

ATCO HUNTER BRM ALASKA RETROFIT

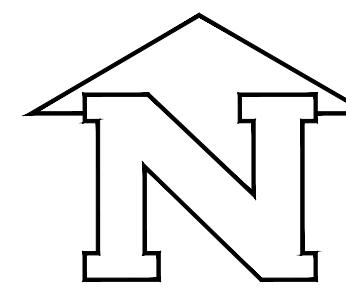
WASILLA, ALASKA

ISSUED FOR REVIEW
JULY 18, 2024

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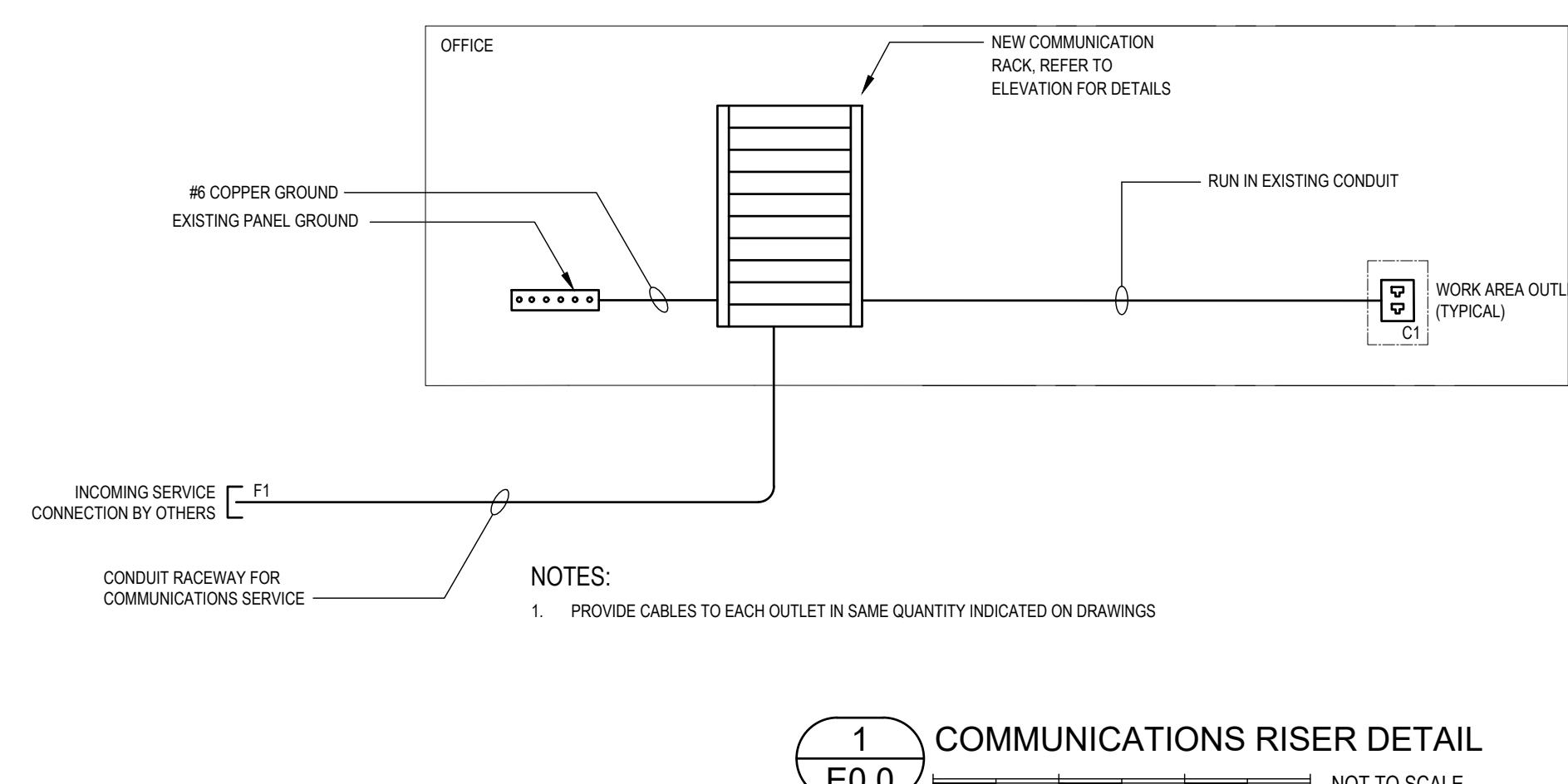
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PROJECT NORTH

PRODUCTION DRAWINGS BY:



CABLING SCHEDULE	
CABLE	SCHEDULE
FIBRE	
F1	INCOMING SERVICE (BY OTHER)
COPPER	
C1	2x CAT 5E - 4 PAIR

PANELBOARD SCHEDULE						
JOB NO/NAME: 0324.0214 - ATCO HUNTER BRM ALASKA RETROFIT EXISTING SYSTEM: 120/240V, 1PH, 3W TYPE: SQUARE D LOCATION: INTERIOR MOUNTING: FLUSH NO. CIRCUITS: 12 BUS SIZE: 100A SYM FAULT RATING: 10kAIC						
DESCRIPTION	BRK	POLE	CCT	CCT	POLE	BRK
A/C UNIT	60	2	01	02	1	35
			03	04	1	15
RECEPTACLES	15	1	05	06	1	15
BASEBOARD HEATER	15	1	07	08	1	15
SPARE	15	1	09	10	2	20
SPARE	15	1	11	12		
DESCRIPTION	BRK	POLE	CCT	CCT	POLE	BRK
BOOSTER PUMP						
ELECTRIC WATER HEATER						
RECEPTACLES						
LIGHTING AND FANS						
WALL FAN ELECTRIC HEATERS						

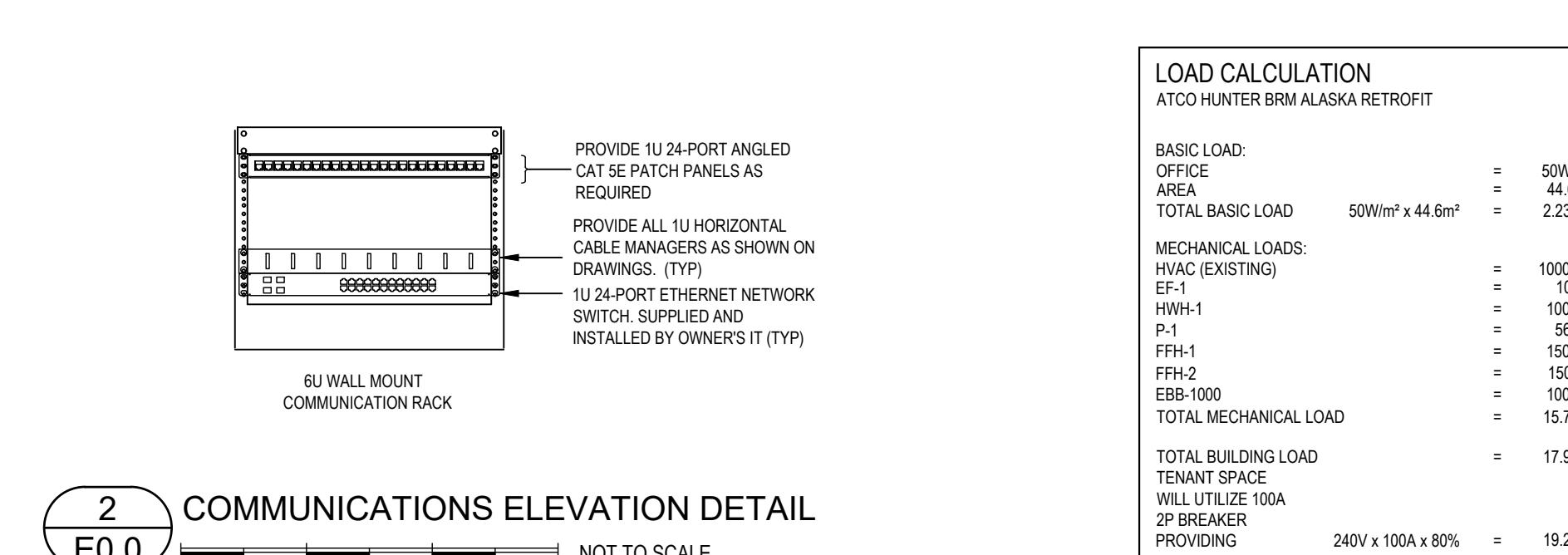
ELECTRICAL SYMBOL LEGEND	
ABBREVIATIONS	
NOTE: EQUIPMENT SHOWN DOTTED IS EXISTING AND TO REMAIN UNLESS INDICATED OTHERWISE	
R	EXISTING DEVICE TO BE REMOVED
RN	EXISTING DEVICE TO BE REPLACED WITH NEW
RR	EXISTING DEVICE TO BE REMOVED AND RELOCATED
RE	EXISTING DEVICE IN NEW RELOCATED POSITION
POWER	
∅	DUPLEX RECEPTACLE
∅	4 PLEX RECEPTACLE
∅	ABOVE COUNTER DUPLEX RECEPTACLE
∅	GROUND FAULT CIRCUIT INTERRUPTER (GFCI)
∅	5-20R DUPLEX RECEPTACLE (T-SLOT)
∅	5-20R DUPLEX RECEPTACLE (T-SLOT)
∅	GROUND FAULT CIRCUIT INTERRUPTER (GFCI)
∅	POWER CONNECTION
∅	MOTOR CONNECTION
∅	DISCONNECT SWITCH
∅	PANEL BOARD
∅	FORCE FLOW HEATER
LIGHTING	
∅	CEILING RECESSED LUMINAIRE
∅	STRIP LUMINAIRE
∅	WALL MOUNTED LUMINAIRE
∅	SINGLE POLE TOGGLE SWITCH, GANGED AS SHOWN
∅	OCCUPANCY SENSOR, CEILING MOUNTED
∅	OCCUPANCY SENSOR, CEILING MOUNTED
∅	COMBINATION EXIT SIGN WITH REMOTE HEADS
FIRE ALARM	
∅	SMOKE ALARM

LUMINAIRE SCHEDULE					
TYPE	MANUFACTURER	CAT. No.	OPTICS	VOLTAGE	REMARKS
A	LITHONIA	CLX L24 1500LM SEF FDL 120 GZ10 35K 80CRI	15W, LED, 1500Lm, 3500K, 80CRI	120V	surface mount 2' strip fixture.

MECHANICAL EQUIPMENT SCHEDULE																														
Q#	DESCRIPTION	EQUIPMENT LOCATION	LOAD			PHASE	UNIT	STARTER	DISC.	CONTROL	SUPPLY PANEL			WIRE & CONDUIT																
			MCA	KW	HP						SUPPLY	CONNECT	SUPPLY	CONNECT	TYPE	FREE	ACROSS	PANEL #	P	CCT NO'S	WIRE SIZE mm ²	NO BENDS	CONDUIT SIZE mm ²	TOTAL AMPS	NOTE					
AC	EXISTING HVAC UNIT	EXTERIOR	-	-	-	208	1	M	M	E	-	-	E	E	E	M	M	E	-	-	EX	INTERIOR	60	2	1,3	-	-			
EF-1	CEILING MOUNT INLINE EXHAUST FAN	WASHROOM	0.1	-	-	120	1	M	M	E	-	-	E	E	E	M	M	E	-	-	EX	INTERIOR	15	1	8	12	2	21	-	2
HWH-1	ELECTRIC WATER HEATER	MECHANICAL ROOM	1	-	-	120	1	M	M	E	-	-	E	E	E	M	M	E	-	-	EX	INTERIOR	15	1	4	12	2	21	-	2
P-1	BOOSTER PUMP	MECHANICAL ROOM	-	0.75	-	120	1	M	M	E	-	-	E	E	E	M	M	E	-	-	EX	INTERIOR	35	1	2	12	2	21	-	2
FFH-1	WALL FAN ELECTRIC HEATER	OFFICE	1.5	-	240	1	M	M	E	E	-	-	E	E	E	M	M	E	-	-	EX	INTERIOR	20	2	10,12	12	3	21	-	2
FFH-2	WALL FAN ELECTRIC HEATER	OFFICE	1.5	-	240	1	M	M	E	E	-	-	E	E	E	M	M	E	-	-	EX	INTERIOR	20	2	10,12	12	3	21	-	2
EBB-100	1000W ELECTRIC BASE BOARD HEATER	MECHANICAL ROOM	-	1	-	120	1	E	E	E	-	-	E	E	E	E	E	E	-	-	EX	INTERIOR	15	1	7	12	2	21	-	2

LEGEND
M = DENOTES BY MECHANICAL CONTRACTOR
E = DENOTES BY ELECTRICAL CONTRACTOR
T = THERMOSTAT

NOTES
1. ALL VARIABLE SPEED DRIVES TO HAVE A DEDICATED COPPER GROUND CONDUCTOR SIZED TO MATCH PHASE CONDUCTOR.
2. CONFIRM FINAL MECHANICAL EQUIPMENT REQUIREMENTS WITH MECHANICAL CONTRACTOR'S SHOP DRAWINGS AND ADJUST CIRCUIT WIRING AND BREAKER RATING IF REQUIRED AT NO ADDITIONAL COST.



2 COMMUNICATIONS ELEVATION DETAIL
E0.0
NOT TO SCALE

DRAWING TITLE:

COVER PAGE

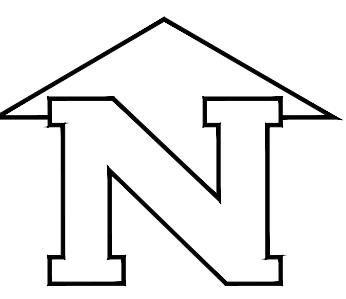
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SCALE: AS NOTED
DRAWN BY: PS
CHECKED BY: NM
JOB NUMBER: 0324.0214
DRAWING NUMBER:

E0.0

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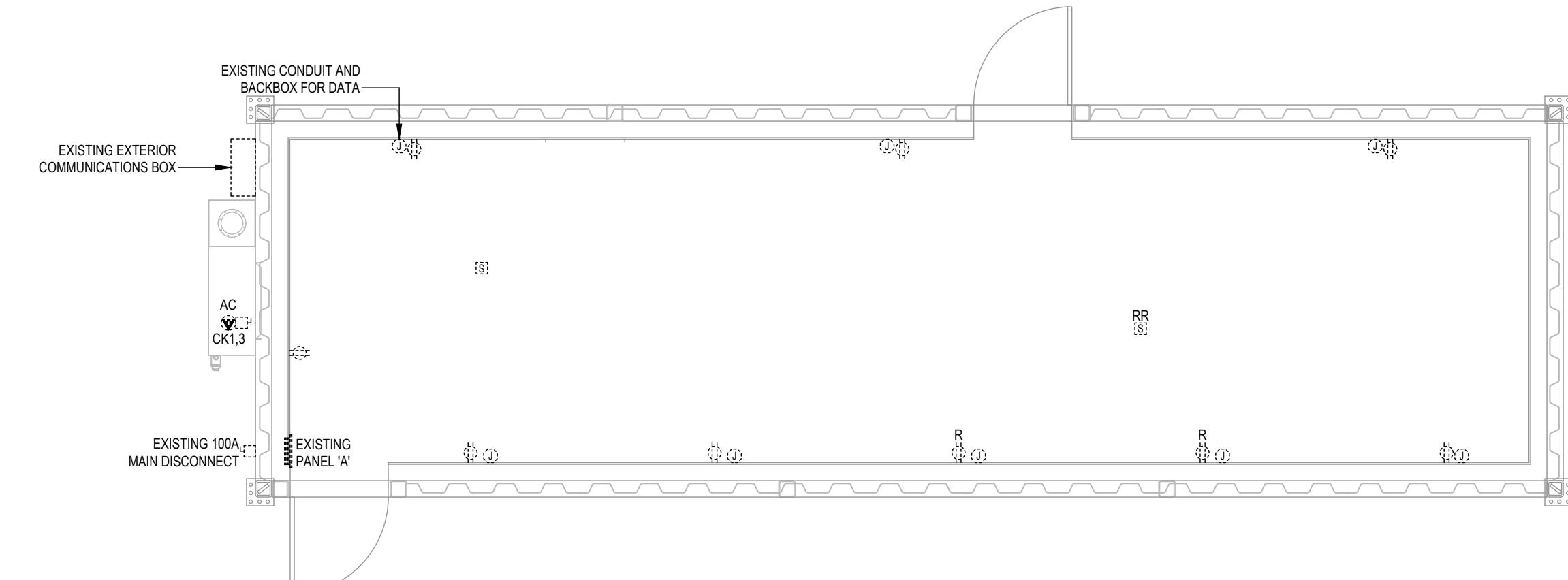
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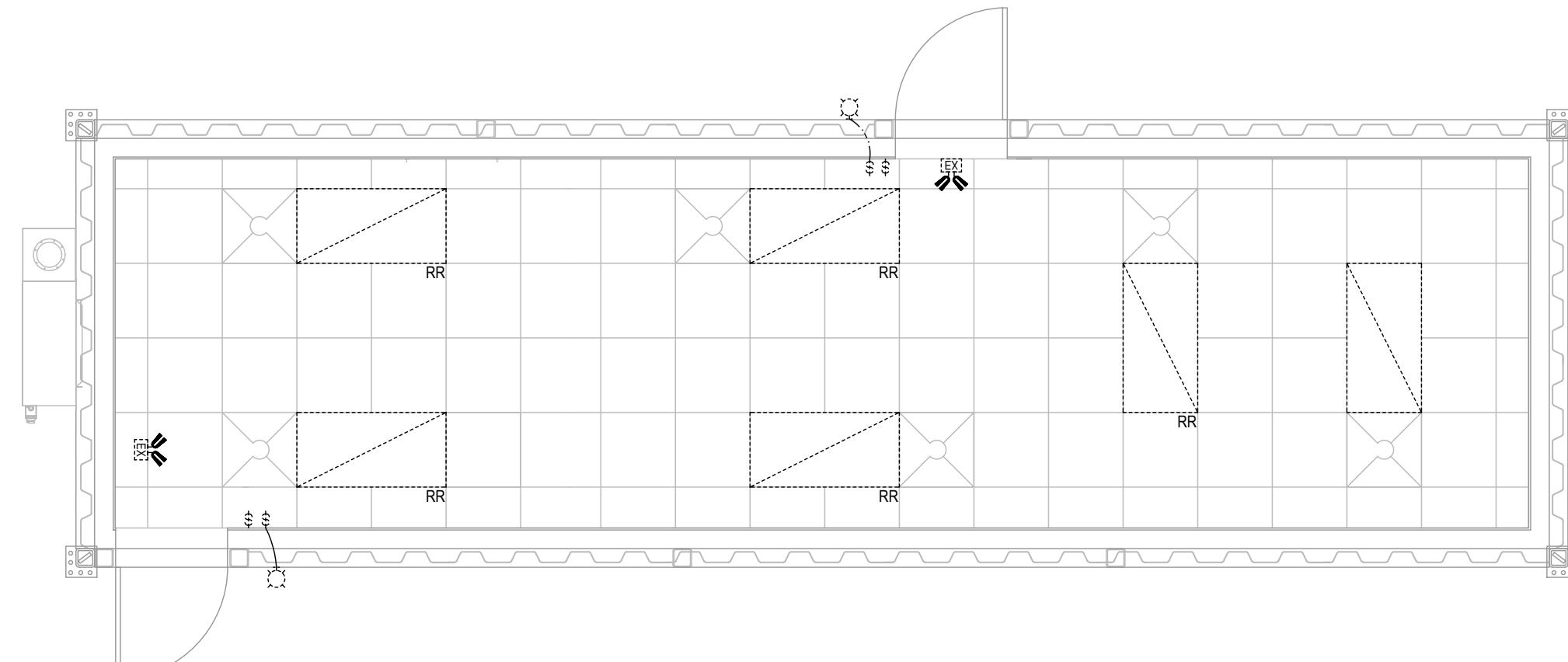


PROJECT NORTH

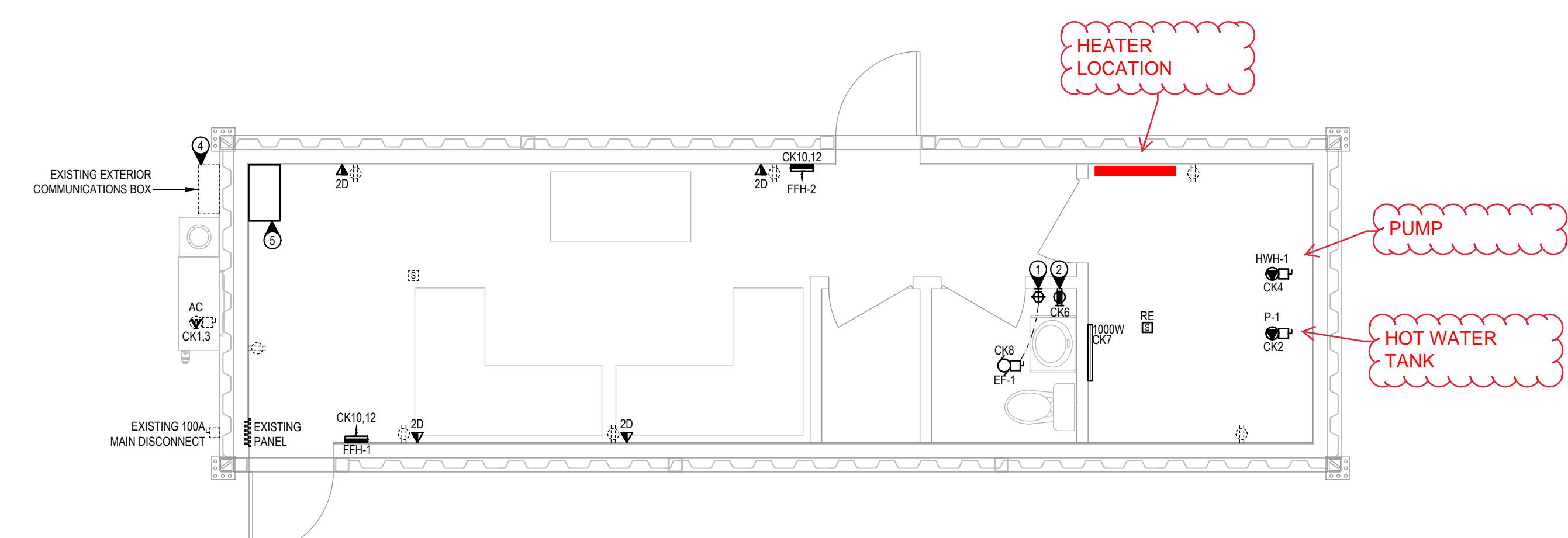
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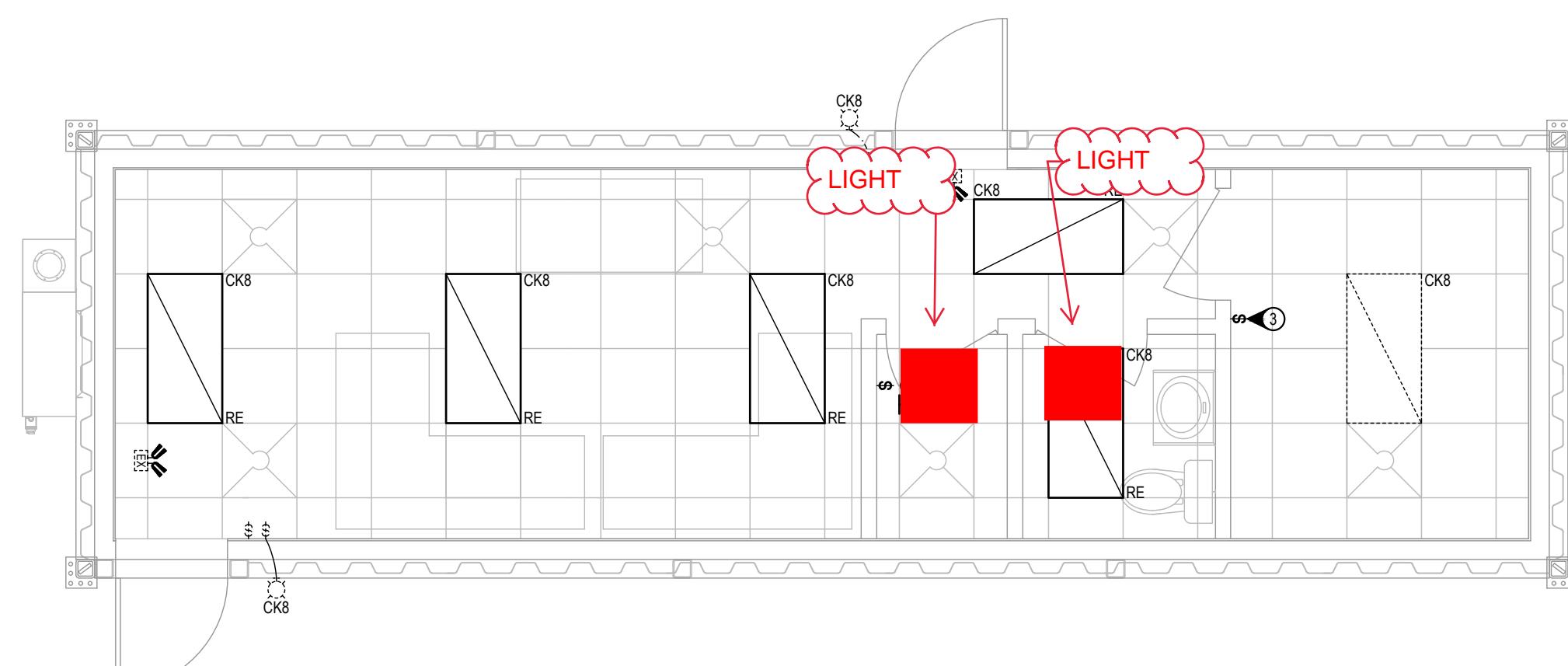
1 DEMOLITION POWER AND SYSTEM LAYOUT
E1.0 1/4"=1'-0"



2 DEMOLITION LIGHTING LAYOUT
E1.0 1/4"=1'-0"



3 RENOVATION POWER AND SYSTEM LAYOUT
E1.0 1/4"=1'-0"



4 RENOVATION LIGHTING LAYOUT
E1.0 1/4"=1'-0"

NOTES:

- ① WALL MOUNTED OCCUPANCY SENSOR SHALL BE TIED TO LOCAL EXHAUST FAN SUCH THAT FAN IS ENERGIZED UPON ROOM OCCUPANCY. UTILIZE SAME SENSOR FOR FAN AND LIGHTING CONTROL.
- ② ENSURE NO DEVICES ARE CONNECTED TO THE LOAD SIDE OF THE GFCI RECEPTACLE.
- ③ INTERCEPT EXISTING LIGHTING CIRCUIT AND PROVIDE LOCAL LIGHTING CONTROL (TYPICAL).
- ④ CONTRACTOR TO SUPPLY AND INSTALL TELEPHONE SURGE PROTECTOR AND 110-PUNCH BLOCK WITHIN EXISTING EXTERIOR COMMUNICATIONS RACK.
- ⑤ CONTRACTOR TO PROVIDE WALL MOUNTED 6U COMMUNICATION RACK COMPETE WITH G15 RATED PLYWOOD BACKING. REFER TO DRAWING 2/E0.0 FOR EQUIPMENT REQUIREMENTS

PROJECT NAME:
ATCO HUNTER
BRM ALASKA RETROFIT

DRAWING TITLE:
ELECTRICAL LAYOUT

DATE:	JUNE 2024
SCALE:	AS NOTED
DRAWN BY:	PS
CHECKED BY:	NM
JOB NUMBER:	0324.0214

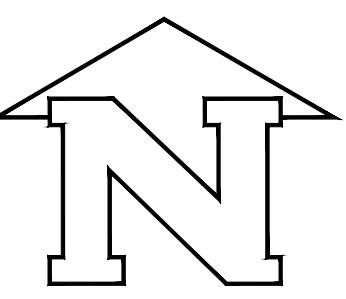
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PROJECT NORTH

PRODUCTION DRAWINGS BY:



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403.910.4660 | www.aeseng.com
CALGARY | KELOWNA | VANCOUVER | VICTORIA

1. GENERAL	13. CLEANUP	26. SUPPORTS
.1 GENERAL REQUIREMENTS, INSTRUCTIONS TO BIDDERS, THIS SPECIFICATION AND ANY ADDENDA HERETO FORM PART OF THE CONTRACT DOCUMENTS AND SHALL BE READ IN CONJUNCTION WITH THEM. WORK TO INCLUDE THE FURNISHING OF ALL LABOR AND MATERIALS, UNLESS SPECIFIED OTHERWISE, TO COMPLETE AND PUT INTO OPERATING CONDITION ALL ELECTRICAL SYSTEMS AS INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN.	.1 THE ELECTRICAL TRADE AND THEIR SUBTRADES ARE TO KEEP THE SITE FREE DURING CONSTRUCTION OF DEBRIS, BOXES, PACKING, AND OTHER MATERIALS ASSOCIATED WITH THE WORK OF THIS TRADE. ALL WASTE MATERIAL IS TO BE DISPOSED OF IN A SAFE AND ENVIRONMENTALLY RESPONSIBLE MANNER.	.1 ALL CONDUIT, RACEWAYS, AND OTHER ELECTRICAL EQUIPMENT SHALL BE SECURELY AND ADEQUATELY SUPPORTED, IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND THE LOCAL BUILDING CODE REQUIREMENTS.
2. IT IS THE INTENT OF THE WORK TO PROVIDE COMPLETE, NEATLY FINISHED, AND OPERATIONAL SYSTEMS AND ANY LABOR, MATERIAL, PERMITS, LICENSES, APPROVALS AND INSPECTIONS REQUIRED FOR COMPLETION OF THE WORK, WHETHER SPECIFICALLY MENTIONED IN THE DRAWINGS OR SPECIFICATIONS OR NOT, ARE TO BE INCLUDED IN THE TENDERED PRICE.	.2 UPON COMPLETION OF WORK, THE ELECTRICAL INSTALLATION SHALL BE LEFT IN A CLEAN AND FINISHED CONDITION TO THE SATISFACTION OF THE ENGINEER.	.2 WHERE INSERTS ARE REQUIRED IN CONCRETE, EXPANSION INSERTS, LEAD INSERTS OR PLASTIC INSERTS ARE TO BE USED IN DRILLED HOLES. SHOT DRIVEN PINS MAY BE USED IN STRUCTURAL CONCRETE ONLY WITH THE PERMISSION OF THE ENGINEER.
3. RESPONSIBILITY AS TO WHICH TRADE PROVIDED REQUIRES ARTICLES OR MATERIALS RESTS SOLELY WITH THE GENERAL CONTRACT TRADE. EXTRAS WILL NOT BE CONSIDERED BASED ON GROUNDS OF DIFFERENCE OF INTERPRETATION OF SPECIFICATIONS AS TO WHICH TRADE INVOLVED SHALL PROVIDE CERTAIN SPECIALTIES OR MATERIALS.	14. ACCESS DOORS	27. GROUNDING AND BONDING
4. THE DRAWINGS AND SPECIFICATIONS FOR THE COMPLETE WORKS, INCLUDING ALL OF THOSE RELATED TO OTHER TRADES ARE TO BE EXAMINED BEFORE SUBMITTING TENDERS. ALL ELECTRICAL AND COMMUNICATIONS REQUIREMENTS INDICATED ARE TO BE INCLUDED IN THE SCOPE OF THE WORK.	.1 THE ELECTRICAL TRADE IS TO SUPPLY AND INSTALL RATED ACCESS DOORS AS REQUIRED FOR PROPER SERVICING OF ALL ELECTRICAL WORK. ACCESS DOORS SHALL BE COMPLETE WITH NECESSARY FRAMES AND HINGED DOORS HELD CLOSER WITH CAPTIVE STUDS. ACCESS PANEL TO BE OF NOT LESS THAN 14 GAUGE STEEL, PRIME COAT FINISHED AND PAINTED ON THE JOB TO MATCH THE WALL OR CEILING FINISH.	.1 A COMPLETE GROUNDING AND BONDING SYSTEM SHALL BE SUPPLIED AND INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND THE ELECTRICAL INSPECTION DEPARTMENT.
5. CLEAN UP AND REMOVE ALL UNUSED WIRING AND CONDUITS.	.2 THE NUMBER OF ACCESS DOORS SHALL BE KEPT TO A MINIMUM.	.2 ALL METAL PARTS NOT CARRYING CURRENT, INCLUDING BUT NOT LIMITED TO, SECONDARY FEEDER CIRCUITS, EQUIPMENT AND PANELBOARD ENCLOSURES, METAL RACEWAYS, PULL AND JUNCTION BOXES, SHALL BE PROPERLY BONDED. METAL RACEWAYS SHALL UTILIZE DOUBLE LOCKNUTS AND OTHER FITTINGS WHERE NECESSARY TO PROVIDE BONDING CONTINUITY.
6. REMOVE AND REINSTALL EXISTING DEVICES TO FACILITATE CONSTRUCTION AS REQUIRED.	.3 THE ELECTRICAL TRADE SHALL PROVIDE ACCESS PANELS IN THE DRYWALL CEILINGS FOR ALL ELECTRICAL JUNCTION BOXES AND EQUIPMENT IN ACCORDANCE WITH APPLICABLE CODES.	.3 A SEPARATE BONDING CONDUCTOR SHALL BE INSTALLED IN ALL RACEWAY FEEDER RUNS, FLEXIBLE CONDUIT, AND IN CONDUIT INSTALLED IN SLAB OR UNDERGROUND.
7. CONFIRM OUTLET LOCATIONS AND MOUNTING HEIGHT WITH PROJECT COORDINATOR ON SITE PRIOR TO INSTALLATION.	15. CODES, PERMITS AND INSPECTION	.4 BOND ALL COMMUNICATIONS AND SECURITY SYSTEM EQUIPMENT TO GROUND INCLUDING RACKS, PATCH PANELS, CONTROL PANELS, AND OTHER ASSOCIATED COMPONENTS.
.8 APPLICABLE CODES AND STANDARDS	.1 THE ENTIRE INSTALLATION, INCLUSIVE OF MATERIAL AND LABOR, IS TO COMPLY WITH ALL THE REQUIREMENTS OF ALL BUILDING CODES AND AUTHORITIES HAVING JURISDICTION, THE NATIONAL ELECTRICAL CODE, AND REGULATIONS OF THE LOCAL INSPECTION DEPARTMENT.	28. PANELS
1. NATIONAL ELECTRICAL CODE - 2020 EDITION	.2 THE ELECTRICAL TRADE IS TO OBTAIN ALL PERMITS REQUIRED FOR EACH STAGE OF WORK, AND AFTER COMPLETION OF THE ENTIRE INSTALLATION FURNISH TO THE ENGINEER A CERTIFICATE OF FINAL INSPECTION AND APPROVAL FROM THE ELECTRICAL INSPECTION DEPARTMENT.	.1 REUSE EXISTING PANELBOARDS AND BREAKERS WHERE POSSIBLE. PROVIDE ADDITIONAL BREAKERS AS REQUIRED TO SUIT INSTALLATION.
2. INTERNATIONAL BUILDING CODE 2021	16. MECHANICAL EQUIPMENT AND EQUIPMENT SUPPLIED BY OTHERS	.2 PROVIDE ALL CIRCUIT BREAKERS INDICATED ON PANEL SCHEDULES. ANY NEW CIRCUIT BREAKERS TO BE RATED MINIMUM 10A I.C. UNLESS OTHERWISE INDICATED.
3. INTERNATIONAL ENERGY CONSERVATION CODE 2021	.1 UNLESS SPECIFIED OTHERWISE, THE ELECTRICAL CONTRACTOR IS TO SUPPLY AND INSTALL ALL REQUIRED CONDUIT, WIRING, ELECTRICAL FITTINGS AND CONNECTORS, PULL BOXES AND OTHER MECHANICAL EQUIPMENT, THOUGH THE CONTRACTOR MAY NOT BE THE TECHNICAL EQUIPMENT MANUFACTURER. EQUIPMENT SUPPLIED BY OTHERS, WHETHER APPLICABLE OR NOT, INCLUDING SWITCHES, STARTERS, OVERLOAD RELAYS AND OTHER NECESSARY PROTECTIVE DEVICES ARE TO BE SUPPLIED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. MOTORS AND CONTROLS SHALL BE FURNISHED BY THE SUPPLIER OF THE DRIVEN EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL INCLUDE ALL WORK AND CONNECTIONS REQUIRED TO MAKE THE SYSTEM COMPLETE AND OPERATIONAL. EQUIPMENT SUPPLIED BY OTHERS SHALL BE APPROVED AND BEAR LABEL MEETING THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE FOR USE IN THE UNITED STATES OF AMERICA.	.3 UPDATED TYPEDRAWN PANEL DIRECTORIES SHALL BE PROVIDED FOR ALL PANELS.
4. UL STANDARDS	.2 EQUIPMENT SUPPLIED BY OTHERS MAY INCLUDE BUT NOT BE LIMITED TO SUCH ITEMS AS GRILLE MOTORS AND INTERLOCKS, STOREFRONT AND INTERIOR SIGNAGE, STARTING DEVICES, MOTOR CONTROLLERS, FLOAT SWITCHES, ALARM DEVICES OR SYSTEMS, PUSH BUTTONS, EXHAUST FANS, DATA SYSTEMS, INTERCOMS AND STEREO SYSTEMS.	.4 BALANCE PANEL LOAD FOR EACH PHASE A, B AND C. ALLOW FOR RELOCATING CIRCUITS WITHIN PANEL BOARD TO BALANCE THE LOAD.
5. INTERNATIONAL FIRE CODE 2021	.3 THE ELECTRICAL CONTRACTOR IS TO CONFIRM MOTOR (OR OTHER EQUIPMENT) LOCATION AND SIZES WITH THE TRADE SUPPLYING THE MOTOR (OR OTHER EQUIPMENT) BEFORE COMMENCING ANY ASSOCIATED ELECTRICAL WORK.	29. LIGHTING LUMINAIRES AND LIGHTING CONTROLS
2. DRAWINGS AND SPECIFICATIONS	.4 WHETHER INDICATED ON THE DRAWINGS OR NOT, ALL MECHANICAL EQUIPMENT IS TO HAVE A MINIMUM SHORT CIRCUIT CURRENT RATING (SCCR) TO MATCH THE PANEL TO WHICH IT IS CONNECTED.	.1 PROVIDE A NEW LIGHTING SYSTEM, COMPLETE AND FULLY OPERATIONAL AND IN CONFORMANCE WITH NATIONAL ELECTRICAL CODE AND UL LISTING REQUIREMENTS. UNLESS NOTED OTHERWISE, ALL FIXTURES AND LAMPS ARE TO BE SUPPLIED AND INSTALLED BY THE CONTRACTOR AS SPECIFIED IN THE DRAWINGS.
.1 DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY TO EACH OTHER AND WHAT IS CALLED FOR BY ONE IS TO BE BINDING AS IF CALLED FOR BY BOTH.	.5 CONFIRM REQUIREMENTS FOR MECHANICAL EQUIPMENT WITH MECHANICAL TRADE PRIOR TO ROUGH-IN. ADJUST BREAKER SIZES, FEEDER SIZES, DISCONNECTS AND STARTERS WHERE APPLICABLE. AT NO ADDITIONAL COST.	.2 ELECTRICAL TRADE TO INSTALL ALL LIGHTING LUMINAIRES COMPLETE WITH LAMPS, MOUNTING BRACKETS, BALLASTS AND ALL NECESSARY ACCESSORIES IN ACCORDANCE WITH THE LUMINAIRE TYPES SHOWN ON THE DRAWINGS, OR OTHERWISE SPECIFIED.
2. SHOULD ANY DISCREPANCY APPEAR BETWEEN DRAWINGS AND SPECIFICATIONS THAT LEAVES THE ELECTRICAL TRADE IN DOUBT AS TO TRUE INTENT AND MEANING, OBTAIN RULING FROM THE ENGINEER BEFORE SUBMITTING TENDER, OR ALLOW FOR THE MOST EXPENSIVE ALTERNATIVE.	17. TESTS	.3 ALL MATERIALS AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE RECOMMENDATION OF THE MANUFACTURER AND COMPLY WITH CODES.
3. EXAMINATION OF OTHER DRAWINGS	.1 ALL PORTIONS OF ELECTRICAL WORK ARE TO BE TESTED FOR SATISFACTORY OPERATION.	.4 ALL LUMINAIRES SHALL BE ALIGNED, AS APPROPRIATE, WITH ONE ANOTHER AND WITH STRUCTURAL LINES.
.1 THE ELECTRICAL CONTRACTOR IS TO EXAMINE CAREFULLY STRUCTURAL, ARCHITECTURAL AND MECHANICAL DRAWINGS, AND THE WORK OF OTHER TRADES AND ENSURE THAT THE WORK UNDER THIS CONTRACT CAN BE SATISFACTORILY CARRIED OUT WITHOUT CHANGES TO THE BUILDING AS SHOWN ON THE PLANS. SHOT AND DIFFICULTY USE SHOULD CONFLICT WITH, OR REQUIRE ADDITIONAL WORK BEYOND THE WORK OF THESE DRAWINGS, BRING THIS MATTER TO THE ATTENTION OF THE ENGINEER BEFORE SUBMITTING TENDER.	.2 BEFORE ENERGIZING ANY PORTION OF THE ELECTRICAL SYSTEM, THE ELECTRICAL TRADE SHALL PERFORM MEGGER TESTS ON ALL FEEDERS AND BRANCH CIRCUITS. ANY PROBLEMS DISCOVERED BY SUCH TESTING ARE TO BE CORRECTED BY THE ELECTRICAL TRADE AND THE CIRCUITS IN QUESTION RESTESTED. THE RESULTS OF ALL FINAL TESTING SHALL BE PROVIDED TO THE ENGINEER IN REPORT FORM.	.5 ALL LUMINAIRES SHALL BE CLEANED AND LAMPED UPON COMPLETION OF WORK AND PRIOR TO FINAL ACCEPTANCE. UTILIZE MANUFACTURER'S APPROVED OR RECOMMENDED CLEANING SOLUTIONS.
4. UNIFORMITY OF EQUIPMENT	.3 UPON PROJECT COMPLETION AND IMMEDIATELY PRIOR TO FINAL INSPECTION AND TAKEOVER, THE ELECTRICAL TRADE SHALL CHECK THE LOAD BALANCE ON ALL FEEDERS AND AT DISTRIBUTION CENTRES, LOAD CENTRES, AND PANELS. THESE CHECKS ARE TO BE CARRIED OUT BY TURNING ON ALL LOADS AND CHECKING LOAD CURRENT BALANCE. IF LOAD UNBALANCE EXCEEDS 15%, THE CIRCUITS ARE TO BE RECONFIGURED AS NECESSARY TO BALANCE THE LOADS.	.6 LIGHTING CONTROL DEVICES SHALL BE OF THE SAME MANUFACTURER.
5. STANDARDS OF MATERIAL AND WORK	18. PAINTING AND FINISHES	.7 SWITCHES SHALL HAVE A CURRENT RATING NOT LESS THAN THAT OF THE CIRCUIT TO WHICH THEY ARE CONNECTED.
.1 ALL MATERIALS ARE TO BE NEW AND OF THE QUALITY SPECIFIED, AND SHALL BE UL LISTED OR APPROVED BY EQUIVALENT AGENCY RECOGNIZED IN ALASKA.	.1 ALL ELECTRICAL FITTINGS, SUPPORTS, HANGER RODS, PULLBOXES, CHANNEL FRAMES, CONDUIT RACKS, OUTLET BOXES, BRACKETS, AND CLAMPS ARE TO HAVE A GALVANIZED FINISH OR A PAINT FINISH OVER CORROSION-RESISTANT PRIMER.	30. EXIT LIGHTING AND EMERGENCY LIGHTING
.2 ALL WORK SHALL BE EXECUTED IN A NEAT AND TIDY MANNER BY QUALIFIED TRADESPeople. THE ELECTRICAL CONTRACTOR SHALL KEEP A COMPETENT FOREPERSON AND NECESSARY ASSISTANTS ON THE SITE DURING THE PROGRESS OF THE WORK.	.2 ALL PANELS ARE TO BE FACTORY-FINISHED WITH SPRAY-ON AIR DRY ENAMEL. ALL PANELS ARE TO BE APPLIED OVER CORROSION-RESISTANT PRIMER. MATTE OR FLAT TYPE FINISH PAINT WILL NOT BE ACCEPTED. ALL PANELS OR SIMILAR FACTORY-FINISHED UNITS THAT ARE SCRATCHED OR MARKED DURING INSTALLATION ARE TO BE TOUCHED UP WITH MATCHING SPRAY-ON AIR DRY LACQUER AND, IF REQUIRED TO PROVIDE A SATISFACTORY JOB, TO BE COMPLETELY REFINISHED.	.1 EXISTING EXIT SIGN COMBO UNITS TO BE RE-USED, AND TIED INTO LOCAL LIGHTING CIRCUIT AHEAD OF SWITCH. ENSURE EXIT SIGNS ARE RATED FOR 90 MINUTES OF STANDBY OPERATION.
.3 ALL MATERIAL AND INSTALLATION SHALL MATCH BUILDING STANDARD UNLESS IT IS NOTED OTHERWISE ON THE DRAWINGS.	.3 ALL 120/208V PANELBOARDS, PULLBOXES, AND OTHER ELECTRICAL CABINETS AND BOXES ARE TO BE FINISHED IN GREY ENAMEL.	.2 ALL EXIT AND EMERGENCY LIGHTING IS TO OPERATE AUTOMATICALLY AND IMMEDIATELY (FROM BATTERIES) UPON FAILURE OF NORMAL POWER SUPPLY.
6. RECORD PLANS	19. CONDUIT AND EMT	31. COMMUNICATIONS (VOICE, DATA & TV) & SECURITY ROUGH-IN
.1 THE ENGINEER WILL FURNISH TO THE ELECTRICAL TRADE ONE SET OF DRAWINGS TO BE USED FOR RECORD PURPOSES. THE ELECTRICAL TRADE IS TO ACCURATELY RECORD ON THESE PRINTS ALL REVISIONS TO THE ORIGINAL PLANS THAT ARE MADE ON SITE DURING CONSTRUCTION.	.1 WHERE REQUIRED BY THE NATIONAL ELECTRICAL CODE, ALL WIRE AND CABLE IS TO BE INSTALLED IN CONDUIT OR EMT. WHERE APPROVED, AC90 OR TECK90 MAY BE USED.	.1 NO CONDUIT RUN SHALL EXCEED TWO 90 DEGREE BENDS AND ONE 45 DEGREE SWEEPING BEND.
.2 ARRANGE AND PAY FOR THE RE-DRAWING OF THE ELECTRICAL TRADE PACKAGE INCLUDING ALL ADDENDA, CCNS AND SITE INSTRUCTION DURING BIDDING AND CONSTRUCTION. CONTRACTOR TO INCORPORATE ANY "AS-BUILT" CHANGES TO REPRODUCIBLE PLANS AND ISSUE THEM AS "RECORD DRAWINGS". THESE CHANGES SHALL BE OF A SIMILAR QUALITY OF PRESENTATION AS THE ORIGINAL PLANS. UPON COMPLETION A SET OF "PDFS AND BOUND" DWG FILES ARE TO BE INCLUDED ON DISK OR USB DRIVE FOR FINAL SUBMISSION. NOTE: ALL PLANS WHETHER REQUIRING AS-BUILT CHANGES OR NOT, SHALL NOT BE INCLUDED IN THIS SET.	.2 UNLESS OTHERWISE NOTED, CONDUIT AND EMT ARE TO BE CONCEALED IN ALL FINISHED AREAS. IN SERVICE AREAS, CONDUIT AND EMT SHALL BE RUN ON SURFACE UNLESS INDICATED OTHERWISE.	.2 ALL COMMUNICATION BACKBOARDS ARE TO BE 21mm THICK, G1, AND PAINTED WITH FIRE RETARDANT PAINT TO MATCH COLOR OF THE ROOM.
.3 SHOULD THE CONTRACTOR REQUIRE THE ELECTRICAL CONSULTANT TO PREPARE THE "RECORD DRAWINGS", THE COST WOULD BE \$500.	.3 SURFACE MOUNTED CONDUIT AND EMT ARE TO BE INSTALLED PARALLEL TO STRUCTURAL LINES, AND, WHERE BENDS OCCUR IN PARALLEL RUNS, THEY SHALL BE CONCENTRIC.	.3 THE INSTALLATION OF COMMUNICATION EQUIPMENT, AND CONDUIT TO BE USED FOR COMMUNICATION WIRES, SHALL COMPLY IN ALL RESPECTS WITH THE REQUIREMENTS OF TELUS AND SHAW.
7. SHOP DRAWINGS	.4 RACEWAYS ARE TO BE INSTALLED FREE FROM DENTS AND BRUISES AND SHALL HAVE THEIR ENDS CAPPED, PLUGGED, OR SEALED AS NECESSARY TO PREVENT ENTRY OF DIRT OR MOISTURE.	.4 PROVIDE DOUBLE GANG BOX C/W SINGLE GANG MUD RING, OUTLET BOXES AND EMPTY CONDUITS C/W PULL STRING FOR COMMUNICATION OUTLETS AS SHOWN ON THE DRAWINGS.
.1 THE ELECTRICAL CONTRACTOR IS TO SUBMIT TO THE ENGINEER, FOR REVIEW, SHOP DRAWINGS OF MAJOR ELECTRICAL EQUIPMENT. SUCH EQUIPMENT SHALL INCLUDE, BUT NOT BE LIMITED TO SWITCHGEAR, PANELBOARDS, SERIES-RATED BREAKER COMBINATIONS, FIXTURES AND FITTINGS NOT PROVIDED BY THE OWNER.	.5 IN ALL AREAS SUBJECT TO MOISTURE, RAIN TIGHT FITTINGS MUST BE USED.	.5 INSTALL 25mm EMT CONDUITS FROM EACH WALL MOUNTED COMMUNICATION OUTLET TO CEILING SPACE C/W BUSHING AT BOTH ENDS.
.2 ALL DRAWINGS ARE TO BE SUBMITTED IN TRUE DIGITAL PDF FORMAT (NO SCANS) AND A REVIEWED COPY WILL BE RETURNED TO THE COORDINATING PROFESSIONS FOR DISTRIBUTION TO THE ELECTRICAL TRADE.	.6 ALL RACEWAY, EXCEPT WHERE OTHERWISE INDICATED, SHALL BE SIZED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE. MINIMUM CONDUIT SIZE TO BE 21mm.	32. IDENTIFICATION
.3 THE ENGINEER'S REVIEW OF SHOP DRAWINGS IS TO BE FOR GENERAL DESIGN ONLY AND WILL NOT RELIEVE THE ELECTRICAL TRADE OR SUPPLIERS FROM RESPONSIBILITY FOR ERRORS, PROPER FITTING, CONSTRUCTION OF WORK, AND FURNISHING OF MATERIALS. REVIEW WILL NOT BE CONSTRUED AS APPROVING DEPARTURES FROM CONTRACT DOCUMENT REQUIREMENTS IF SUCH DEPARTURES ARE NOT SPECIFICALLY NOTED. THE ELECTRICAL TRADE IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS.	.7 THE ELECTRICAL TRADE SHALL FURNISH A WRITTEN GUARANTEE WARRANTY, SIGNED BY AUTHORIZED PERSONNEL, STATING THAT ANY WORK EXECUTED UNDER THIS CONTRACT WILL BE FREE FROM DEFECTS OF MATERIAL AND WORK FOR A PERIOD OF 1 YEAR FROM DATE OF FINAL ACCEPTANCE.	.1 IDENTIFY ALL MAJOR PIECES OF EQUIPMENT, INCLUDING BUT NOT LIMITED TO PANELBOARDS, ELECTRICAL CABINETS, AND BREAKERS IN PANELBOARDS WITH ENGRAVED LAMACOID LABELS, BLACK LETTERING ON WHITE BACKGROUND.
.4 PROVIDE SHOP DRAWINGS FOR THE FOLLOWING ELECTRICAL PRODUCTS:	.2 THE ABOVE PARTIES FURTHER AGREE TO, AT THEIR OWN EXPENSE, REPAIR AND REPLACE ALL SUCH DEFECTIVE WORK, AND OTHER WORK DAMAGED THEREBY, WHICH FAILS OR BECOMES DEFECTIVE DURING THE TERM OF THE GUARANTEE WARRANTY PROVIDED THAT SUCH FAILURE IS NOT DUE TO IMPROPER USAGE.	.2 PROVIDE TYPEDRAWN DIRECTORIES IN ALL PANELS.
.1 POWER DISTRIBUTION EQUIPMENT	.3 THE PERIOD OF GUARANTEE SPECIFIED WILL IN NO WAY SUPPLANT ANY OTHER GUARANTEE OF A LONGER PERIOD BUT BE BINDING ON WORK NOT OTHERWISE COVERED.	.3 PROVIDE LAMACOID NAMEPLATE ON EACH PANEL COVER TO IDENTIFY PANEL NAME, NUMBER OF PHASES, VOLTAGE, CURRENT RATING AND SOURCE OF FEEDER.
.2 LIGHTING CONTROLS	.4 IN ALL AREAS SUBJECT TO MOISTURE, RAIN TIGHT FITTINGS MUST BE USED.	.4 IDENTIFY BRANCH CIRCUIT WIRES TO MEET CODE REQUIREMENTS.
.3 WIRING DEVICES	.5 ALL OUTLET BOXES ARE TO BE FLUSH MOUNTED AND INSTALLED WITHIN 6mm OF FINISH WITHOUT THE USE OF EXTENSION SLEEVES EXCEPT WHERE BOXES ARE LOCATED IN COMBUSTIBLE MATERIALS WHERE EXTENSION SLEEVES MAY BE USED.	33. ALTERNATE SEPARATE PRICE
8. GUARANTEE WARRANTY	.6 ALL OUTLET BOXES ARE TO BE PLUMB AND LEVEL WITH BUILDING STRUCTURAL LINES.	.1 ALL REQUESTS FOR ALTERNATES SHALL BE SUBMITTED TO THE ENGINEER NOT LESS THAN 5 DAYS PRIOR TO THE CLOSE OF TENDER.
.1 THE ELECTRICAL TRADE SHALL FURNISH A WRITTEN GUARANTEE WARRANTY, SIGNED BY AUTHORIZED PERSONNEL, STATING THAT ANY WORK EXECUTED UNDER THIS CONTRACT WILL BE FREE FROM DEFECTS OF MATERIAL AND WORK FOR A PERIOD OF 1 YEAR FROM DATE OF FINAL ACCEPTANCE.	.7 ALL OUTLET BOXES ARE TO BE FLUSH MOUNTED AND INSTALLED WITHIN 6mm OF FINISH WITHOUT THE USE OF EXTENSION SLEEVES EXCEPT WHERE BOXES ARE LOCATED IN COMBUSTIBLE MATERIALS WHERE EXTENSION SLEEVES MAY BE USED.	.2 THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ENSURING THAT ALTERNATE PRODUCTS MEET ALL SPACE, WEIGHT, CONNECTION, POWER, WIRING, AND PERFORMANCE REQUIREMENTS.
.2 THE ABOVE PARTIES FURTHER AGREE TO, AT THEIR OWN EXPENSE, REPAIR AND REPLACE ALL SUCH DEFECTIVE WORK, AND OTHER WORK DAMAGED THEREBY, WHICH FAILS OR BECOMES DEFECTIVE DURING THE TERM OF THE GUARANTEE WARRANTY PROVIDED THAT SUCH FAILURE IS NOT DUE TO IMPROPER USAGE.	.8 THE ELECTRICAL TRADE SHALL UTILIZE FOR CONNECTIONS TO MOTORS AND MOTOR CONTROLLERS.	34. COMMUNICATION CABLING (COPPER)
.3 THE PERIOD OF GUARANTEE SPECIFIED WILL IN NO WAY SUPPLANT ANY OTHER GUARANTEE OF A LONGER PERIOD BUT BE BINDING ON WORK NOT OTHERWISE COVERED.	.9 ALL BUILDING WIRING IS TO BE COPPER, EXCEPT WHERE NOTED OTHERWISE.	.1 CONTRACTOR TO COMPLETE ALL DATA TERMINATIONS AND TESTING REPORTS.
9. OPERATING AND MAINTENANCE MANUALS	.10 A MINIMUM CONDUCTOR SIZE OF #12 AWG COPPER IS TO BE USED, EXCEPT WHERE NOTED OTHERWISE.	.2 CAT 5E UTP CABLE SHALL BE FOUR-PAIR, UNSHELLED, TWISTED, 22AWG TO 24AWG, 100 OHM FT6, SOLID COPPER BY PANDUIT OR APPROVED EQUAL. TRANSMISSION REQUIREMENTS SHALL MEET OR EXCEED ALL REQUIREMENTS OF TIA/EIA-568-B.2 FOR CATEGORY 5E CABLEING AND COMPONENTS.
.1 SUBMIT THREE (3) SETS OF OPERATING AND MAINTENANCE MANUALS FOR ELECTRICAL SYSTEMS PROVIDED IN THIS CONTRACT, INCLUDE DESCRIPTIVE AND TECHNICAL DATA, ALL SHOP DRAWINGS, OPERATING PROCEDURES, ROUTINE AND PREVENTATIVE MAINTENANCE, WIRING DIAGRAMS, SPARE PARTS LIST, WARRANTY, SERVICE COMPANIES, SUPPLIERS OF REPLACEMENT PARTS, TEST RESULTS, FIRE ALARM CERTIFICATE OF VERIFICATION, ELECTRICAL INSPECTION AUTHORITY CERTIFICATE, CONTRACT GUARANTEE, PROJECT PERSONNEL CONTACT LIST, COMMISSIONING TEST REPORTS AND PRODUCT SUPPORT CONTACT INFORMATION.	.11 ALL CONDUIT AND EMT ARE TO BE COATED THROUGHOUT THE INSTALLATION AS FOLLOWS:	.3 PATCH PANELS SHALL BE MODULAR PATCH PANEL, 24-PORT, HIGH DENSITY INDIVIDUAL CUT-OUTS FOR SNAP IN TYPE FEMALE 8P8W.
.2 SUBMIT DOCUMENTATION IN GREEN COLOURED HEAVY DUTY THREE RING BINDERS, WITH LETTERING ON SPINE IDENTIFYING "OPERATING AND MAINTENANCE MANUAL", PROJECT TITLE AND SYSTEM NAMES AND ALSO SUBMIT ONE DIGITAL COPY ON A USB DRIVE AS PART OF PROJECT CLOSE-OUT.	.1 NEUTRAL CONDUCTOR - WHITE .2 120/208V PHASE WIRES - RED, BLACK, AND BLUE .3 GROUND WIRE - BARE GREEN	.4 PROVIDE BU WALL MOUNTED COMMUNICATION RACK. MUST HAVE THREADED MOUNTING HOLES. PROVIDE 3/4 INCH G15 FIRE RATED PLYWOOD BACKING FOR EQUIPMENT MOUNTING.
.3 SUBMIT ONE COPY FOR APPROVAL BY CONSULTANT PRIOR TO ASSEMBLY OF FINAL SETS.	22. WIRING DEVICES & BOXES	5. ISSUED FOR REVIEW 07/18/2024
10. SETTING OUT OF THE WORK	.1 ALIGN ALL DEVICES AND PLATES PLUMB AND LEVEL WITH BUILDING STRUCTURAL LINES.	4. ISSUED FOR REVIEW 07/12/2024
.1 THE ELECTRICAL TRADE IS RESPONSIBLE FOR CORRECTING ALL WORK COMPLETED CONTRARY TO THE INTENT OF DRAWINGS AND SPECIFICATIONS AND SHALL BEAR ALL COSTS INVOLVED IN MAKING THE CORRECTIONS. WHERE INTENT OF DRAWINGS AND SPECIFICATIONS IS NOT CLEAR, OBTAIN CLARIFICATION FROM THE ENGINEER BEFORE PROCEEDING WITH WORK.	.2 ALL OUTLET BOXES ARE TO BE FLUSH MOUNTED AND INSTALLED WITHIN 6mm OF FINISH WITHOUT THE USE OF EXTENSION SLEEVES EXCEPT WHERE BOXES ARE LOCATED IN COMBUSTIBLE MATERIALS WHERE EXTENSION SLEEVES MAY BE USED.	3. ISSUED FOR REVIEW 07/05/2024
.2 THE ELECTRICAL TRADE IS TO GIVE THEIR PERSONAL SUPERVISION, LAY OUT THEIR OWN WORK, DO ALL NECESSARY LEVELING AND MEASURING, OR EMPLOY A COMPETENT ENGINEER TO DO SO. FIGURES, FULL SIZE AND DETAIL DRAWINGS TO TAKE PRECEDENCE OVER SCALE MEASUREMENTS.	.3 THE ELECTRICAL TRADE SHALL FURNISH A WRITTEN GUARANTEE WARRANTY, SIGNED BY AUTHORIZED PERSONNEL, STATING THAT ANY WORK EXECUTED UNDER THIS CONTRACT WILL BE FREE FROM DEFECTS OF MATERIAL AND WORK FOR A PERIOD OF 1 YEAR FROM DATE OF FINAL ACCEPTANCE.	2. ISSUED FOR REVIEW 06/27/2024
.3 THE ELECTRICAL TRADE SHALL BE RESPONSIBLE FOR ANY DAMAGE CAUSED TO THE OWNER OR ANY OTHER TRADE BY IMPROPER LOCATION OR CARRYING OUT OF THEIR WORK.	.4 IN THE SETTING OUT OF THEIR WORK, IS TO MAKE REFERENCE TO ARCHITECTURAL AND MECHANICAL DRAWINGS. THEY SHALL CONSULT WITH ALL RELEVANT TRADES IN SETTING OUT LOCATIONS FOR CONDUIT RUNS, LIGHTING FIXTURES, PANEL ASSEMBLIES, AND ALL OTHER ELECTRICAL EQUIPMENT, SO THAT CONFLICTS ARE AVOIDED AND SYMMETRICAL SPACING IS MAINTAINED.	1. ISSUED FOR REVIEW 06/21/2024
.5 THE ELECTRICAL TRADE SHALL CONFIRM OUTLET LOCATIONS AND MOUNTING HEIGHTS WITH THE PROJECT COORDINATOR ON SITE PRIOR TO INSTALLATION.	.5 THE ELECTRICAL TRADE SHALL SUPPLY AND INSTALL PULLBOXES AS REQUIRED TO SUIT JOB CONDITIONS. PULLBOXES SHALL CONFORM TO NATIONAL ELECTRICAL CODE REQUIREMENTS. PULLBOXES TO BE FINISHED IN ENAMEL OVER CORROSION-RESISTANT PRIMER WITH SCREW-ON OR HINGED COVER. IN REMOVABLE CEILING AREAS, PULLBOXES ARE TO BE INSTALLED ABOVE THE CEILING.	REV DESCRIPTION DATE
.6 WHERE RECEPTACLES ARE MOUNTED ABOVE COUNTERS, BENCHES, SPLASHBACKS, OR OTHER FIXTURES, THEIR LOCATIONS AND MOUNTING HEIGHTS ARE TO BE COORDINATED WITH THE BUILT-IN UNITS. REFER TO ARCHITECTURAL DETAILS WHERE RECEPTACLES OCCUR IN OUTSIDE WALLS WHERE HEATING UNITS ALSO OCCUR. RECEPTACLE HEIGHT TO BE ADJUSTED TO COORDINATE WITH THE HEATING UNITS.	.6 ALL SWITCHES AND RECEPTACLES SHALL BE SPECIFICATION GRADE IN WHITE UNLESS OTHERWISE NOTED. FACEPLATES SHALL BE HIGH IMPACT NYLON EXCEPT WHERE SHOWN AS WEATHERPROOF.	PROJECT NAME:
.7 SWITCH OUTLET BOXES ARE TO BE COORDINATED WITH ARCHITECTURAL DETAILS AND SHALL BE ADJUSTED, IF REQUIRED, TO COORDINATE WITH PANELING, DADOES, MASONRY, COURSE LINES, OR OTHER RELEVANT BUILDING FEATURES.	.7 DUPLEX RECEPTACLES TYPE 5-15R, OR 5-20R (AS INDICATED), 125V, SPECIFICATION GRADE U GROUND, WITH FOLLOWING FEATURES:</td	