Montana State University, Bozeman MT

REV

Communications | Audio | Video

Cable Enclosure (Requires 1 Dedicated 20A Circuit)

REVISIONS # DATE DESCRIPTION 1 03.27.20 Addendum 1

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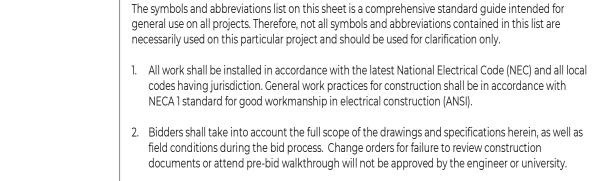
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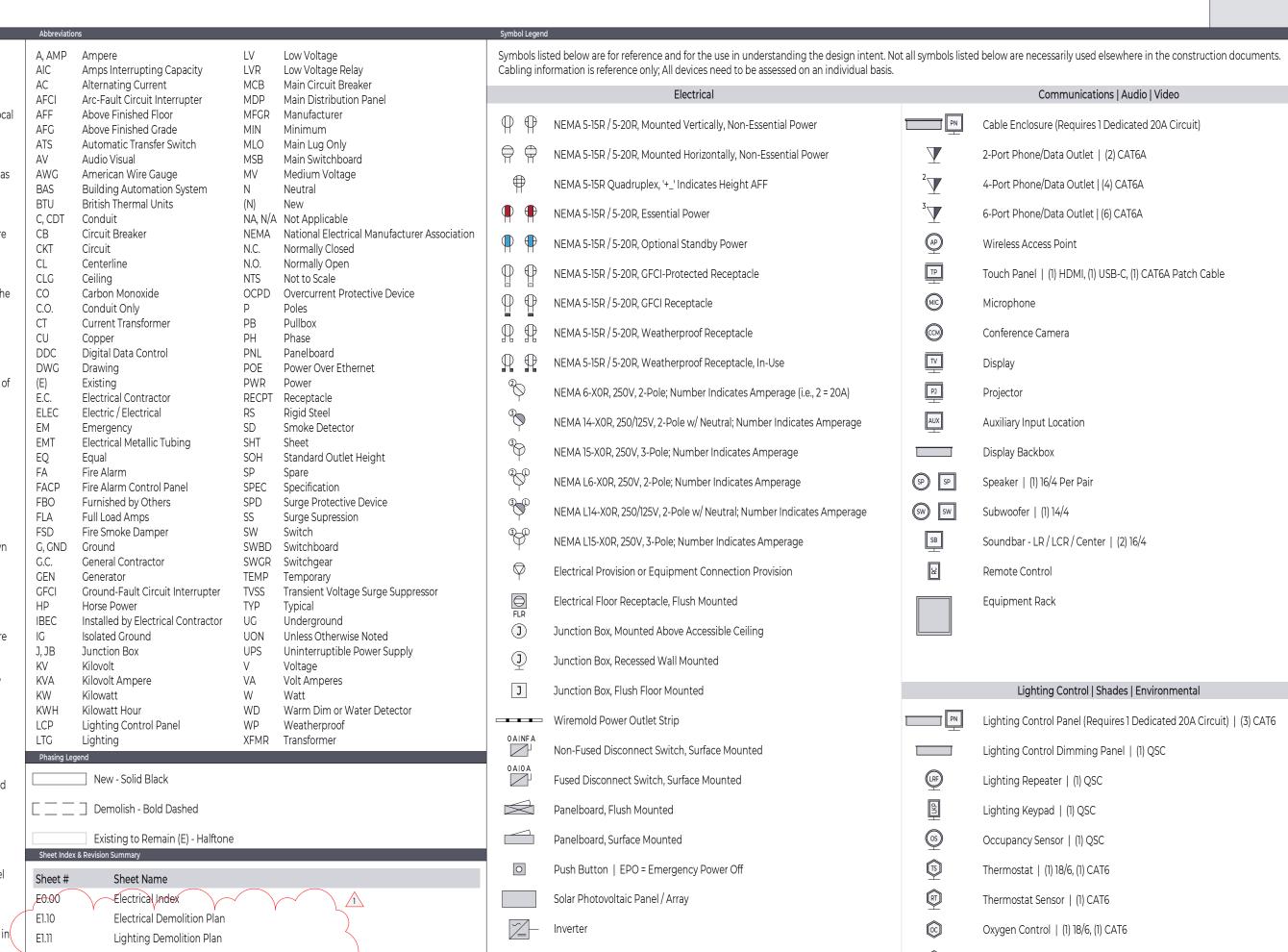
A/E#001 Electrical Index

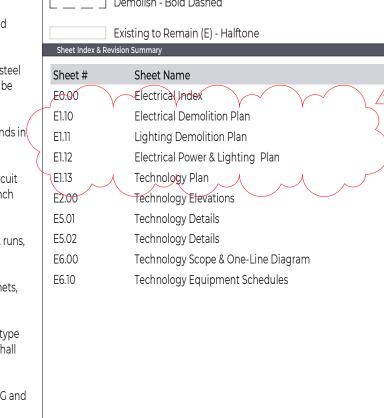
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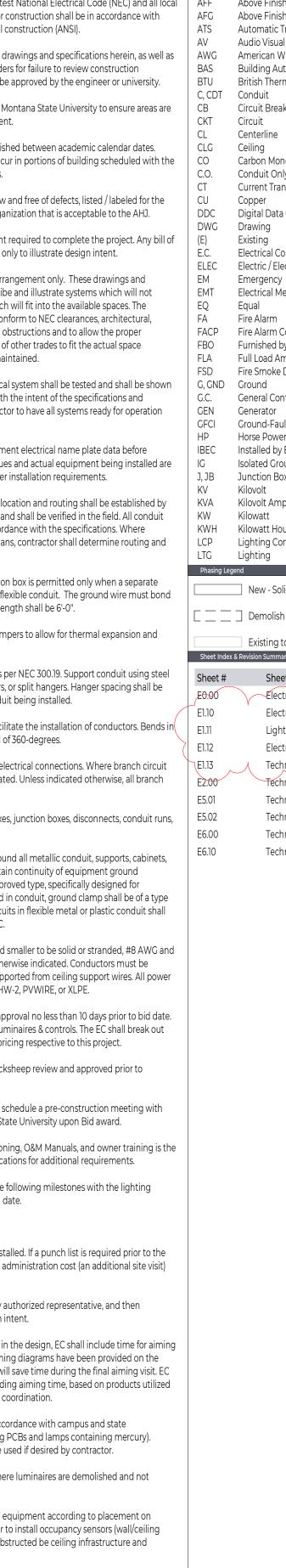
Date: 03.07.2024

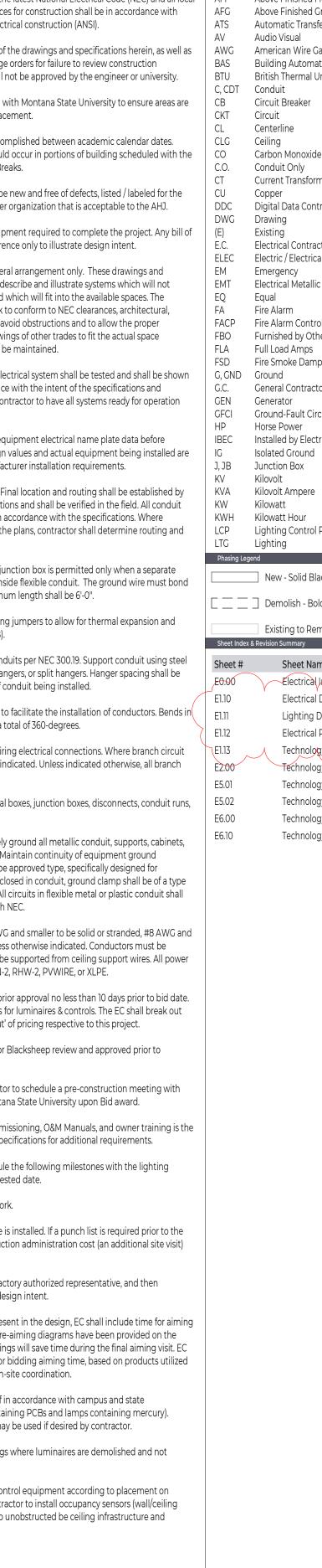
Electrical

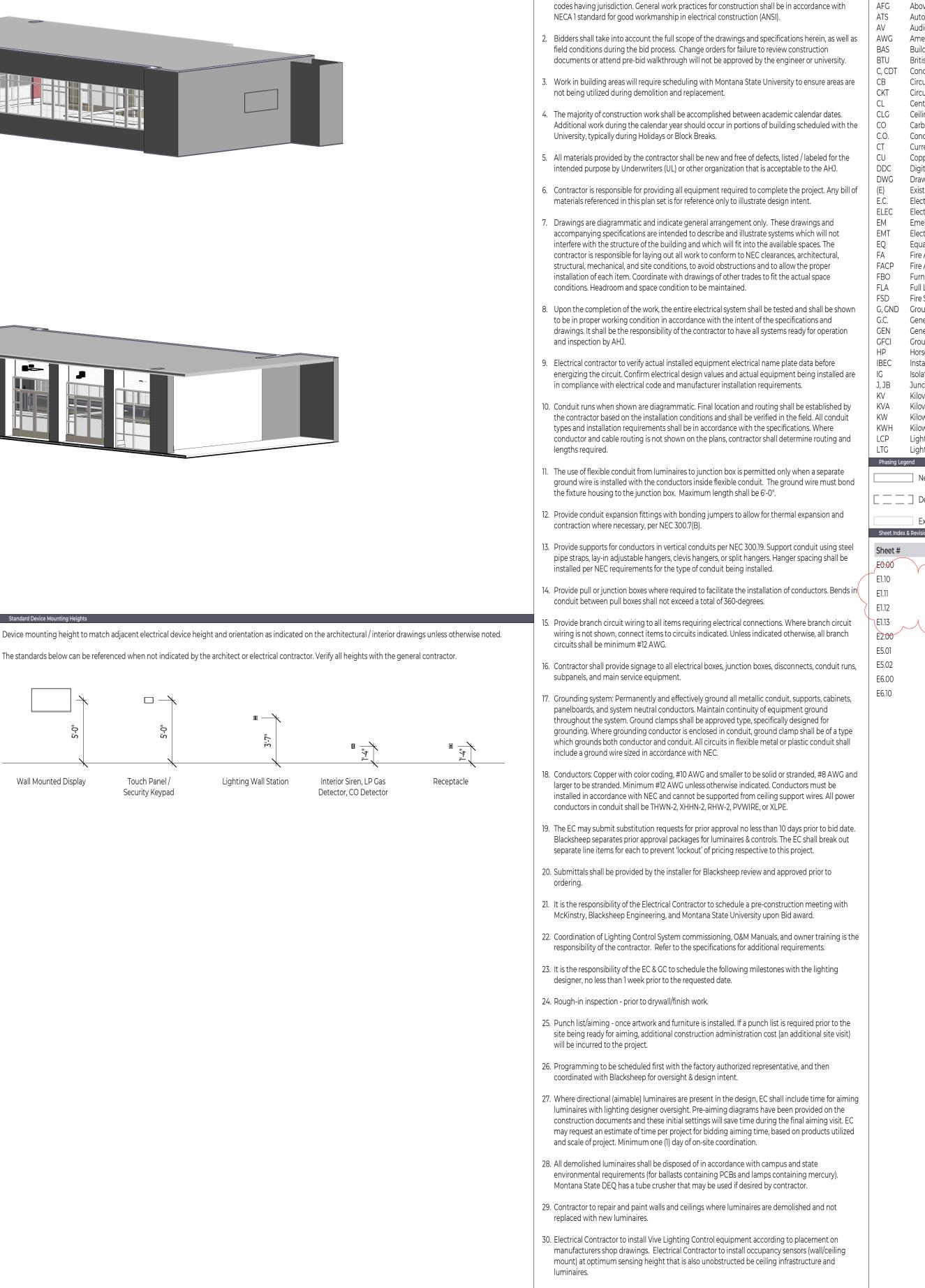


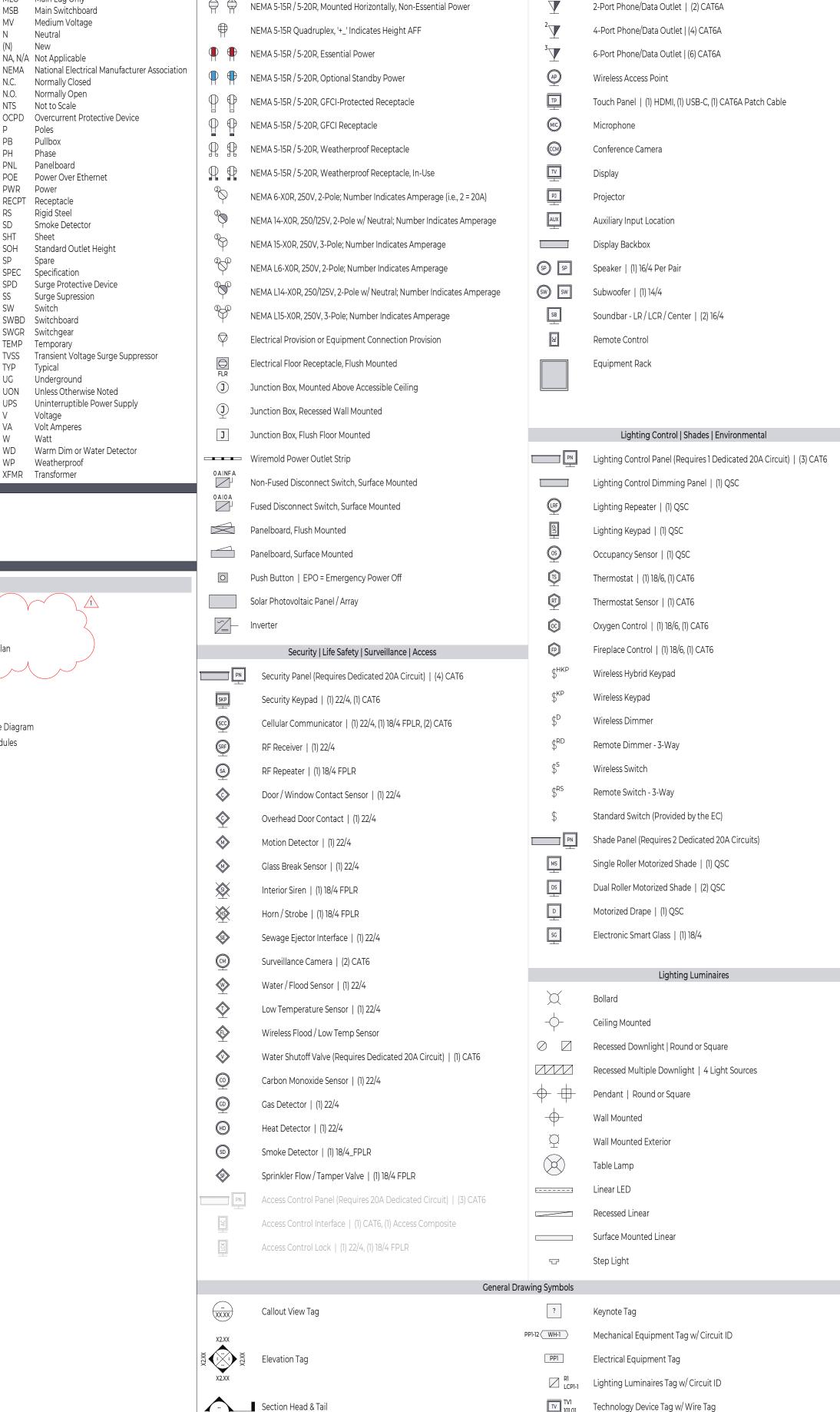


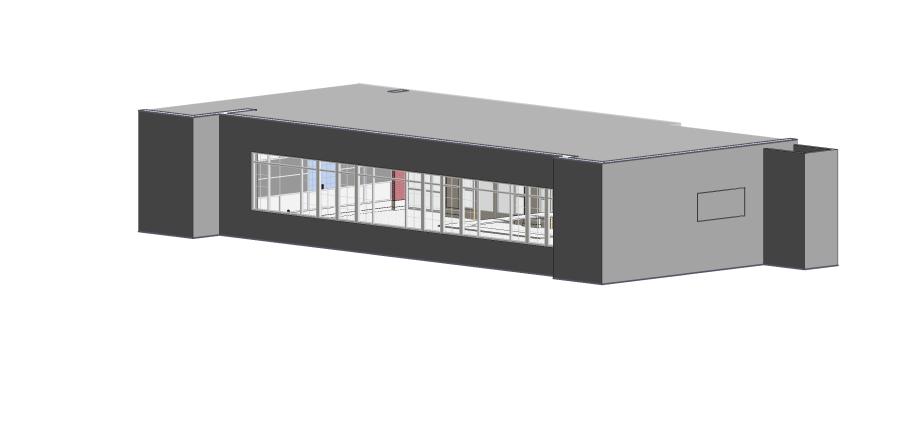














The standards below can be referenced when not indicated by the architect or electrical contractor. Verify all heights with the general contractor.

Lighting Wall Station

Interior Siren, LP Gas

Detector, CO Detector

Receptacle

 $\Box \rightarrow$

Touch Panel /

Security Keypad

Wall Mounted Display

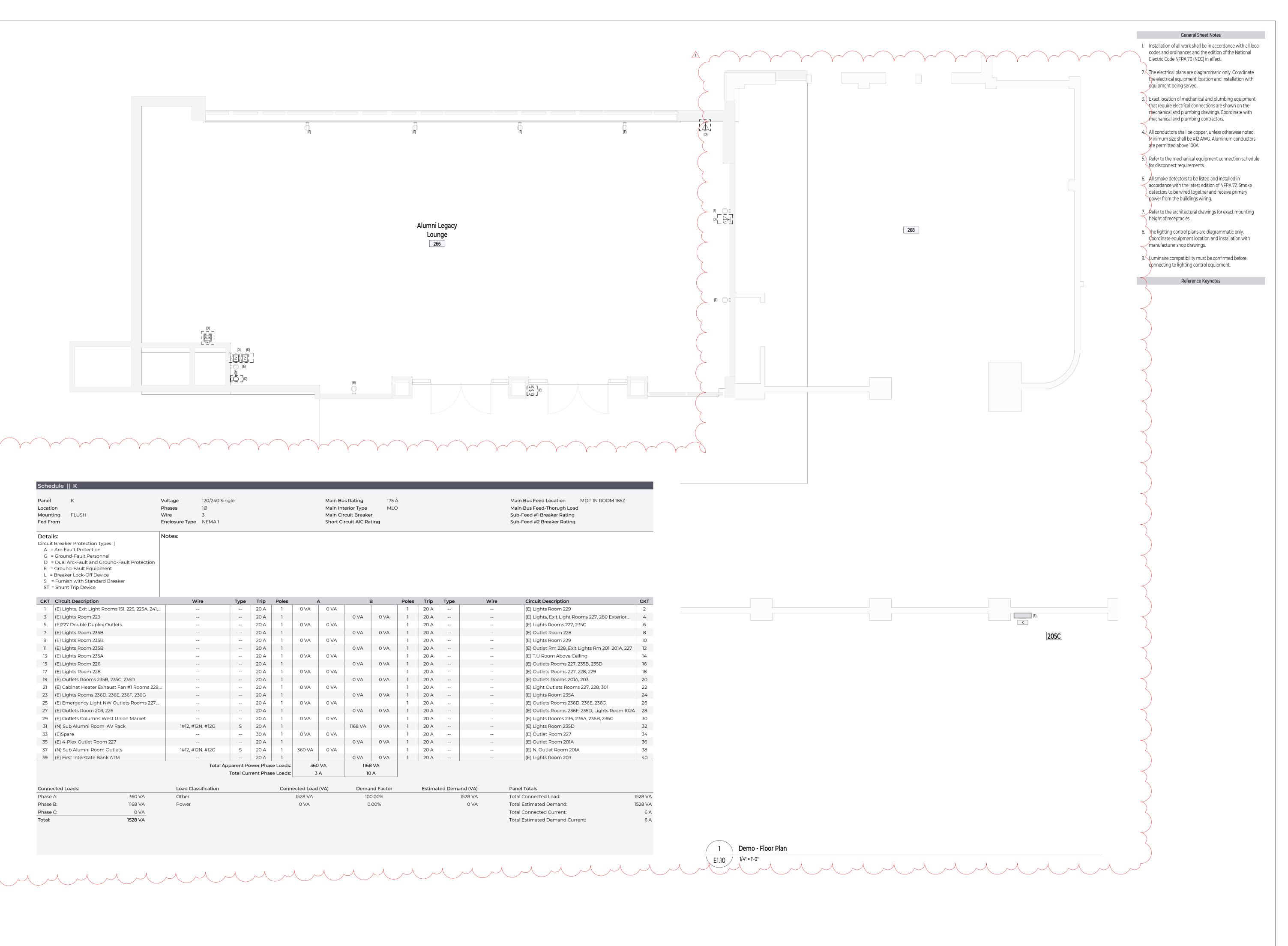
Design relocation for notification devices for existing fire alarm system.

with owner expectations.

Electrical Design for the site's power distribution system. Power design to include relocation or replacement of receptacles within the space, power to new technology equipment and division 26 Fire & Life Safety

Lighting Design							
Design of interior environments will implement strategies to compliment the architectural design,							
maximize sustainability, and increase the wellness & wellbeing of the occupants, and meet the MSU							
lighting standards. Design to include light fixture selection, layouts, schedules, mounting details,							
controls and calculations. Design reviews to be conducted to ensure the lighting is in conformance							

Technology Remove existing wiring and conferencing equipment and install a new QSC audio/video conferencing system.



NTANA UNIVERSITY

STRAND UNION BUILDING

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CAMPUS PLANNING,
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BLACK SHEEP

Mechanical | Plumbing | Electrical | Lighting | Technology 602 W Hemlock St. | Bozeman, MT 59715 BLACKSHEEP.engineering | 406.219.8489

PPA#23-0720

A/E#001

Electrical Demolition Plan

E1.10

Demo - Reflected Ceiling Plan E1.11 1/4" = 1'-0"

General Sheet Notes

- 1. Installation of all work shall be in accordance with all local codes and ordinances and the edition of the National Electric Code NFPA 70 (NEC) in effect.
- 2. The electrical plans are diagrammatic only. Coordinate the electrical equipment location and installation with equipment being served.
- 3. Exact location of mechanical and plumbing equipment that require electrical connections are shown on the mechanical and plumbing drawings. Coordinate with mechanical and plumbing contractors.
- 4. All conductors shall be copper, unless otherwise noted. Minimum size shall be #12 AWG. Aluminum conductors are permitted above 100A.
- 5. Refer to the mechanical equipment connection schedule for disconnect requirements.
- 6. All smoke detectors to be listed and installed in accordance with the latest edition of NFPA 72. Smoke detectors to be wired together and receive primary power from the buildings wiring.
- 7. Refer to the architectural drawings for exact mounting height of receptacles.
- 8. The lighting control plans are diagrammatic only. Coordinate equipment location and installation with manufacturer shop drawings.
- 9. Luminaire compatibility must be confirmed before connecting to lighting control equipment.

Reference Keynotes



Checker

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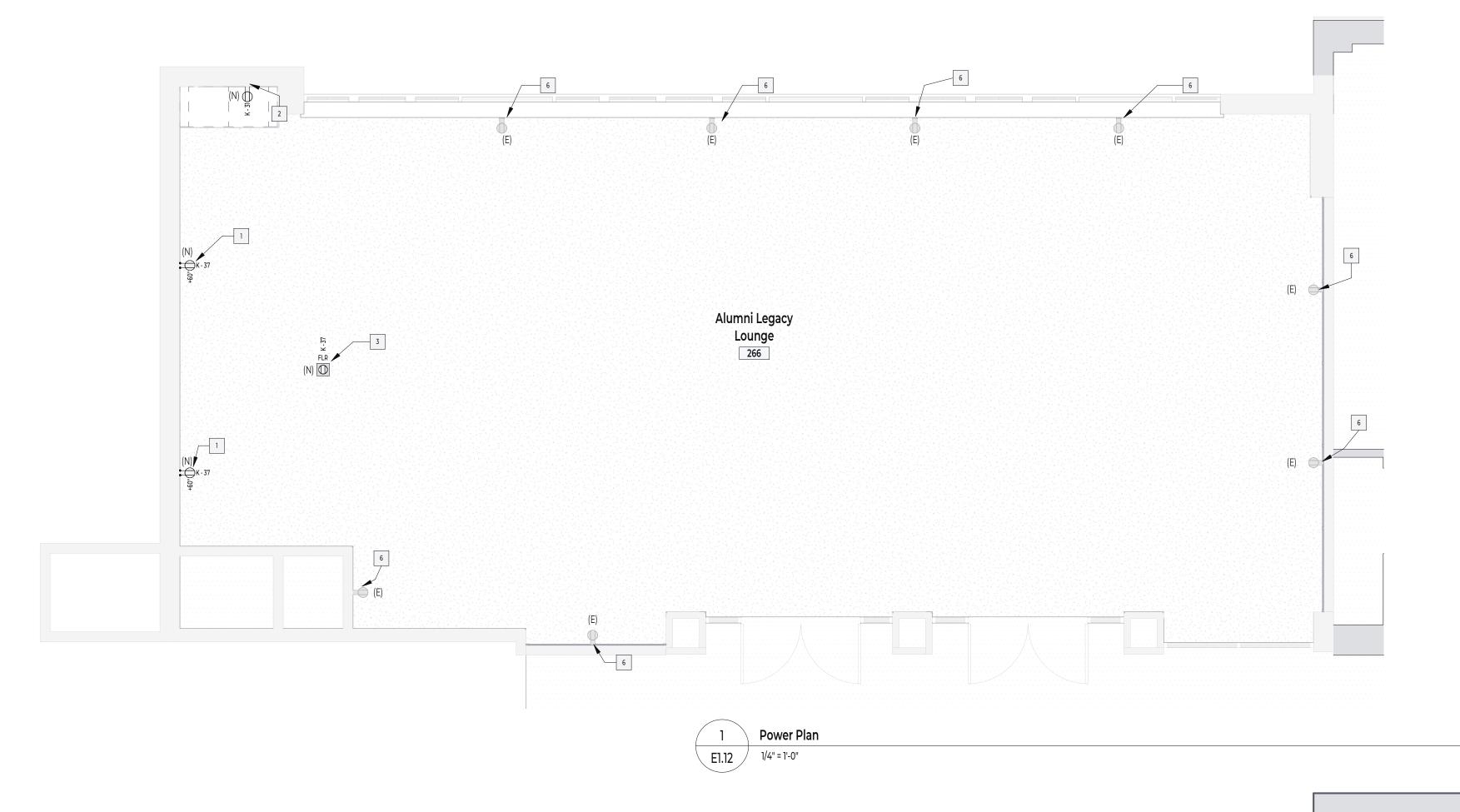
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Lighting Demolition Plan



Luminaire Sched	ule							
Type	Description	Manufacturer	Model	Dimming	Load	Voltage	Qty.	Notes
B01	Stellr Surface Mount Up & Down Light	Lucifer Lighting	S2C-AU-AU-9030-9030-55-S-2-SG-J	0-10V	21 VA	120 V	15	
B02	Wall Arm Mounted Art Lighting	Elliptar	S121-2-HSD-99-M-935-ZX	0-10V	15 VA	120 V	4	1
B03	2" Recessed Downlight - Adjustable Round	Lucifer Lighting	ASRS-F-1-WH-WH-AD-IC-9014D-30-AZ-4	0-10V	15 VA	120 V	2	

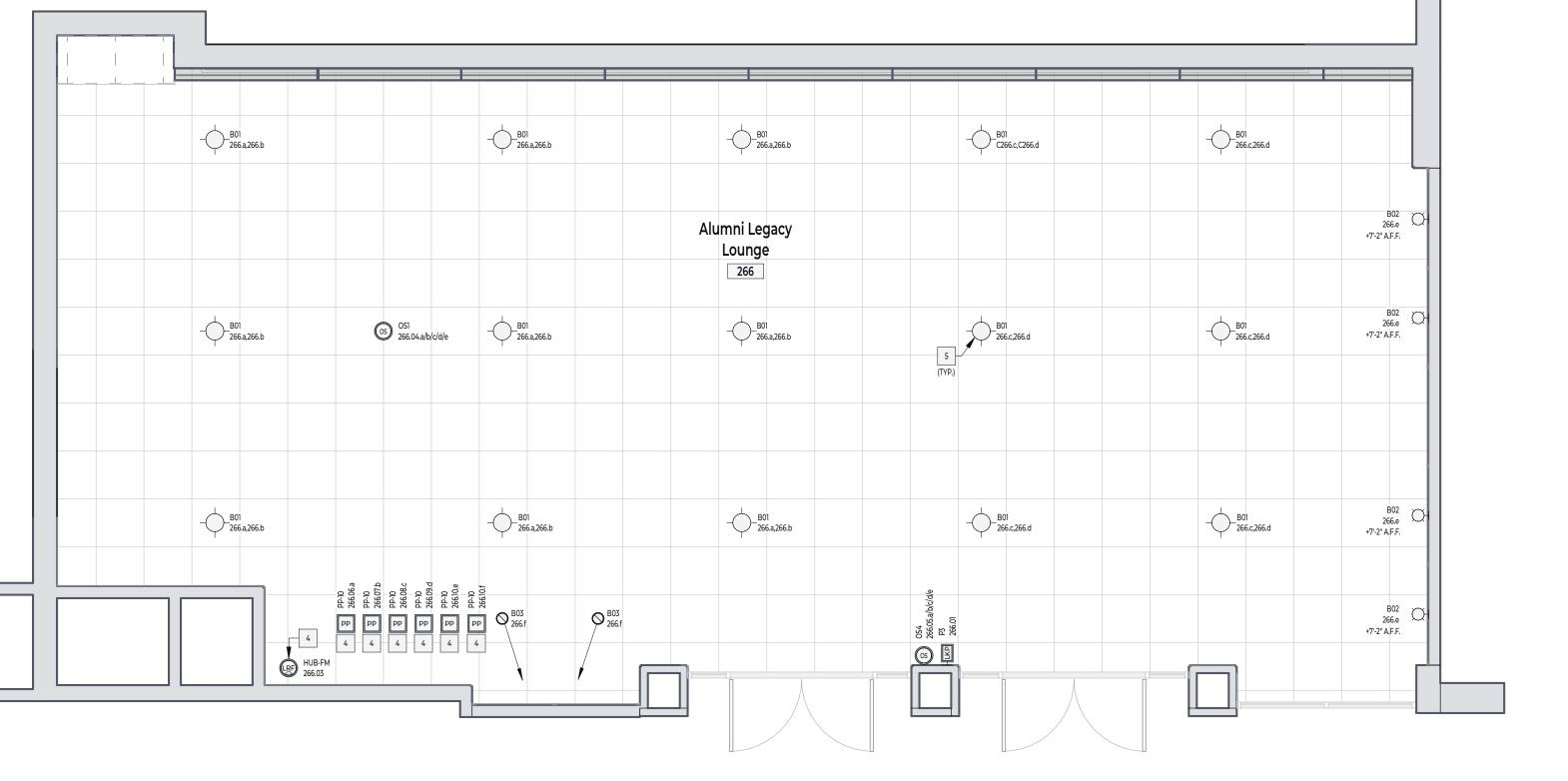
1. Provide custom finish #99 in Metallic Gold; Lighting designer to coordinate color sample with factory.

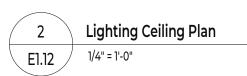
- 2. Install dimming cable GECA30H20-OO-03B per manufacturer's requirements.
- 3. EC to confirm mounting condition prior to ordering for proper mounting accessory. 4. EC to confirm voltage on site for luminaire installation.

4. Le to confirm voltage on site for furnifialle histaliation.											
Lighting Devices Schedule											
Туре	Description	Manufacturer	Model	Qty.	Notes						
HUB-FM	Vive Wireless Hub without BACnet, Up to 75 Devices, Flush Mount.	Lutron	HJS-0-FM	1	1,2,3						
OS1	Vive Wireless Ceiling Occupancy Sensor	Lutron	LRF2-OCR2B-P	1	1,2,3,6						
OS4	Vive Wireless Occupancy Sensor, Wall Mounted	Lutron	LRF2-OWLB-P	1	1,2,3,6						
P3	PICO Keypad, 3 Button with Raise/Lower and Light Icon, 1 Column	Lutron	PJ2-3BRL-GWH-L01	1	1,2,3						
PED	PICO Pedestal, Single	Lutron	L-PEDX-XX	1	1,2,3						
PICO-WB	PICO Wireless Control Wallbox Adapter Kit	Lutron	PICO-WBX-ADAPT	1	1,2,3						
PP-10	Vive PowPak Dimming Module with 0-10v Control	Lutron	RMJS-8T-DV-B	6	1,2,3,4						
VLW	Commercial Systems 2-Year Limited Warranty	Lutron	LSC-B2	1	1,2,3						
VSTART	Vive Onsite Startup	Lutron	LSC-OS-SU-VIVE	1	1,2,3						

1. EC to install a complete working system.

- 2. EC to provide startup, commissioning, and training services for Lighting Control System.
- 3. Refer to specifications for additional control system requirements.
 4. EC to include an additional 5% of 0-10v PowPaks (RMJS-8T-DV-B) to cover unforeseen existing zoning.
- 5. EC to install Vive Lighting Control equipment according to placement on manufacturer shop drawings to ensure the best connectivity to wireless control devices.
- 6. Occupancy Sensors to be installed in locations according to plans. They are to be installed at levels that allow the sensors to operate properly and are also unobstructed by building infrastructure and luminaires.





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- 7. Refer to the architectural drawings for exact mounting height of receptacles.
- 8. The lighting control plans are diagrammatic only. Coordinate equipment location and installation with manufacturer shop drawings.
- 9. Luminaire compatibility must be confirmed before connecting to lighting control equipment.

Reference Keynotes

- 1. Connect all new receptacles on the same circuit available spare in panel K circuit 37 located in room 205C. See E1.10 for panel location and schedule.
- 2. AV rack shall have a dedicated 20A circuit connected to available spare in panel K circuit 31 located in room 205C. See E1.10 for panel location and schedule.
- 3. E.C. to provide poke-through floor box for podium power requirements. Connect to new receptacle circuit
- 4. Connect new vibe hub and power packs to existing unswitched lighting circuit(s) serving this area. Extend wiring from power pack to all luminaires in zone as required.
- 5. Luminaire has two control circuits. Connect to associated power packs as shown. Typical of all luminaires of this type.
- 6. Replace with new device to match new style.



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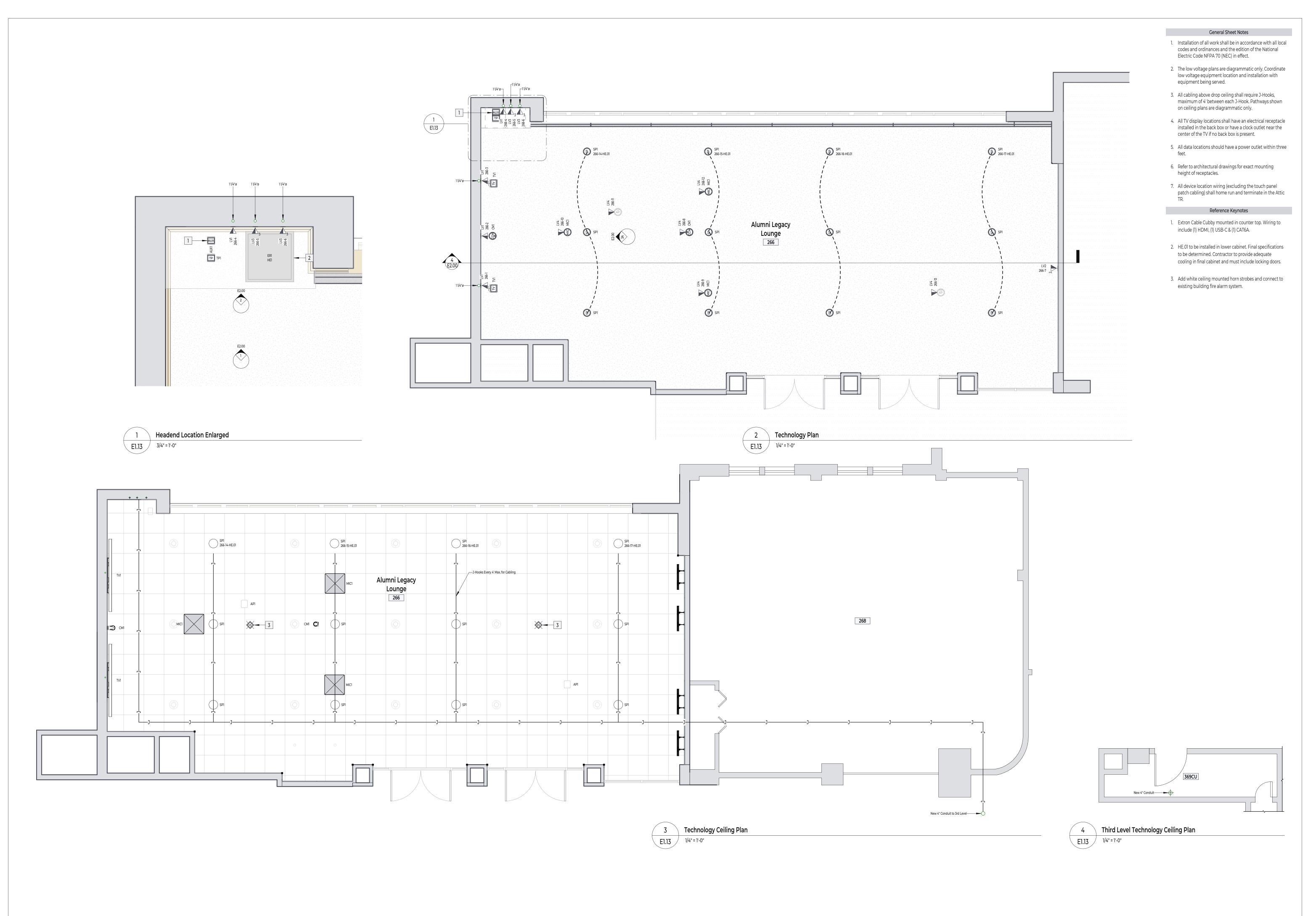
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PPA#23-0720

A/E#001

Electrical Power & Lighting Plan



MONTANA FATE UNIVERSITY

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Technology Plan

E1.13