: NONE

F. OREGON VENTILATION CRITERIA:
   1. COMPLY WITH CHAPTER 4 OF OMSC/IMC OR ASHRAE 62.1.

G. BUILDING ENVELOPE (EXISTING CONDITIONS):
   1. GLAZING: GLASS/FRAME COMBINATION:
      A. TYPICAL VERTICAL:
         1) U= 0.42 / SC = 0.4
      B. TYPICAL OVERHEAD
         1) U= 0.5 / SC = 0.31
   2. WALL CONSTRUCTION:
      A. FACE BRICK WITH R-19 INSULATION
   3. ROOF CONSTRUCTION:
      A. LIGHT COLORED MEMBRANE WITH R-30 INSULATION

H. INTERNAL HEAT GAINS:
   1. LIGHTING: : 0.85 W/SQ.FT.
   2. RECEPTACLE POWER
      A. ROOM 2012: 2.0 W/SQ.FT.
   3. OCCUPANCY CRITERIA IN OREGON:
      A. OCCUPANT: 245 BTUH SENSIBLE/200 BTUH LATENT
      B. OCCUPANTS:
         1) CONTROL ROOM: 9 PERSONS. (NUMBER OF CHAIRS)
   4. ZONING CRITERIA:
      A. ONE ZONE (TEMPERATURE SENSORS) PER ROOM

I. DUCTWORK DESIGN CRITERIA:
   1. DESIGN DUCTWORK TO PROVIDE HIGH EFFICIENCY OPERATION WITH MINIMAL ACOUSTICAL NOISE. DUCT STATIC PRESSURE FRICTION LOSS SHALL NOT EXCEED 0.2" PER 100 FEET IN MECHANICAL ROOMS AND SHAFTS. LOW PRESSURE SUPPLY DUCT STATIC PRESSURE FRICTION LOSS BASED ON A MAXIMUM OF 0.08" PER 100 FEET. LOW PRESSURE RETURN AND EXHAUST DUCT STATIC PRESSURE FRICTION LOSS BASED ON A MAXIMUM OF 0.06" PER 100 FEET. MEDIUM PRESSURE DUCTWORK SHALL NOT EXCEED A DUCT STATIC PRESSURE FRICTION LOSS BASED ON A MAXIMUM OF 0.1" PER 100 FEET.
   2. MAXIMUM SUPPLY, RETURN AND EXHAUST DUCT AIR FLOW VELOCITIES, REGARDLESS OF PRESSURE DROP, SHALL NOT EXCEED THE FOLLOWING CRITERIA:
      A. MAINS ABOVE CEILING: 1750 FPM
      B. MAINS ABOVE OPEN OCCUPIED SPACES: 1450 FPM
      C. BRANCHES ABOVE CEILING: 1400 FPM
      D. BRANCHES ABOVE OPEN OCCUPIED SPACES: 1150 FPM
      E. SUPPLY RUN-OUTS TO DIFFUSERS: 500 FPM
      F. RETURN OR EXHAUST RUN-OUTS: 600 FPM
      G. IN MECHANICAL ROOMS OR SHAFTS: 2000 FPM

J. ACOUSTICAL:
   1. THE FOLLOWING NOISE NC/RC CRITERIA LEVELS WILL BE ACHIEVED AND AS DEFINED IN THE ASHRAE HVAC APPLICATIONS HANDBOOK. THESE LEVELS ADDRESS THE MECHANICAL SYSTEMS ONLY. ACTUAL SOUND PERFORMANCE REQUIREMENTS FOR EACH SPACE MUST BE VERIFIED WITH ACOUSTICAL CONSULTANT.
      A. OPEN OFFICES: 30-40
      B. CONFERENCE ROOMS: 25-30
      C. PRIVATE OFFICES: 25-35
      D. CORRIDORS AND LOBBIES: 40
      E. TOILET AND STORAGE ROOMS: 45
      F. CLASSROOMS: 35

K. AIR FILTERS:
   1. OUTSIDE AIR PRE-FILTERS: MERV-8 (MINIMUM)
   2. FINAL FILTERS: MERV-13 (MINIMUM):

L. SEISMIC:
   1. ANCHORAGE AND RESTRAINTS MUST BE COORDINATED WITH STRUCTURAL ENGINEER AND AUTHORITY HAVING JURISDICTION.

HVAC DRAWING LIST

SHEET NUMBER	SHEET NAME
M0.0	MECHANICAL LEGEND AND ABBREVIATIONS
M0.1	MECHANICAL SPECIFICATIONS
M1.1	FIRST FLOOR MECHANICAL PLAN
M2.2	SECOND FLOOR MECHANICAL PLAN
M3.2	SECOND FLOOR MECHANICAL CEILING PLAN

ISSUED FOR PERMIT AND BID

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MARK	DATE	DESCRIPTION
1	09.06.23	ADD 1

Sheet Title
MECHANICAL LEGEND AND ABBREVIATIONS

Drawing No.
M0.0

Scale NONE
Date 07/27/2023
Project No. 19-0016

MECHANICAL SPECIFICATIONS

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. Definitions– "Contractor" means "Mechanical Contractor" when referenced anywhere in the mechanical construction documents unless work and equipment has been coordinated between mechanical and General Contractors to be provided by others. "Needed," "Provide," and "install" means all items called out in the contract documents and any additional items not called out but required to make a complete and operational system.

B. Plans are diagrammatic. Do not scale for material quantities. All scaling should be referenced to architectural plans only. Furnish and install all components needed whether indicated or not to provide a complete and operating system.

C. Contractor shall visit site and verify all connections to existing work prior to bidding.

D. Scope – The intent of the specifications and the drawings is to provide a complete and fully operational mechanical system. The Mechanical Contractor shall furnish and install all labor, material and equipment necessary to complete the mechanical work. The Contractor shall be responsible for the proper fitting of material into the building as indicated on drawings, without interference with other work, and shall make reasonable modifications in the layouts needed to prevent conflict with other trades, to provide access and for the proper execution of the work.

E. Permits and Fees – The Mechanical Contractor shall procure and pay for all permits, fees and inspections necessary to complete the mechanical scope of work.

F. Warranty – The Mechanical Contractor shall unconditionally warrant all work to be free of defects in material and workmanship for a period of one (1) year from the date of final acceptance by Owner's Representative and will repair or replace any defective work promptly and without charge and restore any other existing work damaged in the course of repairing defective materials and workmanship.

G. Codes – All work shall be performed in strict accordance with all applicable local codes and ordinances, in case of conflict between the drawings and the specifications and the codes and ordinances, the highest standard shall apply. The Mechanical Contractor shall satisfy code requirements as a minimum standard without extra cost.

H. Standards – Equipment and materials shall conform with appropriate provisions of CSA, ULC, ARL, ASME, ASTM, UL, NEMA, ANSI SMACNA, ASHRAE, and NFPA, as applicable to each individual unit or assembly.

I. LEED –The work, materials and equipment are to be provided to meet specific LEED credit requirements as stated on schedules and plans.

J. Substitutions – All proposed substitutions shall be submitted prior to bidding and preapproved in writing. All coordination associated with substituted materials or equipment is the responsibility of the contractor.

K. Submittals –The contractor shall submit shop drawings and technical data for all equipment and materials scheduled and specified including air distribution and piping systems.

L. Operating and Maintenance Instructions – At the conclusion of the project, the contractor shall provide three (3) copies of operating and maintenance instructions for each piece of equipment requiring periodic service.

1.2 COORDINATION WITH EXISTING CONDITIONS AND OTHER TRADES

A. This project involves construction inside an existing structure. Contractors, by submitting a bid are deemed to be completely familiar with the existing conditions of the building as it influences the work described. No claims for extra compensation will be considered for existing conditions visible or reasonably inferable from a careful examination of the existing building conditions.

B. Contractor shall inspect the existing field conditions at the site and the "as built" contract documents prior to the start of any work to determine what affect the existing conditions will have on the work potential. Problem areas shall be brought to the attention of the Owner's Representative immediately.

C. Contractor shall connect their work to the existing piping, ductwork, and control systems. New work shall be compatible with the existing system materials, and construction methods. Coordinate all work with other trades and install all work in coordination with architectural and structural members. Except for necessary connections to associated equipment, no piping or ductwork is to be in contact with equipment.

D. Coordinate all cutting and patching with general contractor and other disciplines. Contractor shall be responsible for all cutting and patching related to his work.

E. Obtain written permission of structural engineer before proceeding with any cutting or patching of structural systems. Do not cut roof framing.

F. Care shall be taken during installation of the work to not damage or interrupt the existing building systems and services installed. Damage to existing systems and equipment caused by Contractor during the installation of their work shall be repaired and/or replaced at Contractor's expense to the satisfaction of the building owner.

G. Notifications and Compliance with Building Standards and Rules:

1. Obtain a copy of any applicable building tenant development and building construction standards and comply with these standards.

2. Shutdown of existing systems for connection to existing services shall be coordinated with the Owner's Represenetative. Contractor shall submit requests where they affect the operation of the building systems at least one (1) week in advance of any required shutdown. The actual shutdown period shall be as short as possible and at a time agreed to by the Owner's Representative.

H. Demolition shall be coordinated with Owner's Representative, Architect and General Contractor.

I. Contractor shall provide the following services as applicable, on all existing HVAC equipment indicated to remain: filter changes; balancing; lubrication of applicable moving components; clean all coils; calibrate unit control components; verify fan rotation and operation; verify controls operation; clean condensate pan and trap; and verify pitch of condensate drain.

J. Contractor shall report any equipment deficiencies found to the Owner's Representative within five (5) days of discovery.

1.3 MECHANICAL - GENERAL

A. All materials and equipment are to be new unless otherwise designated in these documents.
B. The Mechanical Contractor shall coordinate HVAC work with other trades. The architectural drawings shall take precedence over all other drawings. See architectural drawings for dimensioned diffuser locations and mounting heights where exposed.
C. All HVAC ductwork and equipment shall be supported from structure (confirm) and not from other ducts, piping, conduits or ceiling supports.

1.4 TESTING, ADJUSTING, BALANCING

A. Independent air balance contractor or qualified Mechanical Contractor shall accurately balance the air (supply, return, ventilation air, and exhaust air) and hydronic systems (heating water, chilled water, condenser water), where applicable, to provide air and water quantities indicated on the drawings and in this specification. Balancer shall be qualified for TAB work per NEBB or AABC standards. Operate automatic controls system and verify set points. Submit two (2) copies of the balance report to the Owner's Representative for review and approval.

PART 2 - PRODUCTS AND EXECUTION

2.1 DUCTWORK AND ACCESSORIES

A. Sheetmetal Ductwork – All ductwork shall be rigid sheetmetal constructed from galvanized sheet steel in accordance with SMACNA Low Velocity Duct Construction Standards. Fiberglass ductboard is not allowed. All exposed ductwork shall be round, flat, oval, spiral, or rectangular lock-seam type, as shown on HVAC plan. Assemble and install ductwork in accordance with recognized industry practice for achieving air tight (5% leakage) and noiseless (no objectionable noise) systems, capable of performing each indicated service. Furnish all required dampers, transitions, connections to air terminals, and other accessories necessary for a complete operating system. No variation of duct configuration or sizes will be permitted except by permission from the engineer.

1. All medium pressure supply ductwork upstream of air terminal devices shall be 4-inch w.g. pressure class.

2. All low pressure supply ductwork distribution shall be 2-inch w.g. pressure class.

3. All return and exhaust ductwork shall be 2-inch pressure class.

4. Ductwork crossing over corridors shall be not less than 26-gauge.

5. Commercial kitchen grease hood exhaust duct shall be a minimum of 16-gauge carbon steel with continuous external welded joints fabricated in accordance with SMACNA and ASTM A569.

6.

7. Ductwork carrying moisture laden air including dishwasher and shower rooms shall be aluminum or A304 stainless steel where concealed and 316 stainless steel where exposed. Ductwork shall be sealed watertight and sloped to point of origin.

B. Flexible Ductwork – Flexible ductwork shall only be installed as shown in plan and not above hard lid ceilings. Flexible ductwork shall not exceed 5' in length with one elbow. Flexible ductwork shall be pulled taut and appropriately fastened to rigid branch duct and diffuser. Bends shall be minimized and where needed be a full, radius bend. Support bands shall be installed so as to not crimp flex duct. Flexible ductwork shall be UL 181 listed as a Class 1 air duct.

C. Duct Sealant – Seal longitudinal and transverse joints with non-hardening, non-mitigating mastic or liquid elastic sealant, with VOC content no greater than 250G/L and of a type recommended by the manufacturer for sealing joints and seams in sheet metal ductwork. Cover all field joints, joints around spin-in fittings and fastening screws with mastic.

D. Supports – Provide hot-dipped galvanized steel, fasteners, anchors, rods, straps, trim and angles for support of ductwork.

E. Dampers – Furnish and install opposed-blade, multi-leaf volume control dampers where indicated on drawings. Provide manual volume dampers where branches are taken from larger ducts and in all branch ducts to individual diffusers, grilles, and registers. Provide UL listed fire dampers and/or combination fire smoke dampers where needed and in accordance with NFPA and local codes. Coordinate with General Contractor and electrical for fire alarm interface and power. Provide conveniently located access doors of ample size and quantity for servicing the dampers. Where required by code or AHJ, F&I motorized campers for OSA (not necessarily shown).

F. Grilles, Registers and Diffusers – Grilles, registers and diffusers shall be indicated on the drawings and schedules. Provide all miscellaneous items necessary for a complete and proper installation in the type of walls and ceilings used in this project.

G. Thermal Insulation – Provide external thermal insulation with an integral vapor barrier facing of sufficient thickness to meet local energy code requirements and ASHRAE 90.1, whichever is more stringent. Provide insulation on exhaust and outside air ducts, and on concealed portions of supply and return air ducts. Do not externally insulate exposed ductwork and portions of ductwork that are internally lined with code required thickness. Thermal insulation to comply with an NFPA flame spread of 25 or less, and smoke developed to greater than 50. Internally insulate exterior ductwork per code.

H. Access Provisions – Provide access doors in hard walls and ceilings for all equipment and ductwork requiring service. Provide access doors in ductwork as required access.

2.2 INSULATION

A. Insulate ductwork and piping systems to meet local energy code requirements. Insulation materials to meet flame spread and smoke development rating of 25/50 or less. Where systems are exposed to damage the insulation shall be protected with a sheet metal or plastic cover. Where ductwork is installed exposed to the outside, insulation is to be executed using lined ductwork.

ISSUED FOR PERMIT AND BID

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MARK	DATE	DESCRIPTION

Sheet Title
MECHANICAL SPECIFICATIONS

Drawing No.
M0.1

Scale

Date 07/27/2023

Project No. 19-0016

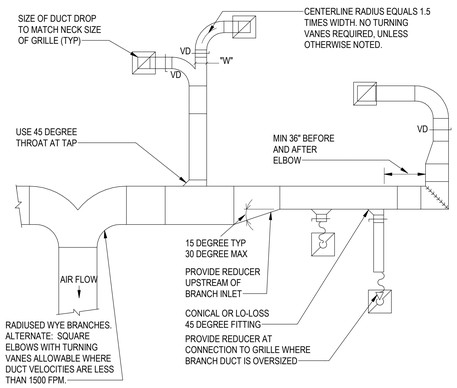
DIFFUSER AND GRILLE SCHEDULE

TAG	MANUFACTURER	MODEL	DESCRIPTION	FACE TYPE	FACE SIZE	COLOR	MATERIAL	OBD	NOTES
E	TITUS	PAR-AA	SQUARE CEILING EXHAUST	PERFORATED	12"x12"	WHITE	ALUMINUM	NO	ALL
S	TITUS	PAS-AA	SQUARE CEILING SUPPLY	PERFORATED MODULAR CORE	12"x12"	WHITE	ALUMINUM	NO	ALL

NOTES:
1. MAXIMUM TOTAL PRESSURE DROP SHALL NOT EXCEED 0.1" WG WITH DUCT TRANSITION.
2. MAXIMUM NC LEVEL SHALL BE 30.
3. ALL VISIBLE SURFACES AND DUCTWORK BEHIND FACE SHALL BE PAINTED FLAT BLACK.
4. COORDINATE WITH ARCHITECTURAL REFLECTED CEILING PLANS FOR BORDER TYPES.
5. NECK SIZE AND CFM SHOWN ARE ON PLANS (EXAMPLE: SA12x12-400 REFERS TO TAG "SA" WITH 12x12 NECK AND 400 CFM).
6. PROVIDE RECTANGULAR/SQUARE TO ROUND TRANSITION AS REQUIRED AND SIZED FOR MAXIMUM 0.01" WG TOTAL PRESSURE DROP.

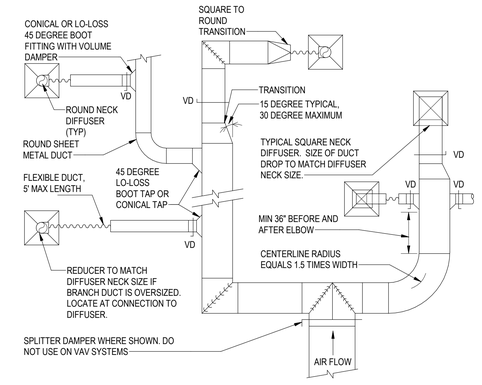
KEYED NOTES

1. RELOCATE EXISTING SUPPLY DIFFUSER AND DEMO DUCT BACK TO SOUND LINED SECTION. PROVIDE END CAP.
2. PROVIDE NEW SUPPLY TAPS AS SHOWN. REBALANCE TERMINAL UNIT TO 290 CFM.
3. POINT OF NEW CONNECTION INTO EXISTING EXHAUST DUCT.
4. EXHAUST UP TO EF-1 ON ROOF. REBALANCE FAN TO 1375 CFM.



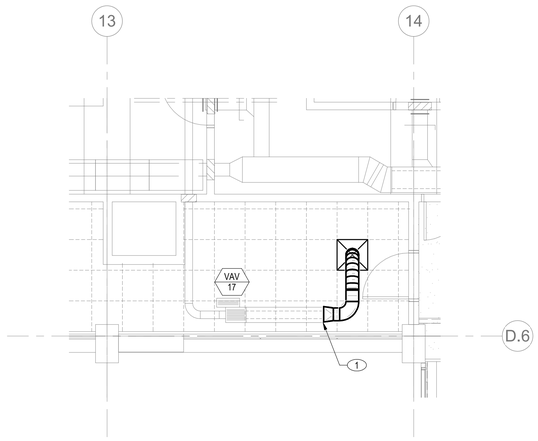
NOTES:
1. PROVIDE DUCT LINER AND/OR EXTERNAL DUCT INSULATION AS NOTED ON PLANS OR IN SPECIFICATIONS.
2. PROVIDE HANGERS AND SEISMIC BRACING PER SMACNA AND BUILDING CODE.
3. LOCATE MANUAL BALANCING DAMPERS IMMEDIATELY DOWNSTREAM OF EACH DUCT TAP.
4. MAINTAIN MINIMUM 36" CLEARANCE BETWEEN LEADING OR TRAILING ELBOW JOINT AND DUCT TAP FITTINGS.
5. TURNING VANES REQUIRED ON RECTANGULAR DUCT SYSTEM ELBOWS. SINGLE THICKNESS VANES UP TO 25" HEIGHT AND DOUBLE THICKNESS VANES IN DUCTS GREATER THAN 25" HEIGHT. RADIUSED ELBOWS MAY BE USED AS AN ALTERNATE.
6. NO TURNING VANES REQUIRED ON DUCT SIZES LESS THAN 180 SQ. IN. IF DUCT VELOCITY IS LESS THAN 1500 FPM.

4 RETURN EXHAUST DUCT FITTINGS
SCALE: NONE

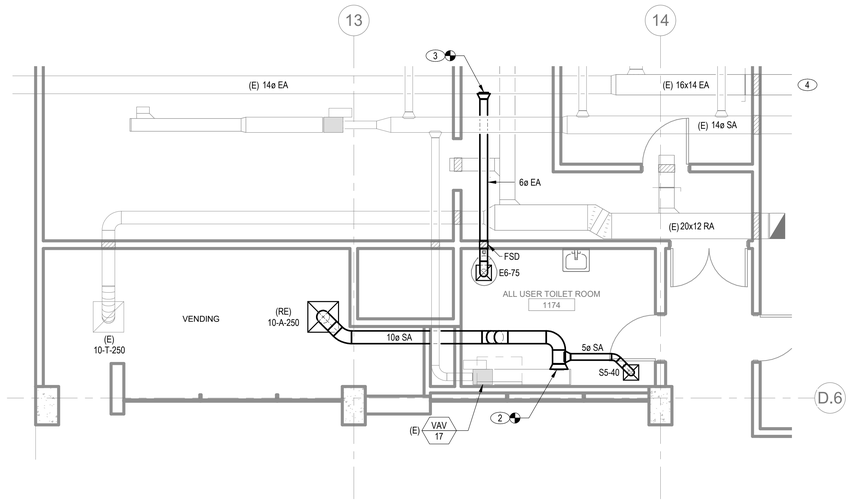


NOTES:
1. PROVIDE DUCT LINER AND/OR EXTERNAL DUCT INSULATION AS NOTED ON PLANS OR IN SPECIFICATIONS.
2. PROVIDE HANGERS AND SEISMIC BRACING PER SMACNA AND BUILDING CODE REQUIREMENTS.
3. LOCATE MANUAL BALANCING DAMPERS IMMEDIATELY DOWNSTREAM OF EACH DUCT TAP.
4. CUSHION HEADS OR BULLHEAD TEES ARE NOT ALLOWED.
5. MAINTAIN MINIMUM 36" CLEARANCE BETWEEN LEADING OR TRAILING ELBOW JOINT AND DUCT TAP FITTINGS.
6. RADIUSED ELBOWS OR TURNING VANES REQUIRED ON RECTANGULAR DUCT SYSTEM ELBOWS. SINGLE THICKNESS VANES UP TO 25" HEIGHT AND DOUBLE THICKNESS VANES IN DUCTS GREATER THAN 25" HEIGHT.

3 SUPPLY DUCT FITTINGS
SCALE: NONE



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



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

GRAPHIC SCALE: 1/4" = 1'-0"
N
0' 2' 4' 8' 16'

ISSUED FOR PERMIT AND BID

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OREGON JANUARY 13, 2015
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PARTIAL

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MARK	DATE	DESCRIPTION

Sheet Title
FIRST FLOOR MECHANICAL PLAN

Drawing No.
M1.1

Scale	As indicated
Date	07/27/2023
Project No.	19-0016

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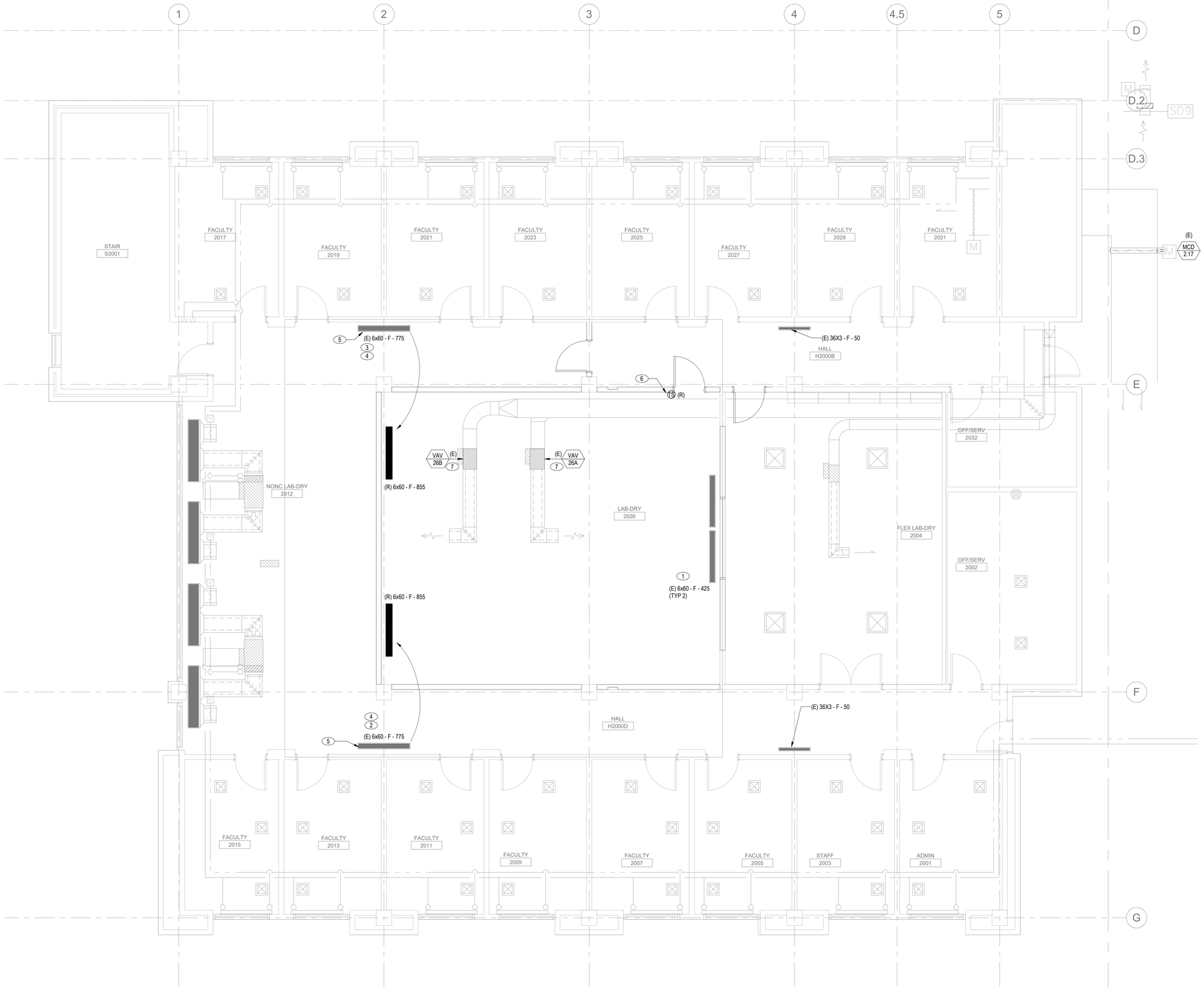

KEYED NOTES

1. BALANCE FLOOR GRILLE TO 855 CFM (TYP 3)
2. RELOCATE EXISTING GRILLE NORTH TO LOCATION SHOWN WITHIN CONTROL ROOM
3. RELOCATE EXISTING GRILLE SOUTH TO LOCATION SHOWN WITHIN CONTROL ROOM
4. GRILLE TO BE THOROUGHLY CLEANED PRIOR TO RELOCATION.
5. CAP AND SEAL EXISTING PENETRATION AIRTIGHT. COVER INFILL WITH SALVAGED EXISTING CARPET.
6. RELOCATE EXISTING TEMPERATURE SENSOR SERVING VAV 26A & VAV 26B.
7. BALANCE EXISTING VAV BOX TO 1280 CFM MAX, 480 CFM MIN.

1 LEVEL 2 - FLOOR PLAN - MECHANICAL HVAC

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

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

N 0' 2' 4' 8' 16'

ISSUED FOR PERMIT AND BID

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MARK	DATE	DESCRIPTION

Sheet Title
SECOND FLOOR MECHANICAL PLAN

Drawing No.
M2.2

Scale	1/4" = 1'-0"
Date	07/27/2023
Project No.	19-0016

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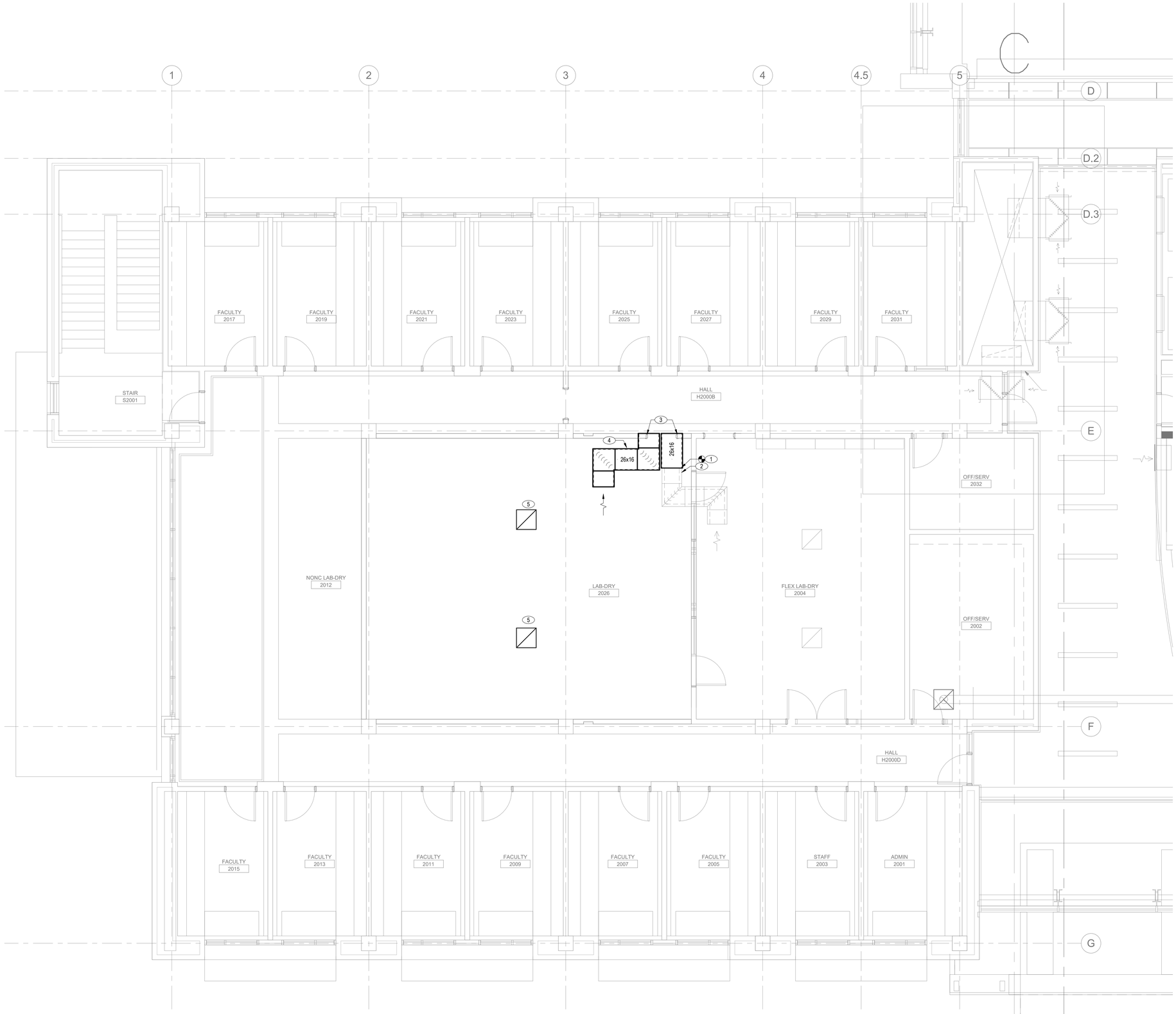

KEYED NOTES (#)

1. EXTEND EXISTING TRANSFER BOOT DUCT TO CORRIDOR PLENUM.
2. INTERNALLY CLEAN DUCTWORK.
3. PROVIDE 1" ACOUSTICAL LINING.
4. LINED ACOUSTIC TRANSFER BOOT. PROVIDE ADEQUATE LENGTH TO ENSURE NO CLEAR SIGHTLINE THROUGH DUCT.
5. 24"X24" CEILING RETURN GRILLE. MATCH EXISTING STYLE AND COLOR OF EXISTING RETURN AIR GRILLES.

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

N 0' 2' 4' 8' 16'

1 LEVEL 2 - CEILING PLAN - MECHANICAL HVAC

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

ISSUED FOR PERMIT AND BID

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MARK	DATE	DESCRIPTION

Sheet Title
SECOND FLOOR
MECHANICAL
CEILING PLAN

Drawing No.
M3.2

Scale	1/4" = 1'-0"
Date	07/27/2023
Project No.	19-0016

ELECTRICAL LEGEND

NOTE: NOT ALL SYMBOLS OR ABBREVIATIONS ARE APPLICABLE TO THIS PROJECT. REFER TO DETAILS AND NOTES FOR MOUNTING HEIGHTS.

LIGHTING

SYMBOL	DESCRIPTION
	RECESSED 2X4 LUMINAIRE
	SURFACE MOUNTED 2X4 LUMINAIRE
	RECESSED 1X4 LUMINAIRE
	SURFACE MOUNTED 1X4 LUMINAIRE
	RECESSED 2X2 LUMINAIRE
	SURFACE MOUNTED 2X2 LUMINAIRE
	SHADING OF ANY LUMINAIRE INDICATES CONNECTION TO ALTERNATE POWER SOURCE (EMERGENCY, UPS, STANDBY, ETC.) PER CIRCUITING INDICATED
	SUSPENDED LINEAR LUMINAIRE (SIZE VARIES)
	WALL MOUNTED LINEAR LUMINAIRE (SIZE VARIES)
	SUSPENDED PENDANT LUMINAIRE (SIZE VARIES)
	RECESSED DOWNLIGHT, CEILING MOUNTED
	SURFACE DOWNLIGHT, CEILING MOUNTED
WW DIRECTION →	RECESSED WALLWASH
WW DIRECTION →	SURFACE WALLWASH
	RECESSED LINEAR WALLWASH
	SURFACE LINEAR WALLWASH
	RECESSED WALL MOUNTED LUMINAIRE
	TRACK LIGHTING WITH HEADS AS INDICATED.
	RECESSED CEILING ADJUSTABLE POINT SOURCE
	SURFACE CEILING ADJUSTABLE POINT SOURCE
	WALL MOUNTED LUMINAIRE
	WALL MOUNTED DIRECTIONAL (SIZE VARIES)
	FLUORESCENT STRIPLIGHT - POWER FEED SECTION, FEED THROUGH SECTION. LENGTH AS SHOWN.
	WALL MOUNTED FLUORESCENT STRIPLIGHT
	UNDERCABINET FLUORESCENT STRIPLIGHT
	CONTINUOUS LINEAR SOURCE (LED, COLD CATHODE, NEON, FIBER OPTIC, ETC...)
	BATTERY POWER EMERGENCY UNIT EQUIPMENT (SEE LUMINAIRE SCHEDULE FOR QUANTITY OF HEADS) - WALL, CEILING MOUNTED.
	ILLUMINATED EXIT SIGN, SHADED QUADRANT INDICATES FACES, ARROWS AS SHOWN
	BOLLARD
	POLE MOUNTED LUMINAIRE- SINGLE OR DUAL HEAD
	INDICATES ROTATED OPTICS
	POST TOP MOUNTED LUMINAIRE
	IN-GRADE POINT SOURCE
	GARAGE LIGHTING LUMINAIRE WITH CUTOFF LOUVERS
HA 3c / HA 3A	LUMINAIRE MARKING CONVENTION LEGEND: HA = LUMINAIRE TYPE IDENTIFICATION. SEE LUMINAIRE SCHEDULE. 3c = CIRCUIT NUMBER VIA LOCAL SWITCH (LOWERCASE LETTER) THAT SERVES THE LUMINAIRE. 3A = CIRCUIT NUMBER/UPPERCASE LETTER COMBINATION INDICATES LOW VOLTAGE RELAY OR LIGHTING CONTACTOR THAT SERVES THE LUMINAIRE

SWITCHING CONTROLS

SYMBOL	DESCRIPTION
S^a	SINGLE POLE SWITCH (SUPERSCRIPT DENOTES SIMILARLY MARKED LUMINAIRES CONTROLLED TOGETHER)
S_2	TWO POLE SWITCH
S_3	THREE WAY SWITCH
S_4	FOUR WAY SWITCH
S_K	KEY OPERATED SWITCH
D	DIMMER SWITCH. NUMBER INDICATES WATTAGE RATING. IF NOT SHOWN THEN EQUAL TO LOAD.
D	DIMMER SWITCH UNDER SEPARATE COVERPLATE
D	LOW-VOLTAGE DIMMER SWITCH
S_{PL}	SWITCH WITH PILOT LIGHT (PILOT IS "ON WHEN SWITCH IS "OFF").
S_{TS}	TIMER SWITCH
$\$^{5A}$	LOW VOLTAGE MOMENTARY CONTACT SWITCH, UPPER CASE LETTER SUPERSCRIPT INDICATES CONNECTION TO LOW VOLTAGE RELAY CONTROLLING SIMILARLY MARKED LUMINAIRES.
S_{WP}	WEATHERPROOF SWITCH
S_V	LINE VOLTAGE, VARIABLE SPEED FAN CONTROL SWITCH. LOCATE ADJACENT TO ADJACENT TO LIGHT SWITCHES.
S_T	MOTOR-RATED THERMAL OVERLOAD SWITCH
S_{OR1}	LIGHTING CONTROL OVERRIDE SWITCH. NUMBER = ZONE CONTROLLED
PC	PHOTOCELL
	EQUIPMENT OPERATOR PUSH BUTTON STATION. PROVIDED WITH EQUIPMENT, INSTALLED AND CONNECTED BY ELECTRICAL, UON.
	PUSHBUTTON OR PUSHBUTTONS.
TC	TIME CLOCK
OS	LIGHT SWITCH W/ INTEGRAL OCC SENSOR - WALL MOUNTED
OS	360 DEGREE OCCUPANCY SENSOR - CEILING MTD.
OS	180 DEGREE OCCUPANCY SENSOR - CEILING MTD.
OS	CORRIDOR/AISLE OCCUPANCY SENSOR - CEILING MOUNTED
S^a OS b	COMBINATION OCCUPANCY SENSOR & SWITCH GANGED UNDER COMMON COVER PLATE. OCC SENSOR TO CONTROL ALL LUMINAIRES W/ SWITCH-CONTROLLED 1/2 LIGHT REDUCTION.
T T	THERMOSTAT - WALL, CEILING.
S_{EPO} EPO	EMERGENCY POWER OFF, HEAVY-DUTY, OIL-TIGHT RED MUSHROOM-HEAD PUSHBUTTON WITH GUARD.
	LIGHTING CONTROL PANEL AND ASSOCIATED COMPONENTS. PROVIDE CONTROL POWER AS REQUIRED OR AS INDICATED.

DISTRIBUTION & EQUIPMENT

SYMBOL	DESCRIPTION
	BRANCH CIRCUIT PANELBOARDS, SURFACE AND RECESS MOUNTED
	MOTOR CONTROL CENTER WITH CODE CLEARANCES SHOWN, DASHED EQUIP. = FUTURE
	TRANSFORMER WITH CODE CLEARANCES SHOWN
	SERVICE AND/OR DISTRIBUTION EQUIPMENT WITH CODE CLEARANCES SHOWN
	CONNECTION TO MOTOR PROVIDED BY OTHERS
VFD	CONNECTION TO VARIABLE FREQUENCY DRIVE WITH INTEGRAL DISCONNECT
	DISCONNECT SWITCH, SIZE AS NOTED OR IF NOT SHOWN SIZE PER CONNECTED MOTOR SIZE AND MOTOR DISCONNECT SCHEDULE
F	FUSED DISCONNECT SWITCH, SIZE AS NOTED. SIZE FUSE PER MANUFACTURER'S RECOMMENDATIONS
C	ENCLOSED CIRCUIT BREAKER DISCONNECT SWITCH, TRIP SIZE AS NOTED.
	DISCONNECT W/ MAGNETIC MOTOR STARTER (CONTROLLER) OR CONTACTOR. SIZE PER LOAD SERVED. NEMA SIZE #1 MINIMUM.
	MAGNETIC MOTOR STARTER (CONTROLLER) OR CONTACTOR. SIZE PER LOAD SERVED. NEMA SIZE #1 MINIMUM.
	CONNECTION TO EQUIPMENT PROVIDED BY OTHERS. SHADED = ON ALT. POWER SOURCE NOTED
	CONNECTION TO EQUIPMENT WITH INTEGRAL DISCONNECT PROVIDED BY OTHERS. SHADED = ON ALTERNATE POWER SOURCE NOTED
	EQUIPMENT OR TERMINAL ENCLOSURE AS NOTED, SURFACE AND RECESS MOUNTED
DM	DAMPER MOTOR
	BUSWAY RISER
C F	BUSWAY STAB-IN TYPE CIRCUIT BREAKER OR FUSE DISCONNECT. SIZE AS NOTED.

DIAGRAMS

SYMBOL	DESCRIPTION
	AUTOMATIC TRANSFER SWITCH (ATS)
	AUTOMATIC TRANSFER SWITCH WITH MAINTENANCE BYPASS(BIATS)
	OVERLOADS
	NORMALLY CLOSED CONTACTOR OR RELAY CONTACTS
	NORMALLY OPEN CONTACTOR OR RELAY CONTACTS
	BUS DUCT
	BUS BAR
	BATTERY GENERAL
	RESISTOR
	CONNECTOR, FEMALE AND MALE RESPECTIVELY
	PIPE GROUND
C	CONTACTOR COIL
R	RELAY COIL
D	LIGHTNING SURGE ARRESTOR D = DISTRIBUTION CLASS I = INTERMEDIATE CLASS
SPD	SURGE PROTECTION DEVICE
	CURRENT TRANSFORMER
	POTENTIAL TRANSFORMER
	NORMALLY OPEN PUSH BUTTON
	NORMALLY CLOSED PUSH BUTTON
	FUSED VOLTAGE SENSE LEADS
PF	METER: POWER FACTOR
KWH	METER: KILOWATT HOUR
M M	UTILITY CO. APPROVED SOCKET WITH METER INSTALLED. SQUARE = REMOTE MOUNTED
DMU	DIGITAL METER UNIT. REFER TO SPECIFICATIONS.
STB	CURRENT TRANSFORMER SHORTING TERMINAL BLOCK.
	TERMINAL FOR FIELD CONNECT, SIZE & TYPE SUITABLE FOR CONDUCTOR INSTALLED.
	LED INDICATOR LIGHT, PUSH TO TEST, R=RED, G= GREEN, B= BLUE, Y= YELLOW, W= WHITE
	DELTA CONNECTION
	GROUNDED WYE CONNECTION
	CONNECTION TO GROUND
100AT 225AF	CIRCUIT BREAKER, WITH TRIP & FRAME AMPERE RATING
225AF 400AS	FUSED SWITCH, WITH FUSE AND SWITCH AMPERE RATING
	INDIVIDUALLY MOUNTED CIRCUIT BREAKER
52	CIRCUIT BREAKER, MEDIUM VOLTAGE, DRAWOUT
	DRAWOUT CIRCUIT BREAKER
GF	GROUND FAULT TRIP UNIT
BA	BELL ALARM TRIP MODULE CONTACTS
ST	SHUNT TRIP UNIT, 120VAC OR VOLTAGE AS NOTED
AM	INTEGRAL AMMETER DISPLAY
K	KEY INTERLOCK
10	CAPACITOR, POWER FACTOR CORRECTION, SIZE IN KVAR
	GENERATOR
	FUSE, HOLDER & PULLER
C	CONNECTION TO CHILLER

POWER DEVICES

SYMBOL	DESCRIPTION
	SIMPLEX RECEPTACLE - WALL, CEILING, ON ALT.
	DUPLEX RECEPTACLE - WALL, CEILING, ON ALT.
	DOUBLE DUPLEX RECEPTACLE - WALL, CLG, ON ALT.
	SPECIAL PURPOSE RECEPTACLE -WALL, CEILING ON ALT. POWER; NEMA CONFIGURATION AS NOTED
AB	RECEPTACLE TYPE SHOWN -WALL -ABOVE COUNTER BACKSPLASH. SEE ARCHITECTURAL DRAWINGS.
"ON ALT."	SHADED RECEPTACLES NOTED "ON ALT." ABOVE ARE CONNECTED TO ALTERNATE POWER SOURCE (EMERG., STANDBY, UPS, ETC.) PER CIRCUITING INDICATED
	DUPLEX RECEPTACLE - WALL - HALF SWITCHED
C C	CONTROLLED DUPLEX / DOUBLE DUPLEX RECEPTACLE
S	COMBINATION SWITCH/DUPLEX RECEPTACLE
GFI	DUPLEX RECEPTACLE - WALL - WITH INTEGRAL GROUND FAULT CIRCUIT INTERRUPTER
WP	RECEPTACLE TYPE SHOWN W/ WEATHERPROOF COVER AND INTEGRAL GROUND FAULT CIRCUIT INTERRUPTER
+42"	RECEPTACLE TYPE SHOWN AT SPECIAL HEIGHT
J	WALL MOUNTED ELECTRICAL CONNECTION TO ELECTRIFIED FURNITURE. PROVIDE 8 WIRES (4 HOTS, 1 DEDICATED NEUTRAL, 1 COMMON NEUTRAL, 1 IG) NEUTRALS TO BE #10 AWG. USE LIQUID-TIGHT FLEX.
	CLOCK HANGER RECEPTACLE
	FLUSH FLOOR BOX DEVICE - DEVICE TYPE PER SYMBOLS ABOVE
	PEDESTAL FLOOR DEVICE - DEVICE TYPE PER SYMBOLS ABOVE
	POKE THRU UNIT WITH DUPLEX RECEPTACLE - FLUSH, PEDESTAL MOUNTED.
	POKE THRU UNIT WITH DOUBLE DUPLEX RECEPTACLE - FLUSH, PEDESTAL MOUNTED.
	COMBO POKE THRU UNIT WITH DUPLEX RECEPTACLE AND TELEPHONE OUTLET - FLUSH, PEDESTAL MOUNTED.
	MULTI-SERVICE FLOOR BOX CAST IN CONC. OR IN RAISED FLOOR - SEE ARCH DWGS; WITH RECEPTACLES & SIGNAL OUTLETS AS NOTED.
J	POKE THRU UNIT WITH JUNCTION BOX. RACEWAY COMPONENTS RC-700 SERIES.
J J	TELE/POWER POLE, POWER POLE
J J	TELE/POWER POLE WITH WHIP CONNECTION TO ELECTRIFIED FURNITURE
J	TWO-PIECE SURFACE METAL RACEWAY WITH RECEPTACLES AS NOTED, BACK LENGTH AS INDICATED ON THE DRAWINGS AND WITH ALL FITTINGS AS REQUIRED.
J	TWO OR THREE COMPARTMENT SURFACE METAL RACEWAY WITH RECEPTACLES AND OUTLETS AS INDICATED, LENGTH AS INDICATED ON THE DRAWINGS. PROVIDE ALL FITTINGS AS REQUIRED.
TX	REMOTE MOUNTED LINE TO LOW-VOLTAGE FUSED TRANSFORMER. CONCEAL FROM VIEW.

SIGNAL DEVICES

SYMBOL	DESCRIPTION
W	TERMINAL/MOUNTING BOARD, 8' HIGH, 3/4"x4'x WIDTH AS SHOWN, FIRE RETARDANT TREATED PLYWOOD.
	SIGNAL SYSTEM EQUIPMENT ENCLOSURES AS NOTED- SURFACE, RECESSED MOUNTED
	COMBO TELEPHONE/DATA OUTLET - WALL
(X) W	TELEPHONE OUTLET - WALL, W = USE HIGHER MOUNTING HEIGHT PER MOUNTING HEIGHT DETAIL. X = INDICATES QUANTITY OF CABLE/JACKS. (2) UON.
(X)	DATA OUTLET - WALL X = INDICATES QUANTITY OF CABLE/JACKS. (2) UON.
S S	SPEAKER - WALL, CEILING
V	VOLUME CONTROL - WALL
B	BELL
	BUZZER
	CHIME
C C	SYSTEM CLOCK - WALL , CEILING
I M I	INTERCOM STATION - WALL, DESK. M = MASTER STATION
M M	MICROPHONE JACK - WALL, FLOOR
	PUSHBUTTON OR PUSHBUTTONS
	RF COAX CABLE OUTLET (TV, VCR, ETC.)
	COMBINATION RF COAX CABLE AND DATA OUTLET
	RF COAX CABLE SIGNAL SPLITTER
S PA	PAGING SYSTEM HORN (OUTDOOR)
AV	AV INPUT OUTLET, 1"C WITH 3-GANG BOX. CONDUIT STUBBED ABOVE ACCESSIBLE TILE CEILING.
IR	ASSISTIVE LISTENING INFRARED TRANSMITTER PANEL, 1"C WITH 2-GANG BOX. CONDUIT STUBBED ABOVE ACCESSIBLE TILE CEILING.
	RF COAX CABLE DISTRIBUTION AMPLIFIER. PROVIDE 120V POWER AS REQUIRED OR AS INDICATED. SEE RISER DIAGRAM.
	FLUSH FLOOR DEVICE - DEVICE TYPE PER SYMBOLS ABOVE
	PEDESTAL FLOOR DEVICE - DEVICE TYPE PER SYMBOLS ABOVE
S D S D	DUAL COIL SPEAKER - SURFACE CEILING, RECESSED CEILING.
S	PAGING OR PAGING/SOUND MASKING SPEAKER, MOUNTED ABOVE ACOUSTIC TILE CEILING.

REFERENCE SYMBOLS

SYMBOL	DESCRIPTION
XX	KEYED NOTE REFERENCE
125.4	BRANCH CIRCUIT OR FEEDER TAG; REFER TO BRANCH CIRCUIT AND FEEDER SCHEDULE FOR WIRE AND CONDUIT SIZES & QUANTITY.
1 / E4.1	REFER TO DETAIL ON DRAWING INDICATED
2 / E4.1	ELEVATION TAG: REFER TO ELEVATION NUMBER ON DRAWING INDICATED
A / M-1	SECTION TAG: REFER TO SECTION NUMBER ON DRAWING INDICATED
K112	KITCHEN EQUIPMENT TAG, REFER TO KITCHEN EQUIPMENT SCHEDULE
CH 1	MECHANICAL EQUIPMENT IDENTIFICATION TAG
EQUIP NAME	EQUIPMENT BY OTHERS IDENTIFICATION TAG

WIRING

SYMBOL	DESCRIPTION
	NEW WORK
	WIRING CONCEALED IN FLOOR OR UNDER GRADE OR ROUTED IN CEILING SPACE OF FLOOR BELOW.
(E)	EXISTING WORK TO REMAIN
(ER)	EXISTING RELOCATED
(D)	EXISTING WORK TO BE REMOVED
(F)	FUTURE WORK
T	TELEPHONE SYSTEM CONDUIT
MV	MEDIUM VOLTAGE CONDUIT
G	BARE GROUNDING GRID OR CONDUCTORS, UON.
GC	GROUNDING CONDUCTOR(S) ROUTED IN CODE SIZED CONDUIT, UON.
	STROKES INDICATE QUANTITY OF #12 AWG. CONDUCTORS, UON. NOTE: WIRING STROKES FOR 20A BRANCH CIRCUITS ARE NOT SHOWN ON DRAWINGS. CONTRACTOR SHALL USE INFORMATION IN PANEL AND BRANCH CIRCUIT SCHEDULES TO PROVIDE REQUIRED CIRCUITING.
	GROUND
	HOT
	NEUTRAL
L1A-1,3	HOME RUN WIRING TO INDICATED DESTINATION, 3/4"C. MIN. OR AS OTHERWISE NOTED. CONTRACTOR SHALL USE CIRCUIT SIZES NOTED IN RESPECTIVE SCHEDULES AND INFORMATION IN THE FEEDER AND BRANCH CIRCUIT SCHEDULES.
HD1A	CONDUIT RUN TURNED UP THROUGH FLOOR OR CEILING. CORE & FIREPROOF AS REQUIRED.
	CONDUIT RUN TURNED DOWN THROUGH FLOOR OR CEILING. CORE & FIREPROOF AS REQUIRED.
	CONDUIT STUBBED OUT AT LOCATION SHOWN. PROVIDE INSULATED BUSHING & PULLROPE.
	TELEPHONE/DATA SLEEVE THROUGH WALL, ABOVE CEILING. EXTEND TO ACCESSIBLE TILE CLG. BOTH SIDES. TERMINATE WITH BUSHINGS. (1) 1.25" CO UON. COORDINATE LOCATIONS WITH CABLE INSTALLER(S) PRIOR TO ROUGH-IN.
	BASKET TYPE CABLE TRAY WITH 90 DEGREE ELBOW SHOWN
	LADDER TYPE CABLE TRAY WITH 90 DEGREE ELBOW SHOWN
J J J	JUNCTION BOXES, WALL, CEILING AND FLUSH FLOOR MOUNTED. 4" SQ. BOX MIN., LARGER IF REQUIRED
	WIRING EXTENSION POINT - CONDUIT TO MC CABLE OR MANUFACTURED WIRING SYSTEM J-BOX ABOVE ACCESSIBLE CEILINGS AREAS, OR EXTEND CONDUIT & WIRE IN EXPOSED OR "HARD" CEILING AREAS. SHADED= ON ALT. POWER SOURCE (EMERG,UPS,ETC.)
PB	PULL BOX, MIN. SIZE PER NEC., UON.
P	UNDERFLOOR RACEWAY
	FLEXIBLE CONDUIT CONNECTION
	POWER CONNECTION TO DIV 15 FIRE/SMOKE DAMPER. REFER TO FSD CONNECTION DETAIL IF NOT SHOWN

GROUNDING SYSTEM

SYMBOL	DESCRIPTION
G	BARE GROUNDING GRID OR CONDUCTORS, UON.
GC	GROUNDING CONDUCTOR(S) ROUTED IN CODE SIZED CONDUIT, UON.
	GROUND GRID BOND POINT
	GROUND GRID BOND POINT - MECHANICAL CONNECTION
	GROUND GRID BOND POINT - EXOTHERMIC WELD CONNECTION
	GROUND BAR, SEE PLANS AND SPECIFICATIONS FOR DIMENSIONS AND REQUIREMENTS
	GROUND ROD LOCATION
	GROUND ROD IN TEST WELL
	LIGHTNING PROTECTION PARAPET MOUNTED AIR TERMINAL
	LIGHTNING PROTECTION MID ROOF MOUNTED AIR TERMINAL
	LIGHTNING PROTECTION AIR TERMINAL
	LIGHTNING PROTECTION CONDUCTOR ROUTED DOWN
	LIGHTNING PROTECTION BOND PLATE
	LIGHTNING PROTECTION BIMETAL CONNECTION

FIRE ALARM SYSTEM

SYMBOL	DESCRIPTION
FACP	FIRE ALARM CONTROL PANEL AND ASSOCIATED COMPONENTS. PROVIDE 120V POWER AS REQUIRED OR AS INDICATED.
FAA	FIRE ALARM ANNUNCIATOR
F	FIRE ALARM SYSTEM MANUAL PULL STATION, WALL MOUNTED
	ALARM BELL OR GONG
	STROBE LIGHT - WALL, CEILING MOUNTED (# = CANDELA RATING)
S	SPEAKER - WALL, CEILING MOUNTED
S 15	COMBINATION SPEAKER/STROBE, WALL MOUNTED (# = CANDELA RATING)
H	HORN - CEILING, WALL MOUNTED
H 15	COMBINATION HORN/STROBE - WALL, CEILING MOUNTED (# = CANDELA RATING)
H 15	COMBINATION MINI HORN/STROBE - WALL, CEILING MOUNTED (# = CANDELA RATING)
	SPRINKLER VALVE TAMPER SWITCH CONNECTION
	SPRINKLER FLOW SWITCH CONNECTION
BR,BT	LIGHT BEAM TYPE SMOKE DETECTOR (BR=BEAM RECEIVER, BT=BEAM TRANSMITTER)
	SMOKE DETECTOR, DUCT MOUNTED, WITH FULL WIDTH SAMPLING TUBES. PHOTOELECTRIC TYPE UON.
D	SMOKE DETECTOR, LOW AIR VELOCITY IN DUCT MOUNTED PHOTOELECTRIC TYPE UON.
P,B,R,C	SMOKE DETECTOR - WALL, CEILING MOUNTED (P=PLENUM MOUNTED, B=W/RELAY BASE, R=ELEVATOR RECALL, C=INTEGRAL TO DOOR CLOSURE)
	SMOKE DETECTOR MOUNTED BELOW RAISED FLOOR
C	ELECTROMAGNETIC DOOR HOLDER - WALL, FLOOR, DOOR CLOSURE MOUNTED. COORDINATE WITH DOOR INSTALLER.
LM	DATA LOOP ISOLATION MODULE
CM	ADDRESSABLE CONTROL MODULE
MM	ADDRESSABLE MONITOR MODULE
EOL	END OF LINE RESISTOR (MAY NOT BE SHOWN ON PLANS)
J	FIREMAN'S PHONE JACK, WALL MOUNTED
P	FIREMAN'S PHONE HANDSET, WALL MOUNTED
	FIRE/SMOKE DAMPER BY DIV 15. WIDTH OF SYMBOL WILL VARY WITH DUCT WIDTH. PROVIDE POWER AND MONITORING AS INDICATED. REFER TO FSD CONNECTION DETAIL.
	FLAME DETECTOR (FLICKER DETECTOR)
	HEAT DETECTOR, CEILING MOUNTED. RATE OF RISE AND FIXED TEMPERATURE TYPE, UON.
R/C,F,R	HEAT DETECTOR (R/C=RATE OF COMBUSTION, F=FIXED TEMP. ONLY, R=RATE OF RISE ONLY)
EWSD	EARLY WARNING SMOKE DETECTION SYSTEM - INCLUDES ALL SAMPLING TUBING
	LIGHT (LAMP, SIGNAL LIGHT, INDICATOR LAMP, STROBE)
A	FIRE ALARM OUTPUT OR RELEASE ABORT PUSHBUTTON, REFER TO SPECIFICATIONS AND DETAILS.
	AGENT RELEASE INITIATING VALVE
	BELL SILENCE SWITCH
	AGENT DISCHARGE SWITCH

SECURITY SYSTEM

SYMBOL	DESCRIPTION
	CCTV SECURITY FIXED CAMERA - WALL,CEILING
D	CCTV SECURITY INDOOR DOME CAMERA
PTZ	CCTV SECURITY PAN/TILT/ZOOM CAMERA
MRIB	INTELLIGENT CARD READER INTERFACE
MO	ROLL-UP DOOR MOTOR CONTROL OUTPUT
D	DOOR POSITION MONITOR SWITCH
RX RX	REQUEST TO EXIT DEVICE WALL,MULLION MOUNTED
I I M	INTERCOM STATION - WALL, DESK MOUNTED. M = MASTER STATION
DS	DURESS PUSHBUTTON STATION
CR CR	CARD READER- WALL MOUNTED/MULLION MOUNTED
ER	EMERGENCY DOOR RELEASE BREAK-GLASS STATION
N	LOCAL DOOR MONITOR WARNING NOISE DEVICE
EB	ELECTRIC BOLT
EL	ELECTRIC LOCK/LATCH
ES	ELECTRIC STRIKE
ML	MAGNETIC LOCK
GB	GLASS BREAK SENSOR
H	ELECTRIC POWER TRANSFER HINGE
	SECURITY ELECTRONIC MOTION SENSOR

ELECTRICAL EQUIPMENT NAMING CONVENTION LEGEND

EXAMPLES/LEGEND

EQUIP. TYPE	POWER SYSTEM DESIG.	SYSTEM VOLTAGE	FLOOR	LOCATION	SEQ. LETTERS
MCC-		H	1	N	A
DP-	N	L	1	E	A
XFR-	S	H	1	S	A
SWBD-	E	H	1	W	A
PNL-	C	H	2		B

EQUIPMENT TYPE

ATS - AUTOMATIC TRANSFER SWITCH
BIATS - BYPASS ISOLATION ATS
MTS - MANUAL TRANSFER SWITCH
XFR - TRANSFORMER
UTX - UTILITY MAIN TRANSFORMER
MCC - MOTOR CONTROL CENTER
CB - ENCLOSED CIRCUIT BREAKER
FSW - FUSED DISCONNECT SWITCH
DSW - NON-FUSED DISCONNECT SW.
SUB - UNIT SUBSTATION
SWBD - SWITCHBOARD
SWGR - SWITCHGEAR
DP - DISTRIBUTION PANEL
PNL - BRANCH PANEL

POWER SYSTEMS

BLANK - NORMAL LOADS
M - MAIN UTILITY SERVICE
E - EMERGENCY POWER (Life Safety)
S - STANDBY POWER
U - UNINTERRUPTIBLE POWER (UPS)
C - CRITICAL POWER (Hospital)
Q - EQUIPMENT POWER (Hospital)
S - LIFE SAFETY POWER (Hospital)

VOLTAGE

H - 480/277 VOLT
L - 208/120 VOLT
MV - MEDIUM VOLTAGE

ADDITIONAL DESIGNATION

(1st letter)
BLANK - PANEL
D - DISTRIBUTION PNL
S - SWITCHBOARD
M - MCC

(2nd letter)
BLANK - NOT USED
N - NORTH WING
S - SOUTH WING
E - EAST WING
W - WEST WING
K - KITCHEN
P - PROCESS EQUIP.

FLOOR

B - BASEMENT/PIT
1 - FIRST FLOOR
M - MEZZANINE
R - ROOF

ABBREVIATIONS

(E)	EXISTING TO REMAIN
(F)	FUTURE
(R)	EXISTING TO BE REMOVED
(RL)	EXISTING TO BE RELOCATED
AB	ABOVE COUNTER BACKSPLASH
ACU	AIR CONDITIONING UNIT
AC	ALTERNATING CURRENT
A, AMP	AMPERES
ADJ	ADJACENT
AF	AMPERE (RATED) FUSE OR CB FRAME
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHJ	AUTHORITY HAVING JURISDICTION
AIC	EQUIPMENT SHORT CIRCUIT INTERRUPT RATING (RMS SYM. AMPS)
AL	ALUMINUM (ALLOY)
ALC	AUTOMATIC LIGHTING CONTROL
AS	AMPERE (RATED) SWITCH
AT	CIRCUIT BRKR TRIP SETTING (AMPS)
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
BATT	BATTERY
BC	BARE COPPER
BG	BELOW GRADE
BRKR	CIRCUIT BREAKER
C	CONDUIT (CIRCULAR RACEWAY)
CAB	CABINET
CB	CIRCUIT BREAKER
CFM	CUBIC FEET PER MINUTE
CKT	CIRCUIT
CLG	CEILING
CO	CONDUIT ONLY
CPT	CONTROL POWER TRANSFORMER
CT	CURRENT TRANSFORMER
CU	COPPER
DC	DIRECT CURRENT
DISC	DISCONNECT
DIA	DIAMETER
DIV	DIVISION
DP	DISTRIBUTION PANEL
DPDT	DOUBLE POLE DOUBLE THROW
DPST	DOUBLE POLE SINGLE THROW
DWG	DRAWING
E,EMER	EMERGENCY
EF	EXHAUST FAN
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
EO	ELECTRICALLY OPERATED
EOL	END OF LINE
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
FA	FIRE ALARM
FAA	FIRE ALARM ANNUNCIATOR
FACP	FIRE ALARM CONTROL PANEL
FBO	FURNISHED BY OTHERS
FC	FOOT CANDLES
FF	FLUSH FLOOR MOUNTED
FLA	FULL LOAD AMPERES
FLEX	FLEXIBLE
FPB	FAN POWERED BOX
FSD	FIRE/SMOKE DAMPER
FW	FLUSH WALL MOUNTED
FU	FUSE
GEN	GENERATOR
GFI	GROUND FAULT CIRCUIT INTERRUPTER
G,GND	GROUND
GRAP	GENERATOR REMOTE ANNUNCIATOR PANEL
GRC	GALVANIZED RIGID STEEL CONDUIT
HLO	HANDLE LOCK-ON(OFF)
HP	HORSEPOWER
HPF	HIGH POWER FACTOR
HTR	HEATER
HZ	HERTZ (CYCLES PER SECOND)
IES	ILLUMINATING ENGINEERING SOCIETY
IBC	INDIVIDUAL BRANCH CIRCUIT
ID	INSIDE DIAMETER
IG	ISOLATED GROUND
IMC	INTERMEDIATE METAL CONDUIT
KCMIL	THOUSAND CIRCULAR MILS
KN	KEYED NOTE
KO	KNOCK OUT
KW	KILOWATTS
KVA	KILOVOLT-AMPERES
LTG	LIGHTING
LCP	LIGHTING CONTROL PANEL
MAX	MAXIMUM
MCA	MINIMUM CIRCUIT AMPERES
MCB	MAIN CIRCUIT BREAKER
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MLO	MAIN LUGS ONLY
MO	MANUAL OPERATOR
MTD	MOUNTED
MTR	MOTOR
N	NEUTRAL (GROUNDED CONDUCTOR)
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
-,NEG	NEGATIVE
NEMA	NATIONAL ELECTRICAL MFGR'S ASSOC.
NL	NIGHT LIGHT (UNSWITCHED)
NO	NORMALLY OPEN
NTS	NOT TO SCALE
NP	NAMEPLATE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
ODOI	OWNER FURNISHED, OWNER INSTALLED
OS	OCCUPANCY SENSOR
P	POLE
PB	PUSHBUTTON
PH,Ø	PHASE
PNL	PANEL
+,POS	POSITIVE
PRI	PRIMARY
REQD	REQUIRED
RL	RELOCATED
RNC	RIGID NON-METALLIC CONDUIT (PVC)
RS	RAPID START
RST	REMOTE STATION TRANSMITTER
SAD	SEE ARCHITECTURAL DRAWINGS
SEC	SECONDARY
SN	SHEET NOTE
SOL	SOLENOID
SPD	SURGE PROTECTION DEVICE
SPDT	SINGLE POLE DOUBLE THROW
SPST	SINGLE POLE SINGLE THROW
SUB	SUBSTATION
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TB	TERMINAL BOARD
TDC	TIME DELAY CLOSING
TDO	TIME DELAY OPENING
TEL	TELEPHONE
TYP	TYPICAL
UF	UNDERFLOOR
UG	UNDERGROUND
UL	UNDERWRITERS LAB
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
UTX	UTILITY TRANSFORMER
V	VOLTS
VA	VOLT-AMPERES
VFD	VARIABLE FREQUENCY DRIVE
W	WATT
W/	WITH
W/O	WITHOUT
WP	WEATHERPROOF
XFR	TRANSFORMER
XP	EXPLOSION PROOF
Z	ZONE
",IN	INCHES
',FT	FEET
Ø	PHASE
>	GREATER THAN
<	LESS THAN
>	GREATER THAN OR EQUAL TO

ELECTRICAL DRAWING LIST

SHEET NUMBER	SHEET NAME
E0.0	ELECTRICAL LEGEND AND ABBREVIATIONS
E0.1	BASIS OF DESIGN, GENERAL NOTES, AND SCHEDULES
E0.2	ELECTRICAL SPECIFICATIONS
E2.1	FIRST FLOOR POWER & LIGHTING PLAN
E2.2	SECOND FLOOR LIGHTING PLAN
E3.2	SECOND FLOOR POWER PLAN
E5.3	PANELBOARD SCHEDULES
E9.1	ELECTRICAL DETAILS
ED2.2	ELECTRICAL DEMOLITION PLAN

ISSUED FOR PERMIT

EXPIRE: 12/31/2024

REGISTERED PROFESSIONAL ENGINEER 78483 PAUL B. LEONETTI

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ELECTRICAL LEGEND AND ABBREVIATIONS

Drawing No.
E0.0

Scale NONE
Date 07/27/2023
Project No. 19-0016

ELECTRICAL GENERAL NOTES - DEMOLITION

A REFER TO ARCHITECTURAL DRAWINGS FOR FULL EXTENT OF DEMOLITION.

B CONTRACTOR SHALL VERIFY CIRCUITS WITH TRACING DEVICE AND LABEL CIRCUITS AVAILABLE AT EACH J-BOX, MODIFY DRAWINGS AS REQUIRED TO DOCUMENT ACTUAL CIRCUITING.

C FOR WALL, COLUMNS, CASEWORK, SOFFITS, ISLANDS, ETC. SHOWN EXISTING TO REMAIN PERFORM THE FOLLOWING:
1. OPEN WALL AS REQUIRED TO ALLOW FOR INSTALLATION IN NEW SCOPE OF WORK.
2. REMOVE RECEPTACLES AND COVERPLATES, INSTALL NEW DEVICES AND COVERPLATES IN THE NEW SCOPE OF WORK, EXISTING CONDUIT AND WIRING TO REMAIN IF IN GOOD CONDITION.
3. REMOVE LIGHT SWITCHES AND COVERPLATES. INSTALL NEW DEVICES AND COVERPLATES IN THE NEW SCOPE OF WORK. EXISTING CONDUIT AND WIRING TO REMAIN IF IN GOOD CONDITION.
4. FOR LIGHT SWITCHES THAT SERVE EXISTING LIGHTING TO BE REMOVED, REMOVE LIGHT SWITCHES INCLUDING THEIR J-BOXES, CONDUIT AND WIRE.
5. REMOVE FIRE ALARM DEVICES AND COVERPLATES, INSTALL NEW DEVICES, COVERPLATES AND WIRING IN THE NEW SCOPE OF WORK, EXISTING J-BOX AND CONDUIT TO REMAIN.
6. REMOVE EXIT SIGNS, EXISTING J-BOX AND CONDUIT TO REMAIN.

D WHERE REMODELING INTERFERES WITH EXISTING CIRCUITS AND EQUIPMENT WHICH IS NOT TO BE REMOVED. SUCH CIRCUITS AND EQUIPMENT SHALL BE REWORKED AND RELOCATED AS REQUIRED TO MAINTAIN SERVICE TO ITEM. REFER ALL QUESTIONABLE SITUATIONS TO THE ENGINEER. DO NOT LOCATE J-BOXES ON WALLS, EXCEPT ONES REQUIRED TO MOUNT THE ITEM. I.E. AT THE COMPLETION OF THE PROJECT THERE SHALL BE NO J-BOXES WITH BLANK COVERPLATES ON WALLS OR CEILINGS, THE PROJECT SHALL APPEAR AS NEW CONSTRUCTION.

E REMOVE ALL EXISTING BRANCH CIRCUIT CONDUCTORS AND CONDUITS ASSOCIATED WITH REMOVED ELECTRICAL EQUIPMENT AND DEVICES BACK TO THE EXISTING HOMERUN FROM WHICH THEY ARE FED OR THE NEAREST ACTIVE DEVICE THAT IS TO REMAIN. REMOVE ALL OLD TYPE WIRING IF IT IS NOT RATED FOR 90°C.

F IF POSSIBLE, EXISTING BRANCH CIRCUIT HOMERUN CONDUITS AND WIRES ARE TO REMAIN AND BE REUSED IN THE NEW CONSTRUCTION PHASE OF WORK, DOWNSTREAM BRANCH CIRCUIT CONDUITS AND WIRING SERVING EXISTING-TO-BE-REMOVED EQUIPMENT, RECEPTACLES AND LUMINAIRES ARE TO BE REMOVED. INTENT IS TO REUSE THE MAIN INFRASTRUCTURE AND REMOVE ALL THE BRANCH CIRCUITING THAT WILL NO LONGER BE USED. REMOVE EXISTING HOMERUNS BACK TO PANEL IF THEY WILL NOT BE USED AT THE COMPLETION OF THE PROJECT.

G CONTRACTOR SHALL VERIFY CIRCUITS WITH TRACING DEVICE AND LABEL CIRCUITS AVAILABLE AT EACH J-BOX, MODIFY DRAWINGS AS REQUIRED TO DOCUMENT ACTUAL CIRCUITING.

H DO NOT REMOVE ANY CONDUITS SERVING EXISTING TO REMAIN ITEMS, ESPECIALLY TO:
1. FAN POWERED BOXES AND OTHER MECHANICAL EQUIPMENT TO REMAIN. REFER TO MECHANICAL DRAWINGS FOR SCOPE OF WORK.
2. PANELS, DISTRIBUTION PANELS, TRANSFORMERS, ETC., UON.
3. HVAC CONTROLS AND CONTROL PANELS, UNLESS THE PIECE OF HVAC EQUIPMENT IS TO BE REMOVED. REFER TO MECHANICAL DRAWINGS AND SPECS. FOR SCOPE OF WORK.
4. CONDUITS AND J-BOXES TO FIRE ALARM DEVICES ON EXISTING TO REMAIN WALLS.
5. BRANCH CIRCUIT WORK SERVING THE EXISTING CORE AND EXTERIOR LIGHTING.
6. DOOR HOLDERS, ROLL-DOWN FIRE DOORS, ROLL-UP DOORS AND THEIR ASSOCIATED POWER AND CONTROL WIRING, UON.
7. EXTERIOR LIGHTING AND ASSOCIATED LIGHTING CONTROL WIRING.
8. CONTROL, POWER WIRING AND TELECOM WIRING ASSOCIATED WITH ALL ELEVATORS.
9. SECURITY DEVICES, EQUIPMENT, CONDUIT AND WIRING, UON.

I DO NOT REMOVE ANY TELECOM INFRASTRUCTURE, I.E. CONDUITS CONNECTING TELECOM CLOSETS, CABLE TRAYS, BRIDAL RINGS IN AREAS THAT WILL BE ABOVE SUSPENDED CEILINGS.

J ALL REMOVED ELECTRICAL MATERIAL INCLUDING WIRING, RACEWAYS, OUTLETS, DEVICES, SUPPORTS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE JOB SITE.

K ALL SALVAGED LUMINAIRES SHALL REMAIN THE PROPERTY OF THE OWNER. DELIVER TO OWNER'S STORAGE SITE. IF NOT TO BE RETAINED THEN THEY SHALL BECOME THE PROPERTY OF THE OWNER UNLESS OWNER DIRECTS OTHERWISE.

L COORDINATE STORAGE LOCATION AND PROTECTION OF SALVAGED LUMINAIRES THAT ARE TO BE REUSED WITH GENERAL CONTRACTOR.

M DAMAGE TO OTHER TRADE'S WORK AS A RESULT OF THIS WORK IS TO BE PROMPTLY REPAIRED AT NO EXPENSE TO THE OWNER AND TO THE COMPLETE SATISFACTION OF THE OWNER.

N CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO SUBMISSION OF BID AND FIELD VERIFY ALL EXISTING CONDITIONS AND THE EXTENT OF THE DEMOLITION WORK. ALL ASSOCIATED DEMOLITION COSTS SHALL BE INCLUDED IN THE BID PRICE. NO EXTRA PAYMENT WILL BE ALLOWED FOR WORK REQUIRED BECAUSE OF DISCERNIBLE CONDITIONS, WHETHER OR NOT SPECIFICALLY SHOWN ON THESE DRAWINGS.

O THE EXISTING BUILDING INCLUDING PORTIONS OF THE RENOVATED AREA SHALL REMAIN IN SERVICE DURING THE CONSTRUCTION PHASE OF THIS PROJECT. ANY MODIFICATIONS TO THE EXISTING ELECTRICAL SYSTEMS THAT MAY REQUIRE THE TEMPORARY INTERRUPTION OF EXISTING SERVICES SHALL BE COMPLETED AFTER NORMAL WORKING HOURS. PRE-SCHEDULE ANY SERVICE INTERRUPTIONS WITH THE OWNER PRIOR TO STARTING ANY WORK. DO NOT DISTURB THE EXISTING DEPARTMENTS IN THE EXISTING BUILDING COMPLEX.

P UTILITY OUTAGES: NOT LESS THAN TEN (10) WORKING DAYS PRIOR TO A REQUIRED UTILITY (POWER, TELE, NET) OUTAGE, NOTIFY AND OBTAIN APPROVAL IN WRITING OF SAID OUTAGE FROM THE FACILITY. NO OUTAGE SHALL BE ACCOMPLISHED PRIOR TO THE RECEIPT OF APPROVAL. CONTRACTOR SHALL LOCK-OUT AND RED-TAG THE APPROPRIATE CIRCUIT BREAKER, SWITCH, ETC. RED-TAG SHALL INDICATE WHEN THE OUTAGE WILL BE TERMINATED, AND A TELEPHONE NUMBER TO CONTACT REGARDING THIS OUTAGE. THE TAG SHALL ALSO WARN PEOPLE NOT TO RE-ENERGIZE THE CIRCUIT SYSTEM BECAUSE OF POTENTIAL DANGER TO PERSONNEL AND EQUIPMENT. ALL WORK ASSOCIATED WITH ANY POWER OUTAGES SHALL BE COMPLETED AFTER NORMAL WORKING HOURS.

Q EXISTING WIRING WHERE SHOWN ON THE DRAWINGS IS BASED ON AVAILABLE AS-BUILT DRAWINGS AND FIELD INFORMATION. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS.

ELECTRICAL GENERAL NOTES - POWER

A WHERE POSSIBLE, BOXES SHALL BE IN SEPARATE STUD SPACES FROM BOXES SERVING OTHER ROOMS TO MINIMIZE SOUND TRANSFER.

B COORDINATE EXACT MECHANICAL EQUIPMENT LOCATIONS AND REQUIREMENTS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN. COORDINATE CONDUIT REQUIREMENTS FOR ALL HVAC EQUIPMENT WITH CONTROLS CONTRACTOR.

C REFER TO DETAIL DRAWINGS FOR ADDITIONAL INFORMATION. ALL DETAILS APPLY FOR ALL APPLICABLE SITUATIONS WHETHER REFERENCED OR NOT, UON.

D REFER TO ARCHITECTURAL FLOOR PLANS, INTERIOR ELEVATIONS AND DETAIL DRAWINGS PRIOR TO ROUGH-IN FOR EXACT LOCATION OF RECEPTACLES, FLOOR BOXES AND OUTLETS. INFORM ENGINEER OF CONFLICTS.

E CONTRACTOR IS RESPONSIBLE TO REVIEW ARCHITECTURAL DRAWINGS TO CONFIRM CEILING TYPES IN ALL ROOMS (ACCESSIBLE, EXPOSED, OR "HARD") AND TO USE THE APPROPRIATE WIRING METHOD FOR EACH TYPE. INSURE ALL J-BOXES ARE ACCESSIBLE AFTER ALL OTHER TRADE'S WORK IS COMPLETED. DO NOT LOCATE ANY J-BOXES ON "HARD" CEILINGS; ALL WIRING MUST BE ACCESSIBLE THROUGH DEVICE ONLY IN "DAISEY-CHAIN" METHOD OR WITH DEDICATED HOMERUNS TO EACH DEVICE. J-BOXES MAY BE LOCATED ABOVE OTHER TRADE'S ACCESS DOORS IF FEASIBLE AND DOES NOT INTERFERE WITH ACCESS.

F CIRCUIT SIZES ARE NOT SHOWN ON THE PLANS. CONTRACTOR SHALL USE CIRCUIT SIZES INDICATED IN NOTES OR RESPECTIVE SCHEDULES (PNL, MCC, ETC.) AND INFORMATION IN THE FEEDER AND BRANCH CIRCUIT SCHEDULES.

G INSTALL ALL EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS. THESE DRAWINGS ARE DIAGRAMMATIC.

H ALL NEW RACEWAYS AND CONDUCTORS SHALL BE INSTALLED CONCEALED; CUT AND PATCH EXISTING WALLS TO ACCOMODATE NEW RACEWAY INSTALLATION. ALL CONDUITS TO BE INSTALLED 90° TO BUILDING LINES.

I FOR ELECTRICAL CONNECTIONS AND CIRCUITING TO MECHANICAL EQUIPMENT SHOWN ON THIS SHEET, REFER TO MECHANICAL-ELECTRICAL EQUIPMENT SCHEDULE.

J THE EXISTING BUILDING INCLUDING PORTIONS OF THE RENOVATED AREA SHALL REMAIN IN SERVICE DURING THE CONSTRUCTION PHASE OF THIS PROJECT. ANY MODIFICATIONS TO THE EXISTING ELECTRICAL SYSTEMS THAT MAY REQUIRE THE TEMPORARY INTERRUPTION OF EXISTING SERVICES SHALL BE COMPLETED AFTER NORMAL WORKING HOURS. PRE-SCHEDULE ANY SERVICE INTERRRUPTIONS WITH THE OWNER PRIOR TO STARTING ANY WORK. DO NOT DISTURB THE EXISTING DEPARTMENTS IN THE EXISTING BUILDING COMPLEX.

K UTILITY OUTAGES: NOT LESS THAN TEN (10) WORKING DAYS PRIOR TO A REQUIRED UTILITY (POWER, TELE, NET) OUTAGE, NOTIFY AND OBTAIN APPROVAL IN WRITING OF SAID OUTAGE FROM THE FACILITY. NO OUTAGE SHALL BE ACCOMPLISHED PRIOR TO THE RECEIPT OF APPROVAL. CONTRACTOR SHALL LOCK-OUT AND RED-TAG THE APPROPRIATE CIRCUIT BREAKER, SWITCH, ETC. RED-TAG SHALL INDICATE WHEN THE OUTAGE WILL BE TERMINATED, AND A TELEPHONE NUMBER TO CONTACT REGARDING THIS OUTAGE. THE TAG SHALL ALSO WARN PEOPLE NOT TO RE-ENERGIZE THE CIRCUIT SYSTEM BECAUSE OF POTENTIAL DANGER TO PERSONNEL AND EQUIPMENT. ALL WORK ASSOCIATED WITH ANY POWER OUTAGES SHALL BE COMPLETED AFTER NORMAL WORKING HOURS.

L EXISTING WIRING WHERE SHOWN ON THE DRAWINGS IS BASED ON AVAILABLE AS-BUILT DRAWINGS AND FIELD INFORMATION. CONTRACTOR SHALL VERIFY EXISTING INSTALLATIONS AND THE TIME FOR DOING SO SHALL BE INCLUDED IN THIS BID.

M WHERE NOTED AS OWNER-SUPPLIED ON DRAWINGS, CONTRACTOR SHALL RECEIVE, INSTALL, AND CONNECT EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. PRIOR TO INSTALLATION OF OWNER-SUPPLIED EQUIPMENT, CONTRACTOR SHALL INSPECT/TEST EQUIPMENT AND INFORM PROJECT MANAGER OF ANY DEFECTS. FAILURE TO DO SO SHALL MEAN THAT THE EQUIPMENT IS IN GOOD WORKING CONDITION. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION AND TESTING OF SUCH EQUIPMENT.

N

COPPER FEEDER SCHEDULE

FEEDER TAG	CONDUITS MET	CONDUITS SETS	CONDUITS RNC	CONDUCTORS PER SET PHASE/NEUTRAL	CONDUCTORS PER SET GROUND	NOTES
4000.4	3.50"	11	4.00"	(4) 500 KCMIL	500 KCMIL	-
4000.3	3.00"	11	4.00"	(3) 500 KCMIL	500 KCMIL	-
3500.4	3.50"	10	4.00"	(4) 500 KCMIL	500 KCMIL	-
3500.3	3.00"	10	4.00"	(3) 500 KCMIL	500 KCMIL	-
3000.4	3.50"	8	4.00"	(4) 500 KCMIL	400 KCMIL	-
3000.3	3.00"	8	4.00"	(3) 500 KCMIL	400 KCMIL	-
2500.4	3.50"	7	4.00"	(4) 500 KCMIL	350 KCMIL	-
2500.3	3.00"	7	4.00"	(3) 500 KCMIL	350 KCMIL	-
2000.4	3.00"	6	4.00"	(4) 400 KCMIL	250 KCMIL	-
2000.3	3.00"	6	4.00"	(3) 400 KCMIL	250 KCMIL	-
1600.4	3.00"	5	4.00"	(4) 400 KCMIL	#4/0	-
1600.3	3.00"	5	4.00"	(3) 400 KCMIL	#4/0	-
1200.4	3.00"	4	4.00"	(4) 350 KCMIL	#3/0	-
1200.3	3.00"	4	3.00"	(3) 350 KCMIL	#3/0	-
1000.4	3.00"	3	4.00"	(4) 400 KCMIL	#2/0	-
1000.3	3.00"	3	4.00"	(3) 400 KCMIL	#2/0	-
800.4	3.00"	3	3.00"	(4) 300 KCMIL	#1/0	-
800.3	2.50"	3	3.00"	(3) 300 KCMIL	#1/0	-
700.4	3.50"	2	4.00"	(4) 500 KCMIL	#1/0	-
700.3	3.00"	2	4.00"	(3) 500 KCMIL	#1/0	-
600.4	3.00"	2	4.00"	(4) 350 KCMIL	#1	-
600.3	2.50"	2	3.00"	(3) 350 KCMIL	#1	-
500.4	2.50"	2	3.00"	(4) 250 KCMIL	#2	-
500.3	2.50"	2	2.50"	(3) 250 KCMIL	#2	-
450.4	2.50"	2	3.00"	(4) #4/0	#2	-
450.3	2.00"	2	2.50"	(3) #4/0	#2	-
400.4	2.00"	2	2.50"	(4) #3/0	#2	-
400.3	2.00"	2	2.50"	(3) 3/0	#2	-
350.4	3.50"	1	4.00"	(4) 500 KCMIL	#2	-
350.3	2.50"	1	4.00"	(3) 500 KCMIL	#2	-
300.4	3.00"	1	3.00"	(4) 350 KCMIL	#4	-
300.3	2.50"	1	3.00"	(3) 350 KCMIL	#4	-

FEEDER TAG	CONDUITS MET	CONDUITS SETS	CONDUITS RNC	CONDUCTORS PER SET PHASE/NEUTRAL	CONDUCTORS PER SET GROUND	NOTES
250.4	2.50"	1	3.00"	(4) 250 KCMIL	#4	-
250.3	2.50"	1	3.00"	(3) 250 KCMIL	#4	-
225.4	2.50"	1	3.00"	(4) #4/0	#4	-
225.3	2.00"	1	2.50"	(3) #4/0	#4	-
200.4	2.00"	1	2.50"	(4) #3/0	#6	-
200.3	2.00"	1	2.50"	(3) #3/0	#6	-
175.4	2.00"	1	2.50"	(4) #2/0	#6	-
175.3	1.50"	1	2.00"	(3) #2/0	#6	-
150.4	2.00"	1	2.00"	(4) #1/0	#6	-
150.3	1.50"	1	2.00"	(3) #1/0	#6	-
125.4	1.50"	1	1.50"	(4) #1	#6	-
125.3	1.25"	1	1.50"	(3) #1	#6	-
110.4	1.25"	1	1.50"	(4) #2	#6	-
110.3	1.25"	1	1.50"	(3) #2	#6	-
100.4	1.25"	1	1.50"	(4) #2	#8	-
100.3	1.25"	1	1.50"	(3) #2	#8	-
90.4	1.25"	1	1.50"	(4) #2	#8	-
90.3	1.25"	1	1.50"	(3) #2	#8	-
80.4	1.25"	1	1.50"	(4) #4	#8	-
80.3	1.00"	1	1.50"	(3) #4	#8	-
70.4	1.25"	1	1.50"	(4) #4	#8	-
70.3	1.00"	1	1.50"	(3) #4	#8	-
60.4	1.00"	1	1.00"	(4) #6	#10	-
60.3	0.75"	1	1.00"	(3) #6	#10	-
50.4	1.00"	1	1.00"	(4) #6	#10	-
50.3	0.75"	1	1.00"	(3) #6	#10	-
40.4	0.75"	1	1.00"	(4) #8	#10	-
40.3	0.75"	1	1.00"	(3) #8	#10	-
30.4	0.75"	1	1.00"	(4) #10	#10	-
30.3	0.75"	1	1.00"	(3) #10	#10	-
20.4	0.75"	1	1.00"	(4) #12	#12	-
20.3	0.75"	1	1.00"	(3) #12	#12	-
---.K						7
XFR						8
SCHD						9

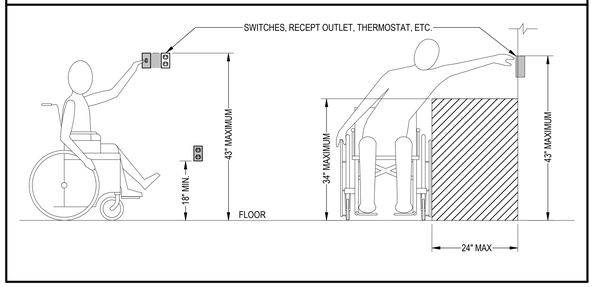
NOTES:
1. CONDUCTORS AND CONDUITS SHOWN IN THIS SCHEDULE ARE BASED ON COPPER CONDUCTORS WITH THHN/THWN INSULATION.
2. THIS SCHEDULE SHALL BE USED ON ALL FEEDERS SERVING LOADS WHERE THE CIRCUIT BREAKER SIZE MATCHES THE AMPACITY OF ITS FEEDER. USE THE "MOTOR CIRCUIT SCHEDULE" FOR LOADS, SUCH AS MOTORS, PUMPS, FANS, CHILLERS, ETC., WHERE THE CIRCUIT BREAKER SIZE IS LARGER THAN THE AMPACITY OF ITS FEEDER.
3. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS AND BRANCH CIRCUITS. WHERE MULTIPLE CONDUITS ARE INDICATED PROVIDE NOTED GROUND WIRE IN EACH CONDUIT.
4. NOT ALL FEEDERS ARE NECESSARILY USED ON THIS PROJECT.
5. NOMINAL AMPACITIES GREATER THAN 100 AMPS ARE FOR 75 DEG..C TERMINALS.
6. "MET"= EMT, IMC, GRC, RAC, OR PVC COATED GRC TYPE CONDUITS. "RNC"= PVC 40, PVC 80 OR FIBERGLASS TYPE CONDUITS ROUTED UNDERGROUND. REFER TO SIZING ON DRAWINGS IF "RNC" CONDUITS ARE ROUTED ABOVEGROUND. CONDUIT SIZES NOTED ON SINGLE-LINE DIAGRAM OR ON PLANS SUPERSEDE SIZES NOTED ABOVE IF LARGER.
7. OVERSIZED (173% MIN.) NEUTRAL FOR FEEDERS CONNECTED TO A K-4 OR HIGHER RATED TRANSFORMER.
8. REFER TO TRANSFORMER SCHEDULE FOR STANDARD PRIMARY AND SECONDARY FEEDER SIZES.
9. REFER TO MCC OR PANEL SCHEDULES FOR FEEDER SIZES TO EQUIPMENT NOTED WITH THIS TAG.

BRANCH CIRCUIT SCHEDULE

CIRCUIT TAG	CONDUITS MET	CONDUITS SETS	CONDUITS RNC	CONDUCTORS PER SET PHASE/NEUTRAL	CONDUCTORS PER SET GROUND	WIRING CONFIG.	NOTES
60.2N	0.75"	1	1.00"	(2) #6, (1) #6N	#10	1,2W,N	_
60.2	0.75"	1	1.00"	(2) #6	#10	1Ø,2W	_
60.1	0.75"	1	1.00"	(1) #6, (1) #6N	#10	1Ø,1W,N	_
50.2N	0.75"	1	1.00"	(2) #6, (1) #6N	#10	1Ø,2W,N	_
50.2	0.75"	1	1.00"	(2) #6	#10	1Ø,2W	_
50.1	0.75"	1	1.00"	(1) #6, (1) #6N	#10	1Ø,1W,N	_
40.2N	0.75"	1	1.00"	(2) #8, (1) #8N	#10	1Ø,2W,N	_
40.2	0.75"	1	1.00"	(2) #8	#10	1Ø,2W	_
40.1	0.75"	1	1.00"	(1) #8, (1) #8N	#10	1Ø,1W,N	_
30.2N	0.75"	1	1.00"	(2) #10, (1) #10N	#10	1Ø,2W,N	_
30.2	0.75"	1	1.00"	(2) #10	#10	1Ø,2W	_
30.1	0.75"	1	1.00"	(1) #10, (1) #10N	#10	1Ø,1W,N	_
20.2N	0.50"	1	1.00"	(2) #12, (1) #12N	#12	1Ø,2W,N	7,8
20.2	0.50"	1	1.00"	(2) #12	#12	1Ø,2W	7,8
20.1	0.50"	1	1.00"	(1) #12, (1) #12N	#12	1Ø,1W,N	7,8

NOTES:
1. CONDUCTORS AND CONDUITS SHOWN IN THIS SCHEDULE ARE BASED ON COPPER CONDUCTORS WITH THHN/THWN INSULATION.
2. THIS SCHEDULE SHALL BE USED ON ALL BRANCH CIRCUITS SERVING LOADS WHERE THE CIRCUIT BREAKER SIZE MATCHES THE AMPACITY OF ITS FEEDER. USE THE "MOTOR CIRCUIT SCHEDULE" FOR LOADS, SUCH AS MOTORS, PUMPS, FANS, CHILLERS, ETC., WHERE THE CIRCUIT BREAKER SIZE IS LARGER THAN THE AMPACITY OF ITS FEEDER.
3. PROVIDE GROUND WIRE NOTED ABOVE IN ALL BRANCH CIRCUITS.
4. NOT ALL BRANCH CIRCUITS SHOWN ABOVE ARE NECESSARILY USED ON THIS PROJECT.
5. "MET"= EMT, IMC, GRC, RAC, OR PVC COATED GRC TYPE CONDUITS. "RNC"= PVC 40, PVC 80 OR FIBERGLASS TYPE CONDUITS ROUTED UNDERGROUND. REFER TO SIZING ON DRAWINGS IF "RNC" CONDUITS ARE ROUTED ABOVEGROUND. CONDUIT SIZES NOTED ON SINGLE-LINE DIAGRAM OR ON PLANS SUPERSEDE SIZES NOTED ABOVE IF LARGER.
6. THIS SCHEDULE APPLIES TO STANDARD LENGTH CIRCUITS ONLY. CONTRACTOR TO UPSIZE WIRING AS REQUIRED TO MEET MINIMUM VOLTAGE DROP REQUIREMENTS INDICATED IN SPECIFICATIONS. GROUND CONDUCTOR WILL ALSO NEED TO BE INCREASED PROPORTIONATELY AS REQUIRED BY NEC.
7. THESE BRANCH CIRCUITS TAGS ARE TYPICALLY NOT SHOWN ON PLANS FOR CLARITY REASONS. CONTRACTOR SHALL USE THIS INFORMATION AS IT APPLIES FOR ALL CONDUITS CONTAINING ONE OR MORE 20A/1P CIRCUITS.
8. CONTRACTOR MAY COMBINE 20A 1 AND 2-POLE CIRCUITS, UP TO A MAXIMUM OF (3) PHASE CONDUCTORS, IN ONE CONDUIT. ALL 3-PHASE AND CIRCUITS LARGER THAN 20A SHALL BE IN DEDICATED CONDUITS, UON. PROVIDE DEDICATED NEUTRALS FOR EACH 1-POLE CIRCUIT.
9. ALL HOMERUNS SHALL USE 0.75" CONDUIT SIZE MINIMUM.

ACCESSIBLE OUTLET MOUNTING HEIGHTS



MECHANICAL AND PLUMBING EQUIPMENT - ELECTRICAL CONNECTION SCHEDULE

TAG NAME	TAG #	DESCRIPTION	LOAD HP	LOAD KVA	LOAD FLA	LOAD CLASS	VOLTS	Ø	CIRCUITING INFORMATION PANEL	CIRCUIT	OCP	POLES	FEEDER	DISCONNECT DIV.	DISCONNECT TYPE	STARTER DIV	STARTER TYPE	LOCATION LEVEL	NOTES
DWH	1	DOMESTIC WATER HEATER	0 hp	3.21 kVA	15 A	N	208 V	1	NL1NA	10,12	20 A	2	20.2	DIV. 26	FUSED	NA	NA	LEVEL 1	

LUMINAIRE SCHEDULE

TAG	DESCRIPTION	FINISH	LAMP TYPE	LAMP LUMENS	LAMP CRI	LAMP CCT	MANUFACTURER	MODEL	DIMMING TYPE	VOLTAGE	MOUNTING LOAD	MOUNTING TYPE	MOUNTING HEIGHT	COMMENTS
F2B4	3-INCH NOMINAL BY 4-FOOT LED INDIRECT/DIRECT AIRCRAFT CABLE PENDANT-HUNG LINEAR WITH WIDESPREAD INDIRECT OPTICS	MATTE WHITE	LED	500 LM/FT DIRECT, 750 LM/FT INDIRECT	90	4000K	LUMENWERX	VIA3PDI-HLO-WIO-LED-90-500-750-35-4-UNV-D1-1-53WAC36-W	0-10V	277 V	54.5 W	PENDANT	8'6" AFF	
FT2	4" RECESSED DOWNLIGHT	MATTE WHITE	LED	2000 LM	80	4000K	COOPER LIGHTING SOLUTIONS	LDS4B-20-D010-EU4B-8035-4LBS-0-MW	0-10V	120 V	21.2 W	RECESSED	10'0" AFF	

A. PROVIDE DOCUMENTATION ON DRIVER USED. MODULES ARE TO BE REPLACED WITH ONE FROM SAME MANUFACTURER ONLY.

COMcheck Software Version COMcheckWeb

Interior Lighting Compliance Certificate

Project Information

Energy Code: 90.1 (2019) Standard
Project Title: OSU KELLY HALL - ENGINEERING LAB
Project Type: Alteration

Construction Site:
110 SW Park Terrace
Corvallis, Oregon 97331

Owner/Agent:
Larry Hengesh
OREGON STATE UNIVERSITY (c/o Glumac)
707 SW Washington Street - Suite 1200
Portland, Oregon 97205
503-227-5280
lhengesh@glumac.com

Designer/Contractor:

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts
1-ENGINEERING LAB (Common Space Types:Laboratory For Classrooms)	1276	1.11	1416
2-HANDICAP RESTROOM (Common Space Types:Restrooms)	113	0.63	71
		Total Allowed Watts =	1488

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	E (C X D)
ENGINEERING LAB (Common Space Types: Laboratory For Classrooms, 1276 sq.ft.)				
LED: F2B4: 4' LED DIRECT/ INDIRECT: Other:	1	3	54	164
LED: FTB8: (E) 8" LED RECESSED DOWNLIGHT: Other:	1	6	109	654
HANDICAP RESTROOM (Common Space Types: Restrooms, 113 sq.ft.)				
LED: FT2: 4" LED RECESSED DOWNLIGHT: Other:	1	2	21	42
			Total Proposed Watts =	860

Interior Lighting PASSES

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 90.1 (2019) Standard requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Larry Hengesh — Name - Title
Signature — 7/14/22 Date

Project Title: OSU KELLY HALL - ENGINEERING LAB
Data filename:
Report date: 07/14/22
Page 1 of 5

8/12/2022 10:27:32 AM

EXPIRE: 12/31/2024
REGISTERED PROFESSIONAL ENGINEER 76483 Electrically Signed by Paul Leonetti OREGON 12-31-2024 PAUL B LEONETTI

Consultant
GLUMAC engineers for a sustainable future
A KPFF Ltd. Affiliated Company
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Portland, OR 97204
T: 503.227.5280
Project Manager: Phillip Cunningham
Job No.: 190-20-05003528

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Project
KELLEY ENGINEERING CENTER PARTIAL 2ND FLOOR REMODEL
110 SW Park Terrace
Corvallis, OR 97331

MARK	DATE	DESCRIPTION
1	09.06.23	ADD 1

Sheet Title
BASIS OF DESIGN, GENERAL NOTES, AND SCHEDULES

Drawing No.
E0.1

Scale NONE
Date 07/27/2023
Project No. 19-0016

ISSUED FOR PERMIT

ELECTRICAL SPECIFICATIONS

A. GENERAL

1. THE "GENERAL CONDITIONS" AND "GENERAL REQUIREMENTS" OF THE ARCHITECTURAL SPECIFICATIONS GOVERN WORK UNDER ELECTRICAL.
2. [illegible]
3. PROVIDE ALL LABOR, MATERIALS, EQUIPMENT AND SERVICES TO CONSTRUCT AND INSTALL COMPLETE NEW ELECTRICAL SYSTEMS AND SERVICE AS DESCRIBED HEREIN AND SHOWN ON THE DRAWINGS.
4. ANY APPARATUS, APPLIANCE, MATERIAL OR WORK NOT SHOWN ON DRAWINGS BUT MENTIONED IN THE SPECIFICATIONS, OR VICE VERSA, OR ACCESSORIES NECESSARY TO MAKE THE WORK COMPLETE IN ALL RESPECTS AND READY FOR OPERATION, EVEN IF NOT PARTICULARLY SPECIFIED, SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR WITHOUT ADDITIONAL EXPENSE TO THE OWNER.
5. DESIGN DRAWINGS ARE DIAGRAMMATIC AND DO NOT SHOW ALL OFFSETS, BENDS, ELBOWS OR OTHER SPECIFIC ELEMENTS WHICH MAY BE REQUIRED FOR PROPER INSTALLATION OF WORK. SUCH WORK SHALL BE VERIFIED AT THE JOB SITE AND THE REQUIRED ACCESSORIES AND ROUTING SHALL BE PROVIDED TO COMPLETE THE WORK AT NO ADDITIONAL COST TO THE OWNER. THE RIGHT IS RESERVED TO MAKE ANY REASONABLE CHANGES IN OUTLET, LIGHTING OR EQUIPMENT LOCATIONS, PRIOR TO ROUGH-IN WITHOUT ANY ADDITIONAL COST TO THE OWNER. "REASONABLE CHANGE" SHALL BE INTERPRETED AS INCLUDING ANY CHANGES OF UP TO SIX FEET FROM THE LOCATIONS INDICATED ON THE DRAWINGS.
6. CONTRACTOR SHALL GIVE ALL NECESSARY NOTICES, OBTAIN ALL PERMITS AND PAY ALL TAXES, FEES AND OTHER COSTS IN CONNECTION WITH THIS WORK. CONTRACTOR SHALL OBTAIN ALL REQUIRED CERTIFICATES OF INSPECTION FOR THIS WORK AND DELIVER SAME TO THE OWNER BEFORE REQUEST FOR ACCEPTANCE AND FINAL PAYMENT FOR THE WORK.
7. WORKS AND MATERIALS SHALL CONFORM TO THE LATEST RULES OF THE NATIONAL BOARD OF FIRE UNDERWRITERS' CODE, REGULATIONS OF THE STATE FIRE MARSHAL, AND WITH APPLICABLE LOCAL AND STATE CODES. NOTHING IN THESE SPECIFICATIONS SHALL BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE MOST STRINGENT APPLICABLE CODES.
8. THE NATIONAL ELECTRICAL CODE, UNIFORM BUILDING CODE PLUS ANY APPLICABLE LOCAL AMENDMENTS TO THE FOREGOING CODES, AND ELECTRICAL REQUIREMENTS ESTABLISHED BY THE STATE AND LOCAL FIRE MARSHALS ARE HEREBY MADE PART OF THESE SPECIFICATIONS. THE CONTRACTOR SHALL NOTIFY THE OWNER OF ANY PART OF THE WORK BELIEVED TO BE IN CONFLICT WITH THESE CODES AND REGULATIONS.
9. ELECTRICAL DRAWINGS ARE ARRANGED FOR CONVENIENCE ONLY AND DO NOT NECESSARILY DETERMINE WHICH TRADE PERFORMS THE VARIOUS PORTIONS OF THE WORK. THE CONTRACTOR SHALL PERFORM ALL NECESSARY WORK TO JOIN WITH OR RECEIVE WORK OF OTHER TRADES. WORK SHALL BE COORDINATED WITH ALL TRADES TO PROVIDE ADEQUATE CLEARANCE AND ELIMINATE CONFLICTS.
10. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO SUBMITTING PROPOSAL AND BE FAMILIAR WITH EXISTING SITE CONDITIONS. INFORMATION ON DRAWINGS RELATIVE TO EXISTING SITE CONDITIONS IS APPROXIMATE. DURING THE PROGRESS OF CONSTRUCTION, DEVIATIONS FOUND NECESSARY TO CONFORM TO ACTUAL CONDITIONS SHALL BE REPORTED TO THE OWNER. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE CAUSED TO EXISTING UTILITIES. BY SUBMITTING THE BID IT IS UNDERSTOOD THAT THE CONTRACTOR HAS REVIEWED THE DOCUMENTS, UNDERSTANDS THE INTENT AND HAS INCLUDED ALL SITE CONSTRAINTS IN THE BID ACCORDINGLY.
11. SHOP DRAWINGS SHALL BE SUBMITTED TO OWNER ON ALL MAJOR PIECES OF ELECTRICAL EQUIPMENT, INCLUDING LIGHT FIXTURES, STARTERS, CIRCUIT BREAKERS, PANELBOARDS AND DEVICES. EACH ITEM OF THE SHOP DRAWINGS SHALL BE PROPERLY LABELED, INDICATING THE INTENDED SERVICE OF THE MATERIAL, THE PROJECT NAME AND THE ELECTRICAL CONTRACTOR'S NAME. WHEN AN ERROR IN THE SHOP DRAWINGS IS NOT DETECTED IN THE REVIEW, THIS DOES NOT GRANT THE CONTRACTOR PERMISSION TO PROCEED IN ERROR. REGARDLESS OF ANY INFORMATION CONTAINED IN THE SHOP DRAWINGS, THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS MUST BE FOLLOWED AND ARE NOT WAIVED OR SUPERSEDED IN ANY WAY BY THE SHOP DRAWING REVIEW.
12. THE ELECTRICAL CONTRACTOR SHALL MAINTAIN A SET OF DRAWINGS AT THE JOB SITE FOR THE EXCLUSIVE PURPOSE OF MAINTAINING A RECORD OF ALL WORK INSTALLED AND TO SHOW ANY DEVIATIONS FROM THE WORK INDICATED ON THE DRAWINGS. ONE SET OF REPRODUCIBLE DRAWINGS, SHOWING ALL AS-BUILT CONDITIONS, SHALL BE DELIVERED TO THE OWNER FOR ACCEPTANCE PRIOR TO FINAL PAYMENT AT THE COMPLETION OF THE PROJECT.
13. THE RIGHT IS RESERVED TO INSPECT AND TEST ANY PORTION OF THE EQUIPMENT AND/OR MATERIALS DURING THE PROGRESS OF ITS INSTALLATION. THE CONTRACTOR SHALL TEST ALL WIRING AND CONNECTIONS FOR CONTINUITY AND GROUNDS BEFORE CONNECTING ANY FIXTURES OR EQUIPMENT. A FULL-SCALE WORKING TEST WITH ALL LIGHTS, EQUIPMENT, SPEAKERS, APPLIANCES, ETC., IN OPERATION SHALL BE MADE, IN THE PRESENCE OF THE BUILDING ENGINEER OR REPRESENTATIVE, AND THE ELECTRICAL SYSTEMS PROVEN SATISFACTORY FOR OPERATION AND FREE FROM DEFECTS. ANY DEFECTS FOUND SHALL BE REMEDIED IMMEDIATELY BY THE CONTRACTOR.
14. THE CONTRACTOR SHALL PARTICIPATE IN AND PROVIDE STANDBY LABOR FOR REQUIRED LIFE SAFETY TESTS INCLUDING AFTER HOUR TESTING IF REQUIRED BY LANDLORD OR AUTHORITIES HAVING JURISDICTION.
15. ON COMPLETION OF THE ENTIRE INSTALLATION, THE APPROVAL OF THE OWNER SHALL BE SECURED. THE CONTRACTOR SHALL OBTAIN AND PAY FOR A CERTIFICATE OF APPROVAL FROM THE PUBLIC AUTHORITIES HAVING JURISDICTION. A FINAL INSPECTION CERTIFICATE SHALL BE SUBMITTED TO THE OWNER PRIOR TO FINAL PAYMENT. ANY AND ALL COST INCURRED FOR FEES SHALL BE PAID FOR BY THE CONTRACTOR.
16. COORDINATE ALL OUTAGES AND CUT-OVERS WITH THE LANDLORD. POWER SHALL NOT BE INTERRUPTED TO THE OCCUPIED PORTIONS OF THE BUILDING DURING BUSINESS HOURS, EXCEPT BY PERMISSION OF THE OWNER.
17. PROVIDE UNDERWRITERS' LABORATORIES, INC. OR ETL TESTING LABORATORIES, INC. LISTED AND LABELED EQUIPMENT FOR ALL ITEMS FOR WHICH U.L CARRIES A LISTING OR LABELING, UNLESS ITEMS ARE SPECIFICALLY EXEMPTED.

B. RACEWAYS AND FITTINGS

1. APPLY RACEWAY PRODUCTS FOR OUTDOOR LOCATIONS AS SPECIFIED BELOW UNLESS OTHERWISE INDICATED.
   A. EXPOSED CONDUIT: GRC OR IMC.
   B. ABOVE GROUND CONCEALED CONDUIT: GRC, IMC, OR EMT.
   C. CONNECTION TO VIBRATING EQUIPMENT, INCLUDING TRANSFORMERS, SOLENOIDS, OR MOTOR-DRIVEN EQUIPMENT: LFMC.
2. APPLY RACEWAY PRODUCTS FOR INDOOR LOCATIONS AS SPECIFIED BELOW UNLESS OTHERWISE INDICATED.
   A. EXPOSED CONDUIT, NOT SUBJECT TO PHYSICAL DAMAGE: EMT.
   B. EXPOSED CONDUIT, NOT SUBJECT TO SEVERE PHYSICAL DAMAGE: EMT.
   C. EXPOSED CONDUIT, SUBJECT TO SEVERE PHYSICAL DAMAGE: GRC OR IMC.
   D. CONCEALED CONDUIT IN CEILINGS AND INTERIOR WALLS AND PARTITIONS: EMT.
   E. CONNECTION TO LIGHTING FIXTURES AND VIBRATING EQUIPMENT, INCLUDING TRANFORMERS, SOLENOIDS, OR MOTOR-DRIVEN EQUIPMENT:FMC, EXCEPT USE LFMC IN DAMP OR WET LOCATIONS. MAX. 6' LENGTH.
   F. CONDUIT IN DAMP OR WET LOCATIONS: GRC OR IMC.
   G. BOXES AND ENCLOSURES: NEMA 250, TYPE 1. USE NEMA 250, TYPE 4 STAINLESS STEEL OR NONMETALLIC IN INSTITUTIONAL AND COMMERCIAL KITCHENS AND DAMP OR WET LOCATIONS.
3. RIGID CONDUIT SHALL BE OF THREADED TYPE, HOT DIP GALVANIZED STEEL OR ALUMINUM. ELECTRICAL METALLIC TUBING SHALL BE GALVANIZED STEEL. ALL STEEL CONDUIT SHALL BE PROTECTED BY AN OVERALL ZINC COATING. FLEXIBLE CONDUIT SHALL BE STEEL, MINIMUM 3/4" SIZE.
4. EMT CONNECTORS AND COUPLINGS SHALL BE STEEL SET SCREW OR COMPRESSION TYPE; CRIMP-ON TYPE IS NOT ACCEPTABLE. CONNECTORS IN PLENUMS SHALL BE COMPRESSION TYPE. TERMINATE THREADED CONDUITS INTO THREADED HUBS OR WITH LOCKNUTS ON INSIDE AND OUTSIDE OF BOXES OR CABINETS. INSULATING BUSHING AND INSULATED THROAT FITTINGS SHALL BE USED THROUGHOUT EMT INSTALLATION.
5. CONCEAL ALL CONDUIT WHEREVER POSSIBLE EXCEPT IN MECHANICAL OR ELECTRICAL EQUIPMENT AREAS. EXPOSED CONDUIT SHALL BE RUN PARALLEL OR AT RIGHT ANGLES TO THE LINES OF THE BUILDING. CONDUIT CONCEALED IN CEILING SPACES SHALL BE RUN PARALLEL TO BUILDING LINES WHERE POSSIBLE.
6. CONDUIT SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE; SUPPORTS FROM AIR CONDITIONING DUCTS OR PIPING SHALL NOT BE PERMITTED. REAM CONDUITS AFTER THREADS ARE CUT; ENDS SHALL BE CUT SQUARE AND SHALL BUTT SOLIDLY INTO COUPLINGS AND CONNECTORS.
7. VERTICAL CONDUIT RUNS SHALL BE SUPPORTED AT EVERY FLOOR WITH SUPPORT INTERVALS NOT EXCEEDING 10 FEET. ALL HORIZONTAL CONDUIT AND BOXES SHALL BE SECURELY SUPPORTED BY MEANS OF CLAMPS, HANGERS, TRAPEZE SUPPORTS OR WALL BRACKETS.
8. ANNULAR SPACE IN AND AROUND SLEEVES THAT PASS THROUGH FIRE RESISTIVE OR FIRE RATED PARTITIONS, FLOORS, OR CEILINGS SHALL BE CLOSED BY PACKING WITH A FIRE RESISTIVE MATERIAL THAT WILL MAINTAIN THE RATING OF THE BARRIER PENETRATED.
9. CONDUITS SHALL BE CONTINUOUS FROM OUTLET TO OUTLET AND FROM OUTLETS TO CABINETS. JUNCTION OR PULL BOXES, AND SHALL ENTER AND BE SECURED AT ALL BOXES SO THAT EACH SYSTEM SHALL BE ELECTRICALLY CONTINUOUS THROUGHOUT.
10. A NYLON PULL CORD SHALL BE LEFT IN ALL CONDUITS IN WHICH PERMANENT WIRING IS NOT INSTALLED.
11. PROVIDE SLEEVES FOR ALL TELECOM CABLING WHICH PENETRATES SLABS AND FULL HEIGHT PARTITIONS.
12. MINIMUM CONDUIT SIZE FOR POWER AND LIGHTING CIRCUITS SHALL BE 3/4-INCH FOR HOME-RUNS. MINIMUM CONDUIT SIZED FOR CONTROL WIRING SHALL BE 1/2-INCH.

C. WIRE AND CABLE

1. CONDUCTORS SHALL BE COPPER AND RATED AT NOT LESS THAN 600 VOLTS, EXCEPT FOR SIGNAL CABLE SPECIFICALLY RATED LOWER. POWER AND LIGHTING CONDUCTORS SHALL BE MINIMUM #12 AWG. SIGNAL CABLE QUANTITY AND SIZE SHALL BE AS INDICATED. ALL WIRE #12 AWG OR LARGER SHALL BE STRANDED.
2. FIXTURE EXTENSIONS SHALL BE #12 AWG EXCEPT THOSE INDIVIDUAL FIXTURE EXTENSIONS THAT DO NOT EXCEED 4 FEET IN LENGTH MAY BE #14 AWG. FIXTURE EXTENSIONS SHALL HAVE TEMPERATURE RATING TO CONFORM TO INDIVIDUAL FIXTURE REQUIREMENTS.
3. WIRING SHALL BE TYPE THWN OR THHN, MINIMUM 75 DEGREE C INSULATION. FEEDERS SIZED #2 AWG AND ABOVE SHALL BE TYPE THW, 75 DEGREE C INSULATION, OR THHN, 90 DEGREE C INSULATION.
4. SPECIAL PRE-MANUFACTURED CABLING SYSTEMS, SUCH AS MODULAR WIRING AND MC TYPE CABLE MAY BE USED FOR FINAL TERMINATIONS TO FIXTURES AND DEVICES WITHIN THE ROOM WHERE PERMITTED BY BUILDING OWNER. ALL HOMERUNS SHALL BE IN EMT OR RIGID.
5. LIFE SAFETY SYSTEM WIRING SHALL BE COLOR CODED TO MATCH BASE BUILDING SYSTEM WIRING.
6. ALL WIRING SHALL BE COLOR CODED AS FOLLOWS: 120/208 VOLT SYSTEM PHASE "A" - BLACK; PHASE "B" - RED; PHASE "C" - BLUE; NEUTRAL - WHITE; GROUNDING CONDUCTOR - GREEN. 277/480 VOLT SYSTEM PHASE "A" - BROWN; PHASE "B" - ORANGE; PHASE "C" - YELLOW; NEUTRAL - GRAY WITH BROWN OR BLACK STRIPES.
7. ALL WIRE AND CABLE SHALL BE INSTALLED IN RACEWAY EXCEPT AS SPECIFICALLY PERMITTED OTHERWISE. VERTICAL RUNS OF CABLE SHALL BE SUPPORTED AT JUNCTION AND PULL BOXES PER CODE REQUIREMENTS.
8. ALL LIFE SAFETY (FIRE ALARM, PUBLIC ADDRESS) SYSTEM WIRING SHALL BE INSTALLED IN RACEWAY. RACEWAY AND J-BOX COVERS SHALL BE RED.
9. AT EACH FIXTURE OUTLET A LOOP OR END OF WIRE NOT LESS THAN 8" LONG SHALL BE LEFT FOR CONNECTION TO FIXTURES.

D. SPLICES AND INSULATION

1. JOINTS IN BRANCH CIRCUITS SHALL OCCUR ONLY WHERE SUCH CIRCUITS DIVIDE AND SHALL CONSIST OF ONE THROUGH CIRCUIT TO WHICH SHALL BE SPLICED THE BRANCH FROM THE CIRCUIT. NO SPLICES SHALL BE MADE IN CONDUCTORS EXCEPT AT OUTLET BOXES, JUNCTION BOXES AND SPLICE BOXES.
2. ALL JOINTS FOR POWER WIRING #10 AWG OR SMALLER SHALL BE MADE WITH WIRE NUTS. JOINTS IN SIGNAL CABLES SHALL BE MADE ONLY WITH COMPRESSION TYPE CONNECTORS.
3. ALL JOINTS OR SPLICES FOR #8 AWG OR LARGER SHALL BE MADE WITH A MECHANICAL COMPRESSION CONNECTOR. AFTER THE CONDUCTORS HAVE BEEN MADE MECHANICALLY AND ELECTRICALLY SECURE, THE ENTIRE JOINT OR SPLICE SHALL BE COVERED WITH TAPE TO MAKE THE INSULATION OF THE JOINT OR SPLICE EQUAL TO THE INSULATION OF THE CONDUCTORS.

E. WIRING DEVICES AND OUTLET BOXES

1. WALL RECEPTACLE OUTLETS SHALL BE NEMA 5-20R, SPECIFICATION GRADE UNLESS OTHERWISE NOTED.
2. SWITCHES PROVIDED FOR ALL USES SHALL BE 20A SPECIFICATION GRADE. COLOR SCHEME SHALL MATCH RECEPTACLES.
3. ALL WIRING DEVICES COLOR SHALL MATCH THE EXISITNG COLOR SCHEME THAT IS PREVALENT THROUGHOUT THE BUILDING.
4. COVER PLATES SHALL MATCH THE MAJORITY OF THE EXISITNG DEVICES. COVER PLATES SHALL BE IDENTIFIED AS TO SOURCE (PANEL AND CIRCUIT NUMBER).
5. OUTLET BOXES FOR CONCEALED WORK SHALL BE ONE PIECE, PRESSED STEEL, KNOCKOUT TYPE WITH ZINC OR CADMIUM COATING. BOXES SHALL NOT BE SMALLER THAN 4" SQUARE NOMINAL SIZE EXCEPT WHERE INDICATED. PROVIDE EXTENSION RINGS, PLASTER RINGS AND COVERS NECESSARY FOR FLUSH FINISH.
6. PROVIDE 3/4" CONDUIT FROM ALL DATA OUTLETS STUBBED UP INTO ACCESSIBLE CEILING SPACE, UNLESS OTHERWISE NOTED.
7. MOUNT DEVICES IN APPROVED OUTLET BOXES AT MOUNTING HEIGHTS DETERMINED BY ARCHITECTS. WHERE MORE THAN ONE WALL SWITCH IS INDICATED AT ONE LOCATION, SWITCHES SHALL BE GANGED UNDER A COMMON WALL PLATE. MORE THAN 6 SWITCHES AT ONE LOCATION SHALL BE GANGED IN TWO ROWS, ONE ABOVE THE OTHER.
8. BEFORE LOCATING OUTLET BOXES, CHECK ALL ARCHITECTURAL DRAWINGS FOR TYPE OF CONSTRUCTION AND TO MAKE SURE THAT THERE ARE NO CONFLICTS WITH OTHER EQUIPMENT.
9. BAR HANGERS SHALL BE USED TO SUPPORT OUTLET BOXES IN STUD OR FURRED PARTITIONS AND CEILINGS. SCREWS SHALL BE USED WITH EXPANSION SHIELDS FOR FASTENING TO CONCRETE OR MASONRY. PROVIDE APPROVED KNOCKOUT SEALS ON UNUSED OPEN KNOCKOUT HOLES.

F. CIRCUIT BREAKERS

1. MOLDED CASE CIRCUIT BREAKERS SHALL BE BY PANELBOARD MANUFACTURER TO MATCH EXISTING WITH FRAME, TRIP AND SHORT CIRCUIT RATING AS INDICATED ON THE DRAWINGS.
2. CIRCUIT BREAKERS SHALL BE OF THE BOLT-ON TYPE MOUNTING. MULTI-POLE BREAKERS SHALL BE SINGLE DEVICES, IN ONE ENCLOSURE, WITH ONE OPERATING HANDLE AND COMMON TRIP.
3. MINIMUM RMS SYMMETRICAL RATING OF CIRCUIT BREAKERS SHALL MATCH PANEL RATING.
4. CIRCUIT BREAKER TERMINATIONS SHALL NOT BE DOUBLE LUGGED TO TAP OFF FOR ADDITIONAL CIRCUIT RUNS. ALL BRANCH CIRCUIT TAPS SHALL BE MADE OUTSIDE OF PANELS IN APPROPRIATE JUNCTION BOXES.
5. PROVIDE FULLY RATED ELECTRICAL EQUIPMENT. SERIES RATED EQUIPMENT IS NOT ALLOWED.

G. GROUNDING

1. PROVIDE ALL GROUNDING FOR ELECTRICAL SYSTEMS AND EQUIPMENT IN ACCORDANCE WITH ARTICLE 250 OF THE N.E.C. GROUNDING LUGS MAY BE USED WHERE PROVIDED AS STANDARD MANUFACTURER'S ITEMS ON EQUIPMENT FURNISHED.
2. PROVIDE SEPARATE GREEN INSULATED EQUIPMENT GROUND CONDUCTOR IN ALL NON-METALLIC AND FLEXIBLE ELECTRICAL RACEWAYS. EFFECTIVELY GROUND ALL FIXTURES, PANELS, CONTROLS, MOTORS, DISCONNECT SWITCHES, AND NON-CURRENT CARRYING METALLIC ENCLOSURES. USE BONDING JUMPERS, GROUNDING BUSHINGS, LUGS, BUSES, ETC., FOR THIS PURPOSE. PROVIDE GROUNDING BUSHINGS ON ALL FEEDER CONDUIT ENTRANCES TO PANELS AND EQUIPMENT ENCLOSURES AND BOND BUSHINGS TO ENCLOSURES WITH MINIMUM # 10 AWG CONDUCTOR. CONNECT THE EQUIPMENT GROUND TO THE BUILDING SYSTEM GROUND. USE THE SAME SIZE EQUIPMENT GROUND CONDUCTORS AS PHASE CONDUCTORS, UP THROUGH #10 AWG. USE N.E.C. TABLE 250-95 FOR CONDUCTOR SIZE WITH PHASE CONDUCTORS #8 AND LARGER, IF NOT SHOWN ON THE DRAWINGS.
3. RECEPTACLES: PERMANENTLY CONNECT THE GROUND TERMINAL ON EACH RECEPTACLE TO THE GREEN GROUND CONDUCTOR OR GROUNDED METAL RACEWAY SYSTEM WITH A GROUND WIRE.
4. MOTORS: CONNECT THE GROUND CONDUCTOR TO THE CONDUIT WITH AN APPROVED GROUNDING BUSHING, AND TO THE METAL FRAME WITH A BOLTED SOLDERLESS LUG. BOLTS, SCREWS AND WASHERS SHALL BE BRONZE OR CADMIUM PLATED STEEL.
5. GROUND CONDUCTORS SHALL BE 600 VOLT - #12 AWG STRANDED COPPER MINIMUM, WITH GREEN INSULATION; AND SHALL BE CONTINUOUS FROM TERMINAL TO TERMINAL WITHOUT SPLICE.

H. JUNCTION AND PULL BOXES

1. DRAWINGS DO NOT NECESSARILY SHOW EVERY PULL BOX REQUIRED. ADDITIONAL BOXES MAY BE ADDED WHEN DESIRABLE TO SAVE LABOR AND AVOID DIFFICULTIES; AND WHEN CODE REQUIREMENTS LIMIT THE NUMBER OF BENDS BETWEEN BOXES. ADDITIONAL BOXES SHALL BE PROVIDED WITHOUT ADDED COST TO THE OWNER. BOXES SHALL BE SIZED ACCORDING TO CODE AND SHALL BE UNDERWRITERS' LABORATORIES LISTED. BOXES SHALL BE ACCESSIBLE AT THE TIME OF COMPLETION AND IN FINISHED AREAS SHALL BE LOCATED ONLY AFTER APPROVAL OF ARCHITECT DUE TO APPEARANCE CONSIDERATIONS.
2. ALL JUNCTION BOXES IN CEILING SPACES SHALL BE MARKED WITH BLACK MARKING PEN AS TO THE PANEL AND CIRCUITS PASSING THROUGH THE BOX.

I. LABELS

1. WHITE CORE BLACK ENGRAVED PLASTIC NAMEPLATES SHALL BE ATTACHED TO ALL NEW EQUIPMENT (PANELBOARDS, TRANSFORMERS, STARTERS, ETC.) INDICATING EQUIPMENT, DESIGNATION AND VOLTAGES.
2. SELF-ADHESIVE COMPUTER-GENERATED TYPE LABELS WITH BLACK LETTERING ON CLEAR BACKGROUND SHALL BE PROVIDED FOR EACH LIGHT SWITCH, POWER AND SIGNAL OUTLET COVER PLATE. LABEL TO INDICATE PANEL AND BRANCH CIRCUIT OR DATA CABLE(S) NUMBER SERVING THE RECEPTACLES/OUTLET. CONTROLS WITH FLIP UP COVER SHALL BE LABELED UNDER THE COVER.

G. LIGHTING FIXTURES

1. VERIFY ALL CEILING TYPES AND COORDINATE FIXTURE TRIM AND ACCESSORIES BEFORE ORDERING FIXTURES. COORDINATE WITH CEILING INSTALLER.
2. ALL NEW LIGHT FIXTURES SHALL BE SECURELY FASTENED TO EITHER SLAB, CEILING OR WALL. RECESSED FIXTURES IN SUSPENDED CEILING SHALL BE INDEPENDENTLY SUPPORTED FROM BUILDING STRUCTURE WITH MINIMUM 2 #12 WIRES AT DIAGONAL CORNERS AND CLIPPED TO CEILING GRID FOR BRACING.
3. ALL FIXTURES WITH LAMP POSITION, SHUTTERS, ROTATION OR OTHER TYPES OF ADJUSTMENTS SHALL BE ROUGH-ADJUSTED BY THE CONTRACTOR AT THE TIME OF INSTALLATION. ARCHITECT WILL DETERMINE FINAL AIMING AND/OR ADJUSTMENT DURING FINAL INSPECTION.
4. ALL LED LIGHT FIXTURES SHALL HAVE A 10-YEAR WARRANTY.

K. FIRE ALARM

1. THE FIRE ALARM SYSTEM SHALL BE DESIGN / BUILD BY THE FIRE ALARM SYSTEM VENDOR.
2. FIRE ALARM SYSTEM DESIGN SHALL BE SUBMITTED SEPARATELY FOR DEFERRED PLAN CHECK AND PERMITTING.
3. PROVIDE FIRE ALARM INITIATION AND NOTIFICATION DEVICES AND CONNECT TO EXISTING FIRE ALARM SYSTEM.
4. ALL FIRE ALARM DEVICES SHALL MATCH BUILDING STANDARD DEVICES.
5. SCHEDULE AND COORDINATE ALL LIFE SAFETY WORK WITH THE BUILDING ENGINEER.
6. CONTRACTOR SHALL PROVIDE CERTIFICATION OF THE LIFE SAFETY SYSTEM COMPLETION AND VERIFY PROPER .

ISSUED FOR PERMIT

8/12/2022 10:27:33 AM

EXPIRE: 12/31/2024
REGISTERED PROFESSIONAL ENGINEER 78483 Registered by Paul Leonetti 3/31/1995 STORER JUNE 2, 20 PAUL B LEONETTI

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Portland, OR. 97205

Project
KELLEY ENGINEERING CENTER PARTIAL 2ND FLOOR REMODEL
110 SW Park Terrace
Corvallis, OR 97331

MARK	DATE	DESCRIPTION
1	09.06.23	ADD 1

Sheet Title
ELECTRICAL SPECIFICATIONS

Drawing No.
E0.2

Scale

Date 07/27/2023

Project No. 19-0016

KEYED NOTES (#)

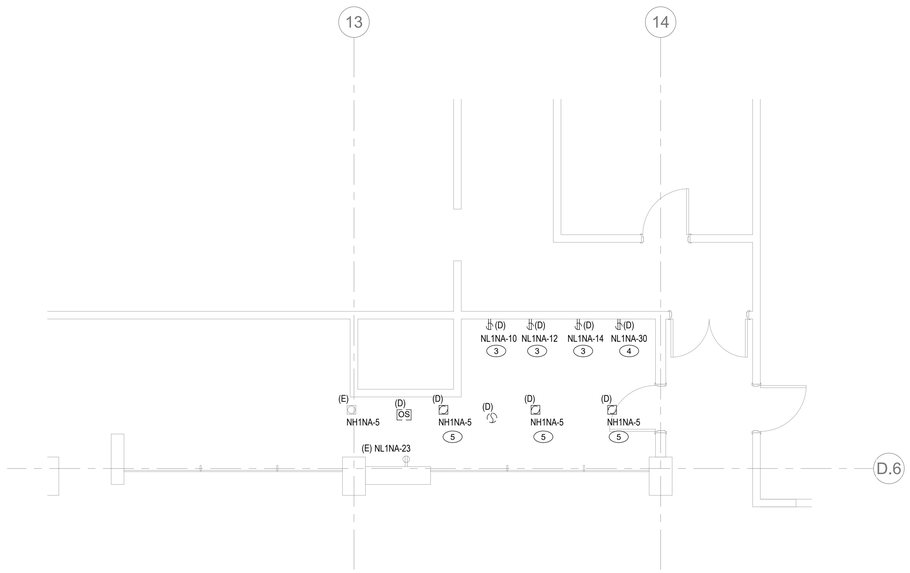
1. REUSE EXISITNG CIRCUIT MADE AVAILABEL DURING DEMOLITION.
2. REPLACE EXISITNG (2) 120V, 1P BREAKER MADE SPARE DURING DEMOLITION WITH (1) 208V, 2P, 20A BREAKER AND FEED DWH-1. THE NEW CIRCUITS TO BE USED IS NL1NA-10,12.
3. REMOVE EXISITNG RECEPTACLES AS INDICATED. RETAIN AND REUSED EXISITNG CIRCUIT FOR NEW WORK.
4. REMOVE EXISTING RECEPTACLE AS INDICATED. REMOVE EXISITNG CONDUIT AND WIRING TO SOURCE OF SUPPLY OR LAST DEVICE ON CIRCUIT TO REMAIN.
5. REMOVE EXISITNG LIGHT FIXTURE AS INDICATED. RETAIN AND REUSE EXISTING CIRCUIT FOR NEW WORK.

SHEET NOTES

A. EXISTING DEVICES OUTSIDE OF SCOPE OF WORK AREA ARE NOT SHOWN.

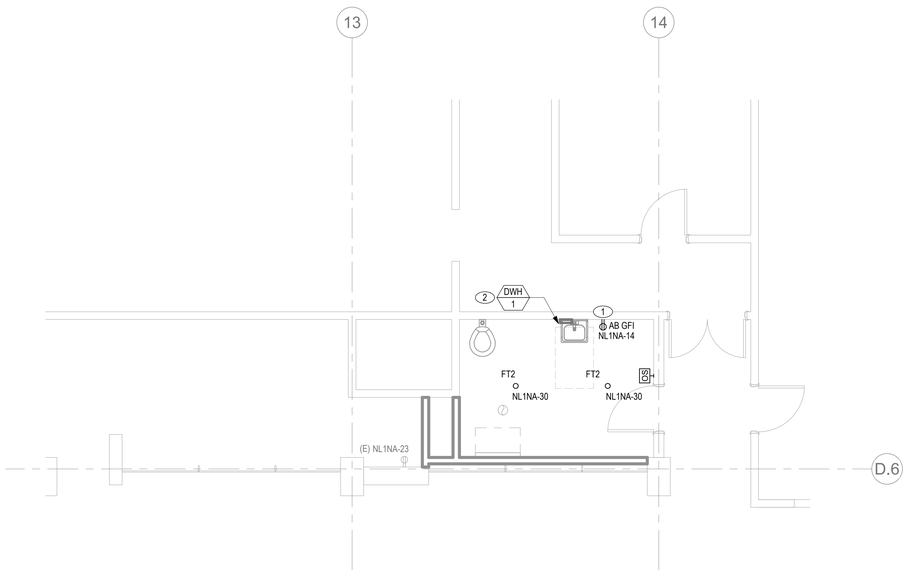
B. REFER TO SHEET E0.1 FOR DEMOLITION NOTES AND GENERAL NOTES.

C. NEW LIGHTING CONTROL DEVICES TO MATCH EXISTING. IF MATCHING EXISTING SYSTEM IS NOT POSSIBLE, USE PRODUCTS FROM COOPER LIGHTING CONTROLS.



2 LEVEL 1 - FLOOR PLAN - DEMOLITION

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



1 LEVEL 1 - FLOOR PLAN - POWER AND SIGNAL

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

ISSUED FOR PERMIT

8/12/2022 10:27:34 AM

EXPIRE: 12/31/2024
REGISTERED PROFESSIONAL ENGINEER
78483
Signature for
Paul Leonetti
37316951220E4EB...
AUG 2, 20
PAUL B LEONETTI

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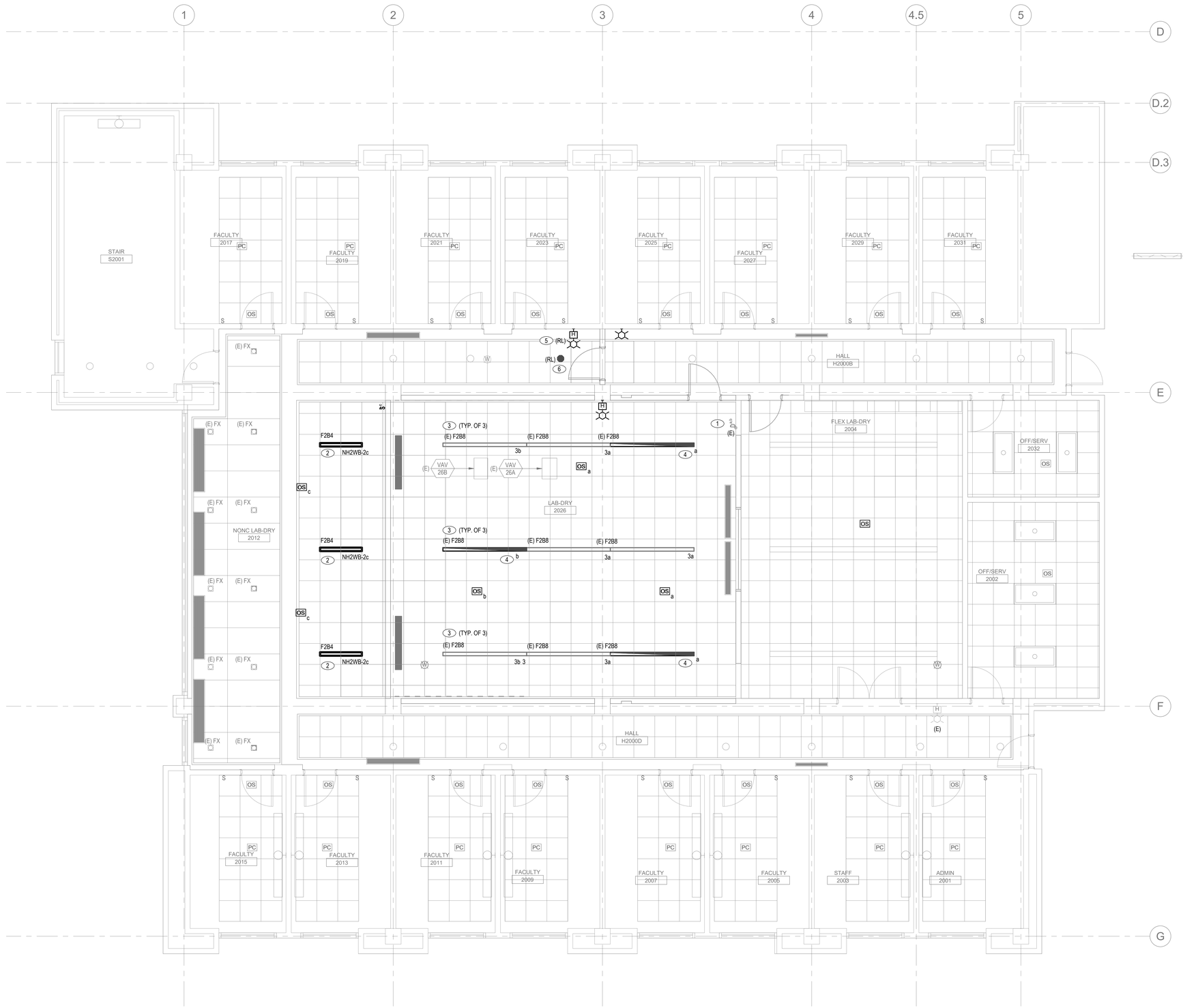
Project
KELLEY ENGINEERING CENTER PARTIAL 2ND FLOOR REMODEL
110 SW Park Terrace
Corvallis, OR 97331

MARK	DATE	DESCRIPTION

Sheet Title
FIRST FLOOR POWER & LIGHTING PLAN

Drawing No.
E2.1

Scale	1/4" = 1'-0"
Date	07/27/2023
Project No.	19-0016



GENERAL NOTES

A. COORDINATE ALL CEILING MOUNTED EQUIPMENT AND APPURTENANCES (GRILLES, REGISTERS, LIGHTS, AREA DETECTORS, LIGHTING CONTROLS, ETC) WITH THE CEILING GRID, SUPPORTS, STRUCTURAL ELEMENTS, AND SPRINKLER HEADS. ANY MODIFICATIONS TO SPRINKLER HEAD LAYOUT, IF REQUIRED, SHALL BE PERFORMED BY A QUALIFIED DESIGN BUILD CONTRACTOR.

SHEET NOTES

A REUSE AND RELOCATE EXISTING LIGHT FIXTURES IN REMODELED SPACE, UNLESS OTHERWISE NOTED. LUMINAIRES TO REMAIN ON CIRCUIT 3 IN PANEL NH2WB.

B CONTRACTOR TO VERIFY PLACEMENT OF RELOCATED OCCUPANCY SENSORS SATISFIES SENSOR COVERAGE RANGE. ADDITIONAL SENSORS TO BE ADDED AND WIRED INTO SAME SENSOR SYSTEM IF UPDATED COVERAGE IS INSUFFICIENT.

C REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND MOUNTING HEIGHTS OF ALL LUMINAIRES. INFORM ENGINEER OF CONFLICTS.

D CEILING SENSOR SWITCHES IN SAME SPACE WITH SAME SWITCH DESIGNATION ARE TO BE WIRED IN PARALLEL SUCH THAT EITHER SENSOR WILL ACTIVATE ALL DESIGNATED LIGHTS.

E TOGGLE SWITCHES SERVING SAME AREA AS OCCUPANCY SENSORS SHALL PROVIDE MANUAL OFF CONTROL OF LIGHTING.

F TWO LIGHT SWITCHES SHOWN TOGETHER SERVING A SPACE INDICATE DUAL LEVEL SWITCHING OF EACH SWITCHED LIGHTING FIXTURE IN THE SPACE. REFER TO LIGHTING FIXTURE SCHEDULE NOTES FOR ADDITIONAL INFORMATION.

G CONTRACTOR IS RESPONSIBLE TO REVIEW ARCHITECTURAL DRAWINGS TO CONFIRM CEILING TYPES IN ALL ROOMS (ACCESSIBLE, EXPOSED, OR "HARD") AND TO USE THE APPROPRIATE WIRING METHOD FOR EACH TYPE. INSURE ALL J-BOXES ARE ACCESSIBLE AFTER ALL OTHER TRADES' WORK IS COMPLETED. DO NOT LOCATE ANY J-BOXES ON "HARD" CEILINGS; ALL WIRING MUST BE ACCESSIBLE THROUGH LUMINAIRE ONLY IN "DAISEY-CHAIN" METHOD OR WITH DEDICATED HOMERUNS TO EACH LUMINAIRE. J-BOXES MAY BE LOCATED ABOVE OTHER TRADE'S ACCESS DOORS IF FEASIBLE AND DOES NOT INTERFERE WITH ACCESS.

H CONTRACTOR SHALL USE CIRCUIT SIZES INDICATED IN NOTES OR RESPECTIVE SCHEDULES (PNL, MCC, ETC.) AND INFORMATION IN THE FEEDER AND BRANCH CIRCUIT SCHEDULES. IN ACCESSIBLE CEILING AREAS ONLY; THE CONTRACTOR HAS THE OPTION TO USE EITHER MANUFACTURED (MODULAR SOFT-WIRED) WIRING SYSTEM AS DESCRIBED IN THE NATIONAL ELECTRICAL CODE-ARTICLE 604, OR MC CABLE. MANUFACTURED WIRING SYSTEM SUPPLIER SHALL PROVIDE SHOP DRAWINGS OF WIRING SYSTEM LAYOUT FOR REVIEW.

J ALL LOW VOLTAGE CABLING TO LIGHTING FIXTURES AND CONTROL DEVICES SHALL BE PLENUM RATED.

K NEW LIGHTING CONTROL DEVICES (DIMMERS, OCCUPANCY SENSORS, SWITCHES) TO MATCH EXISTING.

KEYED NOTES (#)

1 EXISTING 4-ZONE DIMMER TO BE REUSED TO CONTROL LIGHTING IN REMODELED CONTROL ROOM SPACE. EXISTING CONTROLLER PROGRAMMED WITH (4) ZONE/SCENE PRESETS. (2) ZONES REQUIRED IN REMODELED SPACE.

2 REPLACE DEMOLISHED F2B8 FIXTURES IN REMODELED HALLWAY SPACE WITH VIA 3 LED DIRECT/INDIRECT LINEAR PENDANTS, 4' LENGTH OPTION, 0.5" DROP CROSS-SECTION, IF NO OTHER FIXTURES ARE SELECTED. TIE INTO EXISTING CORRIDOR CIRCUIT ON PANEL NH2WB-2. CONTROL THROUGH LCP 2W-7.

3 CONTRACTOR TO CONFIRM EXISTING LUMINAIRE BULB TYPE. IF EXISTING BULBS ARE NOT LED OR OTHERWISE COMPLIANT WITH CURRENT OREGON ENERGY EFFICIENCY SPECIALTY CODE, CONTRACTOR IS TO REPLACE EXISTING LUMINAIRES WITH LED-BASED EQUIVALENTS. CONFIRM SELECTION WITH OWNER AND ARCHITECT.

4 CIRCUIT EMERGENCY LIGHTING FIXTURES TO PANEL EH2WA, VIA PANEL LCP-2W.EMERGENY FIXTURE TO BE CONTROLLED TOGETHER WITH FIXTURE ON NORMAL CIRCUIT VIA UL924 RELAY.

5 RELOCATE PREVIOUSLY REMOVED FIRE ALARM STROBE/HORN DEVICE.

6 RELOCATE PREVIOUSLY REMOVED LIGHT FIXTURE.

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

GRAPHIC SCALE: 1/4" = 1'-0"
N
0' 2' 4' 8' 16'

ISSUED FOR PERMIT

8/12/2022 10:27:36 AM

EXPIRE: 12/31/2024
REGISTERED PROFESSIONAL ENGINEER
78483
Paul Lenetti
OREGON
JULY 2, 20
PAUL B LEONETTI

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1 2 3 4
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Project
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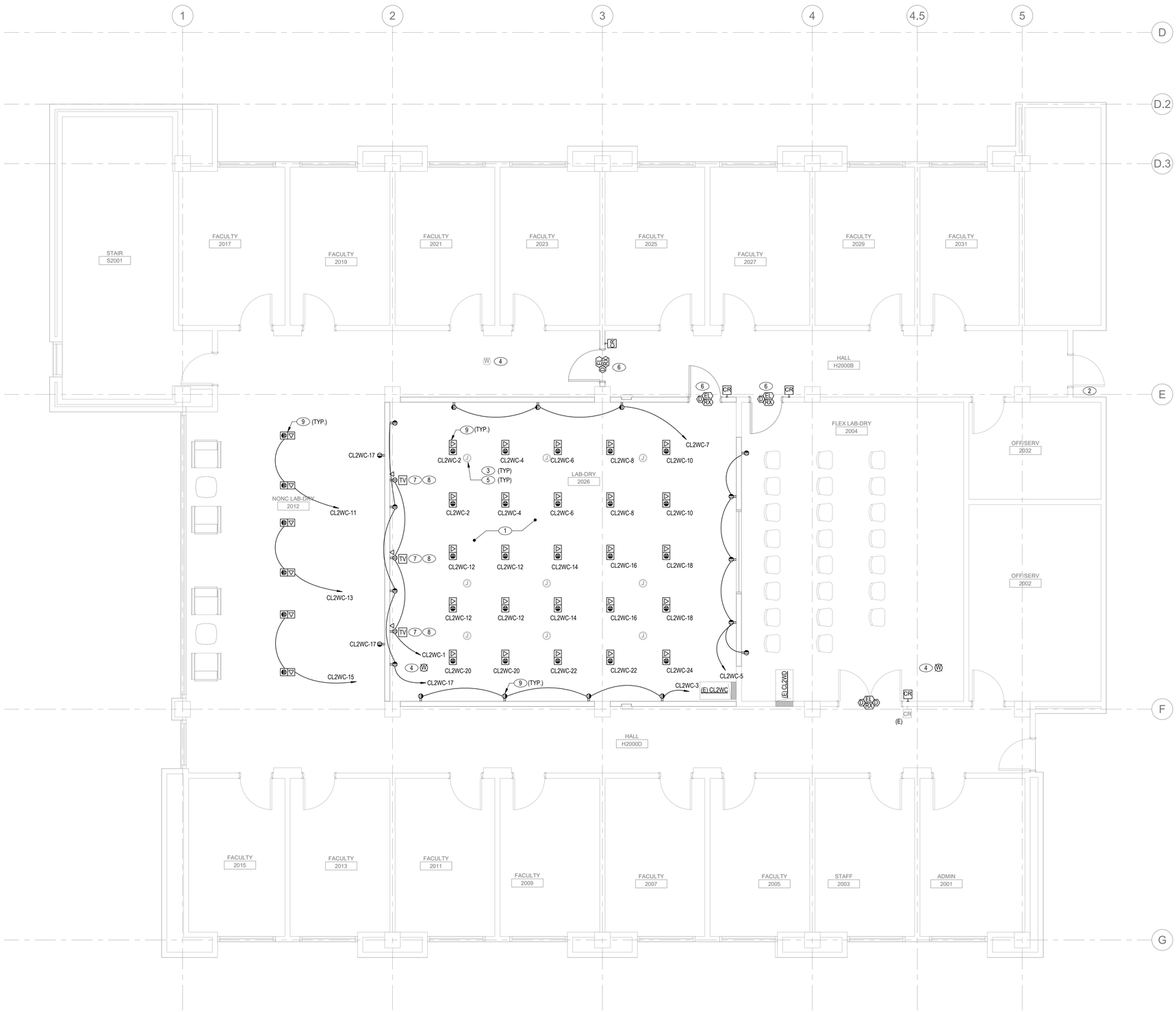
110 SW Park Terrace
Corvallis, OR 97331

MARK DATE DESCRIPTION

Sheet Title
SECOND FLOOR LIGHTING PLAN

Drawing No.
E2.2

Scale 1/4" = 1'-0"
Date 07/27/2023
Project No. 19-0016



SHEET NOTES

A. ALL EQUIPMENT CIRCUITED TO PANEL CL2WC, UNLESS OTHERWISE NOTED. REUSE EXISTING 20A/1P BREAKERS WHERE POSSIBLE. OTHERWISE, CIRCUIT TO NEXT AVAILABLE 20A/1P SPARE BREAKER.

B. BASIS OF DESIGN FOR FLOOR BOXES IS LEGRAND CAF3 SHALLOW THREE-GANG RAISED FLOOR BOX.

C. COORDINATE LOCATIONS OF FLOOR BOXES WITH OWNER-PROVIDED FURNITURE SELECTION AND PLACEMENT.

D. FIRE ALARM IS DESIGN-BUILD BY ELECTRICAL CONTRACTOR. DEVICES SHOWN FOR COORDINATION ONLY.

E. IT SCOPE IS LIMITED TO PATHWAYS, CABLING, AND POWER. ACTIVE NETWORK EQUIPMENT (SWITCHES, ROUTERS, ETC.) SHALL BE SPECIFIED BY OWNER'S I.T. REPRESENTATIVE.

F. CONTRACTOR TO MATCH EXISTING CARD READER HARDWARE. EXISTING SYSTEM TO BE EXPANDED AS NECESSARY TO INTEGRATE ADDITIONAL CARD READERS.

G. CONTRACTOR TO VERIFY AVAILABILITY SPACE WITHIN (E) IDF FOR ADDITION OF DOOR CONTROLLER AND ADDITIONAL DATA CABLING.

H. FOR HALF-SWITCHED RECEPTACLES AND FLOOR BOXES, REFER TO WIRING DIAGRAM DETAILS ON SHEET E9.2.

I. LAB-DRY 2026 PROVIDED WITH RAISED FLOOR GROUNDING. CONTRACTOR TO VERIFY PRESENCE OF GROUND RING AROUND THE ROOM PERIMETER.

J. EXISTING DEVICES OUTSIDE OF SCOPE OF WORK AREA ARE NOT SHOWN.

K. COORDINATE ALL CEILING MOUNTED EQUIPMENT AND APPURTENANCES (GRILLES, REGISTERS, LIGHTS, AREA DETECTORS, LIGHTING CONTROLS, ETC) WITH THE CEILING GRID, SUPPORTS, STRUCTURAL ELEMENTS, AND SPRINKLER HEADS. ANY MODIFICATIONS TO SPRINKLER HEAD LAYOUT, IF REQUIRED, SHALL BE PERFORMED BY A QUALIFIED DESIGN BUILD CONTRACTOR.

L. REFER TO SHEET E0.1 FOR GENERAL NOTES.

M. RECEPTACLES TO BE LEVATON, LEGRAND, OR APPROVED EQUAL.

KEYED NOTES (#)

1 PROVIDE NEW POWER AND DATA FLOOR BOXES. LEGRAND 3-GANG.

2 PROVIDE 120V/1P, 20A CIRCUIT FROM PANEL CL2WC FOR MAGNETIC HOLD-OPEN FOR EXISTING DOOR. USE FLOOR-MOUNTED VARIETY DUE TO DISTANCE FROM WALL (SEM 7820, OR APPROVED OTHER).

3 REFER TO DETAIL 5/E9.1 FOR FLOOR BOX AND J-BOX CONNECTION DETAILS.

4 WIRELESS ACCESS POINT LAYOUT SHOWN FOR SCOPE OF PATHWAYS ONLY. FINAL LAYOUT SHALL BE PROVIDED BY THE OWNER'S IT REPRESENTATIVE.

5 REPURPOSE EXISTING JUNCTION BOXES BENEATH THE FLOOR AS NEEDED FOR NEW CIRCUITING.

6 SEE 4/E9.1 FOR SINGLE DOOR ACCESS CONTROL DETAIL.

7 PROVIDE 1" CONDUIT FROM THE TV BACK BOX TO ACCESS FLOOR.
PROVIDE 1-1/2" CONDUIT BETWEEN TV BACK BOX AND HDMI BACK BOX.

8 REFER TO ARCHITECTURAL ELEVATION PLAN FOR MOUNTING HEIGHT AND CONDUIT ROUTING.
PROVIDE 1-1/2" CONDUIT BETWEEN TV BACK BOX AND HDMI BACK BOX.

9 RECEPTACLES TO BE CONTROLLED VIA THE OCCUPANCY SENSORS FOR LIGHT FIXTURES.

1 LEVEL 2 - FLOOR PLAN - POWER AND SIGNAL

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

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

N 0' 2' 4' 8' 16'

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8/12/2022 10:27:39 AM

EXPIRE: 12/31/2024
REGISTERED PROFESSIONAL ENGINEER 78483 OREGON
Signature by Paul Leonetti
12/19/95 ISSUED/RENEWED
DEC 2, 20
PAUL B. LEONETTI

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Project
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110 SW Park Terrace
Corvallis, OR 97331

MARK	DATE	DESCRIPTION

Sheet Title
SECOND FLOOR POWER PLAN

Drawing No.
E3.2

Scale	1/4" = 1'-0"
Date	07/27/2023
Project No.	19-0016

PANEL: (E) CL2WC

VOLTAGE: 208Y/120V, 3PH, 4W
MOUNTING: SURFACE
BUS RATING: 225 A
MAIN AMPS: 225 A MLO
AIC RATING: 10 kAIC

NEMA RATING: Type 1
INTEGRAL SPD: No
ISOL GROUND BAR: No
FEED-THRU LUGS: No
DOUBLE-LUGS: No

LOCATION: LAB-DRY 2026
SUPPLY FROM:

CKT	TRIP	POLE	DESCRIPTION	TYPE	A (kVA)		B (kVA)		C (kVA)		TYPE	DESCRIPTION	POLE	TRIP	CKT
1	20 A	1	{NL} TV'S - WEST WALL	C	0.9	0.72					N	{NL} FLOOR QUAD - DRY-LAB 2026	1	20 A	2
3	20 A	1	{NL} CONV RECEPTS - SOUTH WALL	R			0.72	0.72			N	{NL} FLOOR QUAD - DRY-LAB 2026	1	20 A	4
5	20 A	1	{NL} CONV RECEPTS - EAST WALL	R					0.9	0.72	N	{NL} FLOOR QUAD - DRY-LAB 2026	1	20 A	6
7	20 A	1	{NL} CONV RECEPTS - NORTH WALL	R	0.54	0.72					N	{NL} FLOOR QUAD - DRY-LAB 2026	1	20 A	8
9	20 A	1	{NL} CONV RECEPTS - WEST WALL	R			0.72	0.72			N	{NL} FLOOR QUAD - DRY-LAB 2026	1	20 A	10
11	20 A	1	{NL} OPEN AREA WORKSTATION	N					0.72	1.44	N	{NL} FLOOR QUAD - DRY-LAB 2026	1	20 A	12
13	20 A	1	{NL} OPEN AREA WORKSTATION	N	0.72	0.72					N	{NL} FLOOR QUAD - DRY-LAB 2026	1	20 A	14
15	20 A	1	{NL} OPEN AREA WORKSTATION	N			0.72	0.72			N	{NL} FLOOR QUAD - DRY-LAB 2026	1	20 A	16
17	20 A	1	{NL} RECEPTS - NONC-LAB DRY 2012	R					0.36	0.72	N	{NL} FLOOR QUAD - DRY-LAB 2026	1	20 A	18
19	20 A	1	{RL} SPARE	--	0	0.72					N	{NL} FLOOR QUAD - DRY-LAB 2026	1	20 A	20
21	20 A	1	{RL} SPARE	--			0	0.72			N	{NL} FLOOR QUAD - DRY-LAB 2026	1	20 A	22
23	20 A	1	{RL} SPARE	--					0	0.36	N	{NL} FLOOR QUAD - DRY-LAB 2026	1	20 A	24
25	20 A	1	SPARE	--	0	0					--	SPARE	1	20 A	26
27	20 A	1	SPARE	--			0	0			--	SPARE	1	20 A	28
29	20 A	1	SPARE	--					0	0	--	SPARE	1	20 A	30
31	--	1	SPACE	--	--	--					--	SPACE	1	--	32
33	--	1	SPACE	--			--	--			--	SPACE	1	--	34
35	--	1	SPACE	--					--	--	--	SPACE	1	--	36
37	--	1	SPACE	--	--	--					--	SPACE	1	--	38
39	--	1	SPACE	--			--	--			--	SPACE	1	--	40
41	--	1	SPACE	--					--	--	--	SPACE	1	--	42
SPECIAL PANEL FEATURES					5.04 kVA		5.04 kVA		5.22 kVA		CIRCUIT NOTES				

{NL} = NEW LOAD ON EXISTING BREAKER
{NB} = NEW BREAKER
{RL} = LOAD REMOVED

LOAD TYPE	CONNECTED	DEMAND FACTOR	DEMAND LOAD
C	0.9 kVA	125%	1.13 kVA
N	11.16 kVA	100%	11.16 kVA
R	3.24 kVA	100%	3.24 kVA

LOAD TYPE KEY
C = CONTINUOUS
E = ELEVATOR
K = KITCHEN
L = LIGHTING
M = MOTOR
MOTOR = LARGEST MOTOR
N = NON-CONTINUOUS
R = RECEPTACLE

PANEL TOTALS	KVA	AMPS
TOTAL CONNECTED LOAD:	15.3 kVA	42.5 A
TOTAL DEMAND LOAD:	15.53 kVA	43.1 A
SPARE CAPACITY:	25%	25%
DESIGNED CAPACITY:	**19.41 kVA**	**54 A**

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EXPIRE: 12/31/2024
REGISTERED PROFESSIONAL ENGINEER
78483
Electronically Signed by: Paul Lenetti
07/27/2023
OREGON
PAUL B LENETTI

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Corvallis, OR 97331

MARK	DATE	DESCRIPTION

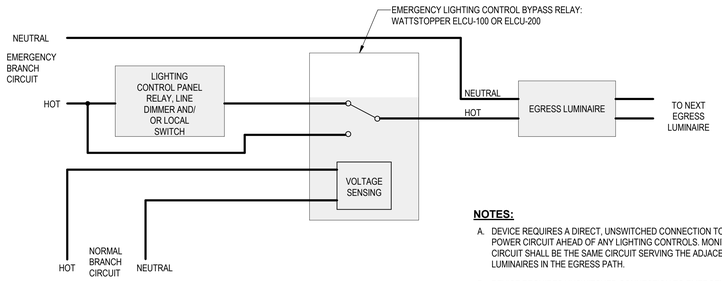
Sheet Title
PANELBOARD SCHEDULES

Drawing No.
E5.3

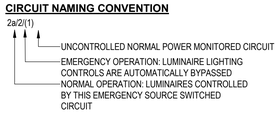
Scale

Date 07/27/2023

Project No. 19-0016



CIRCUIT NAMING CONVENTION



NOTES:

A. DEVICE REQUIRES A DIRECT, UNSWITCHED CONNECTION TO A NORMAL POWER CIRCUIT AHEAD OF ANY LIGHTING CONTROLS. MONITORED CIRCUIT SHALL BE THE SAME CIRCUIT SERVING THE ADJACENT NORMAL LUMINAIRES IN THE EGRESS PATH.

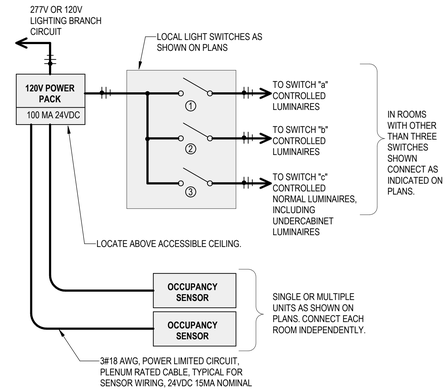
B. DEVICE REQUIRES UNSWITCHED CONNECTION TO EMERGENCY CIRCUIT.

C. DURING NORMAL OPERATION, EGRESS LIGHTING LOAD IS POWERED AND CONTROLLED VIA LIGHTING CONTROLS (SWITCHES, DIMMERS OR LCP RELAYS) ON THE SAME EMERGENCY CIRCUIT.

D. DURING EMERGENCY OPERATION, I.E. LOSS OF NORMAL POWER MONITORED CIRCUIT, THE EMERGENCY EGRESS LIGHTING LOAD IS POWERED FULLY ON BY BYPASSING ITS EMERGENCY LIGHTING CONTROLS.

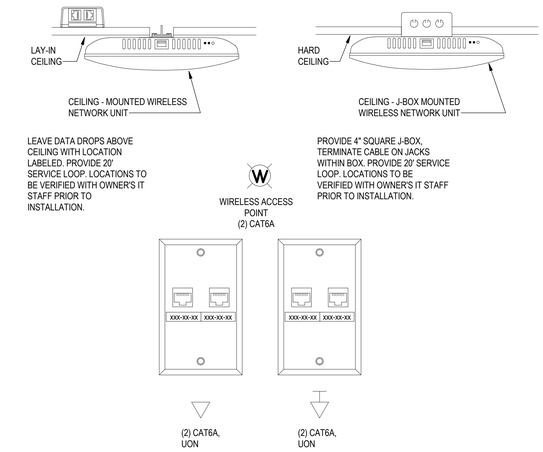
9 CONTROLLED EMERGENCY EGRESS LIGHTING - AUTOMATIC CONTROL BYPASS

SCALE: NONE



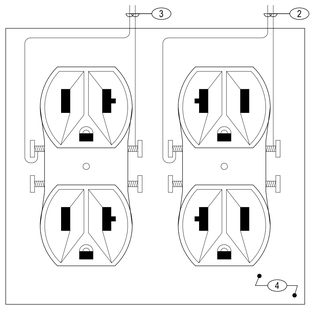
6 LOW-VOLTAGE OCCUPANCY SENSOR WIRING WITH WALL SWITCH

SCALE: NONE

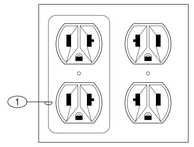


3 SIGNAL DEVICES

SCALE: NONE



WIRING



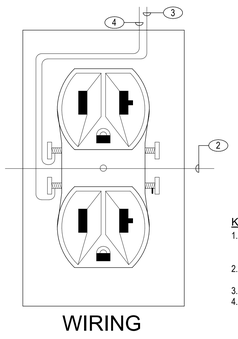
IDENTIFICATION

KEYED NOTES: (XX)

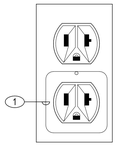
1. THIS PORTION OF RECEPTACLE TO BE OCCUPANCY SENSOR CONTROLLED.
2. TO UNSWITCHED POWER (HOT AND NEUTRAL SHOWN).
3. TO OCCUPANCY SENSOR CONTROLLED POWER. (HOT AND NEUTRAL SHOWN).
4. WHERE QUAD DEVICES ARE INDICATED TO HAVE OCCUPANCY SENSOR CONTROLLED POWER, PROVIDE (2) DUPLEXES WIRED IN THIS FASHION AT THE QUAD LOCATION.

8 OCC SENSOR CONTROLLED QUAD

SCALE: NONE



WIRING



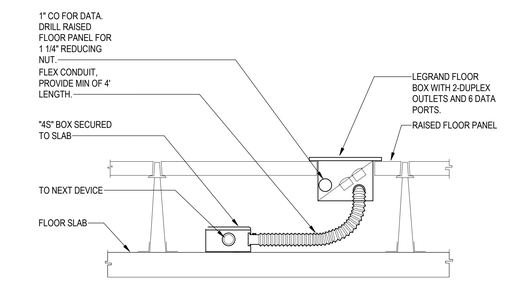
IDENTIFICATION

KEYED NOTES: (XX)

1. THIS PORTION OF RECEPTACLE TO BE OCCUPANCY SENSOR CONTROLLED. PROVIDE RECEPTACLE AS MANUFACTURED BY PASS & SEYMOUR WITH PRE-IDENTIFIED RECEPTACLE CONTROL. CAT#26352CHW BASE BUILDING STANDARD.
2. DEVICE CONDUCTIVELY BROKEN AT MIDPOINT BETWEEN WIRING TERMINALS. REMOVE ANY TABS THAT CONNECT UPPER AND LOWER PORTIONS.
3. TO UNSWITCHED POWER (HOT SHOWN).
4. TO OCCUPANCY SENSOR CONTROLLED POWER (HOT SHOWN).

5 OCC SENSOR CONTROLLED DUPLEX

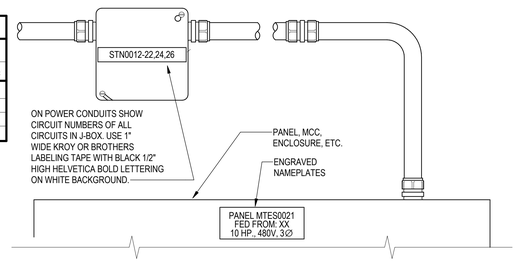
SCALE: NONE



2 RAISED FLOOR MOUNTED OUTLET BOX

SCALE: NONE

NAMEPLATE COLOR LEGEND			
SERVICE	NAMEPLATE COLOR (1)		
	TEXT	BACKGROUND	ROWMARK #
NORMAL	WHITE	BLACK	122-402
EMERGENCY	WHITE	RED	122-602
FIRE ALARM & SECURITY	RED	WHITE	122-206
OTHERS	BLACK	WHITE	122-204



GENERAL NOTES

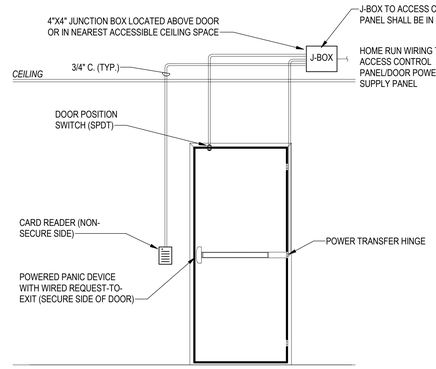
A. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

B. TEXT SHOWN ABOVE IS FOR EXAMPLE ONLY. MODIFY TEXT AS REQUIRED TO MATCH EQUIPMENT SPECIFICATIONS.

C. ROWMARK # IS THE COLOR OF THE PLASTIC ENGRAVING MATERIAL. USE ROWMARK 1/16" SATIN STOCK AS NOTED.

7 RACEWAY AND NAMEPLATE IDENTIFICATION - COMMERCIAL BUILDING

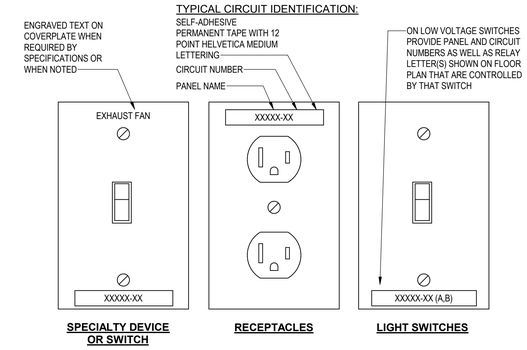
SCALE: NONE



4 ACCESS CONTROL - SINGLE DOOR

SCALE: NONE

TYPICAL CIRCUIT IDENTIFICATION:



NOTES:

1. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION AND COLORS OF TAPE REQUIRED FOR DIFFERENT SYSTEMS.
2. TEXT SHOWN ABOVE IS FOR EXAMPLE ONLY. MODIFY TEXT AS REQUIRED TO MATCH INSTALLATION.
3. LABEL DEVICES IN SURFACE METAL RACEWAYS, POWER POLES, FLOOR BOXES, CONCEALED MULTI-SERVICE POWER BOXES, ETC. SIMILARLY.
4. WHERE MULTIPLE SWITCHES ARE GROUPED UNDER COMMON COVERPLATE AND ARE SERVED FROM SAME CIRCUIT, PROVIDE ONLY ONE LABEL FOR MIDDLE SWITCH. PROVIDE MULTIPLE LABELS IF DIFFERENT CIRCUITS ARE USED.

1 DEVICE & SWITCH LABELING

SCALE: NONE

ISSUED FOR PERMIT

8/12/2022 10:27:41 AM

EXPIRE: 12/31/2024
REGISTERED PROFESSIONAL ENGINEER
Docu Signed by:
Paul Lionetti
OREGON
JULY 2, 2013
PAUL B. LEONETTI

Consultant
GLUMAC
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Project
KELLEY ENGINEERING CENTER PARTIAL 2ND FLOOR REMODEL
110 SW Park Terrace
Corvallis, OR 97331

MARK	DATE	DESCRIPTION

Sheet Title
ELECTRICAL DETAILS

Drawing No.
E9.1

Scale As indicated
Date 07/27/2023
Project No. 19-0016

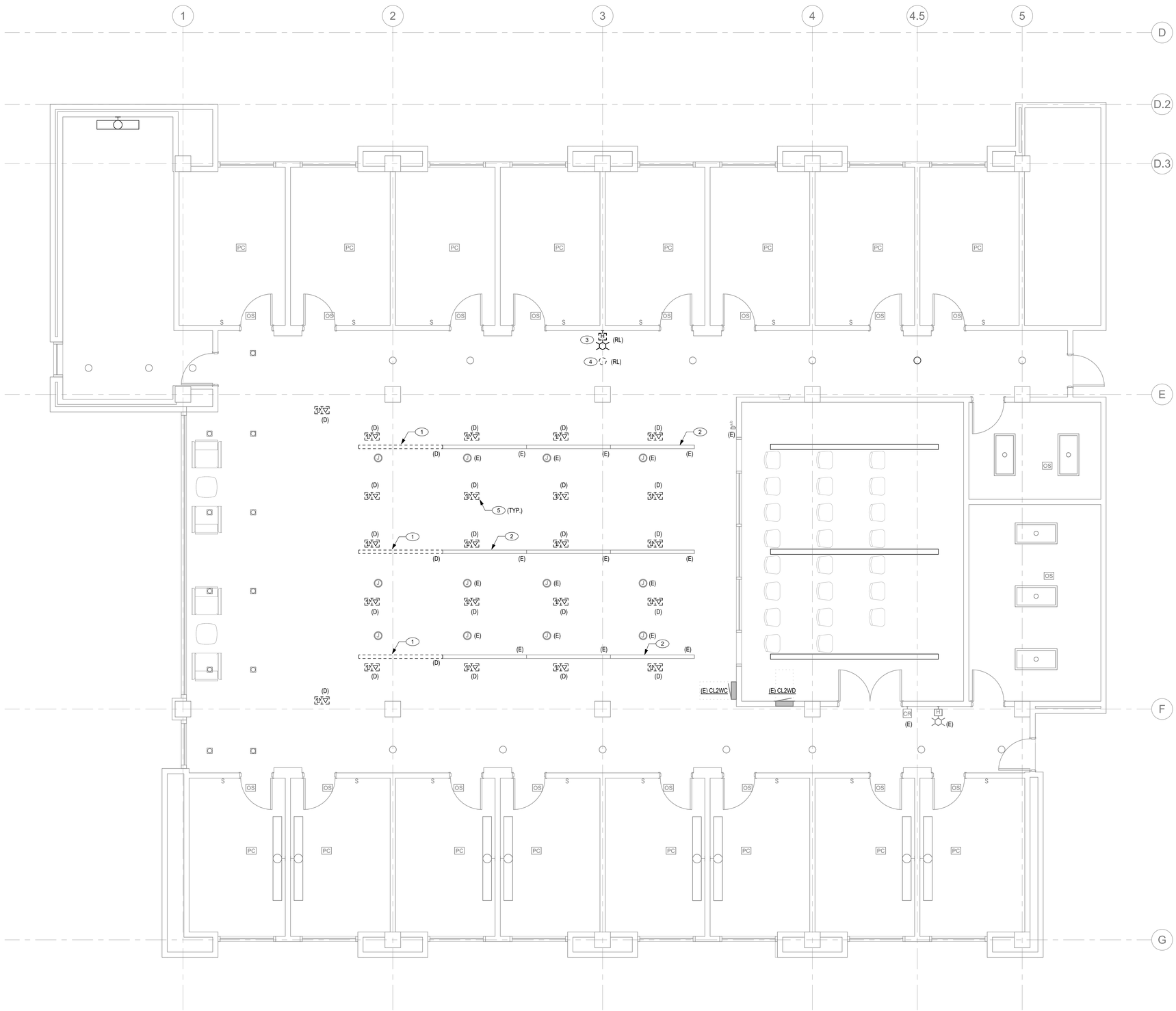
SHEET NOTES

A. NOT ALL EXISTING DEVICES OUTSIDE OF SCOPE OF WORK AREA ARE SHOWN.

B. REFER TO SHEET E0.1 FOR GENERAL NOTES

KEYED NOTES (#)

1. DISCONNECT AND REMOVE EXISITNG LIGHT FIXTURES AS INDICATED.
2. DISCONNECT EXISITNG FIXTURES. EXISTING FIXTURES TO REMAIN IN PLACE TO BE CIRCUITED TO EMERGENCY CIRCUIT UNDER NEW WORK..
3. DISCONNECT AND RELOCATE EXISITNG FIRE ALARM STROBE/HORN. REFER TO NEW WORK PLAN FOR NEW LOCATION.
4. DISCONNECT AND RELOCATE EXISTING LIGHT FIXTURE. REFER TO NEW OWKR PLAN FOR NEW LOCATION.
5. DISCONNECT AND REMOVE EXISTING FLOOR BOXES AS INDICATED.



1 LEVEL 2 - FLOOR PLAN - DEMOLITION

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

ISSUED FOR PERMIT

8/12/2022 10:27:42 AM

EXPIRE: 12/31/2024
REGISTERED PROFESSIONAL ENGINEER
THAD B. LEONETTI
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MARK	DATE	DESCRIPTION

Sheet Title
ELECTRICAL
DEMOLITION PLAN

Drawing No.
ED2.2

Scale	1/4" = 1'-0"
Date	07/27/2023
Project No.	19-0016

ABBREVIATIONS

ABV	ABOVE
AD	ACCESS DOOR
ADA	AMERICANS WITH DISABILITIES ACT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AP	ACCESS PANEL
ARCH	ARCHITECT
ASR	AUTO FIRE SPRINKLER RISER
BAS	BUILDING AUTOMATION SYSTEM
BFV	BUTTERFLY VALVE
BHP	BRAKE HORSEPOWER
BTU	BRITISH THERMAL UNIT
BV	BALL VALVE
BWV	BACKWATER VALVE
CA	COMPRESSED AIR
CD	CONDENSATE DRAIN
CR	STEAM CONDENSATE RETURN
CFF	CAP FOR FUTURE
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CI	CAST IRON
CLG	CEILING
CO	CLEANOUT
CONC	CONCRETE
CV	CHECK VALVE
CW	DOMESTIC COLD WATER
CWFU	COLD WATER FIXTURE UNIT
DN	DOWN
DCVA	DOUBLE CHECK VALVE ASSEMBLY
DDCVA	DOUBLE DETECTOR CHECK VALVE ASSEMBLY
DFU	DRAINAGE FIXTURE UNIT
DIA	DIAMETER
DSN	DOWNSPOUT NOZZLE
DWG	DRAWING
DWV	DRAINAGE WASTE AND VENT
E	EXISTING
ELEC	ELECTRICAL
FA	FLOW ALARM
FC	FLEXIBLE CONNECTION
FCO	FLOOR CLEANOUT
FDV	FIRE DEPARTMENT VALVE
FDVC	FIRE DEPARTMENT VALVE CABINET
FFA/FFB	FROM FLOOR ABOVE/BELOW
FFE	FINISHED FLOOR ELEVATION
FH	FIRE HYDRANT
FHV	FIRE HOSE VALVE
FIN	FINISHED
FO	FUEL OIL
FPS	FEET PER SECOND
FT	FEET
FT	FLUSH TANK
FU	FIXTURE UNIT
FV	FLUSH VALVE
G	GAS
GAL	GALLONS
GC	GAS COCK
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GV	GATE VALVE
HD	HUB DRAIN
HP	HORSEPOWER
HW	DOMESTIC HOT WATER
HWC	DOMESTIC HOT WATER RECIRCULATION
HWFU	HOT WATER FIXTURE UNIT
IAPMO	INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS
ICBO	INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS
IE	INVERT ELEVATION
IRR	IRRIGATION
LAV	LAVATORY
LBS	POUNDS (UNIT OF FORCE)
MAX	MAXIMUM
MBH	THOUSANDS BTU/HR
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
MH	MANHOLE
NC	NORMALLY CLOSED
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NO	NORMALLY OPEN OR NUMBER
NIC	NOT IN CONTRACT
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OW	OIL WASTE
POC	POINT OF CONNECTION
POD	POINT OF DISCONNECTION
PRV	PRESSURE REDUCING VALVE
PS	PRESSURE SWITCH
PSI	POUNDS PER SQUARE INCH
RI&C	ROUGH IN AND CONNECT
RWH	RAIN HARVESTED WATER
R	RELOCATE, RISE, RISER
RP	REDUCED-PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY
RPM	REVOLUTIONS PER MINUTE
SD	STORM DRAIN
SF	SQUARE FEET
SHWR	SOLAR HOT WATER RETURN
SHWS	SOLAR HOT WATER SUPPLY
SOV	SHUT-OFF VALVE
SPR	SPRINKLER
SS	SANITARY SEWER
TFA/TFB	TO FLOOR ABOVE/BELOW
TP	TRAP PRIMER
TS	TAMPER SWITCH
TT	TEST TEE
TYP	TYPICAL
U	URINAL
VB	VACUUM BREAKER
V	VENT
VTR	VENT THROUGH ROOF
W	WASTE
WC	WATER CLOSET
WHA	WATER HAMMER ARRESTOR
WCO	WALL CLEANOUT
W/	WITH
YB	YARD BOX

SYMBOL	DESCRIPTION
	TRAP PRIMER
	BALL VALVE
	BUTTERFLY VALVE
	GATE VALVE
	BALANCING VALVE
	SHUT OFF VALVE IN CONCRETE YARD BOX
	ANGLE GATE VALVE
	SOLENOID VALVE
	CHECK VALVE
	PRESSURE REDUCING VALVE
	MIXING VALVE
	PLUG VALVE / GAS COCK
	RELIEF VALVE
	VACUUM RELIEF VALVE
	PRESSURE & TEMPERATURE RELIEF VALVE
	AUTOMATIC AIR VENT
	BACKWATER VALVE
	REDUCED - PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY (RP)
	UNION
	STRAINER
	STRAINER WITH BLOW OFF HOSE BIBB
	PIPE ANCHOR
	PIPE ALIGNMENT GUIDE
	EXPANSION JOINT
	FLEXIBLE CONNECTOR
	CAP OR PLUG
	BLIND FLANGE
	CONCENTRIC REDUCER
	AQUASTAT
WHA	WATER HAMMER ARRESTOR
PG	PRESSURE GAUGE WITH COCK
T	THERMOMETER
CO/WCO	CLEANOUT / WALL CLEANOUT
FCO/COTG	FLOOR CLEANOUT / CLEANOUT TO GRADE
YCO/COTG	YARD CLEANOUT / CLEANOUT TO GRADE
TT	TEST TEE
WH	WALL HYDRANT
HB	HOSE BIBB
YH	YARD HYDRANT
	THRUST BLOCK
FD	FLOOR DRAIN
FS	FLOOR SINK W/ GRATE AS SHOWN
	HUB DRAIN
	ROOF RECEPTOR
	STORM DRAIN
	OVERFLOW DRAIN
	DECK DRAIN, PLANTER DRAIN
	DOWN SPOUT NOZZLE
M	SUB-METER

NOTE: NOT ALL SYMBOLS OR ABBREVIATIONS ARE APPLICABLE TO THIS PROJECT. REFER TO DETAILS AND NOTES FOR MOUNTING HEIGHTS.

SYMBOL	DESCRIPTION
1% SLOPE	DIRECTION OF SLOPE
	DIRECTION OF FLOW
	PIPE UP OR UP & DN
	PIPE DOWN
	PIPE DROP
	TOP CONNECTION - BRANCH LINE
	BOTTOM CONNECTION - BRANCH LINE
	COLD WATER
	HOT WATER
	HOT WATER RECIRCULATION
140	HOT WATER (140°F)
	VENT
	PIPING BELOW GRADE OR FLOOR
	PIPING ABOVE GRADE OR FLOOR
SS	SANITARY SEWER, WASTE OR SOIL
SD	STORM DRAIN, RAINWATER DRAIN PIPING
OD	OVERFLOW STORM DRAIN PIPING
PD	PUMPED DISCHARGE
D	DRAIN LINE
IW	INDIRECT WASTE
GW	GREASE WASTE
G	NATURAL GAS (7"W.C.)
MG	MEDIUM PRESSURE GAS (2 PSIG TO 5 PSIG)
LG	LOW PRESSURE GAS
CA	COMPRESSED AIR
(E)	EXISTING PIPE
TW	TEMPERED WATER
TWR	TEMPERED WATER RETURN
6"	PIPE SIZE (DIAMETER IN INCHES)
(E)	EXISTING WORK TO REMAIN
(D)	EXISTING WORK TO BE REMOVED
(F)	FUTURE WORK
(ER)	EXISTING RELOCATED
	CENTER LINE
	POINT OF CONNECTION OR POINT OF DISCONNECTION
SS	SANITARY SEWER STACK
V	VENT STACKS
CW	COLD WATER RISER
HW	HOT WATER RISER
HWC	HOT WATER RECIRC. RISER
G	GAS RISER
SD	STORM DRAIN RISER
OD	OVERFLOW DRAIN RISER
CA	COMPRESSED AIR RISER
XX / X	PLUMBING EQUIPMENT
XXX	MISCELLANEOUS EQUIPMENT
#	KEYED NOTE
1 / P2	DETAIL NO. SHEET NO.
#	POUNDS OR NUMBER

PLUMBING - SPECIFICATIONS

220000 PLUMBING SHEET SPECIFICATIONS
PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. DEFINITIONS– "CONTRACTOR" MEANS "PLUMBING CONTRACTOR" WHEN REFERENCED ANYWHERE IN THE PLUMBING CONSTRUCTION DOCUMENTS UNLESS WORK AND EQUIPMENT HAS BEEN COORDINATED BETWEEN PLUMBING AND GENERAL CONTRACTORS TO BE PROVIDED BY OTHERS. "NEEDED," "PROVIDE," AND "INSTALL" MEANS ALL ITEMS CALLED OUT IN THE CONTRACT DOCUMENTS AND ANY ADDITIONAL ITEMS NOT CALLED OUT BUT REQUIRED TO MAKE A COMPLETE AND OPERATIONAL SYSTEM.

B. PLANS ARE DIAGRAMMATIC. DO NOT SCALE FOR MATERIAL QUANTITIES. ALL SCALING SHOULD BE REFERENCED TO ARCHITECTURAL PLANS ONLY. FURNISH AND INSTALL ALL COMPONENTS NEEDED WHETHER INDICATED OR NOT TO PROVIDE A COMPLETE AND OPERATING SYSTEM.

C. CONTRACTOR SHALL VISIT SITE AND VERIFY ALL CONNECTIONS TO EXISTING WORK PRIOR TO BIDDING.

D. SCOPE – THE INTENT OF THE SPECIFICATIONS AND THE DRAWINGS IS TO PROVIDE A COMPLETE AND FULLY OPERATIONAL PLUMBING SYSTEM. THE PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL ALL LABOR, MATERIAL AND EQUIPMENT NECESSARY TO COMPLETE THE PLUMBING WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER FITTING OF MATERIAL INTO THE BUILDING AS INDICATED ON DRAWINGS, WITHOUT INTERFERENCE WITH OTHER WORK, AND SHALL MAKE REASONABLE MODIFICATIONS IN THE LAYOUTS NEEDED TO PREVENT CONFLICT WITH OTHER TRADES, TO PROVIDE ACCESS AND FOR THE PROPER EXECUTION OF THE WORK.

E. PERMITS AND FEES – THE PLUMBING CONTRACTOR SHALL PROCURE AND PAY FOR ALL PERMITS, FEES AND INSPECTIONS NECESSARY TO COMPLETE THE PLUMBING SCOPE OF WORK.

F. WARRANTY – THE PLUMBING CONTRACTOR SHALL UNCONDITIONALLY WARRANT ALL WORK TO BE FREE OF DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE BY OWNER'S REPRESENTATIVE AND WILL REPAIR OR REPLACE ANY DEFECTIVE WORK PROMPTLY AND WITHOUT CHARGE AND RESTORE ANY OTHER EXISTING WORK DAMAGED IN THE COURSE OF REPAIRING DEFECTIVE MATERIALS AND WORKMANSHIP.

G. CODES: ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH ALL APPLICABLE LOCAL CODES AND ORDINANCES, IN CASE OF CONFLICT BETWEEN THE DRAWINGS AND THE SPECIFICATIONS AND THE CODES AND ORDINANCES, THE HIGHEST STANDARD SHALL APPLY. THE PLUMBING CONTRACTOR SHALL SATISFY CODE REQUIREMENTS AS A MINIMUM STANDARD WITHOUT EXTRA COST.

H. STANDARDS: EQUIPMENT AND MATERIALS SHALL CONFORM WITH APPROPRIATE PROVISIONS OF UPC, CPC, CSA, ULC, ARL, ASME, ASTM, UL, NEMA, ANSI SMACNA, ASHRAE, AND NFPA, AS APPLICABLE TO EACH INDIVIDUAL UNIT OR ASSEMBLY.

I. THE WORK, MATERIALS AND EQUIPMENT ARE TO BE PROVIDED TO MEET SPECIFIC LEED CREDIT REQUIREMENTS AS STATED ON SCHEDULES AND PLANS.

J. ALL PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED PRIOR TO BIDDING AND PREAPPROVED IN WRITING. ALL COORDINATION ASSOCIATED WITH SUBSTITUTED MATERIALS OR EQUIPMENT IS THE RESPONSIBILITY OF THE CONTRACTOR.

K. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND TECHNICAL DATA FOR ALL EQUIPMENT AND MATERIALS SCHEDULED AND SPECIFIED INCLUDING AIR DISTRIBUTION AND PIPING SYSTEMS.

L. OPERATING AND MAINTENANCE INSTRUCTIONS – AT THE CONCLUSION OF THE PROJECT, THE CONTRACTOR SHALL PROVIDE THREE (3) COPIES OF OPERATING AND MAINTENANCE INSTRUCTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING PERIODIC SERVICE.

1.2 COORDINATION WITH EXISTING CONDITIONS AND OTHER TRADES

A. THIS PROJECT INVOLVES CONSTRUCTION INSIDE AN EXISTING STRUCTURE. CONTRACTORS, BY SUBMITTING A BID ARE DEEMED TO BE COMPLETELY FAMILIAR WITH THE EXISTING CONDITIONS OF THE BUILDING AS IT INFLUENCES THE WORK DESCRIBED. NO CLAIMS FOR EXTRA COMPENSATION WILL BE CONSIDERED FOR EXISTING CONDITIONS VISIBLE OR REASONABLY INFERABLE FROM A CAREFUL EXAMINATION OF THE EXISTING BUILDING CONDITIONS.

B. CONTRACTOR SHALL INSPECT THE EXISTING FIELD CONDITIONS AT THE SITE AND THE "AS BUILT" CONTRACT DOCUMENTS PRIOR TO THE START OF ANY WORK TO DETERMINE WHAT AFFECT THE EXISTING CONDITIONS WILL HAVE ON THE WORK POTENTIAL. PROBLEM AREAS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT IMMEDIATELY.

C. CONTRACTOR SHALL CONNECT THEIR WORK TO THE EXISTING PIPING SYSTEMS. NEW WORK SHALL BE COMPATIBLE WITH THE EXISTING SYSTEM MATERIALS, AND CONSTRUCTION METHODS. COORDINATE ALL WORK WITH OTHER TRADES AND INSTALL ALL WORK IN COORDINATION WITH ARCHITECTURAL AND STRUCTURAL MEMBERS. EXCEPT FOR NECESSARY CONNECTIONS TO ASSOCIATED EQUIPMENT, NO PIPING OR DUCTWORK IS TO BE IN CONTACT WITH EQUIPMENT.

D. COORDINATE ALL CUTTING AND PATCHING WITH GENERAL CONTRACTOR AND OTHER DISCIPLINES. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING RELATED TO HIS WORK.

E. OBTAIN WRITTEN PERMISSION OF STRUCTURAL ENGINEER BEFORE PROCEEDING WITH ANY CUTTING OR PATCHING OF STRUCTURAL SYSTEMS. DO NOT CUT ROOF FRAMING.

F. CARE SHALL BE TAKEN DURING INSTALLATION OF THE WORK TO NOT DAMAGE OR INTERRUPT THE EXISTING BUILDING SYSTEMS AND SERVICES INSTALLED. DAMAGE TO EXISTING SYSTEMS AND EQUIPMENT CAUSED BYCONTRACTOR DURING THE INSTALLATION OF THEIR WORK SHALL BE REPAIRED AND/OR REPLACED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE BUILDING OWNER.

G. NOTIFICATIONS AND COMPLIANCE WITH BUILDING STANDARDS AND RULES:
1. OBTAIN A COPY OF ANY APPLICABLE BUILDING TENANT DEVELOPMENT AND BUILDING CONSTRUCTION STANDARDS AND COMPLY WITH THESE STANDARDS.
2. SHUTDOWN OF EXISTING SYSTEMS FOR CONNECTION TO EXISTING SERVICES SHALL BE COORDINATED WITH THE OWNER. CONTRACTOR SHALL SUBMIT REQUESTS WHERE THEY AFFECT THE OPERATION OF THE BUILDING SYSTEMS AT LEAST ONE (1) WEEK IN ADVANCE OF ANY REQUIRED SHUTDOWN. THE ACTUAL SHUTDOWN PERIOD SHALL BE AS SHORT AS POSSIBLE AND AT A TIME AGREED TO BY THE OWNER.

H. DEMOLITION SHALL BE COORDINATED WITH OWNER'S REPRESENTATIVE, ARCHITECT AND GENERAL CONTRACTOR.

I. CONTRACTOR SHALL REPORT ANY EQUIPMENT DEFICIENCIES FOUND TO THE ARCHITECT WITHIN FIVE (5) DAYS OF DISCOVERY.

PART 2 - PRODUCTS AND EXECUTION

2.1 BASIC MATERIALS AND METHODS

A. ALL MATERIALS AND EQUIPMENT ARE TO BE NEW UNLESS OTHERWISE DESIGNATED IN THESE DOCUMENTS.

B. CUTTING, CORING AND FITTING – PERFORM REPAIRING AND FINISHING OF THE WORK NECESSARY FOR THE INSTALLATION OF THE FIXTURE. HOWEVER, NO CUTTING OF THE WORK OF OTHER TRADES OR ANY STRUCTURAL MEMBER SHALL BE DONE WITHOUT THE CONSENT OF THE ARCHITECT, CONSTRUCTION MANAGER, GENERAL CONTRACTOR, AND/OR OWNER. PROPERLY FILL, SEAL, FIREPROOF, AND WATERPROOF ALL OPENINGS, SLEEVES AND HOLES IN SLABS, WALLS, AND CASEWORK.

C. HANGERS AND SUPPORTS – THE PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL ALL SUPPORTS NEEDED FOR EQUIPMENT AND MATERIAL. PROVIDE HANGERS FOR INSULATED PIPE SIZES 1/2" TO 1-1/2" OF THE ADJUSTABLE STEEL BAND TYPE. HANGERS FOR INSULATED PIPE SIZES 2" AND OVER SHALL BE ADJUSTABLE STEEL CLEVIS TYPE. SHIELDS SHALL BE USED WHERE HANGER SUPPORTS INSULATED PIPE. HANGERS AND PIPE ATTACHMENTS TO BE FACTORY FABRICATED WITH GALVANIZED COATINGS; NONMETALLIC COATED FOR HANGERS IN DIRECT CONTACT WITH COPPER TUBING. HANGERS SHALL BE LOCATED 12" MAXIMUM FROM ANY CHANGE IN DIRECTION AND SPACES AS FOLLOWS FOR STRAIGHT RUNS. MAXIMUM SPACING BETWEEN HANGERS SHALL COMPLY WITH LOCAL CODE REQUIREMENTS WITH ADDITIONAL SUPPORTS WHERE REQUIRED TO PROPERLY SUPPORT EACH PIPE.

D. CONNECTIONS – INSTALL UNIONS ADJACENT TO EACH VALVE AND AT FINAL CONNECTION TO EACH PIECE OF EQUIPMENT. INSTALL DIELECTRIC COUPLINGS TO CONNECT PIPING MATERIALS OF DISSIMILAR METALS. SCREW JOINT STEEL PIPING UP TO AND INCLUDING 1-1/2". WELD PIPING USE NON-LEAD, NON-ANTIMONY SOLDER FOR SOLDERING DOMESTIC WATER COPPER PIPE.

E. INSTALLATION – INSTALL PIPING FREE OF SAGS AND BENDS, PROVIDE BRACKET STANDOFFS FROM MOUNTING SURFACES SUFFICIENT TO ALLOW 1" CLEANING SPACE AROUND ALL PIPING, INCLUDING ANY ADDED PIPING INSULATION. INSTALL FITTINGS FOR CHANGES IN DIRECTION AND BRANCH CONNECTIONS. INSTALL SLEEVES FOR PIPES PASSING THROUGH CONCRETE AND MASONRY WALLS, GYPSUM-BOARD PARTITIONS, CONCRETE FLOOR, AND ROOF SLABS/STRUCTURE. SEAL PIPE PENETRATIONS THROUGH RATED CONSTRUCTION WITH FIRE-STOPPING SEALANT MATERIAL MEETING CODE, AHJ, AND ARCHITECT'S REQUIREMENTS. UNDERGROUND WATER AND SEWER LINES SHALL BE LAID IN SEPARATE TRENCHES WITH A MINIMUM HORIZONTAL SPACING AS REQUIRED BY CODE, EXCAVATED TO THE PROPER DEPTH AND GRADED TO PRODUCE THE REQUIRED FALL.

F. ALL PLUMBING AND PLUMBING EQUIPMENT SHALL BE SUPPORTED FROM STRUCTURE (CONFIRM) AND NOT FROM OTHER EQUIPMENT, PIPING, CONDUITS OR CEILING SUPPORTS.

2.2 PLUMBING EQUIPMENT

A. EQUIPMENT – THE PLUMBING CONTRACTOR SHALL VERIFY ANY EQUIPMENT LOCATION AND SIZES REQUIRING PLUMBING CONNECTION(S) WITH THE TRADE AND VENDOR SUPPLYING THE EQUIPMENT PRIOR TO ROUGH-IN.

B. CLEANOUTS – F&I J.R. SMITH OR EQUIVALENT FLOOR AND WALL CLEANOUTS AS INDICATED ON THE DRAWINGS AND WHERE NEEDED IN ALL SOIL, WASTE, AND DRAIN LINES. IN AREAS WITH CERAMIC TILE OR CARPETED FLOORING, PROVIDE CLEANOUTS WITH SQUARE, ADJUSTABLE, NICKEL BRONZE TOP. IN AREAS WITH RESILIENT FLOORING, PROVIDE CLEANOUTS WITH SQUARE, ADJUSTABLE, NICKEL BRONZE TOP WITH TILE RECESS. CLEANOUTS SHALL BE SAME SIZE AS PIPE EXCEPT THAT CLEANOUTS LARGER THAN 4" WILL NOT BE REQUIRED. WHERE CLEANOUTS OCCUR IN WALLS OF FINISHED AREAS, THEY SHALL BE CONCEALED BEHIND CHROME PLATED ACCESS COVERS.

C. TESTING – ALL PIPES SHALL BE TESTED BY AN APPROVED METHOD BEFORE THEY ARE BACKFILLED OR CONCEALED. AFTER TESTING IS COMPLETE, THE PLUMBING CONTRACTOR SHALL DISINFECT THE POTABLE WATER SYSTEM AS REQUIRED BY AHJ. TEST WATER PURITY ACCORDING TO AHJ AND SUBMIT CERTIFIED TEST RESULTS TO AHJ FOR REVIEW AND APPROVAL.

2.3 INSULATION

A. INSTALL NO-SCALD SAFETY COVERS WIT INSULATED FOAM LINER AND TAMPER PROOF STRAP AT EXPOSED PIPING UNDER ADA SINKS AS FURNISHED BY STARBUCKS.

2.4 PIPING

A. SOIL, WASTE AND VENT PIPING
1. SOIL, WASTE AND VENT PIPING 10" AND SMALLER SHALL BE SERVICE WEIGHT, HUBLESS, CAST IRON PIPE AND FITTINGS WITH NEOPRENE GASKET AND STAINLESS STEEL SHIELD AND CLAMP. PROVIDE HUB-TYPE PIPE AND FITTINGS BELOW GRADE WHERE REQUIRED BY LOCAL CODES OR AHJ. HORIZONTAL RUNS SHALL DRAIN AT A GRADE OF 1/4" PER FOOT. IF SLOPE OF 1/4" IS NOT POSSIBLE, APPLY TO BUILDING DEPARTMENT FOR VARIANCE IF 1/8" IS NEEDED.

B. DOMESTIC WATER PIPING – 2" AND SMALLER SHALL BE COPPER TUBE WITH WROUGHT COPPER SWEAT FITTINGS JOINED WITH LEAD FREE SOLDER. PROVIDE TYPE "L" COPPER TUBE ABOVE GROUND TYPE "K" BELOW GROUND.

2.5 VALVES

A. GENERAL – PLUMBING CONTRACTOR TO PROVIDE VALVES WHERE INDICATED ON PLANS AND AS NECESSARY FOR PROPER SYSTEM OPERATION AND COMPONENT ISOLATION. INSTALL VALVES FOR EACH FIXTURE AND ITEM OF EQUIPMENT. PROVIDE BRAIDED STAINLESS STEEL HOSE (UNLESS OTHERWISE NOTED) BETWEEN VALVE AND EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. LOCATE SHUT-OFF VALVES WITHOUT MOVING EQUIPMENT. PROVIDE STOP VALVES FOR ALL EQUIPMENT WHETHER SHOWN ON THE DRAWINGS OR NOT. VALVES SHALL BE LISTED/APPROVED FOR USE BY AHJ AND CODE REQUIREMENTS.

B. VALVES – PROVIDE VALVES FOR WORKING PRESSURE IN WATER PIPING OF 125 PSI OR GREATER. UNLESS NOTED OTHERWISE VALVES SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS:
1. VALVE TYPE: DESCRIPTION
A) BALL VALVE (UP TO 3"): BRASS, FULL PORT, QUARTER TURN.
2. WATER HAMMER ARRESTOR: PRE-CHARGED, SEALED CHAMBER.
3. PRESSURE REDUCING VALVE: BRONZE, 25 TO 75 PSI REDUCED PRESSURE RANGE AND UPSTREAM/DOWNSTREAM PRESSURE GAUGES.
4. TRAP SEAL PRIMER: BRONZE, PRESSURE BASED AUTOMATIC PRIMING.

C. SUPPLY WATER SERVICE – IF WATER PRESSURE SUPPLIED TO STORE IS GREATER THAN 65 PSI, THEN PROVIDE A PRESSURE REGULATOR IN MAIN SUPPLY TO REDUCE WATER PRESSURE. PROVIDE BACKFLOW PREVENTION ONWATER SERVICE IF REQUIRED BY LOCAL CODE.

D. THERMOSTATIC MIXING VALVE
1. PROVIDE A SINGLE THERMOSTATIC MIXING VALVE (TMV) SET FOR 110°F (OR AS REQUIRED BY AHJ) TO SERVE LAVATORY. MIXING VALVE TO BE INSTALLED PER MANUFACTURER'S REQUIREMENTS WITH CHECK VALVES AT SUPPLY INLETS.

2.6 TESTING
1. WATER DISTRIBUTION PIPING TEST: BEFORE FIXTURES ARE SET, SUBJECT THE HOT AND COLD WATER PIPING SYSTEMS TO A HYDROSTATIC PRESSURE TEST OF 150 POUNDS PER SQUARE INCH WITH WATER FOR NOT LESS THAN 8 HOURS IN ORDER TO PERMIT INSPECTION OF ALL JOINTS WITH NO EVIDENCE OF LEAKAGE. WHERE A PORTION OF THE WATER DISTRIBUTION PIPING IS TO BE CONCEALED BEFORE COMPLETION, TEST THIS PORTION SEPARATELY AS SPECIFIED FOR THE ENTIRE SYSTEM.
2. SANITARY WASTE AND VENT PIPING TEST: BEFORE THE INSTALLATION OF ANY FIXTURES OR DRAINS, CAP THE ENDS OF THE SYSTEM AND FILL ALL LINES WITH WATER AND ALLOW TO STAND FOR AT LEAST 30 MINUTES WITHOUT LEAKAGE. MAKE TESTS WITHIN BUILDING WITH PIPING EXPOSED. IF THE SYSTEM IS TESTED IN SECTIONS, TIGHTLY LUG EACH OPENING, EXCEPT THE HIGHEST OPENING OF THE SECTION UNDER TEST, AND FILL EACH SECTION WITH WATER AND TEST WITH AT LEAST A 10 FEET HEAD OF WATER FOR WASTE PIPING AND UP TO THE TOP OF VENT TERMINAL FOR VENT PIPING. PERFORM FINAL TEST FOR SANITARY DRAINAGE, VENT AND FIXTURE SYSTEM.

PLUMBING BASIS OF DESIGN

1.1 PLUMBING BASIS OF DESIGN

A. CODES AND STANDARDS (LATEST EDITIONS UNLESS OTHERWISE REQUIRED BY AHJ)
1. OREGON BUILDING CODES ENFORCED BY THE AUTHORITY HAVING JURISDICTION (AHJ):
A) 2022 OREGON STRUCTURAL SPECIALTY CODE (OSSC) BASED ON THE 2021 INTERNATIONAL BUILDING CODE WITH STATE AMENDMENTS.
B) 2021 OREGON PLUMBING SPECIALTY CODE (OPSC) BASED ON THE 2021 UNIFORM PLUMBING CODE WITH STATE AMENDMENTS.
C) 2022 OREGON MECHANICAL SPECIALTY CODE (OMSC) BASED ON THE 2021 INTERNATIONAL MECHANICAL CODE AND THE 2021INTERNATIONAL FUEL GAS CODE (IMC).
2. AMERICANS WITH DISABILITIES ACT (ADA)

B. WATER SUPPLY:
1. THE EXISTING SERVICES ARE ASSUMED TO BE SUFFICIENT FOR ALL USER TOILET ROOM 1174:
A) A NEW 1-1/2" COLD WATER LINE IS TO BE PROVIDED TO SERVICE THE LAVATORY, HOSE BIBB, INSTANT HOT WATER HEATER, AND WATER CLOSET.

C. DOMESTIC HOT WATER:
1. A NEW INSTANT HOT WATER HEATER WILL BE PROVIDED FOR ALL USER TOILET ROOM 1174.
A) INSTANT HOT WATER HEATER OUTLET TEMPERATURE SHALL BE FACTORY LIMITED TO 110°F, PER ADA REQUIREMENTS.

D. SANITARY SEWER:
1. ALL USER TOILET ROOM 1174 SANITARY SEWER PIPING SHALL CONNECT INTO AN EXISTING 6" SANITARY LINE THAT IS NEARBY. SEE SHEET 1/P6.1 FOR FURTHER INFORMATION.
2. THE EXISTING 2" SANITARY VENT, PREVIOUSLY USED FOR A DEMOLISHED FLOOR SINK SHALL BE REUSED TO SUPPORT THE RESTROOM. SEE SHEET 1/P6.1 FOR FURTHER INFORMATION.

E. SEISMIC:
1. ANCHORAGE AND RESTRAINTS MUST BE COORDINATED WITH STRUCTURAL ENGINEER AND AUTHORITY HAVING JURISDICTION.

PLUMBING DRAWING LIST

SHEET NUMBER	SHEET NAME
P0.0	PLUMBING LEGEND AND ABBREVIATIONS
P6.1	FIRST FLOOR ENLARGED PLAN

DEFERRED SUBMITTALS

1. FIRE SPRINKLER DESIGN.
2. SEISMIC BRACING FOR MECHANICAL AND PLUMBING SYSTEMS, INCLUDE EQUIPMENT, PIPING, AND DUCKWORK.
3. PIPING SYSTEM CERTIFICATION AND ANALYSIS:
A. DESIGN: DESIGN AND CALCULATE REQUIREMENTS FOR THERMAL EXPANSION OF PIPING SYSTEMS AND FOR THE SELECTING AND DESIGNING EXPANSION JOINTS AND LOOPS.
B. ANCHOR DETAILS: DETAIL FABRICATION OF EACH ANCHOR. SHOW DIMENSIONS AND METHODS OF ASSEMBLY AND ATTACHMENT TO BUILDING STRUCTURE. SUPPORTS, ANCHORS, AND GUIDES SHALL BE DESIGNED FOR COMBINED GRAVITY, SEISMIC, PRESSURE AND THERMAL LOADS.
C. ALIGNMENTS GUIDE DETAILS: DETAIL FIELD ASSEMBLY AND ATTACHMENT TO BUILDING STRUCTURE.
D. SCHEDULE: EACH EXPANSION JOINT SHALL BE SCHEDULED WITH MANUFACTURER, TYPE, MATERIAL, SIZE, PRESSURE RATING, END CONNECTIONS, AND LOCATION.
E. FULLY COORDINATE WITH DESIGN OF SEISMIC RESTRAINT AND ANCHORAGE.

*FOR ALL ITEMS LISTED ABOVE, THE PLUMBING AND/OR MECHANICAL CONTRACTOR SHALL PROVIDE A DELEGATED DESIGN SUBMITTAL WITH THE DOCUMENTATION AND ENGINEERING REQUIRED TO SATISFY REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION (AHJ). THE DELEGRATED DESIGN SUBMITTAL SHALL INCLUDE, BUT NOT BE LIMITED TO: ANALYSIS DATA SIGNED AND SEALED BY A QUALIFIED PROFESSIONAL ENGINEER RESPONSIBLE FOR THEIR PREPARATION.

EXPIRES: 12/31/23
REGISTERED PROFESSIONAL ENGINEER
OREGON
89232PE
Date Signed by:
Phillip Cunningham
RENEWAL 12/31/2023
PHILLIP C. CUNNINGHAM

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Project
KELLEY ENGINEERING CENTER PARTIAL REMODEL
110 SW Park Terrace
Corvallis, OR 97331

MARK	DATE	DESCRIPTION

Sheet Title
PLUMBING LEGEND AND ABBREVIATIONS

Drawing No.
P0.0

Scale	NONE
Date	07/27/2023
Project No.	19-0016

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ISSUED FOR PERMIT AND BID

PLUMBING FIXTURE SCHEDULE

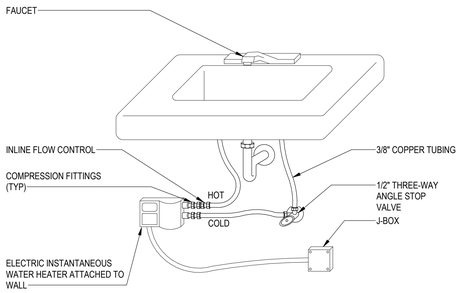
TAG	FIXTURE	MANUFACTURER	MODEL	ADA (Y/N)	FLOW (GPF/GPM)	CONNECTION SIZE W	V	HW	CW	REMARKS
HB-1	HOSE BIBB	J.R. SMITH	5609QT		5				3/4"	WALL FAUCET WITH VACUUM BREAKER, CHROME FINISH, TEE-KEY HANDLE. MOUNT AT 24" AFG.
LV-1	LAVATORY - WALL HUNG	AMERICAN STANDARD	0356.041	YES	0.35	2"	2"	1/2"	1/2"	VITREOUS CHINA, WALL MOUNTED, 20-1/2"X18-1/4". AMERICAN STANDARD 6114.114.002 LEVER FAUCET WITH AMERICAN STANDARD 605XTMV1070 THERMOSTATIC MIXING VALVE. OR EQUAL. PROVIDE K-7131-A OFFSET DRAIN WITH FIXED GRID STRAINER. PROVIDE PLUMBEREX "PRO-EXTREME" P-TRAP AND SUPPLY PROTECTION.
WC-1	WATER CLOSET, WALL HUNG	AMERICAN STANDARD	3351.101	YES	1.28	4"	2"		1 1/4"	VITREOUS CHINA, WALL MOUNT, ELONGATED BOWL, FLUSH VALVE, 1.28 GPF. PROVIDE AMERICAN STANDARD 6047121.002 MANUAL FLUSH VALVE. VALVE HANDLE TO BE ON RIGHT SIDE OF BOWL FOR EASE OF ADA ACCESS. PROVIDE OLSONITE #95SS OPEN FRONT SEAT. MOUNT RIM AT 17" AFF. COORDINATE FLUSH VALVE MOUNTING HEIGHT WITH GRAB BAR MOUNTING AND ADJUST FLUSH VALVE AS REQUIRED, PROVIDE OFFSET OUTLET TUBE ON FLUSH VALVE. COORDINATE WITH ARCHITECTURAL DETAILS. FIXTURE RATED FOR 1000-LBS STATIC WEIGHT.
DRAINS										
(2")FD-1	FLOOR DRAIN	JR SMITH	2005-B			2"	0"		1/2"	9" DIAMETER CAST IRON BODY, 5"x5" NICKEL BRONZE STRAINER HEAD, TRAP PRIMER CONNECTION. PROVIDE PRO-SET TRAP GUARD.
TP-1	TRAP PRIMER	PPP	PR-500						1/2"	PRESSURE DROP ACTIVATED AT 10 PSI.

NOTES:
A. COMPLY WITH ALL MANUFACTURER INSTALLATION REQUIRMENTS TO PROVIDE COMPLETE AND OPERATIONAL FIXTURES.
B. PROVIDE TRANSITION FITTING AS REQUIRED TO CONNECT TO BRANCH PIPING, WHICH MAY BE A DIFFERENT SIZE, AND AS SHOWN ON DRAWINGS.
C. PROVIDE STOP VALVES, BACKFLOW PREVENTERS AND SUPPORTS AS REQUIRED BY THE MANUFACTURER AND PLUMBING CODE.
D. COORDINATE WITH ELECTRICAL DESIGN FOR POWER SUPPLY AND LOCATIONS.
E. HOT WATER SHALL BE LIMITED TO ALL FIXTURES IN ACCORDANCE WITH ASSE STANDARDS: PUBLIC LAVATORIES SHALL BE LIMITED TO 110 F (ASSE 1070)

INSTANT HOT DOMESTIC WATER HEATER SCHEDULE

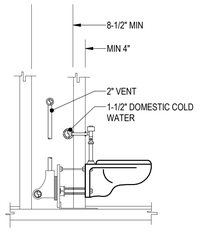
TAG	#	MANUFACTURER	MODEL	LOCATION	VOL (GAL)	RECOV (GPH)	EWT (°F)	LWT (°F)	CONNECTION SIZE CW (IN)	HW (IN)	NATURAL GAS NG (IN)	FLUE (IN)	INPUT (MBH)	EFF (AFUE%)	ELECTRICAL KW	VOLTS	PH	MCA	UNIT SIZE (L"xW"xH")	OPER. WT. (LBS)	NOTES
DWH	1	CHRONOMITE	CM-15L/208	ALL USER TOILET ROOM 1174	-	-	50	110	3/8"	3/8"	-	-	-	-	3.21	208	1	15	9-5/8x2-3/4x6-1/4	5	1,2

NOTES
1. PROVIDE Z-S1616D CASE WITH PRE-WIRED ELECTRICAL DISCONNECT. COORDINATE WITH ELECTRICAL FOR POWER AND DISCONNECT AS REQUIRED.
2. INSTANTANEOUS ELECTRIC TANKLESS, THERMOSTATIC CONTROL, LOW PRESSURE MODEL, 0.2 GMP ACTIVATION FLOW RATE, 61°F RISE AT 0.35 GPM FLOW RATE. MOUNT BELOW LAVATORY. MAXIMUM ALLOWABLE TEMPERATURE: 110°F.



NOTES:
1. REFER TO PLANS FOR SCHEDULE AND LOCATION. INSTALL PER MANUFACTURER'S INSTRUCTIONS.
2. FOR ADA COMPLIANCE INSULATE EXPOSED WATER PIPES,DRAIN PIPE, VALVES AND FITTINGS. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER THE SINK.

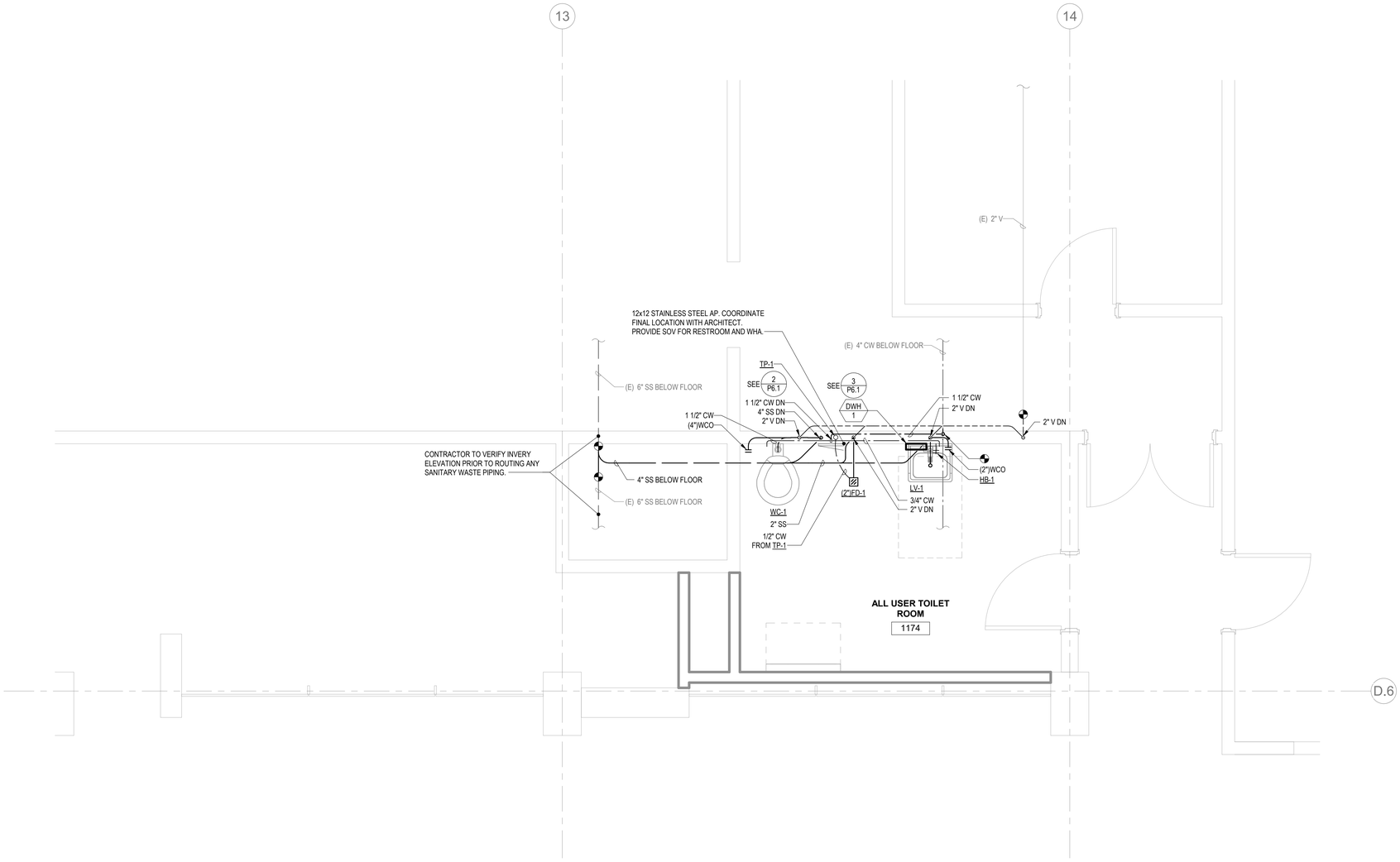
3 UNDER SINK INSTANTANEOUS WATER HEATER
SCALE: NONE



NOTES:
1. CHASE DIMENSIONS ARE BASED OFF THE PLUMBING AND DRAINAGE INSTITUTES MINIMUMS. ACTUAL MINIMUM DIMENSIONS MAY DIFFER PER MANUFACTURER. ALWAYS REFER TO MANUFACTURE MINIMUM REQUIREMENTS.
2. REFER TO PLANS FOR CONTINUATION.

2 PIPE CHASE WALL HUNG CLOSETS
SCALE: NONE

SHEET NOTES
A. ALL EXISTING PIPING IS BASED OFF OWNER PROVIDED AS-BUILT DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR IN-FIELD VERIFICATION AND INSPECTION OF SITE. REPORT ANY DISCREPANCIES TO ARCHITECT AND ENIGNEER OF RECORD UPON DISCOVERY.
B. NO WORK SHALL BE APPROVED OR BEGIN UNTIL CONTRACTOR HAS IN-FIELD VERIFIED THE SITE.
C. COORDINATE ALL UTILITY SHUT-OFFS WITH OWNER SO AS NOT TO DISRUPT NORMAL BUSINESS HOURS.



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

GRAPHIC SCALE: 1/2" = 1'-0"
N 0' 1' 2' 4' 8'

ISSUED FOR PERMIT AND BID

EXPIRES: 12/31/23
REGISTERED PROFESSIONAL ENGINEER
89232PE
Digitally signed by Phillip Cunningham
PHILLIP C. CUNNINGHAM

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Corvallis, OR 97331

MARK	DATE	DESCRIPTION

Sheet Title
FIRST FLOOR ENLARGED PLAN

Drawing No.
P6.1

Scale	As indicated
Date	07/27/2023
Project No.	19-0016

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