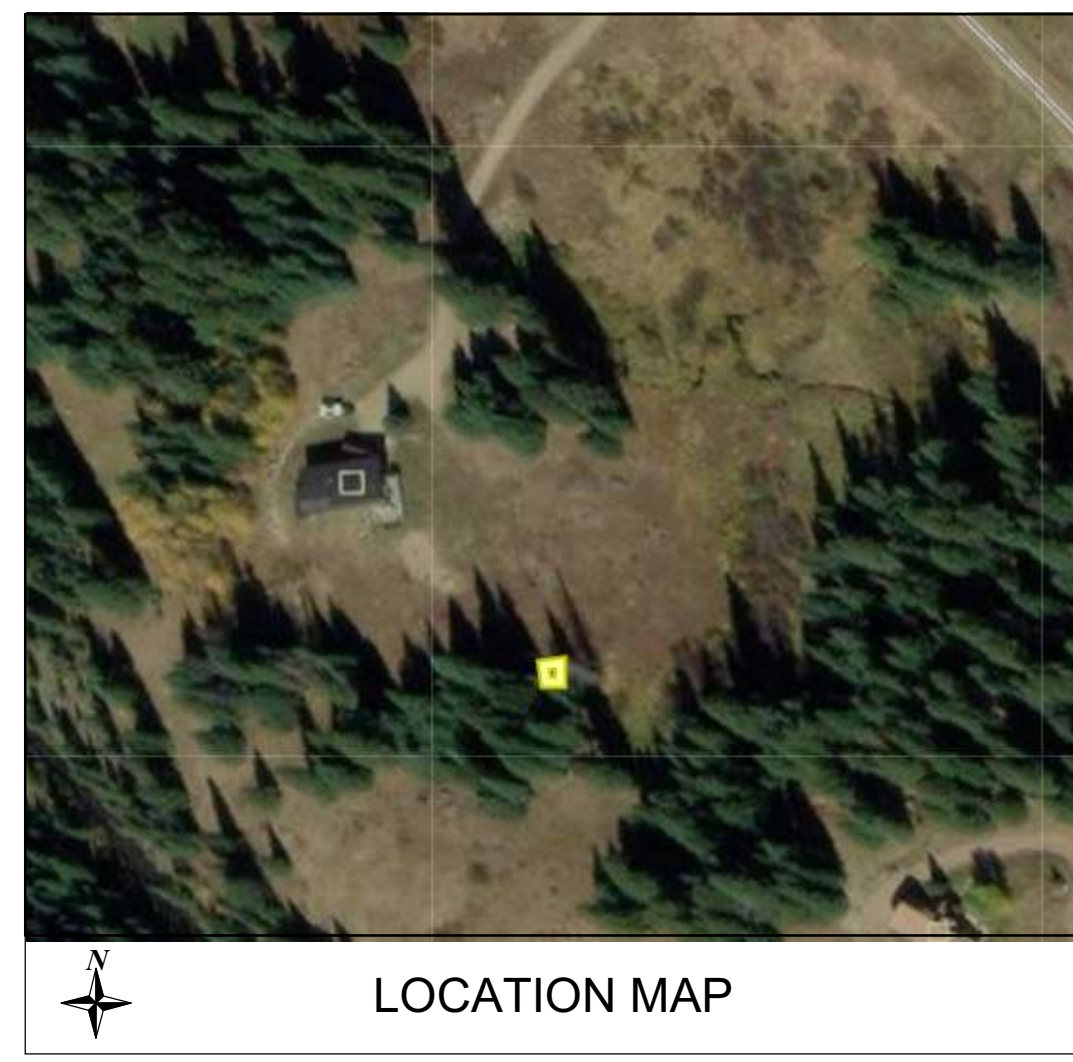


ELECTRICAL GENERAL NOTES

- GENERAL CONTRACTOR IS RESPONSIBLE FOR THE SITE VERIFICATION OF ALL EXISTING AND NEW EQUIPMENT AND SYSTEMS TO REMAIN. IF ANY SYSTEMS OR EQUIPMENT ARE MISSING, DAMAGED OR MALFUNCTIONING THE CONTRACTOR SHALL PROVIDE NEW TO BE INSTALLED AS SPECIFIED AND REQUIRED BY 2020 NEC CODE.
- GENERAL CONTRACTOR AND ELECTRICAL TRADES INVOLVED IN THE PROJECT ARE TO INSTALL ALL ELECTRICAL EQUIPMENT IN ACCORDANCE WITH THEIR SPECIFIC MANUFACTURERS WRITTEN INSTALLATION INSTRUCTIONS AND RECOMMENDATIONS, SPECIFIC CONTRACT DOCUMENTS AND ANY AND ALL APPLICABLE CODES AND REGULATIONS.
- GENERAL CONTRACTOR TO COORDINATE ALL EQUIPMENT CONNECTIONS WITH MANUFACTURERS CERTIFIED DRAWINGS AND/OR DOCUMENTS. COORDINATE WITH AND PROVIDE ALL CONDUIT AND TRANSITIONS REQUIRED FOR FINAL EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT.
- COORDINATE WITH THE OWNER AND ARCHITECT TO ENSURE THAT THE PROGRESS OF ELECTRICAL WORK IS ON SCHEDULE AND THAT THE PROGRESS AND WORKMANSHIP OF OTHER TRADES IS ON SCHEDULE.
- APPLY AND PAY FOR ALL PERMITS, FEES, LICENSES AND INSPECTIONS FOR THIS DIVISION OF WORK.
- COMPLY WITH ALL STATE AND LOCAL CODE REQUIREMENTS AND ORDINANCES. COMPLY WITH REQUIREMENTS OF THE UTILITY COMPANIES. IN THE CASE OF DIFFERENCES BETWEEN THESE REQUIREMENTS AND ORDINANCES, THE MOST STRINGENT SHALL GOVERN. CALL FOR INSPECTIONS REQUIRED BY LOCAL BUILDING INSPECTION AUTHORITY.
- SUBMIT SHOP DRAWINGS FOR ALL MATERIALS AND EQUIPMENT SHOWING ANY CHANGES REQUIRED IN ELECTRICAL WIRING, SPACE ALLOCATION, ETC. TO ARCHITECT.
- THE LOCATION OF EXISTING UNDERGROUND/OVERHEAD CONCEALED UTILITIES IS SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR SHALL PAY FOR AND REPAIR ALL DAMAGES CAUSED BY FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
- PATCH AND REPAIR TO MATCH EXISTING ANY WALLS, CEILINGS, OR FLOORS ACCESSED DURING THE INSTALLATION OF CONDUIT AND WIRING.
- MAINTAIN ONE SET OF REDLINED DRAWINGS ON THE JOB SITE INDICATING ALL CHANGES AND DEVIATIONS FROM THE WORK SHOWN ON THE DRAWINGS.
- AT COMPLETION OF WORK, DELIVER COMPLETED PROJECT RECORD DOCUMENTS MARKED WITH FIELD CHANGES TO OWNER'S REPRESENTATIVE.
- PROVIDE A WRITTEN WARRANTY TO THE OWNER COVERING THE ENTIRE ELECTRICAL WORK TO BE FREE FROM DEFECTIVE MATERIALS, EQUIPMENT AND WORKMANSHIP FOR A PERIOD OF ONE YEAR AFTER DATE OF ACCEPTANCE.
- ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING CONSTRUCTION DOCUMENTS TO THE LOCAL UTILITY COMPANY FOR REVIEW AND APPROVAL PRIOR TO ORDERING EQUIPMENT OR INSTALLATION OF ANY EQUIPMENT, HARDWARE OR WORK TO BE DONE.
- UNLESS OTHERWISE NOTED OR AGREED UPON, THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF ALL WIRING, CABLES AND ELECTRICAL DEVICES EXISTING IN WALLS TO BE DEMOLISHED AND THE REMOVAL OF ALL OTHER REDUNDANT ELECTRICAL DEVICES NOT SHOWN ON PLANS. CUT BACK AND CAP UNUSED RACEWAYS AND OUTLETS AND REMOVE UNUSED WIRING BACK TO PANEL BOARD.
- WHERE THE DISTRIBUTION OF POWER AND COMMUNICATION IS THROUGH A FLOOR SYSTEM, THE ELECTRICAL CONTRACTOR SHALL ENSURE ACCESS AT HAND HOLES AT ALL TIMES. PROVIDE FLOOR PAN COVERS THROUGHOUT THE PREMISES.
- COORDINATION OF WORK SHALL BE DONE WITH ALL OTHER TRADES ON THE SITE TO THE EXTENT OF PROPERLY LOCATING ALL DEVICES, FIXTURES, EQUIPMENT, PIPING, DUCTWORK, ETC. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ACCURATE DIMENSIONS FROM THE ARCHITECTURAL DRAWINGS AND AT THE SITE.
- PRIOR TO FINAL ACCEPTANCE, THOROUGHLY CLEAN ALL WORK.
- ACCESS DOORS & PANELS ARE TO BE SUPPLIED BY CONTRACTOR AND LOCATED ON THE SITE BY THIS TRADE WHERE REQUIRED TO SERVICE NEW OR EXISTING EQUIPMENT AND/OR SYSTEMS. COORDINATE INSTALLATION WITH REQUIRED TRADES.
- CONNECTIONS TO EQUIPMENT THAT PRODUCE NOISE AND OR VIBRATIONS (TRANSFORMERS, MOTORS, GENERATORS, ETC.) SHALL BE MADE WITH FLEXIBLE CONDUIT. USE A MINIMUM 3 FEET OF FLEXIBLE CABLE WITH SLACK AT EACH DEVICE.
- PROVIDE HANGERS, INSERTS (OF A LEAD SHIELD TYPE) AND SUPPORTS, AS REQUIRED, SUPPORT ALL BRANCH CONDUITS FOR POWER AND COMMUNICATIONS FROM BUILDING STRUCTURE; DO NOT CADDE CLIP TO CEILING HANGERS.
- PULL BOXES SHALL BE PROVIDED FOR ALL CONDUIT RUNS OF 50' AND/OR MORE THAN THE EQUIVALENT OF 2-90° ENDS.
- GROUNDING PROVIDE ALL EQUIPMENT GROUNDING AS REQUIRED TO CONFIRM WITH THE APPLICABLE SAFETY CODE. ARRANGE GROUNDS SO UNDER NORMAL OPERATING CONDITIONS NO INJURIOUS AMOUNT OF CURRENT WILL FLOW IN ANY GROUNDING CONDUCTOR. ENSURE CONTINUITY OF EQUIPMENT GROUNDING (CONDUCTORS, CONNECTORS, ACCESSORIES) AND CONNECT TO THE EXISTING BUILDING SYSTEM AT THE NEAREST LOCATION. CONFORM TO THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION. INSULATED GROUNDING CONDUCTORS SHALL BE GREEN.
- LIGHTING SYSTEM TEMPORARY LIGHTING SHALL BE PROVIDED THROUGHOUT PROJECT AS REQ., WHERE REQUIRED BY GENERAL CONTRACTOR.
- CIRCUITRY SHOWN ON PLANS IS FOR GROUPING PURPOSES ONLY. EXACT CIRCUITS ARE TO BE DETERMINED ON SITE BASED ON AVAILABILITY. EXISTING CIRCUITRY SHALL BE VERIFIED FOR CONTINUITY AND CODE COMPLIANCE ON SITE BY THE GENERAL CONTRACTOR PRIOR TO COMMENCING NEW WORK. VERIFY THAT NOT MORE THAN SIX DUPLEX RECEPTACLES ARE CONNECTED TO ANY ONE CIRCUIT.
- CONTRACTOR TO VERIFY AND MAKE NECESSARY ADJUSTMENTS TO ENSURE THAT LOADING ON EACH PHASE IS BALANCED. (UNBALANCED LOAD SHALL BE LESS THAN 10 %). PROVIDE A TYPED CIRCUIT DIRECTORY IN EACH PANEL.
- SMOKE DETECTORS SHALL BE FURNISHED AND WIRED BY THE ELECTRICAL CONTRACTOR. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR MOUNTING THE SMOKE DETECTOR IN DUCTWORK IN ACCORDANCE WITH MANUFACTURERS PRINTED INSTRUCTIONS AS APPLICABLE. ALL SMOKE DETECTORS SHALL BE INTERCONNECTED.
- CONTRACTOR SHALL PROVIDE SHOP DRAWINGS TO ARCHITECT AS APPLICABLE FOR REVIEW.
- ALTERNATIVES TO THE MATERIALS SPECIFIED HEREIN AND/OR ON THE DRAWING MAY BE SUBMITTED SEPARATELY SHOWING ANY CHANGE TO THE BASE CONTRACT PRICE FOR THEIR SUBSTITUTION.
- OPERATING & MAINTENANCE INSTRUCTIONS PREPARED BY MANUFACTURERS SHALL BE PROVIDED TO CUSTOMER.
- SYSTEMS SHALL BE TESTED FOR PROPER OPERATION. IF TESTS SHOW THAT WORK IS DEFECTIVE, CONTRACTOR SHALL MAKE CORRECTIONS NECESSARY AT NO COST TO THE OWNER.

CONT.

- THE ELECTRICAL DRAWINGS ARE SCHEMATIC IN NATURE AND INDICATE THE GENERAL DESIGN AND ARRANGEMENT OF CONDUIT AND WIRING, EQUIPMENT, SYSTEMS, ETC. INFORMATION SHOWN IS DIAGRAMATIC IN CHARACTER AND DOES NOT INDICATE EVERY REQUIRED OFFSET, FITTING, ETC. ANY AND ALL DESIGN ELEMENTS, FIXTURE LOCATIONS, ETC. TO BE FIELD VERIFIED BY THE GENERAL CONTRACTOR AND THE ELECTRICIAN ON SITE.
- THE LOCATIONS OF THE ITEMS SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS THAT ARE NOT DEFINITELY FIXED BY DIMENSIONS ARE APPROXIMATE ONLY. THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS MUST BE DETERMINED BY THE PROJECT SITE CONDITIONS AND SHALL HAVE THE APPROVAL OF THE ENGINEER BEFORE BEING INSTALLED. DO NOT SCALE THE DRAWINGS (UNLESS NOTED OTHERWISE).
- CONTRACTOR SHALL FIELD VERIFY LOCATIONS AND SIZES OF ALL EXISTING EQUIPMENT, ELECTRICAL CONDUIT, STRUCTURAL MEMBERS, ETC. PRIOR TO BID. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY AND ALL DISCREPANCIES BETWEEN FIELD CONDITIONS AND CONTRACT DRAWINGS.
- WHERE BEAMS ARE INDICATED TO BE PENETRATED WITH CONDUITS AND WIRING, COORDINATE DUCTWORK AND PIPING LAYOUT WITH BEAM OPENING SIZE AND OPENING LOCATIONS. COORDINATION SHALL BE DONE PRIOR TO FABRICATION OF BEAMS.
- ALL CONDUIT, WIRING AND EQUIPMENT SUPPORTED FROM STRUCTURAL STEEL SHALL BE COORDINATED WITH THE GC. ALL ATTACHMENTS TO STEEL BAR JOISTS, TRUSSES, OR JOIST GIRDERS, SHALL BE AT PANEL POINTS. PROVIDE BEAM CLAMPS MEETING MSS STANDARDS. WELDING TO STRUCTURAL MEMBERS SHALL NOT BE PERMITTED. THE USE OF C-CLAMPS SHALL NOT BE PERMITTED.
- USE ADJUSTABLE PIPE HANGERS ON SUSPENDED CONDUIT. PROVIDE HANGERS TO SUPPORT THE SYSTEMS WITHOUT SAGGING. INCLUDE HANGERS AT EACH OFFSET OR CHANGE IN DIRECTION AND AT ENDS OF BRANCHES OVER FIVE FEET IN LENGTH.
- SLEEVES AND BOXES SHALL BE PROVIDED WHEREVER CONDUITS PASS THROUGH FLOOR, WALL AND ROOF CONSTRUCTION.
- WHERE HORIZONTAL CONDUITS AND WIRING PASS THROUGH WALLS AND VERTICAL DUCTS AND PIPES PASS THROUGH FLOORS OR ROOFS, SEAL OFF VOID BETWEEN OPENING AND DUCT OR PIPE AND SLEEVE, WITH AN APPROVED NON-COMBUSTIBLE MATERIAL.
- INSTALL NICKEL-PLATED FLOOR, WALL AND CEILING ESCUTCHEONS OF ADJUSTABLE TYPE ON CONDUITS PASSING THROUGH WALLS, FLOOR OR CEILING IN FINISHED AREAS.
- FURNISH AND INSTALL ALL FOUNDATIONS, BASES AND SUPPORTS.
- ELECTRICAL RECEPTACLES IN BATHROOMS, KITCHENS AND GARAGES SHALL BE G.F.I. OR G.F.I.C. PER 2020 NATIONAL ELECTRICAL CODE REQUIREMENTS.
- FIXTURES TO BE SELECTED BY THE ARCHITECT AND OWNER.
- ARC FAULT PROTECTION REQUIRED AT ELECTRICAL OPENINGS.
- PROVIDE PERMITS AND INSPECTIONS AS REQUIRED.
- PROVIDE RECORD DRAWINGS TO ENGINEER. DRAWINGS SHALL INCLUDE ALL ADDENDUM ITEMS, CHANGE ORDERS, ALTERATIONS, REROUTING, ETC.
- SYSTEMS SHALL BE COMPLETE, OPERABLE AND READY FOR CONTINUOUS OPERATION.
- VERIFY EXACT LOCATIONS OF EXISTING AND NEW UNDERGROUND UTILITIES, PIPING, AND RACEWAY SYSTEMS PRIOR TO TRENCHING. PROVIDE NECESSARY TRENCHING, BACKFILL, EXCAVATION, SUPPORTS, SERVICE FEEDERS (CONDUIT AND/OR WIRE), PULLBOXES, TRANSFORMER PADS, SAWCUTTING AND PATCHING, CONCRETE PAVING, ETC. REQUIRED. BACKFILL TRENCHES TO 90 PERCENT COMPACTION AND PATCH TO MATCH EXISTING. CONTRACTOR SHALL OBTAIN AND VERIFY EXACT UTILITY COMPANY DRAWINGS AND REQUIREMENTS.
- FINAL CONNECTIONS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH MANUFACTURERS APPROVED WIRING DIAGRAMS, DETAILS AND INSTRUCTIONS. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PROVIDE MATERIALS AND EQUIPMENT COMPATIBLE WITH EQUIPMENT ACTUALLY SUPPLIED AND SOURCED.
- SYSTEMS SHALL BE TESTED FOR PROPER OPERATION. IF TESTS SHOW THAT WORK IS DEFECTIVE, CONTRACTOR SHALL MAKE CORRECTIONS NECESSARY AT NO COST TO THE OWNER.
- ALUMINUM WIRE AND CABLE IN SIZES @#10 AND LARGER MAY BE SUBSTITUTED FOR COPPER ON SERVICES AND FEEDERS IF AMPACITY IS EQUAL TO OR GREATER THAN COPPER AND VOLTAGE DROP IS EQUAL TO OR LESS THAN COPPER AND SHALL BE TERMINATED AT SWITCHES, LUGS, CIRCUIT BREAKERS, ETC., WITH MAC-ADAPT SERIES "MPT" MACHINE COMPRESSION ADAPTERS OR EQUAL.
- ALL ELECTRICAL SYSTEMS COMPONENTS SHALL BE LISTED OR LABELED BY U.L. OR OTHER RECOGNIZED TESTING FACILITY.
- CIRCUITS SHOWN MAY BE MODIFIED AS REQUIRED FOR FIELD CONDITIONS.
- COORDINATE LIGHT FIXTURE LOC. W/MECH. REQUIREMENTS. COORDINATE W/OWNER AND DESIGN TEAM/ARCHITECT.
- ELECTRICAL OUTLETS TO BE 18" AFF TO CENTER OF COVER PLATE. SWITCHES TO BE 48" AFF UON.
- ALL WIRING SHALL COMPLY WITH ARTICLE 518.4 OF NEC 2020 EDITION. WORK, MATERIALS AND EQUIPMENT SHALL CONFORM TO THE LATEST EDITIONS OF LOCAL AND STATE CODES AND STANDARDS, SPECIFICALLY THE 2020 NEC.
- ALL SMOKE DETECTORS TO BE HARD WIRED 120V W/BATTERY BACKUP.
- MOUNT LIGHT SWITCHES IN ACCESSIBLE LOCATION, COORDINATE FINAL AND EXACT LOCATIONS W/OWNER OR OWNERS REPRESENTATIVE.



LOCATION MAP

SIZE (AWG)	AMP (60 DEG)	AMP (75 DEG)	AMP (90)
18	-	-	8
16	-	-	11
14	16	21	15
12	21	26	21
10	31	38	31
8	41	51	55
6	58	68	75
4	71	88	96
3	88	101	115
2	96	116	131
1	111	131	148

SERVICE AMPERAGE	SIZE	GROUND (250,66)
100	4 AWG	8 AWG
110	3 AWG	8 AWG
125	2 AWG	8 AWG
150	1 AWG	6 AWG
175	1/0 AWG	6 AWG
200	2/0 AWG	4 AWG
225	3/0 AWG	4 AWG
250	4/0 AWG	2 AWG
300	250 KCMIL	2 AWG
350	350 KCMIL	2 AWG
400	400 KCMIL	1/0 AWG

ABBREVIATIONS

ACT - ACOUSTIC CEILING TILE AD - AREA DRAIN AFF - ABOVE FINISHED FLOOR ALUM - ALUMINUM AND - ANODIZED BSMT - BASEMENT BYND - BEYOND BOT - BOTTOM CIP - CAST IN PLACE CHNL - CHANNEL CJ - CONTROL JOINT CLG - CEILING CLR - CLEAR CMU - CONCRETE MASONRY UNIT COL - COLUMN COMPR - COMPRESSIBLE CONC - CONCRETE CONT - CONTINUOUS CPT - CARPET CT - CERAMIC TILE CTYD - COURTYARD DBL - DOUBLE DEMO - DEMOLISH OR DEMOLITION DIA - DIAMETER DIM - DIMENSION DIMS - DIMENSIONS DN - DOWN DR - DOOR DWG - DRAWING EA - EACH EJ - EXPANSION JOINT EL - ELEVATION ELEC - ELECTRICAL ELEV - ELEVATOR OR ELEVATION EP - ELECTRIC PANEL EPDM - ETHYLENE PROPYLENE DIENE M-CLASS (ROOFING) EQ - EQUAL EXIST - EXISTING EXP JT - EXPANSION JOINT EXT - EXTERIOR FD - FLOOR DRAIN OR FIRE DEPT. FEC - FIRE EXTINGUISHER CABINET FIXT - FIXTURE FLR - FLOOR FM - FILLED METAL FO - FACE OF FND - FOUNDATION GA - GAUGE GALV - GALVANIZED GWS - GYPSUM WALL BOARD HC - HOLLOW CORE HI - HIGH HM - HOLLOW METAL HP - HIGH POINT HR - HOUR HVAC - HEATING, VENTILATING, AND AIR CONDITIONING	ILO - IN LIEU OF INSUL - INSULATED OR INSULATION INT - INTERIOR LO - LOW MAX - MAXIMUM MO - MASONRY OPENING MECH - MECHANICAL MEMBR - MEMBRANE MIN - MINIMUM MRGVB - MOISTURE-RESISTANT GYPSUM WALL BOARD MTL - METAL NIC - NOT IN CONTACT NUM - NUMBER NOM - NOMINAL OC - ON CENTER OH - OVERHANG OR OPPOSITE HAND OPP - OPPOSITE OR OPPOSITE HAND OZ - OUNCE PCC - PRE CAST CONCRETE PLUMB - PLUMBING PLYD - PLYWOOD PT - PRESSURE TREATED PNT - PAINT OR PAINTED PVC - POLYVINYL CHLORIDE RBR - RUBBER RCP - REFLECTED CEILING PLAN RD - ROOF DRAIN REQD - REQUIRED RM - ROOM SIM - SIMILAR SPEC - SPECIFIED OR SPECIFICATION SPK - SPRINKLER OR SPEAKER SSTL - STAINLESS STEEL STC - SOUND TRANSMISSION COEFFICIENT STL - STEEL STRUCT - STRUCTURE OR STRUCTURAL TAG - TONGUE AND GROOVE TELE - TELEPHONE TME - TO MATCH EXISTING TO - TOP OF TOC - TOP OF CONCRETE TOS - TOP OF STEEL TD - TELEPHONE/DATE TYP - TYPICAL UNO - UNLESS NOTED OTHERWISE US - UNDERSIDE VIF - VERIFY IN FIELD VP - VISION PANEL W/ - WITH WO - WOOD
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SYMBOLS

	ELECTRICAL CONN.
	CONCRETE
	ELEVATION MARKER

BUILDING CONTRACTOR/HOME OWNER TO REVIEW AND VERIFY ALL DIMENSIONS, SPECS, AND CONNECTIONS BEFORE CONSTRUCTION BEGINS.

1801 WEWATTA ST, 11TH FLOOR
DENVER, CO 80202
720.612.7553
ADMIN@ESDENVER.COM

JUSTIN MEYER - ELECTRICAL

42 Marmot Way,
Ophir, CO 81426

SHEET NUMBER	SHEET NAME
E0.0	COVER SHEET & NOTES
E0.1	LOT - UTILITIES- ELECTRIC
E1.0	ELECTRICAL NOTES & PANEL SCHEDULE
E2.0	ELECTRICAL LAYOUT - WALKOUT BASEMENT
E2.1	ELECTRICAL LAYOUT - MAIN FLOOR
E2.2	ELECTRICAL MAIN FLOOR- MAIN FLOOR RCP
E3.0	ELECTRICAL SERVICE - ELECTRICAL NOTES
E3.1	ELECTRICAL SERVICE - ONE LINE DIAGRAM
E4.0	NEW HOT WATER HEATER - SPECS
E4.1	BOILER UNIT - SPECS

DESIGN CRITERIA & CONDITIONS

PROJECT CITY: TELLURIDE
PROJECT COUNTY: SAN MIGUEL COUNTY
PROJECT ELEVATION: 11126 FT. ABOVE SEA LEVEL
ZONING DISTRICT: PARK (P)

APPLICABLE CODES:

- IRC-2018 INTERNATIONAL RESIDENTIAL CODE
- IBC-2018 INTERNATIONAL BUILDING CODE
- IECC-2018 INTERNATIONAL ENERGY CONSERVATION CODE
- IMC-2018 INTERNATIONAL MECHANICAL CODE
- IPC-2018 INTERNATIONAL PLUMBING CODE
- NEC-2020 NATIONAL ELECTRICAL CODE
- IFGC-2018 INTERNATIONAL FUEL GAS CODE

REFERENCES

- EX. LOT AREA:
MAX BUILDING COVERAGE: NO LIMITATIONS
MAXIMUM FLOOR AREA: 2500 SQ. FT PER DWELLING UNIT
MINIMUM FRONT YARD: 20'
MINIMUM SIDE YARD: 3'
REAR YARD (MIN): N/A
MAX HEIGHT (PRINCIPAL/ACCESSORY): 25'16'
- EXISTING:
BUILDING HEIGHT: - FT HIGHEST RIDGE (+/-) FROM TERRAIN
CONSTRUCTION TYPE: TYPE V-B
OCCUPANCY TYPE: RESIDENTIAL R-3
FIRE PROTECTION: -
GAS:
SEWER: SEPTIC SYSTEM (OWTS)
WATER: PRIVATE WELL
COOLING:
HEATING: ELECTRIC GLYCOL HEATING
PROPOSED SQ. FT.: 1ST FLOOR SQ. FT.: 1836 SQ. FT. WALKOUT BASEMENT SQ. FT.: 1612 SQ. FT. TOTAL SQ. FT.: 3448 SQ. FT.
NUMBER OF STORES: 2
NUMBER OF STORES (ABOVE GROUND): 2
ATTACHED GARAGE: YES

PROJECT DIRECTORY

OWNER:
FIRST/LAST NAME: JUSTIN MEYER
EMAIL: jme@rockwellco.com

DESIGNER:
NAME COMPANY: Whisper Creek
1853 Highway 93 South
Hamilton, MT 59840
ph: 406.363.5660
fx: 406.363.6537
wchdesign@rwh.com

ELECTRICAL & PLUMBING:
NAME COMPANY: ENGINEERING STUDIO DENVER
ADDRESS #1: 1801 Wewatta St, 11th Floor
Denver, CO 80202
TELEPHONE: 720.612.7553
EMAIL: admin@esdenver.com

SITE ADDRESS:
42 MARMOT WAY, OPHIR, CO 81426
YEAR BUILT:
SUBDIVISION: TROUT LAKE-2030
ZONING: PARK (P)
PARCEL #: 482517102066
AIN #: R1040030066
LEGAL DESCRIPTION: SITE 66 TROUT LAKE
PROPERTY TYPE: RESIDENTIAL

PROJECT DATA

ZONING ANALYSIS

DRAWN BY: JD
CHECKED BY: DR

REVISIONS:

No.	DESCRIPTION	DATE
△		
△		
△		
△		

ISSUE RECORD:

No.	DESCRIPTION	DATE

SCALE:

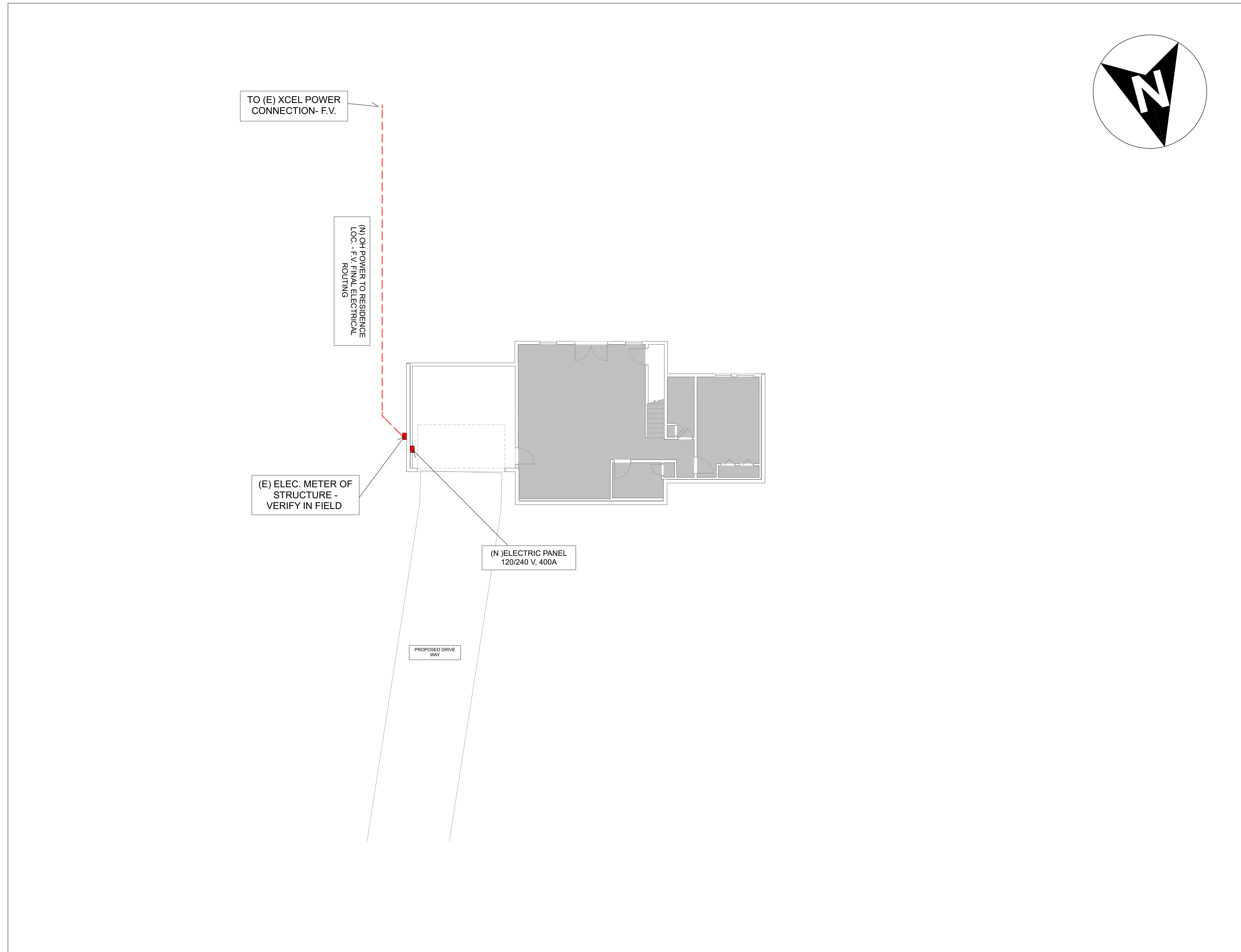
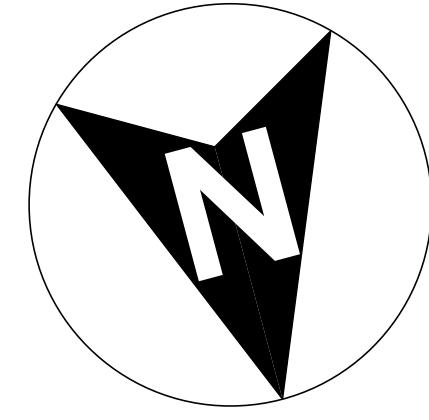
SHEET CONTENTS:

PROJECT NO.:	10305
DATE:	1/25/2023
DRAWING NO.:	E0.0



**SITE CONNECTIONS
PER XCEL. OUT OF
ESDENVERS SCOPE**

FOR UTILITIES REFERENCE ONLY - REFER
TO OFFICIAL SITE SURVEY AND FIELD
VERIFY ALL UTILITIES



LEGEND	
LINE	DESCRIPTION
	ELECTRIC SERVICE LINES
	(N) PANEL/METER
	SUBJECT PROPERTY
	OUT OF SCOPE PROPERTY

* G.C. TO FIELD VERIFY
ALL MEASUREMENTS ON
SITE.

1 LOT - UTILITIES- ELECTRIC
SCALE: NTS

DRAWN BY: JD

CHECKED BY: DR

REVISIONS:

No.	DESCRIPTION	DATE
△		
△		
△		
△		

ISSUE RECORD:

No.	DESCRIPTION	DATE

SCALE:

SHEET CONTENTS:

PROJECT NO.: 10305

DATE: 1/25/2023

DRAWING NO.:

E0.1

QTY	2D SYMBOL	LABEL	COMMENTS
9	⚡	3-WAY SWITCH	
23	⚡	SINGLE POLE SWITCH	
1	⚡	AIR SWITCH - COUNTERTOP	GARBAGE DISPOSAL COUNTER SWITCH
33	⚡	DUPLEX	
4	⚡	DUPLEX WEATHERPROOF	
1	⚡	ELECTRIC RANGE	
13	⚡	GFCI	
1	⚡	GARBAGE DISPOSAL	SWITCHED
1	⚡	DISHWASHER	
1	⚡	MICROWAVE	F.V. FINAL POSTION
1	⚡	HOOD W/ VENT	RANGE HOOD HARDWIRE F.V. FINAL MOUNTING
1	⚡	REFRIGERATOR	
3	⚡	PENDANT	CENTER ABOVE KITCHEN ISLAND- VERIFY IN FIELD
40	⚡	RECESSED DOWN LIGHT 6	LED- DIMMABLE
2	⚡	RECESSED VAPOR LIGHT	LED-U.L. WET RATED
1	⚡	CHANDELIER	CENTER ABOVE DINING TABLE - VERIFY IN FIELD
4	⚡	EXTERIOR WALL SCNCE -1	U.L. WET RATED LED DARK-SKY COMPLIANT FIXTURE
4	⚡	EXTERIOR WALL SCNCE	U.L. WET RATED LED DARK-SKY COMPLIANT FIXTURE
1	⚡	EXHAUST (LIGHT)	50 CFM (MIN.)
2	⚡	EXHAUST	50 CFM (MIN.)
2	⚡	CEILING FAN	FAN W/LIGHT LED F.V. FINAL MOUNTING
3	⚡	CEILING FAN	FAN W/LIGHT LED CENTER IN RM.
1	⚡	ELECTRICAL PANEL	(N) 400A ELECTRICAL PANEL
1	⚡	240V	240V OUTLET FOR CLOTHES DRYER - WALKOUT BASEMENT
5	⚡	CO/SMOKE DETECTOR- WALL MOUNTED	SMOKE/CO DETECTORS NEED TO BE INTERCONNECTED WITH BATTERY BACKUP
1	⚡	240V	240V ELEC. CONN. FOR ELECTRIC BOILER UNIT - 240V SINGLE-PHASE RESIDENTIAL WIRING DO NOT USE 208 VOLT. ONLY USE COPPER WIRING
10	⚡	THERMOSTAT	THERMOSTAT WITH 110 VAC

ENGINEERS NOTE:

- G.C. AND ELECTRICAL TRADES AND INSTALLERS TO WALK SPACE AND CONSULT HOME OWNERS FOR SPECIFIC ELECTRICAL LAYOUT NEEDS PRIOR TO INSTALLATION OR ORDERING OF ELECTRICAL COMPONENTS.
- COORDINATE W/OTHER TRADES AS REQ.
- ELECTRICAL DESIGN DONE WITH ALL EXISTING AVAILABLE INFORMATION FOR THE PROPERTY. CERTIFIED ELECTRICIAN TO VERIFY PANEL CONNECTIONS, SIZING AND LAYOUT.
- CERTIFIED ELECTRICIAN TO INSTALL PER NEC 2020 CODE.
- CERTIFIED ELECTRICIAN TO NOTIFY ENGINEER W/ANY CHANGES.
- ELECTRICAL LAYOUTS ARE SCHEMATIC IN NATURE.
- ELECTRICIAN TO REVIEW ALL SCHEDULES FOR ELECTRICAL COMPONENTS AND ADJUST ACCORDINGLY TO ON SITE CONDITIONS AND NEEDS. RECORD AND FINAL COUNT OF ALL LIGHTING FIXTURE BOXES, SWITCHES, RECEPTACLES, ETC. NEEDED FOR THE HOME.

ENGINEERS NOTE:

- ELECTRICAL DESIGN DONE WITH ALL EXISTING AVAILABLE INFORMATION FOR THE PROPERTY. CERTIFIED ELECTRICIAN TO VERIFY PANEL CONNECTIONS, SIZING AND LAYOUT.
- CERTIFIED ELECTRICIAN TO INSTALL PER NEC 2020 CODE.
- CERTIFIED ELECTRICIAN TO NOTIFY ENGINEER W/ANY CHANGES.

#10305 - 42 MARMOT WAY - MAIN PANEL 'MP-1'										DATE: 1/16/2023				
Mounting Method				Panel Status			Panel Information							
SURFACE FLUSH				RELOCATED NEW	EXISTING	Volt: Phase Wire	240/120 1 3	Bus Rating Main Breaker: AIC Rating:	400A MCB	22,000				
Ckt #	Copper Feeder Size (AWG)	Code	Description	Load VA	Bkr	P	Ph	A	B	Load VA	Description	Code	Copper Feeder Size (AWG)	Ckt #
**Arc fault circuit interrupters (AFCI) per NEC required in all living areas														
MAIN CIRCUIT BREAKER (400)														
1	14	2	Family Room/hall 1/Stairs	1200	20	1	•	1	20	1200	Bsmt. Bath	2	14	2
3	14	2	B.R. #3/closet	1200	20	1	•	1	20	1200	Laundry Recept.	2	14	4
5	14	2	Mech. Room	1200	20	1	•	1	20	1200	Laundry	2	14	6
7	14	2	Garage	1200	20	1	•	1	20	1200	Exterior Recept.	2	14	8
9	14	2	Kitchen 1	1200	20	1	•	1	20	1200	Exterior Lighting	2	14	10
11	14	2	Kitchen 2	1200	20	1	•	1	20	1200	Great Room/Hall 2	2	14	12
13	14	2	Powder Bath	1200	20	1	•	1	20	1200	B.R. 1/Closet	2	14	14
15	14	2	Bath 2	1200	20	1	•	1	20	1200	B.R. 2/Closet	2	14	16
17	14	2	M. Bedroom/W.I.C.	1200	20	1	•	1	20	1200	M. Bath	2	14	18
19	12	5	Range Hood	600	20	1	•	1	20	1500	Dishwasher	5	14	20
21	14	3	Garbage Disposal	800	20	1	•	1	20	1800	Refrigerator	5	14	22
23	14	5	Microwave	900	20	1	•	2	60					24
25	10	3	Clothes Washer	1500	30	1	•	1	/	10000	Electric Boiler Unit	6	6	26
27	10	3	Garage Door Opener	1500	30	1	•	2	40					28
29	14	2	Smoke/CO Detectors	600	20	1	•	1	/	9000	Water Heater	4	8	30
31	14	1	Exhaust Vents	600	20	1	•	2	40					32
33	14	3	ERV/HRV Unit	1200	20	1	•	1	/	9000	Water Heater	4	8	34
35	10	5	Oven	5000	30	2	•	2	40					36
37	/	1	SPARE	/	1	•	1	/	/	9000	Water Heater	4	8	38
39	14	2	SPARE	1200	20	1	•	2	40					40
41	/	/	/	/	/	•	/	/	/	9000	Water Heater	4	8	42
				Load Summary										
1 SMALL APPLIANCE				3000.0 100%				Per Phase						
2 Lighting/Outlets up to 3000				21000.0 35%				Ph A 41400 VA						
LOAD OVER 3000				3500.0 75%				Ph B 38800 VA						
3 APPLIANCE W/MOTOR LARGEST MOTOR				1500.0 125%										
4 APPLIANCE W/O MOTOR				38000.0 100%				Connected 80200.00 VA						
5 KITCHEN EQUIPMENT				9800.0 80%				Code Demand 67190.00 VA						
6 AC/HEAT				10000.0 100%				Connected 192.93 Amps						
7 ELECTRIC DRYER				1000.0 100%				Code Demand 161.63 Amps						
Min Feeder Size				400 KCML				GROUND ELECTRODE 1/0 AWG						

Table 310.12 Single-Phase Dwelling Services and Feeders

Service or Feeder Rating (Amperes)	Conductor (AWG or kcmil)	
	Copper	Aluminum or Copper-Clad Aluminum
100	4	2
110	3	1
125	2	1/0
150	1	2/0
175	1/0	3/0
200	2/0	4/0
225	3/0	250
250	4/0	300
300	250	350
350	350	500
400	400	600

Note: If no adjustment or correction factors are required, this table shall be permitted to be applied.

Table 250.66 Grounding Electrode Conductor for Alternating-Current Systems

Size of Largest Ungrounded Conductor or Equivalent Area for Parallel Conductors (AWG/kcmil)	Size of Grounding Electrode Conductor (AWG/kcmil)	
	Copper	Aluminum or Copper-Clad Aluminum
2 or smaller	1/0 or smaller	8
1 or 1/0	2/0 or 3/0	6
2/0 or 3/0	4/0 or 250	4
Over 3/0 through 500	Over 250 through 500	2
Over 500 through 600	Over 500 through 600	1/0
Over 600 through 1100	Over 600 through 1100	2/0
Over 1100	Over 1100	3/0

Notes:
1. If multiple sets of parallel conductors (conductors directly to a service drop, set of overhead service conductors, or service lateral), the equivalent size of the largest ungrounded conductor shall be determined by the larger size of the area of the corresponding conductors of each set.
2. Where there are no ungrounded conductors, the grounding electrode conductor size shall be determined by the equivalent size of the largest service-entrance conductor (S.E.C.) to be installed.
3. See installation instructions in 250.64.

250.122 Size of Equipment Grounding Conductors

Table 250.122 Minimum Size Equipment Grounding Conductors for Grounding Raceway and Equipment

Rating or Setting of Automatic Overcurrent Device in Circuit Ahead of Equipment, Conduit, etc., Not Exceeding (Amperes)	Size (AWG or kcmil)	
	Aluminum or Copper-Clad Aluminum*	Copper
15	14	12
20	12	10
30	10	8
40	8	6
50	6	4
60	4	2
75	3	1
100	2	1/0
150	1	2/0
200	1/0	3/0
250	2/0	4/0
300	3/0	250
350	4/0	300
400	4/0	300
500	500	750
600	500	750
700	500	750
800	600	1250

Note: Where necessary to comply with 250.4(B)(1) or (B)(4), the equipment grounding conductor shall be sized larger than given in this table.
*See installation instructions in 250.122.

Dwelling Units:

All 120-volt, single-phase, 15- and 20-ampere branch circuits supplying outlets or devices installed in dwelling unit kitchens, family rooms, dining rooms, living rooms, bedrooms, parlors, libraries, den, bedrooms, sunrooms, recreation rooms, closets, hallways, laundry areas, or similar rooms or areas shall be protected by any of the means described in (1) through (6).

- A listed combination-type arc-fault circuit interrupter installed to provide protection of the entire branch circuit.
- A listed branch-feeder-type AFCI installed at the origin of the branch-circuit in combination with a listed outlet branch-circuit-type arc-fault circuit interrupter installed at the first outlet box on the branch circuit. The first outlet box in the branch circuit shall be marked to indicate that it is the first outlet of the circuit.
- A listed supplemental arc protection circuit breaker installed at the origin of the branch circuit in combination with a listed outlet branch-circuit-type arc-fault circuit interrupter installed at the first outlet box on the branch circuit where all of the following conditions are met:
 - The branch-circuit wiring shall be continuous from the branch-circuit overcurrent device to the outlet branch-circuit arc-fault circuit interrupter.
 - The maximum length of the branch-circuit wiring from the branch-circuit overcurrent device to the first outlet shall not exceed 15.2 m (50 ft) for a 14 AWG conductor or 21.3 m (70 ft) for a 12 AWG conductor.
 - The first outlet box in the branch circuit shall be marked to indicate that it is the first outlet of the circuit.
- A listed outlet branch-circuit-type arc-fault circuit interrupter installed at the first outlet on the branch circuit in combination with a listed branch-circuit overcurrent protective device where all of the following conditions are met:
 - The branch-circuit wiring shall be continuous from the branch-circuit overcurrent device to the outlet branch-circuit arc-fault circuit interrupter.
 - The maximum length of the branch-circuit wiring from the branch-circuit overcurrent device to the first outlet shall not exceed 15.2 m (50 ft) for a 14 AWG conductor or 21.3 m (70 ft) for a 12 AWG conductor.
 - The first outlet box in the branch circuit shall be marked to indicate that it is the first outlet of the circuit.
 - The combination of the branch-circuit overcurrent device and outlet branch-circuit AFCI shall be identified as meeting the requirements for a system combination-type AFCI and shall be listed as such.
- If metal raceway, metal wireways, metal auxiliary gutters, or Type MC, or Type AC cable meeting the applicable requirements of 250.118, with metal boxes, metal conduit bodies, and metal enclosures are installed for the portion of the branch circuit between the branch-circuit overcurrent device and the first outlet, it shall be permitted to install a listed outlet branch-circuit-type AFCI at the first outlet to provide protection for the remaining portion of the branch circuit.
- Where a listed metal or nonmetallic conduit or tubing or Type MC cable is enclosed in not less than 50 mm (2 in.) of concrete for the portion of the branch circuit between the branch-circuit overcurrent device and the first outlet, it shall be permitted to install a listed outlet branch-circuit-type AFCI at the first outlet to provide protection for the remaining portion of the branch circuit.

Exception: AFCI protection shall not be required for an individual branch circuit supplying a fire alarm system installed in accordance with 760.41(B) or 760.121(B). The branch circuit shall be installed in a metal raceway, metal auxiliary gutter, steel-armor cable, Type MC, or Type AC, meeting the applicable requirements of 250.118, with metal boxes, conduit bodies, and enclosures.

Informational Note No. 1: For information on combination-type and branch-feeder-type arc-fault circuit interrupters, see UL 1699-2011, Standard for Arc-Fault Circuit Interrupters. For information on outlet branch-circuit type arc-fault circuit interrupters, see UL Subject 1699A, Outline of Investigation for Outlet Branch Circuit Arc-Fault Circuit Interrupters.

Informational Note No. 2: See 29.6.3(3) of NFPA 72-2013, National Fire Alarm and Signaling Code, for information related to secondary power-supply requirements for smoke alarms installed in dwelling units.

Informational Note No. 3: See 760.41(B) and 760.121(B) for power-supply requirements for fire alarm systems.

1 ELECTRICAL NOTES & PANEL SCHEDULE

SCALE: NO SCALE

ESD ENGINEERING STUDIO DENVER

1801 WEWATTA ST, 11TH FLOOR DENVER, CO 80202
720.612.7553
ADMIN@ESDENVER.COM

JUSTIN MEYER - ELECTRICAL

42 Marmot Way,
Ophir, CO 81426

DRAWN BY: JD
CHECKED BY: DR

REVISIONS:

No.	DESCRIPTION	DATE

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PROJECT NO.: 10305
DATE: 1/25/2023

DRAWING NO.: **E1.0**

ELECTRICAL GENERAL NOTES

REF 2020 NEC CODE FOR ELECTRICAL (STATE OF CO)

- GENERAL CONTRACTOR TO COORDINATE ALL EQUIPMENT CONNECTIONS WITH MANUFACTURERS CERTIFIED DRAWINGS AND/OR DOCUMENTS. COORDINATE WITH AND PROVIDE ALL REQ. ITEMS FOR FINAL EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT.
- ELECTRICAL RECEPTACLES IN BATHROOMS, KITCHENS AND GARAGES SHALL BE G.F.I. OR G.F.I.C. PER 2020 NATIONAL ELECTRICAL CODE REQUIREMENTS.
- FIXTURES TO BE SELECTED BY THE GENERAL CONTRACTOR, DESIGNER, OWNER OR OWNER REPRESENTATIVE.
- ELECTRICAL OUTLETS TO BE 18" AFF TO CENTER OF COVER PLATE. SWITCHES TO BE 48" AFF UON. RECEPTACLES ABOVE KITCHEN CABINETS TO BE AT 42-44" TO BTM. (44-48" O.C.) FROM F.F. THERE MUST BE ONE OUTLET WITHIN 36" OF THE OUTSIDE EDGE OF SINK BASIN AND IT MUST BE IN THE WALL ADJACENT TO THE BASIN OR COUNTERTOP.
- THE US NATIONAL ELECTRICAL CODE, SECTION 210.52, STATES THAT THERE SHOULD BE AN ELECTRICAL OUTLET IN EVERY KITCHEN, BEDROOM, LIVING ROOM, FAMILY ROOM, AND ANY OTHER ROOM THAT HAS DEDICATED LIVING SPACE. THEY MUST BE POSITIONED AT LEAST EVERY SIX FEET MEASURED ALONG THE FLOOR LINE & INSTALLED IN EACH WALL SPACE 2 FT. OR MORE IN LENGTH.
- ALL WIRING SHALL COMPLY WITH ARTICLE 518.4 OF NEC 2020 EDITION.
- CLOSETS:
 - DISTANCES BETWEEN FIXTURES AND STORAGE ITEMS: FOR SURFACE-MOUNTED INCANDESCENT OR LED LIGHT FIXTURES, THERE MUST BE A MINIMUM DISTANCE OF 12 INCHES BETWEEN THE FIXTURE AND ANY ITEMS STORED IN THE CLOSET. FOR RECESSED INCANDESCENT OR LED LIGHT FIXTURES, THIS DISTANCE MUST BE AT LEAST 6 INCHES. FOR FLUORESCENT LIGHT FIXTURES, THE MINIMUM DISTANCE IS 6 INCHES.
 - NO BARE BULBS ALLOWED. EXPOSED OR PARTIALLY EXPOSED INCANDESCENT OR LED LAMPS (BULBS) ARE NOT ALLOWED IN CLOSETS. WHILE UTILITY LIGHT FIXTURES WITH BARE BULBS IN A SOCKET WERE ONCE COMMON IN CLOSETS AND OTHER STORAGE AREAS, THESE ARE NO LONGER ALLOWED. ALL LIGHT BULBS MUST BE FULLY ENCLOSED IN A GLOBE OR OTHER HOUSING.
- GFCI PROTECTION:

REF. NEC, 210.8(A): DWELLING UNITS. ALL 125-VOLT THROUGH 250-VOLT RECEPTACLES INSTALLED IN THE LOCATIONS SPECIFIED IN 210.8(A)(1) THROUGH (A)(11) AND SUPPLIED BY SINGLE-PHASE BRANCH CIRCUITS RATED 150 VOLTS OR LESS TO GROUND SHALL HAVE GROUND-FAULT CIRCUIT-INTERRUPTER PROTECTION FOR PERSONNEL.

 - BATHROOMS - MIN. 1 GFCI OUTLET AND WITHIN 3 FT. OF SINK.
 - KITCHENS - WHERE THE RECEPTACLES ARE INSTALLED TO SERVE THE COUNTERTOP SURFACES
 - SINKS - WHERE RECEPTACLES ARE INSTALLED WITHIN 1.8 M (6 FT) FROM THE TOP INSIDE EDGE OF THE BOWL OF THE SINK
 - BATHTUBS OR SHOWER STALLS - WHERE RECEPTACLES ARE INSTALLED WITHIN 1.8 M (6 FT) OF THE OUTSIDE EDGE OF THE BATHTUB OR SHOWER STALL.
 - LAUNDRY AREAS

EXCEPTION TO (1) THROUGH (3), (5) THROUGH (8), AND (10): LISTED LOCKING SUPPORT AND MOUNTING RECEPTACLES UTILIZED IN COMBINATION WITH COMPATIBLE ATTACHMENT FITTINGS INSTALLED FOR THE PURPOSE OF SERVING A CEILING LUMINAIRE OR CEILING FAN SHALL NOT BE REQUIRED TO BE GROUND-FAULT CIRCUIT-INTERRUPTER PROTECTED, IF A GENERAL-PURPOSE CONVENIENCE RECEPTACLE IS INTEGRAL TO THE CEILING LUMINAIRE OR CEILING FAN, GFCI PROTECTION SHALL BE PROVIDED.
 - INDOOR DAMP AND WET LOCATIONS
 - SD TO BE INSTALLED INSIDE OF EACH SEPARATE SLEEPING AREA AND OUTSIDE EACH DOOR IN THE IMMEDIATE VICINITY OF THE BEDROOMS. (R315.3) CO MUST BE INSTALLED OUTSIDE EACH BEDROOM WITHIN 15' OF EACH ROOM.
 - LAUNDRY AREAS REQUIRE A 20 AMP BRANCH CIRCUIT TO SUPPLY THE LAUNDRY RECEPTACLE OUTLET. THIS CIRCUIT SHALL SERVE ONLY RECEPTACLE OUTLETS LOCATED IN LAUNDRY AREA.
 - HARDWIRED APPLIANCES ARE REQ. TO HAVE A DISCONNECT WITHIN SIGHT OR A LOCKABLE MEANS AT CIRCUIT BREAKER.
 - "ARC FAULT CIRCUIT INTERRUPTERS (AFCI), PER NEC, REQUIRED IN ALL LIVING AREAS"
- SMOKE/CO ALARMS:

SD/CO - PER NFPA CODE - SMOKE ALARMS IN NEWLY CONSTRUCTED OR RENOVATED DWELLINGS ARE REQUIRED TO BE HARDWIRED WITH A BATTERY BACK-UP, INTERCONNECTED, AND UL-LISTED.

 - SMOKE ALARMS ARE REQUIRED IN EVERY RESIDENTIAL DWELLING OR SLEEPING UNIT, INCLUDING SINGLE-FAMILY HOMES.
 - EVERY MULTI-FAMILY RESIDENTIAL FACILITY IS REQUIRED TO HAVE SMOKE ALARMS, WHETHER BATTERY-OPERATED OR HARD-WIRED WITH BATTERY BACKUP.
 - SMOKE ALARMS ARE REQUIRED IN EVERY BEDROOM, OUTSIDE EACH SLEEPING AREA, AND ON EVERY LEVEL OF THE HOME INCLUDING THE BASEMENT IF THERE IS ONE.
 - CO DETECTORS SHALL BE PLACED ON EACH LEVEL OF THE HOME INCLUDING THE BASEMENT IF THERE IS ONE.
 - GC TO F.V. THAT SMOKE ALARMS AND CARBON MONOXIDE DETECTORS ARE PLACED AND INSTALLED PER REGULATIONS AND IFC CODE

VIDEO:

 - LOCATE JACKS AS INDICATED IN THE PLAN. INSTALL DATA / CABLE PANEL IN LOCATIONS SPECIFIED BY CUSTOMER. SYSTEM TO BE APPROVED BY HOME OWNER. IF NO JACKS ARE INDICATED IN PLAN, CONTRACTOR TO PLACE IN ACCORDANCE WITH OWNERS REQUESTED LAYOUT
- DATA/CABLE:
 - LOCATE DATA JACKS EQUIPMENT IN SPECIFIED LOCATION BY AND APPROVED BY HOME OWNER.

- KEYED NOTES**
- PROVIDE 120 VOLT CONNECTION TO IN-SINK GARAGE DISPOSAL. COORDINATE FINAL CONNECTION WITH KITCHEN EQUIPMENT INSTALLER.
 - PROVIDE 120 VOLT RECEPTACLE TO UNDER COUNTER DISHWASHER IN ISLAND. COORDINATE FINAL CONNECTION WITH KITCHEN EQUIPMENT INSTALLER.
 - PROVIDE 120 VOLT, HARD WIRED CONNECTION TO RANGE HOOD CONTROL SYSTEM. COORDINATE CONNECTION WITH SYSTEM INSTALLER.
 - PROVIDE 120 VOLT RECEPTACLE FOR KITCHEN REFRIGERATOR. COORDINATE FINAL LOCATION OF RECEPTACLE WITH INSTALLER.
 - PROVIDE 120 VOLT RECEPTACLE FOR KITCHEN MICROWAVE. COORDINATE FINAL LOCATION OF RECEPTACLE WITH INSTALLER.
 - PROVIDE 220V VOLT RECEPTACLE FOR KITCHEN ELEC. RANGE. COORDINATE FINAL LOCATION OF RECEPTACLE WITH INSTALLER.
 - NEW 400A ELECTRICAL PANEL IN GARAGE - SEE PLAN SET
 - PROVIDE 120V ELEC. CONN. FOR BATH FANS IN EACH BATHROOM. F.V. FINAL MOUNTING POSITION AND FINAL LOCATION WITH INSTALLER.
 - CONTRACTOR TO PROVIDE 110V POWER TO ALL THERMOSTAT LOCATIONS- FINAL MOUNTING LOCATIONS TO BE FIELD VERIFIED BY OWNER AND INSTALLING TECH. COORDINATE WITH OTHER TRADES AS REQ.
 - GFCI RECEPTACLES TO BE PLACED NEAR ALL WARMBOARD MANIFOLD LOCATIONS. FIELD VERIFY FINAL MANIFOLD LOCATIONS BEFORE INSTALLATION OF GFCI FIXTURES. COORDINATE WITH OTHER TRADES AS REQ.
 - PROVIDE 240V ELEC. CONN. FOR ELECTRIC BOILER UNIT *BOILER HAS BEEN SIZED AND ENGINEERED FOR 240 VOLT, SINGLE-PHASE RESIDENTIAL WIRING. DO NOT USE 098 VOLT. ONLY USE COPPER WIRING
 - 36KW ON DEMAND HOT WATER HEATER (ELECTRIC) TO BE INSTALLED. ENSURE (4) 40A LEGS INSTALLED INTO PANEL TO ACCOMMODATE NEW HWH UNIT.
- GENERAL NOTES:**
- REFER TO ARCHITECTURAL DRAWINGS FOR CONTINUED CONSTRUCTION AND SCOPE DOCUMENTATION, DIMENSIONS AND LOCATIONS OF NEW DEVICES, APPLIANCE OPENING SIZES. IF ANY CONFLICTS BETWEEN DRAWINGS OCCUR, PLEASE CONTACT THE ENGINEER OR ARCHITECT FOR CLARIFICATION.
 - CONTRACTOR TO COORDINATE FINAL KITCHEN APPLIANCES WITH KITCHEN EQUIPMENT PROVIDER, CUSTOMER AND DESIGN TEAM PRIOR TO FINAL INSTALL. AND ROUGH IN. FINAL LAYOUTS OF APPLIANCES MAY CHANGE AND COORDINATION WILL BE REQUIRED WITH DESIGN TEAM AND CONTRACTORS FOR ANY MADE CHANGES.
 - ARC FAULT CIRCUIT INTERRUPTERS (AFCI), PER NEC, REQUIRED IN ALL LIVING AREAS

- THERMOSTAT PLACEMENT GUIDELINES**
- WITHIN THE ZONE
 - AWAY FROM HOT/COOL SOURCES
 - 5 FEET HIGH
 - ON INTERIOR WALL (EXTERIOR WALLS CAN BE USED IF WELL INSULATED)
 - ABOVE LIGHT SWITCH

* ELECTRICAL SCHEDULE FOR REFERENCE ONLY. G.C. AND ELECTRICIAN TO FIELD VERIFY NEED AND COUNT OF ALL TYPES OF ELECTRICAL HARDWARE, SWITCHES, OUTLETS AND CONNECTIONS

- ENGINEERS NOTE:**
- ELECTRICAL DESIGN DONE WITH ALL EXISTING AVAILABLE INFORMATION FOR THE PROPERTY. CERTIFIED ELECTRICIAN TO VERIFY PANEL CONNECTIONS, SIZING AND LAYOUT.
 - CERTIFIED ELECTRICIAN TO INSTALL PER NEC 2020 CODE.
 - CERTIFIED ELECTRICIAN TO NOTIFY ENGINEER W/ ANY CHANGES.
 - ALL ELECTRICAL LAYOUTS ARE SCHEMATIC IN NATURE
 - SERVICE DISCONNECTING MEANS SHALL BE INSTALLED AT A READILY ACCESSIBLE LOCATION
 - SERVICE DISCONNECT MEANS SHALL NOT BE INSTALLED IN BATHROOMS
 - ALL SERVICES SHALL MEET OR EXCEED THE 2020 NEC CODES AND REQ'S.



ESD ENGINEERING STUDIO DENVER
 1801 WEWATTA ST, 11TH FLOOR DENVER, CO 80202
 720.612.7553
 ADMIN@ESDENVER.COM

JUSTIN MEYER - ELECTRICAL
 42 Marmot Way,
 Ophir, CO 81426

DRAWN BY: JD
CHECKED BY: DR

REVISIONS:

No.	DESCRIPTION	DATE

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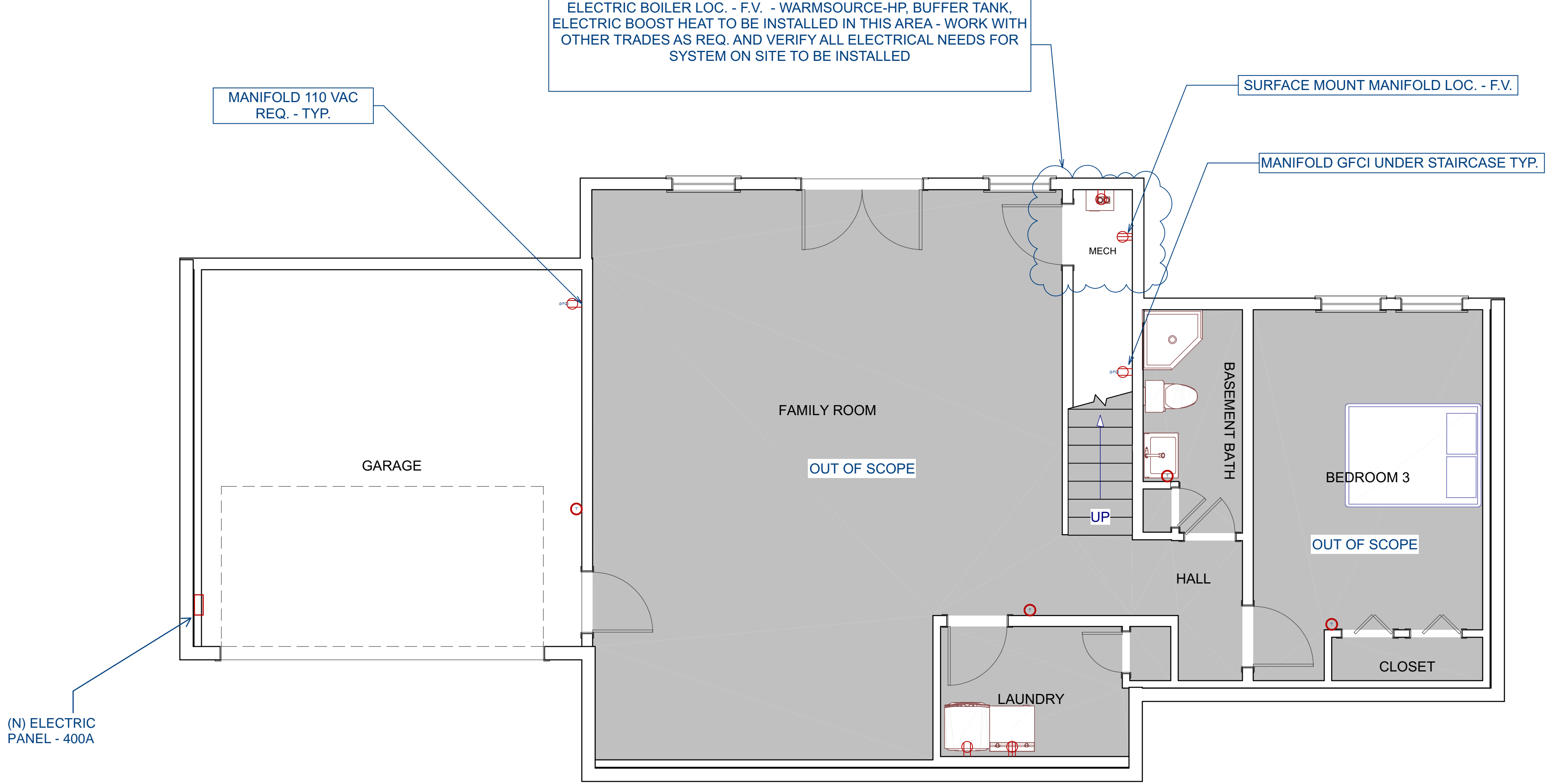
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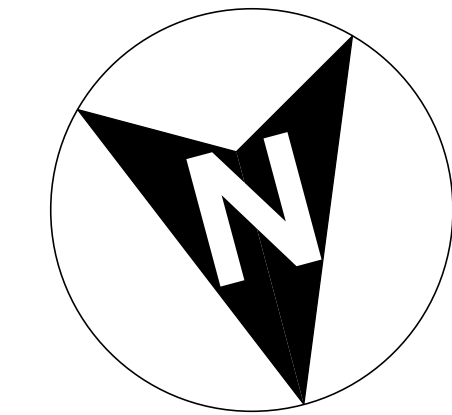
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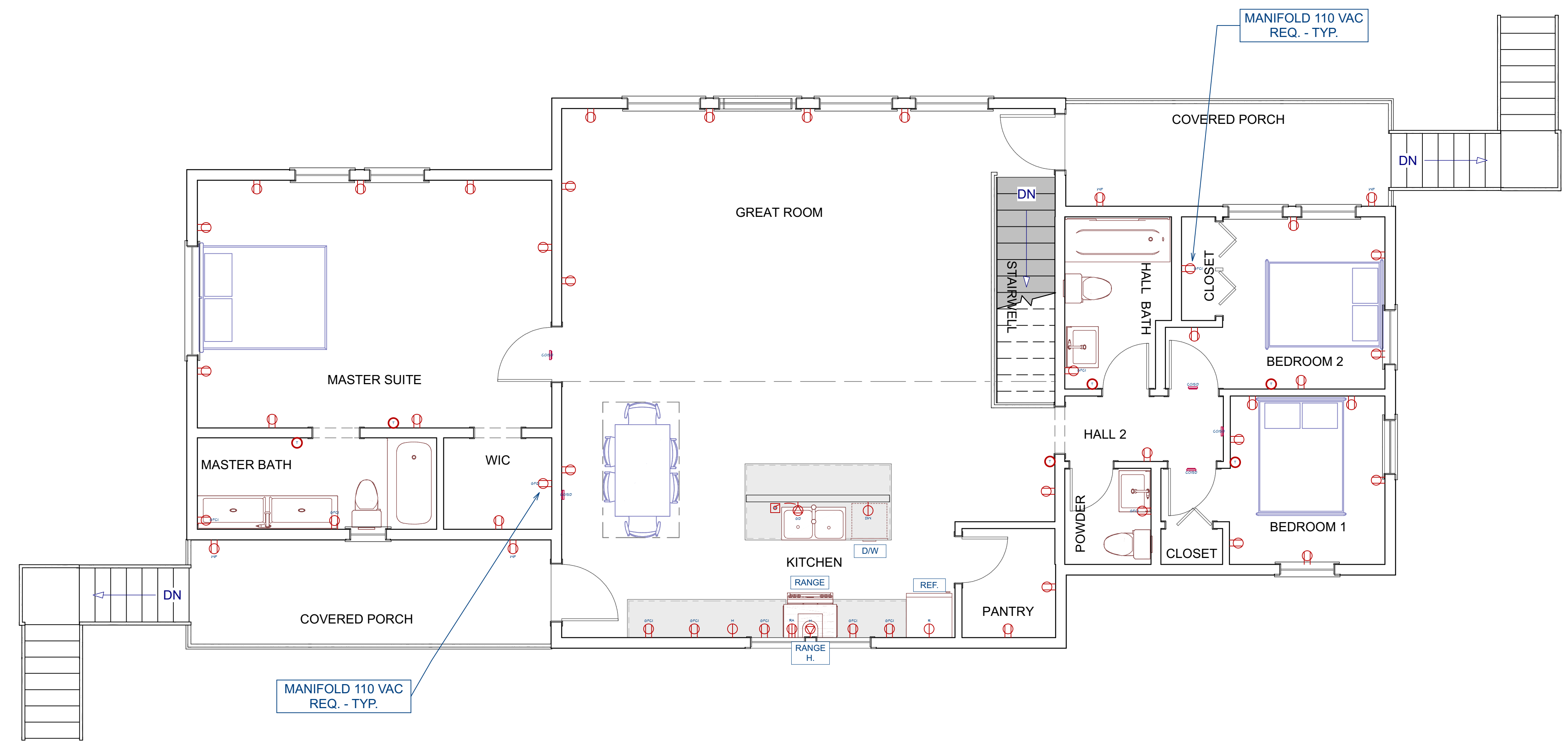


1 ELECTRICAL LAYOUT - WALKOUT BASEMENT
 SCALE: 1/4" = 1 FT.



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- KEYED NOTES
1. PROVIDE 120 VOLT CONNECTION TO IN-SINK GARAGE DISPOSAL. COORDINATE FINAL CONNECTION WITH KITCHEN EQUIPMENT INSTALLER.
 2. PROVIDE 120 VOLT RECEPTACLE TO UNDER COUNTER DISHWASHER IN ISLAND. COORDINATE FINAL CONNECTION WITH KITCHEN EQUIPMENT INSTALLER.
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 7. NEW 400A ELECTRICAL PANEL IN GARAGE - SEE PLAN SET
 8. PROVIDE 120V ELEC. CONN. FOR BATH FANS IN EACH BATHROOM. F.V. FINAL MOUNTING POSITION AND FINAL LOCATION WITH INSTALLER.
 9. CONTRACTOR TO PROVIDE 110V POWER TO ALL THERMOSTAT LOCATIONS- FINAL MOUNTING LOCATIONS TO BE FIELD VERIFIED W/ OWNER AND INSTALLING TECH. COORDINATE WITH OTHER TRADES AS REQ.
 10. GFCI RECEPTACLES TO BE PLACES NEAR ALL WARMBOARD MANIFOLD LOCATIONS. FIELD VERIFY FINAL MANIFOLD LOCATIONS BEFORE INSTALLATION OF GFCI FIXTURES. COORDINATE WITH OTHER TRADES AS REQ.
 11. PROVIDE 240V ELEC. CONN. FOR ELECTRIC BOILER UNIT *BOILER HAS BEEN SIZED AND ENGINEERED FOR 240 VOLT, SINGLE-PHASE RESIDENTIAL WIRING. DO NOT USE 208 VOLT. ONLY USE COPPER WIRING
 12. 36KW ON DEMAND HOT WATER HEATER (ELECTRIC) TO BE INSTALLED. ENSURE (4) 40A LEGS INSTALLED INTO PANEL TO ACCOMMODATE NEW HHW UNIT.
- GENERAL NOTES:
1. REFER TO ARCHITECTURAL DRAWINGS FOR CONTINUED CONSTRUCTION AND SCOPE DOCUMENTATION, DIMENSIONS AND LOCATIONS OF NEW DEVICES, APPLIANCE OPENING SIZES. IF ANY CONFLICTS BETWEEN DRAWINGS OCCUR, PLEASE CONTACT THE ENGINEER OR ARCHITECT FOR CLARIFICATION.
 2. CONTRACTOR TO COORDINATE FINAL KITCHEN APPLIANCES WITH KITCHEN EQUIPMENT PROVIDER, CUSTOMER AND DESIGN TEAM PRIOR TO FINAL INSTALL AND ROUGH IN. FINAL LAYOUTS OF APPLIANCES MAY CHANGE AND COORDINATION WILL BE REQUIRED WITH DESIGN TEAM AND CONTRACTORS FOR ANY MADE CHANGES.
 3. ARC FAULT CIRCUIT INTERRUPTERS (AFCI), PER NEC, REQUIRED IN ALL LIVING AREAS

- THERMOSTAT PLACEMENT GUIDELINES
1. WITHIN THE ZONE
 2. AWAY FROM HOT/COOL SOURCES
 3. 5 FEET HIGH
 4. ON INTERIOR WALL (EXTERIOR WALLS CAN BE USED IF WELL INSULATED)
 5. ABOVE LIGHT SWITCH

JUSTIN MEYER - ELECTRICAL
42 Marmot Way,
Ophir, CO 81426

DRAWN BY: JD
CHECKED BY: DR

REVISIONS:

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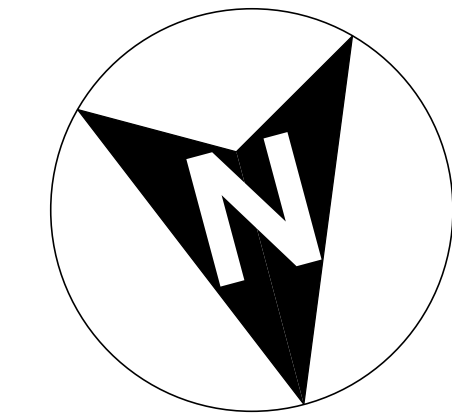
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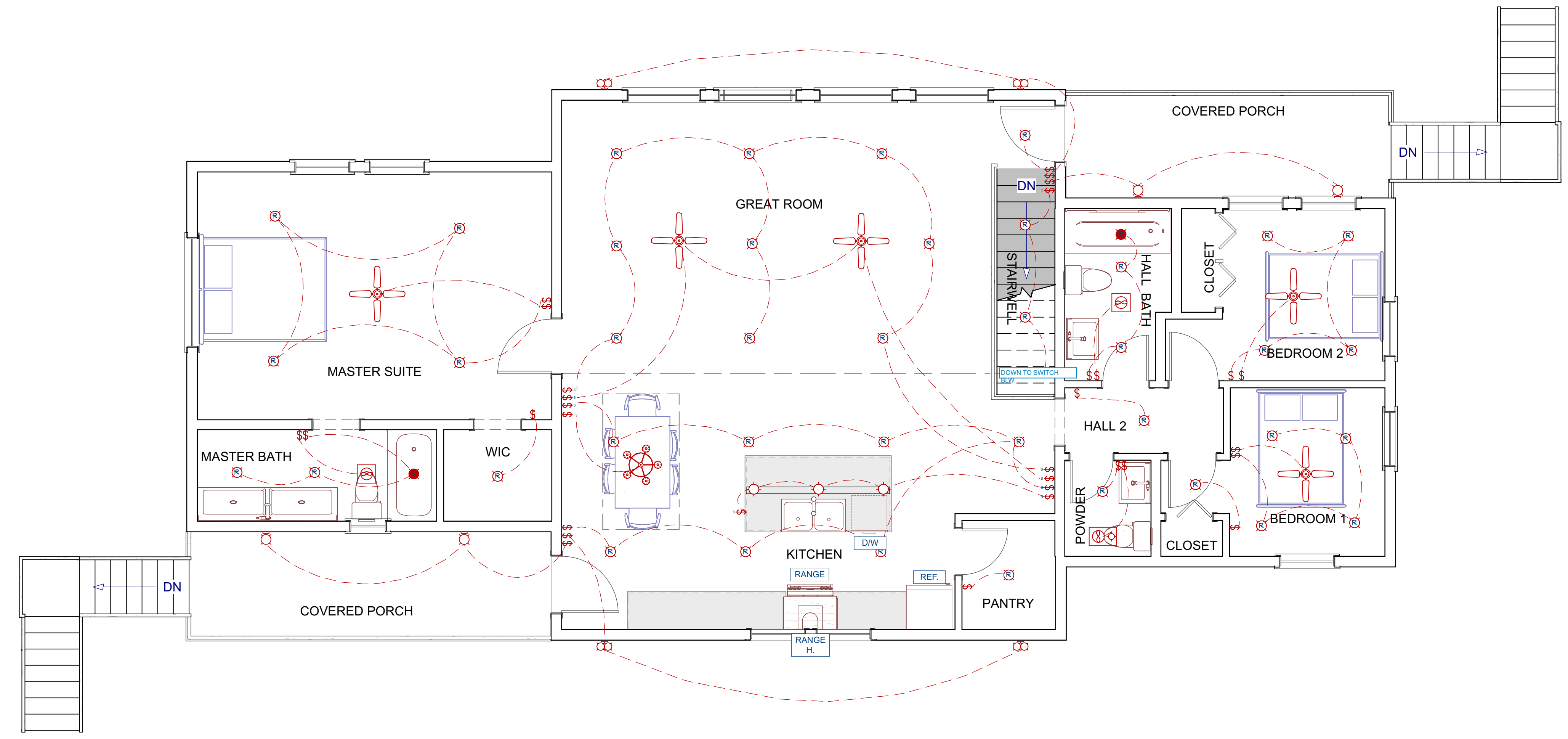
PROJECT NO.:	10305
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DRAWING NO.:	E2.1

2 ELECTRICAL LAYOUT - MAIN FLOOR
SCALE: 1/4" = 1 FT.



* ELECTRICAL SCHEDULE FOR REFERENCE ONLY. G.C. AND ELECTRICIAN TO FIELD VERIFY NEED AND COUNT OF ALL TYPES OF ELECTRICAL HARDWARE, SWITCHES, OUTLETS AND CONNECTIONS

- ENGINEERS NOTE:
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 2. CERTIFIED ELECTRICIAN TO INSTALL PER NEC 2020 CODE.
 3. CERTIFIED ELECTRICIAN TO NOTIFY ENGINEER W/ ANY CHANGES.
 4. ALL ELECTRICAL LAYOUTS ARE SCHEMATIC IN NATURE
 5. SERVICE DISCONNECTING MEANS SHALL BE INSTALLED AT A READILY ACCESSIBLE LOCATION
 6. SERVICE DISCONNECT MEANS SHALL NOT BE INSTALLED IN BATHROOMS
 7. ALL SERVICES SHALL MEET OR EXCEED THE 2020 NEC CODES AND REQ'S.



KEYED NOTES

1. PROVIDE 120 VOLT CONNECTION TO IN-SINK GARAGE DISPOSAL. COORDINATE FINAL CONNECTION WITH KITCHEN EQUIPMENT INSTALLER.
2. PROVIDE 120 VOLT RECEPTACLE UNDER COUNTER DISHWASHER IN ISLAND. COORDINATE FINAL CONNECTION WITH KITCHEN EQUIPMENT INSTALLER.
3. PROVIDE 120 VOLT, HARD WIRED CONNECTION TO RANGE HOOD CONTROL SYSTEM. COORDINATE CONNECTION WITH SYSTEM INSTALLER
4. PROVIDE 120 VOLT RECEPTACLE FOR KITCHEN REFRIGERATOR. COORDINATE FINAL LOCATION OF RECEPTACLE WITH INSTALLER.
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6. PROVIDE 220V VOLT RECEPTACLE FOR KITCHEN ELEC. RANGE. COORDINATE FINAL LOCATION OF RECEPTACLE WITH INSTALLER.
7. NEW 400A ELECTRICAL PANEL IN GARAGE - SEE PLAN SET
8. PROVIDE 120V ELEC. CONN. FOR BATH FANS IN EACH BATHROOM. F.V. FINAL MOUNTING POSITION AND FINAL LOCATION WITH INSTALLER.
9. CONTRACTOR TO PROVIDE 110V POWER TO ALL THERMOSTAT LOCATIONS- FINAL MOUNTING LOCATIONS TO BE FIELD VERIFIED W/ OWNER AND INSTALLING TECH. COORDINATE WITH OTHER TRADES AS REQ.
10. GFCI RECEPTACLES TO BE PLACES NEAR ALL WARMBOARD MANIFOLD LOCATIONS. FIELD VERIFY FINAL MANIFOLD LOCATIONS BEFORE INSTALLATION OF GFCI FIXTURES. COORDINATE WITH OTHER TRADES AS REQ.
11. PROVIDE 240V ELEC. CONN. FOR ELECTRIC BOILER UNIT *BOILER HAS BEEN SIZED AND ENGINEERED FOR 240 VOLT, SINGLE-PHASE RESIDENTIAL WIRING. DO NOT USE 208 VOLT. ONLY USE COPPER WIRING
12. 36KW ON DEMAND HOT WATER HEATER (ELECTRIC) TO BE INSTALLED. ENSURE (4) 40A LEGS INSTALLED INTO PANEL TO ACCOMMODATE NEW HHW UNIT.

- GENERAL NOTES:
1. REFER TO ARCHITECTURAL DRAWINGS FOR CONTINUED CONSTRUCTION AND SCOPE DOCUMENTATION, DIMENSIONS AND LOCATIONS OF NEW DEVICES, APPLIANCE OPENING SIZES. IF ANY CONFLICTS BETWEEN DRAWINGS OCCUR, PLEASE CONTACT THE ENGINEER OR ARCHITECT FOR CLARIFICATION.
 2. CONTRACTOR TO COORDINATE FINAL KITCHEN APPLIANCES WITH KITCHEN EQUIPMENT PROVIDER, CUSTOMER AND DESIGN TEAM PRIOR TO FINAL INSTALL AND ROUGH IN. FINAL LAYOUTS OF APPLIANCES MAY CHANGE AND COORDINATION WILL BE REQUIRED WITH DESIGN TEAM AND CONTRACTORS FOR ANY MADE CHANGES.
 3. ARC FAULT CIRCUIT INTERRUPTERS (AFCI), PER NEC, REQUIRED IN ALL LIVING AREAS

THERMOSTAT PLACEMENT GUIDELINES

1. WITHIN THE ZONE
2. AWAY FROM HOT/COOL SOURCES
3. 5 FEET HIGH
4. ON INTERIOR WALL (EXTERIOR WALLS CAN BE USED IF WELL INSULATED)
5. ABOVE LIGHT SWITCH

JUSTIN MEYER - ELECTRICAL
42 Marmot Way,
Ophir, CO 81426

DRAWN BY: JD

CHECKED BY: DR

REVISIONS:

No.	DESCRIPTION	DATE

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No.	DESCRIPTION	DATE

SCALE:

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DATE: 1/25/2023

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E2.2

3 ELECTRICAL MAIN FLOOR- MAIN FLOOR RCP

SCALE: 1/4" = 1 FT.

JUSTIN MEYER - ELECTRICAL

42 Marmot Way,
Ophir, CO 81426

1. THE ELECTRICAL CONTRACTOR SHALL EXAMINE THE DRAWINGS OF ALL TRADES WHOSE WORK RELATES TO OR IS DEPENDENT ON ELECTRICAL WORK TO BECOME FULLY INFORMED OF THE EXTENT AND CHARACTER OF THEIR SPECIFIED WORK AND BE ABLE TO COORDINATE IT WHILE AVOIDING POSSIBLE INTERFERENCE WITH THE ELECTRICAL WORK.
2. ALL EQUIPMENT, INCLUDING MECHANICAL, MOTORS AND CONTROLS SHALL BE FURNISHED, SET IN PLACE, AND WIRED. THE EXACT FURNISHING AND INSTALLATION OF THE EQUIPMENT SHALL BE COORDINATED BY THE CONTRACTORS INVOLVED.
3. IT IS THE INTENTION OF THESE SPECIFICATIONS AND DRAWINGS TO CALL FOR FINISHED WORK, TESTED AND READY FOR OPERATION. WHEREVER THE WORD "PROVIDE" IS USED, IT SHALL MEAN, "FURNISH AND INSTALL COMPLETE AND READY FOR USE."
4. THE ARCHITECTURAL SPECIFICATIONS, GENERAL AND SPECIAL CONDITIONS FOR THE WORK OF THIS PROJECT SHALL BE EXAMINED BY ELECTRICAL CONTRACTOR BEFORE SUBMITTING A BID.
5. THE CONTRACTOR IS RESPONSIBLE FOR THE COMPLETE AND SATISFACTORY ELECTRICAL INSTALLATION IN ACCORDANCE WITH THE TRUE INTENT OF THE DRAWINGS AND SPECIFICATIONS. HE SHALL PROVIDE, WITHOUT EXTRA CHARGE, ALL INCIDENTAL ITEMS REQUIRED, AS A PART OF THIS ELECTRICAL INSTALLATION. THE INSTALLATION SHALL BE SO MADE THAT ITS SEVERAL COMPONENT PARTS WILL FUNCTION TOGETHER AS A WORKABLE SYSTEM, AND SHALL BE LEFT WITH ALL PARTS ADJUSTED AND IN WORKING ORDER.
6. SECURE AND PAY FOR ALL PERMITS, TAXES, ROYALTIES, LICENSES, AND INSPECTIONS IN ASSOCIATION WITH THE WORK SPECIFIED UNDER ELECTRICAL DIVISION AND INDICATED ON THE DRAWINGS. FILE ALL NECESSARY PLANS, PREPARE ALL DOCUMENTS, AND OBTAIN ALL NECESSARY APPROVALS REQUIRED BY ALL GOVERNMENTAL DEPARTMENTS HAVING JURISDICTION. ALL WORK PERFORMED UNDER THIS CONTRACT SHALL REMAIN EXPOSED TO VIEW UNTIL APPROVED BY THE INSPECTION AUTHORITY.
7. ALL WORK SHALL COMPLY WITH NATIONAL ELECTRICAL CODE (NEC), NATIONAL FIRE PROTECTION ASSOCIATION CODES (NFPA), INTERNATIONAL CODE COUNCIL (ICC) CODES, INCLUDING INTERNATIONAL ENERGY CONSERVATION CODE (IECC), AND ALL APPLICABLE LOCAL, STATE, MUNICIPAL, AND CITY CODES, ORDINANCES AND REGULATIONS.
8. THE NAMING OF THE MANUFACTURER OR BRAND WITH CATALOG NUMBER OR OTHER PRODUCT IDENTIFICATION WITHOUT THE WORDS "OR EQUAL" IN THE SPECIFICATIONS OR NOTES SHALL INDICATE THAT IT IS THE ONLY PRODUCT APPROVED FOR PURCHASE. IF THE WORDS "OR EQUAL" ARE USED, THEY SHALL BE INTERPRETED AS ESTABLISHING A QUALITY OR PERFORMANCE STANDARD FOR THE MATERIAL OR PRODUCT TO BE PURCHASED. THIS SHALL INDICATE THAT THE ELECTRICAL CONTRACTOR IS NOT RESTRICTED TO THE USE OF THE NAMED AND IDENTIFIED PRODUCT IF A SUBSTITUTE APPROVED BY THE ARCHITECT/ENGINEER IS AVAILABLE; HOWEVER, WHERE A SUBSTITUTION IS REQUESTED, IT WILL BE PERMITTED ONLY WITH THE WRITTEN APPROVAL OF THE ARCHITECT/ENGINEER. NO SUBSTITUTE MATERIAL OR PRODUCT SHALL BE ORDERED, FABRICATED, SHIPPED, OR PROCESSED IN ANY MANNER PRIOR TO THE APPROVAL OF THE ARCHITECT/ENGINEER. THE ELECTRICAL CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR ADDITIONAL EXPENSES, AS REQUIRED, MAKING CHANGES FROM THE ORIGINAL MATERIAL OR PRODUCT SPECIFIED.
9. THE TERM "AS REQUIRED" REFERS TO COMPONENTS THAT MAY BE REQUIRED TO COMPLETE THE NOTED SYSTEM INDICATED IN THE PROJECT DOCUMENTS.
10. THE TERM "VERIFY" REFERS TO A CONDITION WHICH MUST BE CONFIRMED PRIOR TO PROCEEDING WITH THE ORDERING OF MATERIAL OR THE FABRICATION AND INSTALLATION OF A COMPONENT.
11. ABBREVIATIONS THROUGHOUT THE DOCUMENTS COMPLY WITH DOCUMENT ABBREVIATION LIST ON LEGEND OR ARE THOSE IN COMMON USE. ENGINEER WILL DEFINE THE INTENT OF ANY IN QUESTION.
12. THE DRAWINGS ARE DIAGRAMMATIC IN CHARACTER. LOCATIONS SHOWN FOR ELECTRICAL EQUIPMENT, DEVICES, CIRCUITING, ETC., ARE APPROXIMATE. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE WORK WITH THE ARCHITECTURAL, PLUMBING, HVAC, AND OTHER TRADE DRAWINGS FOR THE EXACT DIMENSIONS, CLEARANCES, AND ROUGHING-IN LOCATIONS. THE ELECTRICAL CONTRACTOR SHALL COOPERATE WITH THE OTHER TRADES IF FIELD ADJUSTMENTS ARE REQUIRED TO ACCOMMODATE THE WORK OF OTHERS.
13. DRAWINGS SHALL NOT BE SCALED FOR ROUGH-IN MEASUREMENTS OR USED AS SHOP DRAWINGS. WHERE DIMENSIONS ARE SHOWN ON PLANS OR DETAILS, THESE DIMENSIONS ARE TO BE FIELD-VERIFIED BY THE ELECTRICAL CONTRACTOR AGAINST EXISTING FIELD CONDITIONS, INSTALLATION REQUIREMENTS OF OTHER TRADES, AND THE MANUFACTURER'S SUBMITTALS FOR EQUIPMENT TO BE INSTALLED. SHOULD ANY CONFLICTS ARISE WHICH CANNOT BE EASILY RESOLVED IN THE FIELD WITHOUT CHANGING THE DESIGN INTENT, THE ELECTRICAL CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.
14. RECORD DOCUMENTS
 - A. THE ELECTRICAL CONTRACTOR SHALL MAINTAIN ACCURATE RECORDS OF ALL DEVIATIONS IN WORK AS INSTALLED FROM WORK SPECIFIED ON THE DRAWINGS, OR IN THE SPECIFICATIONS, AND IDENTIFY ORIGIN OF CHANGE.
 - B. KEEP A COMPLETE SET OF RECORD DOCUMENT PRINTS IN CUSTODY DURING ENTIRE PERIOD OF CONSTRUCTION AT THE CONSTRUCTION SITE. ON COMPLETION OF THE PROJECT, TWO COMPLETE SETS OF MARKED-UP PRINTS SHOWING THESE DEVIATIONS SHALL BE DELIVERED TO GENERAL CONTRACTOR AND ARCHITECT/ENGINEER. THIS CONTRACT WILL NOT BE CONSIDERED COMPLETED UNTIL THESE RECORD DRAWINGS HAVE BEEN RECEIVED AND REVIEWED BY THE ENGINEER.
 - C. THE FOLLOWING ITEMS ARE REPRESENTATIVE, BUT NOT ALL-INCLUSIVE, OF THE INFORMATION WHICH SHALL BE RECORDED ON THE AS-BUILT DRAWINGS:
 - POWER DISTRIBUTION SYSTEM, INCLUDING DISTRIBUTION EQUIPMENT AND EACH CONDUIT AND WIRE SIZE INSTALLED.
 - FINAL LAYOUT AND CIRCUITING FOR POWER AND LIGHTING, SURFACE RACEWAYS AND RELATED EQUIPMENT, INCLUDING EACH CONDUIT AND WIRE SIZE.
 - CHANGES IN PLAN, SECTIONS, ELEVATIONS, AND DETAILS, SUCH AS SHIFTS IN LOCATION OF WALLS, DOORS, AND WINDOWS.
 - LAST LOCATION AND ARRANGEMENT OF UNDERGROUND UTILITIES AND CONNECTIONS TO EXISTING UTILITIES, INCLUDING ELECTRICAL AND PHONE/TV.
15. BEFORE ANY EQUIPMENT IS INSTALLED, DETERMINE THAT SAID EQUIPMENT WILL PROPERLY FIT WITHIN THE SPACE ALLOCATED. INSTALL ALL EQUIPMENT AND MATERIALS IN SUCH A MANNER AS TO PROVIDE REQUIRED ACCESS FOR SERVICING AND MAINTENANCE. ALLOW AMPLE SPACE FOR REMOVAL OF ALL PARTS THAT REQUIRE REPLACEMENT OR SERVICING.
16. SUFFICIENT ACCESS AND WORKING SPACE SHALL BE PROVIDED AND MAINTAINED ABOUT ALL ELECTRICAL EQUIPMENT TO PERMIT READY AND SAFE OPERATION AND MAINTENANCE OF SUCH EQUIPMENT PER NEC ARTICLE 110 REQUIREMENTS.
17. ALL MATERIALS AND EQUIPMENT SHALL BE NEW, UNDAMAGED, BEAR THE UL LABEL WHERE APPLICABLE, AND BE AS SPECIFIED FOR USE IN EACH SPECIFIC LOCATION. ANY INCIDENTAL ACCESSORIES NECESSARY TO COMPLETE THE WORK IN ALL RESPECTS AND MAKE IT READY FOR OPERATION, EVEN IF NOT SPECIFICALLY SPECIFIED, SHALL BE FURNISHED, DELIVERED, AND INSTALLED BY THE ELECTRICAL CONTRACTOR WITHOUT ADDITIONAL EXPENSE TO THE CLIENT.
18. MINOR DETAILS NOT USUALLY SHOWN OR SPECIFIED, BUT NECESSARY FOR THE PROPER INSTALLATION AND OPERATION OF A SYSTEM OR EQUIPMENT, SHALL BE INCLUDED IN THE ELECTRICAL CONTRACTOR'S ESTIMATE, AS IF SPECIFIED OR SHOWN HEREIN.
19. COORDINATE THE INSTALLATION OF ELECTRICAL MATERIALS AND EQUIPMENT ABOVE AND BELOW CEILINGS WITH SUSPENSION SYSTEM, MECHANICAL EQUIPMENT, AND OTHER BUILDING COMPONENTS. ALL COMPONENTS SHALL BE LOCATED AS TIGHT TO STRUCTURE AS POSSIBLE. COORDINATE CEILING CAVITY SPACE CAREFULLY WITH ALL TRADES.
20. THE CONTRACTOR SHALL PREPARE AN OPERATING AND MAINTENANCE MANUAL COVERING ALL SYSTEMS AND EQUIPMENT INSTALLED UNDER THIS DIVISION. SUBMIT AN OUTLINE OF A PREVENTATIVE MAINTENANCE PROGRAM FOR EACH SYSTEM.
21. WARRANTIES:
 - A. PROVIDE COMPLETE WARRANTY INFORMATION FOR EACH ITEM, WHICH SHALL INCLUDE NAME OF PRODUCT OR EQUIPMENT, DATE OF BEGINNING OF WARRANTY OR BOND, DURATION OF WARRANTY OR BOND, AND NAMES, ADDRESSES, AND TELEPHONE NUMBERS OF MANUFACTURING/SERVICING PERSONNEL, AS WELL AS PROCEDURES FOR FILING A CLAIM AND OBTAINING WARRANTY SERVICES.
 - B. THE CONTRACTOR SHALL WARRANT ALL MATERIALS, WORKMANSHIP AND THE SUCCESSFUL OPERATION OF ALL EQUIPMENT AND APPARATUS INSTALLED FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE ENTIRE WORK AS IDENTIFIED IN THE GENERAL CONDITIONS.
22. THE CONDUIT SYSTEM AND ELECTRICAL ENCLOSURES SHALL BE SECURELY BONDED TOGETHER AND SUPPORTED PER NEC REQUIREMENTS.
23. CONDUIT JOINTS SHALL BE CUT SQUARE AND REAMED SMOOTH. BENDS OR OFFSETS SHALL BE MADE WITH AN APPROVED BENDER OR HICKLEY OR HUB-TYPE CONDUIT FITTINGS. BENDS SHALL BE MADE SO THAT THE CONDUIT IS NOT DAMAGED AND ITS INTERNAL DIAMETER IS NOT EFFECTIVELY REDUCED. THERE SHALL NOT BE MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360° TOTAL) BETWEEN PULL POINTS.
24. CONCEALED CONDUIT SYSTEMS SHALL BE RUN IN A DIRECT LINE WITH LONG SWEEP BENDS AND OFFSETS. EXPOSED CONDUIT RUNS SHALL BE PARALLEL TO AND AT RIGHT ANGLES TO BUILDING LINES, USING CONDUIT FITTINGS FOR ALL TURNS AND OFFSETS.
25. FEEDERS AND BRANCH CIRCUITS SHALL BE PROVIDED WITH APPROPRIATELY SIZED INSULATED EQUIPMENT GROUNDING CONDUCTOR, WHETHER SPECIFICALLY NOTED OR NOT. IF NOTED, THE ELECTRICAL CONTRACTOR IS REQUIRED TO USE THE SIZE OF GROUNDING CONDUCTOR INDICATED ON DRAWINGS. THIS CONDUCTOR SHALL BE CONNECTED FROM THE ELECTRICAL PANEL GROUND BAR TO THE DESIGNATED GROUNDING CONNECTION ON THE ELECTRICAL DEVICE SERVED. ENSURE LISTED GROUND BAR KITS HAVE BEEN INSTALLED PER NEC REQUIREMENTS IN THE ELECTRICAL PANELS.
26. FLOATING CONDUIT GROUNDS ARE NOT ACCEPTABLE. ENSURE ALL FEEDERS (NEW AND EXISTING) ARE PROVIDED WITH APPROPRIATELY-SIZED INSULATED GROUND WIRE, WHETHER NOTED OR NOT. IF NOTED, THE ELECTRICAL CONTRACTOR IS REQUIRED TO USE THE SIZE OF GROUND WIRE INDICATED ON DRAWINGS. THE GROUND WIRE SHALL BE CONNECTED FROM THE ELECTRICAL PANEL GROUND BUS BAR TO THE ELECTRICAL DEVICES. ENSURE FULL SIZE GROUND BUS HAS BEEN INSTALLED PER N.E.C. IN EXISTING ELECTRICAL PANELS. IF REQUIRED, PROVIDE GROUND BUS BAR KIT AND CONNECT AS REQUIRED PER N.E.C. ARTICLE 250.
27. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL JUNCTION AND PULL BOXES TO PROVIDE ACCESS POINTS FOR PULLING AND FEEDING CONDUCTORS INTO A RACEWAY SYSTEM. JUNCTION AND PULL BOXES AND THEIR COVERS SHALL BE FORMED FROM SHEET STEEL, AND SHALL BE BARE METAL OR FINISHED IN GRAY ENAMEL PAINT. BOXES SHALL BE IN INDUSTRY STANDARD SIZES.
28. OUTLET BOXES WITH THE CORRECT FITTING FOR THE APPLICATION SHALL BE LOCATED AT EACH CONDUCTOR SPLICE POINT, AT EACH OUTLET, SWITCH POINT, OR JUNCTION POINT, AND AT EACH PULL POINT FOR THE CONNECTION OF CONDUIT AND OTHER RACEWAYS. OUTLET BOXES FOR CONCEALED WIRING SHALL BE MADE FROM GALVANIZED OR CADMIUM-PLATED SHEET STEEL, AND THEY SHALL HAVE A DEPTH OF AT LEAST 1.5 INCHES, WHETHER SINGLE OR GANGED. THE BOXES SHALL BE LARGE ENOUGH SIZE TO ACCOMMODATE THE NUMBER OF WIRING DEVICES AND CONDUCTORS AS SPECIFIED IN THE FILL SCHEDULE OF THE CURRENT NEC. SECURE BOXES WITH MOUNTING BRACKET, BRACES, HANGER OR BOX MOUNTING SUPPORT.
29. REFER TO ARCHITECTURAL DRAWINGS FOR DEVICE INSTALLATION HEIGHTS PRIOR TO ROUGH-IN.
30. ELECTRICAL DEVICES (SWITCHES, RECEPTACLES, ETC.) SHALL BE 20A RATED UNLESS OTHERWISE SPECIFIED ON DRAWINGS. VERIFY DEVICE CONFIGURATION, COLOR, FINISH, AND MATERIAL REQUIREMENTS WITH ARCHITECT. DEVICES IN RESIDENTIAL UNITS SHALL BE A MINIMUM OF 15A RATED.
31. WIRING INSIDE THE BUILDING SHALL BE COPPER, INSULATION TYPE THHN/THWN, UNLESS OTHERWISE NOTED. THE MINIMUM CONDUCTOR SIZE SHALL BE 12 AWG. CONDUCTORS SIZED FROM #10 AWG AND LARGER SHALL BE STRANDED. WHERE MC TYPE FLEXIBLE CABLE IS INSTALLED IN LIEU OF WIRE AND CONDUIT, FULL-SIZE EQUIPMENT GROUNDING CONDUCTOR SHALL RUN WITH CURRENT CARRYING CONDUCTORS. NM TYPE CABLE MAY BE USED ONLY AS AUTHORIZED BY THE OWNER AND DESIGN ENGINEER, AND WITH APPROVAL OF LOCAL CODE AUTHORITY.
32. CONDUCTORS SIZES #6 AWG AND SMALLER SHALL BE FACTORY COLOR-CODED WITH AN INDUSTRY STANDARD DESIGNATED COLOR FOR EACH PHASE AND A NEUTRAL CONDUCTOR. CONDUCTORS SIZES #4 AWG AND LARGER SHALL HAVE COLORS FIELD APPLIED USING THE COLOR MARKING TAPE OR BY PAINTING THE INSULATION. THESE COLORS SHALL BE USED CONSISTENTLY THROUGHOUT THE SYSTEM.
33. ALL JOINTS OR SPLICES FOR #10 AWG CONDUCTORS OR SMALLER SHALL BE MADE WITH UL-APPROVED WIRE NUTS, "IN-SURE" PUSH-IN CONNECTORS, OR COMPRESSION-TYPE CONNECTORS.
34. ALL JOINTS OR SPLICES FOR CONDUCTORS #8 AWG AND LARGER SHALL BE MADE WITH A MECHANICAL COMPRESSION CONNECTOR. AFTER THE CONDUCTORS HAVE BEEN MADE MECHANICALLY AND ELECTRICALLY SECURE, THE ENTIRE JOINT OR SPLICE SHALL BE COVERED WITH 3M SCOTCH BRAND NO. 33 TAPE, OR APPROVED EQUAL, TO MAKE THE INSULATION VALUE AT THE JOINT OR SPLICE EQUAL TO THE VALUE OF THE CONDUCTORS INSULATION. THE CONNECTORS SHALL BE UL APPROVED.
35. UNLESS OTHERWISE INDICATED, ALL WIRING FOR BRANCH CIRCUITS SHALL BE #12 AWG WHEN PROTECTED BY A 15- OR 20- AMP CIRCUIT BREAKER. IF DISTANCE FROM PANEL TO FIRST DEVICE IS 100 FEET OR GREATER FOR 120-VOLT CIRCUITS, OR 150 FEET OR GREATER FOR 277-VOLT CIRCUITS, #10 AWG WIRING SHALL BE INSTALLED.
36. FOR ALUMINUM CONDUCTOR TERMINATIONS, ALUMINUM BI-METALLIC PIN CONNECTORS ARE RECOMMENDED UNLESS COMPACT-TYPE CONDUCTORS ARE USED. THESE CONNECTORS SHALL BE UL LISTED PER UL486B, RATED FOR USE UP TO 600V AND TEMPERATURE UP TO 90°C. CONNECTORS SHALL BE INSTALLED WITH MANUFACTURER'S SPECIFIED CRIMPING TOOLS AND DIES.
37. INSTALLATION IN AREAS OF DRYWALL CEILING SHALL BE COORDINATED SUCH THAT ACCESS PANELS ARE NOT REQUIRED. ELEMENTS REQUIRING ACCESS SHALL BE LOCATED IN THE AREAS OF ACCESSIBLE CEILING, OR IN THE LOCATIONS COORDINATED WITH ARCHITECT. ACCESS PANELS REQUIRED WITHIN DRYWALL CEILINGS SHALL BE INSTALLED SYMMETRICALLY WITH OTHER PANELS OR DEVICES, AND SHALL BE MINIMUM SIZE REQUIRED, "MUD-IN" TYPE, AND FIRE RATED, IF REQUIRED. ACCESS PANELS IN FIRE-RATED WALLS AND CEILINGS SHALL HAVE PROPER UL LABEL AND FIRE RATING LISTING.
38. WALL AND CEILING ROUGH-IN INSTALLATIONS FOR LOW-VOLTAGE CONTROL WIRING OF ANY TYPE SUCH AS DATA/TELECOMMUNICATIONS WIRING, FIRE ALARM WIRING, HVAC CONTROL WIRING, SECURITY SYSTEMS WIRING, TV CABLING, OPTICAL FIBER CABLING, ETC., SHALL BE COMPLETE AND READY FOR INSPECTION AT THE TIME ELECTRICAL ROUGH-IN INSPECTIONS ARE REQUESTED. ALL SHARP EDGES, CONDUIT ENDS AND METAL STUDS, ETC., FOR LOW-VOLTAGE CABLING SHALL BE PROTECTED BY INSULATED BUSHINGS OR GROMMETS, AND SECURELY FASTENED IN THE OPENINGS FOR THE WALL ROUGH-IN INSPECTIONS. WORK SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER (GROUPED CABLES ROUTED WITH SQUARE CORNERS AND PARALLEL TO BUILDING LINES.) CABLES SHALL BE INSTALLED PER NEC REQUIRED SEPARATIONS, AND SUPPORTED FROM THE BUILDING STRUCTURE. CABLE TIES USED IN DUCTS, PLENUMS, AND OTHER AIR-HANDLING SPACES ARE REQUIRED TO HAVE A TESTING LABORATORY LISTING NUMBER AND LABEL ON EACH UNOPENED PACKAGE AS BEING APPROVED FOR USE IN THESE LOCATIONS.
39. ELECTRICAL CABINETS AND ENCLOSURES LOCATED IN PUBLIC AREAS SHALL BE LOCKABLE TYPE.
40. PENETRATIONS THROUGH STRUCTURAL MEMBERS SHALL NOT BE PERMITTED WITHOUT SPECIFIC WRITTEN PERMISSION FROM STRUCTURAL ENGINEER AND ARCHITECT. SUBMIT REQUESTS FOR PENETRATIONS TO ARCHITECT FOR REVIEW AND DISPOSITION. PRIOR TO CORE DRILLING THROUGH FLOORS, VERIFY CLEARANCE OF BEAMS, DUCTWORK, ETC., IN CEILING SPACE BELOW, AND X-RAY FOR CONDUIT AND/OR REBAR IN SLAB.
41. ALL ROOF PENETRATIONS SHALL BE SEALED WATER TIGHT. PROVIDE FLASHING AND COUNTER FLASHING AS REQUIRED. COORDINATE ROOFING WORK WITH THE GENERAL CONTRACTOR.
42. RACEWAYS SHALL BE PROVIDED WITH EXPANSION FITTINGS WHERE NECESSARY TO COMPENSATE FOR THERMAL EXPANSION AND CONTRACTION, AND TO ALLOW FOR MINOR MOVEMENT OF THE STRUCTURAL ELEMENTS OF THE BUILDING. EXPANSION FITTINGS FOR METAL RACEWAYS SHALL BE MADE ELECTRICALLY CONTINUOUS BY EQUIPMENT BONDING JUMPERS OR OTHER MEANS.
43. PROVIDE TYPEWRITTEN PANELBOARD DOOR DIRECTORIES WITH ACCURATE BRANCH CIRCUIT DESTINATIONS. CLEARLY MARK JUNCTION BOXES IN CEILING SPACE WITH PANEL DESIGNATIONS AND CIRCUIT NUMBERS. PROVIDE ENGRAVED PLASTIC LABELS FOR ALL DISTRIBUTION EQUIPMENT. ATTACH THESE LABELS PERMANENTLY TO EQUIPMENT WITH RIVETS OR SCREWS. SELF ADHESIVE TYPE IS NOT ACCEPTABLE. LABEL OUTLET AND SWITCH COVER PLATES WITH PANEL DESIGNATION AND CIRCUIT NUMBERS.
44. REQUIREMENTS FOR MECHANICAL EQUIPMENT ELECTRICAL CONNECTIONS:
 - A. ELECTRICAL CONTRACTOR SHALL REVIEW MECHANICAL AND PLUMBING DRAWINGS AND SCHEDULES FOR VERIFICATION OF THE EQUIPMENT USED, WIRING AND ADDITIONAL INSTALLATION REQUIREMENTS PRIOR TO PROVIDING REQUIRED STARTERS/DISCONNECT SWITCHES. WHEN EQUIPMENT DELIVERED TO JOB SITE, ELECTRICAL CONTRACTOR SHALL VERIFY THIS DATA WITH EQUIPMENT NAMEPLATES OR MANUALS. IF SIGNIFICANT DISCREPANCIES OCCUR CONTACT ELECTRICAL ENGINEER FOR REVISION OF THE CONSTRUCTION DOCUMENTS.
 - B. PROVIDE SAFETY DISCONNECT SWITCHES FOR ALL MECHANICAL EQUIPMENT UNLESS PROVIDED BY MECHANICAL CONTRACTOR AS SPECIFICALLY DIRECTED ON MECHANICAL DRAWING OR SPECIFICATION REQUIREMENTS.
 - C. ELECTRICAL WIRING IN CONNECTION WITH THE AUTOMATIC TEMPERATURE CONTROL SYSTEM, WHERE SHOWN ON THE ELECTRICAL DIVISION DRAWINGS, SHALL BE PERFORMED BY THE ELECTRICAL CONTRACTOR. ALL OTHER WIRING, INCLUDING 120V REQUIRED FOR PROPER OPERATION OF THE AUTOMATIC TEMPERATURE CONTROL SYSTEM, SHALL BE PERFORMED BY THE MECHANICAL CONTRACTOR.
45. PROVIDE FIRE STOPPING MATERIAL AND SYSTEMS, AS LISTED IN THE UL FIRE RESISTANCE DIRECTORY, EQUAL TO THE FIRE RESISTANCE RATING OF THE RESPECTIVE WALL OR FLOOR ASSEMBLY FOR ALL PENETRATIONS OF CONDUIT, SLEEVES, WIRING, CABLES AND OTHER ELECTRICAL ITEMS THROUGH FIRERATED CORRIDOR WALLS, FIRE RESISTIVE WALLS, FIRE RESISTIVE SHAFTS, AND FLOOR PENETRATIONS.

DRAWN BY: JD

CHECKED BY: DR

REVISIONS:

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No.	DESCRIPTION	DATE

SCALE:

SHEET CONTENTS:

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DATE: 1/25/2023

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E3.0

1 ELECTRICAL SERVICE - ELECTRICAL NOTES
SCALE: NO SCALE

250.122 Size of Equipment Grounding Conductors

Table 250.122 Minimum Size Equipment Grounding Conductors for Grounding Raceway and Equipment

Rating or Setting of Automatic Overcurrent Device in Circuit Ahead of Equipment, Conduit, etc., Not Exceeding (Amperes)	Size (AWG or kcmil)	
	Copper	Aluminum or Copper-Clad Aluminum*
15	14	12
20	12	10
60	10	8
100	8	6
200	6	4
300	4	2
400	3	1
500	2	1/0
600	1	2/0
800	1/0	3/0
1000	2/0	4/0
1200	3/0	250
1600	4/0	350
2000	250	400
2500	350	600
3000	400	600
4000	500	750
5000	700	1250
6000	800	1250

Note: Where necessary to comply with 250.4(A)(2) or (B)(4), the equipment grounding conductor shall be sized larger than given in this table.
*See installation restrictions in 250.120.

Table 310.12 Single-Phase Dwelling Services and Feeders

Service or Feeder Rating (Amperes)	Conductor (AWG or kcmil)	
	Copper	Aluminum or Copper-Clad Aluminum
100	4	2
110	3	1
125	2	1/0
150	1	2/0
175	1/0	3/0
200	2/0	4/0
225	3/0	250
250	4/0	300
300	250	350
350	350	500
400	400	600

Note: If no adjustment or correction factors are required, this table shall be permitted to be applied.

Table 250.66 Grounding Electrode Conductor for Alternating-Current Systems

Size of Largest Ungrounded Conductor or Equivalent Area for Parallel Conductors (AWG/kcmil)	Size of Grounding Electrode Conductor (AWG/kcmil)	
	Copper	Aluminum or Copper-Clad Aluminum
2 or smaller	10 or smaller	8
1 or 1/0	2/0 or 3/0	6
2/0 or 3/0	4/0 or 250	4
Over 3/0 through 350	Over 250 through 500	2
Over 350 through 600	Over 500 through 900	1/0
Over 600 through 1100	Over 900 through 1750	2/0
Over 1100	Over 1750	3/0

Note:
1. If multiple sets of service-entrance conductors connect directly to a service (buss, set of ungrounded service conductors, or service lateral), the equivalent size of the largest service-entrance conductor shall be determined by the largest sum of the areas of the corresponding conductors of each set.
2. Where there are no service-entrance conductors, the grounding electrode conductor size shall be determined by the equivalent size of the largest service-entrance conductor required for the load to be served.
3. See installation restrictions in 250.64.

GENERAL NOTES

- EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE NEC AND ALL AUTHORITY HAVING JURISDICTION.
- FOLLOW MANUFACTURERS SUGGESTED INSTALLATION INSTRUCTIONS AND WIRING SPECIFICATIONS.
- COORDINATE ALL UTILITY RELATED WORK WITH XCEL ENERGY PRIOR TO CONSTRUCTION
- ALL SHOWN IN NEW

ELECTRICAL DETAIL NOTES

- PROVIDE SURGE-PROTECTION DEVICE (SPD) FOR ALL DWELLING UNIT PANELBOARDS, PER NEC 230.67. VERIFY OCPD WITH SPD MANUFACTURE.
- LABEL SERVICE AND EMERGENCY DISCONNECT.
- CONDUCTORS AND OCPD SIZED BASED ON NEC 220 LOAD CALCULATION AND NEC 240.4(B) OCPD RATINGS.

10305_Cabin Site 66
Engineering Studio Denver

Available Fault Current Calculation

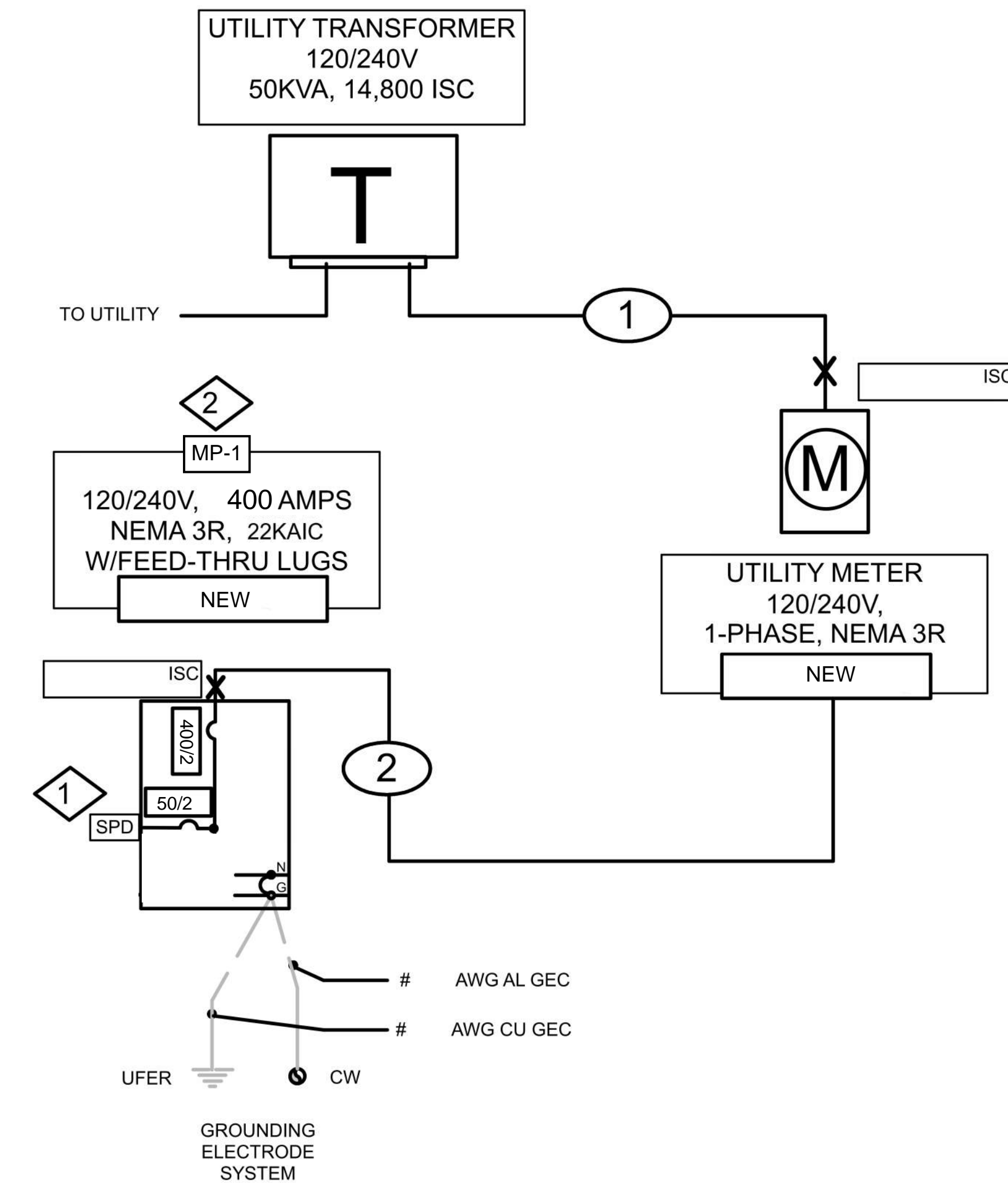
by: John Sokolik Ver. 7.1
jmp1ids@comcast.net

Utility Fault Current amperes kVA =
 $I = \frac{kVA \times 1000}{E} = \text{trans. FLA}$ E = trans. FLA =
 $I_{SCA} = \frac{\text{trans. FLA} \times 100 \times PF}{\text{transformer Z}}$ PF =
 I_{SCA} = ampere short-circuit current RMS symmetrical. Z =
 I_{SCA} = amperes

Point to Point Method Single Phase 208/120
 Length (distance) FEET L =
 # conductors per phase N =
 Phase conductor constant C = Phase Conductor 400 kcmil
 Volt Line to Line E L - L = Volt
 f =
 Neutral conductor constant C = Neutral Conductor 3
 Volt Line to Neutral E L - N = Volt
 f =

Multiplier
 $M = \frac{1}{1 + f}$ Line to Line M =
 Line to Neutral M =

Fault Current at Service Equipment
 I_{SCA} x M = fault current at terminals of main disconnect L - L = amperes
 I_{SCA} x M = fault current at terminals of main disconnect L - N = amperes



DRAWN BY: JD

CHECKED BY: DR

REVISIONS:

No.	DESCRIPTION	DATE

ISSUE RECORD:

No.	DESCRIPTION	DATE

SCALE:

SHEET CONTENTS:

PROJECT NO.: 10305

DATE: 1/25/2023

DRAWING NO.: **E3.1**

JUSTIN MEYER - ELECTRICAL
42 Marmot Way,
Ophir, CO 81426

DRAWN BY: JD

CHECKED BY: DR

REVISIONS:

No.	DESCRIPTION	DATE

ISSUE RECORD:

No.	DESCRIPTION	DATE

SCALE:

SHEET CONTENTS:

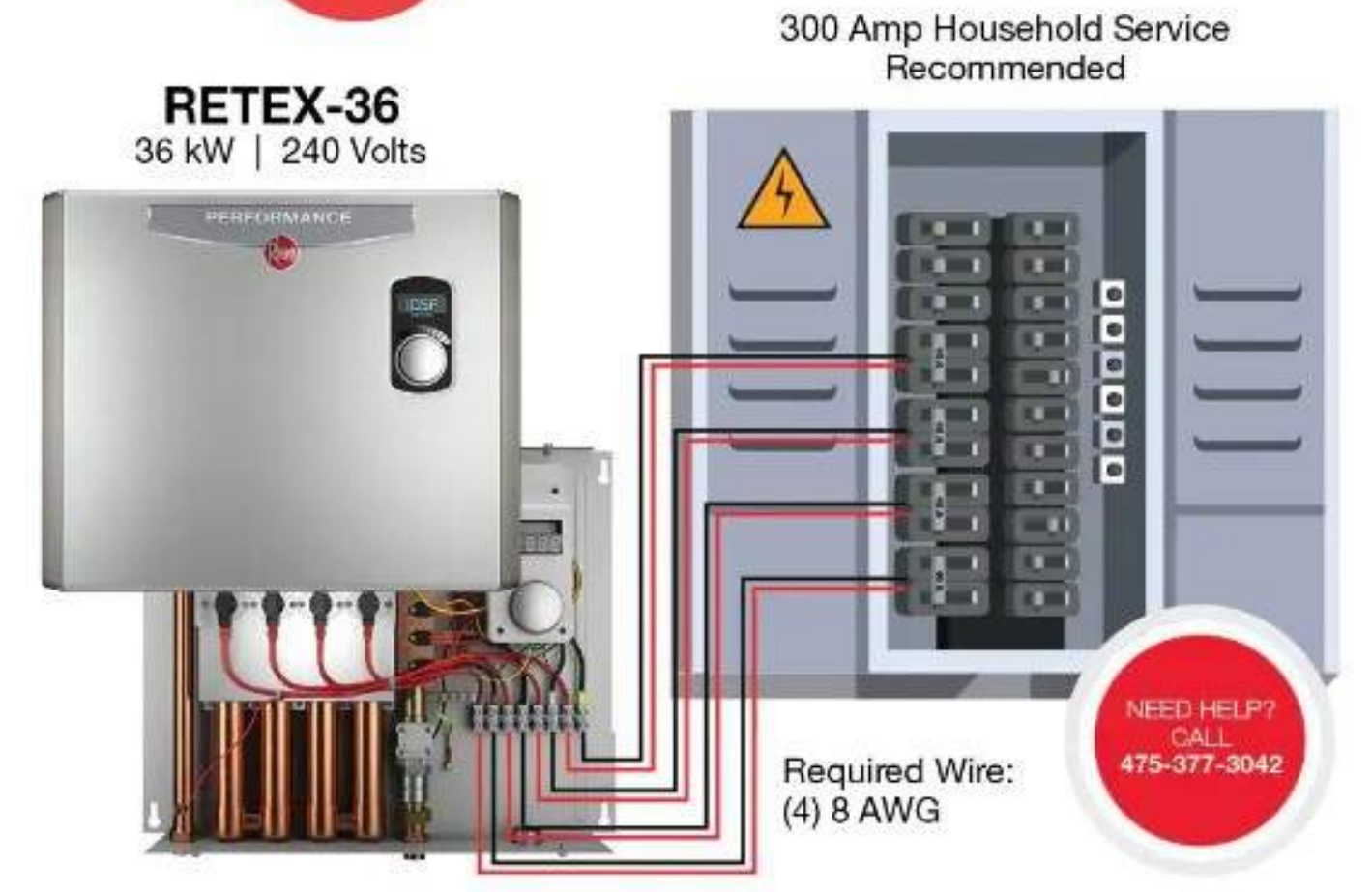
PROJECT NO.: 10305

DATE: 1/25/2023

DRAWING NO.:

E4.0

Rheem ELECTRICAL REQUIREMENTS



- 150 Amp Max Draw
- 4 x 40 Amp Double Pole Breakers Required

In order to install a RETEX-36 you must have enough room in your breaker panel to dedicate four 40 Amp double pole breakers solely to the unit.

Specifications

Dimensions: H 18.25 in, W 21.625 in, D 3.5 in

Dimensions

Product Depth (in.)	3.5 in	Product Height (in.)	18.25 in
Product Width (in.)	21.625 in	Water Connection Size (in.)	3/4 in NPT

Details

Amperage (amps)	150 A	Application Type	Residential
Electricity Phase	Single Phase	Finish Family	Gray
Flow Rate @ 35°F Rise (gallons/min)	7.03 gal (US)/min	Flow Rate @ 45°F Rise (gallons/min)	5.46 gal (US)/min
Flow Rate @ 55°F Rise (gallons/min)	4.47 gal (US)/min	Flow Rate @ 65°F Rise (gallons/min)	3.78 gal (US)/min
Fuel Type	Electric	Heat Exchanger Warranty	5 Year
Indoor/Outdoor	Indoor	Maximum Temperature (F)	140 °F
Minimum Activation Rate (gpm)	0.25	Minimum Temperature (F)	80 °F
Number of Elements	4	Number of Showers	1-3
Pack Size	1	Product Weight (lb.)	19 lb
Required Volt Connection	240 volt	Returnable	90-Day
Uniform Energy Factor	0	Water Heater Features	Wall Mounted
Wattage (watts)	36000 W		

Warranty / Certifications

Certifications and Listings	CSA Certified, ETL Listed, UL Listed	Labor Warranty	No Warranty
Part Warranty	1 Year		

Electrical Requirements

Ensure your home can accommodate the power supply and that you have enough space available in your breaker panel for this unit.

Model	kW	Amps	Volts	Breaker (AMPS)	Wire Gauge Req.	Weight
Modelo	kW	Amperes	Volts	Disyuntor (Amperes)	Calibre requerido del cable	Peso
RETEX-36	36	150	240	4 x 40 DP	4 x 8 AWG	17.4 LBS

Rheem Performance 36 kw Self-Modulating 7.03 GPM Tankless Electric Water Heater

★★★★★ (1909) Questions & Answers (892)

\$619.00 (BULK PRICE ELIGIBLE) Buy 3 or more \$557.10

\$104.00 /mo* suggested payments with 6 months* financing Apply Now

- Provides continuous on-demand hot water
- Energy and cost savings of up to 34% in whole-home installations
- Water heater requires 4 x 40 AMP double pole breakers
- View More Details

Flow Rate @ 35°F Rise (gallons/min): **5.27 gal (US)/min**

1.56 gal (US)/min 2.15 gal (US)/min 2.54 gal (US)/min 3.51 gal (US)/min

4.68 gal (US)/min 5.27 gal (US)/min **7.03 gal (US)/min**

Pickup at Silverlake Delivering to 77584

Ship to Store Jan 17 - Jan 18 51 available FREE

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Get Expert In-Home Installation Need help fast? Call 1-855-400-2552

Add In-Home Installation

Selection Guide

- NOTE THE COLOR OF YOUR LOCATION
- FIND THE CORRESPONDING GPM AND APPROXIMATE USAGE BELOW
- CONSIDER A GAS UNIT IF YOU NEED A HIGHER GPM

MODEL: RETEX-36

Inlet Temp. 37-47°F		Inlet Temp. 47-57°F		Inlet Temp. 57-62°F		Inlet Temp. 62-77°F	
Max GPM	Approx. Usage	Max GPM	Approx. Usage	Max GPM	Approx. Usage	Max GPM	Approx. Usage
4.2	2	5.1	3	5.7	4	8.8	6

Usage Key

- Faucet: Flow rate of 0.5 GPM
- Shower: Flow rate of 1.5 GPM

Inlet Temp: The temperature of water entering your water heater
GPM: Gallons Per Minute
Approx. Usage: The number of faucets/showers unit can serve based on 105° temperature setting*

*Higher temperature settings will reduce flow rates.

