ELECTRICAL SYMBOLS LEGEND

ALL SYMBOLS INDICATED IN THE LEGEND MAY NOT NECESSARILY BE USED ON PLANS.

CIRCUITING

SYMBOL	DESCRIPTION
	CIRCUITING DESIGNATION - OPEN 277/480V., SOLID 120/208V.
	CIRCUITING - RUN CONCEALED IN WALL OR CEILING
	CIRCUITING - RUN CONCEALED IN FLOOR OR GRADE
	CONDUIT RISER - TURNED UP, TURNED DOWN
	CIRCUITING - CONTINUED AS DESIGNATED
	CIRCUITING - END CAP

LINETYPES AND LINEWEIGHTS

	NEW CIRCUITING - CONTINUOUS AND BOLD
	NEW CIRCUITING - UNDER FLOOR OR GRADE - LARGER DASHED AND BOLD
	EXISTING CIRCUITING - CONTINUOUS AND THIN
	DEMOLITION CIRCUITING - LARGER DASHED AND THIN
	NEW AND RELOCATED DEVICES AND FIXTURES - CONTINUOUS AND BOLD
	EXISTING DEVICES AND FIXTURES - CONTINUOUS AND THIN
	DEMOLITION DEVICES AND FIXTURES - SMALLER DASHED AND THIN

NOTES AND TAGS

#	REVISION DELTA
#	DRAWING NOTE
#	MECHANICAL EQUIPMENT
#	KITCHEN EQUIPMENT
#	LIGHTING CONTROL NOTE

TELECOMMUNICATION SYMBOLS

	TELEPHONE OUTLET, DOUBLE GANG BOX, 1" CONDUIT STUB TO ACCESSIBLE CEILING
	DATA OUTLET, DOUBLE GANG BOX, 1" CONDUIT STUB TO ACCESSIBLE CEILING
	TELEPHONE/DATA OUTLET, DOUBLE GANG BOX, 1" CONDUIT STUB TO ACCESSIBLE CEILING
	CABLE TV OUTLET, DOUBLE GANG BOX, 1" CONDUIT STUB TO ACCESSIBLE CEILING
	FLOOR DATA OUTLET - SEE DRAWING NOTES
	FLOOR TELEPHONE/DATA OUTLET - SEE DRAWING NOTES

MISCELLANEOUS SYMBOLS

B	BELL - 1/2" CONDUIT STUB TO ACCESSIBLE CLG
	DOOR BUZZER - 1/2" CONDUIT STUB TO CLG
SS M	MUSIC OR PAGING SPEAKER, DOUBLE GANG, 1/2" CONDUIT STUB TO ACCESSIBLE CEILING
P	PHOTOCELL
T	THERMOSTAT, LINE VOLTAGE
MIC	MICROPHONE JACK
RTS	REMOTE TEST SWITCH
	CLOCK
CKB	COMBINATION CLOCK/SPEAKER BOX

POWER SYMBOLS

SYMBOL	DESCRIPTION
	JUNCTION BOX; J-BOX WITH BLANK COVER
	SIMPLEX RECEPTACLE
	DUPLEX RECEPTACLE
TR	TAMPER RESISTANT DUPLEX RECEPTACLE
USB	COMBINATION DUPLEX RECEPT / USB OUTLET
	HALF SWITCHED DUPLEX RECEPTACLE
	DEDICATED DUPLEX RECEPTACLE
	CEILING MOUNTED DUPLEX RECEPTACLE
	FOURPLEX RECEPTACLE
	DEDICATED FOURPLEX RECEPTACLE
	CLG. MOUNTED FOURPLEX RECEPTACLE
	SPECIAL RECEPTACLE - SEE DRAWING NOTES
	FLOOR MOUNTED POWER FLOOR BOX DEVICE
FAC	FLOOR COMBINATION PWR/DATA FLOOR BOX
	NON FUSED DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH
VFD	VARIABLE FREQUENCY DRIVE
M	MOTOR
	ONE, TWO, and THREE BUTTON PUSH SWITCH
	POWER POLE
	TIME CLOCK
	CONTACTOR
	GROUND BAR
EPO	EMERGENCY POWER OFF PUSH BUTTON
M	METER
	PANEL BOARD
	PULLBOX
	CURRENT TRANSFORMER
	TRANSFORMER
MD	MOTORIZED DAMPER

SWITCHES

S	SWITCH, SINGLE POLE
S2	SWITCH, DOUBLE POLE
S3	SWITCH, THREE WAY
S4	SWITCH, FOUR WAY
SD	SWITCH, DIMMER
SK	SWITCH, KEYED
SP	SWITCH, WITH PILOT LIGHT
STO	SWITCH, THERMAL OVERLOAD
	SWITCH, LOW VOLTAGE - SEE DWG NOTES
SV	SWITCH, VARIABLE SPEED CONTROL
SSU	SWITCH, TYPE S FUSE HLDR(INCLUDE FUSE)
SC	LTG SCENE CONTROLLER-SEE DWG NOTES

SECURITY AND ACCESS CONTROL SYMBOLS

	CARD READER, DOUBLE GANG BOX, 3/4" CONDUIT STUB TO ACCESSIBLE CEILING
	INTERCOM PUSH BUTTON, DOUBLE GANG BOX, 3/4" CONDUIT STUB TO ACCESSIBLE CEILING
	SECURITY CAMERA, DOUBLE GANG BOX, 3/4" CONDUIT STUB TO ACCESSIBLE CEILING
	WALL SECURITY MOTION SENSOR, DBL GANG, 1/2" CONDUIT STUB TO ACCESSIBLE CEILING
	CLG. SECURITY MOTION SENSOR, DBL GANG, 1/2" CONDUIT STUB TO ACCESSIBLE CEILING
	DOOR CONTACT, - SEE DRAWINGS NOTES 1/2" CONDUIT STUB TO ACCESSIBLE CEILING

FIRE ALARM SYMBOLS

SYMBOL	DESCRIPTION
	CEILING MOUNTED FIRE HORN/STROBE
	CEILING MOUNTED STROBE
	CEILING MOUNTED FIRE SPEAKER
	REMOTE INDICATOR LAMP
	MANUAL PULL STATION
	FLOW SWITCH
T	TAMPER SWITCH
PS	PRESSURE SWITCH
	WALL MOUNTED STROBE
	WALL MOUNTED FIRE HORN
	WALL MOUNTED FIRE HORN/STROBE
FDH	MAGNETIC DOOR HOLD OPEN
FACP	FIRE ALARM CONTROL PANEL
ANN	FIRE ALARM ANNUNCIATOR PANEL
MAP	FIRE ALARM GRAPHIC MAP
	DUCT DETECTOR
	FIRE SMOKE DAMPER
H	HEAT DETECTOR
S	SMOKE DETECTOR
CO S	COMBINATION SMOKE/CO DETECTOR
FF	FIREFIGHTER'S PHONE JACK / WALL PHONE
	TWO-WAY COMMUNICATION STATION

LIGHTING CONTROL SENSORS

	WALL VACANCY SENSOR, DUAL TECH, SINGLE ZONE, INTEGRAL OVERRIDE SWITCH
D	WALL VACANCY SENSOR, DUAL TECH, SINGLE ZONE, INTEGRAL OVR SWITCH, DIMMING
x3	WALL VACANCY SENSOR, DUAL TECH, DUAL ZONE, INTEGRAL OVERRIDE SWITCH,
S	CEILING VACANCY SENSOR, DUAL TECH, SINGLE ZONE, POWER PACK; LV OVERRIDE SWITCHES
x3 S x3	CEILING VACANCY SENSOR, DUAL TECH, DUAL ZONE, 2P POWER PACK; LV OVERRIDE SWITCHES
EXP	CEILING VACANCY SENSOR, SINGLE ZONE, EXTERIOR RATED, EXTENDED RANGE, PIR
	WALL OCCUPANCY SENSOR, DUAL TECH, SINGLE ZONE, INTEGRAL OVERRIDE SWITCH
D	WALL OCCUPANCY SENSOR, DUAL TECH, SINGLE ZONE, INTEGRAL OVR SWITCH, DIMMING
x3	WALL OCCUPANCY SENSOR, DUAL TECH, DUAL ZONE, INTEGRAL OVERRIDE SWITCH,
S	CEILING OCCUPANCY SENSOR, DUAL TECH, SINGLE ZONE, POWER PACK; LV OVERRIDE SWITCHES
x1 S x3	CEILING OCCUPANCY SENSOR, DUAL TECH, DUAL ZONE, 2P POWER PACK; LV OVERRIDE SWITCHES
EXP	CEILING OCCUPANCY SENSOR, SINGLE ZONE, EXTERIOR RATED, EXTENDED RANGE, PIR
	INTERIOR DAYLIGHT SENSOR

ONE LINE DIAGRAM SYMBOLS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
PANEL "LA"	PANEL BOARD	100A FRN-R / 100/3	FUSED DISCONNECT SWITCH WITHIN SWITCHBOARD
C / T	CURRENT TRANSFORMER ENCLOSURE	SPARE / 100/3	SPARE SWITCH WITHIN SWITCHBOARD
PB	PULL BOX	SPACE / 100/3	SPACE WITHIN SWITCHBOARD
100/3 / 100A FRN-R	FUSED DISCONNECT SWITCH		CIRCUIT BREAKER
	NON-FUSED DISCONNECT SWITCH		SERVICE WEATHER HEAD
T / F	TRANSFORMER		CURRENT TRANSFORMER
T / F	PAD MOUNTED TRANSFORMER		GROUNDING CONNECTION
	TRANSFER SWITCH	M	MOTOR
	OVERHEAD POLE MOUNTED TRANSFORMER BANK	G	GENERATOR
		M	METER
		GB	GROUND BAR

ABBREVIATIONS

A, AMP	AMPERE	CU	COPPER	GC	GENERAL CONTRACTOR	MLO	MAIN LUGS ONLY	NTS	NOT TO SCALE
AC	ABOVE COUNTER	CLG	CEILING (CEILING MOUNTED)	GD	GARBAGE DISPOSAL	MV	MEDIUM VOLTAGE	(PART)	PARTIAL CIRCUIT
AFCI	ARC FAULT CIRCUIT INTERRUPTER	CWP	COLD WATER PIPE	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	MW	MICROWAVE	REF	REFRIGERATOR
AFF	ABOVE FINISHED FLOOR	(D)	EXISTING TO BE DEMOLISHED	G.GND	GROUND	(N)	NEW	(RL)	EXISTING TO BE RELOCATED
AFG	ABOVE FINISHED GRADE	Db	DECIBEL	HP	HORSEPOWER	N	NEUTRAL	RTS	REMOVE TEST SWITCH
AL	ALUMINUM	(E)	EXISTING TO REMAIN	IG	ISOLATED GROUND DEVICE	N.C.	NORMALLY CLOSED	TBB	TELEPHONE PLYWOOD BACKBOARD
BLDG	BUILDING	EC	ELECTRICAL CONTRACTOR	LV	LOW VOLTAGE	N.O.	NORMALLY OPEN	UC	UNDER COUNTER
C	CONDUIT	EPO	EMERGENCY POWER OFF	MC	MECHANICAL CONTRACTOR	NEC	NATIONAL ELECTRIC CODE	UG	UNDER GROUND
CB	CIRCUIT BREAKER	EM	EMERGENCY POWER CIRCUIT	MCB	MAIN CIRCUIT BREAKER	NF	NON FUSED	WP	WEATHERPROOF – NEMA 3R
CCTV	CLOSED CIRCUIT TELEVISION	FA	FIRE ALARM	MFR	MANUFACTURER	NIC	NOT IN CONTRACT	XP	EXPLOSION PROOF
CT	CURRENT TRANSFORMER	FC	FOOTCANDLES			NL	NIGHT LIGHT		

NOTES:

APPLICABLE CODE STANDARDS

2018 INTERNATIONAL BULDING CODE	2018 INTERNATIONAL ENERGY CONSERVATION CODE	2017 NATIONAL ELECTRIC CODE
2018 INTERNATIONAL FIRE CODE	2018 INTERNATIONAL FUEL GAS CODE	

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REVIEWED FOR CODE COMPLIANCE
03/21/2024

STEAMBOAT GRAND
PIPING SYSTEM REPLACEMENT
2300 MT WERNER CIR,
STEAMBOAT SPRINGS, CO 80487

ISSUE	DATE
100% SD	12/15/2021
PRICING SET	11/01/2022
FOR PERMIT	06/02/2023
95% CD's	01/16/2023

PROJECT #: 21056
DESIGNED: NWS
CHECKED: RCC

ELECTRICAL LEGEND

COLORADO REGISTERED PROFESSIONAL ENGINEER
35656
06.01.23

E100

DIVISION 26 - ELECTRICAL SPECIFICATIONS

260100 - BASIC ELECTRICAL REQUIREMENTS - GENERAL

1. THE GENERAL CONDITIONS OF THE CONTRACT, SUPPLEMENTARY CONDITIONS OF THE GENERAL CONTRACT, AND REQUIREMENTS OF OTHER DIVISIONS APPLY TO WORK UNDER THIS DIVISION. PROVIDE LABOR, MATERIALS, TEMPORARY FACILITIES, EQUIPMENT AND SERVICES TO INSTALL ELECTRICAL SYSTEMS AS INDICATED OR REQUIRED, WHICH INCLUDES BUT IS NOT LIMITED TO, MASONRY, EXCAVATION AND BACKFILL, CONCRETE, CARPENTRY, PAINTING, CONDUIT SLEEVES AND SUPPORTS, ANCHORS, VIBRATION AND SOUND ISOLATION, ACCESS DOORS, CUTTING AND PATCHING, AND SIMILAR WORK. PROVIDE TEMPORARY ELECTRICITY FOR ELECTRICAL WORK AND THE WORK OF OTHER TRADES.

2. THE MANUFACTURER'S MATERIAL OR EQUIPMENT LISTED FIRST IN THE SPECIFICATIONS OR ON THE DRAWINGS ARE TYPES TO BE PROVIDED FOR ESTABLISHMENT OF SIZE, CAPACITY, GRADE AND QUALITY. ADDITIONAL MANUFACTURERS MATERIALS OR EQUIPMENT LISTED ARE CONSIDERED TO BE "OTHER ACCEPTABLE" MANUFACTURERS, AND THE COST OF CHANGES IN CONSTRUCTION REQUIRED BY THEIR USE SHALL BE BORNE BY THIS CONTRACTOR.

3. IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS TO RESULT IN A COMPLETE ELECTRICAL INSTALLATION IN COMPLETE ACCORDANCE WITH APPLICABLE CODES AND ORDINANCES.

4. NEITHER THE PROFESSIONAL ACTIVITIES OF THE ENGINEER NOR THE PRESENCE OF THE ENGINEER OR ITS EMPLOYEES AND SUBCONSULTANTS AT A CONSTRUCTION/PROJECT SITE SHALL RELIEVE THE CONTRACTOR OF ITS OBLIGATIONS, DUTIES, AND RESPONSIBILITIES INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES, OR PROCEDURES NECESSARY FOR PERFORMING, SUPERINTENDING, AND COORDINATING THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

5. DRAWINGS ARE DIAGRAMMATIC IN CHARACTER AND DO NOT NECESSARILY INDICATE EVERY REQUIRED JUNCTION BOX, PULL BOX, ELL, ETC. ITEMS NOT SPECIFICALLY MENTIONED IN THE SPECIFICATION OR NOTED ON THE DRAWINGS, BUT WHICH ARE NECESSARY TO MAKE A COMPLETE WORKING INSTALLATION, SHALL BE INCLUDED.

6. DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY. WHATEVER IS CALLED FOR IN EITHER IS BINDING AS THOUGH CALLED FOR IN BOTH. THE MORE STRINGENT REQUIREMENTS SHALL GOVERN.

7. DRAWINGS SHALL NOT BE SCALED FOR ROUGH-IN MEASUREMENTS OR USED AS SUBMITTALS. WHERE DRAWINGS ARE REQUIRED FOR THESE PURPOSES OR HAVE TO BE MADE FROM FIELD MEASUREMENTS, TAKE THE NECESSARY MEASUREMENTS AND PREPARE THE DRAWINGS.

8. PRIOR TO ORDERING EQUIPMENT, DETERMINE THAT EQUIPMENT SHALL ADEQUATELY PASS THROUGH BUILDING OPENINGS AND PASSAGE WAYS PROVIDING UNOBSTRUCTED ACCESS TO FINAL EQUIPMENT LOCATION. EQUIPMENT SHALL BE MANUFACTURED AND SHIPPED IN SECTIONS FOR ASSEMBLY IN FINAL EQUIPMENT LOCATION WHEN INADEQUATE BUILDING OPENINGS AND PASSAGE WAYS LIMIT ACCESS. SUBMITTALS SHALL INDICATE SECTIONALIZED MANUFACTURE OF EQUIPMENT.

9. BEFORE ORDERING EQUIPMENT AND BEFORE WORK IS INSTALLED, DETERMINE THAT EQUIPMENT SHALL PROPERLY FIT THE SPACE; THAT REQUIRED CLEARANCES CAN BE MAINTAINED AND THAT ELECTRICAL EQUIPMENT CAN BE LOCATED WITHOUT INTERFERENCES BETWEEN SYSTEMS, WITH STRUCTURAL ELEMENTS OR WITH THE WORK OF OTHER TRADES.

10. IF CONFLICTS ARE DISCOVERED IN CONTRACT DOCUMENTS AS WORK PROGRESSES, A SET OF PRINTS MARKED WITH RED PENCIL SHOWING RECOMMENDED MODIFICATIONS SHALL BE SUBMITTED TO THE [ARCHITECT] [ENGINEER] FOR APPROVAL PRIOR TO INSTALLATION.

11. THE DRAWINGS INDICATE THE GENERAL ARRANGEMENT OF CIRCUITS AND OUTLETS, LOCATIONS OF SWITCHES, PANELBOARDS AND OTHER WORK. HOWEVER, REARRANGEMENT AND RECIRCUITING SHALL NOT BE PERMITTED WITHOUT SPECIFIC ACCEPTANCE.

12. INCIDENTAL EQUIPMENT SUCH AS TOOLS, SCAFFOLDING, CONSUMABLE ITEMS, TESTING EQUIPMENT, APPLIANCES AND THE LIKE SHALL BE PROVIDED WHETHER LISTED OR NOT. LABOR, FEES, LICENSES, START-UP AND CHECKOUT SERVICES SHALL ALSO BE PROVIDED.

13. INSTRUCTIONS SUCH AS "PROVIDE THE OUTLETS..." SHALL MEAN THE SAME AS THOUGH THE WORDS "THIS CONTRACTOR SHALL" PRECEDED EACH INSTRUCTION. "PROVIDE" SHALL MEAN "FURNISH AND INSTALL." WHERE THE WORDS "ACCEPTED" OR "ACCEPTABLE" ARE USED, SUCH "ACCEPTED" OR "ACCEPTABLE" ACTION BY THE ENGINEER DENOTES THAT THE WORK OR EQUIPMENT ITEM IS IN CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND, IN GENERAL, COMPLIES WITH THE PERTINENT INFORMATION GIVEN IN THE CONTRACT DOCUMENTS.

14. IN THE EVENT THAT DISCREPANCIES EXIST OR REQUIRED ITEMS OR DETAILS HAVE BEEN OMITTED, NOTIFY THE ENGINEER IN WRITING OF SUCH DISCREPANCY OR OMISSION AT LEAST FIVE DAYS PRIOR TO BID DATE. FAILURE TO DO SO SHALL BE CONSTRUED AS WILLINGNESS TO SUPPLY NECESSARY MATERIALS AND LABOR REQUIRED FOR THE PROPER COMPLETION OF THIS WORK. FOR DISCREPANCIES WHICH ARE NOT REPORTED BY CONTRACTOR THE MOST STRINGENT REQUIREMENT SHALL APPLY.

15. IN THE EVENT THAT ADDITIONAL INFORMATION IS REQUIRED DURING CONSTRUCTION, REQUEST SUCH INFORMATION FROM THE ENGINEER IN WRITING PRIOR TO PERFORMING RELATED WORK. THE REQUEST FOR INFORMATION SHALL INCLUDE AN EXPLANATION OF THE INFORMATION REQUIRED INCLUDING REFERENCES TO RELATED PORTIONS OF THE DOCUMENTS AND CONTRACTOR'S RECOMMENDATIONS.

16. EXAMINE THE PREMISES AND BECOME FAMILIAR WITH EXISTING CONDITIONS PRIOR TO BIDDING. NO ALLOWANCE SHALL SUBSEQUENTLY BE MADE FOR NOT FOLLOWING THIS PROCEDURE.

17. PROTECT WORK, MATERIALS, AND EQUIPMENT AGAINST THEFT, INJURY, OR DAMAGE UNTIL IT HAS BEEN INSTALLED, TESTED, AND ACCEPTED.

18. BE RESPONSIBLE FOR DAMAGE TO THE PROPERTY OF THE OWNER OR TO THE WORK OF OTHER TRADES DUE TO THE ELECTRICAL WORK DURING THE CONSTRUCTION AND WARRANTY PERIOD.

19. ERRORS AND OMISSIONS IN THE CONTRACT DOCUMENTS DO NOT RELIEVE THE CONTRACTOR FROM PROVIDING THE WORK IN ACCORDANCE WITH REGULATORY REQUIREMENTS.

20. EXECUTE AND INSPECT WORK IN ACCORDANCE WITH UNDERWRITERS, LOCAL AND STATE CODES, RULES AND REGULATIONS APPLICABLE TO THE TRADE AFFECTED AS A MINIMUM, BUT IF THE PLANS OR SPECIFICATIONS CALL FOR REQUIREMENTS THAT EXCEED THESE RULES AND REGULATIONS, THE GREATER REQUIREMENT SHALL BE FOLLOWED. FOLLOW REQUIREMENTS OF IBC, IMC, IFC, IECC NFPA, NEC, OSHA, NEMA, ANSI, UL, EIA/TIA, AND APPLICABLE STATE, LOCAL OR FEDERAL SPECIFICATIONS.

21. CONFORM TO GUIDELINES AND REQUIREMENTS OF LOCAL UTILITY COMPANIES.

22. THE OWNER'S STANDARDS SHALL BE CONSIDERED PART OF THESE CONSTRUCTION DOCUMENTS.

23. OBTAIN PERMITS REQUIRED FOR THE ELECTRICAL WORK ON THIS PROJECT. PAY FEES, INCLUDING [SERVICE INSTALLATION AND CONNECTION CHARGES,] PERMIT FEES. NO WORK SHALL BE STARTED PRIOR TO OBTAINING NECESSARY PERMITS AND PAYMENT OF REQUIRED FEES. WORK INSTALLED PRIOR TO OBTAINING PROPER PERMITS SHALL, IF REQUIRED BY PERMITTING AUTHORITY, BE REDONE IN COMPLIANCE WITH REQUIREMENTS. NOTATIONS MADE ON PERMIT OR REVIEW DOCUMENTS SHALL BE OBSERVED. ADDITIONAL REQUIREMENTS NOTED BY JURISDICTIONAL AUTHORITY SHALL BE MADE PART OF THE REQUIREMENTS FOR CONSTRUCTION OF THE PROJECT. ADDITIONAL COSTS FOR IMPLEMENTING JURISDICTIONAL AUTHORITY'S REQUIREMENTS, IF ANY, SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO CONSTRUCTION FOR REVIEW.

24. SUBSTITUTIONS

    A. MATERIAL AND EQUIPMENT USED IN BIDS SHALL BE AS SPECIFIED. PROPOSED SUBSTITUTIONS SHALL BE REVIEWED AFTER AWARD OF CONTRACT DURING SUBMITTAL REVIEW. PROPOSED SUBSTITUTES SHALL BE CLEARLY LABELED AS A SUBSTITUTE. SUBMITTALS SHALL INCLUDE DATA NECESSARY FOR COMPLETE EVALUATION OF THE PROPOSED SUBSTITUTION. SUBSTITUTION MATERIALS AND EQUIPMENT USED IN BIDS SHALL BE AT CONTRACTOR'S RISK, AND AS SUCH ARE SUBJECT TO REJECTION DURING SUBMITTAL REVIEW. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FEES FOR RE-DESIGN INCURRED BY THE ENGINEER RESULTING FROM THE USE OF SUBSTITUTION MATERIALS. SUCH EXTRA FEES SHALL BE DEDUCTED FROM PAYMENT TO THE CONTRACTOR.

    B. WHERE "OTHER ACCEPTABLE" MANUFACTURERS ARE NAMED, THEIR PRODUCTS MAY BE USED PROVIDED THEY TOTALLY MEET THE SPECIFICATIONS AND ARE DIMENSIONALLY SUITABLE AND OPERATIONALLY IDENTICAL TO THE SPECIFIED ITEM. THE DECISION AS TO WHETHER OR NOT SUCH ITEMS ARE EQUAL TO THE SPECIFIED ITEMS SHALL BE MADE BY THE ENGINEER DURING SUBMITTAL REVIEW.

25. SUBMITTALS

    A. THE PURPOSE OF SUBMITTALS IS TO ENSURE THAT CONTRACTOR UNDERSTANDS DESIGN REQUIREMENTS AND DEMONSTRATES UNDERSTANDING BY INDICATING AND DETAILING INTENDED MATERIALS, METHODS, AND PROPER INSTALLATION PRACTICES. IF DISCREPANCIES BETWEEN SUBMITTALS AND CONTRACT DOCUMENTS ARE DISCOVERED EITHER PRIOR TO OR AFTER SUBMITTALS ARE REVIEWED, REQUIREMENTS OF CONTRACT DOCUMENTS SHALL TAKE PRECEDENCE. SUBMITTALS WHICH ARE SUBMITTED, BUT WHICH ARE NOT REQUIRED BY CONTRACT DOCUMENTS, SHALL BE RETURNED NOT REVIEWED.

    B. REVIEW OF SUBMITTALS AND ACTION RECOMMENDED AS RESULT OF REVIEW IS A COURTESY EXTENDED TO CONTRACTOR BY ENGINEER. THIS REVIEW IS INTENDED TO MINIMIZE DELIVERY TO JOB SITE AND INSTALLATION OF MATERIALS AND EQUIPMENT THAT DO NOT MEET INTENT OF CONSTRUCTION DOCUMENTS. SUBMISSION OF MATERIAL FOR REVIEW DOES NOT ALTER CONTRACTOR'S OBLIGATION TO FOLLOW INTENT OF CONSTRUCTION DOCUMENTS, NOR CONTRACTOR'S RESPONSIBILITY TO COMPLY THEREWITH REGARDLESS OF ACTION NOTED IN ENGINEERS REVIEW.

    C. PRODUCT DATA SUBMITTALS SHALL INCLUDE CATALOG CUT-SHEETS, MANUFACTURER'S DATA SHEETS, WRITTEN DESCRIPTIONS, SPECIFICATION SHEETS DETAILING THE ASSOCIATED PRODUCT, ITEM, ASSEMBLY AND INSTALLATION. HIGHLIGHT CHARACTERISTICS AND FEATURES WITHIN PRODUCT DATA SUBMITTALS WITH A YELLOW HIGHLIGHTING MARKER TO IDENTIFY COMPLIANCE WITH THE DRAWINGS AND SPECIFICATIONS. INDICATE CHARACTERISTICS AND FEATURES WHICH ARE MISSING OR VARY FROM THE DRAWINGS AND SPECIFICATIONS. SUBMITTALS SHALL INCLUDE DETAILS, INSTALLATION DRAWINGS, ASSEMBLY DRAWINGS, FABRICATION DRAWINGS, DIAGRAMS, ETC., WHICH SHOW ADAPTATION OR INSTALLATION OF CONTRACTOR-FURNISHED PRODUCTS OR MATERIALS FOR OVERALL PROJECT.

    D. PRIOR TO ORDERING EQUIPMENT OR BEGINNING INSTALLATION WORK, ASSEMBLE, PREPARE, AND SUBMIT SHOP DRAWINGS REQUIRED FOR PROJECT. SUBMIT SUBMITTALS AS REQUIRED BY INDIVIDUAL SECTIONS OF SPECIFICATIONS. AS A MINIMUM, PROVIDE PRODUCT DATA SUBMITTALS FOR EQUIPMENT INDICATED ON THE DRAWINGS WHETHER MENTIONED IN THESE SPECIFICATIONS OR NOT.

    E. CONTRACTOR SHALL THOROUGHLY CHECK SUBCONTRACTORS' OR VENDORS' SUBMITTALS AND, AFTER APPROVING SUBMITTALS, PROVIDE SUBMITTALS FOR REVIEW. PARTIAL OR INCOMPLETE SUBMITTALS WILL NOT BE REVIEWED BY THE [ARCHITECT] [ENGINEER] AND WILL BE RETURNED NOT REVIEWED. SUBMITTALS THAT DO NOT BEAR CONTRACTOR'S REVIEW STAMP SHALL BE RETURNED NOT REVIEWED.

    F. EACH SET OF SUBMITTALS SUBMITTED OR RE-SUBMITTED SHALL BEAR A UNIQUE CONTRACTOR'S SUBMITTAL NUMBER. AFTER REVIEW, SUBMITTALS SHALL BE RETURNED TOGETHER WITH SUBMITTAL REVIEW SHEET WHICH INDICATES COMMENTS ON SUBMITTALS WITH SPECIFIC ACTIONS SUCH AS: NO EXCEPTION TAKEN; MAKE CORRECTIONS NOTED, RE-SUBMITTAL NOT REQUIRED; MAKE CORRECTIONS NOTED, RE-SUBMITTAL REQUIRED; REJECTED; NOT REVIEWED. CONTINUE TO RE-SUBMIT SUBMITTALS UNTIL NO EXCEPTION TAKEN OR MAKE CORRECTIONS NOTED, RE-SUBMITTAL NOT REQUIRED ACTION IS INDICATED. PROVIDE A COPY OF THE ORIGINAL SUBMITTAL REVIEW COMMENTS FOR RE-SUBMITTED ITEMS.

    G. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EXTRA FEES INCURRED BY THE ENGINEER RESULTING FROM SUBSEQUENT REVIEW(S) OF SUBMITTALS WHICH FAIL TO MEET THE REQUIREMENTS HEREIN. SUCH EXTRA FEES SHALL BE DEDUCTED FROM PAYMENT TO THE CONTRACTOR.

26. KEEP IN CUSTODY DURING ENTIRE PERIOD OF CONSTRUCTION, A CURRENT SET OF DOCUMENTS INDICATING CHANGES THAT HAVE BEEN MADE TO THE CONTRACT DOCUMENTS. CHANGES TO BE NOTED ON THE DOCUMENTS SHALL INCLUDE BUT SHALL NOT BE LIMITED TO, PANELBOARD, LUMINAIRE, EQUIPMENT, AND OTHER SCHEDULES; CIRCUITING; EQUIPMENT, LUMINAIRES, OR CONDUIT LOCATED MORE THAT 2 FEET (0.61 METERS) FROM WHERE SHOWN ON DRAWINGS; ELECTRICAL EQUIPMENT RATINGS; MODIFICATIONS TO SPECIFICATIONS. INCORPORATE ADDENDA, ACCEPTED ALTERNATES, CHANGE ORDERS, AND OTHER DOCUMENT REVISIONS WHICH OCCURRED AFTER THE AWARD OF THE GENERAL CONTRACT OR THE START OF CONSTRUCTION ACTIVITIES INTO THE RECORD DOCUMENTS. NOTATIONS AND CHANGES SHALL BE DONE IN A NEAT AND LEGIBLE MANNER. UPON COMPLETION OF WORK, SUBMIT THE COMPLETE SET OF RECORD DOCUMENTS TO THE ENGINEER.

27. MAKE PROVISIONS FOR RECEIVING AND STORING MATERIALS, INCLUDING OWNER FURNISHED MATERIALS TO BE INSTALLED UNDER THIS DIVISION. CAREFULLY MARK AND STORE MATERIALS. CAREFULLY CHECK AND INSPECT MATERIALS FURNISHED FOR INSTALLATION, AND FURNISH A RECEIPT ACKNOWLEDGING ACCEPTANCE OF DELIVERY AND CONDITION OF THE MATERIALS RECEIVED. DO NOT USE RECEIVED MATERIALS WHICH CONTAIN CRACKS, DENTS, ABRASIONS, OR OTHER DEFECTS. MARK SUCH MATERIALS REJECTED AND REMOVE FROM SITE OR RETURN TO SUPPLIER FOR REPLACEMENT.

28. PROTECT MATERIALS AND EQUIPMENT FROM PHYSICAL DAMAGE, CONSTRUCTION DIRT, AND THE ELEMENTS FROM THE TIME THEY ARE DELIVERED UNTIL FINAL ACCEPTANCE. THE CONTRACTOR INSTALLING THE EQUIPMENT OR MATERIALS SHALL BE RESPONSIBLE FOR THEIR PROTECTION.

29. SCHEDULE WORK TO COORDINATE WITH THAT OF OTHER TRADES TO MINIMIZE DELAYS. COORDINATE WITH OWNER AND UTILITY COMPANIES OUTAGES DUE TO INTERFACING ELECTRICAL EQUIPMENT. OUTAGES MUST BE SCHEDULED AT LEAST FIVE DAYS IN ADVANCE AND SHALL BE AT A TIME AND DURATION ACCEPTABLE TO THE OWNER OUTAGES AT A TIME OTHER THAN NORMAL WORKING HOURS, SHALL NOT ENTITLE THE CONTRACTOR TO ADDITIONAL OVERTIME OR COMPENSATION BEYOND THAT IN THE BID.

30. LOCATIONS OF DEVICES, OUTLETS, ETC., AS SHOWN ON THE DRAWINGS ARE APPROXIMATE UNLESS DIMENSIONED OR OTHERWISE NOTED. WHERE LOCATIONS OF DEVICES, OUTLETS, ETC., ARE DIMENSIONED OR NOTED ON THE DRAWINGS, VERIFY LOCATION WITH ENGINEER'S REPRESENTATIVE OR WITH EQUIPMENT TO BE SUPPLIED. EXACT LOCATIONS OF DEVICES, OUTLETS, ETC., SHALL BE COORDINATED WITH FIELD CONDITIONS. ENSURE THAT SWITCHES OR OTHER ELECTRICAL DEVICES ARE MOUNTED SUCH THAT THEY ARE NOT "TRAPPED" BEHIND OPENED DOORS OR OTHERWISE RENDERED INACCESSIBLE, REGARDLESS OF LOCATIONS INDICATED ON DRAWINGS.

31. PRIOR TO ROUGH-IN FOR SERVICE TO EQUIPMENT FURNISHED OR PROVIDED BY OTHERS, COORDINATE WITH OTHER TRADES AND OWNER TO VERIFY ROUGH-IN LOCATIONS, CONNECTION REQUIREMENTS, ELECTRICAL SERVICE TO EQUIPMENT SIZE AND CHARACTERISTICS, AND OBTAIN A SCHEDULE OF EQUIPMENT ELECTRICAL LOADS. SCHEDULES SHALL BE FOR VERIFYING ELECTRICAL SERVICES, CONTROLS, DISCONNECTS, FUSES, AND OVERLOAD PROTECTION. COORDINATE WITH ENGINEER, AUTHORITY HAVING JURISDICTION, AND OTHER APPROPRIATE DIVISIONS AS NEEDED.

32. VERIFY THE PHYSICAL DIMENSIONS OF EACH ITEM OF ELECTRICAL EQUIPMENT TO FIT THE AVAILABLE SPACE AND PROMPTLY NOTIFY THE ENGINEER PRIOR TO ROUGHING-IN IF CONFLICTS APPEAR. BE RESPONSIBLE FOR COORDINATION OF EQUIPMENT TO THE AVAILABLE SPACE AND TO THE ACCESS ROUTES THROUGH THE CONSTRUCTION. CONFER AND COOPERATE WITH OTHER TRADES AND COORDINATE THE WORK IN PROPER RELATION WITH THEIRS. COORDINATE CEILING CAVITY SPACE CAREFULLY WITH OTHER TRADES.

33. ALL ELECTRICAL EQUIPMENT SHALL BE LISTED AND LABELED WITH THE UNDERWRITERS LABORATORY TAG OR OTHER LISTING AS APPROVED BY THE LOCAL JURISDICTIONAL AUTHORITY. CUSTOM DESIGNED ITEMS SHALL BE FABRICATED OF UL APPROVED MATERIALS AND UL LISTED AS A COMPLETE ASSEMBLY AS REQUIRED.

34. THROUGHOUT SPECIFICATIONS, VARIOUS MATERIALS, EQUIPMENT, APPARATUS, ETC., ARE SPECIFIED BY MANUFACTURER, BRAND NAME, TYPE OR CATALOG NUMBER. SUCH DESIGNATIONS ARE TO ESTABLISH STANDARDS OF DESIRED QUALITY AND CONSTRUCTION AND SHALL BE THE BASIS OF THE BID. SUBSTITUTIONS SHALL BE ALLOWED ONLY AS SPECIFIED HEREIN.

35. MAKE UP THE OPERATING AND MAINTENANCE MANUALS AS SPECIFIED AND SUBMIT NO LATER THAN 2 WEEKS PRIOR TO THE COMPLETION OF THE PROJECT. INFORMATION CONTAINED IN THE OPERATING AND MAINTENANCE MANUALS CONSIST OF SUBMITTAL MATERIALS REFLECTING EQUIPMENT AS SUPPLIED AND INSTALLED, TEST REPORTS, WARRANTIES, DESCRIPTION OF REQUIRED TESTING AND TESTING METHODS, DESCRIPTION OF ROUTINE MAINTENANCE, CLEANING, ADJUSTMENTS, AND SERVICE REQUIRED, SUGGESTED FREQUENCY OF TESTING AND MAINTENANCE, AND RECOMMENDED REPLACEMENT PARTS WITH A LIST OF NAMES, ADDRESSES, AND TELEPHONE NUMBERS OF SERVICE ORGANIZATIONS THAT CARRY STOCK OF SUCH REPLACEMENT PARTS. AN INDEX SHALL BE PROVIDED WHICH SHALL LIST CONTENTS IN AN ORDERLY MANNER. SUBMIT ONE ELECTRONIC COPY OF THE MANUAL TO THE ENGINEER FOR REVIEW PRIOR TO PREPARATION OF FINAL COPIES. AFTER REVIEW, MAKE CHANGES AS NOTED AND PREPARE [3] FINAL HARD BOUND COPIES OF MANUAL TO BE TURNED OVER TO THE OWNER.

260100 - BASIC ELECTRICAL REQUIREMENTS - EXECUTION

1. WORKMANSHIP SHALL BE FIRST QUALITY THROUGHOUT AND SHALL BE IN COMPLETE ACCORDANCE WITH THE APPLICABLE CODES. THE APPEARANCE OF THE WORK SHALL BE OF EQUAL IMPORTANCE TO ITS OPERATION. LACK OF QUALITY WORKMANSHIP SHALL BE CONSIDERED SUFFICIENT REASON FOR REJECTION OF A SYSTEM IN PART OR IN WHOLE.

2. ALL GROUND- OR FLOOR-MOUNTED ELECTRICAL DISTRIBUTION EQUIPMENT, INCLUDING SWITCHBOARDS, DISTRIBUTION PANELS, MOTOR CONTROL CENTERS, TRANSFER SWITCHES, GENERATORS, AND TRANSFORMERS, SHALL BE INSTALLED AND FIRMLY ANCHORED TO A 4 INCH HIGH (10.16 CM) CONCRETE HOUSEKEEPING PAD. PAD SHALL EXTEND NO MORE THAN 2 INCHES BEYOND THE EQUIPMENT FOOTPRINT.

3. SUPERVISE WORK SO IT SHALL PROCEED IN PROPER SEQUENCE WITHOUT DELAY TO OTHER TRADES. THE SUPERINTENDENT SHALL BE ON THE PROJECT SITE FOR THE DURATION OF THE PROJECT TO ENSURE THAT CONTRACT DOCUMENTS ARE BEING FOLLOWED.

4. DEMOLITION

    A. PROVIDE LABOR, MATERIALS, EQUIPMENT, AND SERVICES FOR EXISTING ELECTRICAL EQUIPMENT WHICH IS TO BE REMOVED, ABANDONED, OR RELOCATED. COMPLY WITH STATE AND FEDERAL REGULATIONS FOR THE REMOVAL, HAULING AND DISPOSAL OF MATERIALS.

    B. VERIFY THAT FEEDERS AND BRANCH CIRCUITS HAVE BEEN DISCONNECTED AND SAFELY CAPPED FROM EQUIPMENT TO BE RELOCATED, DEMOLISHED OR REMOVED.

    C. REMOVE ELECTRICAL EQUIPMENT TO BE RELOCATED AND ENSURE THAT SUCH EQUIPMENT IS IN ACCEPTABLE CONDITION FOR REUSE. THESE ITEMS SHALL BE TAGGED, PROTECTED FROM DAMAGE, AND STORED AS DIRECTED BY THE OWNER.

    D. LAMPS, BALLASTS, AND OTHER ELECTRICAL EQUIPMENT WHICH CONTAIN HAZARDOUS MATERIALS SHALL BE PROPERLY REMOVED AND DISPOSED. PAY FEES FOR DISPOSAL. REPORT THE EXISTENCE OF HAZARDOUS MATERIALS UNRELATED TO ELECTRICAL EQUIPMENT TO THE ENGINEER IMMEDIATELY.

    E. THE LOCATIONS OF EXISTING EQUIPMENT, CIRCUITING, ETC. SHOWN ON THE DRAWINGS HAVE BEEN TAKEN FROM EXISTING DRAWINGS AND OBTAINED FROM FIELD SURVEYS AND ARE, THEREFORE, ONLY AS ACCURATE AS THAT INFORMATION. EXISTING CONDITIONS SHALL BE FIELD VERIFIED WITH NECESSARY ADJUSTMENT BEING MADE TO THE DRAWING INFORMATION.

    F. WHERE CORE DRILLING OR CONCRETE DEMOLITION IS REQUIRED AS WORK OF THIS TRADE OR OTHER TRADES, DETERMINE THE LOCATION OF EXISTING ENCASED OR BURIED CONDUITS AND CIRCUITS IN THE AREA OF THE WORK USING METAL DETECTORS, CIRCUIT TRACERS AND JUDGMENT PRIOR TO COMMENCEMENT OF DRILLING OR DEMOLITION. TURN OFF ALL CIRCUITS WHICH MIGHT FEED THROUGH CONDUITS AND WIRING IN THE AREA OF THE WORK.

    G. WHERE ITEMS ARE INDICATED ON THE DRAWINGS TO BE REMOVED, REMOVAL OF THE ITEM SHALL INCLUDE REMOVAL OF POWER CIRCUITS, CONTROL CIRCUITS, OVERCURRENT DEVICES, GROUNDING, ACCESSORY DEVICES, RACEWAY AND HARDWARE UNLESS NOTED OTHERWISE. ENSURE THAT THE CONTINUITY OF FEED THROUGH CIRCUITS IS MAINTAINED.

    H. WHERE CIRCUITS TO BE REMOVED ARE EXPOSED DURING CONSTRUCTION, COMPLETELY REMOVE WIRE, CONDUIT, AND SUPPORTS AS REQUIRED. WHERE CIRCUITS TO BE REMOVED ARE CONCEALED OR EMBEDDED IN CONCRETE, REMOVE WIRING BACK TO JUNCTION POINT.

    I. ABANDONED CONDUIT, LEFT IN PLACE, SHALL HAVE PULL TAPE INSTALLED AND SHALL BE LABELED AT EACH END IDENTIFYING ORIGIN, DESTINATION AND ABANDONMENT. LABELS SHALL BE SEMI-PERMANENT.

    J. REMOVAL AND RELOCATION OF ELECTRICAL EQUIPMENT SHALL INCLUDE PATCHING AND PAINTING AS REQUIRED TO REFINISH BUILDING SURFACES. COORDINATE PATCHING AND REPAINTING WITH ARCHITECT.

5. EQUIPMENT MODIFICATION

    A. WHERE EXISTING EQUIPMENT IS TO BE MODIFIED, FURNISH MATERIALS AND LABOR NECESSARY TO MODIFY OR ADD TO THE EQUIPMENT. MODIFICATIONS SHALL BE DONE NEATLY WITH FACTORY PARTS AND ASSEMBLIES APPROVED FOR THE APPLICATION. PROVIDE EQUIPMENT SUPPLIER WITH INFORMATION OF EXISTING EQUIPMENT, INCLUDING SERIAL NUMBER, DATE OF MANUFACTURE, AND SPECIAL REQUIREMENTS. MODIFICATION SHALL IN NO WAY JEOPARDIZE THE COMPLIANCE OF EXISTING EQUIPMENT WITH GOVERNING CODES, UNDERWRITERS LISTINGS OR OTHER REGULATIONS.

    B. ALL NEW AND MODIFIED ELECTRICAL EQUIPMENT, SUCH AS SWITCHBOARDS, PANELBOARDS, INDUSTRIAL CONTROL PANELS, METER SOCKET ENCLOSURES, AND MOTOR CONTROL CENTERS, THAT ARE IN OTHER THAN DWELLING OCCUPANCIES, AND ARE LIKELY TO REQUIRE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE WHILE ENERGIZED SHALL BE FIELD MARKED TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS. THE MARKING SHALL BE LOCATED SO AS TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE OF THE EQUIPMENT PER NEC 2017, ARTICLE 110.16.

6. CUTTING, PATCHING, OPENINGS, SLEEVES, INSERTS AND HANGERS

    A. FURNISH AND INSTALL SLEEVES AND BOXES REQUIRED FOR OPENINGS IN THE STRUCTURE FOR INSTALLATION OF ELECTRICAL WORK. BE RESPONSIBLE FOR PROPER PLACEMENT OF SLEEVES AND BOXES.

    B. PROVIDE INSERTS AND HANGERS REQUIRED TO SUPPORT CONDUIT, CABLES, BOXES, FIXTURES, ETC. PROVIDE INDEPENDENT SUPPORT FOR ALL ELECTRICAL EQUIPMENT.

    C. PROPERLY SIZE AND LOCATE HOLES AND CHASES REQUIRED FOR WORK UNDER THIS DIVISION AS CONSTRUCTION PROGRESSES. BEFORE BEGINNING SLEEVING OR INSTALLATION WORK, CAREFULLY STUDY CONTRACT DRAWINGS AND CHECK CONDUIT, BOXES AND EQUIPMENT LOCATIONS FOR INTERFERENCE WITH OTHER TRADES. IF CONFLICTS ARE DISCOVERED IN DRAWINGS OR AS WORK PROGRESSES, A SET OF PRINTS MARKED WITH RED PENCIL SHOWING RECOMMENDED INSTALLATION METHODS SHALL BE SUBMITTED TO THE [ARCHITECT] [ENGINEER] FOR REVIEW PRIOR TO INSTALLATION. CUTTING, REPAIRING AND REQUIRED STRUCTURAL REINFORCING FOR INSTALLATION OF THIS WORK SHALL BE DONE IN CONFORMANCE WITH THE ENGINEER'S DIRECTIONS. CUTTING SHALL NOT BE DONE WITHOUT THE ENGINEER'S APPROVAL.

    D. CUTTING OF CONCRETE OR OTHER BUILDING MATERIALS SHALL BE AVOIDED WHERE POSSIBLE. HAVE A WORKMAN QUALIFIED IN THE ELECTRICAL TRADE PRESENT AT THE POURING OF CONCRETE OR THE BUILDING OF MASONRY CONTAINING ELECTRICAL WORK TO AVOID CUTTING OF CONCRETE OR OTHER BUILDING MATERIAL.

    E. SLEEVES AND CHASES ARE PROHIBITED IN STRUCTURAL MEMBERS EXCEPT WHERE APPROVED BY THE ENGINEER IN WRITING. IF OPENINGS NECESSARY FOR THIS WORK ARE NOT INSTALLED AT THE TIME OF CONSTRUCTION, OR IF AN OPENING IS REQUIRED IN EXISTING CONSTRUCTION, PROVIDE THE OPENING.

    F. PATCHING IN EVERY INSTANCE CONSISTS OF COMPLETING THE WORK TO MATCH AND BLEND IN WITH THE ADJOINING EXISTING WORK INSOFAR AS METHODS, MATERIALS AND COLORS, AND WORKMANSHIP ARE CONCERNED. PATCHES WHICH ARE NOT PROPERLY BLENDED SHALL BE REJECTED AND ORDERED REDONE. EXECUTE PATCHING IN FULL COMPLIANCE WITH THE PROVISION OF THE SPECIFICATIONS RELATING TO THE TYPE OF WORK INVOLVED BY CRAFTSMEN QUALIFIED AND SKILLED IN THE PARTICULAR TYPE OF WORK INVOLVED.

    G. OPENINGS FOR ELECTRICAL WORK SHALL BE CAREFULLY CAULKED OR GROUTED AS REQUIRED. SPARE CONDUITS SHALL BE TIGHTLY CAPPED.

    H. HOLES AND VOIDS CREATED TO EXTEND ELECTRICAL SYSTEMS THROUGH FIRE RATED FLOORS, WALLS, AND CEILINGS SHALL BE SEALED WITH AN INTUMESCENT MATERIAL.

    I. COSTS OF CUTTING AND PATCHING CAUSED BY IMPROPER COORDINATION SHALL BE PAID FOR BY THE CONTRACTOR REGARDLESS OF THE RESPONSIBILITIES SET FORTH IN THESE CONTRACT DOCUMENTS FOR NEW WORK.

7. EQUIPMENT IDENTIFICATION

    A. LABELS SHALL BE ETCHED LAMACOID TAGS, WHITE WITH BLACK CORE. LETTERING SHALL BE 1/4 INCH UPPER-CASE, UNLESS OTHERWISE NOTED. ATTACH LABEL TAGS TO EQUIPMENT WITH SHEET METAL SCREWS. EMERGENCY EQUIPMENT LABELS SHALL BE THE SAME AS ABOVE EXCEPT TAGS SHALL BE RED WITH WHITE CORE.

    B. POWER DISTRIBUTION EQUIPMENT FURNISHED UNDER DIVISION 26 INCLUDING, BUT NOT LIMITED TO, ENGINE GENERATOR SYSTEMS, TRANSFER SWITCHES, TRANSFORMERS, SWITCHGEAR, SWITCHBOARDS, PANELBOARDS, MOTOR CONTROL CENTERS, AND DISCONNECTS ARE LABELED TO INCLUDE NAME, AMPERE, VOLTAGE, PHASE, AND AIC RATING.

    C. MAIN AND BRANCH DISCONNECTS FOR SWITCHBOARDS, DISTRIBUTION PANELBOARDS, AND MOTOR CONTROL CENTERS SHALL BE CLEARLY IDENTIFIED AS TO SERVICE FRAME SIZE, CIRCUIT BREAKER TRIP SETTING OR FUSE SIZE AND TYPE.

    D. LABEL JUNCTION, SPLICE AND TERMINAL BOX INTERIORS AND COVERS. LABELING SHALL BE BY WAY OF PERMANENT MARKING PEN AND INCLUDE PANEL NAME AND CIRCUIT NUMBER. LABELS SHALL BE LOCATED ON THE BACK INTERIOR SURFACE OF BOXES. IN FINISHED AREAS LOCATE LABELS ON THE INTERIOR SURFACE OF COVERS. ON JUNCTION BOXES ABOVE CEILINGS OR IN UNFINISHED AREAS, LOCATE LABELS ON THE EXTERIOR SURFACE OF COVERS.

    E. LABEL OUTLET BOXES. LABELING SHALL BE BY WAY OF TYPED ADHESIVE LABEL AND INCLUDE PANEL NAME AND CIRCUIT NUMBER. LOCATE LABELS ON THE EXTERIOR SURFACE OF DEVICE FACEPLATE.

    F. THE EXTERIOR SURFACE OF FIRE ALARM SYSTEM JUNCTION, SPLICE AND TERMINAL BOX COVERS SHALL BE PAINTED RED. THE EXTERIOR SURFACE OF LIFE SAFETY SYSTEM JUNCTION, SPLICE AND TERMINAL BOX COVERS SHALL BE PAINTED YELLOW.

    G. UNLESS OTHERWISE INDICATED, WIRES AND CABLES OF EACH COMMUNICATION SYSTEM SHALL HAVE UNIQUE COLORS WHICH FOLLOW A COLOR CODING DOCUMENTED WITHIN THE HEAD-END EQUIPMENT OF EACH SYSTEM.

    H. WIRE AND CABLE IDENTIFICATION SHALL BE INSTALLED AT POINTS OF TERMINATION IN DISTRIBUTION EQUIPMENT, JUNCTION BOXES, SPLICE BOXES, TERMINAL BOXES, OUTLETS BOXES, AND LOAD CONNECTIONS. SUCH IDENTIFICATION SHALL BE BY MEANS OF CLOTH, SPLIT SLEEVE OR TUBING TYPE LABELS. FEEDER LABELS SHALL INCLUDE NAME OF EQUIPMENT FROM WHICH FEEDER ORIGINATES, NAME OF EQUIPMENT WHICH FEEDER SERVES, AND GAUGE OF CONDUCTOR. WIRE AND CABLES FOR BRANCH CIRCUIT IDENTIFICATION SHALL INCLUDE CIRCUIT NUMBER, PANELBOARD NAME, AND GAUGE OF CONDUCTOR.

    I. FOR EXTERIOR UNDERGROUND POWER, SIGNAL, AND COMMUNICATION LINES, INSTALL CONTINUOUS UNDERGROUND PLASTIC LINE MARKER TAPE LOCATED DIRECTLY ABOVE SUCH LINES. MARKER SHALL BE PERMANENT, BRIGHT-COLORED, CONTINUOUS-PRINTED, VINYL TAPE NOT LESS THAN 4 MILS THICK BY 6 INCHES WIDE WITH AN EMBEDDED CONTINUOUS METALLIC STRIP OR CORE. MARKER PRINTING INDICATES TYPE OF UNDERGROUND LINE. LOCATE 6 TO 8 INCHES BELOW FINISHED GRADE, UNLESS OTHERWISE INDICATED. WHERE MULTIPLE LINES INSTALLED IN A COMMON TRENCH OR CONCRETE ENCASED DO NOT EXCEED AN OVERALL WIDTH OF 16 INCHES, USE A SINGLE LINE MARKER WITH PRINTING INDICATING THE MULTIPLE LINES.

8. SPECIAL PROJECT PROVISIONS

    A. WIRING FOR EQUIPMENT FURNISHED BY OTHERS: PROVIDE ELECTRICAL SERVICES TO EQUIPMENT FURNISHED BY OTHERS. PROVIDE FINAL CONNECTIONS UNLESS OTHERWISE NOTED. WHERE FINAL CONNECTIONS ARE TO BE MADE BY OTHERS, INSTALL OUTLET BOX AND PULL IN CONDUCTORS LEAVING 8 INCH PIGTAILS FOR EACH CONDUCTOR. CONDUCTORS SHALL BE TAPED AND APPROPRIATE COVER PLATE INSTALLED OVER BOX. CONTROL AND ALARM WIRING FOR SUCH EQUIPMENT SHALL BE PROVIDED BY THE EQUIPMENT SUPPLIER OR TRADE PROVIDING EQUIPMENT UNLESS OTHERWISE NOTED.

    B. UNLESS OTHERWISE NOTED, PROVIDE 120 VOLT WIRING TO NEAREST PANELBOARD, INCLUDING CIRCUIT BREAKER, CONDUIT, WIRE, AND CONNECTIONS FOR MAGNETIC DOOR HOLDERS, FIRE SMOKE DAMPERS, AND FIRE ALARM SYSTEM REMOTE POWER SUPPLIES. PROVIDE CONTROL CIRCUITRY FROM THE FIRE ALARM CONTROL PANEL. COORDINATE QUANTITY AND LOCATION OF FIRE SMOKE DAMPERS WITH DIVISION 23.

9. PAINTING

    A. SCRATCHED, CHIPPED, OR OTHERWISE MARRED ELECTRICAL EQUIPMENT SHALL BE REPAINTED TO MATCH ORIGINAL FINISH AT NO ADDITIONAL COST TO THE OWNER.

    B. EQUIPMENT RECEIVED FROM MANUFACTURER WITH A PRIME COAT OF PAINT SHALL BE CLEANED, SANDED AND FURNISHED WITH A FINAL COAT OF PAINT.

    C. ALL SURFACE MOUNTED CONDUIT SHALL BE PAINTED TO MATCH THE ADJACENT SURFACE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

10. QUALITY ASSURANCE

    A. ARRANGE AND OVERSEE INSPECTIONS BY GOVERNING AUTHORITIES. UPON COMPLETION OF THE WORK, DELIVER CERTIFICATES OF INSPECTION AND FINAL APPROVAL TO THE ENGINEER.

    B. TESTING OF ELECTRICAL SYSTEMS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND IN ACCORDANCE WITH APPLICABLE CODES AND STANDARDS FOR THAT SYSTEM AS REQUIRED AND AS REFERENCED IN THIS SPECIFICATION. PROJECT SITE TESTING OF EQUIPMENT PRIOR TO INSTALLATION, WHERE CALLED FOR IN THE SPECIFICATIONS, SHALL INCLUDE PERFORMANCE TESTING TO ESTABLISH THE APPLICABILITY OF EQUIPMENT FOR ITS INTENDED PURPOSE.

    C. TESTING OF ELECTRICAL SYSTEMS INVOLVING COMPLIANCE TO SPECIFIC STANDARDS, INCLUDING BUT NOT LIMITED TO IBC, IFC, IECC, ANSI, NFPA, ICEA, NEC, IEEE, LPI, NETA, AND OSHA SHALL REQUIRE THE SUBMITTAL OF A COMPLETED TEST REPORT, CERTIFIED BY THE INSTALLER, TESTING AGENCY OR MANUFACTURER. TEST REPORTS SHALL BE COMPLETE AND IN ACCORDANCE WITH THE APPROPRIATE STANDARD.

    D. INSTALLATION OF WORK SHALL BE OBSERVED BY THE ENGINEER. WORK FOUND TO BE IN NON-COMPLIANCE WITH THE SPECIFICATIONS SHALL BE REDONE. THE ENGINEER SHALL BE CONSULTED FOR DIRECTION FOR QUESTIONS REGARDING SUITABILITY OF THE INSTALLED WORK. THE ENGINEER SHALL BE NOTIFIED AT LEAST ONE WEEK PRIOR TO THE COVERING UP OF WORK SO THAT OBSERVATION OF WORK MAY BE SCHEDULED. WORK SHALL NOT BE COVERED UP OR ENCLOSED UNTIL WORK HAS BEEN TESTED BY CONTRACTOR AND HAS BEEN OBSERVED BY PROPER AUTHORITIES INCLUDING STATE/LOCAL INSPECTORS AND ENGINEER. SHOULD WORK BE COVERED UP OR ENCLOSED BEFORE SUCH OBSERVATION OR TEST, IT SHALL BE UNCOVERED, TESTED AND REVIEWED AND SHALL BE RESTORED BY CONTRACTOR TO FINISHED CONDITION AT CONTRACTOR'S OWN EXPENSE.

11. COMPLETION

    A. TEST SYSTEMS AND PLACE IN PROPER WORKING ORDER PRIOR TO DEMONSTRATING SYSTEMS TO OWNER.

    B. INSTRUCT OWNER'S REPRESENTATIVE(S) ONCE, IN THE PRESENCE OF THE ENGINEER, ON THE PROPER OPERATION, TESTING, AND MAINTENANCE OF THE ELECTRICAL SYSTEMS. AS A MINIMUM, PARTICIPANTS SHALL INCLUDE CONTRACTOR AND MAJOR EQUIPMENT MANUFACTURERS' REPRESENTATIVES. NOT LESS THAN A TOTAL OF FOUR HOURS SHALL BE ALLOWED FOR AN INSTRUCTION PERIOD. USE FINAL VERSION OF OPERATING AND MAINTENANCE MANUAL AS A TRAINING AID. INSTRUCTION DATES AND TIMES SHALL BE COORDINATED WITH THE OWNER. INSTRUCTION SHALL AS A MINIMUM INCLUDE ITEMS CONTAINED IN THE OPERATING AND MAINTENANCE MANUAL.

    C. AFTER TESTS AND ADJUSTMENTS HAVE BEEN MADE AND SYSTEMS PRONOUNCED SATISFACTORY FOR PERMANENT OPERATION, FINISH AND LEAVE EVERYTHING IN PROPER WORKING ORDER AND OF THE INTENDED APPEARANCE AT THE FINAL COMPLETION OF THE CONTRACT.

    D. ON COMPLETION OF WORK, REMOVE TOOLS, SCAFFOLDING, DEBRIS, ETC., FROM THE GROUNDS AND LEAVE THE PREMISES PERFECTLY CLEAN. EQUIPMENT AND FACILITIES SHALL BE THOROUGHLY CLEANED INSIDE AND OUT AND RESIDUE REMOVED. EQUIPMENT SHALL BE TURNED OVER TO THE OWNER IN PERFECT, UNBLEMISHED CONDITION. REMOVE TEMPORARY LABELS AND STICKERS.

    E. LOAD BALANCE TEST THE DISTRIBUTION SYSTEM. UNBALANCE BETWEEN PHASES SHALL NOT EXCEED 10% WITH FULL LIGHTING AND MECHANICAL LOADS. CORRECT UNBALANCED LOAD CONDITIONS EXCEEDING THIS LIMIT. CORRECTIONS SHALL BE INDICATED ON RECORD DRAWINGS.

12. PROJECT CLOSE-OUT

    A. UPON WRITTEN REQUEST FROM THE CONTRACTOR CERTIFYING THAT THE WORK IS COMPLETE AND READY FOR INSPECTION, THE [ARCHITECT] [ENGINEER] SHALL PREPARE PUNCHLIST OF ITEMS DETERMINED TO BE INCOMPLETE OR OTHERWISE NOT IN COMPLIANCE WITH INTENT OF CONTRACT DOCUMENTS.

    B. WHEN REQUIRED, SUBSEQUENT VISIT TO REVIEW COMPLETION OF PUNCHLIST WORK SHALL BE MADE AFTER RECEIPT OF WRITTEN STATEMENT FROM CONTRACTOR INDICATING PUNCHLIST WORK IS COMPLETE. INCLUDE COPIES OF INTERMEDIATE OBSERVATION REPORTS AND FINAL PUNCHLISTS WITH INDIVIDUAL ITEMS INITIALED BY CONTRACTOR TO ATTEST THAT INDIVIDUAL WORK ITEMS ARE COMPLETED.

    C. CONTRACTOR SHALL PAY ENGINEER'S COSTS AT THE BILLING RATES IN EFFECT AT THE TIME THE SERVICES ARE PERFORMED FOR SUBSEQUENT PUNCHLIST VISITS REQUIRED DUE TO LACK OF COMPLETION OF PRIOR PUNCHLIST.

13. WARRANTY

    A. WARRANTY MATERIALS, WORKMANSHIP AND THE SUCCESSFUL OPERATION OF EQUIPMENT INSTALLED FOR A PERIOD OF [1] YEAR FROM THE DATE OF ACCEPTANCE OF THE ENTIRE WORK. GUARANTEE TO REPAIR OR REPLACE AT CONTRACTOR'S EXPENSE, WORK WHICH MAY SHOW DEFECT DURING THAT TIME, PROVIDED SUCH DEFECT IS, IN THE OPINION OF THE ENGINEER, DUE TO IMPERFECT MATERIAL OR WORKMANSHIP AND NOT DUE TO THE OWNER'S CARELESSNESS OR IMPROPER USE.

    B. PROVIDE TESTING AND MAINTENANCE OF EQUIPMENT AND SYSTEMS PER MANUFACTURER'S REQUIREMENTS DURING WARRANTY PERIOD TO ADHERE TO WARRANTY REQUIREMENTS.

260500 - COMMON WORK RESULTS FOR ELECTRICAL - GENERAL

1. PROVIDE COMPLETE RACEWAY SYSTEMS FOR CONDUCTORS UNLESS OTHERWISE SPECIFIED.

2. PROVIDE COMPLETE SYSTEM OF CONDUCTORS AS REQUIRED FOR RACEWAY SYSTEMS. WHERE QUANTITIES OF CONDUCTORS ARE NOT SPECIFICALLY INDICATED, PROVIDE NECESSARY NUMBER TO MAINTAIN CIRCUITS AND FUNCTION.

3. PROVIDE METAL BOXES FOR USE AS OUTLET BOXES, PULL BOXES, OR JUNCTION BOXES. BOXES TO INCLUDE PRESSED STEEL BOXES, MASONRY BOXES, AND WEATHERPROOF CAST STEEL OR ALUMINUM BOXES.

4. PROVIDE SUPPORT FOR CONDUIT, WIREWAY, JUNCTION BOXES, PULL BOXES, AND RELATED EQUIPMENT.

5. PROVIDE FIRE SEALING OF HOLES AND VOIDS THROUGH FIRE RATED BARRIERS.

6. WIRE AND CABLE SIZES INDICATED ARE COPPER. [ALUMINUM MAY BE USED FOR SERVICE AND FEEDER CONDUCTOR SIZES # 1 AWG AND LARGER, UNLESS OTHERWISE INDICATED. ALL EQUIPMENT GROUNDING AND GROUNDING ELECTRODE CONDUCTORS SHALL BE COPPER. SHOULD ALUMINUM BE USED, THE CONTRACTOR IS RESPONSIBLE FOR RESOLVING TO THE SATISFACTION OF THE ENGINEER COORDINATION ITEMS THAT ARE A DIRECT RESULT OF THE USE OF ALUMINUM CONDUCTORS IN LIEU OF COPPER INCLUDING, BUT NOT LIMITED TO:]

    A. CONDUCTOR SIZES TO ACHIEVE THE SAME AMPACITY AND VOLTAGE DROP AS COPPER SIZES INDICATED.

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REVIEWED
FOR
CODE
COMPLIANCE
03/21/2024

STEAMBOAT GRAND
PIPING SYSTEM REPLACEMENT
2300 MT WERNER CIR,
STEAMBOAT SPRINGS, CO 80487

ISSUE	DATE

PROJECT #: 21056
DESIGNED: NWS
CHECKED: RCC

ELECTRICAL
SPECIFICATIONS

COLORADO REGISTERED PROFESSIONAL ENGINEER
ROGER C. CRAWFORD
35656
06.01.23

E100A

DIVISION 26 - ELECTRICAL SPECIFICATIONS CONTINUED

B. RACEWAY, BOXES AND EQUIPMENT SIZES AND LOCATIONS.

C. SHORT CIRCUIT CURRENT VALUES AND AIC RATINGS OF EQUIPMENT.

7. SUBMIT PRODUCT DATA FOR CONDUIT, FITTINGS, SUPPORTS, WIRES, CABLES, CONNECTORS, SPLICES, BOXES, AND FIRE SEALS. MANUFACTURER SHALL HAVE AT LEAST 5 YEARS EXPERIENCE IN MANUFACTURING PRODUCT.

8. COMPLY WITH APPLICABLE PORTIONS OF NEMA STANDARDS PERTAINING TO METALLIC AND NONMETALLIC ELECTRICAL RACEWAY.

9. PROVIDE ELECTRICAL RACEWAYS, BOXES, CONDUCTORS, AND CONNECTORS WHICH HAVE BEEN APPROVED, LISTED AND LABELED BY UL.

10. PROVIDE ELECTRICAL RACEWAYS AND CONDUCTORS WHICH COMPLY WITH APPLICABLE PORTIONS OF ANSI/ASTM STANDARDS FOR CONSTRUCTION OF RACEWAYS AND CONDUCTORS.

11. PROVIDE CONDUCTORS WHICH COMPLY WITH APPLICABLE PORTIONS OF NEMA/ICEA STANDARDS PERTAINING TO MATERIAL, CONSTRUCTION, AND TESTING OF CONDUCTORS.

260500 - COMMON WORK RESULTS FOR ELECTRICAL - PRODUCTS

1. CONDUIT

A. RIGID METAL CONDUIT SHALL BE STEEL, GALVANIZED INSIDE AND OUTSIDE. FACTORY MADE THREADS SHALL BE FULL CUT AND GALVANIZED AFTER THREADING. THE CONDUIT SHALL BE UL LISTED AND SHALL MEET THE REQUIREMENTS OF UL 6 AND ANSI C80.1.

B. ELECTRICAL METALLIC TUBING SHALL BE HOT-DIPPED GALVANIZED OR ELECTRO-GALVANIZED STEEL WITH AN INNER COATING TO PROTECT CABLES AND AID PULLING. THE CONDUIT SHALL BE UL LISTED AND SHALL MEET THE REQUIREMENTS OF UL 797 AND ANSI C80.3.

C. FLEXIBLE METAL CONDUIT SHALL BE COMPOSED OF ONE SPIRALLY WOUND CONTINUOUS STRIP OF INTERLOCKED GALVANIZED STEEL. THE CONDUIT SHALL CONFORM TO FEDERAL SPECIFICATION WW-C-566C AND SHALL BE UL LISTED.

D. LIQUID TIGHT FLEXIBLE METAL CONDUIT SHALL BE GALVANIZED STEEL WITH AN OIL AND SUNLIGHT RESISTANT POLYVINYL CHLORIDE JACKET BONDED OR EXTRUDED ONTO THE EXTERIOR. LIQUID TIGHT FLEXIBLE METAL CONDUIT SHALL BE APPROVED FOR GROUNDING. LIQUID TIGHT FLEXIBLE METAL CONDUIT SHALL MEET UL STANDARD FOR SAFETY, UL 360.

E. RIGID NONMETALLIC CONDUIT, UNLESS OTHERWISE NOTED, SHALL BE SCHEDULE [40] [80] RIGID PLASTIC, PVC RATED FOR USE WITH 90 DEGREE C WIRE AND SHALL BE UL LISTED AND CONFORM TO UL 651, WC-1094A AND NEMA TC-2.

F. RIGID NONMETALLIC TYPE EB-20 CONDUIT SHALL BE ETL LISTED, TESTED TO UL-651-A, AND MEET THE REQUIREMENTS OF NEMA TC-6 AND ASTM F-512.

2. CONDUIT FITTINGS

A. FITTINGS FOR RIGID METAL CONDUIT SHALL BE GALVANIZED OR CADMIUM PLATED. FITTINGS SHALL BE THREADED. COUPLINGS SHALL BE OF GALVANIZED STEEL. LOCKNUTS AND BUSHINGS SHALL BE STEEL OR MALLEABLE IRON. BUSHINGS SHALL HAVE NYLON INSULATED THROAT.

B. CONNECTORS, COUPLINGS AND COMBINATION COUPLINGS FOR EMT SHALL BE STEEL SET SCREW OR STEEL COMPRESSION TYPE. INSULATED THROAT CONNECTORS SHALL BE USED FOR SIZES 1 INCH AND SMALLER. UNINSULATED CONNECTORS WITH INSULATED BUSHING SHALL BE USED FOR SIZES LARGER THAN 1 INCH.

C. FITTINGS FOR FLEXIBLE METAL CONDUIT AND LIQUID TIGHT FLEXIBLE METAL CONDUIT SHALL BE OF A TYPE SPECIFICALLY DESIGNED FOR THE PURPOSE.

D. FITTINGS FOR RIGID NONMETALLIC CONDUITS SHALL BE OF SAME MATERIAL AND MANUFACTURER AS CONDUIT. NON-METALLIC FITTINGS SHALL BE UL LISTED AND CONFORM TO UL 514.

E. EXPANSION FITTINGS ACROSS STRUCTURAL JOINTS SHALL BE OF A DESIGN TO COMPENSATE FOR EXPANSION AND CONTRACTION AND SHALL BE SEALED TO PREVENT ENTRANCE OF WATER OR MOISTURE. EXPANSION FITTINGS SHALL BE APPROVED FOR GROUNDING DUTY.

F. ADAPTERS FOR JOINTS BETWEEN PVC AND STEEL CONDUITS SHALL BE UL LISTED CARLON E942 AND E943 SERIES.

3. WIRE AND CABLE

A. CONDUCTORS SHALL BE NEW AND UNUSED. WIRE AND CABLE SHALL BE COPPER SINGLE CONDUCTOR TYPE WITH 600 V INSULATION, UNLESS OTHERWISE NOTED. CONDUCTOR SHALL BE SOFT ANNEALED CLASS B, PER ASTM B-3 FOR SOLID WIRE AND ASTM B-8 FOR STRANDED WIRE. CONDUCTORS SHALL BE MINIMUM 98% CONDUCTIVE.

B. ALUMINUM CONDUCTORS SHALL BE AN ALUMINUM ALLOY THAT IS LISTED OR LABELED BY UL AS "COMPONENT ALUMINUM-WIRE STOCK (CONDUCTOR MATERIAL)." TYPE EC/1350 ALUMINUM IS NOT ACCEPTABLE. CONDUCTORS SHALL BE "STABILOY" AS MANUFACTURED BY ALCAN.

C. NUMBER 10 AWG AND SMALLER WIRE EXCEPT FOR MOTOR CIRCUITS SHALL BE SOLID WITH TYPE THHN, OR THWN INSULATION. LARGER WIRE AND MOTOR CIRCUIT FEEDERS SHALL BE STRANDED WITH TYPE THHN, OR THWN INSULATION. CONDUCTORS FOR SERVICE ENTRANCE USE OR WHERE USED UNDERGROUND SHALL BE TYPE XHHW ONLY. GROUNDING CONDUCTORS SHALL BE COPPER.

D. INSULATION SHALL BE FLAME RETARDANT, HEAT RESISTANT POLYVINYL CHLORIDE (PVC), ETHYLENE PROPYLENE (EP) OR POLYETHYLENE (PE) WITH MINIMUM INSULATION THICKNESSES PER TABLE 310-13 OF THE NEC. THE INSULATION SHALL CONFORM TO THE REQUIREMENTS OF UL 83 ICEA S-68-516 FOR EP, ICEA S-61-402 FOR PVC AND PE.

E. TYPE THWN OR THHN WIRE AND CABLE SHALL HAVE A OUTER NYLON JACKET CONFORMING TO UL-83. CABLES SHALL BE MANUFACTURED TO MEET THE STANDARDS OF INSULATED CABLE ENGINEER'S ASSOCIATION (ICEA).

F. MC CABLE SHALL BE UL LISTED, AND CONSIST OF COLOR-CODED INSULATED CONDUCTORS WRAPPED SURROUNDED WITH A MOISTURE RESISTANT TAPE AND ENCLOSED IN A GALVANIZED STEEL INTERLOCKED CLADDING. EACH CABLE SHALL CONTAIN A FULL SIZED GROUND WIRE. (WHERE APPROVED, SEE EXECUTION SECTION)

G. NM CABLE SHALL BE UL LISTED, AND CONSIST OF COLOR-CODED THERMOPLASTIC INSULATED CONDUCTORS ENCLOSED IN A POLYVINYLCHLORIDE PLASTIC OVERALL JACKET. EACH CABLE SHALL CONTAIN A FULL SIZED GROUND WIRE.

H. WIRE PULLING LUBRICANT SHALL BE EQUAL TO IDEAL "AQUA GEL CW" OR DOW CORNING COMPOUND #7.

4. CONNECTORS AND SPLICES

A. FOR SOLID WIRE SIZE #10 AND SMALLER, "SCOTCHLOK" INSULATED TWIST-ON CONNECTORS OR COMPRESSION TYPE, 600V INSULATED OR ACCEPTABLE SUBSTITUTION.

B. FOR STRANDED WIRE, "BURNDY HYDENT" HYDRAULIC COMPRESSION TYPE, TAPED TO 600V INSULATION LEVEL.

5. PULL AND JUNCTION BOXES

A. PROVIDE CODE GAUGE SHEET METAL BOXES WITH SUITABLE COVERS, TRIMS, ETC. BOXES TO BE SIZED, PER THE NEC, BY NUMBER AND SIZE OF CONDUITS AND CONDUCTORS, UNLESS OTHERWISE NOTED.

6. OUTLET BOXES

A. BOXES SHALL BE ZINC OR CADMIUM-PLATED CODE GAUGE PRESSED STEEL AND OF THE KNOCK-OUT TYPE. DEPTH MAY VARY TO SUIT REQUIREMENTS OF LOCATION.

B. BOXES SHALL ACCOMMODATE DEVICES TO BE INSTALLED AND SHALL BE SIZED AS REQUIRED BY THE NEC FOR NUMBER AND SIZE OF CONDUITS AND CONDUCTORS ENTERING AND LEAVING. ROUND BOXES SHALL NOT BE PERMITTED, EXCEPT WHERE SPECIFICALLY CALLED FOR.

C. SPECIAL OVERSIZED OUTLET BOXES SHALL BE CODE GAUGE STEEL AND OF THE KNOCK-OUT TYPE. BOXES SHALL HAVE SCREW MOUNTED COVERS FOR SURFACE OR FLUSH MOUNTING. BOXES SHALL BE SIZED AS INDICATED OR AS REQUIRED BY THE NATIONAL ELECTRICAL CODE. SPECIAL OUTLET BOXES SHALL ACCOMMODATE THE EQUIPMENT SERVED.

D. WEATHERPROOF BOXES SHALL BE CAST ALUMINUM WITH THREADED HUBS. BOXES SHALL HAVE SCREW MOUNTED, GASKETED COVERS.

7. SUPPORTS

A. HANGERS, STRAPS AND SUPPORTS SHALL BE OF CORROSION RESISTANT OR GALVANIZED STEEL.

B. SINGLE RUNS: GALVANIZED MALLEABLE-IRON CONDUIT STRAPS FOR SURFACE MOUNTING OR 3/8 INCH THREADED ROD WITH STEEL ONE BOLT CONDUIT CLAMPS FOR ALL SUSPENDED RUNS.

C. MULTIPLE RUNS: CHANNEL SUPPORT FOR SURFACE MOUNTING OR TRAPEZE STYLE HANGERS OF 1-5/8 INCHES BY 1-5/8 INCHES GALVANIZED STEEL CHANNELS, SUPPORTED BY 3/8 INCH THREADED ROD FOR ALL SUSPENDED RUNS. SIZE HANGERS TO ALLOW FOR 25 PERCENT ADDITIONAL CONDUITS.

D. SUPPORTS AND HARDWARE SHALL BE GALVANIZED STEEL, EXCEPT THAT HIGH CARBON SPRING STEEL SUPPORTS MAY BE USED IN STEEL STUD WALLS TO SUPPORT HORIZONTAL AND VERTICAL CONDUIT UP TO 3/4 INCH.

E. PERFORATED PLUMBING TAPE IS NOT PERMITTED IN ANY SUPPORT APPLICATION.

8. ANCHOR METHODS

A. HOLLOW MASONRY: TOGGLE BOLTS OR SPIDER TYPE EXPANSION ANCHORS.

B. SOLID MASONRY (EXCLUDING CONCRETE): STEEL EXPANSION BOLTS.

C. NEW CONCRETE: PRESET INSERTS WITH MACHINE SCREWS AND BOLTS.

D. EXISTING CONCRETE: STEEL EXPANSION BOLTS.

E. WOOD SURFACES: WOOD SCREWS.

F. STEEL: WELDED THREADED STUDS OR GALVANIZED STEEL CLAMPS.

G. LIGHT STEEL: SHEET METAL SCREWS.

9. FIRE SEALS

A. FIRE SEALS FOR WALLS AND FLOORS SHALL BE AN INTUMESCENT MATERIAL CAPABLE OF EXPANDING TO FILL VOIDS WHEN EXPOSED TO TEMPERATURES BEGINNING AT 250 DEGREE F (121 DEGREE C). THE SEAL SYSTEM SHALL BE U.L. CLASSIFIED AND HAVE ICBO, BOCA, AND SBCC RATINGS TO 3 HOURS. THE SEAL SYSTEM FIRE RATING SHALL EQUAL OR EXCEED THE FIRE RATING OF THE PENETRATED SURFACE TO COMPLY WITH NEC SECTION 300-21.

B. IN CABLE TRAY APPLICATIONS THE FIRE SEAL SHALL BE EITHER A PILLOW OR PUTTY TYPE ALLOWING EASY REENTRY.

260500 - COMMON WORK RESULTS FOR ELECTRICAL - EXECUTION

1. CONDUIT INSTALLATION

A. BURIED RACEWAYS, EXCEPT WHERE CONCRETE ENCASED, SHALL BE RIGID METAL CONDUIT OR RIGID NONMETALLIC CONDUIT.

B. RACEWAYS EMBEDDED IN CONCRETE SLABS AT OR BELOW GRADE LEVEL SHALL BE RIGID NONMETALLIC CONDUIT, EXCEPT IN CLASSIFIED HAZARDOUS AREAS.

C. RACEWAYS EMBEDDED IN CONCRETE SLABS ABOVE GRADE LEVEL SHALL BE RIGID METAL CONDUIT, ELECTRICAL METALLIC TUBING, OR RIGID NONMETALLIC CONDUIT.

D. RACEWAYS IN CONCRETE ENCASED DUCT BANKS SHALL BE TYPE EB-20 RIGID NONMETALLIC CONDUIT.

E. WHERE RIGID NONMETALLIC CONDUIT IS USED FOR BURIED OR ENCASED AND BURIED CONDUIT RUNS, USE A MINIMUM OF 5 FEET OF RIGID METALLIC CONDUIT AT FOUNDATION AND MANHOLE PENETRATIONS.

F. HAZARDOUS AREAS RACEWAYS SHALL BE RIGID METAL CONDUIT ONLY.

G. RACEWAYS OUTDOORS, IN UTILITY TUNNELS, IN CRAWL SPACES, AND IN LOCATIONS SUBJECT TO MECHANICAL INJURY SHALL BE RIGID METAL CONDUIT.

H. MOTOR, VIBRATING EQUIPMENT, AND ROOFTOP MOUNTED HEATING, VENTILATING, AND AIR CONDITIONING EQUIPMENT CONNECTIONS SHALL BE MADE WITH PVC JACKETED LIQUID TIGHT FLEXIBLE METALLIC CONDUIT FOR THE LAST 2 FEET WITH LIQUID TIGHT CONNECTORS. SIMILAR EQUIPMENT CONNECTIONS IN ENVIRONMENTAL AIR PLENUMS SHALL BE MADE WITH FLEXIBLE METAL CONDUIT.

I. RACEWAYS IN OTHER AREAS SHALL BE ELECTRICAL METALLIC TUBING UNLESS OTHERWISE NOTED.

2. CONDUIT SIZES

A. MINIMUM SIZE ALLOWABLE FOR GALVANIZED RIGID METAL CONDUIT OR EMT SHALL BE 3/4 INCH.

B. MINIMUM SIZE ALLOWABLE FOR LIQUID TIGHT FLEXIBLE METAL CONDUIT SHALL BE 3/4 INCH.

C. MINIMUM SIZE ALLOWABLE FOR FLEXIBLE METAL CONDUIT SHALL BE 3/4 INCH EXCEPT FOR LUMINAIRE AND CONTROL WIRING FOR WHICH 3/8 INCH SHALL BE ALLOWED.

3. CONDUIT EXECUTION

A. UNLESS NOTED AS ALUMINUM, CONDUCTOR AND CONDUIT SIZES SHOWN ON DRAWINGS ARE BASED ON THE USE OF COPPER CONDUCTORS.

B. WIRE AND CABLE SHALL BE RUN IN METAL RACEWAYS, EXCEPT WHERE NONMETALLIC RACEWAYS HAVE BEEN SPECIFICALLY APPROVED.

C. CONDUIT SHALL BE RUN PARALLEL TO WALLS, CEILINGS, AND BUILDING LINES WHEREVER POSSIBLE.

D. CONDUIT SHALL BE INSTALLED IN FINISHED WALLS AND ABOVE SUSPENDED CEILINGS. CONDUIT ROUTED ABOVE SUSPENDED CEILINGS SHALL BE SURFACE MOUNTED TO THE STRUCTURAL CEILING. WHEN ABOVE SUSPENDED CEILINGS, ROUTE CONDUITS ABOVE SUSPENDED LAY-IN CEILING INSTEAD OF SUSPENDED HARD CEILINGS WHEREVER POSSIBLE. COORDINATE THE ROUTING OF ALL OTHER CONDUIT WITH THE OWNER PRIOR TO ROUGH-IN.

E. WHERE FLEXIBLE METAL CONDUIT IS USED FOR EQUIPMENT CONNECTIONS OR OTHER SPECIAL (APPROVED) SITUATIONS, GROUND CONTINUITY SHALL BE PROVIDED IN ACCORDANCE WITH THE NEC. LIQUID TIGHT FLEXIBLE METAL CONDUIT SHALL BE USED FOR FLEXIBLE EQUIPMENT CONNECTIONS IN DAMP AND WET AREAS EXCEPT WHERE INSTALLED IN ENVIRONMENTAL AIR PLENUMS WHERE FLEXIBLE METAL CONDUIT SHALL BE USED.

F. DO NOT CUT, NOTCH OR DRILL STRUCTURAL FRAMING MEMBERS FOR THE INSTALLATION OF CONDUIT WITHOUT THE ENGINEER'S APPROVAL IN EACH CASE.

G. WHERE RIGID METAL CONDUIT ENTERS A BOX, FITTING OR DEVICE THROUGH A KNOCKOUT, DOUBLE LOCKNUTS AND AN INSULATED METALLIC BUSHING SHALL BE USED. EMT SHALL TERMINATE AT KNOCKOUTS WITH AN INSULATED THROAT FITTING AND ONE LOCKNUT. CONNECTORS SHALL BE MADE UP TIGHT TO ENSURE ELECTRICAL CONTINUITY OF THE RACEWAY SYSTEM. PROVIDE GROUNDING BUSHINGS AT EACH JUNCTION BOX, PULL BOX, OR ENCLOSURE AS REQUIRED BY THE NEC.

H. RIGID METAL CONDUIT SHALL BE REAMED AFTER THREADS ARE CUT. JOINTS SHALL BE CUT SQUARE AND SHALL BUTT SOLIDLY INTO COUPLINGS. RUNNING THREADS SHALL NOT BE PERMITTED. CUT ENDS OF EMT SHALL ALSO BE REAMED.

I. BENDS IN RIGID METAL CONDUIT AND EMT RUNS LARGER THAN 1-1/4 INCHES SHALL BE FACTORY-MADE ELBOWS UNLESS OTHERWISE SPECIFICALLY APPROVED. BENDS IN 1-1/4 INCH AND 1 INCH RUNS SHALL BE MADE IN AN APPROVED BENDING MACHINE OR FACTORY MADE. HICKEY BENDS SHALL NOT BE PERMITTED IN CONDUITS LARGER THAN 3/4 INCH. FIELD BENDS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE NEC.

J. CONDUITS RUN IN MASONRY SHALL BE PLACED AT LEAST 1 INCH FROM THE SURFACE.

K. INSTALL EXPANSION FITTINGS WHERE CONDUIT CROSSES AN EXPANSION JOINT IN STRUCTURE OR IS IN AN ENVIRONMENT WHERE TEMPERATURE CHANGES COMBINED WITH CONDUIT RUN LENGTH PRODUCE EXPANSION OR CONTRACTION STRESS ON THE INSTALLATION. ENDS OF CONDUIT SHALL BE PROVIDED WITH INSULATED GROUNDING BUSHINGS. COPPER GROUND RINGS OR A FLEXIBLE BONDING JUMPER, EQUAL TO AT LEAST THREE TIMES THE NOMINAL WIDTH OF THE JOINT, SHALL BE PROVIDED TO INSURE A CONTINUOUS GROUND BETWEEN CONDUIT AND FITTING.

L. PROVIDE COMPLETELY SEPARATE RACEWAY SYSTEM FOR CIRCUITS, OUTLETS, LUMINAIRES, ETC., THAT ARE CONNECTED TO THE EMERGENCY SYSTEM.

M. PROVIDE SEPARATE CODE-SIZED GROUND CONDUCTOR FOR EACH RUN OF CONDUIT. CONDUIT SHALL BE SIZED TO ACCOMMODATE GROUND CONDUCTOR.

N. INSTALL BURIED OR ENCASED AND BURIED CONDUITS IN ACCORDANCE WITH SECTIONS 300.5 OF THE NEC. [WHERE POSSIBLE, EXTERIOR CONDUITS SHALL BE BURIED AT MINIMUM OF 30 INCHES BELOW GRADE OR AS INDICATED ON THE DRAWINGS. CONTRACTOR SHALL VERIFY WITH ENGINEER, PRIOR TO INSTALLATION, EXTERIOR BURIED CONDUITS NOT BURIED A MINIMUM OF 30 INCHES BELOW GRADE.] SLOPE CONDUIT TO DRAINAGE POINT AT LEAST 4 INCHES PER 100 FEET.

O. ADJUSTMENTS IN LINE AND GRADE FOR DIRECT BURIED OR ENCASED AND BURIED CONDUITS SHALL BE VIA LONG SWEEPS WITH MINIMUM OF 48 INCH RADIUS. ROUTE SUCH CONDUITS BELOW EXISTING OR NEW GAS LINES.

P. MULTIPLE RUNS OF CONDUIT BELOW GRADE UNDER SLAB SHALL BE INSTALLED IN TRENCHES BACKFILLED WITH SAND. EACH LAYER OF CONDUIT SHALL BE INSTALLED SEPARATELY, BACKFILLED WITH SAND, AND COMPACTED TO THE DEPTH NEEDED TO PROVIDE CONTINUOUS SUPPORT FOR THE NEXT LAYER OF CONDUIT. SAND SHALL BE SPREAD EVENLY AND COMPACTED TO GRADE LEVEL FOR COVERAGE OF THE FINAL LAYER OF CONDUIT. OFFSET JOINTS TO MAINTAIN UNIFORM SPACING BETWEEN CONDUIT.

Q. DIRECT BURIED OR ENCASED AND BURIED CONDUITS SHALL FIRST BE SWABBED OUT AND THEN SHALL BE CAPABLE OF PASSING A RIGID BALL 1/4 INCH SMALLER THAN THE INSIDE DIAMETER OF CONDUIT. SUCH CONDUITS FOR FUTURE USE SHALL BE CAPPED TO PREVENT ENTRY OF DIRT AND DEBRIS.

R. PROVIDE ROOF JACKS FOR WATERPROOFING CONDUIT PENETRATIONS OF ROOF. CONDUIT ROUTING AND MOUNTING ON ROOFS SHALL BE COORDINATED WITH THE [ARCHITECT] [ENGINEER]. UNLESS OTHERWISE INDICATED OR REQUIRED, CONDUIT SHALL BE MOUNTED 12 INCHES ABOVE THE FINISHED SURFACE OF FLAT ROOFS ON REDWOOD OR TREATED WOOD STANDOFFS. CONDUITS SHALL BE PERMANENTLY ATTACHED TO STANDOFFS. STANDOFFS SHALL REST FREELY ON ROOF WITHOUT BEING ANCHORED TO ROOF SURFACE.

S. JOINTS FOR RIGID NONMETALLIC CONDUIT SHALL BE SOLVENT CEMENTED IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

T. ELBOWS FROM BELOW GRADE CONDUIT TO ABOVE GRADE SHALL BE PVC JACKETED RIGID METAL CONDUIT AND SHALL EXTEND 6 INCHES ABOVE GRADE OR FINISHED FLOOR. PVC CORROSION RESISTANT TAPE SHALL [NOT] BE PERMITTED.

U. CONDUIT EXTENDING FROM BELOW GRADE TO ABOVE GRADE, OR CONDUIT STUBBING OUT OF FLOORS, SHALL BE RIGID METAL CONDUIT FOR A MINIMUM OF 12 INCHES ABOVE GRADE OR FINISHED FLOOR.

V. WHEREVER CONDUITS ENTER STRUCTURE THROUGH FOUNDATION BELOW GROUND LEVEL, GROUT AROUND CONDUIT WITH WATERPROOF GROUT OR INSTALL WALL AND FLOOR ENTRANCE SEALS. SEALS SHALL BE OZ/GEDNEY WS SERIES FOR NEW CONSTRUCTION AND OZ/GEDNEY CSM SERIES FOR EXISTING STRUCTURES.

W. CONDUITS WHICH PIERCE AIR TIGHT SPACES OR PLENUMS SHALL BE SEALED TO PREVENT LEAKAGE.

X. CARE SHALL BE TAKEN TO AVOID PLACING CONDUITS WHERE THEY SHALL BE SUBJECTED TO EXCESSIVE HEAT. LOCATE CONDUITS A MINIMUM OF 12 INCHES FROM FLUES, STEAM LINES, HOT WATER LINES, ETC.

Y. CONDUIT ENDS SHALL BE CAPPED USING STANDARD CAPPED BUSHINGS TO PREVENT ENTRANCE OF FOREIGN MATERIALS DURING AND AFTER CONSTRUCTION. WHEN CONDUIT INSTALLATION IS NOT IN PROGRESS CLOSE OPEN ENDS OF CONDUIT WITH TEMPORARY PLUGS OR CAPS.

Z. CLEAN CONDUITS PRIOR TO INSTALLATION OF WIRES. INSTALL A NYLON PULLING LINE IN EACH CONDUITS RUN ASSEMBLY OR AFTER COMPLETION OF EACH CONDUIT RUN ASSEMBLY FOR INSTALLATION OF WIRES OR FOR FUTURE USE.

4. WIRE AND CABLE INSTALLATION

A. MINIMUM WIRE SIZE FOR LIGHTING AND POWER CIRCUITS SHALL BE #12. SIGNAL AND CONTROL CIRCUITS MAY USE #14 EXCEPT AS NOTED. WIRING SHALL BE INSTALLED IN CONDUIT, UNLESS OTHERWISE NOTED.

B. UNLESS OTHERWISE INDICATED, THE MAXIMUM NUMBER OF BRANCH CIRCUITS ALLOWED IN EACH CONDUIT SHALL BE THREE. IN SUCH CASES, THE BRANCH CIRCUITS SHALL ALSO BE OF DIFFERENT PHASES.

C. UNLESS OTHERWISE INDICATED OR REQUIRED, THE FOLLOWING SCHEDULE SHALL BE ADHERED TO FOR CONDUCTOR SIZES:

CIRCUIT OVERCURRENT DEVICE RATING	COPPER CONDUCTOR SIZES
20 A OR LESS	#12 AWG
30 A	#10 AWG
40 A	# 8 AWG
50 A	# 6 AWG
60 A	# 4 AWG
70 A	# 4 AWG
80 A	# 3 AWG
90 A	# 2 AWG
100 A	# 1 AWG

D. TO LIMIT VOLTAGE DROP, 120 V BRANCH CIRCUITS WITH LENGTH FROM PANEL TO FIRST OUTLET EXCEEDING 75 FEET SHALL BE #10 OR LARGER. [FOR 277 V BRANCH CIRCUITS WITH LENGTH FROM PANEL TO FIRST OUTLET EXCEEDING 175 FEET SHALL BE #10 OR LARGER.] WIRE SIZES FOR OTHER BRANCH CIRCUITS SHALL BE SIZED TO LIMIT VOLTAGE DROP TO 3%.

E. CONDUCTORS FROM OUTLET TO INCANDESCENT LUMINAIRE SOCKETS AND WHERE RUN IN FLUORESCENT LUMINAIRE CHANNELS SHALL BE TYPE THHN OR AS APPROVED BY THE NEC.

F. SOLID WIRE #10 AND SMALLER SHALL BE CONNECTED AS SPECIFIED HEREIN AND SHALL BE MADE TIGHT IN CONFORMANCE WITH MANUFACTURERS RECOMMENDATIONS.

G. STRANDED WIRE SHALL BE CONNECTED AS SPECIFIED HEREIN AND THOROUGHLY TAPED WITH "SCOTCH" #33 OR ACCEPTABLE SUBSTITUTION APPROVED EQUAL ELECTRICAL TAPE.

H. PROVIDE EQUIPMENT LUGS COMPATIBLE WITH WIRE SIZES INDICATED. LUGS SHALL NOT BE RATED LESS THAN EQUIPMENT RATING. PROVIDE BOX SIZES TO ACCOMMODATE WIRE BENDING RADIUS REQUIREMENTS. REVISE FEEDERS AS NEEDED, MAINTAINING THE AMPERE RATING AND FAULT CURRENT VALUES INDICATED, FOR COMPATIBILITY WITH EQUIPMENT LUGS, UL LISTINGS, OR MANUFACTURER'S RECOMMENDATIONS.

I. INSTALL WIRING AFTER CONCRETE, PLASTERING, ETC., WORK IS COMPLETE. CAREFULLY PULL WIRE UNSPLICED BETWEEN OUTLETS. USE APPROVED PULLING LUBRICANT AS NECESSARY TO PREVENT INSULATION CUTTING OR NICKING. BRANCH CIRCUIT AND FEEDER WIRING SHALL BE COLOR CODED IN ACCORDANCE WITH NEC AND IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

CONDUCTOR	240/120V/1ø	208Y/120V/3ø	480Y/277V/3ø
PHASE A	BLACK	BLACK	BROWN
PHASE B	RED	RED	ORANGE
PHASE C	---	BLUE	YELLOW
NEUTRAL	WHITE	WHITE	WHITE
GROUND	GREEN	GREEN	GREEN

J. MOTOR CIRCUITS AND FEEDERS SHALL UTILIZE STRANDED CONDUCTORS.

K. RESIDENTIAL ELECTRICAL PANELBOARD FEEDERS MAY BE [MC] [SE] CABLE.

L. RESIDENTIAL INTERIOR CONCEALED BRANCH CIRCUITS MAY BE [MC] [NM] CABLE.

M. ALL ELECTRICAL WIRING SHALL BE INSTALLED IN CONDUIT. ALL HOME RUNS SHALL BE RUN IN CONDUIT. OBTAIN WRITTEN APPROVAL FROM DESIGN ENGINEER AND PROPERTY MANAGEMENT FOR THE USE OF "MC" AND "AC" TYPE CABLING. IF APPROVED, "MC" AND "AC" TYPE CABLE SHALL BE PERMITTED FOR USE IN BRANCH CIRCUIT WIRING FROM JUNCTION BOXES TO DEVICES ONLY AND FOR LIGHT FIXTURE WHIPS TO J-BOX WITHIN 6FT. "MC" AND "AC" CABLING SHALL BE INSTALLED PER NATIONAL ELECTRICAL CODE AND LOCAL BUILDING DEPARTMENT REQUIREMENTS. USE APPROVED TYPE COUPLINGS AND CONNECTORS. PROVIDE CONDUIT SUPPORTS AS REQUIRED BY THE NATIONAL ELECTRICAL CODE AS A MINIMUM. PRE-MANUFACTURED CABLE ASSEMBLIES SHALL NOT BE PERMITTED.

5. PULL AND JUNCTION BOX INSTALLATION

A. LOCATE PULL BOXES AND JUNCTION BOXES ABOVE REMOVABLE CEILINGS OR IN ELECTRICAL ROOM, UTILITY ROOMS, OR STORAGE AREAS.

B. PULL AND JUNCTION BOXES SHALL BE SUPPORTED INDEPENDENTLY OF THE CONDUIT SYSTEM AND SHALL BE PLUMB. SUPPORTS SHALL BE NONCOMBUSTIBLE AND CORROSION RESISTANT. SUSPENDED PULL AND JUNCTION BOXES SHALL BE SUPPORTED WITH THREADED ROD HANGERS AND GALVANIZED STEEL CLAMPS, OR TRAPEZE HANGERS OF UNISTRUT OR KINDORF CHANNEL.

C. PULL AND JUNCTION BOXES SHALL BE ACCESSIBLE.

6. OUTLET BOX INSTALLATION

A. EACH LIGHTING OUTLET, SWITCH, CONVENIENCE OUTLET, COMMUNICATION OUTLET, OR OTHER MISCELLANEOUS DEVICE SHALL BE PROVIDED WITH A SUITABLE BOX.

B. CONVENIENCE OUTLETS AND TELEPHONE AND DATA OUTLETS SHALL BE PROVIDED WITH DOUBLE GANG BOXES AND SINGLE DEVICE TRIM PLATES WHERE SINGLE DEVICES ARE INDICATED.

C. WHERE TWO OR MORE SIMILAR TYPE DEVICES OCCUR ADJACENT TO EACH OTHER, THEY SHALL BE IN A GANG TYPE BOX WITH A GANG TYPE COVER. WHERE DIFFERENT TYPE DEVICES OCCUR ADJACENT TO EACH OTHER, SPACE OUTLET BOXES SO THAT FINISH PLATES SHALL BE SPACED 1 INCH APART.

D. 4" SQUARE (DOUBLE GANG) JUNCTION BOX WITH SINGLE GANG PLASTER RING FOR ALL NEW COMBINATION TELEPHONE/DATA OUTLETS. STUB 1" EMPTY CONDUIT UP TO 6" ABOVE ACCESSIBLE CEILING WITH PULL WIRE IN CONDUIT AND PLASTIC BUSHINGS ON CONDUIT ENDS. OWNER'S COMMUNICATION'S SYSTEM VENDOR UNDER SEPARATE CONTRACT SHALL PROVIDE ALL COMMUNICATION DEVICES AND WIRING. COORDINATE EXACT REQUIREMENTS AND OUTLET LOCATIONS WITH ARCHITECTURAL PLANS PRIOR TO ROUGH IN.

E. INSTALL OUTLET BOXES SECURELY IN PLACE, PLUMB WITH BUILDING LINES IN ACCORDANCE WITH NEC. RECESS OUTSIDE EDGE AND ASSOCIATED TRIM PLATES FROM FINISHED SURFACE IN ACCORDANCE WITH NEC. PROVIDE BLANK COVERS, WHICH MATCH DEVICE PLATES IN AREA, FOR OUTLETS NOT SPECIFIED WITH COVERS. OUTLETS IN PLASTERED, PANELED, AND FURRED FINISHES SHALL BE EQUIPPED WITH TRIM PLATES AND EXTENSIONS OF SUCH DEPTHS AS TO BRING OUTLETS FLUSH WITH FINAL SURFACE FINISH.

F. WALL OUTLETS IN EXPOSED BLOCK OR MASONRY CONSTRUCTION SHALL HAVE EXTENSION AND DEVICE MOUNTING STRAPS AS REQUIRED TO PROVIDE ONLY SUCH WALL OPENINGS AS MAY BE COVERED BY DEVICE PLATES WITHOUT THE USE OF MORTAR OR OTHER FILLER MATERIAL.

G. BOXES SHALL BE SUPPORTED INDEPENDENTLY OF THE CONDUIT SYSTEM AND SHALL BE PLUMB. SUPPORTS SHALL BE NONCOMBUSTIBLE AND CORROSION RESISTANT. SUSPENDED BOXES SHALL BE SUPPORTED WITH THREADED ROD HANGERS AND GALVANIZED STEEL CLAMPS, OR TRAPEZE HANGERS OF UNISTRUT OR KINDORF CHANNEL. WHERE THE SUSPENDED CEILING SYSTEM IS APPROVED FOR THE APPLICATION, OUTLET BOXES MAY BE SUPPORTED WITH BAR HANGERS ATTACHED TO THE CEILING CHANNELS.

H. INSTALL ADDITIONAL STRAPS OR CROSS-BRACING TO ENSURE COMPLETE RIGID INSTALLATION IN STEEL STUD SYSTEM, BRACING PRIOR TO INSTALLATION OF WALL FINISH MATERIAL.

I. "BACK-TO-BACK" OUTLETS IN THE SAME WALL, OR "THRU-WALL" TYPE BOXES SHALL NOT BE PERMITTED. PROVIDE 12 INCH (MINIMUM) LONG NIPPLE TO OFFSET OUTLETS SHOWN ON OPPOSITE SIDES OF A COMMON WALL TO MINIMIZE SOUND TRANSMISSION.

J. OUTLET BOXES ON OPPOSITE SIDES OF FIRE RATED WALLS AND PARTITIONS SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF AT LEAST 24 INCHES.

K. PROVIDE LUMINAIRE OUTLETS WITH 3/8 INCH NO BOLT FIXTURE STUD WHERE REQUIRED.

L. TELEPHONE OUTLETS SHALL BE MOUNTED AT THE SAME HEIGHT AS ADJACENT RECEPTACLE OUTLETS UNLESS NOTED OTHERWISE.

1. SUPPORT INSTALLATION

A. INSTALL INDIVIDUAL AND MULTIPLE RACEWAY HANGERS AND RISER CLAMPS TO SUPPORT RACEWAYS. PROVIDE ALL HARDWARE AS REQUIRED FOR HANGER ASSEMBLIES AND FOR SECURING HANGER RODS TO CONDUITS.

B. MULTIPLE RUNS OF CONDUITS ON CEILINGS AND WALLS SHALL BE MOUNTED ON UNISTRUT OR KINDORF CHANNELS. PERFORATED PLUMBERS TAPE SHALL NOT BE USED.

C. CADDY CLIPS WITH SUPPORT WIRES USING NOT LESS THAN NO. 14 WIRE MAY BE USED ONLY FOR SINGLE SUSPENDED RUNS OF EMT OR RIGID CONDUIT UP TO 3/4 INCHES.

D. CONDUIT AND BOX SUPPORT INSTALLATION SHALL PREVENT DISPLACEMENT OF CONDUIT IN ANY DIRECTION.

E. IN STEEL STUD WALLS, HIGH CARBON STEEL SPRING CLIPS MAY BE USED TO SUPPORT CONDUITS UP TO 3/4 INCH, AND BOXES TO METAL STUDS.

F. SUPPORTS, WHETHER FOR SINGLE OR MULTIPLE RUNS, REGARDLESS OF TYPE SHALL HAVE STRENGTH ADEQUATE TO SUPPORT AT LEAST FOUR TIMES THE PRESENT LOAD, A MINIMUM OF 200-LB DESIGN LOAD.

8. FIRE SEAL INSTALLATION

A. FIRE SEAL INSTALLATIONS SHALL BE PERFORMED PER MANUFACTURER'S RECOMMENDATIONS AND SHALL CONFORM TO STANDARD UL FIRE STOP SYSTEM DETAILS. ALL CABLES OR CONDUITS SHALL BE FIRMLY SECURED AND CLEANED WHERE PENETRATING THE FIRE RATED SURFACE. FIRE SEALS SHALL NOT ACT AS SUPPORTS.

260526 - GROUNDING - PRODUCTS

1. PROVIDE A COMPLETE GROUNDING SYSTEM IN ACCORDANCE WITH THE SPECIFICATIONS AND DRAWINGS. DRAWINGS DO NOT NECESSARILY INDICATE EVERY REQUIREMENT. ITEMS NOT SPECIFICALLY MENTIONED IN THE SPECIFICATIONS OR DRAWINGS, BUT WHICH ARE NECESSARY TO MAKE A COMPLETE INSTALLATION SHALL BE INCLUDED. WHERE TYPES, SIZES, RATINGS, AND QUANTITIES INDICATED ARE IN EXCESS OF NEC REQUIREMENTS, THE MORE STRINGENT REQUIREMENTS GOVERN.

2. EQUIPMENT AND BONDING JUMPER CONDUCTORS: COPPER AND INSULATED WITH GREEN INSULATION OR MARKING UNLESS OTHERWISE NOTED.

3. GROUNDING-ELECTRODE CONDUCTORS: COPPER STRANDED CABLE, UNLESS OTHERWISE INDICATED.

4. UNDERGROUND GROUNDING CONDUCTORS: COPPER, BARE, TINNED, AND STRANDED, UNLESS OTHERWISE INDICATED.

5. MAIN BONDING JUMPER: FACTORY INSTALLED WITH SERVICE ENTRANCE EQUIPMENT WHEN POSSIBLE, OTHERWISE FIELD INSTALLED CONDUCTOR.

6. GROUNDING RODS: COPPER-CLAD STEEL, 3/4 INCH BY 120 INCHES.

260526 - GROUNDING - EXECUTION

1. GROUNDING CONDUCTORS: AVOID OBSTRUCTING ACCESS OR PLACING CONDUCTORS WHERE THEY MAY BE SUBJECTED TO STRAIN, IMPACT, OR DAMAGE. CONDUCTORS SHALL BE FORMED TO THE CONTOUR OF EQUIPMENT AND FIRMLY SUPPORTED.

2. UNDERGROUND GROUNDING CONDUCTORS: BURY AT LEAST 24 INCHES BELOW GRADE. IF INSTALLED NEAR THE BASE OF A STRUCTURE, IT SHALL BE IN EARTH AND AS FAR FROM THE STRUCTURE AS THE EXCAVATION PERMITS BUT NOT CLOSER THAN 6 INCHES.

3. METAL WATER SERVICE PIPE: WHERE A DIELECTRIC MAIN WATER FITTING IS INSTALLED, CONNECT GROUNDING CONDUCTOR TO STREET SIDE OF FITTING. DO NOT INSTALL A GROUNDING JUMPER ACROSS DIELECTRIC FITTINGS.

4. WATER METER PIPING: USE BONDING JUMPERS TO ELECTRICALLY BYPASS WATER METERS. CONNECT TO PIPE WITH GROUNDING-CLAMP CONNECTORS.

5. UFER GROUND (CONCRETE-ENCASED GROUNDING ELECTRODE): FABRICATE ACCORDING TO NEC. BOND GROUNDING CONDUCTOR TO REINFORCING STEEL IN AT LEAST 4 LOCATIONS, AND TO ANCHOR BOLTS.

6. GROUNDING RODS: DRIVE UNTIL TOPS ARE 2 INCHES BELOW FINISHED FLOOR OR FINAL GRADE. CONNECTIONS TO RODS SHALL BE BY EXOTHERMIC WELD, UNLESS AS OTHERWISE INDICATED. MAKE THESE CONNECTIONS WITHOUT DAMAGING COPPER COATING OR EXPOSING STEEL.

7. EQUIPMENT GROUNDING CONDUCTORS: PROVIDE A SEPARATE EQUIPMENT GROUNDING CONDUCTOR WITH ALL FEEDER AND BRANCH CIRCUIT CONDUCTORS, UNLESS OTHERWISE INDICATED. A PROPERLY SIZED COMMON EQUIPMENT GROUNDING CONDUCTOR MAY BE USED FOR MULTIPLE FEEDERS OR BRANCH CIRCUITS ROUTED WITHIN A SINGLE CONDUIT.

8. SIGNAL AND COMMUNICATION SYSTEMS: FOR TELEPHONE SYSTEM, FIRE ALARM AND DETECTION SYSTEM, DATA SYSTEM, CARD ACCESS SYSTEM, PUBLIC ADDRESS SYSTEM, SECURITY SYSTEM, CLOCK AND PROGRAM SYSTEM, AND OTHER COMMUNICATION SYSTEMS, PROVIDE A #4 AWG MINIMUM INSULATED GROUNDING CONDUCTOR IN RACEWAY FROM GROUNDING-ELECTRODE SYSTEM TO EACH COMMUNICATION SYSTEM SERVICE TERMINAL CABINET, WIRING CLOSET, OR CENTRAL EQUIPMENT LOCATION.

9. METAL POLES SUPPORTING OUTDOOR LIGHTING FIXTURES: GROUND POLE TO METAL REINFORCING WITHIN CONCRETE POLE BASE USING NO. 6 AWG CONDUCTOR. THERMOWELD CONNECTION BETWEEN GROUND CONDUCTOR AND METAL REINFORCING. FOR PRECAST CONCRETE POLE BASES, GROUND POLE TO A LOCAL GROUND ROD WITH NO. 6 AWG CONDUCTOR. PROVIDE MADE ELECTRODE WITHIN 6 FEET OF POLE BASE. THERMOWELD CONNECTION BETWEEN GROUND CONDUCTOR AND GROUND ROD.

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REVIEWED FOR CODE COMPLIANCE
03/21/2024

STEAMBOAT GRAND
PIPING SYSTEM REPLACEMENT
2300 MT WERNER CIR,
STEAMBOAT SPRINGS, CO 80487

ISSUE	DATE

PROJECT #: 21056
DESIGNED: NWS
CHECKED: RCC

ELECTRICAL SPECIFICATIONS

35656
06.01.23

E100B

DIVISION 26 - ELECTRICAL SPECIFICATIONS CONTINUED

262200 - DRY TYPE TRANSFORMERS - EXECUTION

262414 - MOTOR AND CIRCUIT DISCONNECTS - PRODUCTS

1. PROVIDE MOTOR AND CIRCUIT DISCONNECTS AS SCHEDULED AND INDICATED ON DRAWINGS. MOTOR AND CIRCUIT DISCONNECTS ARE NOT ALWAYS SHOWN SYMBOLICALLY ON THE DRAWINGS. REFER TO PLANS AND EQUIPMENT SCHEDULE FOR QUANTITIES AND TYPES TO BE PROVIDED.
2. SUBMIT SHOP DRAWINGS AND PRODUCT DATA INCLUDE MANUFACTURER'S DESCRIPTIVE CATALOG DATA AND SHORT CIRCUIT RATINGS. DISCONNECTS THROUGHOUT THE PROJECT SHALL BE OF THE SAME MANUFACTURER. ACCEPTABLE MANUFACTURERS: CUTLER-HAMMER/EATON CORP., GENERAL ELECTRIC, SIEMENS, AND SQUARE D.MOTOR AND CIRCUIT DISCONNECTS SHALL BE NEMA STANDARD TYPE HEAVY-DUTY, "HD," 100 PERCENT DUTY RATED. MOTOR AND CIRCUIT DISCONNECTS SHALL HAVE QUICK, MAKE, QUICK, BREAK, VISIBLE BLADE OPERATING MECHANISMS WITH FULL COVER INTERLOCK AND FACILITIES FOR PADLOCKING IN THE "OFF" OR "OPEN" POSITION. MOTOR AND CIRCUIT DISCONNECTS SHALL BE ENCLOSED, UL LISTED, AND HORSEPOWER RATED FOR THE LOADS SERVED. MOTOR AND CIRCUIT DISCONNECTS SHALL HAVE COPPER CURRENT CARRYING PARTS AND REMOVABLE ARC SUPPRESSORS. DISCONNECT SHALL INCLUDE FRONT ACCESSIBLE PROVISIONS FOR DEFEATING THE COVER INTERLOCK.
3. UL (NEMA) 1 ENCLOSURES SHALL BE USED IN INDOOR AND DRY LOCATIONS, UL (NEMA) 3R ENCLOSURES SHALL BE USED IN EXTERIOR OR WET LOCATIONS. UL (NEMA) 12 OR 12X ENCLOSURES SHALL BE UTILIZED WHERE REQUIRED. HAZARDOUS LOCATION ENCLOSURES SHALL BE RATED FOR CLASS AND DIVISION. REFER TO DRAWINGS FOR HAZARDOUS LOCATIONS.
4. MOTOR AND CIRCUIT DISCONNECTS SHALL BE FUSIBLE OR NON-FUSIBLE AS INDICATED ON THE DRAWINGS OR AS REQUIRED AND SHALL BE OF SAME OR LARGER AMPERE RATING AS THE CIRCUIT PROTECTIVE DEVICE, 30 AMPERE MINIMUM. DISCONNECTS, WHEN FUSIBLE, SHALL BE EQUIPPED WITH CLASS R, FUSE REJECTION CLIPS.
5. MOTOR AND CIRCUIT DISCONNECTS SHALL INCLUDE EQUIPMENT GROUND LUG.
6. MOTOR AND CIRCUIT DISCONNECTS SHALL INCLUDE SOLID NEUTRALS IN 4-WIRE APPLICATIONS.
7. MOTOR AND CIRCUIT DISCONNECTS INDICATED ON DRAWINGS SHALL HAVE AUXILIARY CONTACTS FOR SHUT-DOWN OF VARIABLE SPEED DRIVE ON LINE SIDE OF DISCONNECT IF DISCONNECT IS OPENED. PROVIDE CONTROL WIRING IN CONDUIT BETWEEN DISCONNECT AND DRIVE. COORDINATE REQUIREMENTS FOR SUCH CONTROL WITH DRIVE SUPPLIER.
8. ELEVATOR CONTROLLER DISCONNECTS SHALL BE EQUIPPED WITH A SHUNT TRIP DEVICE WITH 120V OPERATING COIL, FIRE ALARM INTERFACE RELAY, FIRE ALARM VOLTAGE MONITORING RELAY. THE DISCONNECT SHALL BE IN NEMA 3R ENCLOSURE.

262414 - MOTOR AND CIRCUIT DISCONNECTS - EXECUTION

1. FURNISH AND INSTALL MOTOR AND CIRCUIT DISCONNECTS FOR PERMANENTLY CONNECTED MOTORS LARGER THAN 1/8 HP UNLESS THE CONNECTED DEVICE IS COMPLETE WITH AN APPROVED DISCONNECTING MEANS.
2. INSTALL MOTOR AND CIRCUIT DISCONNECT IMMEDIATELY ADJACENT TO ITS ASSOCIATED MOTOR AND WITHIN SIGHT OF MOTOR AND DRIVE EQUIPMENT. PROVIDE MOUNTING HARDWARE, UNISTRUT RACK, FUSES, FUSE CLIPS, AND ACCESSORIES AS REQUIRED FOR THE APPLICATION.
3. IN UTILITY AREAS, MOUNT MOTOR AND CIRCUIT DISCONNECTS ON ADJACENT WALLS MAINTAINING NEC REQUIRED ACCESS. WHERE REQUIRED, DUE TO ACCESS REQUIREMENTS, MOUNT MOTOR AND CIRCUIT DISCONNECTS ON FREE STANDING UNISTRUT STANDS ADJACENT TO EQUIPMENT.
4. ON ROOFS, OR OTHER EXTERIOR LOCATIONS, MOUNT MOTOR AND CIRCUIT DISCONNECTS ON EQUIPMENT OR PROVIDE FREE STANDING UNISTRUT STAND ADJACENT TO EQUIPMENT.
5. THE ELEVATOR CONTROLLER DISCONNECT SHALL BE INTERLOCKED WITH THE FIRE ALARM THERMAL DETECTORS LOCATED IN THE ELEVATOR ROOM AND ELEVATOR SHAFT TO SHUT DOWN THE ELEVATOR IF THE DETECTORS ARE ACTIVATED. COORDINATE SHUNT TRIP COIL VOLTAGE WITH THE FIRE ALARM CONTRACTOR. SUPPLY 120 VOLT EMERGENCY POWER FOR SHUNT TRIP IF REQUIRED.

262726 - WIRING DEVICES - PRODUCTS

1. PROVIDE WIRING DEVICES AND ACCESSORIES IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS. WIRING DEVICES AND ACCESSORIES SHALL BE OF THE SAME MANUFACTURER THROUGHOUT THE PROJECT WHEREVER POSSIBLE. ACCEPTABLE MANUFACTURERS: COOPER WIRING DEVICES, HUBBELL, LEVITON. DEVICE PLATES AND ACCESSORIES SHALL MATCH CORRESPONDING WIRING DEVICES.
2. SUBMIT PRODUCT DATA FOR EACH PRODUCT SPECIFIED. PROVIDE SAMPLES AS REQUESTED BY ENGINEER.
3. STRAIGHT-BLADE RECEPTACLES: STANDARD, IG, TVSS, IG WITH TVSS, AND GFCI TYPES SHALL BE HUBBELL 5362 SERIES, HEAVY-DUTY, SPECIFICATION GRADE, 20A, UNLESS OTHERWISE INDICATED OR REQUIRED.
4. STRAIGHT-BLADE RECEPTACLES: HUBBELL CBRF20 COMMERCIAL SERIES, GENERAL-DUTY, SPECIFICATION GRADE, 20A, UNLESS OTHERWISE INDICATED OR REQUIRED.
5. STRAIGHT-BLADE RECEPTACLES: STANDARD, IG, TVSS, IG WITH TVSS, GFCI, AND TR TYPES SHALL BE HUBBELL 8300 SERIES, HEAVY-DUTY, HOSPITAL GRADE, 20A, UNLESS OTHERWISE INDICATED OR REQUIRED.
6. SPECIAL PURPOSE OUTLETS: HEAVY-DUTY GRADE OF NEMA CONFIGURATION INDICATED OR REQUIRED. SPECIAL PURPOSE OUTLETS SHALL BE RECEPTACLES OTHER THAN SINGLE-PLEX OR DUPLEX, 125V, AND 20A NON-LOCKING TYPE.
7. USB CHARGER RECEPTACLES: HUBBELL USB8300W, OR EQUAL.
8. AUTOMATIC CONTROL RECEPTACLES: SPECIFICATION GRADE, 20A, UNLESS OTHERWISE INDICATED OR REQUIRED. UNIVERSALLY RECOGNIZED POWER SYMBOL AND THE WORD "CONTROLLED" REMAINS CLEARLY VISABLE ON THE DEVICE AFTER INSTALLATION.
   A. ONE CONTROLLED FACE SPLIT CIRCUIT HOT TAB: HUBBELL BR20C1 (20A) OR EQUAL.
   B. TWO CONTROLLED FACES: HUBBELL BR20C2 (20A) OR EQUAL.
9. SWITCHES: 1, 2, 3, 4, K, P (RED POLYCARBONATE LIGHTED HANDLE), PO (CLEAR POLYCARBONATE LIGHTED HANDLE) TYPES SHALL BE HUBBELL HBL1221 SERIES, HEAVY-DUTY, SPECIFICATION GRADE, 20A, UNLESS OTHERWISE INDICATED OR REQUIRED.
10. SWITCHES: 1, 2, 3, AND 4 TYPES SHALL BE HUBBELL CSB320 SERIES, GENERAL-DUTY, SPECIFICATION GRADE, 20A, UNLESS OTHERWISE INDICATED OR REQUIRED.
11. 30A SWITCHES: 1, 2, AND 3 TYPES SHALL BE HUBBELL HBL3031 SERIES, HEAVY-DUTY, SPECIFICATION GRADE, UNLESS OTHERWISE INDICATED OR REQUIRED.
12. MOMENTARY CONTACT SWITCHES: THREE POSITION, TWO CIRCUIT, CENTER OFF TYPE SHALL BE HUBBELL HBL1557 SERIES, HEAVY-DUTY, SPECIFICATION GRADE, 20A, WITH TOGGLE OR KEY AS INDICATED.
13. MAINTAINED CONTACT SWITCHES: THREE POSITION, TWO CIRCUIT, CENTER OFF TYPE SHALL BE HUBBELL HBL1385 SERIES, HEAVY-DUTY, SPECIFICATION GRADE, 20A, WITH TOGGLE OR KEY AS INDICATED. SINGLE OR DOUBLE POLE AS INDICATED.
14. WIRING DEVICE COLOR SHALL BE BLACK UNLESS OTHERWISE INDICATED OR REQUIRED. VERIFY COLOR WITH ARCHITECT PRIOR TO SUBMITTALS. [SPECIAL CONDITION COLORS: EMERGENCY (RED), STANDBY (YELLOW), IG RECEPTACLES (ORANGE), TVSS RECEPTACLES (BLUE).]
15. NYLON DEVICE PLATE COLOR SHALL BE WHITE UNLESS OTHERWISE INDICATED OR REQUIRED. VERIFY COLOR WITH ARCHITECT PRIOR TO SUBMITTALS. [SPECIAL CONDITION COLORS: EMERGENCY (RED), STANDBY (YELLOW), IG RECEPTACLES (ORANGE), TVSS RECEPTACLES (BLUE).] PROVIDE METAL SECURING SCREWS WITH FINISH TO MATCH DEVICE PLATE.
16. STAINLESS STEEL DEVICE PLATES SHALL BE 0.04-INCH-THICK TYPE 302 STAINLESS STEEL.
17. ALUMINUM DEVICE PLATES SHALL BE 0.05-INCH-THICK ALUMINUM, SMOOTH CLEAR ANODIZED SATIN FINISH (WITHOUT LINES) APPEARANCE.
18. WEATHER PROOF ENCLOSURES SHALL BE NEMA 3R RATED WHILE-IN-USE WHEN USED WITH MANUFACTURER'S RECOMMENDED OUTLET BOX. GASKETS ARE CLOSED-CELL FOAM. MEETS OSHA LOCKOUT AND TAGOUT REQUIREMENTS. ENCLOSURES SHALL HAVE LATCHING COVERS AND CORD OPENINGS. UL LISTED AND CSA CERTIFIED WITH CLEARLY MARKED LOGOS. COVERS INCLUDE GASKET AND MOUNTING SCREWS. LIDS HAVE GASKETLESS DESIGN. HOLES FOR PADLOCKS ARE 1/4 INCH.
   A. METALLIC TYPE SHALL BE DIE CAST ALLOY 360 COPPER-FREE ALUMINUM WITH STANDARD GRAY BAKED ALUMINUM LACQUER FINISH. COORDINATE COLOR WITH ENGINEER PRIOR TO SUBMITTALS.
   B. NON-METALLIC TYPE SHALL BE OF IMPACT RESISTANT POLYCARBONATE WITH TRANSPARENT COVER WHICH PROVIDES VISIBILITY TO THE CONNECTION.

262726 - WIRING DEVICES - EXECUTION

1. RECEPTACLES OVER-COUNTER SHALL BE MOUNTED HORIZONTALLY, AND VERTICALLY MOUNTED ELSEWHERE, UNLESS OTHERWISE INDICATED. MOUNT HORIZONTAL RECEPTACLES WITH NEUTRAL BLADE SLOT UP, AND MOUNT VERTICAL RECEPTACLES WITH GROUND PRONG HOLE UP.
2. WHERE RECEPTACLES ARE INSTALLED WITHIN ONE STUD SPACING WIDTH FROM A SWITCH, THE CONVENIENCE OUTLET AND SWITCH SHALL ALIGN VERTICALLY.
3. SWITCHES SHALL BE LOCATED AS INDICATED ON DRAWINGS, ARRANGED SINGULAR OR IN GANGS AND WITHIN 18 INCHES OF DOOR JAMB ON THE STRIKE SIDE OF THE DOOR OPENINGS. GROUP ADJACENT SWITCHES UNDER SINGLE MULTI-GANG WALL PLATE. VERIFY THE DOOR SWINGS WITH THE ARCHITECTURAL DRAWINGS PRIOR TO ROUGH-IN.
4. MATCH RECEPTACLES AND SPECIAL PURPOSE OUTLETS TO OWNER-FURNISHED EQUIPMENT, UNLESS OTHERWISE INDICATED.
5. INSTALL EMERGENCY SWITCHES SEPARATE FROM NORMAL POWER SWITCHES. DO NOT INCLUDE IN THE MULTIPLE GANG CONFIGURATIONS.
6. SWITCH AND RECEPTACLE COMBINATIONS SHALL BE PERMITTED IN A SINGLE 2-GANG BOX WHERE BOTH ARE OF THE SAME VOLTAGE. PROVIDE SEPARATE BOXES WHERE DIFFERENT VOLTAGES ARE PRESENT.
7. INSTALL DEVICE PLATES AS REQUIRED FOR ALL DEVICE BOXES AND BLANKED OUTLET BOXES. INSTALL DEVICES AND DEVICE PLATES PLUMB AND SECURE.
8. DEVICE PLATES SHALL BE MARKED ON THE OUTSIDE INDICATING PANELBOARD AND CIRCUIT NUMBER TO WHICH THE DEVICE IS CONNECTED.
9. DEVICE PLATES FOR SPECIAL PURPOSE OUTLETS SHALL BE MARKED ON THE OUTSIDE TO IDENTIFY THE VOLTAGE, LOAD, AND NEMA CONFIGURATION OF THE RECEPTACLE.
10. LABELING OF DEVICE PLATES ON THE OUTSIDE SHALL BE BY WAY OF ADHESIVE LABELS.
    A. ADHESIVE LABELS SHALL BE OF CLEAR OR WHITE KROY, BROTHER, OR BRADY TAPE WITH BLACK 1/4 INCH MINIMUM HEIGHT UPPER-CASE LETTERS. RED LETTERS SHALL BE USED FOR EMERGENCY APPLICATIONS ON STAINLESS STEEL PLATES.
    B. FACTORY ENGRAVED LABELS SHALL BE OF BLACK 1/4 INCH MINIMUM HEIGHT RECESSED UPPER-CASE LETTERS. RED LETTERS SHALL BE USED FOR EMERGENCY APPLICATIONS ON STAINLESS STEEL PLATES.
11. PROTECT WIRING DEVICES AND ASSEMBLIES DURING PAINTING. INSTALL DEVICE PLATES WHEN PAINTING IS COMPLETE.
12. INTERNALLY CLEAN DEVICES, DEVICE OUTLET BOXES, AND ENCLOSURES. REPLACE STAINED, DAMAGED, OR DEFECTIVE COMPONENTS.
13. TEST RECEPTACLES FOR PROPER POLARITY AND GROUND CONTINUITY. REPLACE RECEPTACLES WHICH ARE DAMAGED OR DEFECTIVE. TEST GFCI RECEPTACLES WITH BOTH LOCAL AND REMOTE FAULT SIMULATIONS ACCORDING TO MANUFACTURER RECOMMENDATIONS
14. TEST EACH SWITCH AND REPLACE SWITCHES WHICH ARE DAMAGED OR DEFECTIVE.
15. TEST THE RETENTION FORCE OF THE GROUNDING BLADE OF EACH ELECTRICAL RECEPTACLE IN PATIENT CARE AREAS (EXCEPT FOR LOCKING-TYPE RECEPTACLES), AND REPLACE RECEPTACLES WITH A RETENTION FORCE OF LESS THAN 4 OUNCES.
16. TEST TVSS RECEPTACLE INDICATING LIGHTS FOR NORMAL OPERATION.

262800 - OVERCURRENT PROTECTIVE DEVICES - PRODUCTS

1. PROVIDE CIRCUIT BREAKERS AND FUSES OF TYPE, SIZE AND MANUFACTURER IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS.
2. SUBMIT PRODUCT DATA FOR EACH PRODUCT SPECIFIED. SUBMIT SELECTIVE COORDINATION CURVE CHARTS FOR ALL CIRCUIT BREAKERS AND FUSES PROPOSED AS PRODUCT SUBSTITUTIONS THAT VARY FROM ENGINEER'S PLANS. SELECTIVE COORDINATION SHALL COMPLY WITH NEC ARTICLE 700.
3. CIRCUIT BREAKERS SHALL BE FROM ONE SOURCE AND BY A SINGLE MANUFACTURER WHICH IS THE SAME MANUFACTURER AS PANELBOARD, SWITCHBOARD, DISCONNECTING DEVICE, ETC. ACCEPTABLE MANUFACTURERS: CUTLER-HAMMER/EATON CORP., GENERAL ELECTRIC, SIEMENS, AND SQUARE D.
4. CIRCUIT BREAKERS SHALL BE MOLDED CASE, THERMAL MAGNETIC, QUICK MAKE, QUICK BREAK, TRIP FREE AND TRIP INDICATING UNLESS OTHERWISE NOTED. MULTI POLE BREAKERS SHALL BE COMMON TRIP, USE OF TIE BARS OR PINS IS NOT ACCEPTABLE. ALL CIRCUIT BREAKER LUGS SHALL BE RATED FOR A MINIMUM OF 75 DEGREE CELSIUS.
5. EXTRA MATERIALS
   A. SPARE FUSES: [20] PERCENT OF EACH FUSE TYPE AND SIZE INSTALLED, BUT NOT LESS THAN [2] SETS OF 3 OF EACH TYPE AND SIZE.
   B. SPARE FUSE CABINET: WALL-MOUNTED, 0.05-INCH- (1.27-MM-) THICK STEEL UNIT WITH FULL-LENGTH, RECESSED PIANO-HINGED DOOR WITH KEY-CODED CAM LOCK AND PULL. SIZED ADEQUATELY FOR ORDERLY STORAGE OF SPARE FUSES SPECIFIED WITH 15 PERCENT SPARE CAPACITY MINIMUM.

262800 - OVERCURRENT PROTECTIVE DEVICES - EXECUTION

1. VERIFY MECHANICAL EQUIPMENT OVERCURRENT PROTECTIVE DEVICE SIZE AND TYPE WITH NAME PLATE DATA AND STARTER DATA.
2. PROVIDE SETTINGS ON CIRCUIT BREAKERS PER MANUFACTURER'S RECOMMENDATIONS.
3. INSTALL SPARE FUSE CABINET NEAR THE MAIN SERVICE EQUIPMENT, UNLESS OTHERWISE NOTED, WITH NEATLY STORED BOXES OF SPARE FUSES WITHIN.
4. BRANCH CIRCUITS THAT SUPPLY 120 VOLT, SINGLE-PHASE, 15 AND 20 AMPERE OUTLETS IN BEDROOMS, DORM ROOMS, AND GUEST SUITES SHALL BE PROTECTED BY ARC-FAULT CIRCUIT INTERRUPTER CIRCUIT BREAKERS TO PROVIDE PROTECTION OF THE ENTIRE BRANCH CIRCUIT.

265100 - LIGHTING - PRODUCTS

1. PROVIDE LUMINAIRES, LAMPS, BALLASTS, AND ACCESSORIES IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS. LUMINAIRES REQUIRING CAPS, MOUNTING SPACES, HOLD-DOWN CLIPS OR OTHER ACCESSORY ITEMS SHALL BE FURNISHED COMPLETE WITH SAME WHETHER THE DESCRIPTIONS, CATALOG NUMBERS, AND NOTES ON THE DRAWINGS INCLUDE SUCH ITEMS OR NOT.
2. SUBMIT PRODUCT DATA FOR EACH LUMINAIRE AND ACCESSORY INCLUDING LAMPS, BALLAST, AND DRIVERS. PROVIDE SAMPLES AS REQUESTED BY ENGINEER.
3. RECESSED OR SEMI-RECESSED LUMINAIRES SHALL BE DESIGNED TO BE COMPATIBLE WITH CEILING AS INSTALLED. FURNISH AND INSTALL FRAMES WHERE REQUIRED FOR PROPER INSTALLATION. SUPPLY WITH TRIM THAT IS COMPATIBLE WITH CEILING SYSTEM IN WHICH IT SHALL BE INSTALLED.
4. UNLESS OTHERWISE NOTED, LINEAR OR U-TUBE LAMP BALLASTS SHALL BE FULLY ELECTRONIC, INTEGRATED CIRCUIT, SOLID-STATE, RAPID-START, FULL-LIGHT-OUTPUT, ENERGY-EFFICIENT TYPE. DIMMABLE BALLASTS SHALL BE FULLY ELECTRONIC, INTEGRATED CIRCUIT, SOLID-STATE, PROGRAMMED RAPID START, FULL-LIGHT-OUTPUT, ENERGY-EFFICIENT TYPE WITH 100-5% (100-10% FOR 4-LAMP) DIMMING RANGE.
5. LED AND FLUORESCENT LUMINAIRES INDICATED TO INCLUDE BATTERY PACKS SHALL CONTAIN A BATTERY PACK ASSEMBLY CONSISTING OF A BATTERY, CHARGER, INVERTER, AND ELECTRONIC CIRCUITRY ENCLOSED IN ONE ASSEMBLY. LUMINAIRE SHALL HAVE VALID UL LABEL WITH BATTERY PACK INSTALLED AT LUMINAIRE MANUFACTURER'S FACTORY.
6. POLES, BRACKET ARMS, APPURTENANCES, AND ANCHORAGE MATERIAL SHALL BE OF MATCHING COLOR. SAME SHALL BE SUFFICIENT TO SUPPORT EFFECTIVE PROJECTED AREAS OF LUMINAIRES AND POLE SUPPLIED WITHOUT FAILURE, PERMANENT DEFLECTION, OR DAMAGE TO LAMP FILAMENTS AGAINST STEADY WINDS OF 100 MI/HR WITH A GUST FACTOR OF 1.3.

265100 - LIGHTING - EXECUTION

1. CONFIRM COMPATIBILITY AND INTERFACE OF OTHER MATERIALS WITH LUMINAIRE AND CEILING SYSTEM. IN THE EVENT OF ANY DISCREPANCY, IMMEDIATELY NOTIFY THE ARCHITECT. DO NOT PROCEED WITH INSTALLATION IN AREAS OF DISCREPANCY UNTIL ALL SUCH DISCREPANCIES HAVE BEEN RESOLVED.
2. INSTALLATION OF LUMINAIRES IN MECHANICAL ROOMS SHALL BE COORDINATED WITH THE DUCTWORK AND OTHER OBSTRUCTIONS. WHERE LUMINAIRES ARE SHOWN IN CONFLICT WITH LOCATIONS OF STRUCTURAL MEMBERS, MECHANICAL OR OTHER EQUIPMENT, FURNISH AND INSTALL ALL REQUIRED SUPPORTS AND WIRING TO CLEAR THE ENCROACHMENT.
3. WHERE MOUNTING DIMENSIONS ARE NOT SHOWN, REFER TO ARCHITECTURAL DRAWINGS FOR INSTALLATION DETAILS. LIGHTING PLANS ARE DIAGRAMMATIC IN NATURE, DO NOT SCALE FROM LIGHTING PLANS. LUMINAIRES SHALL BE INSTALLED AS INDICATED AND/OR NOTED AND IN ACCORDANCE WITH THE NEC AND THE MANUFACTURER'S RECOMMENDATIONS.
4. RECESSED LUMINAIRES SHALL BE COMPLETE WITH ALL REQUIRED HARDWARE AND ACCESSORIES IN EACH CASE. WHERE "LAY-IN" AND "HARD LID (GYP)" LUMINAIRES CANNOT BE USED IN SUSPENDED CEILINGS, RECESSED LUMINAIRES SHALL BE INSTALLED COMPLETE WITH BAR HANGERS AND SHALL BE SUPPORTED FROM THE CEILING SUSPENSION SYSTEM.
5. IN AREAS WITH "LAY-IN" AND "HARD LID (GYP)" CEILINGS, SUPPORT WIRES SHALL BE USED TO CONNECT RECESSED, SURFACE, OR PENDANT MOUNTED LUMINAIRES TO THE STRUCTURE ABOVE. RECESSED AND SURFACE MOUNTED LUMINAIRES SHALL ALSO BE POSITIVELY ATTACHED TO THE SUSPENSION SYSTEM OF THE "LAY-IN" AND "HARD LID (GYP)" CEILING ASSEMBLY.
6. SURFACE MOUNTED LUMINAIRES SHALL BE SUPPORTED FROM OUTLET BOX FIXTURE STUDS, MOUNTING BRACKETS OR MOUNTING STRAPS OR SHALL BE SECURED DIRECTLY TO THE STRUCTURAL SYSTEM. OUTLET BOXES AND MOUNTING BRACKETS (OR STRAPS) SHALL BE SECURED TO A JOIST OR SIMILAR STRUCTURAL UNIT OR TO AN APPROVED METAL SUPPORT WHICH IS SECURED TO SUCH A STRUCTURAL UNIT. THE USE OF TOGGLE BOLTS FOR LUMINAIRE SUPPORT SHALL NOT BE PERMITTED.
9. CLEAN ALL LUMINAIRES (INSIDE AND LENS) OF CONSTRUCTION DIRT, DEBRIS, AND PAINT PRIOR TO PROJECT CLOSE OUT. REPLACE DAMAGED OR MALFUNCTIONING BALLASTS AND LENSES WITH NEW.
10. WIRE GUARDS SHALL BE PROVIDED FOR LIGHTING FIXTURES MOUNTED IN AREAS SUSCEPTIBLE TO DAMAGE FROM FLYING OBJECTS SUCH AS GYMNASIUMS, MULTI-PURPOSE ROOMS, OR SIMILAR SPACES.

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REVIEWED FOR CODE COMPLIANCE
03/21/2024

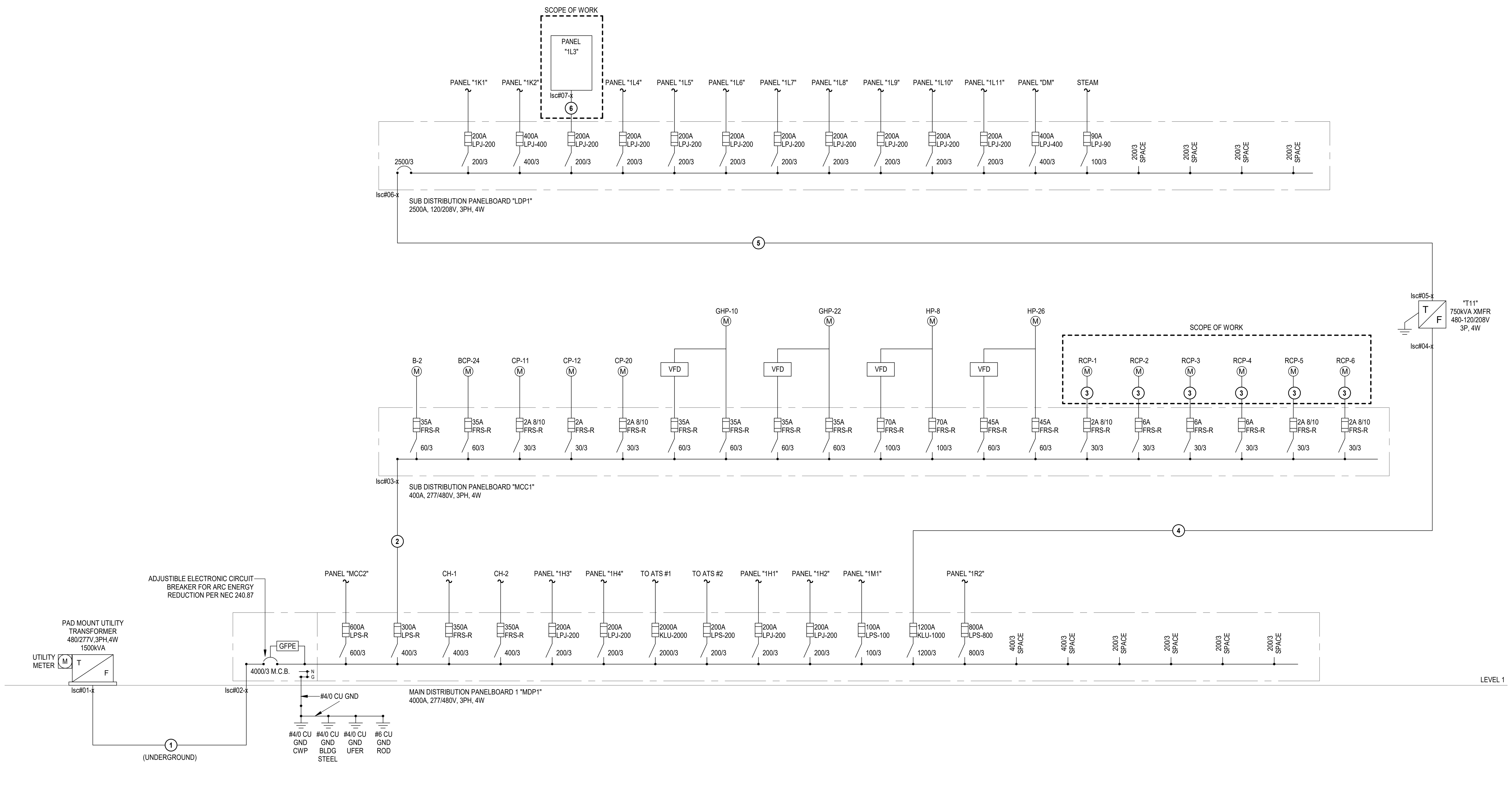
STEAMBOAT GRAND PIPING SYSTEM REPLACEMENT
2300 MT WERNER CIR,
STEAMBOAT SPRINGS, CO 80487

ISSUE	DATE

PROJECT #: 21056
DESIGNED: NWS
CHECKED: RCC

ELECTRICAL SPECIFICATIONS

E100C



ELECTRICAL ONE-LINE DIAGRAM - EXISTING

NOT TO SCALE

ALL ELECTRICAL EQUIPMENT EXISTING TO REMAIN UNLESS OTHERWISE NOTED

Isc CALCULATION - 3 PHASE

Point #1 - At The 1500kVA Utility Transformer

Isc = 33,900

Point #2 - At the Main Board "MDP1"

f = [1.732 X length X Isc(prev)] / [# runs X wire factor X voltage]
f = 1.732 X 10 X 33,900 / 13 X 18,755 X 480
f = 0.005

M = 1/(1+f)
M = 0.995

Isc = Isc(prev) x M
Isc = 33,731

Point #3 - At the Sub Distribution Board "MCC1"

f = [1.732 X length X Isc(prev)] / [# runs X wire factor X voltage]
f = 1.732 X 100 X 33,731 / 1 X 18,755 X 480
f = 0.649

M = 1/(1+f)
M = 0.606

Isc = Isc(prev) x M
Isc = 20,456

Point #4 - At the 750kVA Transformer

f = [1.732 X length X Isc(prev)] / [# runs X wire factor X voltage]
f = 1.732 X 50 X 20,456 / 4 X 16,670 X 480
f = 0.055

M = 1/(1+f)
M = 0.948

Isc = Isc(prev) x M
Isc = 19,383

Point #5 - Through the Transformer, 3-phase

f = Isc(pri) X V(pri) X 1.73 X (%Z) / 100,000 X kVA trans
f = 19,383 X 480 X 1.73 X 3.5 / 100,000 X 750
f = 0.751

M = 1/(1+f)
M = 0.571

Isc = V(pri) / V(sec) X M X Isc(pri)
Isc = 25,544

Point #6 - At the 750kVA Transformer

f = [1.732 X length X Isc(prev)] / [# runs X wire factor X voltage]
f = 1.732 X 100 X 25,544 / 10 X 15,484 X 208
f = 0.137

M = 1/(1+f)
M = 0.879

Isc = Isc(prev) x M
Isc = 22,458

Point #7 - At Panel "1L3"

f = [1.732 X length X Isc(prev)] / [# runs X wire factor X voltage]
f = 1.732 X 50 X 22,458 / 1 X 617 X 208
f = 15.155

M = 1/(1+f)
M = 0.062

Isc = Isc(prev) x M
Isc = 1,390

DEMOLITION DRAWING NOTES

1 13 [(4-500 KCMIL AL, 1-500 KCMIL G) 4"C]
2 (3-500 KCMIL AL, 1-#2 G) 3-1/2"C
3 (3-#12 CU, 1-#12 CU G) 3/4"C
4 4 [(3-400 KCMIL AL, 1-4/0 AL G) 3-1/2"C]
5 10 [(4-350 KCMIL AL, 1-350 AL G) 3"C]
6 (3-#3/0 CU, 1-#6 CU G) 2-1/2"C

MEP ENGINEERING INC.
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DAVIS PARTNERSHIP ARCHITECTS

REVIEWED FOR CODE COMPLIANCE 03/21/2024

STEAMBOAT GRAND PIPING SYSTEM REPLACEMENT

2300 MT WERNER CIR,
STEAMBOAT SPRINGS, CO 80487

ISSUE	DATE
100% SD	12/15/2021
PRICING SET	11/01/2022
FOR PERMIT	06/02/2023
95% CD's	01/16/2023

PROJECT #: 21056
DESIGNED: NWS
CHECKED: RCC

ELECTRICAL ONE LINE DIAGRAM

COLORADO REGISTERED PROFESSIONAL ENGINEER 35656 06.01.23

E101

MECHANICAL EQUIPMENT SCHEDULE

DESIGNATION	DESCRIPTION	VOLTAGE	PH	HP	kVA	FLA (MCA)	AIC (A)	Isc (A)	DATE	CONDUCTORS	CONDUIT	SWITCH	CB	FUSE SIZE/TYPE	REMARKS
HX-1	HEAT EXCHANGER	120	1	1/25	-	1.0	-	-	-	(2-#12 CU, 1-#12 GND)	3/4"	STO	20/1	-	1
HX-2	HEAT EXCHANGER	120	1	1/25	-	1.0	-	-	-	(2-#12 CU, 1-#12 GND)	3/4"	STO	20/1	-	1
HX-3	HEAT EXCHANGER	120	1	1/25	-	1.0	-	-	-	(2-#12 CU, 1-#12 GND)	3/4"	STO	20/1	-	1
HX-4	HEAT EXCHANGER	120	1	1/25	-	1.0	-	-	-	(2-#12 CU, 1-#12 GND)	3/4"	STO	20/1	-	1
RCP-1	CIRCULATION PUMP	480	3	1	-	2.1	-	-	-	(3-#12 CU, 1-#12 GND)	3/4"	30/3	10/3	10A FRS-R	-
RCP-2	CIRCULATION PUMP	480	3	3	-	4.8	-	-	-	(3-#12 CU, 1-#12 GND)	3/4"	30/3	10/3	10A FRS-R	-
RCP-3	CIRCULATION PUMP	480	3	3	-	4.8	-	-	-	(3-#12 CU, 1-#12 GND)	3/4"	30/3	10/3	10A FRS-R	-
RCP-4	CIRCULATION PUMP	480	3	3	-	4.8	-	-	-	(3-#12 CU, 1-#12 GND)	3/4"	30/3	10/3	10A FRS-R	-
RCP-5	CIRCULATION PUMP	480	3	1	-	2.1	-	-	-	(3-#12 CU, 1-#12 GND)	3/4"	30/3	10/3	10A FRS-R	-
RCP-6	CIRCULATION PUMP	480	3	1	-	2.1	-	-	-	(3-#12 CU, 1-#12 GND)	3/4"	30/3	10/3	10A FRS-R	-
TMV-1	THERMOSTATIC MIXING VALVE	120	1	-	360W	-	-	-	-	(2-#12 CU, 1-#12 GND)	3/4"	STO	20/1	-	-
TMV-2	THERMOSTATIC MIXING VALVE	120	1	-	360W	-	-	-	-	(2-#12 CU, 1-#12 GND)	3/4"	STO	20/1	-	-

REMARKS:

1. HEAT EXCHANGERS ARE PART OF AN ADDITIONAL ALTERNATE.

LIGHTING FIXTURE SCHEDULE

LUMINAIRE								LAMPS				
ID	MANUFACTURER	MODEL	CATALOG NUMBER	DESCRIPTION	VOLTAGE	DIMMING	MOUNTING	QTY.	TYPE	WATTS	LUMENS	COLOR TEMP/CRI
R1	LIGHT LOTUS	6" ROUND COMMERCIAL 3 CCT & 3 WATT SELECTABLE	TP120-347-RT6-C-DIM-G1-ES	6" ROUND LED DOWNLIGHT, SELECT 1000 LUMEN OUTPUT, SELECT 3000K, 90CRI, 0-10V DIMMING, UNIVERSAL VOLTAGE, WET LOCATION RATED	UNV	0-10V	CEILING RECESSED	1	LED	10W	1000	3000K/90CRI

PANEL "MDP1" VOLTAGE 277 / 480 V 3 PH 4 W
FLUSH ___ MAIN 4000/3 MLO ___
SURFACE X BUS 4000A FEED THRU ___ A.I.C. 100,000A

	TYPE	DESCRIPTION	BKR	CIR	A		B		C		CIR	BKR	DESCRIPTION	TYPE	
	G	PANEL "MCC2"	600	1	83100	221600					2	2000	ATS #1	G	
	G	-		3			83100	221600			4		-	G	
	G	-	3	5					83100	221600	6	3	-	G	
1.	G	PANEL "MCC1"	400	7	77854	27700					8	200	ATS #2	G	
1.	G	-		9			77854	27700			10		-	G	
1.	G	-	3	11					77854	27700	12	3	-	G	
	G	CH-1	400	13	55400	27700					14	200	PANEL "1H1"	G	
	G	-		15			55400	27700			16		-	G	
	G	-	3	17					55400	27700	18	3	-	G	
	G	CH-2	400	19	55400	27700					20	200	PANEL "1H2"	G	
	G	-		21			55400	27700			22		-	G	
	G	-	3	23					55400	27700	24	3	-	G	
	G	PANEL "1H3"	200	25	27700	13850					26	100	PANEL "1M1"	G	
	G	-		27			27700	13850			28		-	G	
	G	-	3	29					27700	13850	30	3	-	G	
	G	PANEL "1H4"	200	31	27700	177900					32	1200	PANEL "LDP1"	KG	1.
	G	-		33			27700	178060			34		-	RKG	1.
	G	-	3	35					27700	178060	36	3	-	RKG	1.
		SPACE	400	37	0	110800					38	800	PANEL "1R2"	G	
		-		39			0	110800			40		-	G	
		-	3	41					0	110800	42	3	-	G	
		SPACE	400	43	0	0					44	200	SPACE		
		-		45			0	0			46		-		
		-	3	47					0	0	48	3	-		
		SPACE	200	49	0	0					50	200	SPACE		
		-		51			0	0			52		-		
		-	3	53					0	0	54	3	-		
		SPACE	200	55	0	0					56		SPACE		
		-		57			0	0			58		SPACE		
		-	3	59					0	0	60		SPACE		
					934404		934564		934564						

LOAD TYPE	CONNECTED KVA A	B	C	TOTAL ALL	FACTOR	DEMAND KVA A	B	C	TOTAL ALL
LIGHTING/CONTINUOUS	0.0	0.0	0.0	0.0	125%	0.0	0.0	0.0	0.0
RECEPTACLE (10KVA OR LESS)	0.0	0.4	0.4	0.7	100%	0.0	0.4	0.4	0.7
RECEPTACLE (OVER 10KVA)	0.0	0.0	0.0	0.0	100%	0.0	0.0	0.0	0.0
HVAC/MOTOR	0.0	0.0	0.0	0.0	100%	0.0	0.0	0.0	0.0
MOTOR(LARGEST)	0.0	0.0	0.0	0.0	125%	0.0	0.0	0.0	0.0
KITCHEN EQUIPMENT	36.0	36.0	36.0	108.0	100%	36.0	36.0	36.0	108.0
MISCELLANEOUS	898.4	898.2	898.2	2694.8	100%	898.4	898.2	898.2	2694.8
TOTAL KVA	934.4	934.6	934.6	2803.5	TOTAL KVA	934.4	934.6	934.6	2803.5
					TOTAL AMPERES	3373.3	3373.9	3373.9	3373.9

LEGEND: L = LIGHTING; R = RECEPTACLE; M = HVAC / MOTOR; K = KITCHEN; G = MISCELLANEOUS

1. CIRCUIT UPDATED THIS CONTRACT.

PANEL "MCC1" VOLTAGE 277 / 480 V 3 PH 4 W
FLUSH ___ MAIN ___ MLO X
SURFACE X BUS 400A FEED THRU ___ A.I.C. 65,000A

	TYPE	DESCRIPTION	BKR	CIR	A		B		C		CIR	BKR	DESCRIPTION	TYPE
	G	B-2	60	1	4155	4155					2	60	VFD FOR GHP-10	G
	G	-		3			4155	4155			4		-	G
	G	-	3	5					4155	4155	6	3	-	G
	G	BCP-24	60	7	4155	4155					8	60	GHP-10	G
	G	-		9			4155	4155			10		-	G
	G	-	3	11					4155	4155	12	3	-	G
	G	CP-11	30	13	2770	4155					14	60	VFD FOR GHP-22	G
	G	-		15			2770	4155			16		-	G
	G	-	3	17					2770	4155	18	3	-	G
	G	CP-12	30	19	2770	4155					20	60	GHP-22	G
	G	-		21			2770	4155			22		-	G
	G	-	3	23					2770	4155	24	3	-	G
	G	CP-20	30	25	2770	13850					26	100	VFD FOR HP-8	G
	G	-		27			2770	13850			28		-	G
	G	-	3	29					2770	13850	30	3	-	G
1.	G	RCP-1	30	31	873	13850					32	100	HP-8	G
	G	-		33			873	13850			34		-	G
	G	-	3	35					873	13850	36	3	-	G
1.	G	RCP-2	30	37	1995	4155					38	60	VFD FOR HP-26	G
	G	-		39			1995	4155			40		-	G
	G	-	3	41					1995	4155	42	3	-	G
1.	G	RCP-3	30	43	1995	4155					44	60	HP-26	G
	G	-		45			1995	4155			46		-	G
	G	-	3	47					1995	4155	48	3	-	G
1.	G	RCP-4	30	49	1995	0					50		SPACE	
	G	-		51			1995	0			52		SPACE	
	G	-	3	53					1995	0	54		SPACE	
1.	G	RCP-5	30	55	873	0					56		SPACE	
	G	-		57			873	0			58		SPACE	
	G	-	3	59					873	0	60		SPACE	
1.	G	RCP-6	30	61	873	0					62		SPACE	
	G	-		63			873	0			64		SPACE	
	G	-	3	65					873	0	66		SPACE	
		SPACE		67	0	0					68		SPACE	
		SPACE		69			0	0			70		SPACE	
		SPACE		71					0	0	72		SPACE	
		SPACE		73	0	0					74		SPACE	
		SPACE		75			0	0			76		SPACE	
		SPACE		77					0	0	78		SPACE	
		SPACE		79	0	0					80		SPACE	
		SPACE		81			0	0			82		SPACE	
		SPACE		83					0	0	84		SPACE	
					77854		77854		77854					

LOAD TYPE	CONNECTED KVA A	B	C	TOTAL ALL	FACTOR	DEMAND KVA A	B	C	TOTAL ALL
LIGHTING/CONTINUOUS	0.0	0.0	0.0	0.0	125%	0.0	0.0	0.0	0.0
RECEPTACLE (10KVA OR LESS)	0.0	0.0	0.0	0.0	100%	0.0	0.0	0.0	0.0
RECEPTACLE (OVER 10KVA)	0.0	0.0	0.0	0.0	100%	0.0	0.0	0.0	0.0
HVAC/MOTOR	0.0	0.0	0.0	0.0	100%	0.0	0.0	0.0	0.0
MOTOR(LARGEST)	0.0	0.0	0.0	0.0	125%	0.0	0.0	0.0	0.0
KITCHEN EQUIPMENT	0.0	0.0	0.0	0.0	100%	0.0	0.0	0.0	0.0
MISCELLANEOUS	77.9	77.9	77.9	233.6	100%	77.9	77.9	77.9	233.6
TOTAL KVA	77.9	77.9	77.9	233.6	TOTAL KVA	77.9	77.9	77.9	233.6
					TOTAL AMPERES	281.1	281.1	281.1	281.1

LEGEND: L = LIGHTING; R = RECEPTACLE; M = HVAC / MOTOR; K = KITCHEN; G = MISCELLANEOUS

1. RCP UNITS REPLACED LIKE FOR LIKE. RECONNECT TO EXISTING CIRCUIT.

PANEL "LDP1" VOLTAGE 120 / 208 V 3 PH 4 W
FLUSH ___ MAIN 2500/3 MLO ___
SURFACE X BUS 2500A FEED THRU ___ A.I.C. 65,000A

	TYPE	DESCRIPTION	BKR	CIR	A		B		C		CIR	BKR	DESCRIPTION	TYPE
	K	PANEL "1K1"	200	1	12000	12000					2	200	PANEL "1L7"	G
	K	-		3			12000	12000			4		-	G
	K	-	3	5					12000	12000	6	3	-	G
	K	PANEL "1K2"	400	7	24000	12000					8	200	PANEL "1L8"	G
	K	-		9			24000	12000			10		-	G
	K	-	3	11					24000	12000	12	3	-	G
1.	G	PANEL "1L3"	200	13	15500	12000					14	200	PANEL "1L9"	G
1.	RG	-		15			15860	12000			16		-	G
1.	RG	-	3	17					15860	12000	18	3	-	G
	G	PANEL "1L4"	200	19	12000	12000					20	200	PANEL "1L10"	G
	G	-		21			12000	12000			22		-	G
	G	-	3	23					12000	12000	24	3	-	G
	G	PANEL "1L5"	200	25	12000	12000					26	200	PANEL "1L11"	G
	G	-		27			12000	12000			28		-	G
	G	-	3	29					12000	12000	30	3	-	G
	G	PANEL "L16"	200	31	12000	24000					32	400	PANEL "DM"	G
	G	-		33			12000	24000			34		-	G
	G	-	3	35					12000	24000	36	3	-	G
	G	STEAM	100	37	6000	0					38	200	SPACE	
	G	-		39			6000	0			40		-	
	G	-	3	41					6000	0	42	3	-	
		SPACE	200	43	0	0					44	200	SPACE	
		-		45			0	0			46		-	
		-	3	47					0	0	48	3	-	
		SPACE	200	49	0	0					50		SPACE	
		-		51			0	0			52		SPACE	
		-	3	53					0	0	54		SPACE	
		SPACE		55	0	0					56		SPACE	
		SPACE		57			0	0			58		SPACE	
		SPACE		59					0	0	60		SPACE	
					177500		177860		177860					

LOAD TYPE	CONNECTED KVA A	B	C	TOTAL ALL	FACTOR	DEMAND KVA A	B	C	TOTAL ALL
LIGHTING/CONTINUOUS	0.0	0.0	0.0	0.0	125%	0.0	0.0	0.0	0.0
RECEPTACLE (10KVA OR LESS)	0.0	0.4	0.4	0.7	100%	0.0	0.4	0.4	0.7
RECEPTACLE (OVER 10KVA)	0.0	0.0	0.0	0.0	100%	0.0	0.0	0.0	0.0
HVAC/MOTOR	0.0	0.0	0.0	0.0	100%	0.0	0.0	0.0	0.0
MOTOR(LARGEST)	0.0	0.0	0.0	0.0	125%	0.0	0.0	0.0	0.0
KITCHEN EQUIPMENT	36.0	36.0	36.0	108.0	100%	36.0	36.0	36.0	108.0
MISCELLANEOUS	141.5	141.5	141.5	424.5	100%	141.5	141.5	141.5	424.5
TOTAL KVA	177.5	177.9	177.9	533.2	TOTAL KVA	177.5	177.9	177.9	533.2
					TOTAL AMPERES	1479.2	1482.2	1482.2	1482.2

LEGEND: L = LIGHTING; R = RECEPTACLE; M = HVAC / MOTOR; K = KITCHEN; G = MISCELLANEOUS

1. CIRCUIT UPDATED THIS CONTRACT.

PANEL "1L3" VOLTAGE 120 / 208 V 3 PH 4 W
FLUSH ___ MAIN ___ MLO ___
SURFACE X BUS 225A FEED THRU ___ A.I.C. 10,000A

TYPE	DESCRIPTION	BKR	CIR	A		B		C		CIR	BKR	DESCRIPTION	TYPE	
G	EXT. LOADING COS	20	1	1000	200					2	20	X-1	G	1.
G	LOAD, TRASH COS	20	3			1000	200			4	20	X-2	G	1.
G	UH-7	20	5					1000	200	6	20	X-3	G	1.
G	UH-4,6	20	7	1000	200					8	20	X-4	G	1.
G	B-1 CONT PANEL	20	9			1000	360			10	20	TMV-1	R	1.
G	B-2 CONT PANEL	20	11					1000	360	12	20	TMV-2	R	1.
G	BRINE PMP 1	20	13	1000	1000					14	20	WS-1	G	
G	BRINE PMP 2	20	15			1000	1000			16	20	FAN ROOM COS	G	
G	CHILLER CONT PWR	20	17					1000	1000	18	20	BOILER ROOM COS	G	
G	CHILLER CONT PWR	20	19	1000	1000					20	20	CHILLER ROOM COS	G	
G	AH-1 LTS	20	21			1000	1000			22	20	EXHISTING LOAD	G	
G	AH-2 LTS	20	23					1000	1000	24	20	EXHISTING LOAD	G	
G	COOL TWR 1 CONT	20	25	1000	1000					26	20	EXHISTING LOAD	G	
G	COOL TWR 2 CONT	20	27			1000	1000			28	20	EXHISTING LOAD	G	
G	PBP-1 CONT PWR	20	29					1000	1000	30	20	EXHISTING LOAD	G	
G	PBP-2 CONT PWR	20	31	1000	1000					32	20	EXHISTING LOAD	G	
G	PBP-3 CONT PWR	20	33			1000	1000			34	20	EXHISTING LOAD	G	
G	UH-2, 5	20	35					1000	1000	36	20	EXHISTING LOAD	G	
G	CHILL RM UNIT HEAT	20	37	1000	1000					38	20	EXHISTING LOAD	G	
G	CHEMICAL FEED	20	39			1000	1000			40	20	EXHISTING LOAD	G	
G	EXHISTING LOAD	20	41					1000	1000	42	20	EXHISTING LOAD	G	
				15900		16060		16060						

LOAD TYPE	CONNECTED KVA A	B	C	TOTAL ALL	FACTOR	DEMAND KVA A	B	C	TOTAL ALL
LIGHTING/CONTINUOUS	0.0	0.0	0.0	0.0	125%	0.0	0.0	0.0	0.0
RECEPTACLE (10KVA OR LESS)	0.0	0.4	0.4	0.7	100%	0.0	0.4	0.4	0.7
RECEPTACLE (OVER 10KVA)	0.0	0.0	0.0	0.0	100%	0.0	0.0	0.0	0.0
HVAC/MOTOR	0.0	0.0	0.0	0.0	100%	0.0	0.0	0.0	0.0
MOTOR(LARGEST)	0.0	0.0	0.0	0.0	125%	0.0	0.0	0.0	0.0
KITCHEN EQUIPMENT	0.0	0.0	0.0	0.0	100%	0.0	0.0	0.0	0.0
MISCELLANEOUS	15.9	15.7	15.7	47.3	100%	15.9	15.7	15.7	47.3
TOTAL KVA	15.9	16.1	16.1	48.0	TOTAL KVA	15.9	16.1	16.1	48.0
					TOTAL AMPERES	132.5	133.8	133.8	133.8

LEGEND: L = LIGHTING; R = RECEPTACLE; M = HVAC / MOTOR; K = KITCHEN; G = MISCELLANEOUS

1. CIRCUIT UPDATED THIS CONTRACT.

MEP ENGINEERING INC.
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DAVIS PARTNERSHIP ARCHITECTS
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REVIEWED FOR CODE COMPLIANCE 03/21/2024

STEAMBOAT GRAND PIPING SYSTEM REPLACEMENT

2300 MT WERNER CIR,
STEAMBOAT SPRINGS, CO 80487

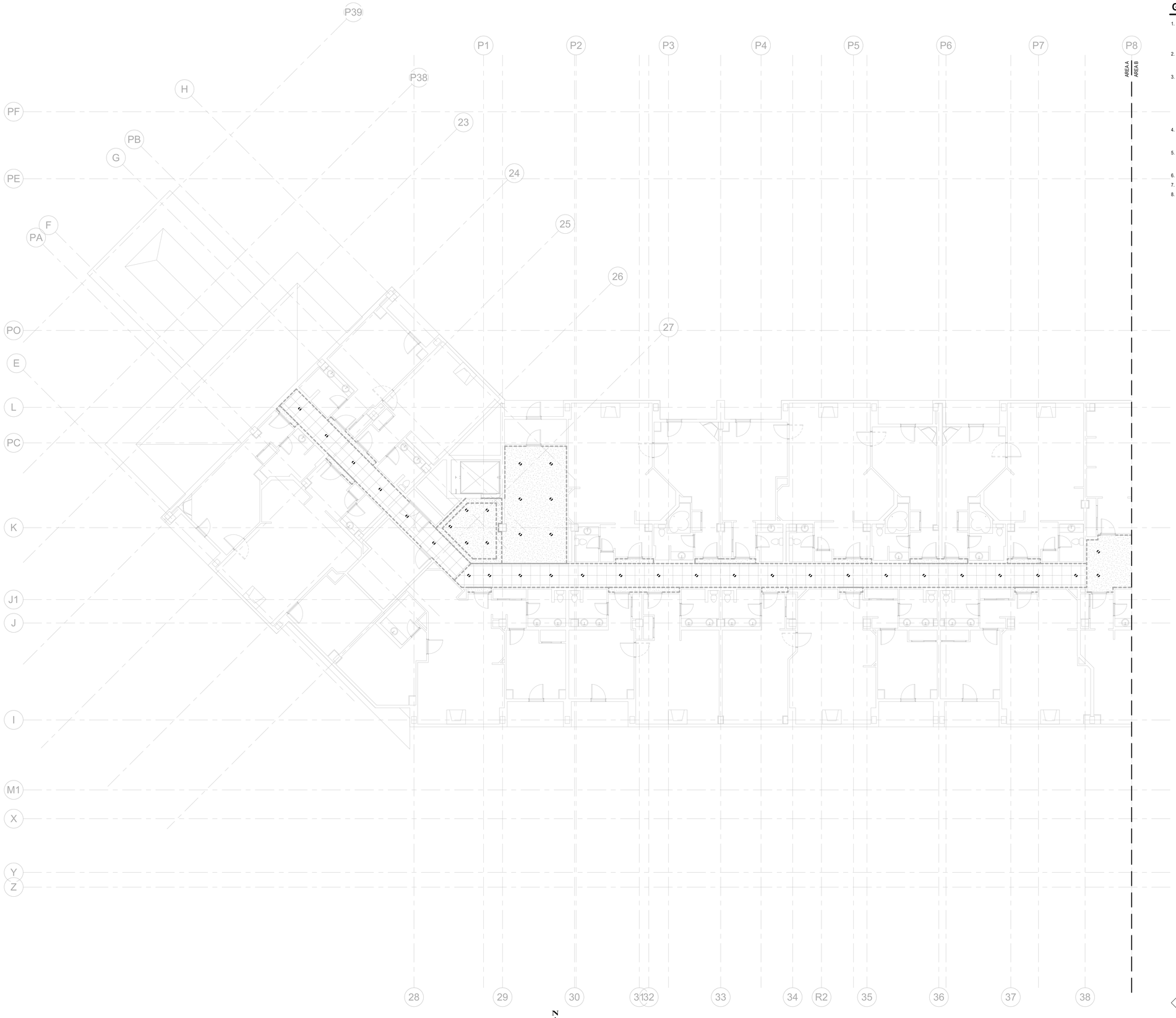
ISSUE	DATE
100% SD	12/15/2021
PRICING SET	11/01/2022
FOR PERMIT	06/02/2023
95% CD'S	01/16/2023

PROJECT #: 21056
DESIGNED: NWS
CHECKED: RCC

ELECTRICAL PANEL SCHEDULES

COLORADO REGISTERED PROFESSIONAL ENGINEER 35656 06.01.23

E102



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LIGHTING DEMOLITION PLAN LEVEL 2 - AREA A
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. DEMOLITION PLANS ARE FOR REFERENCE AND MAY NOT SHOW ALL ELECTRICAL DEVICES THAT NEED TO BE DEMOLISHED DUE TO FIELD CONDITION DURING THE ELECTRICAL SURVEY. FIELD VERIFY PRIOR TO PRICING. REFER TO ARCHITECTURAL AND MECHANICAL PLANS FOR ADDITIONAL INFORMATION PRIOR TO PRICING.
2. EXISTING DEVICES, CIRCUITS, AND CONDUITS SHOWN TO BE REMOVED SHALL BE REMOVED IN THEIR ENTIRETY BACK TO NEAREST DEVICE TO REMAIN. MAINTAIN CIRCUIT CONTINUITY OF ALL EXISTING DEVICES TO REMAIN.
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4. REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR ANY EQUIPMENT THAT IS TO BE DEMOLISHED DURING THIS SCOPE OF WORK. COORDINATE WITH MECHANICAL CONTRACTOR FOR DEMOLITION RESPONSIBILITIES.
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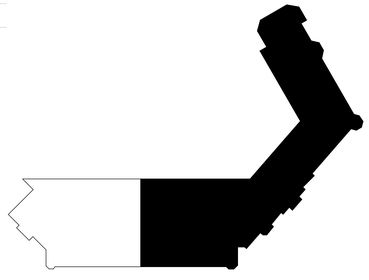
7. LUMINAIRES SHOWN DASHED SHALL BE RELOCATED.
8. POKE THROUGH CORE LOCATIONS ARE TO BE CAPPED FROM FLOOR BELOW AND FILLED WITH CONCRETE.



KEY PLAN:

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REVIEWED FOR CODE COMPLIANCE
03/21/2024

STEAMBOAT GRAND
PIPING SYSTEM REPLACEMENT
2300 MT WERNER CIR,
STEAMBOAT SPRINGS, CO 80487

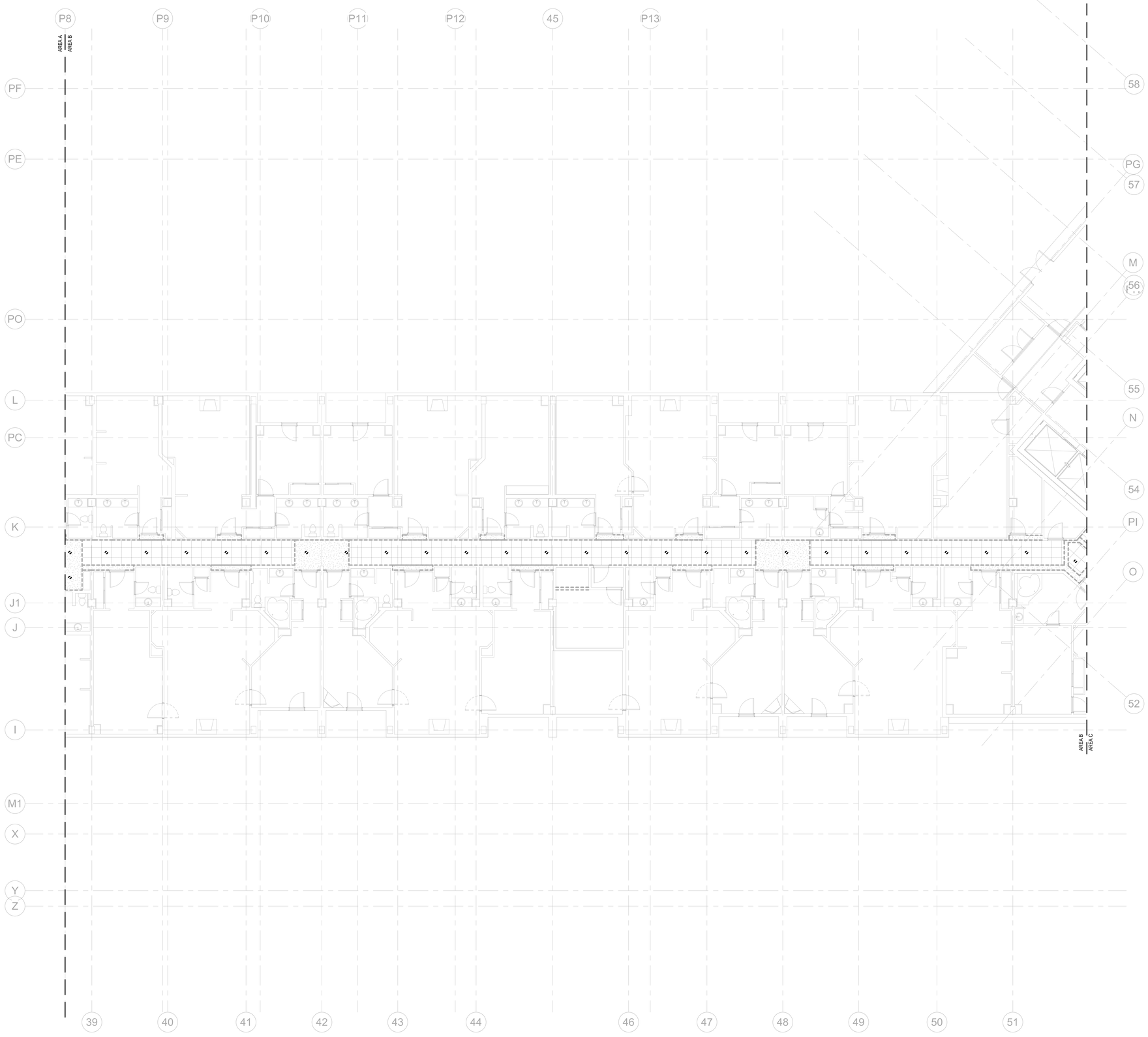
ISSUE	DATE
FOR PERMIT	06/02/2023

PROJECT #: 21056
DESIGNED: NWS
CHECKED: RCC

LIGHTING
DEMOLITION PLAN
LEVEL 2 - AREA A

REGISTERED PROFESSIONAL ENGINEER
35656
06.01.23
PROFESSIONAL ENGINEER

ED100



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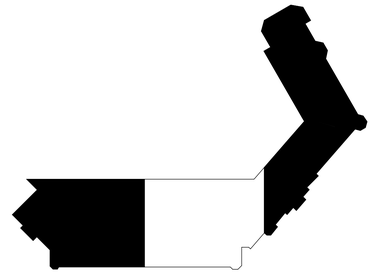
LIGHTING DEMOLITION PLAN LEVEL 2 - AREA B
SCALE: 1/8" = 1'-0"



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PIPING SYSTEM REPLACEMENT
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STEAMBOAT SPRINGS, CO 80487

ISSUE	DATE
FOR PERMIT	06/02/2023

PROJECT #: 21056
DESIGNED: NWS
CHECKED: RCC

LIGHTING
DEMOLITION PLAN
LEVEL 2 - AREA B

COLORADO REGISTERED PROFESSIONAL ENGINEER
35656
06.01.23

ED101

GENERAL NOTES:

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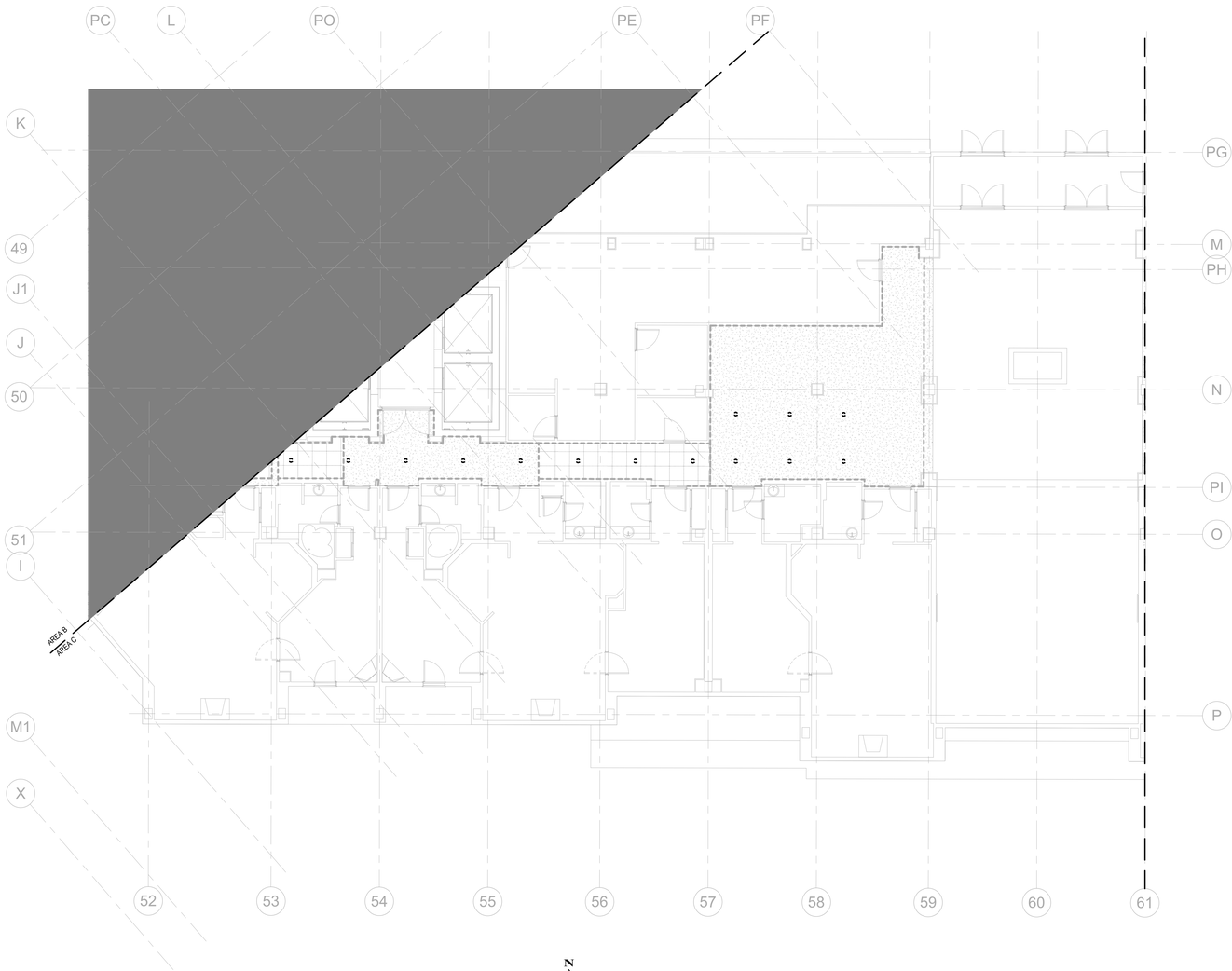

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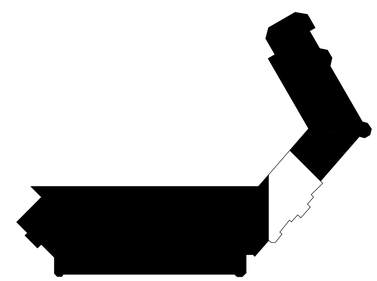
LIGHTING DEMOLITION PLAN LEVEL 2 - AREA C
SCALE: 1/8" = 1'-0"



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REVIEWED FOR CODE COMPLIANCE
03/21/2024

STEAMBOAT GRAND
PIPING SYSTEM REPLACEMENT
2300 MT WERNER CIR,
STEAMBOAT SPRINGS, CO 80487

ISSUE	DATE
FOR PERMIT	06/02/2023

PROJECT #: 21056
DESIGNED: NWS
CHECKED: RCC

LIGHTING
DEMOLITION PLAN
LEVEL 2 - AREA C

ED102

GENERAL NOTES:

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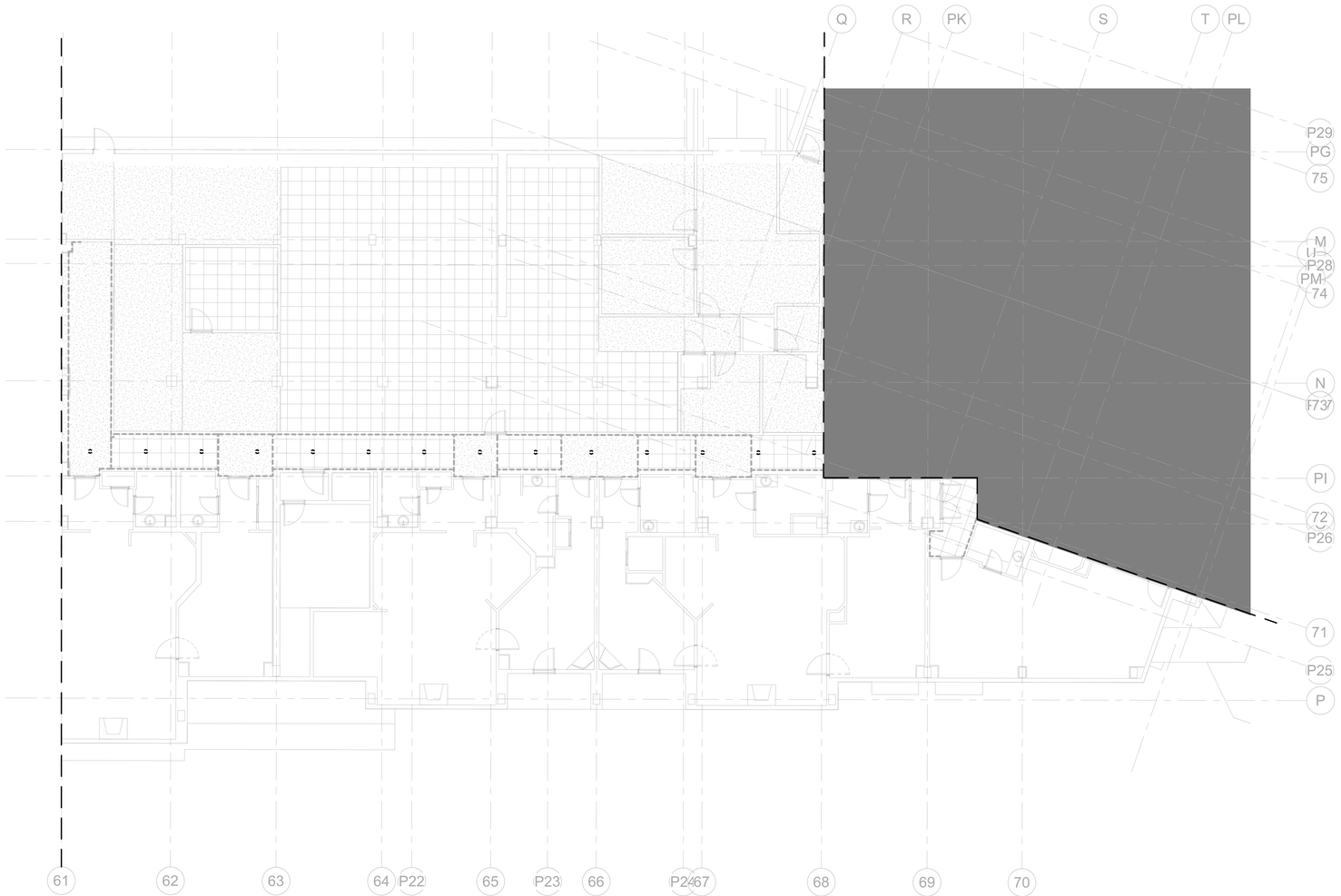

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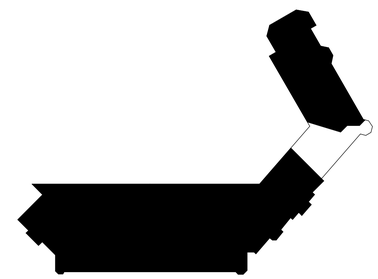
LIGHTING DEMOLITION PLAN LEVEL 2 - AREA D
SCALE: 1/8" = 1'-0"



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REVIEWED FOR CODE COMPLIANCE
03/21/2024

STEAMBOAT GRAND
PIPING SYSTEM REPLACEMENT
2300 MT WERNER CIR,
STEAMBOAT SPRINGS, CO 80487

ISSUE	DATE
FOR PERMIT	06/02/2023

PROJECT #: 21056
DESIGNED: NWS
CHECKED: RCC

LIGHTING
DEMOLITION PLAN
LEVEL 2 - AREA D

REGISTERED PROFESSIONAL ENGINEER
STATE OF COLORADO
RCC
35656
06.01.23

ED103

GENERAL NOTES:

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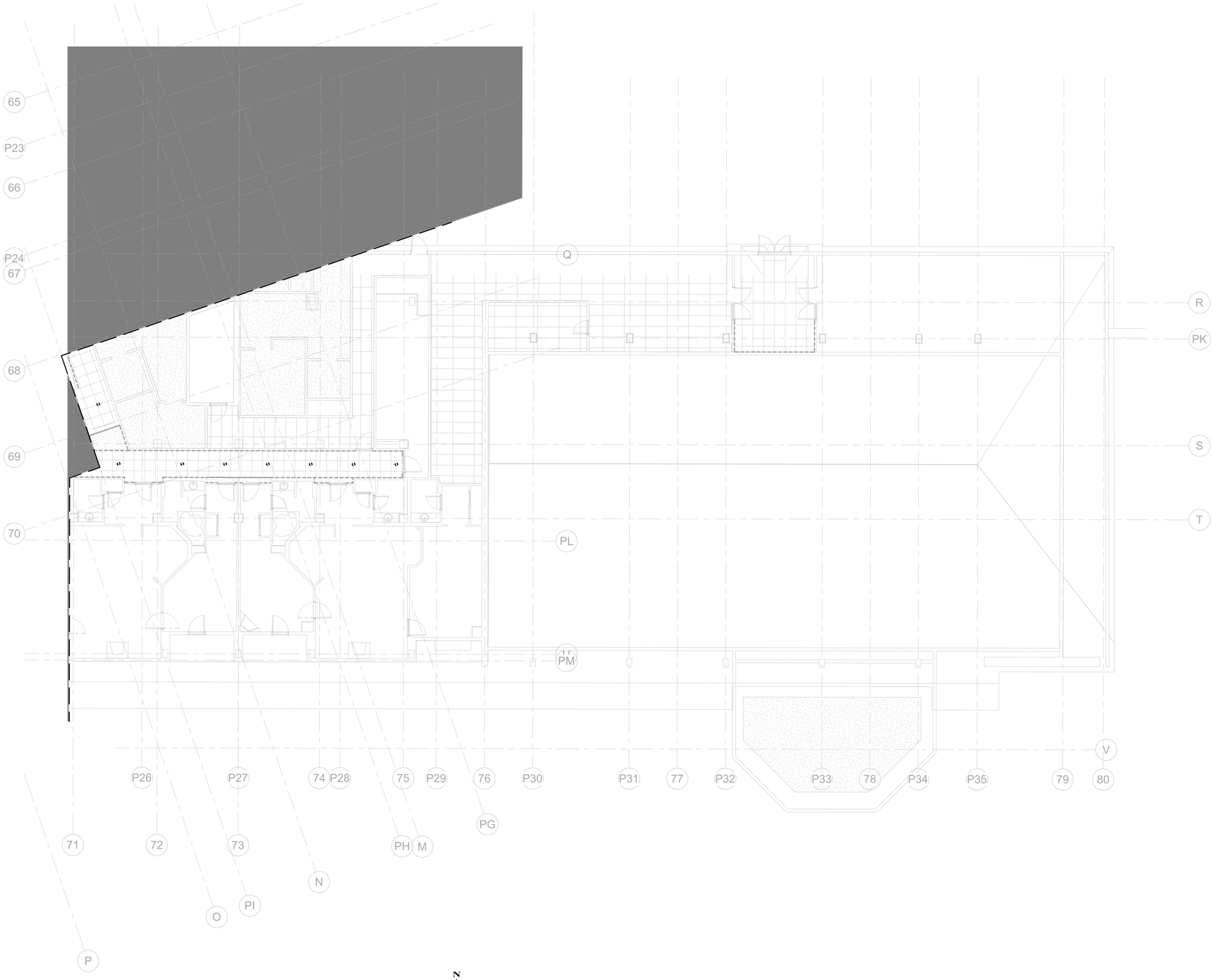

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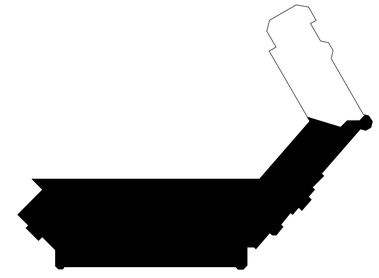
LIGHTING DEMOLITION PLAN LEVEL 2 - AREA E
SCALE: 1/8" = 1'-0"



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DAVIS PARTNERSHIP ARCHITECTS
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Denver, CO 80205
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REVIEWED FOR CODE COMPLIANCE
03/21/2024

STEAMBOAT GRAND
PIPING SYSTEM REPLACEMENT
2300 MT WERNER CIR,
STEAMBOAT SPRINGS, CO 80487

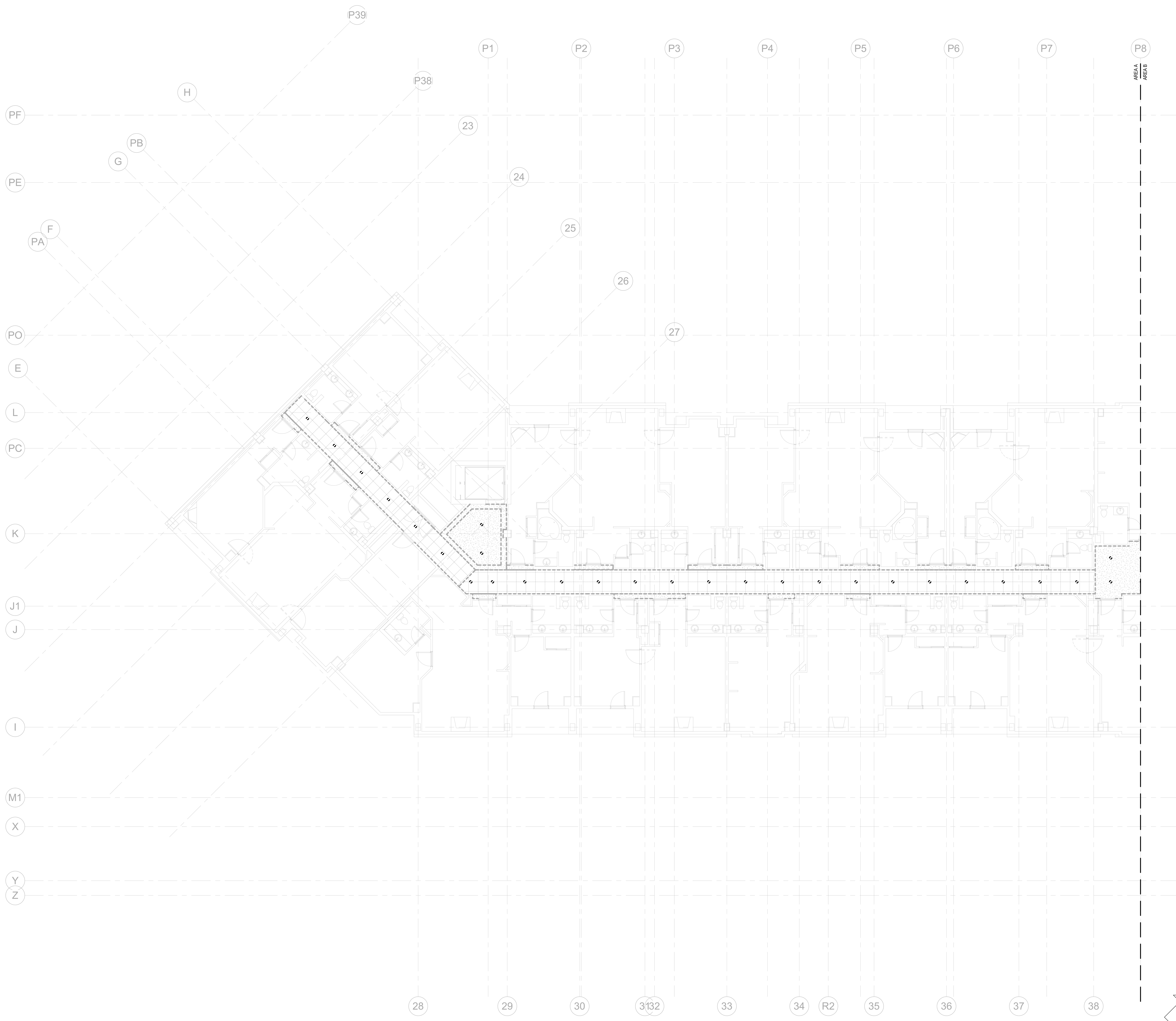
ISSUE	DATE
FOR PERMIT	06/02/2023

PROJECT #: 21056
DESIGNED: Designer
CHECKED: Checker

LIGHTING
DEMOLITION PLAN
LEVEL 2 - AREA E

COLORADO REGISTERED PE
35656
06.01.23
PROFESSIONAL ENGINEER

ED104



LIGHTING DEMOLITION PLAN LEVEL 5 - AREA A

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

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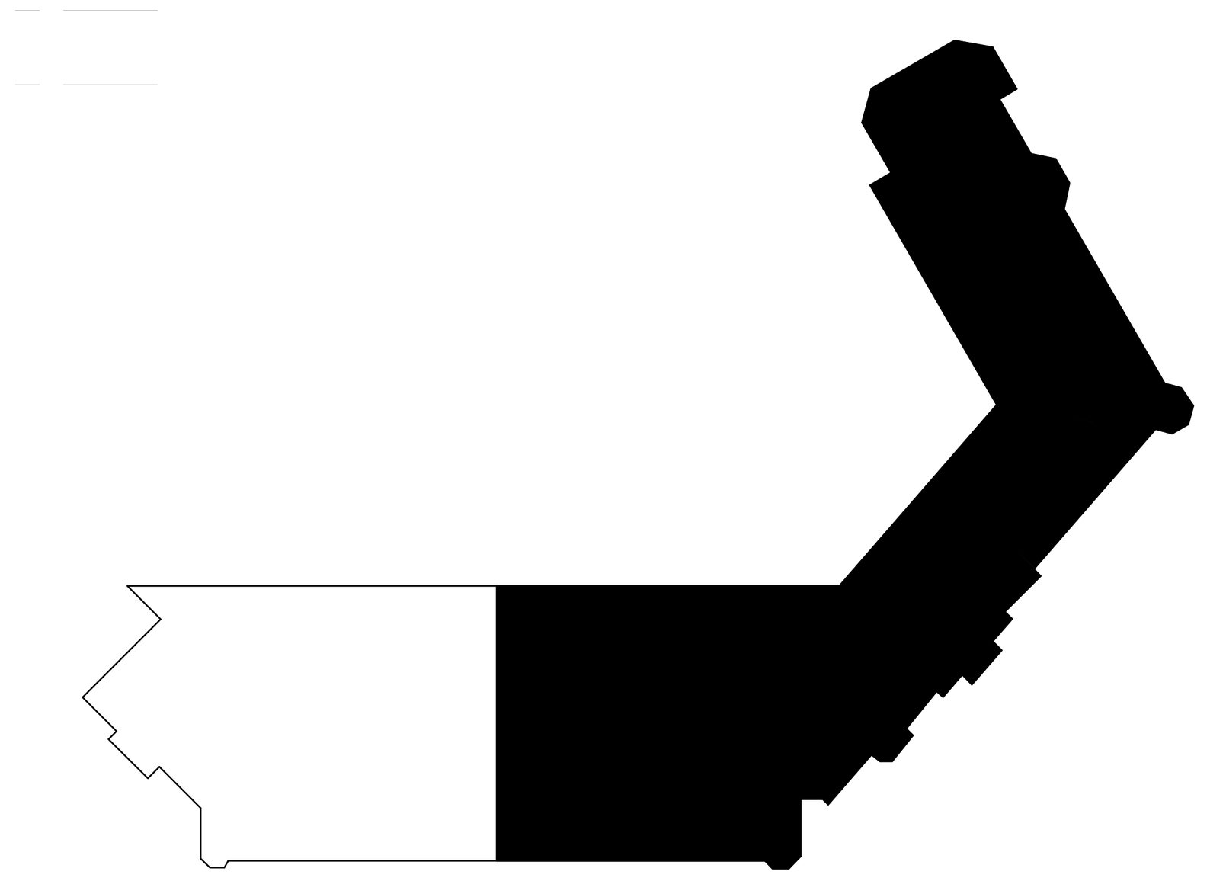

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ISSUE	DATE
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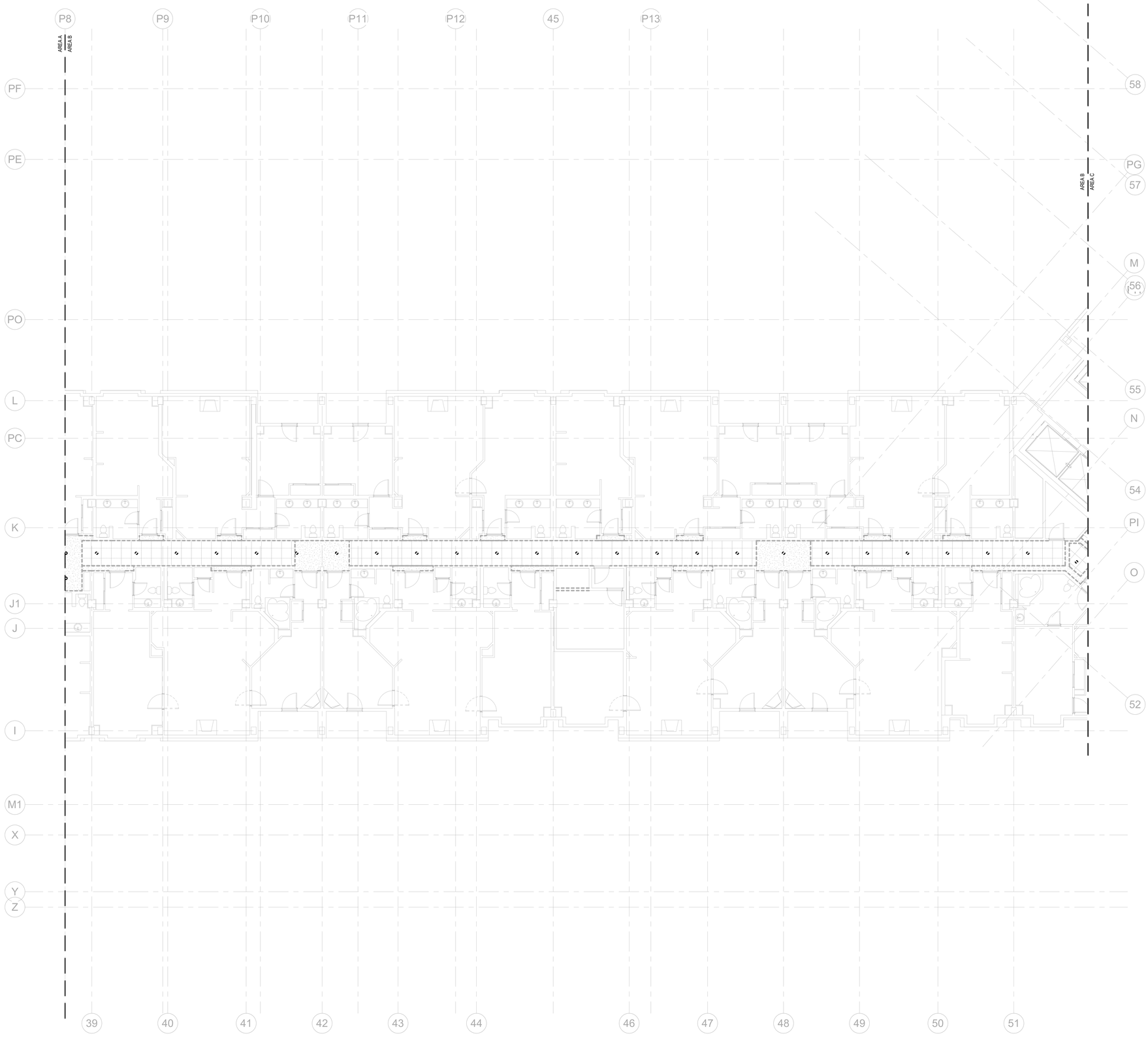
PROJECT #: 21056
DESIGNED: Designer
CHECKED: Checker

LIGHTING DEMOLITION PLAN LEVEL 5 - AREA A

35656
06.01.23

ED105



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LIGHTING DEMOLITION PLAN LEVEL 5 - AREA B

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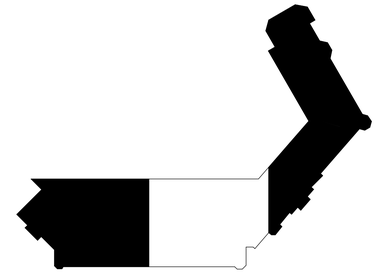

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STEAMBOAT SPRINGS, CO 80487

ISSUE	DATE
FOR PERMIT	06/02/2023

PROJECT #: 21056
DESIGNED: Designer
CHECKED: Checker

LIGHTING
DEMOLITION PLAN
LEVEL 5 - AREA B

COLORADO REGISTERED PROFESSIONAL ENGINEER
35656
06.01.23

ED106

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3. DEMOLITION OR ABANDONING ANY ELECTRICAL AND COMMUNICATIONS CONDUIT, WIRING, CABLING, OR DEVICE MEANS TO REMOVE IN ITS ENTIRETY. REMOVE UNUSED CONDUITS FROM CEILING SPACES IN AREAS OF WORK. ABANDONED OUTLET JUNCTION BOXES ARE TO BE REMOVED AND COVERED WITH NEW GYPSUM BOARD. ABANDONED POKE THRU OUTLETS SHALL HAVE COVER PLATES AND BE FILLED WITH FIRE RATED FOAM SEALANT TO MAINTAIN FIRE RATING OF FLOOR. RETURN UNUSED ELECTRICAL EQUIPMENT AND LIGHT FIXTURES TO BUILDING MANAGEMENT FOR STORAGE AND/OR REMOVAL FROM SITE AS DIRECTED BY OWNERS.
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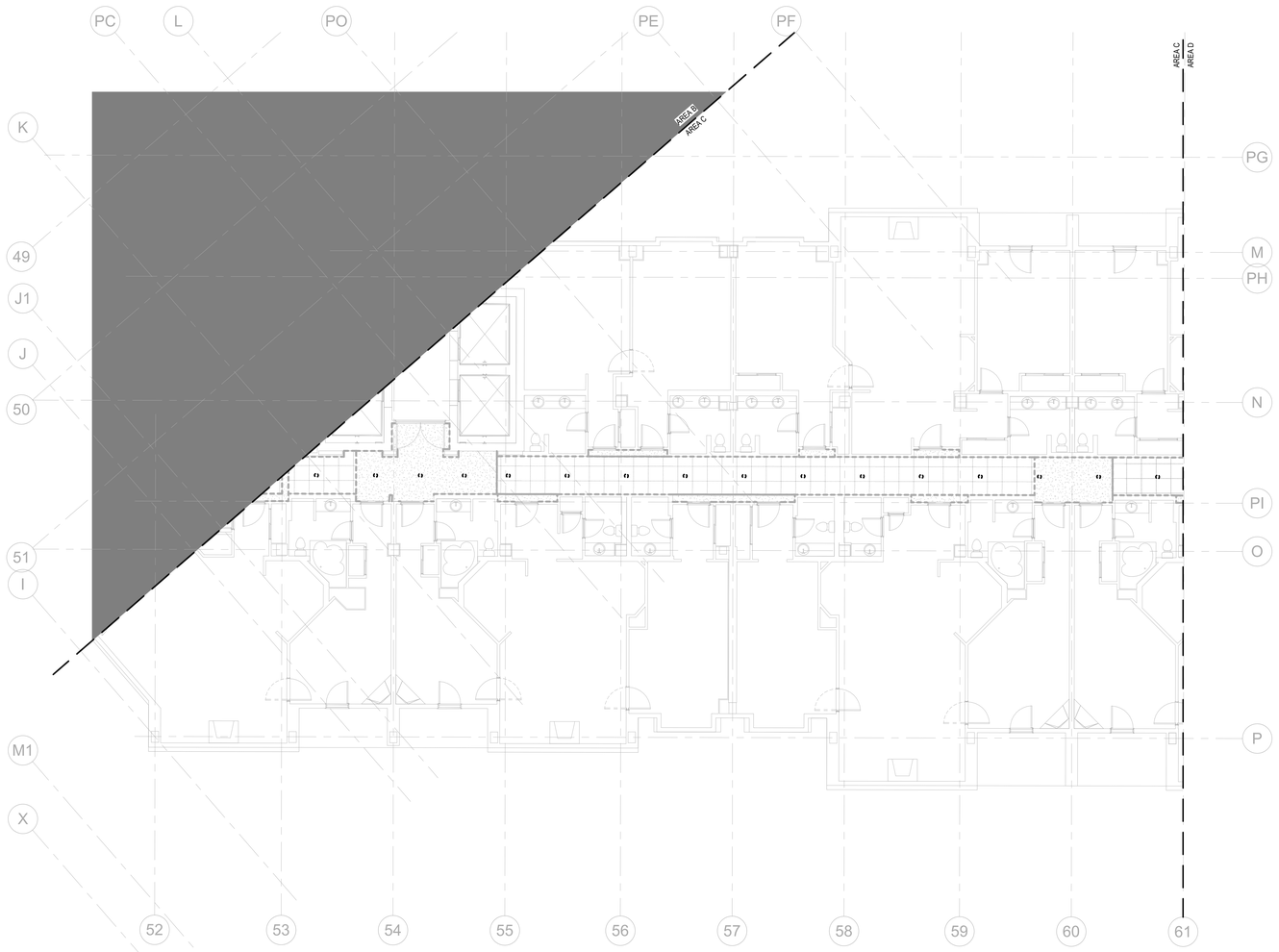
6. TURN OFF ALL UNUSED BREAKERS AND INDICATE "SPARE" ON UPDATED PANEL INDEXES.
7. LUMINAIRES SHOWN DASHED SHALL BE RELOCATED.
8. POKE THROUGH CORE LOCATIONS ARE TO BE CAPPED FROM FLOOR BELOW AND FILLED WITH CONCRETE.



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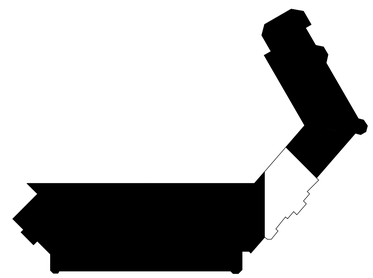
LIGHTING DEMOLITION PLAN LEVEL 5 - AREA C
SCALE: 1/8" = 1'-0"



KEY PLAN:

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info@mep-eng.com www.mep-eng.com

DAVIS PARTNERSHIP ARCHITECTS
2901 Blake Street, Suite 100
Denver, CO 80205
303.861.8555

REVIEWED FOR CODE COMPLIANCE
03/21/2024

STEAMBOAT GRAND
PIPING SYSTEM REPLACEMENT
2300 MT WERNER CIR,
STEAMBOAT SPRINGS, CO 80487

ISSUE	DATE
FOR PERMIT	06/02/2023

PROJECT #: 21056
DESIGNED: Designer
CHECKED: Checker

LIGHTING
DEMOLITION PLAN
LEVEL 5 - AREA C

COLORADO REGISTERED PROFESSIONAL ENGINEER
35656
06.01.23

ED107

GENERAL NOTES:

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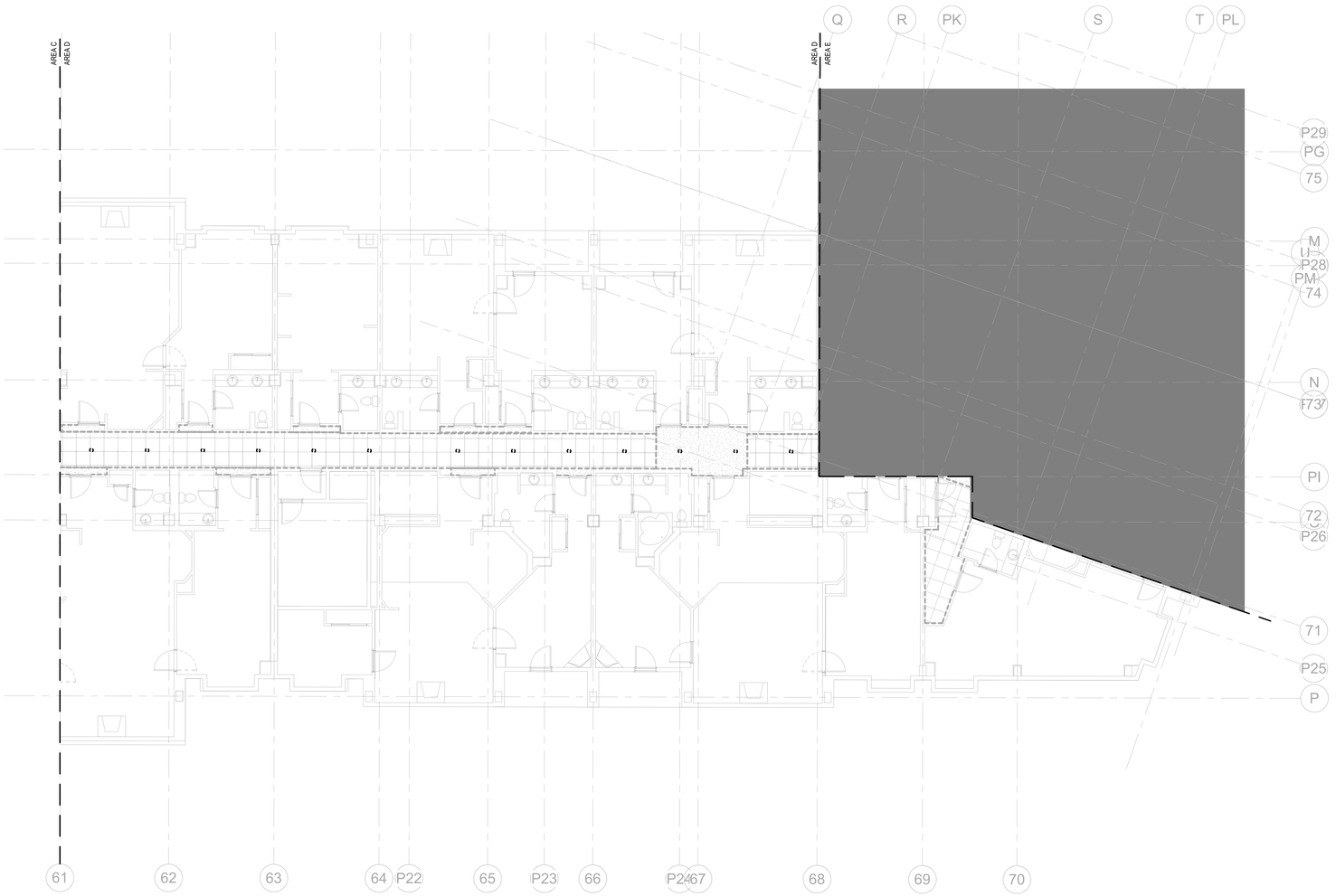

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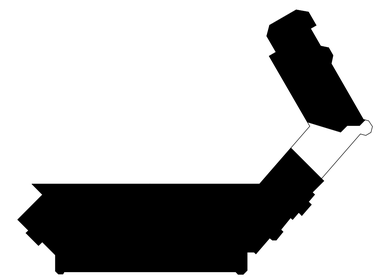
LIGHTING DEMOLITION PLAN LEVEL 5 - AREA D
SCALE: 1/8" = 1'-0"



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REVIEWED FOR CODE COMPLIANCE
03/21/2024

STEAMBOAT GRAND
PIPING SYSTEM REPLACEMENT
2300 MT WERNER CIR,
STEAMBOAT SPRINGS, CO 80487

ISSUE	DATE
FOR PERMIT	06/02/2023

PROJECT #: 21056
DESIGNED: Designer
CHECKED: Checker

LIGHTING
DEMOLITION PLAN
LEVEL 5 - AREA D

COLORADO REGISTERED PROFESSIONAL ENGINEER
35656
06.01.23

ED108

GENERAL NOTES:

1. DEMOLITION PLANS ARE FOR REFERENCE AND MAY NOT SHOW ALL ELECTRICAL DEVICES THAT NEED TO BE DEMOLISHED DUE TO FIELD CONDITION DURING THE ELECTRICAL SURVEY. FIELD VERIFY PRIOR TO PRICING. REFER TO ARCHITECTURAL AND MECHANICAL PLANS FOR ADDITIONAL INFORMATION PRIOR TO PRICING.
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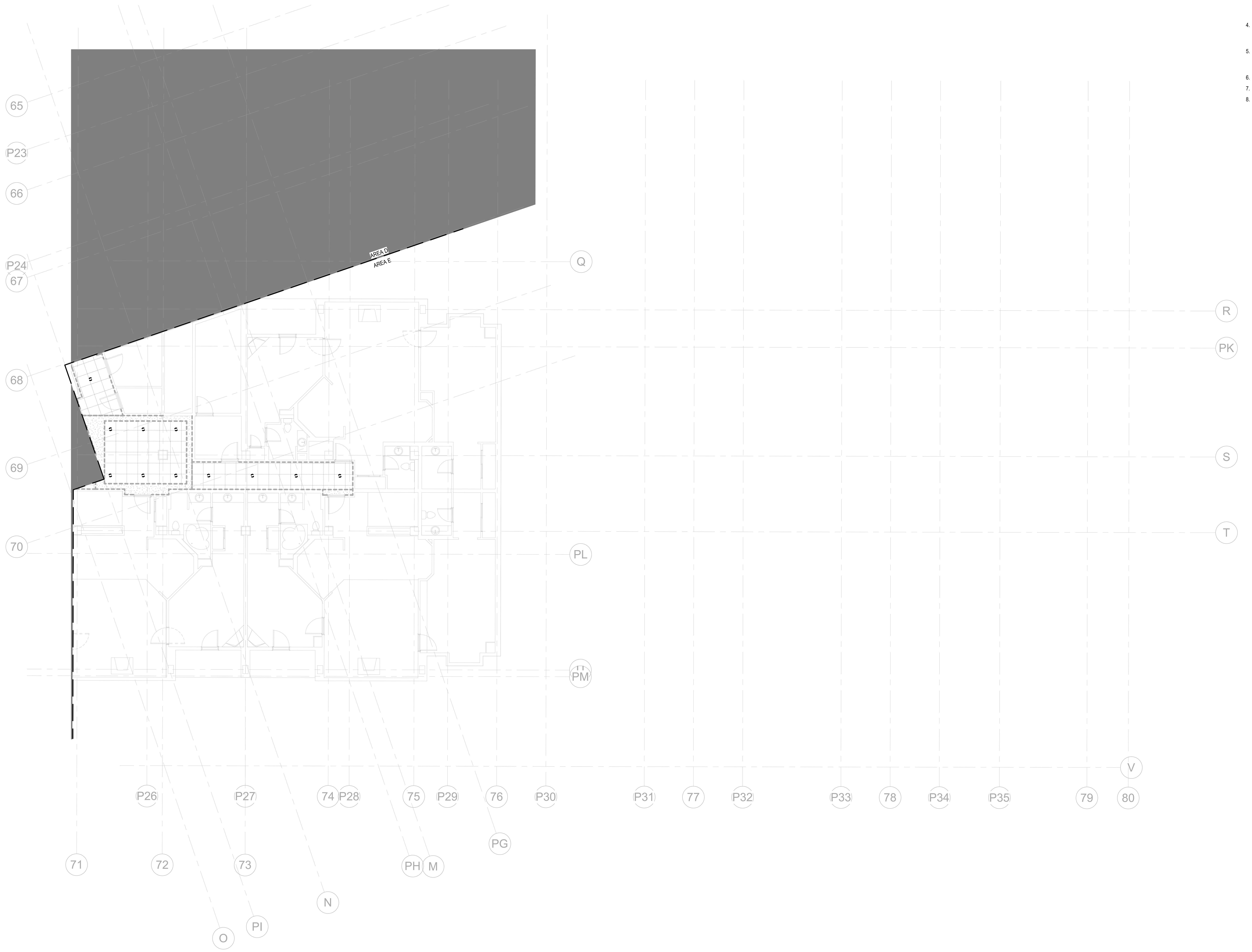

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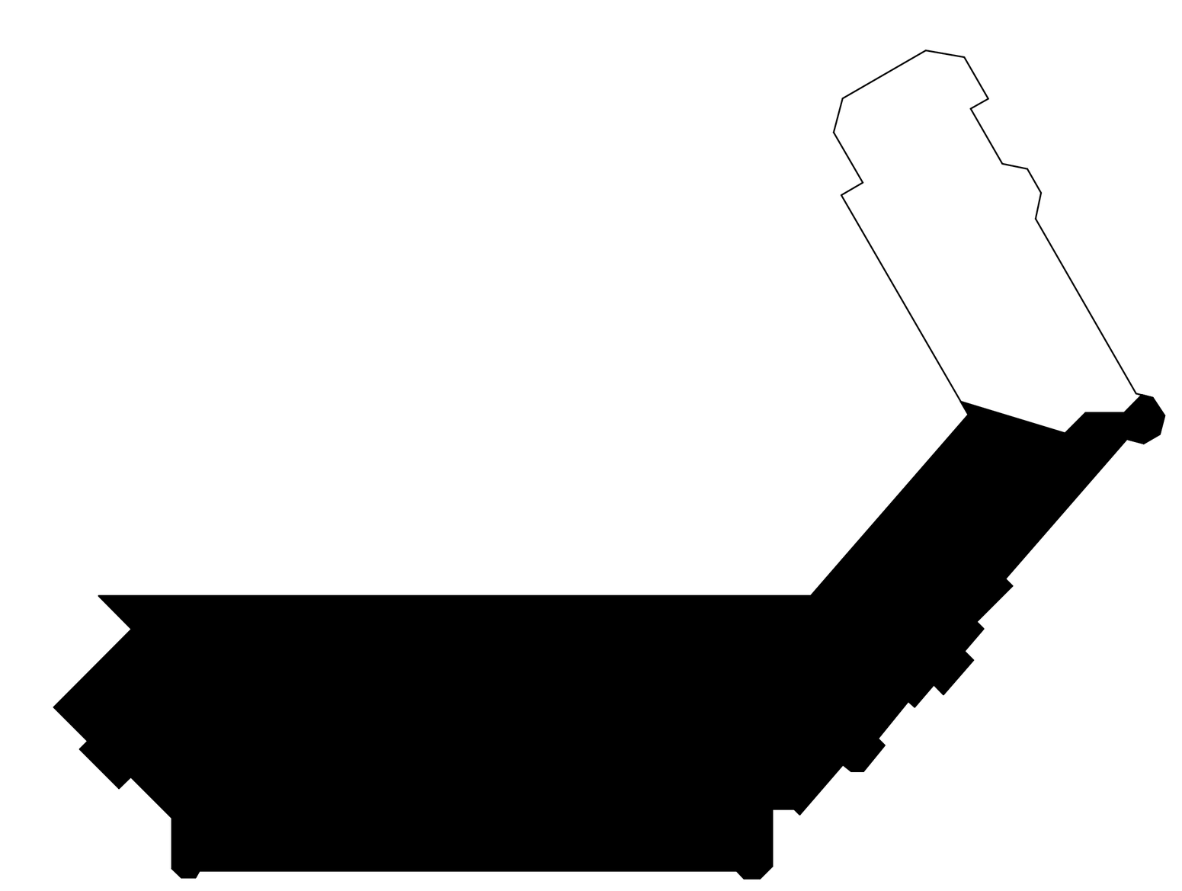
LIGHTING DEMOLITION PLAN LEVEL 5 - AREA E
SCALE: 1/8" = 1'-0"



KEY PLAN:

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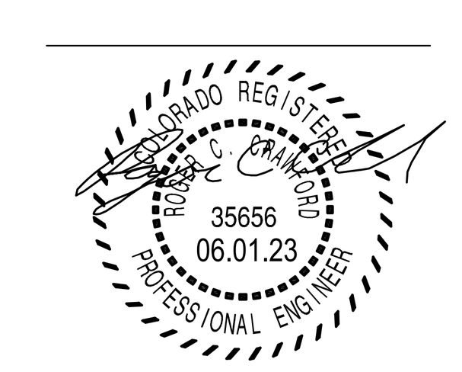
REVIEWED FOR CODE COMPLIANCE
03/21/2024

STEAMBOAT GRAND
PIPING SYSTEM REPLACEMENT
2300 MT WERNER CIR,
STEAMBOAT SPRINGS, CO 80487

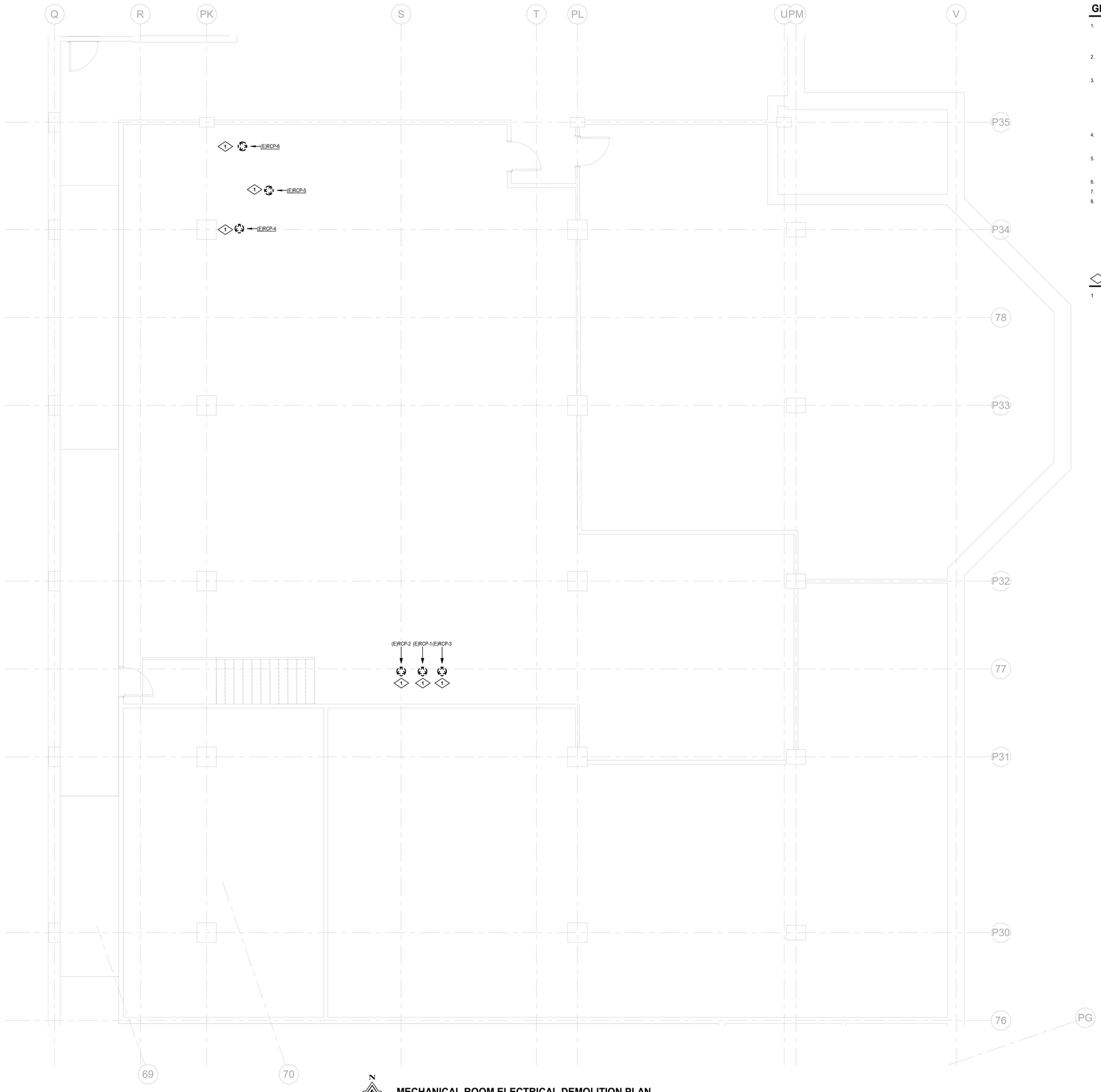
ISSUE	DATE
FOR PERMIT	06/02/2023

PROJECT #: 21056
DESIGNED: Designer
CHECKED: Checker

LIGHTING
DEMOLITION PLAN
LEVEL 5 - AREA E



ED109



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◇ DRAWING NOTES

1 DEMOLISH EXISTING CIRCULATION PUMPS AND REPLACE WITH NEW. CONFIRM EXACT CIRCUIT NUMBER FOR REUSE.

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

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REVIEWED FOR CODE COMPLIANCE
03/21/2024

STEAMBOAT GRAND
PIPING SYSTEM REPLACEMENT
2300 MT WERNER CIR,
STEAMBOAT SPRINGS, CO 80487

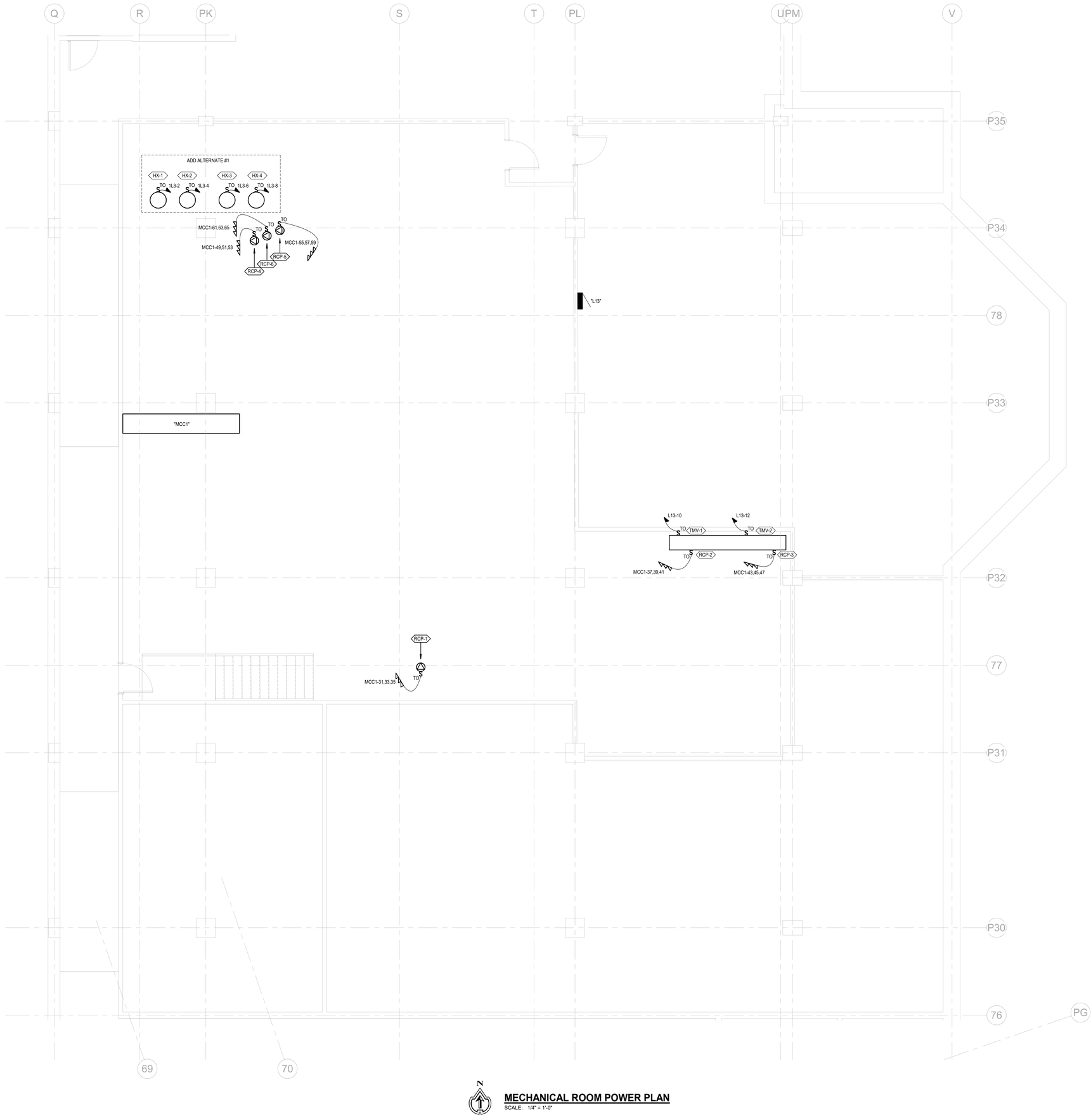
ISSUE	DATE
FOR PERMIT	06/02/2023
BID/ISSUE SET	01/10/2022

PROJECT #: 21056
DESIGNED: NWS
CHECKED: RCC

ENLARGED ELECTRICAL MECHANICAL ROOM DEMOLITION PLAN

COLORADO REGISTERED PROFESSIONAL ENGINEER
35656
06.01.23

E103



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

GENERAL NOTES:

1. ALL COMPUTER AND TELEPHONE CABLING SHALL BE PULLED BY TENANTS REPRESENTATIVE.
2. CIRCUIT NUMBERS SHOWN ARE FOR REFERENCE ONLY AND SHOW DESIGN INTENT. ACTUAL AVAILABLE CIRCUIT NUMBERS MAY DIFFER. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY.
3. ELECTRICAL CONTRACTOR TO LABEL ALL SWITCHES AND RECEPTACLES, NEW AND EXISTING WITH CIRCUIT NUMBERS AND PANEL NAME. CIRCUIT NUMBERS AND PANEL NAMES SHALL BE CLEAR AND LEGIBLE ON COVER PLATES. ELECTRICAL CONTRACTOR SHALL COORDINATE COLOR OF COVER PLATES WITH BUILDING MANAGEMENT.
4. ENSURE CIRCUIT CONTINUITY TO RECEPTACLES THAT ARE EXISTING TO REMAIN AND MAY BE AFFECTED BY DEMOLITION / REMODEL WORK.
5. FIRE ALARM IS UNDER SEPARATE DESIGN / BUILD CONTRACT COORDINATE ALL FIRE ALARM REQUIREMENTS WITH FIRE ALARM CONTRACTOR.
6. REFER TO MECHANICAL DRAWINGS FOR ANY ADDITIONAL INFORMATION AND ELECTRICAL REQUIREMENTS REGARDING ELECTRICAL EQUIPMENT.
7. PROVIDE TYPEWRITTEN UPDATED PANEL DOOR DIRECTORIES FOR ALL AFFECTED PANELS REFLECTING ALL CIRCUITS WITH THEIR ACCURATE DESTINATIONS PER N.E.C. 408.4. TURN OFF ALL UNUSED BREAKERS AND INDICATE "SPARE" IN PANEL INDEX.
8. PROVIDE STICKERS ON ALL RECEPTACLE COVERPLATES INDICATING PANEL AND CIRCUIT NUMBER INFORMATION IN TENANT SUITE.
9. ALL NEW DEVICES AND COVERPLATES ARE TO BE WHITE. ALL EXISTING TO REMAIN DEVICES AND COVERPLATES THAT ARE NOT WHITE ARE TO BE REPLACED WITH NEW BUILDING STANDARD WHITE DEVICES AND COVERPLATES.
10. PRIOR TO COMMENCING WORK, ELECTRICAL CONTRACTOR SHALL VERIFY / IDENTIFY WHICH BREAKERS ARE AVAILABLE FOR THIS BUILD-OUT. CONTACT ELECTRICAL ENGINEER IF THERE IS AN INSUFFICIENT NUMBER OF AVAILABLE BREAKERS.
11. (OPT) ALL CONDUIT IN EXPOSED CEILING TO BE RUN TIGHT TO STRUCTURE AND PAINTED TO MATCH. REFER TO ARCHITECTURAL PLAN FOR MORE INFORMATION.
12. (OPT) EXPOSED CONDUIT SHALL BE INSTALLED TIGHT TO BOTTOM OF STRUCTURE AND SHALL BE EMT CONDUIT RAN PERPENDICULAR OR PARALLEL TO BUILDING WALLS AND LINES. EXPOSED MC CONDUIT IS NOT ACCEPTABLE.

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REVIEWED FOR CODE COMPLIANCE
03/21/2024

STEAMBOAT GRAND
PIPING SYSTEM REPLACEMENT
2300 MT WERNER CIR,
STEAMBOAT SPRINGS, CO 80487

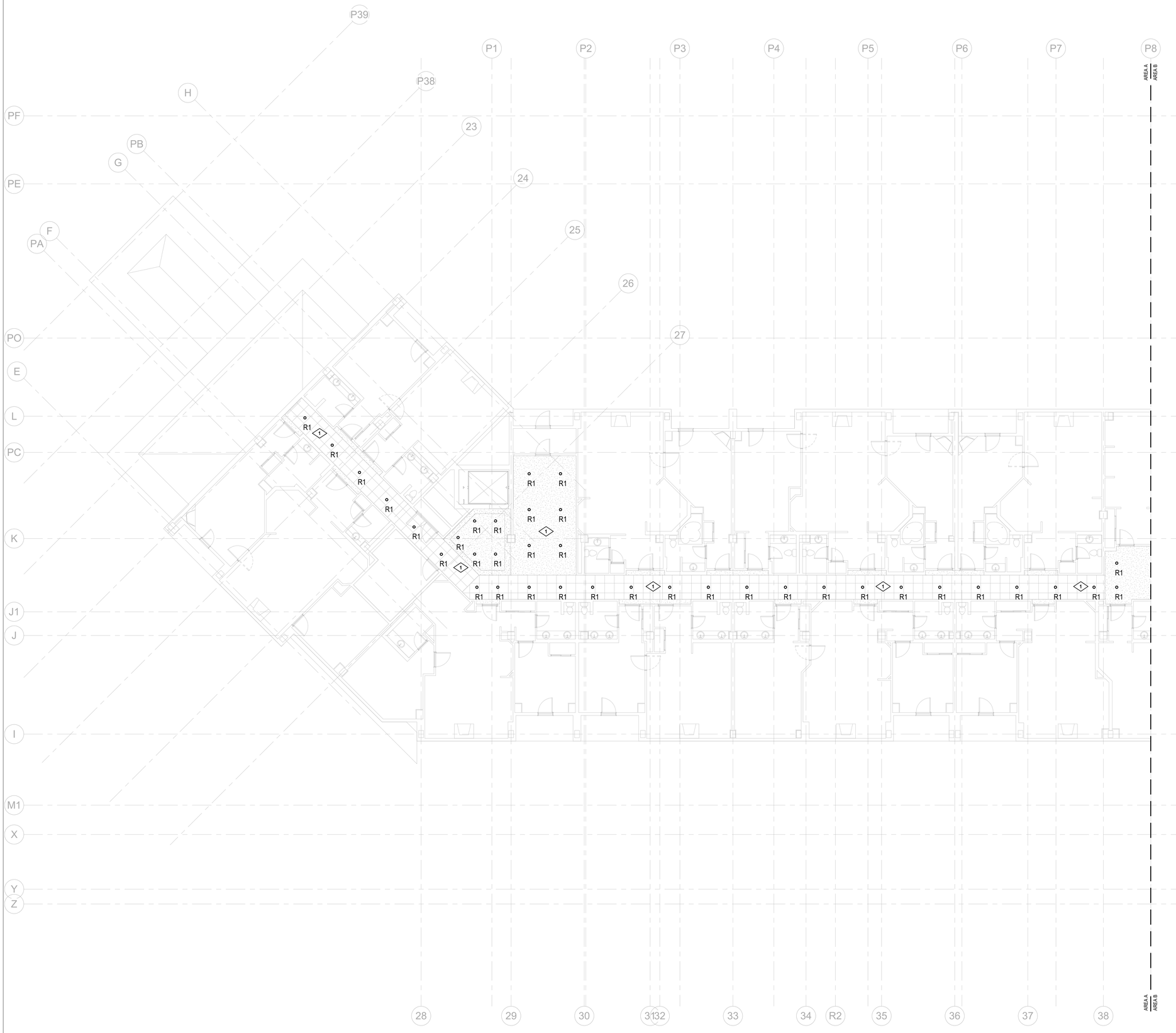
ISSUE	DATE
100% SD	12/15/2021
PRICING SET	11/01/2022
FOR PERMIT	06/02/2023
95% CD's	01/16/2023

PROJECT #: 21056
DESIGNED: NWS
CHECKED: RCC

ENLARGED ELECTRICAL MECHANICAL ROOM PLAN

REGISTERED PROFESSIONAL ENGINEER
35656
06.01.23
PROFESSIONAL ENGINEER

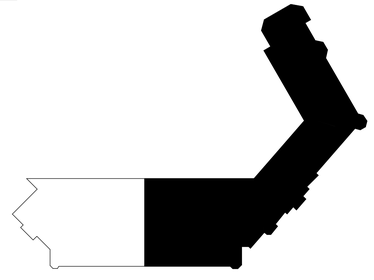
E104



DRAWING NOTES

1 ONLY LIGHTS DETAILED IN THESE AREAS ARE TO BE REPLACED. CONTROLS, EXIT SIGNAGE, FIRE ALARM DEVICES AND ALL OTHER ELECTRICAL DEVICES ARE EXISTING TO REMAIN. RECONNECT NEW REPLACEMENT FIXTURES TO EXISTING CIRCUITING AND CONTROLS.

LIGHTING PLAN LEVEL 2 - AREA A
SCALE: 1/8" = 1'-0"



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REVIEWED FOR CODE COMPLIANCE
03/21/2024

STEAMBOAT GRAND
PIPING SYSTEM REPLACEMENT
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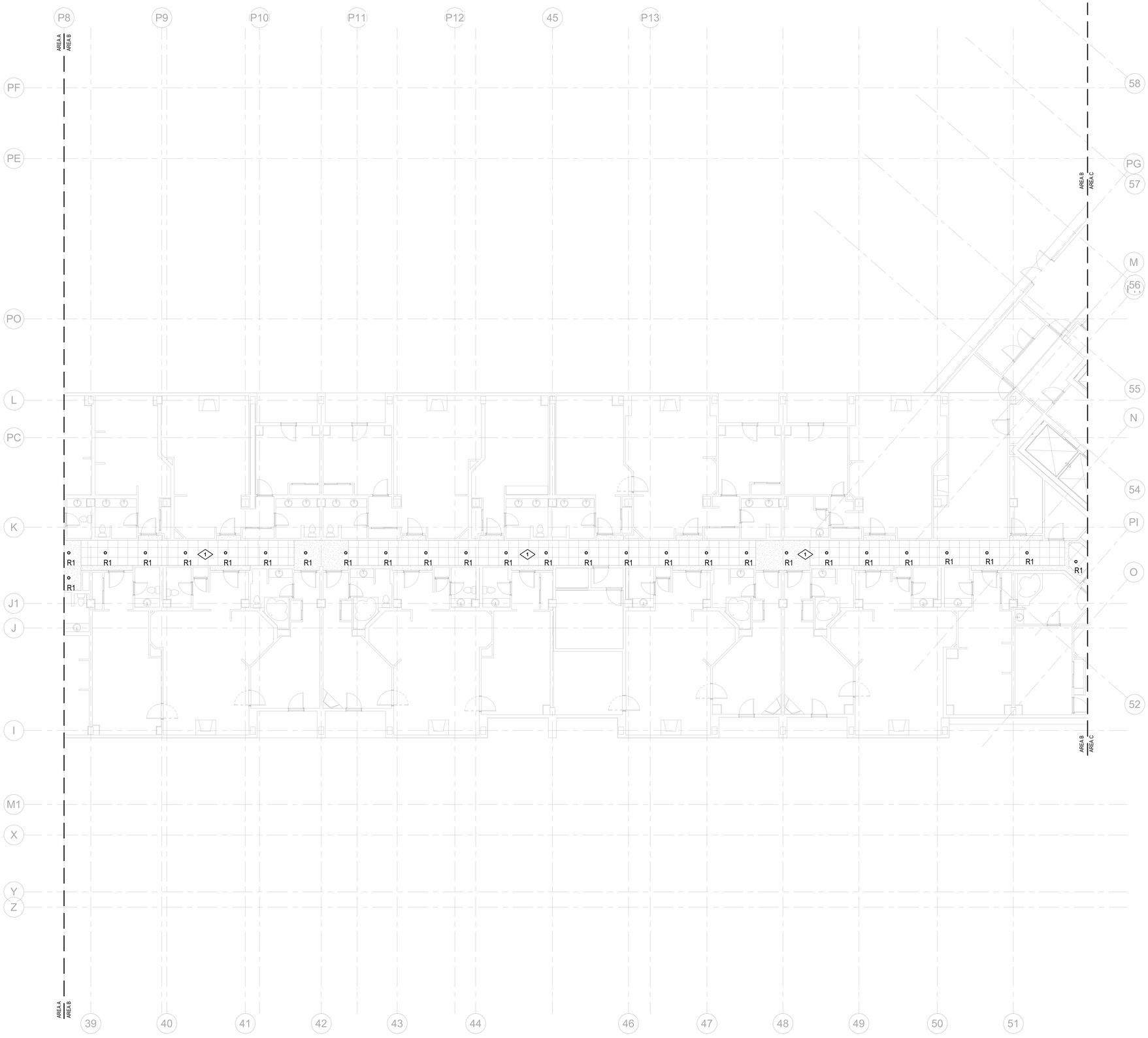
ISSUE	DATE
FOR PERMIT	06/02/2023
95% CD's	01/16/2023

PROJECT #: 21056
DESIGNED: NWS
CHECKED: RCC

LIGHTING PLAN
LEVEL 2 - AREA A

COLORADO REGISTERED PROFESSIONAL ENGINEER
35656
06.01.23
PROFESSIONAL ENGINEER

E200



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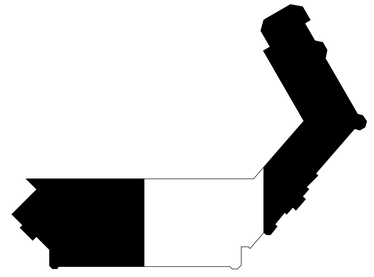
LIGHTING PLAN LEVEL 2 - AREA B
SCALE: 1/8" = 1'-0"



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95% CD's	01/16/2023

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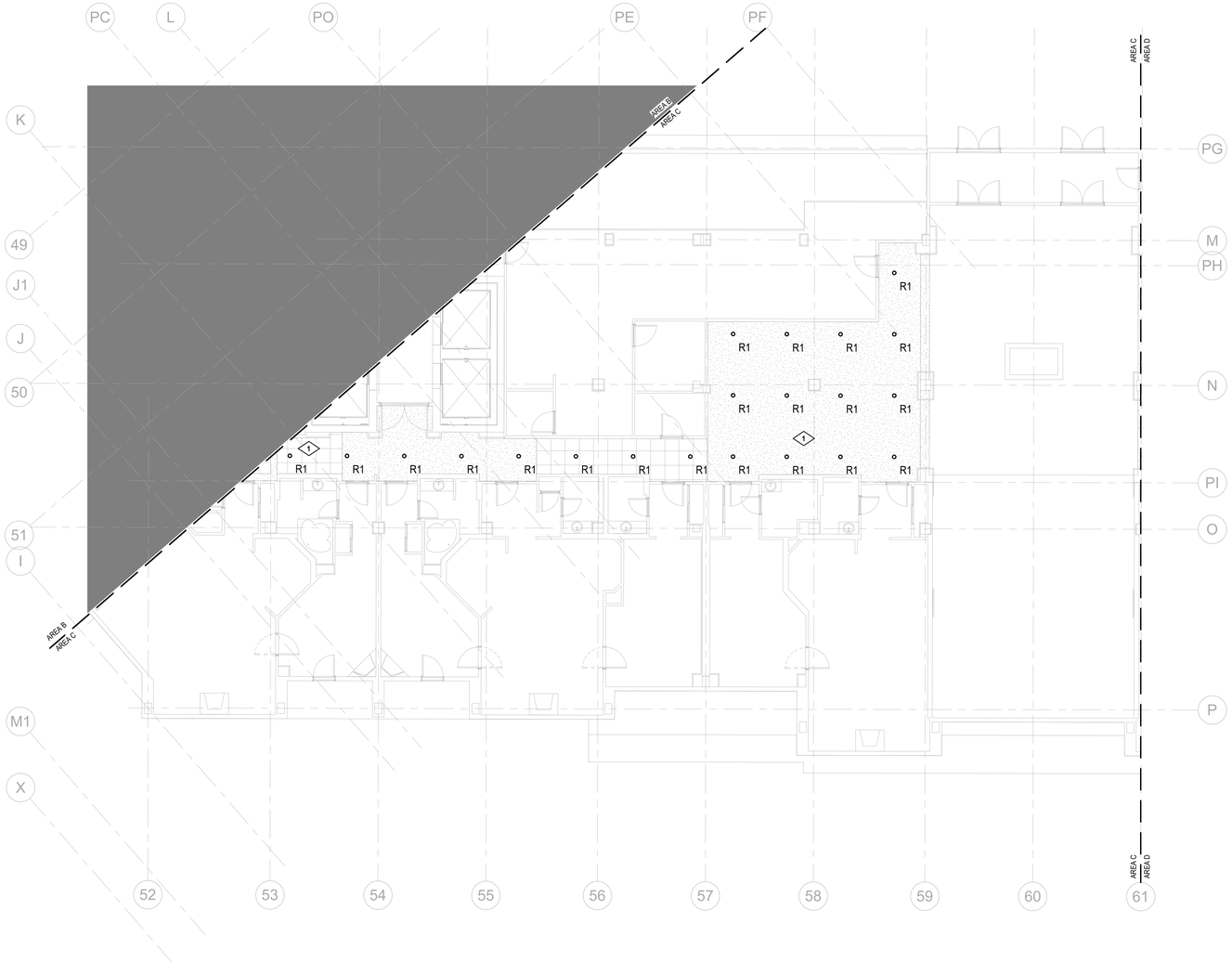
LIGHTING PLAN
LEVEL 2 - AREA B

REGISTERED PROFESSIONAL ENGINEER
35656
06.01.23
COLORADO

E201



N

LIGHTING PLAN LEVEL 2 - AREA C

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

DRAWING NOTES

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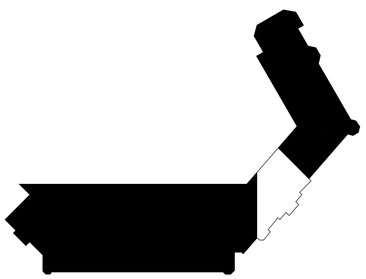

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FOR PERMIT	06/02/2023
95% CD's	01/16/2023

PROJECT #: 21056
DESIGNED: NWS
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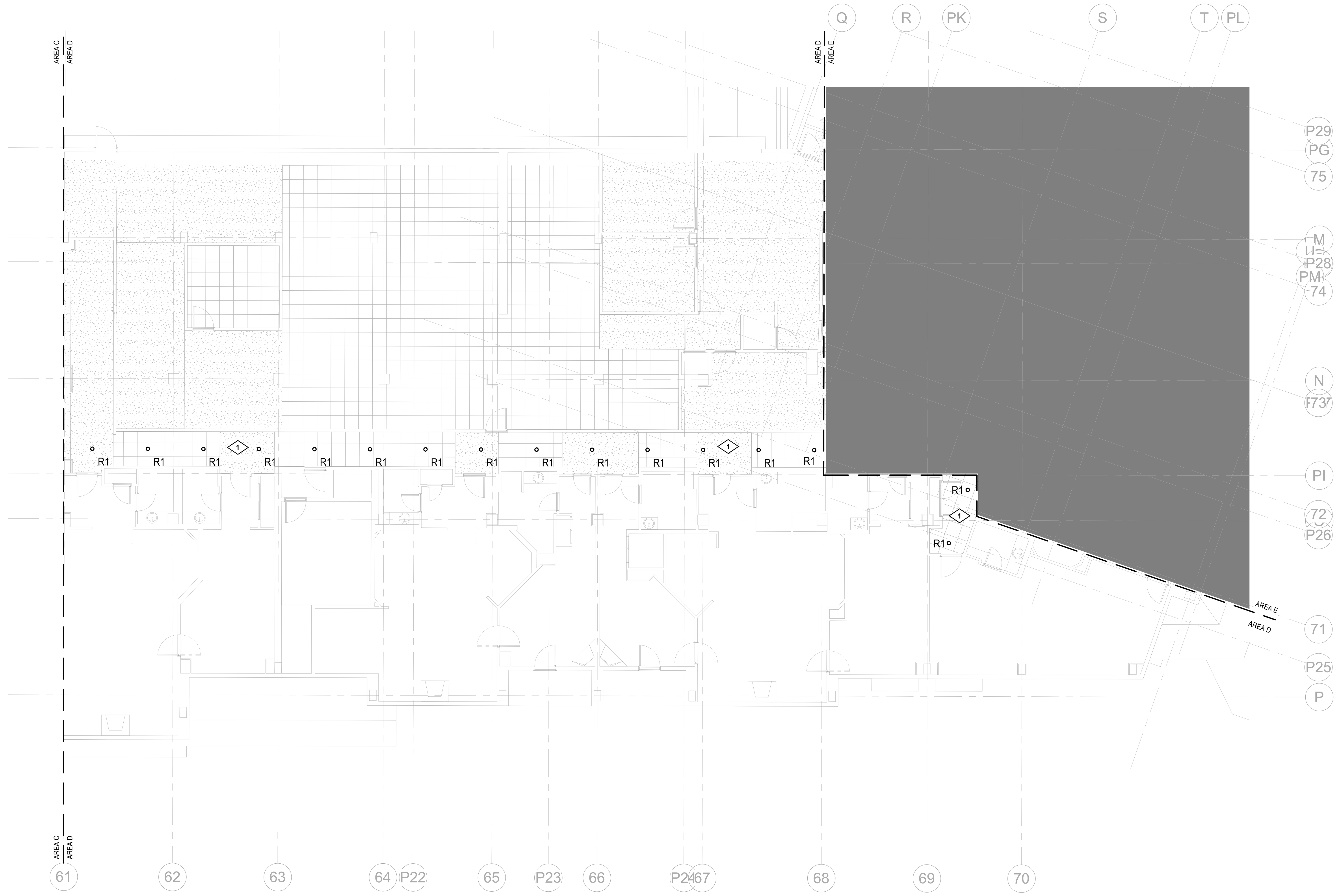
LIGHTING PLAN
LEVEL 2 - AREA C

E202



N

LIGHTING PLAN LEVEL 2 - AREA D

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

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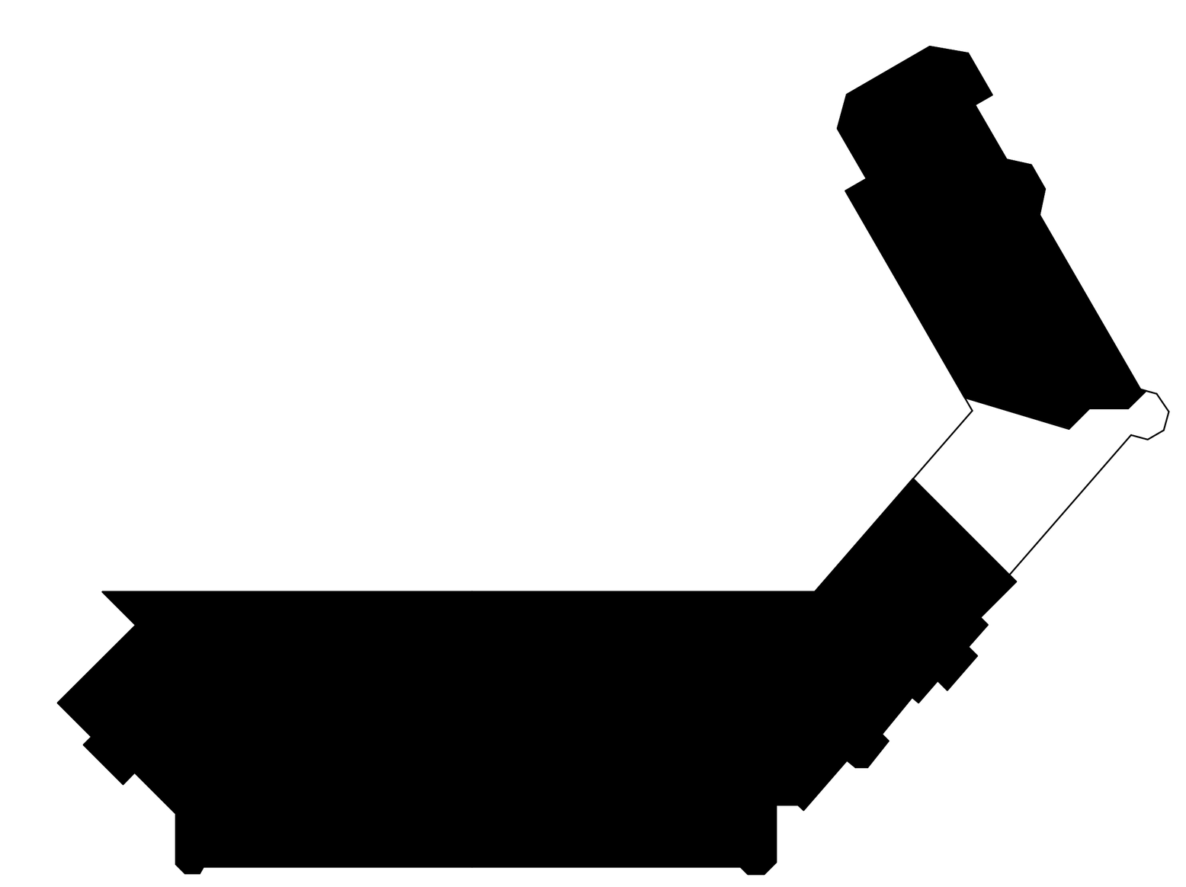

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Buffalo, WY ○ Carbondale, CO ○ Golden, CO ○ Loveland, CO

REVIEWED FOR CODE COMPLIANCE
03/21/2024

STEAMBOAT GRAND
PIPING SYSTEM REPLACEMENT
2300 MT WERNER CIR,
STEAMBOAT SPRINGS, CO 80487

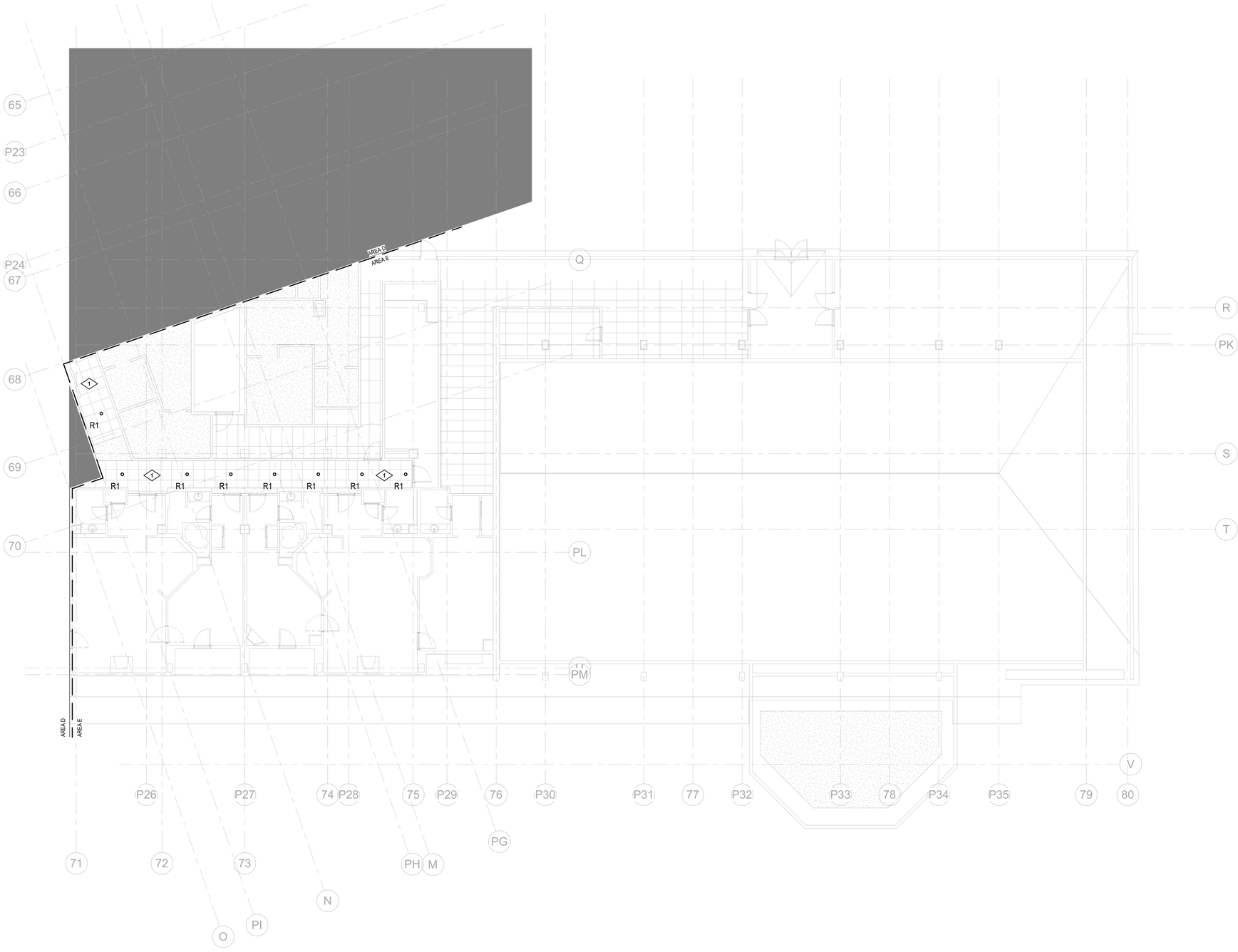
ISSUE	DATE
FOR PERMIT	06/02/2023
95% CD's	01/16/2023

PROJECT #: 21056
DESIGNED: NWS
CHECKED: RCC

LIGHTING PLAN
LEVEL 2 - AREA D

COLORADO REGISTERED PROFESSIONAL ENGINEER 35656 06.01.23

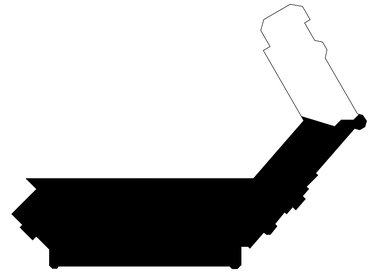
E203



DRAWING NOTES

1 ONLY LIGHTS DETAILED IN THESE AREAS ARE TO BE REPLACED. CONTROLS, EXIT SIGNAGE, FIRE ALARM DEVICES AND ALL OTHER ELECTRICAL DEVICES ARE EXISTING TO REMAIN. RECONNECT NEW REPLACEMENT FIXTURES TO EXISTING CIRCUITING AND CONTROLS.

LIGHTING PLAN LEVEL 2 - AREA E
SCALE: 1/8" = 1'-0"



KEY PLAN:

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REVIEWED FOR CODE COMPLIANCE
03/21/2024

STEAMBOAT GRAND
PIPING SYSTEM REPLACEMENT
2300 MT WERNER CIR,
STEAMBOAT SPRINGS, CO 80487

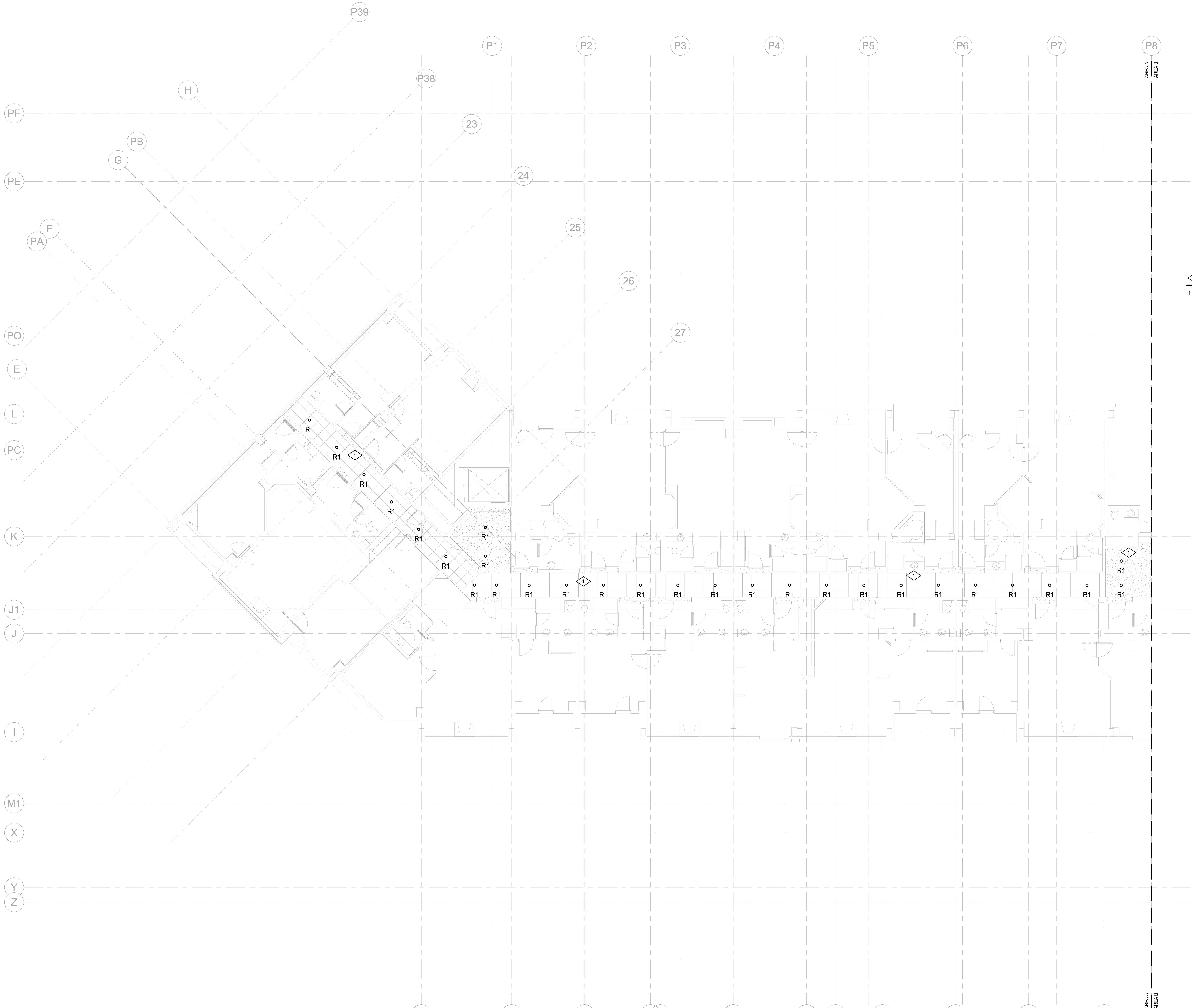
ISSUE	DATE
FOR PERMIT	06/02/2023

PROJECT #: 21056
DESIGNED: Designer
CHECKED: Checker

LIGHTING PLAN
LEVEL 2 - AREA E

COLORADO REGISTERED PE
35656
06.01.23
PROFESSIONAL ENGINEER

E204



LIGHTING PLAN LEVEL 5 - AREA A
SCALE: 1/8" = 1'-0"

DRAWING NOTES

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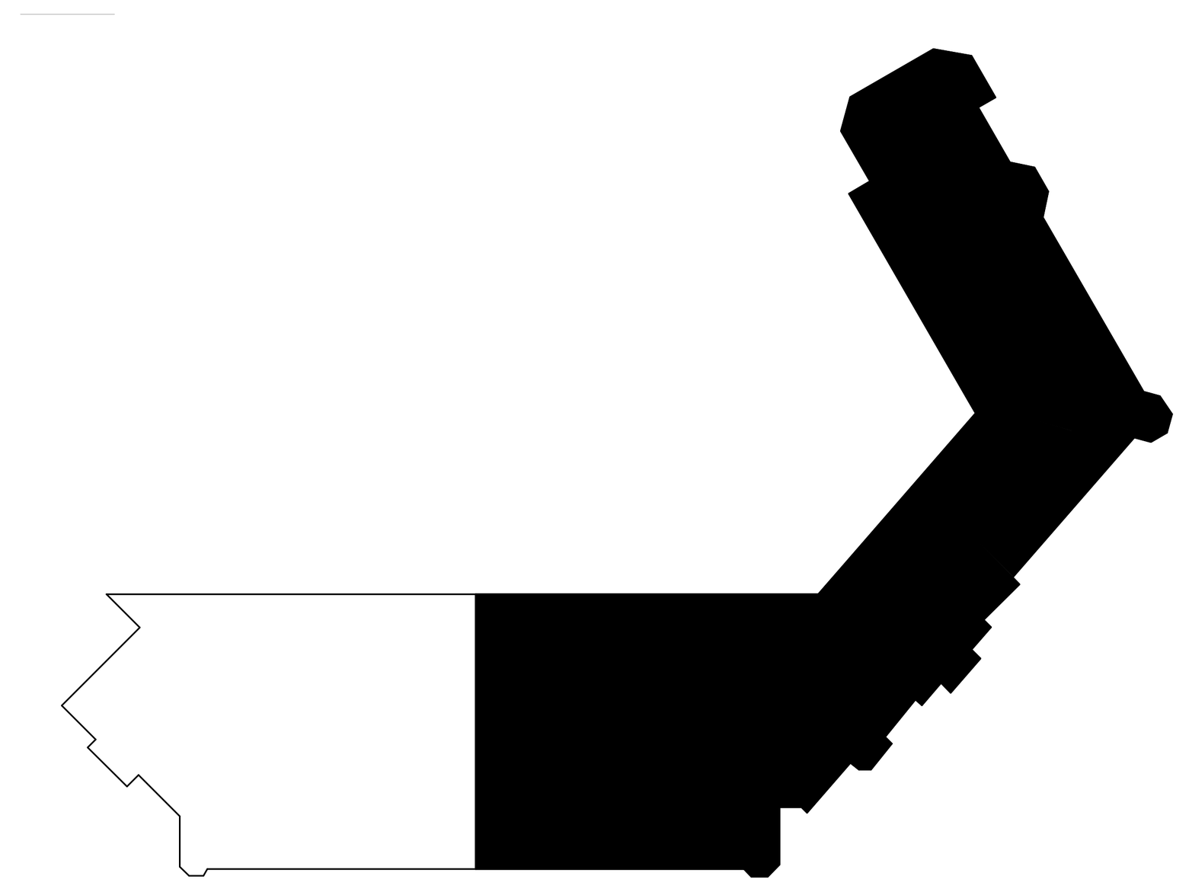
KEY PLAN:



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03/21/2024

STEAMBOAT GRAND
PIPING SYSTEM REPLACEMENT
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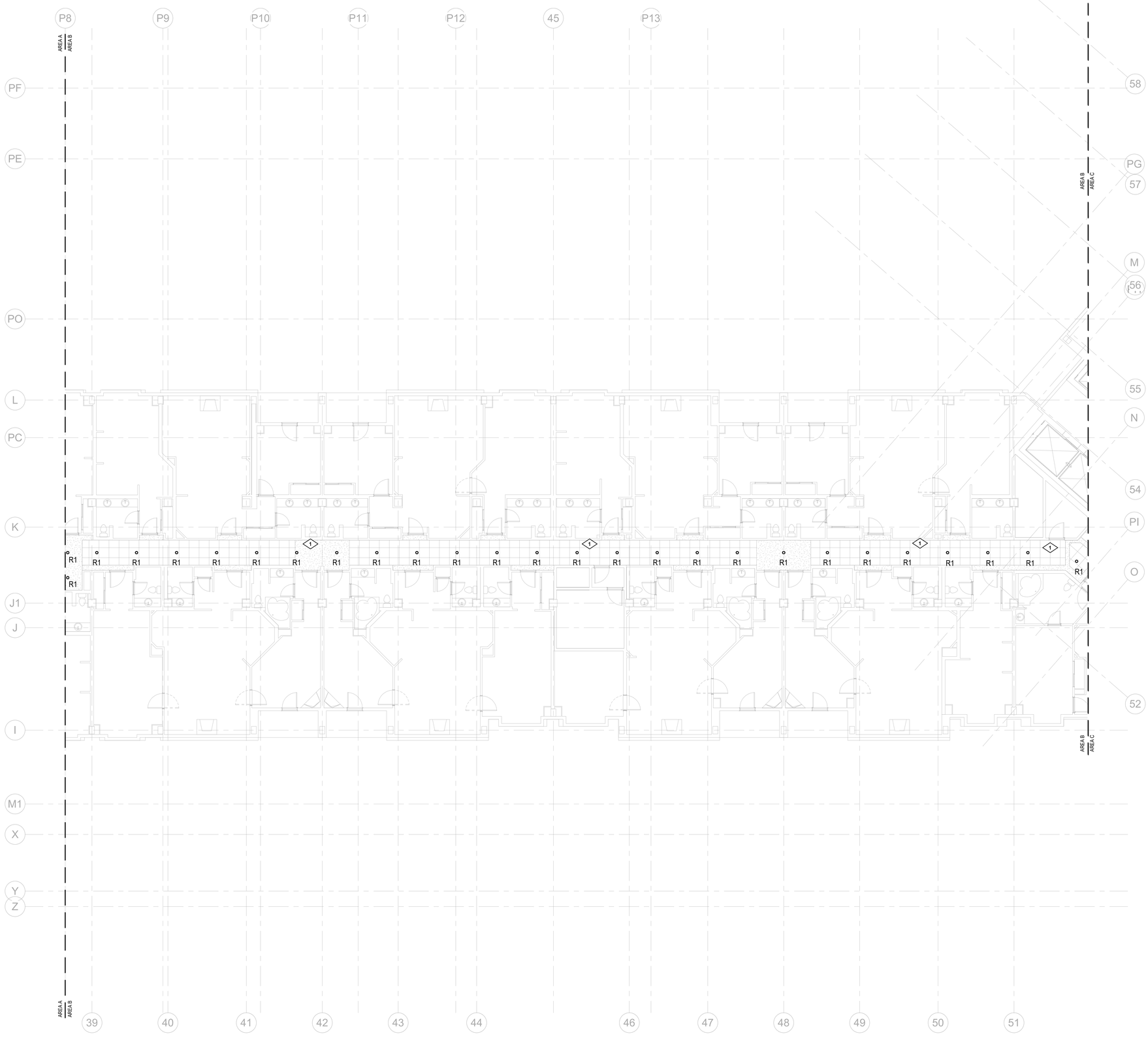
ISSUE	DATE
FOR PERMIT	06/02/2023

PROJECT #: 21056
DESIGNED: Designer
CHECKED: Checker

LIGHTING PLAN
LEVEL 5 - AREA A

E205



DRAWING NOTES

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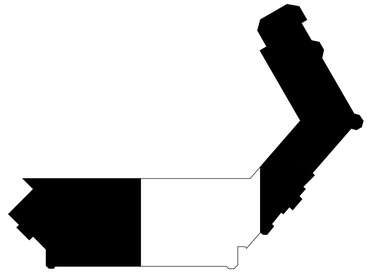
LIGHTING PLAN LEVEL 5 - AREA B
SCALE: 1/8" = 1'-0"



KEY PLAN:

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REVIEWED FOR CODE COMPLIANCE
03/21/2024

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PIPING SYSTEM REPLACEMENT
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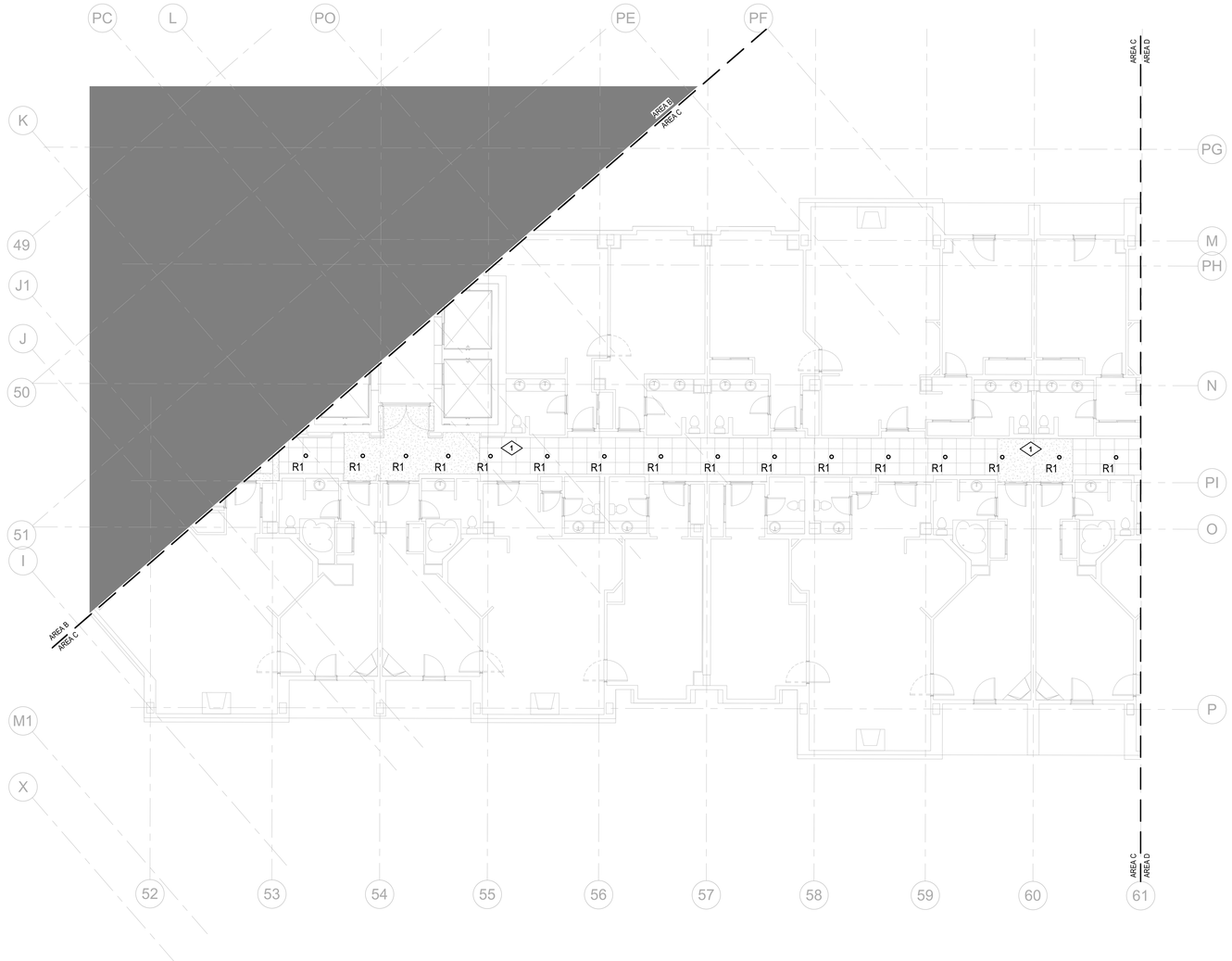
ISSUE	DATE
FOR PERMIT	06/02/2023

PROJECT #: 21056
DESIGNED: Designer
CHECKED: Checker

LIGHTING PLAN
LEVEL 5 - AREA B

REGISTERED PROFESSIONAL ENGINEER
35656
06.01.23
PROFESSIONAL ENGINEER

E206



N

LIGHTING PLAN LEVEL 5 - AREA C

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

DRAWING NOTES

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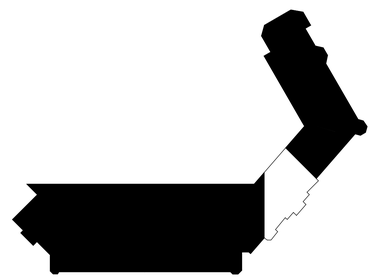

KEY PLAN:

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REVIEWED FOR CODE COMPLIANCE
03/21/2024

STEAMBOAT GRAND
PIPING SYSTEM REPLACEMENT
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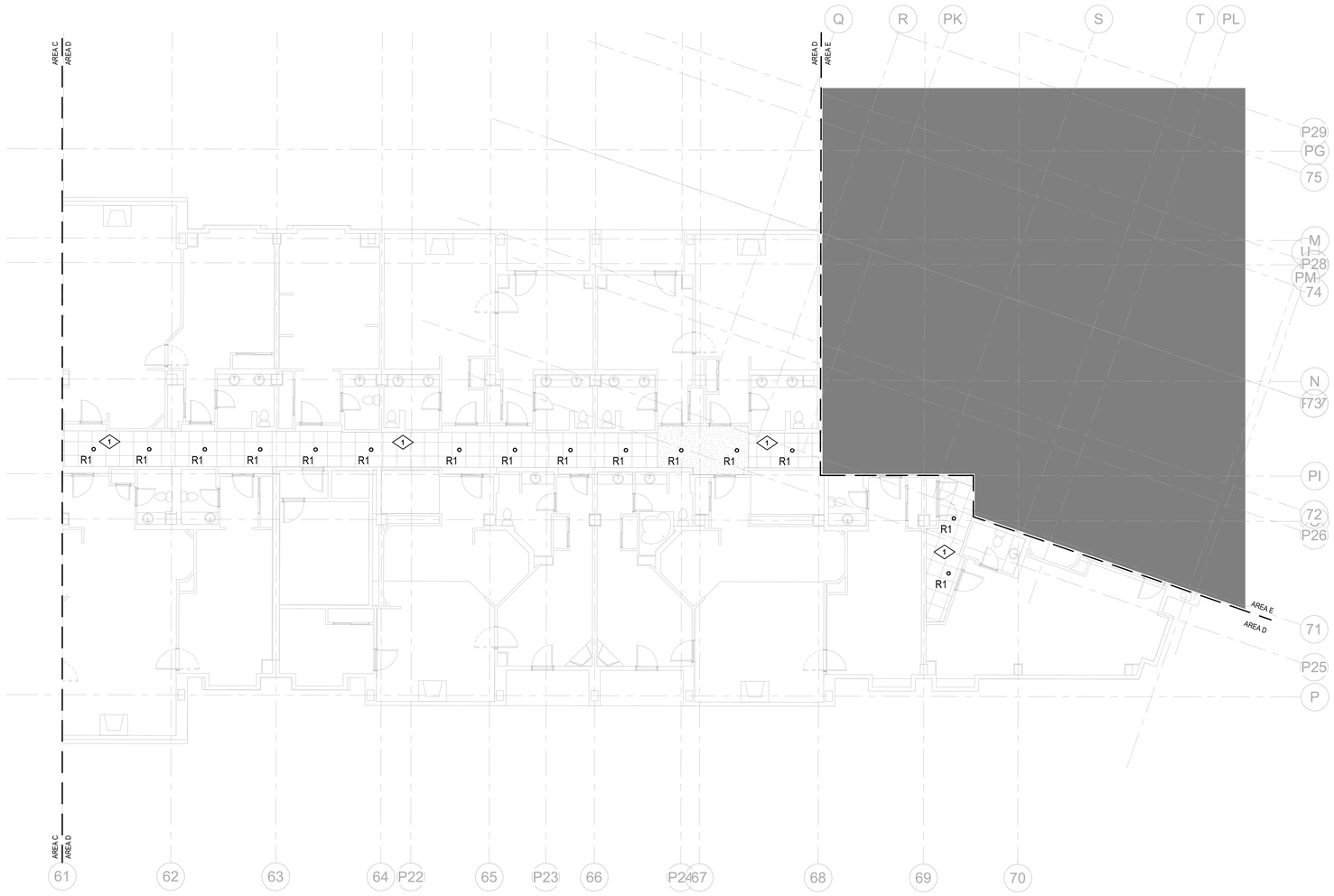
STEAMBOAT SPRINGS, CO 80487

ISSUE	DATE
FOR PERMIT	06/02/2023

PROJECT #: 21056
DESIGNED: Designer
CHECKED: Checker

LIGHTING PLAN
LEVEL 5 - AREA C

E207



N

LIGHTING PLAN LEVEL 5 - AREA D

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

DRAWING NOTES

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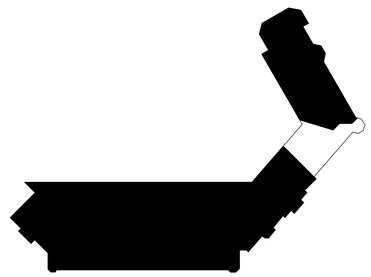

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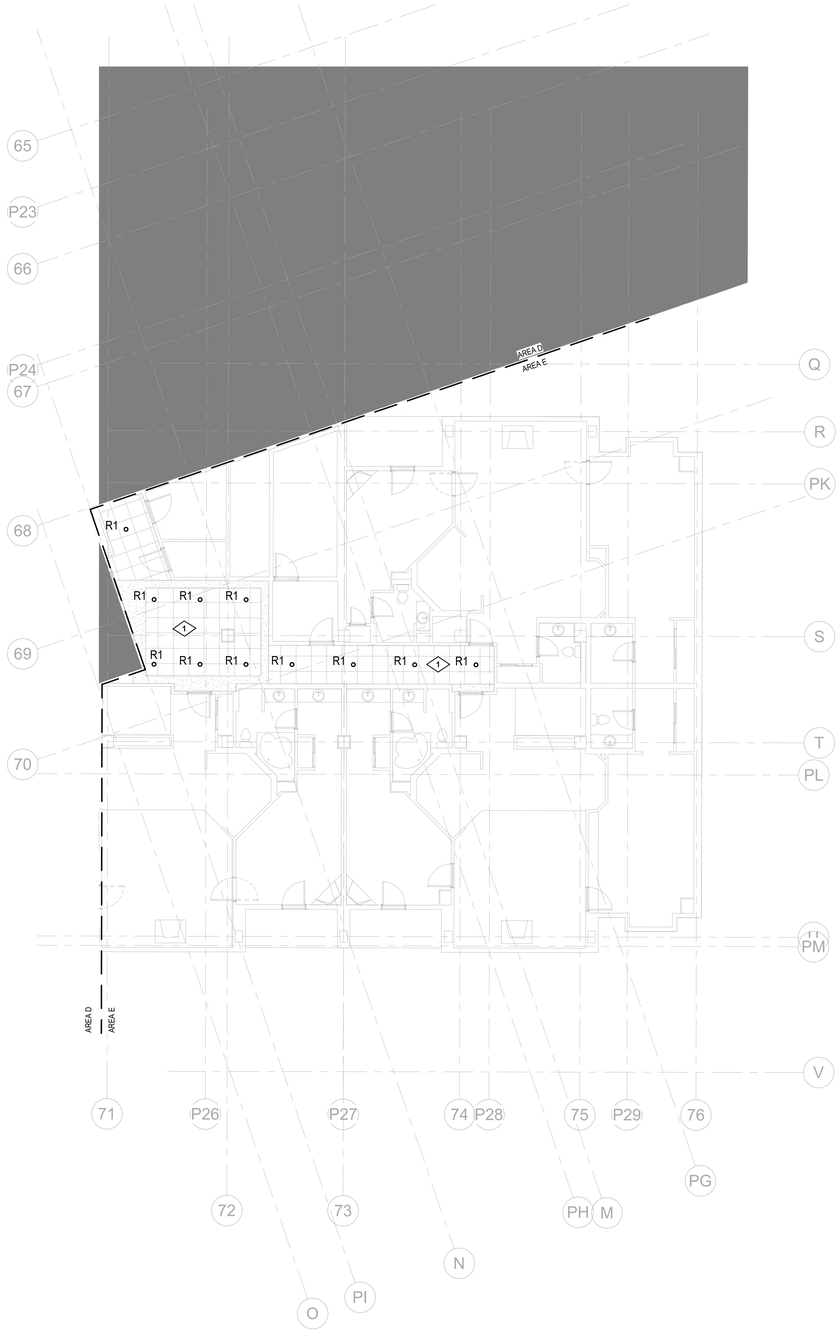
PROJECT #: 21056
DESIGNED: Designer
CHECKED: Checker

LIGHTING PLAN
LEVEL 5 - AREA D

REGISTERED PROFESSIONAL ENGINEER
35656
06.01.23
PROFESSIONAL ENGINEER

E208



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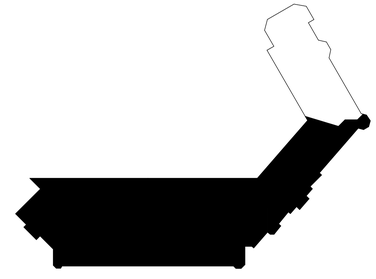
LIGHTING PLAN LEVEL 5 - AREA E
SCALE: 1/8" = 1'-0"



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LIGHTING PLAN
LEVEL 5 - AREA E

COLORADO REGISTERED PROFESSIONAL ENGINEER
35656
06.01.23

E209