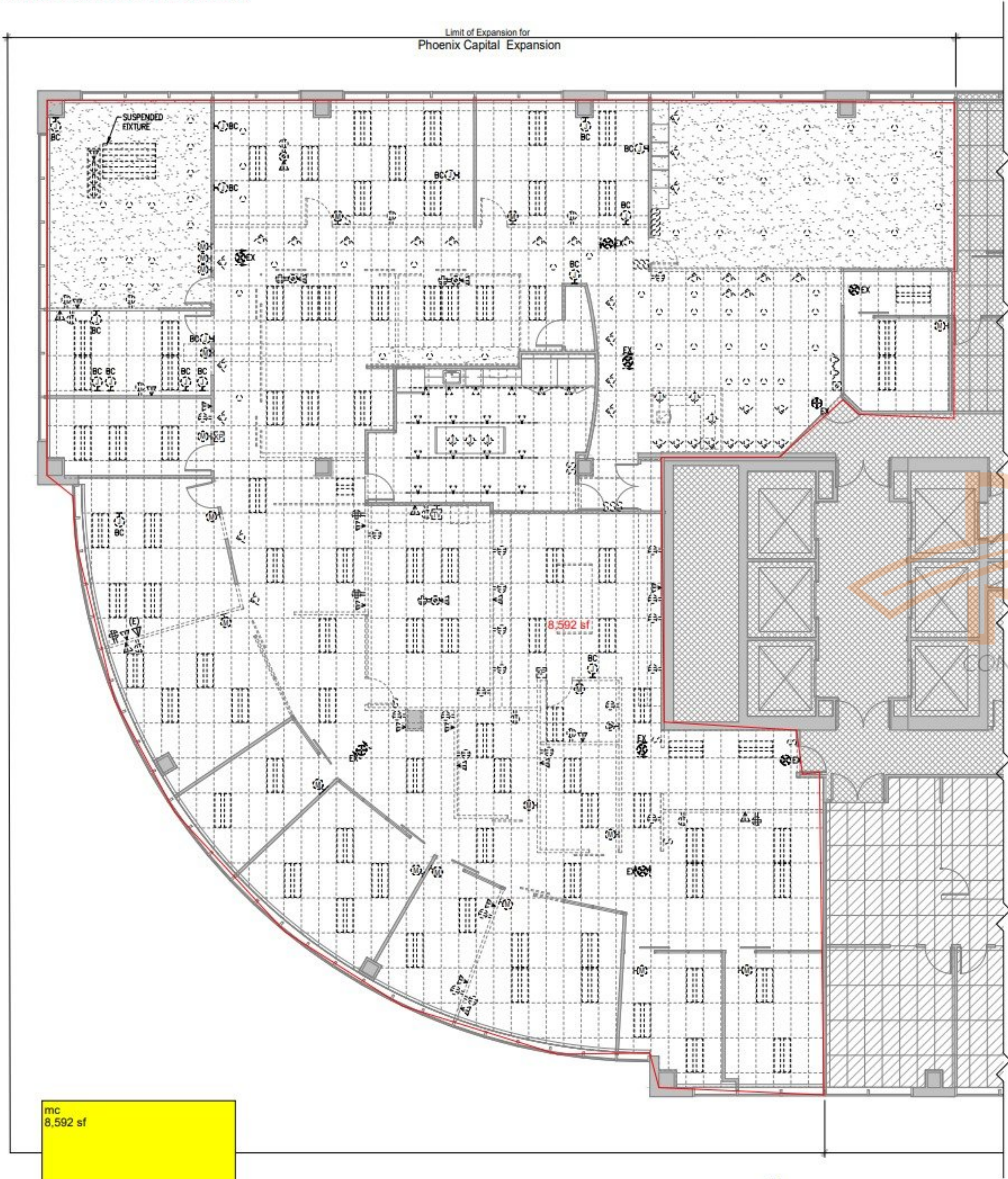


PROJECT NAME : PHOENIX CAPITAL EXPANSION

DETAILED - MARKUPS



DEMOLITION NOTES

1. DURING THE DEMOLITION PHASE OF THIS CONTRACT, IT IS THE RESPONSIBILITY OF THIS CONTRACTOR TO VERIFY DEMOLITION SCOPE AND ITEMS WITH ARCHITECTURAL AND ELECTRICAL DRAWINGS.
2. EXISTING LIGHT FIXTURES, ELECTRICAL DEVICES, EQUIPMENT, AND OTHER RELATED ITEMS SHALL BE CAREFULLY REMOVED EITHER AS SHOWN ON DEMOLITION DRAWINGS AS BEING REMOVED, OR AS REQUIRED FOR THE WORK UNDER THIS CONTRACT. THESE ITEMS SHALL BE TAGGED, PROTECTED FROM DAMAGE, AND STORED FOR FUTURE USE OR DISPOSED AS DIRECTED BY THE BUILDING MANAGEMENT/OWNER, ARCHITECT OR ENGINEER.
3. EXISTING LIGHT FIXTURES IN WORK AREA, NOTED ON DRAWINGS TO BE RE-USED, SHALL BE THOROUGHLY CLEANED AND/OR REFINISHED TO MATCH NEW.
4. CONTRACTOR SHALL REMOVE SWITCHES, DATA/TELEPHONE OUTLETS, AND ELECTRICAL OUTLETS SCHEDULED FOR DEMOLITION. ALL UNUSED POWER WIRING SHALL BE REMOVED BACK TO JUNCTION BOX IN CEILING SPACE OR TO THE ELECTRICAL PANEL FEEDING THE CIRCUIT. THE SPARE CIRCUIT BREAKER SHALL BE SWITCHED TO THE "OFF" POSITION AND NOTED ON PANEL DIRECTORY AS SPARE WITH THE JUNCTION BOX LOCATION IF APPLICABLE.
5. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR RINGING OUT ALL CIRCUITS WHICH ARE OR MAY BE AFFECTED BY THIS PROJECT TO ENSURE CIRCUIT CONTINUITY AND TO PREVENT OVERLOADING OF ANY SINGLE CIRCUIT. CONTRACTOR SHALL ENSURE THAT CIRCUITS SHARED BETWEEN PROJECT AREA AND EXISTING TENANT SPACES REMAIN INTACT PER ORIGINAL DESIGN INTENT. CORRECT ANY MISLABELED J-BOX COVERS WITH ACCURATE PANEL BRANCH CIRCUIT IDENTIFICATION. REFER TO DETAIL NOTES ON PLANS THAT APPLY TO WORK TO BE PERFORMED UNDER THIS CONTRACT. CIRCUIT BREAKERS FOR ALL UNUSED CIRCUITS SHALL BE TURNED TO THE "OFF" POSITION AND LABELED AS SPARE ON REVISED PANEL DIRECTORIES.
6. PROVIDE NEW JUNCTION BOXES, NEW CONDUIT AND WIRING AS REQUIRED TO REPAIR, REROUTE AND RECONNECT CONDUCTORS THAT ARE DAMAGED, DISTURBED OR OTHERWISE ADVERSELY AFFECTED BY THE DEMOLITION AND REMODEL WORK.
7. THE LOCATIONS OF EXISTING AND REMOVED LIGHT FIXTURES, POWER DEVICES AND WIRING, ETC., SHOWN ON THE DRAWINGS HAS BEEN TAKEN FROM EXISTING DRAWINGS AND VERIFIED DURING THE FIELD SURVEY, AND ARE, THEREFORE, ONLY AS ACCURATE AS THAT INFORMATION. ALL EXISTING CONDITIONS SHALL BE VERIFIED AT THE FIELD WITH NECESSARY ADJUSTMENT BEING MADE TO THE DRAWING INFORMATION.
8. FOR EXISTING FLOOR POKE-THRU DEVICES BEING ABANDONED, REMOVE EXISTING DEVICES, CONDUIT, AND ASSOCIATED WIRING BACK TO POINT OF ORIGIN. MAINTAIN CIRCUIT CONTINUITY FOR REMAINING DEVICES, IF REQUIRED. PROVIDE A FIRE-RATED PLUG AND FLUSH ABANDONMENT KIT. COORDINATE SCHEDULE WITH BUILDING MANAGEMENT TO INFORM TENANT BELOW PRIOR TO COMMENCING OF WORK.
9. ELECTRICAL CONTRACTOR SHALL COORDINATE ADDITIONAL WORK REQUIRED FOR DEMOLITION SCOPE OF THIS PROJECT WITH MECHANICAL AND PLUMBING CONTRACTORS. COORDINATE IF ANY EQUIPMENT WILL BE REMOVED OR RELOCATED. DISCONNECT EQUIPMENT AND REMOVE ASSOCIATED RACEWAY AND CONDUCTORS BACK TO THE POINT OF ORIGIN. IF EQUIPMENT IS BEING RELOCATED, EXTEND EXISTING BRANCH CIRCUIT(S) TO NEW EQUIPMENT LOCATION AND RECONNECT EQUIPMENT AS EXISTING. RETAIN CIRCUIT CONTINUITY FOR REMAINING EQUIPMENT IF REQUIRED.



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Regency Plaza
4643 S Ulster
Denver, CO 80237
Suite 1500



July 29, 2024

Phoenix Capital Expansion

Dates of Record

30/12/2024 10:48:12 AM - First Issue (E) - Lighting Plan.dwg Plotted by: Jerry Bain On: Monday, July 29, 2024 10:48:12 AM



1 SUITE 1500 LIGHTING PLAN
SCALE: 1/8" = 1'-0"
NOTE: ALL ELECTRICAL DEVICES SHOWN ARE NEW UNLESS NOTED OTHERWISE.

1 LIGHTING DETAIL NOTES

Room Schedule			
1500	Public Corridor	1513	Office
1501	Reception	1514	Office
1502	Conference	1515	Office
1503	Office	1516	Office
1504	Office	1517	Office
1505	Office	1518	Office
1506	Office	1519	Office
1507	Office	1520	-----
1508	Office	1521	Open Office
1509	Office	1522	Copy Area
1510	Office	1523	Break

Legend		
Description	Quantity	Unit
26: LINE VOLTAGE DUAL TECHNOLOGY ON/OFF DIMMING WALL SWITCH OCCUPANCY SENSOR	18	Count
26: 2#12, 1#12 GND CU WIRE SERVICE FOR LIGHTING	1,170.66	ft
26: DUAL TECHNOLOGY CEILING MOUNTED SMART VACANCY AND DAYLIGHT SENSOR	8	Count
26: EMERGENCY POWER/RELAY PACK	6	Count
26: JUNCTION BOX	32	Count
26: LIGHT A	72	Count
26: LIGHT B	10	Count
26: LIGHT C	31	Count
26: LIGHT D	9	Count
26: LIGHT EX	4	Count
26: P1, POWER/RELAY PACK WITH DIMMING, NPP16 D EFP	10	Count
26: P2, POWER/RELAY PACK WITH DIMMING	1	Count
26: RELOCATE EXISTING LIGHT EX	5	Count
26: WIRELESS ON/OFF DIMMING SINGLE POLE SWITCH	4	Count
26: WIRELESS ON/OFF DIMMING TWO POLE SWITCH	5	Count

LIGHTING CONTROL OPERATION NOTES

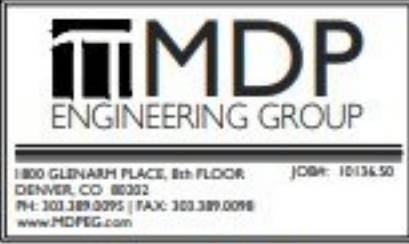
- PRIVATE OFFICE (WINDOWS/NO WINDOWS, WALL DIMMABLE OCCUPANCY SENSOR, 0-10V DIMMABLE FIXTURES, LESS THAN 150VA IN SIDEWALL ZONE)
- FIXTURES SHALL BE TURNED ON MANUALLY
 - MANUAL "ON/OFF/DIMMING" CONTROL PROVIDED WITH WALL MOUNTED OCCUPANCY SENSOR
 - ALL FIXTURES AUTOMATICALLY TURN OFF WITHIN NO MORE THAN 20 MINUTES FROM WHEN ROOM BECOMES VACANT
- CONFERENCE ROOM (WINDOWS, CEILING SENSORS AND DIMMING PHOTOCELL/SENSOR COMBINATION, 0-10V DIMMABLE FIXTURES, EMERGENCY RELAY MODULE WITH 0-10V DIMMING OUTPUT)
- FIXTURES SHALL BE TURNED ON MANUALLY (OR OPTIONALLY CAN BE CONFIGURED TO COME ON AUTOMATICALLY TO 50%)
 - MANUAL "ON/OFF/DIMMING" CONTROL SHALL BE PROVIDED WITH A LOW VOLTAGE SWITCH.
 - CONTINUOUS DAYLIGHT CONTROL DIMMING FOR ROW OF LIGHT FIXTURES WITHIN SIDEWALL ZONE
 - SEPARATE LIGHTING CONTROL MODULE WITH DIMMING OUTPUT MIGHT BE REQUIRED FOR DAYLIGHT DIMMING
 - FIXTURES AUTOMATICALLY TURN OFF WITHIN NO MORE THAN 20 MINUTES FROM WHEN ROOM BECOMES VACANT
 - EMERGENCY RELAY MODULE TURNS EMERGENCY FIXTURES TO 100% OF LIGHT OUTPUT DURING POWER OUTAGE.
- OPEN OFFICE, RECEPTION, COPY AREA, BREAK (NO WINDOWS, CEILING SENSORS, 0-10V DIMMABLE FIXTURES, EMERGENCY RELAY MODULE WITH 0-10V DIMMING OUTPUT)
- FIXTURES SHALL BE TURNED ON MANUALLY (OR OPTIONALLY CAN BE CONFIGURED TO COME ON AUTOMATICALLY TO 50%)
 - MANUAL "ON/OFF/DIMMING" CONTROL SHALL BE PROVIDED WITH A LOW VOLTAGE SWITCH.
 - FIXTURES AUTOMATICALLY TURN OFF WITHIN NO MORE THAN 20 MINUTES FROM WHEN ROOM BECOMES VACANT
 - EMERGENCY RELAY MODULE TURNS EMERGENCY FIXTURES TO 100% OF LIGHT OUTPUT DURING POWER OUTAGE.

LIGHTING CONTROLS SCHEDULE			
SYMBOL/KEY	DESCRIPTION	ACUITY CONTROLS PRODUCT CATALOG NO.	SPECIFIC NOTES
[P]	POWER/RELAY PACK WITH 0-10V DIMMING	NPP16 D EFP	-
[P2]	POWER/RELAY PACK WITH PHASE DIMMING	NPP16 PCD EFP	-
[E]	EMERGENCY POWER/RELAY PACK WITH 0-10V DIMMING (16A)	NPP16 D ER EFP	-
[D]	DUAL TECHNOLOGY CEILING MOUNTED SMART VACANCY AND DAYLIGHT SENSOR (EXTENDED RANGE 360°)	NOM PDT 10 R/B	-
[D2]	LINE VOLTAGE DUAL TECHNOLOGY ON/OFF/0-10V DIMMING WALL SWITCH OCCUPANCY SENSOR	WSXA PDT 10 SA VLP	-
[S1V]	WIRELESS ON/OFF/DIMMING SINGLE POLE WALL SWITCH	NPOCBA DX	-
[S1V2]	WIRELESS ON/OFF/DIMMING 2-POLE WALL SWITCH	NPOCBA 2P DX	-
NOTES: - VERIFY DEVICES SELECTION, CATALOG NUMBER, FINISH, AND ADDITIONAL INSTALLATION REQUIREMENTS WITH BUILDING OWNER, CHIEF ENGINEER, CLIENT, ARCHITECT, AND LOCAL MANUFACTURER REPRESENTATIVE PRIOR TO ORDERING.			

LUMINAIRE SCHEDULE								
TYPE	LAMPS	DESCRIPTION	DIMMING TYPE	MOUNTING	LOAD, VA	VOLTS	MANUFACTURER/CATALOG NO.	SPECIFIC NOTES
A	LED 3500K 80CRI 4000LM	2'x4' GRID TROFFER	0-10V 10%	RECESSED	32	120-277	LITHONIA LIGHTING: 2BLT4-40L-ADPT-GZ10-LP835	-
B	LED 3500K 80CRI 4000LM	2'x2' GRID TROFFER	0-10V 10%	RECESSED	26	120-277	LITHONIA LIGHTING: 2BLT2-33L-ADPT-GZ10-LP835	-
C	LED 3500K 80CRI 250LM/FT	6" DOWNLIGHT	0-10V 10%	RECESSED	44	120-277	LITHONIA LIGHTING: LDN6-35/40-LD6-WR-MVOLT- GZ10	-
D	LED 3500K 80CRI 250LM/FT	6" WALL WASHER	0-10V 10%	RECESSED	44	120-277	LITHONIA LIGHTING: LDN6-35/40-LW6-WR-MVOLT- GZ10	-
EX	LED	EXIT SIGN WITH GREEN LETTERING ON CONTRASTING FIELD	-	SURFACE	5	120/277	BEGHELLI: OL2-HT-LG-~W-OR-AT	-
GENERAL NOTE: - VERIFY FIXTURE CATALOG NUMBER, FINISH, LENGTH, LAMPS SELECTION, AND ADDITIONAL INSTALLATION REQUIREMENTS WITH ARCHITECT/OWNER PRIOR TO ORDERING. - LIGHT FIXTURE SUBSTITUTIONS OF EQUAL QUALITY AND PERFORMANCE WILL BE ACCEPTED WITH PRIOR OWNER/ARCHITECT APPROVAL. - COORDINATE DIMMING TYPE AND DIMMERS COMPATIBILITY WITH FIXTURE PROVIDER. NO SHARED NEUTRAL IS ALLOWED FOR DIMMING SWITCH LEGS. - DIMMING TYPE SHOWN AS "DIM" INDICATES THAT FIXTURE IS DIMMABLE, BUT ENGINEER HAS NO INFORMATION ABOUT USED TYPE OF DIMMING. - SYMBOL "*" IN THE CATALOG NUMBER INDICATES OPTIONS, TRIM, FINISH, AND COLOR SELECTIONS TO BE COORDINATED WITH THE ARCHITECT, INTERIOR DESIGNER, LIGHTING CONSULTANT, OR OWNER. - WHEN A FIXTURE HAS MULTIPLE OPTIONS FOR LAMPS SIZE OR A SPECIFIED LAMP HAS DIFFERENT WATTAGE COMPARED TO THE FIXTURE DEFAULT LAMP SIZE, THE ELECTRICAL CONTRACTOR SHALL PROVIDE A NEW LABEL LIMITING REPLACEMENT LAMP TO SPECIFIED ON THIS SCHEDULE.								

LIGHTING NOTES

- UP-TO-DATE AS-BUILT ELECTRICAL PLANS ARE NOT AVAILABLE FOR THIS BUILDING AREA. INFORMATION FOR EXISTING CIRCUITRY IS BASED ON EXISTING PANEL DIRECTORIES, AVAILABLE DRAWINGS, FIELD SURVEY OBSERVATIONS, AND ASSUMPTIONS. IF SIGNIFICANT DISCREPANCIES ARE FOUND THAT CANNOT BE EASILY RESOLVED, CONTACT THE ARCHITECT OR ENGINEER.
- CIRCUIT NUMBERS SHOWN ON PLAN MAY NOT REFLECT ACTUAL CIRCUIT NUMBERS AS A RESULT OF UNDOCUMENTED MODIFICATIONS MADE BY PREVIOUS CONSTRUCTION IMPROVEMENT PROJECTS. CIRCUIT NUMBERS SHOWN INDICATE QUANTITY OF AND LOAD FOR CIRCUITS UNDER THIS CONTRACT.
- EXISTING LIGHT FIXTURES AND SWITCHES ARE TO REMAIN WHERE SHOWN ON PLAN IN A LIGHT SOLID LINE WEIGHT, UNLESS OTHERWISE NOTED. RETAIN CIRCUIT CONTINUITY FOR THESE DEVICES AS REQUIRED.
- THE ELECTRICAL CONTRACTOR SHALL INSPECT EXISTING AND RELOCATED FIXTURES IN WORK AREA. RELAMP, CLEAN LENSES AND REFLECTORS, REPLACE ALL NECESSARY COMPONENTS AS REQUIRED TO MAINTAIN A LIKE-NEW APPEARANCE THROUGHOUT THE SPACE. ENSURE THAT ALL LAMPS HAVE THE SAME COLOR RENDERING INDEX (CRI) AND COLOR TEMPERATURE (KELVIN), AND ARE OF BUILDING APPROVED MANUFACTURER THROUGHOUT THE AREA OF WORK. VERIFY LIGHT FIXTURE AND LAMP REQUIREMENTS WITH BUILDING ENGINEER.
- FURNISH AND INSTALL LIGHT FIXTURES COMPLETE WITH LAMPS, BALLAST(S), AND MOUNTING HARDWARE. ELECTRICAL CONTRACTOR SHALL SUBMIT FIXTURE CUT SHEETS TO CLIENT AND ARCHITECT FOR THEIR FINAL APPROVAL PRIOR TO ORDERING OF THE LUMINAIRES. THE ELECTRICAL CONTRACTOR SHALL ALSO VERIFY QUANTITIES, MOUNTING REQUIREMENTS, FINISHES, FIXTURE AVAILABILITY AND LEAD TIME FOR DELIVERY TO THE SITE. WHERE LIGHT FIXTURES ARE STOCKPILED IN THE BUILDING FOR OCCUPANTS' USE, CONTRACTOR SHALL ARRANGE WITH BUILDING MANAGEMENT OR OWNER FOR THE PURCHASE OF SUCH FIXTURES FOR INSTALLATION ON THE PROJECT AS APPLICABLE.
- COORDINATE LAYOUT AND INSTALLATION OF LIGHTING FIXTURES AND SUSPENSION SYSTEM WITH OTHER CONSTRUCTION THAT PENETRATES CEILINGS OR IS SUPPORTED BY THEM, INCLUDING HVAC EQUIPMENT, FIRE-SUPPRESSION SYSTEM, AND PARTITION ASSEMBLIES. PRIOR TO COMMENCING OF WORK, NOTIFY ENGINEER OF ANY CONFLICTS BETWEEN HVAC EQUIPMENT AND LOCATION OF LIGHT FIXTURES. VERIFY CLEARANCES REQUIRED.
- ALL LIGHTING FIXTURES SHALL BE POSITIVELY ATTACHED TO THE SUSPENDED CEILING SYSTEM BY MECHANICAL MEANS SUCH AS BOLTS, SCREWS, OR RIVETS. LISTED SUPPORT CLIPS, IDENTIFIED FOR USE WITH THE TYPE OF CEILING GRID MEMBER AND LUMINAIRE, ARE PERMITTED AT OR NEAR EACH FIXTURE CORNER. IN ADDITION, FIXTURES WEIGHING LESS THAN 50 POUNDS SHALL HAVE A MINIMUM OF TWO NO. 8 GAUGE WIRES CONNECTED FROM THE OPPOSITE CORNERS OF THE FIXTURE HOUSING TO THE STRUCTURE DIRECTLY ABOVE THE FIXTURE. FIXTURES ABOVE 50 POUNDS SHALL BE SUPPORTED DIRECTLY FROM THE STRUCTURE. FIXTURES OF SIZES LESS THAN CEILING GRID SHALL BE SUPPORTED INDEPENDENTLY WITH AT LEAST TWO 3/4-INCH METAL CHANNELS SPANNING AND SECURED TO CEILING TEES. DO NOT USE GRID AS SUPPORT FOR PENDANT FIXTURES; CONNECT SUPPORT WIRES OR RODS TO BUILDING STRUCTURE.
- SUPPORT FLEXIBLE WIRING WHIPS FOR ALL FIXTURES INDEPENDENTLY OF THE GRID SUPPORT SYSTEM.
- THE ELECTRICAL CONTRACTOR SHALL PURCHASE ANY ADDITIONAL LIGHTING FIXTURES REQUIRED, DUE TO DAMAGE OR CLIENT REQUIREMENTS, FROM BUILDING ENGINEER IF POSSIBLE. MATCH EXISTING LIGHT FIXTURES IN THE AREA.
- MULTIPLE LIGHT SWITCHES SHALL BE MOUNTED IN A MULTIPLE GANG BOX WITH SINGLE COVER PLATE.
- EACH MULTIWIRE BRANCH CIRCUIT SHALL BE PROVIDED WITH A MEANS THAT WILL SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS AT THE POINT WHERE THE BRANCH CIRCUIT ORIGINATES. DISCONNECTION CAN BE ACCOMPLISHED THROUGH IDENTIFIED HANDLE TIES USE WITH SINGLE-POLE



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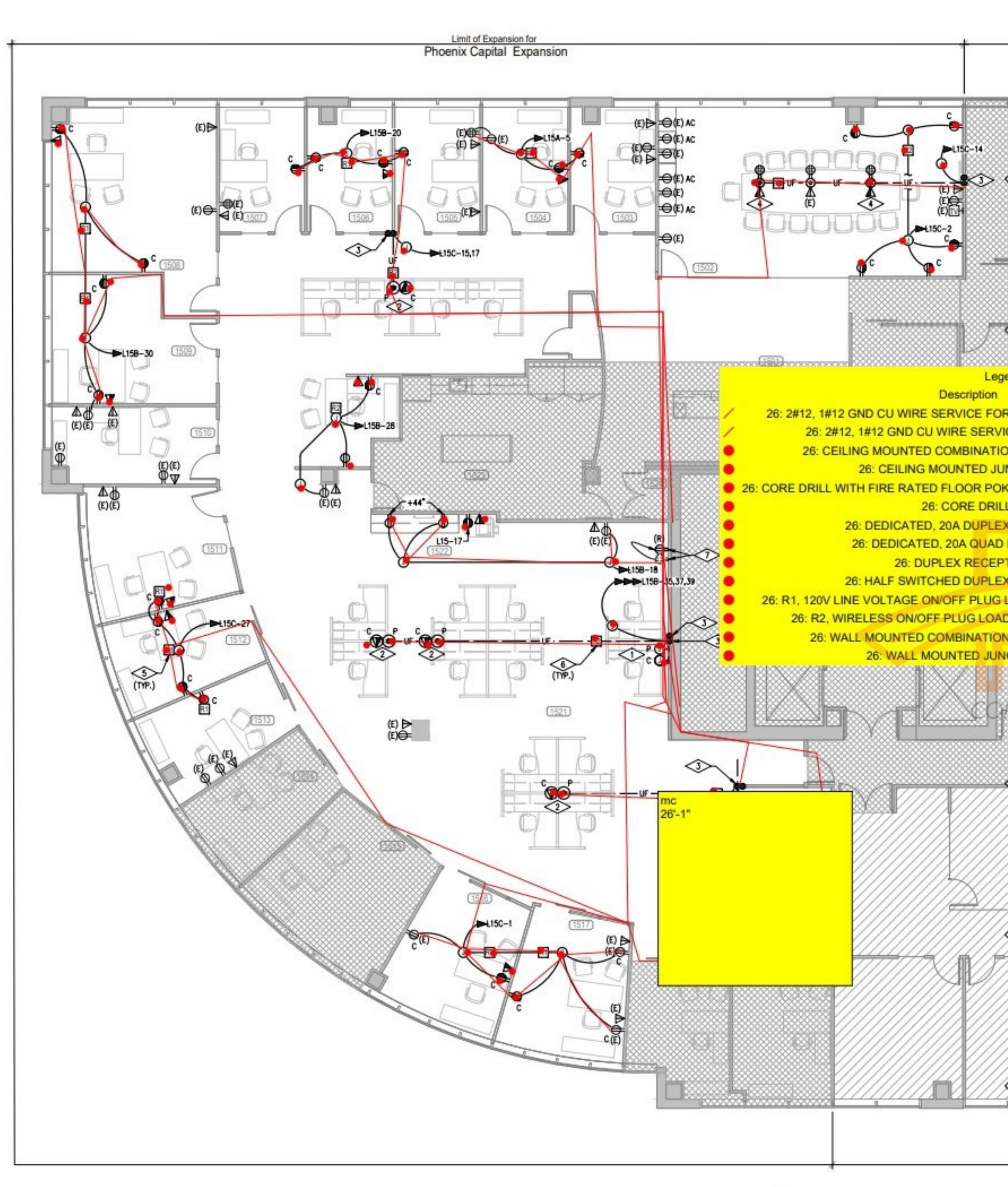
Regency Plaza
4643 S Ulster
Denver, CO 80237
Suite 1500



July 29, 2024

Phoenix Capital Expansion

Dates of Record



2 SUITE 1500 POWER PLAN
SCALE: 1/8" = 1'-0"
0 2' 4' 8' 16' 32'

Legend	
Description	Quantity
26: 2#12, 1#12 GND CU WIRE SERVICE FOR RECEPTACLE, UF CONDUIT	169.53
26: 2#12, 1#12 GND CU WIRE SERVICE FOR RECEPTACLE	660.20
26: CEILING MOUNTED COMBINATION DATA/TELE OUTLET	5
26: CEILING MOUNTED JUNCTION BOX	17
26: CORE DRILL WITH FIRE RATED FLOOR POKE-THRU AND FOURPLEX DEVICE	2
26: CORE DRILL	5
26: DEDICATED, 20A DUPLEX RECEPTACLE	1
26: DEDICATED, 20A QUAD RECEPTACLE	1
26: DUPLEX RECEPTACLE	3
26: HALF SWITCHED DUPLEX RECEPTACLE	22
26: R1, 120V LINE VOLTAGE ON/OFF PLUG LOAD CONTACTOR, NPP20 PL	8
26: R2, WIRELESS ON/OFF PLUG LOAD CONTROL POWE PACK	5
26: WALL MOUNTED COMBINATION DATA/TELE OUTLET	9
26: WALL MOUNTED JUNCTION BOX	2

CONTROLS SCHEDULE		
DESCRIPTION	ACUITY CONTROLS HIGHT PRODUCT CATALOG NO.	SPECIFIC NOTES
PLUG LOAD CONTACTOR	NPP20 PL	-
CONTROL POWER PACK	NPP20 EFP G2	-

- DETAIL NOTES**
- ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL FLUSH WALL MOUNTED J-BOXES FOR POWER AND DATA/COMMUNICATIONS CONNECTIONS TO MODULAR FURNITURE BASE. COORDINATE EXACT JUNCTION BOX LOCATIONS AND WIRING REQUIREMENTS WITH FURNITURE CONTRACTOR. PROVIDE 4-11/16" x 4-11/16" STEEL JUNCTION BOXES WITH DOUBLE GANG PLASTER RINGS. FROM DATA/COMMUNICATIONS JUNCTION BOX, INSTALL (2) 1" EMT CONDUITS (OR AS OTHERWISE SPECIFIED BY TELECOMMUNICATIONS CONTRACTOR) WITH PULL WIRE. STUB CONDUITS ABOVE CEILING LINE AND BUSH. CABLING SHALL BE PULLED BY OTHERS. COORDINATE WORK WITH TELECOMMUNICATIONS CONTRACTOR PRIOR TO ROUGH-IN. FINAL ELECTRICAL CONNECTIONS TO MODULAR FURNITURE SHALL BE MADE BY ELECTRICAL CONTRACTOR.
 - ELECTRICAL CONTRACTOR SHALL CORE DRILL FLOOR AND PROVIDE NEW FURNITURE FEED POKE-THRU DEVICE WIREMOLD 484TC SERIES OR EQUAL. THIS ASSEMBLY REQUIRES 4" DIAMETER CORE DRILLED HOLE AND PROVIDES 3/4" CONNECTION FOR POWER AND 1-1/4" CONNECTION FOR TELECOMMUNICATIONS WIRING. COORDINATE EXACT CORE DRILL LOCATION, COVER COLOR AND FINISH, AND WIRING REQUIREMENTS WITH TENANT, TELECOMMUNICATIONS CONTRACTOR AND FURNITURE CONTRACTOR PRIOR TO DEVICE ORDERING. FLOOR CORE SHALL BE LOCATED UNDER CORNER OF THE WORK SURFACE, AS CLOSE TO FURNITURE PANELS AS POSSIBLE WITHOUT BEING UNDER PANELS. SEE ELECTRICAL GENERAL NOTES FOR ADDITIONAL INFORMATION AND REQUIREMENTS PRIOR TO CORE DRILLING.
 - RECOMMENDED FLOOR PENETRATION LOCATION FOR CONDUITS AND/OR SLEEVES SERVING POKE-THRU FITTINGS. ELECTRICAL CONTRACTOR SHALL PROVIDE ONE (1) 1/2" EMT CONDUIT FOR POWER CONNECTIONS AND ONE (1) 1-1/4" EMT CONDUIT FOR DATA/COMMUNICATIONS WIRING. VERIFY CONDUIT SIZES, ROUTING AND ADDITIONAL REQUIREMENTS WITH MANUFACTURER SPECIFICATIONS, TENANT AND COMMUNICATIONS CONTRACTOR PRIOR TO ROUGH-IN.
 - ELECTRICAL CONTRACTOR SHALL CORE DRILL THE FLOOR AND PROVIDE AND INSTALL THE NEW FLUSH POKE-THRU ASSEMBLY: LEGRAND WIREMOLD EVOLUTION SERIES CAT. #EAT OR EQUAL. IT PROVIDES POWER (FOURPLEX), TELECOMMUNICATIONS AND/OR AV CONNECTIONS, OR FOURPLEX RECEPTACLE OUTLETS ONLY WITHOUT DATA/AV CONNECTORS. THIS ASSEMBLY REQUIRES A 6" DIAMETER CORE DRILLED HOLE AND IS A 2-HOUR FIRE RATED. COORDINATE EXACT CORE DRILL AND PENETRATION LOCATIONS, QUANTITY, SIZE, AND TYPE OF ASSEMBLY USED, OPTIONAL INSERTS SPECIFICATION, AND WIRING REQUIREMENTS WITH CLIENT, AV, AND TELECOMMUNICATIONS CONTRACTOR BEFORE DEVICE ORDERING. VERIFY THE SIZE OF THE CONDUITS USED. SEE ELECTRICAL GENERAL NOTES FOR ADDITIONAL INFORMATION AND REQUIREMENTS BEFORE CORE DRILLING.
 - PER 2021 IEC SECTION C405.11, THE ELECTRICAL CONTRACTOR SHALL PROVIDE SPLIT-CONTROLLED RECEPTACLES WHERE RECEPTACLE ON THE ELECTRICAL PLAN IS LABELED WITH "C" FOR "CONTROLLED." THE RECEPTACLE SHALL BE PERMANENTLY MARKED PER NEC ARTICLE 406.3(F) AND ORIENTED WITH THE TOP RECEPTACLE TO BE CONTROLLED. THE CONTROLLED RECEPTACLE SHOULD BE CONTROLLED BY THE INDIVIDUAL OCCUPANCY SENSOR AND A POWER PACK OR HAVE A POWER PACK OR OTHER CONTROL DEVICE CONNECTED TO THE LIGHTING OCCUPANCY SENSOR IN THE AREA. THE THE OCCUPANCY SENSOR CONTROL SHOULD TURN OFF CONTROLLED RECEPTACLES WITHIN 20 MINUTES OF OCCUPANTS LEAVING THE AREA. A SINGLE POWER PACK OR CONTROLLED DEVICE CAN CONTROL MULTIPLE CONTROLLED RECEPTACLES IN THE AREA NOT EXCEEDING 5,000 SQUARE FEET CONNECTED TO THE SAME CIRCUIT.
 - PER 2021 IEC SECTION C405.11, AT LEAST ONE OUT OF UP TO FOUR (NOT LESS THAN 25 PERCENT) BRANCH CIRCUITS FEEDING THE MODULAR FURNITURE SHALL BE PROVIDED WITH THE CONTROLLED SWITCHING DEVICE OR A POWER PACK CONTROLLED BY THE INDIVIDUAL OCCUPANCY SENSOR OR CONNECTED TO THE LIGHTING OCCUPANCY SENSOR IN THE AREA. THE THE OCCUPANCY SENSOR CONTROL SHOULD TURN OFF CONTROLLED RECEPTACLES WITHIN 20 MINUTES OF OCCUPANTS LEAVING THE AREA.
 - RELOCATE EXISTING POWER RECEPTACLE AND DATA OUTLET TO 18" AFF. PROVIDE AND INSTALL J-BOXES, CONDUITS, AND WIRING TO EXTEND EXISTING CIRCUIT TO NEW LOCATION AS NEEDED. COORDINATE EXACT INSTALLATION LOCATION WITH CLIENT.
 - RECEPTACLE OUTLET LOCATIONS IN IT ROOM 1525 SHOWN FOR REFERENCE ONLY. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY EXACT ROOM LAYOUT, RECEPTACLE LOCATIONS, AND MOUNTING REQUIREMENTS WITH DATA/COMMUNICATIONS CONTRACTOR PRIOR TO ROUGH-IN. COORDINATE LOCATIONS AND INSTALLATION REQUIREMENTS FOR DATA CABLING WALL PENETRATIONS. INSTALL SLEEVES OR CABLE TRAY IF REQUIRED.

1 SUITE 1500 POWER PLAN
SCALE: 1/8" = 1'-0"
0 2' 4' 8' 16' 32'

NOTE: ALL ELECTRICAL DEVICES SHOWN ARE NEW UNLESS NOTED OTHERWISE.

COMCHECK NOTE: ALL BLANK PAGES AND/OR SECTIONS OMITTED, NO INFORMATION OMITTED.

COMcheck Software Version COMcheckWeb Interior Lighting Compliance Certificate

Project Information

Energy Code: 2021 IECC
Project Title: Phoenix Capital
Alteration
Project Type:

Construction Site:
4643 S Ulster
Denver, Colorado 80237

Owner/Agent:

Designer/Contractor:
MDP Engineering Group
4643 S Ulster
Denver, Colorado 80237

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft ²)	C Allowed Watts / ft ²	D Allowed Watts
1-Office	8250	0.64	5280
Total Allowed Watts =			5280

Proposed Interior Lighting Power

Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture Watt.	D D (C X D)	E E
Office (8250 sq.ft.)				
LED A: Other	1	72	32	2304
LED B: Other	1	10	31	310
LED C: Other	1	20	44	880
LED D: Other	1	9	64	396
Total Proposed Watts =			3890	

Interior Lighting PASS/FAIL

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 2021 IECC requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title: Jentry Bain Signature: 07/29/2024

COMcheck Software Version COMcheckWeb Inspection Checklist

Energy Code: 2021 IECC

Requirements: 100.0% were addressed directly in the COMcheck software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section & Req. ID	Plan Review	Complies?	Comments/Assumptions
C103.2 (P141)	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	Requirement will be met. Location on plans/spec: E1.1

Section & Req. ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.1 (E121)	Spaces required to have light reduction controls have a manual control that allows the occupant to reduce the connected lighting load in a reasonably uniform illumination pattern -> 50 percent.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	Requirement will be met. Location on plans/spec: E1.1

Section & Req. ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.1 (E118)	Occupancy sensors installed in classrooms/lecture/training rooms, conference/meeting/multipurpose rooms, copy/print rooms, lounges/breakrooms, enclosed offices, open plan office areas, restrooms, storage rooms, locker rooms, corridors, warehouse storage areas, and other spaces <= 300 sq ft that are enclosed by floor-to-ceiling height partitions. Reference section language C405.2.1.2 for control function in warehouses and section C405.2.1.3 for open plan office spaces.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	Requirement will be met. Location on plans/spec: E1.1

Section & Req. ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.1 (E119)	Occupancy sensors control function in warehouses: In warehouses, the lighting in aislesways and open areas is controlled with occupant sensors that automatically reduce lighting power by 50% or more within 20 minutes of when the areas are unoccupied. The occupant sensors control lighting in each aisleway independently and do not control lighting beyond the aisleway being controlled by the sensor. Lights not turned off by occupant sensors is done so by time-switch.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	Exception: Requirement does not apply.

Section & Req. ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.1 (E120)	Occupant sensor control function in open plan office areas: Occupant sensor controls in open office spaces >= 300 sq ft. have controls 1) configured so that general lighting can be controlled separately in control zones with floor areas <= 600 sq ft. within the space, 2) general lighting in each zone permitted to turn on upon occupancy in control zone, 3) automatically turn off general lighting in all control zones within 20 minutes after all occupants leave the space, 4) are configured so that general lighting power in each control zone is reduced by >= 80% of the full zone general lighting power within 20 minutes of all occupants leaving that control zone.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	Requirement will be met. Location on plans/spec: E1.1

Section & Req. ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.2 (E121)	Each area not served by occupancy sensors (per C405.2.1.1) have time-switch controls and functions detailed in sections C405.2.2.1.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	Requirement will be met. Location on plans/spec: E1.1

Section & Req. ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.4 (E123)	Daylight zones provided with individual controls that control the lights independent of general area lighting. See code section C405.2.3 Daylight-responsive controls for applicable spaces. C405.2.3.1 Daylight-responsive control function and section C405.2.3.2 Sublet zone.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	Requirement will be met. Location on plans/spec: E1.1
C405.2.5 (E127)	Additional interior lighting power allowed for special functions per the approved lighting plans and 5 automatically controlled and separated from general lighting.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	Requirement will be met. Location on plans/spec: E1.1
C405.7 (E126)	Low-voltage dry-type distribution electric transformers meet the minimum efficiency requirements of Table C405.6.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	Exception: Requirement does not apply.
C405.8 (E127)	Electric motors meet the minimum efficiency requirements of Table C405.7.1.1 through C405.7.1.4. Efficiency verified through certification under an approved certification program or the equipment efficiency ratings shall be provided by motor manufacturer (where certification programs do not exist).	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	Exception: Requirement does not apply.
C405.9.1 (E128)	Excavation and trench walls comply with ASME A17.1/CSA B44 and have automatic controls configured to reduce speed to the minimum permitted speed in accordance with ASME A17.1/CSA B44 or applicable local code when not conveying passengers.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	Exception: Requirement does not apply.
C405.10 (E129)	Total voltage drop across the combination of feeders and branch circuits <= 5%.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	Requirement will be met. Location on plans/spec: E1.1
C405.11 (E130)	At least 90% of dwelling unit permanently installed lighting shall have lamp efficacy >= 65 lm/W or luminaires with efficacy >= 45 lm/W or comply with C405.2.4 or C405.3.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	Exception: Requirement does not apply.
C405.11 (E131)	50% of 15/20 amp receptacles installed in enclosed offices, conference rooms, study rooms, break rooms, classrooms and workstations and > 25% of branch circuit feeders for modular furniture will have automatic receptacle control in accordance with C405.11.1.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	Requirement will be met. Location on plans/spec: E2.1

Section & Req. ID	Final Inspection	Complies?	Comments/Assumptions
C303.3 (E117)	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	Requirement will be met.
C408.1.1 (F157)	Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of illustrating to owner how building, equipment and systems are intended to be installed, maintained, and operated.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	Requirement will be met.
C408.2.5 (F16)	Furnished as-built drawings for electric power systems within 90 days of system acceptance.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	Requirement will be met.
C408.3 (F133)	Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	Requirement will be met. Location on plans/spec: E1.1/E1.3

IECC COMPLIANCE NOTES

EVERY EFFORT HAS BEEN MADE ON THE PART OF THE ELECTRICAL ENGINEER TO INDICATE THE PROPER SELECTION AND PLACEMENT OF THE DEVICES. FINAL SELECTION, DETERMINATION OF CIRCUITING, WIRING, LOCATIONS, AND SETTING OF SENSITIVITY/DAYLIGHT/TIME ADJUSTMENTS ARE THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR AND/OR COMMISSIONING AGENT. MANUFACTURERS INSTALLATION INSTRUCTIONS SHOULD BE ADHERED TO.

1. LIGHTING SYSTEM CONTROLS, THE MAXIMUM LIGHTING POWER FOR INTERIOR AND EXTERIOR APPLICATIONS, AND ELECTRICAL ENERGY CONSUMPTION SHALL COMPLY WITH THIS 2021 IECC SECTION C405.
2. ALL OCCUPANCY AND DAYLIGHT SENSOR LOCATIONS ARE APPROXIMATE. COORDINATE PLACEMENT OF THESE DEVICES TO ACHIEVE OPTIMUM PERFORMANCE. PROPER SENSOR PLACEMENT SHOULD BE COORDINATED WITH OTHERS IN ORDER TO AVOID OBSTRUCTIONS THAT WOULD INTERFERE WITH OCCUPANCY SENSING ZONES AND MAINTAIN PRESCRIBED LIGHT LEVELS.
3. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS PRIOR TO INSTALLATION.
4. ULTRASONIC CEILING-MOUNTED OCCUPANCY SENSORS SHOULD BE LOCATED A MINIMUM OF FOUR TO SIX FEET FROM HVAC SUPPLY/RETURN VENTS.
5. THE CONTRACTOR IS RESPONSIBLE FOR PROPER SENSITIVITY AND TIME DELAY SETTINGS FOR NON-ADAPTIVE PRODUCTS, FOLLOWING THE MANUFACTURER'S RECOMMENDED PLACEMENT. THE TIME DELAY SHOULD NOT EXCEED 20 MINUTES. REFER TO SENSOR ADJUSTMENT REQUIREMENTS AS SHOWN ON DRAWINGS IF THE SENSOR IS FACTORY PRE-SET FOR FULL "AUTO-ON" MODE.
6. PROVIDE ALL THE REQUIRED COMPONENTS FOR A FULLY FUNCTIONAL SYSTEM.
7. COORDINATE THE WORK TO PROVIDE LUMINAIRES AND LAMPS THAT ARE COMPATIBLE WITH THE LIGHTING CONTROLS TO BE INSTALLED.
8. NOTIFY ENGINEER AND ARCHITECT OF ANY CONFLICTS OR DEVIATIONS FROM THE CONTRACT DOCUMENTS TO OBTAIN DIRECTION PRIOR TO PROCEEDING WITH WORK.
9. PER 2022 DENVER ENERGY CODE, NEW LIGHTING SYSTEMS ARE EXEMPT FROM THE FUNCTIONAL TESTING REQUIREMENTS IN SECTION C408.3.1 IN BUILDINGS WHERE THE NEW INSTALLED LIGHTING LOAD IS LESS THAN 20W AND THE WORK AREA IS LESS THAN 10,000 SQUARE FEET.
10. THE TOTAL VOLTAGE DROP ACROSS THE COMBINATION OF CUSTOMER-OWNED SERVICE CONDUCTORS, FEEDER CONDUCTORS, AND BRANCH CIRCUIT CONDUCTORS SHALL NOT EXCEED 5 PERCENT. AT LEAST 50 PERCENT OF ALL 120V, 15- AND 20-AMP RECEPTABLES INSTALLED IN ENCLOSED OFFICES, CONFERENCE ROOMS, ROOMS USED PRIMARILY FOR COPY OR PRINT FUNCTIONS, BREAKROOMS, CLASSROOMS, AND INDIVIDUAL WORKSTATIONS, INCLUDING THOSE INSTALLED IN MODULAR PARTITIONS AND MODULE OFFICE WORKSTATION SYSTEMS, AND AT LEAST ONE OUT OF FOUR CIRCUITS (NOT LESS THAN 25 PERCENT) FEEDING MODULAR FURNITURE WITH RECEPTABLES NOT SHOWN ON CONSTRUCTION DOCUMENTS SHALL HAVE AUTOMATIC RECEPTACLE CONTROL COMPLYING WITH SECTION C405.11.
12. THE ELECTRICAL CONTRACTOR SHALL PROVIDE SPLIT CONTROLLED RECEPTACLE(S) WITH THE TOP RECEPTACLE CONTROLLED, OR A CONTROLLED RECEPTACLE SHALL BE LOCATED WITHIN 12 INCHES OF EACH UNCONTROLLED RECEPTACLE. THE CONTROLLED RECEPTABLES SHALL BE PERMANENTLY MARKED IN ACCORDANCE WITH NEC (NFPA 70) AND BE UNIFORMLY DISTRIBUTED THROUGHOUT SPACE.
13. THE CONTROL SHOULD BE PROVIDED USING ONE OF THE FOLLOWING METHODS:
 - * A SCHEDULED BASIS USING A TIME-OF-DAY OPERATED CONTROL DEVICE THAT TURNS RECEPTACLE POWER OFF AT SPECIFIC PROGRAMMED TIMES FOR EACH DAY OF THE WEEK. THIS DEVICE SHOULD BE CONFIGURED TO CONTROL THE PORTION OF THE BUILDING NOT EXCEEDING 5,000 SQUARE FEET AND NOT MORE THAN ONE FLOOR. THE MANUAL 2-HOUR OVERRIDE SHOULD BE PROVIDED FOR EACH SUCH DEVICE.
 - * AN OCCUPANT SENSOR CONTROL THAT TURNS THE CONTROLLED RECEPTABLES OFF WITHIN 20 MINUTES OF ALL OCCUPANTS LEAVING SPACE.
 - * AN AUTOMATED SIGNAL FROM ANOTHER CONTROL OR ALARM SYSTEM THAT TURNS OFF CONTROLLED RECEPTABLES WITHIN 20 MINUTES AFTER DETERMINING THAT THE AREA IS UNOCCUPIED.

FOR ADDITIONAL INFORMATION FOR PROVIDING FULLY FUNCTIONAL SYSTEM AND EQUIPMENT SUBMITTALS CONTACT LOCAL MANUFACTURER REPRESENTATIVE OR EQUIPMENT SUPPLIER.

FEEDER SCHEDULE				
#	# OF SETS	CONDUCTORS	GROUND CONDUCTOR	CONDUIT SIZE
5000.4N	16	4-500KCMIL AL	-	3"
3000.4N	10	4-500KCMIL AL	-	3"
2500.4A	10	4-400KCMIL AL	1-350KCMIL AL	3"
700.4A	3	4-400KCMIL AL	1-4/0 AL	3"
400.4S	2	4-3/0 CU	1-2 CU	2"
400.4	2	4-3/0 CU	1-3 CU	2"
200.3A	1	3-250KCMIL AL	1-4 AL	2-1/2"
125.4T	1	4-1 CU	1-1 CU	1-1/2"
100.4	1	4-2 CU	1-8 CU	1-1/4"
50.4	1	4-6 CU	1-10 CU	1"

LEGEND: TYPICAL LABEL FORMAT IS AAA.BC, WHERE:
AAA-REFERS TO CONDUCTORS CURRENT RATING
B-NUMBER OF CURRENT CARRYING CONDUCTORS
C-OPTIONS: N-SERVICE ENTRANCE; S-TRANSFORMER SECONDARY CONDUCTORS; T - TAP RULE PER NEC ARTICLE 250.122(G) FOR EQUIPMENT GROUNDING CONDUCTOR SIZING.



PARTIAL BUILDING ONE-LINE DIAGRAM

SCALE: NO SCALE
NOTE: ALL EQUIPMENT SHOWN ON ELECTRICAL ONE-LINE DIAGRAM IS EXISTING. DIAGRAM IS SHOWN FOR REFERENCE ONLY.

Panel: L15													
Location: 15th Floor Electrical Room Fed from: Panel PPH15A via CB# 19.21.23 Feeder OCDP: 100 Tr Size, Kva: 45				Status: Existing Mounting: Surface Feed: Bottom		Voltage: 208/120 Phase: 3 Wire: 4 Note: PRL in Panelboard		Bus Rating: A: 225 Main 3-pole CB Size, A: 100 AIC Rating: 10,000					
CB #	CB Note	CB Code	Description	Load, VA	CB Size	Phase	CB Size	Load, VA	Description	CB Code	CB Note		
1		2	Floorbox	720	20	1	A	1	20	180	Recept - Des		
3		2	Floorbox	720	20	1	B	1	20	180	Recept - Des		
5		2	Floorbox	380	1	C	1	20	1500	Copier	2	10	
7		2	Recepts	840	20	1	A	1	20	840	Recepts - Conf Rm 1510	2	6
9		6	Copier	1500	20	1	B	1	20	720	Recepts	2	10
11		6	Copier	1500	20	1	C	1	20	360	Recepts	2	12
13		2	Recepts	840	20	1	A	1	20	180	Recept - Des - IT	6	10
15		2	Recepts	840	20	1	B	1	20	400	Pump Pl	6	16
17		2	Recepts	840	20	1	C	1	20	540	Recepts	2	18
19		2	Recept - Des - 1510	180	20	1	A	2	30	2000	AC	8	20
21		2	Recepts - 1510	840	20	1	B	1	20	840	Recepts - 1510	2	24
23		2	Recepts - 1510	720	20	1	C	1	20	540	Recepts - 1510	2	24
25		2	Recepts - 1510	720	20	1	A	1	20	540	Recepts - 1510	2	26
27		2	Recepts - 1510	840	20	1	B	1	20	540	Recepts - 1500	2	28
29		2	Recepts - 1510	840	20	1	C	1	20	1500	Copier - 1510	2	30
31		2	Recepts - 1510 Offices	720	20	1	A	1	20	800	Refrigerator - 1510	6	32
33		2	Recepts - 1510 Offices	840	20	1	B	1	20	180	Recept - Des - 1510 Break Rm	2	34
35		2	Recepts	840	20	1	C	1	20	1200	DWGD - 1510 Break Rm	8	36
37	N	2	Furn. Feed - Open Office 1521	1080	20	1	A	1	20	180	Recept - Des - 1510 Break Rm	2	38
39	N	2	Furn. Feed - Open Office 1521	1080	20	1	B	1	20	180	Recept - Des - 1510 Break Rm	2	40
41	N	2	Furn. Feed - Open Office 1521	720	20	1	C	1	20	1500	DWHD - 1521	4	42
Code				Description of the load	Load, VA	Demand	Load Summary per Phase						
1				Lighting	1200	125%	Connected		Demand				
2				Receptacles - First 10,000	16000	100%	8023 VA		8023 VA				
3				Receptacles - Other 10,000	8560	80%	6593 VA		6593 VA				
4				Motor	1000	100%	11880 VA		11880 VA				
5				Largest Motor	1500	125%							
6				Electrical Heating	1500	100%	Panel Connected Load:		28580 VA				
7				Kitchen Equipment	2160	100%	Panel Demand Load:		25280 VA				
8				Other	6400	100%							
9				Heating H/VAC	2160	100%	Panel Demand Load:		76.17 Amps				
10				Cooling H/VAC	2600	100%							
11				Sub Panel	1000	100%							
12				Reboundant	0%	0%							

CB Notes Legend: N - New, GR - GFCI ARC, APC, GPP - Equipment rated GFCI, L - Lockable (NEC110.25), Sample: "N,GRF" - means new GFCI circuit breaker.

* Revised Load

Panel: L15C											
Location: 15th Floor Electrical Room			Status: Existing			Voltage: 208/120		Bus Rating A: 200			
Fed from: Panel L15A via CB# 14.16.18			Mounting: Surface			Phase: 3		Main 3-pole CB Size: A: MLO			
Feeder OCDP: 100			Feed: Bottom			Wire: 4		AIC Rating: 10,000			
Tr Size, Kva: 45			Note: ITE Type 1 Panelboard								
CB #	CB Note	CB Code	Description	Load VA	CB Size	Phase	CB Size	Load VA	Description	CB Code	CB Note
1	2	Recept - Office 1516-17	900	20	1	A	1	20	900	Recept - Conf Rm 1502	2
3	2	Recept	720	20	1	B	1	20	540	Recept	2
5	2	Recept	720	20	1	C	1	20	360	Recept - Des - IT 1525	2
7	2	Recept	720	20	1	A	1	20	720	Recept	2
9	2	Recept	840	20	1	B	1	20	720	Recept	2
11	2	Recept	840	20	1	C	1	20	540	Recept	2

Panel: L15B													
Location: 15th Floor Electrical Room Fed from: Panel L15A via Feed-Thru Feeder OCDP: 400 Tr Size, Kva: 45				Status: Existing Mounting: Surface Feed: Bottom		Voltage: 208/120 Phase: 3 Wire: 4 Main 3-pole CB Size, A: MLO AIC Rating: 10,000		Bus Rating, A: 400 Main 3-pole CB Size, A: MLO AIC Rating: 10,000					
CB #	CB Note	CB Code	Description	Load, VA	CB Size	Phase	CB Size	Load, VA	Description	CB Code	CB Note		
1		5	DWGD - 1510	1200	20	1	A	1	20	900	Recept - Penthouse		
3		2	Recept - Des - 1510	180	20	1	B	1	20	900	Recept - Penthouse		
5		5	Refrigerator	900	20	1	C	1	20	720	Recept - Penthouse		
7		2	Recept	840	20	1	A	1	20	720	Recept		
9		1	Lighting - Restroom	600	20	1	B	1	20	190	Temp Control - Penthouse		
11		1	Lighting - Lobby	600	20	1	C	1	20	600	Cooling Tower		
13		6	Copier - MKDG	1500	20	1	A	1	20	200	Vibration Sensor		
15		6	Copier - 1510	1500	20	1	B	1	20	200	Alarm Panel		
17		2	Recept - 1510	840	20	1	C	1	20	640	Recept - 1510		
19		2	Recept - Des - 1510	180	20	1	A	1	20	720	Recept - Office 1505-07		
21		2	Recept - Des	180	20	1	B	1	20	180	Recept - Des - Break 1510		
23		2	Recept - 1510	840	20	1	C	1	20	640	Recept - 1510		
25		6	Existing Load	490	20	1	A	1	20	750	Lighting		
27		4	EVH	1500	20	1	B	1	20	180	Recept - Des		
29		1	Lighting	600	20	1	C	1	20	600	Recept - Office 1508-10		
31		6	Existing Load	500	20	1	A	1	20	500	Lighting		
33		6	Copier - Magnus	1500	20	1	B	1	20	1			
35	N	2	Pum. Feed - Open Office 1521	1680	20	3	C	1	20	180	Recept - Des		
37	N	2	Pum. Feed - Open Office 1521	1680	1	A	1	20	500	Existing Load	6	30	
39	N	2	Pum. Feed - Open Office 1521	720	1	A	1	20	680	Recept	6	30	
41	N	2	Recept - Des	180	20	1	C	1	20	690	Existing Load	6	40
Code Description of the load				Load, VA	Demand		Connected		Load Summary per Phase				
1 st Lighting				3280	125%				Demand				
2 nd Receptacles - First 10,000				10900			9745 VA		Phase A -- 9953 VA				
3 rd Receptacles - Other 10,000				85	50%		8445 VA		Phase B -- 6660 VA				
4 th Motor				100%			8960 VA		Phase C -- 7268 VA				
Largest Other				1225									
5 th Electrical Heating				1560	100%		Panel Connected Load		25130 VA				
6 th Kitchen Equipment				1240	100%		Panel Demand Load		25995 VA				
7 th Other				8255	100%								
8 th Heating H/VAC				100%	100%		Panel Demand Load		71.88 Amps				
9 th Sub Panel				100%									
10 th Redundant				0%									

DETAILED BREAKDOWN TAKEOFF & ACCURATE PRICING

DETAILED BREAKDOWN OF ITEMS												
Prepared for:	PHOENIX CAPITAL EXPANSION											
Project ID:	4643 S ULSTER DENVER, CO 80237											
Scope:	ELECTRICAL											
Date:	8/3/2024											
							TOTAL LABOR HC	Hourly rate	TOTAL MATERIAL COST			
							1249.29	170.00	\$ 40,866.54			
							For 2 Person					



Pontis
CONSTRUCTION INC.



SR #	DESCRIPTION	QUANTIT Y	UNIT	WASTAGE	QUANTITY W/ WASTAGE	UNIT MANHOUR	LABOR HOUR	HOURLY WAGE	LABOR COST	UNIT MAT. COST	MATERIAL COST	SUB COST	
DIV-1		GENERAL REQUIREMENTS											
1	Permits	1	LS	0%	1	0.000	0.00	\$ 170.00	\$ -	\$ -	\$ -	\$ -	
2	Supervision anD Coordination	1	LS	0%	1	0.000	0.00	\$ 170.00	\$ -	\$ -	\$ -	\$ -	
3	Submittals and Shop Drawings	1	LS	0%	1	0.000	0.00	\$ 170.00	\$ -		\$ -	\$ -	
4	Final Cleaning	1	LS	0%	1	0.000	0.00	\$ 170.00	\$ -	\$ -	\$ -	\$ -	
5	Mobilization Costs	1	LS	0%	1	0.000	0.00	\$ 170.00	\$ -	\$ -	\$ -	\$ -	
6	Temporary Control & Facilities	1	LS	0%	1		0.00	\$ 170.00	\$ -	\$ -	\$ -	\$ -	
7	Scaffolding	1	LS	0%	1		0.00	\$ 170.00	\$ -	\$ -	\$ -	\$ -	
											SUBTOTAL \$		-
DIV-02		EXISTING CONDITION											
	DEMOLISH												
8	Remove Existing Lighting Fixture/Switched, Data/Telephone Outlets And Electrical Outlet Along	8592	SF	10%	9451	0.060	567.07	\$ 170.00	\$ 96,402.24	\$ -	\$ -	\$ 96,402.24	
9	Relocate Existing Light Ex	5	EA	10%	6	1.000	5.50	\$ 170.00	\$ 935.00	\$ -	\$ -	\$ 935.00	
DIV-26		ELECTRICAL											
	CONDUIT												
10	3/4" Emt Conduit	1945	LF	10%	2140	0.062	132.65	\$ 170.00	\$ 22,550.33	\$ 1.12	\$ 2,396.24	\$ 24,946.57	
11	1" Pvc Conduit For Under Floor Run	180	LF	10%	198	0.060	11.88	\$ 170.00	\$ 2,019.60	\$ 0.96	\$ 190.08	\$ 2,209.68	
	CONDUCTOR												
12	2#12, 1#12 Gnd Cu Wire Service For Lighting	1234	LF	10%	1357	0.040	54.30	\$ 170.00	\$ 9,230.32	\$ 0.48	\$ 651.55	\$ 9,881.87	
13	2#12, 1#12 Gnd Cu Wire Service For Receptacle	710	LF	10%	781	0.040	31.24	\$ 170.00	\$ 5,310.80	\$ 0.48	\$ 374.88	\$ 5,685.68	
14	2#12, 1#12 Gnd Cu Wire Service For Receptacle, Under Floor Conduit	170	LF	10%	187	0.040	7.48	\$ 170.00	\$ 1,271.60	\$ 0.48	\$ 89.76	\$ 1,361.36	
	LIGHTING FIXTURE												
15	Light A, 2X4 Grid Troffer, Lithonia, Led 3500K, 80Cri, 4000Lm, 32Watt	72	EA	0%	72	1.540	110.88	\$ 170.00	\$ 18,849.60	\$ 162.00	\$ 11,664.00	\$ 30,513.60	
16	Light B, 2X4 Grid Troffer, Lithonia, Led 3500K, 80Cri, 4000Lm,26Watt	10	EA	0%	10	1.500	15.00	\$ 170.00	\$ 2,550.00	\$ 158.00	\$ 1,580.00	\$ 4,130.00	
17	Light C, 6" Dia Recessed Downlight, Lithinia Lighting, Led 3500K, 80Cri, 250Lm/Ft, 44Watt Led	31	EA	0%	31	1.600	49.60	\$ 170.00	\$ 8,432.00	\$ 167.80	\$ 5,201.80	\$ 13,633.80	
18	Light D, 6" Wall Washer, Lithonia Lighting, Led 3500K, 80Cri, 250Lm/Ft, 44Watt	9	EA	0%	9	1.590	14.31	\$ 170.00	\$ 2,432.70	\$ 161.00	\$ 1,449.00	\$ 3,881.70	
19	Light Ex, Exit Sign, Beghelli, 5Watt Led	4	EA	0%	4	1.200	4.80	\$ 170.00	\$ 816.00	\$ 148.00	\$ 592.00	\$ 1,408.00	
	LIGHTING CONTROL												
20	P1, Power/Relay Pack With Dimming, Npp16 D Efp	10	EA	0%	10	1.600	16.00	\$ 170.00	\$ 2,720.00	\$ 181.84	\$ 1,818.40	\$ 4,538.40	
21	P2, Power/Relay Pack With Dimming	1	EA	0%	1	1.500	1.50	\$ 170.00	\$ 255.00	\$ 153.45	\$ 153.45	\$ 408.45	
22	Wireless On/Off Dimming Single Pole Switch	1	EA	0%	1	1.000	1.00	\$ 170.00	\$ 170.00	\$ 66.00	\$ 66.00	\$ 236.00	
23	Emergency Power/Relay Pack	6	EA	0%	6	2.000	12.00	\$ 170.00	\$ 2,040.00	\$ 325.02	\$ 1,950.12	\$ 3,990.12	
24	Line Voltage Dual Technology On/Off Dimming Wall Switch Occupancy Sensor	18	EA	0%	18	1.400	25.20	\$ 170.00	\$ 4,284.00	\$ 144.73	\$ 2,605.14	\$ 6,889.14	
25	Wireless On/Off Dimming Single Pole Switch	3	EA	0%	3	0.850	2.55	\$ 170.00	\$ 433.50	\$ 36.55	\$ 109.65	\$ 543.15	
26	Wireless On/Off Dimming Two Pole Switch	5	EA	0%	5	0.900	4.50	\$ 170.00	\$ 765.00	\$ 38.99	\$ 194.95	\$ 959.95	
27	Dual Technology Ceiling Mounted Smart Vacancy And Daylight Sensor	8	EA	0%	8	1.500	12.00	\$ 170.00	\$ 2,040.00	\$ 166.77	\$ 1,334.16	\$ 3,374.16	
	RECEPTACLE CONTROL												
28	R1, 120V Line Voltage On/Off Plug Load Contactor, Npp20 P1	8	EA	0%	8	1.450	11.60	\$ 170.00	\$ 1,972.00	\$ 223.50	\$ 1,788.00	\$ 3,760.00	
29	R2, Wireless On/Off Plug Load Control Powe Pack	5	EA	0%	5	1.500	7.50	\$ 170.00	\$ 1,275.00	\$ 153.45	\$ 767.25	\$ 2,042.25	
	POWER RECEPTACLE												
30	Duplex Receptacle	3	EA	0%	3	0.550	1.65	\$ 170.00	\$ 280.50	\$ 14.00	\$ 42.00	\$ 322.50	
31	Dedicated, 20A Duplex Receptacle	1	EA	0%	1	0.850	0.85	\$ 170.00	\$ 144.50	\$ 28.48	\$ 28.48	\$ 172.98	
32	Dedicated, 20A Quad Receptacle	1	EA	0%	1	0.900	0.90	\$ 170.00	\$ 153.00	\$ 34.55	\$ 34.55	\$ 187.55	
33	Half Switched Duplex Receptacle	22	EA	0%	22	0.950	20.90	\$ 170.00	\$ 3,553.00	\$ 44.34	\$ 975.48	\$ 4,528.48	
34	Core Drill With Fire Rated Floor Poke-Thru And Fourplex Device	2	EA	0%	2	1.500	3.00	\$ 170.00	\$ 510.00	\$ 68.90	\$ 137.80	\$ 647.80	
	PANEL & CIRCUIT BREAKER												
	Existing Panel - L15,												
35	20Amp, 3-Pole Circuit Breaker	1	EA	0%	1	0.750	0.75	\$ 170.00	\$ 127.50	\$ 34.00	\$ 34.00	\$ 161.50	
	Existing Panel - L15B,												
36	20Amp, 3-Pole Circuit Breaker	1	EA	0%	1	0.750	0.75	\$ 170.00	\$ 127.50	\$ 34.00	\$ 34.00	\$ 161.50	
	Existing Panel - L15C,												
37	20Amp, 2-Pole Circuit Breaker	1	EA	0%	1	0.700	0.70	\$ 170.00	\$ 119.00	\$ 30.00	\$ 30.00	\$ 149.00	

\$ 155,908

	MISC. ITEM											
38	Ceiling Mounted Junction Box	49	EA	0%	49	1.000	49.00	\$ 170.00	\$ 8,330.00	\$ 55.00	\$ 2,695.00	\$ 11,025.00
39	Wall Mounted Junction Box	2	EA	0%	2	1.000	2.00	\$ 170.00	\$ 340.00	\$ 60.00	\$ 120.00	\$ 460.00
40	Core Drill	5	EA	0%	5	1.000	5.00	\$ 170.00	\$ 850.00	\$ 48.00	\$ 240.00	\$ 1,090.00
	COMMUNICATION RUN											
41	3/4" Emt Conduit	510	EA	0%	510	0.062	31.62	\$ 170.00	\$ 5,375.40	\$ 1.12	\$ 571.20	\$ 5,946.60
42	Cat5E/Cat6E Cable For Combination Data/Tele Outlet	490	EA	0%	490	0.050	24.50	\$ 170.00	\$ 4,165.00	\$ 0.46	\$ 225.40	\$ 4,390.40
	COMMUNICATION ITEM											
43	Ceiling Mounted Combination Data/Tele Outlet	5	EA	0%	5	0.713	3.57	\$ 170.00	\$ 606.05	\$ 56.60	\$ 283.00	\$ 889.05
44	Wall Mounted Combination Data/Tele Outlet	9	EA	0%	9	0.616	5.54	\$ 170.00	\$ 942.48	\$ 48.80	\$ 439.20	\$ 1,381.68

SUBTOTAL \$ 155,908

										PROJECTED COST		\$155,908
OVERHEAD AND PROFIT											15%	\$23,386
MATERIAL MARKUPS											12%	\$18,709
TAX											10.0%	\$15,591
SUGGESTED BID												\$213,594

Note:

1. Please verify the Electrical and their prices with owner.
2. Online sources are used for pricing.
3. Prices can vary Depending upon field conditions.

GENERAL SUMMARY

Prepared for: **PHOENIX CAPITAL EXPANSION**
Project ID: **4643 S ULSTER DENVER, CO 80237**
Scope: **ELECTRICAL**
No. Of Floors:
Date: **3-Aug-24**



BUILDING GSF

DIVISION NO.	DESCRIPTION	TOTAL DIV. COST
1000	GENERAL REQUIREMENT	\$ -
26000	ELECTRICAL	\$ 155,908
TOTAL TRADE COST		\$ 155,908

OVERHEAD AND PROFIT	15%	\$ 23,386.19
MATERIAL MARKUPS	12%	\$ 18,709
TAX	10.000%	\$ 15,591
TOTAL TRADE COST		\$ 213,594