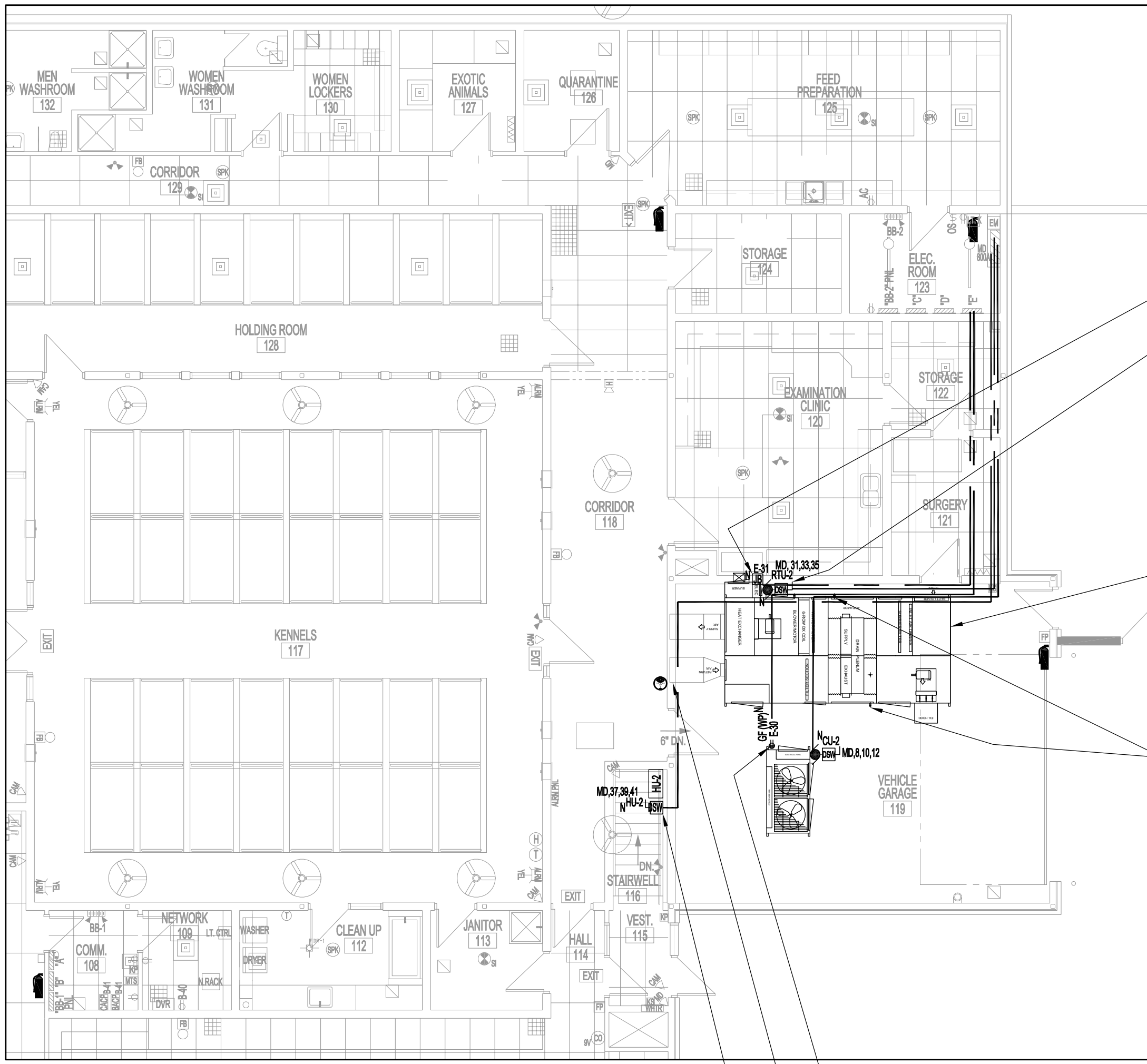




PARTIAL MAIN FLOOR PLAN
PARTIAL ROOF PLAN SHOWN FOR CLARITY
SCALE: 1/8"=1'-0"

POWER AND SYSTEMS DEMOLITION NOTES: "X"

ALL ABANDONED CABLES TO BE REMOVED AS REQUIRED BY LATEST CANADIAN ELECTRICAL CODE.
DO NOT DISTURB OR DISCONNECT ANY WIRING & CABLING IN AREA OF WORK REQUIRED FOR OTHER AREAS.

1. REMOVE EXISTING (RTU-2) ELECTRICAL CONNECTIONS AND CONTROLS TO ACCOMMODATE (RTU-2) REPLACEMENT.

ELECTRICAL LEGEND	
TYPE	DESCRIPTION
	DUPLEX RECEPTACLE
	HEIGHT IN INCHES ABOVE FINISH FLOOR TO CENTERLINE OF DEVICE
	GROUND FAULT CIRCUIT INTERRUPTER DUPLEX RECEPTACLE
	LIGHT SWITCH, SINGLE POLE
	OCCUPANCY SENSOR SWITCH WITH AUTO-ON & AUTO-OFF, WHITE
	DISCONNECT SWITCH
	JUNCTION BOX
	FIRE ALARM MANUAL PULL STATION
	FIRE ALARM BELL
	FIRE ALARM STROBE SIREN
	HEAT DETECTOR
	DATA PORT
	KEY PADDISPLAY - SECURITY
	HORN - SECURITY
	MOTION DETECTOR- SECURITY
	ELECTRICAL PANEL
	NETWORK ACCESS POINT
	THERMOSTAT

POWER AND SYSTEMS RENOVATION NOTES: "X"

1. PROVIDE COMPONENTS TO INSTALL (RTU-2), (CU-2) AND (HU-2), 208V/3PH/60HZ.
- 1.1. ELECTRICAL CONTRACTOR TO WIRE & COORDINATE WITH MECHANICAL ON SITE.
- 1.2. INSTALLATION SHALL BE CONTROLLED BY DIVISION 26.
- 1.3. PROVIDE WEATHERPROOF TECK CONDUITS/CONNECTIONS FROM WEATHER TIGHT ROOF PITCH BOXES TO ROOF DISCONNECT SWITCHES, EQUIPMENT & BOXES.
- 1.4. PROVIDE ALL LINE VOLTAGE WIRING & CONTROL WIRING AS REQUIRED. REFER TO MECHANICAL DRAWING FOR LOCATION OF NEW CONTROLS/THERMOSTATS.
- 1.5. WIRE (RTU-2) WITH MOTOR STARTER & MOTOR OVERLOADS TO CIRCUIT SHOWN WITH NEW 50A-3P CIRCUIT BREAKER & 4C- #6 AWG RW90 IN 1" EMT.
- 1.6. WIRE (CU-2) WITH MOTOR STARTER & MOTOR OVERLOADS TO CIRCUIT SHOWN WITH NEW REPLACEMENT 70A-3P CIRCUIT BREAKER (MD, 8,10,12) & 4C- #6 AWG RW90 IN 1-1/4" EMT.
- 1.7. WIRE (HU-2) TO CIRCUIT SHOWN WITH NEW 125A-3P CIRCUIT BREAKER & 4C-#2 AWG RW90 IN 1-1/2" EMT.
- 1.8. PROVIDE RELAY(S) TO INTERLOCK WITH EXISTING FIRE ALARM SYSTEM TO SHUTDOWN (RTU-2), (CU-2) & (HU-2) IN THE EVENT OF A FIRE ALARM.
- 1.9. PRIOR TO (RTU-2), (CU-2) AND (HU-2) STARTUPS.
- 1.9.1. PERFORM MANUFACTURER'S START-UP CHECK LIST.
- 1.9.2. TEST SUPPLY VOLTAGE. VOLTAGE MUST BE WITHIN 10% OF RATING PLATE, CORRECT VOLTAGE CONDITION, IF REQUIRED.
- 1.9.3. CHECK ROTATION OF ALL 3 PHASE MOTORS.
2. PROVIDE COMPONENTS TO INSTALL COMMERCIAL-QUALITY HEAT TRACE (5-WATT PER FOOT CABLE) WITH BUILT-IN THERMOSTAT CONTROL FROM (RTU-2) ENERGY RECOVERY SECTION (2) DRAIN CONNECTIONS TO ROOF PENETRATION.
- 2.1. SPIRAL WRAP AROUND DRAIN PIPES TO ACHIEVE MANUFACTURE'S LOWEST EXPECTED TEMPERATURE (-40°C).
- 2.2. APPLY HIGH-QUALITY WATER/FIRE-RESISTANT PIPE INSULATION (1/2" THICK MIN) OVER DRAIN PIPES WITH OUTER WATER-TIGHT SLEEVES.
- 2.3. APPLY "CAUTION" LABEL ON INSULATED PIPES.
- 2.4. PROVIDE A DEDICATED 120V, 20A BRANCH CIRCUIT WITH 20A BREAKER TO CIRCUIT SHOWN, CSA 5-20R GFCI, CLASS A TYPE RECEPTACLE WITH WEATHERPROOF COVER AS REQUIRED BY CEC. INSTALL SECURELY AT 36" MINIMUM ABOVE FINISHED ROOF, PROTECTED FROM MECHANICAL DAMAGE AND ACCESSIBLE.
3. PROVIDE IN-DUCT SMOKE DETECTOR (SYSTEM SENSOR MODEL: DNRA WITH DST SAMPLING TUBE) & ALL NECESSARY COMPONENTS TO MOUNT TO (RTU-2) RETURN AIR DUCT AS PER MANUFACTURER'S INSTRUCTIONS. WIRE WITH RELAY & ALL NECESSARY COMPONENTS TO INTERLOCK WITH FIRE ALARM SYSTEM TO SHUTDOWN (RTU-2), (CU-2) & (HU-2). TEST FIRE ALARM SYSTEM & SUBMIT VERIFICATION REPORT, PER GENERAL NOTES.
4. PROVIDE MAINTENANCE EQUIPMENT DEDICATED 120V, 20A BRANCH CIRCUIT WITH 20A BREAKER TO CIRCUIT SHOWN, CSA 5-20R GFCI, CLASS A TYPE RECEPTACLE WITH WEATHERPROOF COVER AS REQUIRED BY CEC. INSTALL SECURELY AT 36" MINIMUM ABOVE FINISHED ROOF, PROTECTED FROM MECHANICAL DAMAGE AND ACCESSIBLE.

- 1.1 ELECTRICAL SPECIFICATIONS
1. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE, SUBMIT AND FACILITATE ALL ITEMS RELATED TO MANITOBA HYDRO PROGRAM INCENTIVES.
2. REFER TO SPECIFICATIONS AND OTHER GENERAL CONDITIONS.
3. PROVIDE FOR A COMPLETE AND FULLY WORKING INSTALLATION AS HEREIN SPECIFIED AND AS SHOWN ON DRAWINGS.
4. THE ELECTRICAL INSTALLATION SHALL BE IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE, PROVINCIAL, AND MUNICIPAL CODES AND REGULATIONS AS MANDATED BY THE AUTHORITY HAVING JURISDICTION (AHJ) AND BYLAWs.
5. OBTAIN ALL PERMITS, APPROVALS AND PAY ALL RELATED FEES REQUIRED FOR A FULLY FUNCTIONAL AL INSTALLATION.
6. ALL EQUIPMENT SUPPLIED UNDER THIS CONTRACT SHALL BE NEW AND BE C.S.A. AND OR ULC APPROVED.
7. COORDINATE ALL CONDUIT RUNS AS SPECIFIED OR AS PER CONTRACT ADMINISTRATOR BEFORE INSTALLATION BEGINS.
8. ARRANGE FOR, COORDINATE, ROUGH-IN AND FINAL INSPECTIONS WITH INSPECTION AUTHORITIES AND FORWARD INSPECTION RESULTS TO CONTRACT ADMINISTRATOR.
9. VISIT EXISTING SITE WHERE SUCH EQUIPMENT IS PRESENTLY INSTALLED, AND/OR OBTAIN OUTLETS, WIRING AND RECEPTACLE CONFIGURATIONS FROM EQUIPMENT MANUFACTURERS. EXACT CONFIGURATIONS MAY DIFFER FROM THOSE SHOWN ON THE DRAWINGS. INCLUDE ALL COSTS TO PROVIDE NECESSARY WIRING, OUTLETS, RECEPTACLES AND CERTIFICATIONS TO CSA OR ULC.
- 1.2 EXAMINATION
1. EXAMINE IN-CONTRACT DOCUMENTS/DRAWINGS TO ENSURE WORK UNDER THIS CONTRACT CAN BE SATISFACTORILY CARRIED OUT. REPORT ANY DISCREPANCIES TO THE CONTRACT ADMINISTRATOR.
2. THE CONTRACTOR SHALL EXAMINE THE SITE, LOCAL CONDITIONS AND CONSIDER HOW THEY MAY AFFECT THE PROJECT.
- 1.3 SUPERVISION
1. SUPERVISE THE WORK AT ALL TIMES THROUGH A RESPONSIBLE AND COMPETENT JOURNEYMEN ELECTRICIAN / SUPERVISOR.
2. FULL COOPERATION SHALL BE SHOWN WITH OTHER TRADES TO FACILITATE INSTALLATIONS AND TO AVOID DELAYS IN CARRYING OUT THE WORK.
- 1.4 ACCURACY OF DATA
1. DRAWINGS ARE SCHEMATIC EXACT LOCATIONS, DISTANCES, LEVELS AND OTHER DIMENSIONS SHALL BE GOVERNED BY THE BUILDING AS CONSTRUCTED.
2. OUTLETS OR EQUIPMENT SHALL BE MOVED TO ANY POINT WITHIN A 10' RADIUS WHEN RELOCATION IS REQUESTED BY THE CONTRACT ADMINISTRATOR BEFORE THE WORK HAS BEEN SUBSTANTIALLY COMPLETED, WITHOUT ADDITIONAL COST.
3. BRANCH CIRCUIT WIRING SHALL BE INSTALLED WITH CIRCUITS ARRANGED EXACTLY AS SHOWN ON THE DRAWINGS. CONDUIT AND CABLE RUNS MAY BE MODIFIED TO SUIT THE INSTALLATION AND CODE.
- 1.5 APPROVAL OF MATERIAL
1. REQUEST FOR APPROVAL OF MATERIAL AS EQUALS OR ALTERNATES TO THAT SPECIFIED SHALL BE SUBMITTED TO THE CONTRACT ADMINISTRATOR IN ACCORDANCE WITH TENDER CONDITIONS.
- 1.6 SHOP DRAWINGS
1. PROVIDE SHOP DRAWINGS FOR REVIEW TO THE CONTRACT ADMINISTRATOR. THE SHOP DRAWINGS MUST BE ASSEMBLED AS COMPLETE WITH SPECIFICATION, DIMENSIONS AND DRAWINGS.
2. THE REVIEW OF THE SHOP DRAWINGS IS FOR THE SOLE PURPOSE OF ASCERTAINING CONFORMANCE WITH THE GENERAL DESIGN CONCEPT. THE REVIEW SHALL NOT MEAN APPROVAL OF THE DETAILED DESIGN INHERENT IN THE EQUIPMENT, THE RESPONSIBILITY FOR WHICH SHALL REMAIN WITH THE CONTRACTOR. THE REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO MEET THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL REMAIN RESPONSIBLE FOR CONFIRMING AND CORRELATING THE DIMENSIONS ON THE JOBSITE, AND FOR INFORMATION THAT PERTAINS TO THE FABRICATION PROCESS, CONSTRUCTION TECHNIQUES, AND INSTALLATION DETAILS, AND FOR COORDINATING ALL WORK OF THE RELATED SUB-TRADES.
3. FABRICATION OF EQUIPMENT SHALL NOT COMMENCE UNTIL SHOP DRAWINGS OF SUCH EQUIPMENT HAVE BEEN REVIEWED AND APPROVED THROUGH THE CONTRACT ADMINISTRATOR. WHERE REQUIRED, TWO SETS SHALL BE SUBMITTED WITH LOCAL INSPECTION DEPARTMENT APPROVAL.
4. THE ELECTRICAL SUB-CONTRACTOR SHALL REVIEW ALL APPLICABLE MECHANICAL SHOP DRAWINGS - REQUIRING ELECTRICAL CONNECTION - AND COORDINATE VOLTAGE AND SIZES WITH MECHANICAL SUB-CONTRACTOR AND CONTRACTOR.
- 1.7 AS-BUILT DRAWINGS
1. KEEP A RECORD SET OF DRAWINGS ON-SITE AT ALL TIMES RECORDING ANY CHANGES THAT MAY OCCUR. SUBMIT THESE DRAWINGS TO THE CONTRACT ADMINISTRATOR UPON COMPLETION OF PROJECT. AS-BUILTS SHALL INCLUDE TAGGING EXISTING AND NEW CIRCUITS AND EQUIPMENT IN AREA OF WORK.
2. SUBMIT A CERTIFICATE OF INSPECTION FROM THE LOCAL INSPECTION AUTHORITY UPON COMPLETION OF WORK.
3. THE CONTRACT ADMINISTRATOR RESERVES THE RIGHT TO RECOMMEND A PORTION OF THE CONTRACT FUNDS BE WITHHELD PENDING SUBMISSION (PDF VERSION) AND (2) SET HARD COPIES) OF ACCEPTABLE ON-SITE REDLINE DRAWINGS, AS-BUILT DRAWINGS, CONTROLS DIAGRAMS, OPERATING AND MAINTENANCE MANUALS.
- 1.8 TESTING
1. THE ELECTRICAL INSTALLATION SHALL BE COMPLETELY TESTED DEMONSTRATING THE EQUIPMENT AND SYSTEMS INSTALLED PERFORM IN THE MANNER INTENDED.
- 1.9 GUARANTEE
1. THE SATISFACTORY OPERATION OF ALL WORK SHALL BE GUARANTEED FOR A PERIOD OF 12 CALENDAR MONTHS AFTER FINAL ACCEPTANCE.
- 1.10 REQUEST FOR CHANGE
1. ALL QUOTATIONS IN RESPONSE TO REQUEST FOR CHANGE SHALL BE SUBMITTED COMPLETE WITH AN ITEMIZED COST BREAKDOWN OF ALL MATERIALS AND LABOUR REQUIRED IN THE CHANGE.
- 1.11 GROUNDING AND BONDING
1. THE ENTIRE INSTALLATION SHALL BE GROUNDED AND BONDED IN ACCORDANCE WITH THE EDITION OF CANADIAN ELECTRICAL CODE MANDATED BY AHJ AND BYLAWs.
- 1.12 WORKMANSHIP
1. INSTALL EQUIPMENT, CONDUIT AND CABLES IN A WORKMANLIKE MANNER TO PRESENT A NEAT APPEARANCE TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR. INSTALL CONDUITS AND CABLE TO RUN PARALLEL AND/OR PERPENDICULAR TO BUILDING GRID LINES, COLUMNS, IN CEILING SPACES, CHASES & BEHIND FURRING. IN AREAS WHERE SYSTEMS ARE TO BE EXPOSED, INSTALL NEATLY AND GROUP TO PRESENT A TIDY APPEARANCE.
2. AS REQUIRED BY CODE, INSTALLED EQUIPMENT AND APPARATUSES REQUIRING MAINTENANCE, ADJUSTMENT OR EVENTUAL REPLACEMENT TO HAVE ADEQUATE CLEARANCES AND ACCESSIBILITY WITH ACCESS DOOR/HATCHES AT NO-COST.
3. INCLUDE IN WORK ALL REQUIREMENTS SHOWN ON THE SHOP DRAWINGS OR MANUFACTURERS' INSTALLATION INSTRUCTIONS.
4. WORK UNSATISFACTORY TO THE CONTRACT ADMINISTRATOR SHALL BE REWORKED WITHOUT EXTRA COST.
5. USE OF CLIPS FOR SECURING AC90 TO CEILING SYSTEM IS PROHIBITED.
6. ALL CONDUITS MUST BE CLIPPED TO STRUCTURAL CONCRETE BY MEANS OF SUITABLE ANCHORS OR SUPPORTED BY UNISTRUT HANGERS AS CLOSE TO UNDERSIDE AS POSSIBLE. THE WRAPS FOR WIRE HANGING AND FASTENING IS NOT ACCEPTABLE. PERFORATED STRAPPING IS ALSO UNACCEPTABLE. ALL ELECTRICAL COMPONENTS MUST BE SUPPORTED INDEPENDENTLY AND MEET CODE.
7. ALL ELECTRICAL SUPPORTS AND HANGER SHALL CONFORM TO EDITION OF CANADIAN ELECTRICAL CODE MANDATED BY AHJ AND BYLAWs INCLUDING MANUFACTURERS' INSTALLATION INSTRUCTIONS.
- 2.0 MATERIALS AND INSTALLATION
- 2.1 OUTLET BOXES
1. OUTLET, JUNCTION AND SWITCH BOXES SHALL BE GALVANIZED PRESSED STEEL OF SIZE AND TYPE TO SUIT EACH INDIVIDUAL APPLICATION.
2. COMMERCIAL DUTY DUPLEX RECEPTABLES, DATA FACEPLATES SHALL BE "DECORA" STYLE, WHITE & CSA APPROVED, ON STAINLESS STEEL FACE PLATES MOUNTED 18" ABOVE FINISHED FLOOR OR OTHERWISE NOTED.
3. LIGHT SWITCHES SHALL BE MOUNTED 42" ABOVE FINISHED FLOOR OR OTHERWISE NOTED.
4. OUTLETS SHALL NOT BE LOCATED ANYWHERE ON THE EXTERIOR CURTAIN WALL. OUTLETS SHOWN SHALL BE MOUNTED ON THE NEAREST DIVIDING WALL 2" FROM OUTSIDE WALL, OR NEAREST FURRED OUT COLUMN.
5. PROVIDE ALL REQUIRED ACCESS PANELS WITH SUITABLE FIRE RATINGS FOR THE WALL OR CEILING THEY ARE BEING INSTALLED IN.
6. DO NOT INSTALL OUTLETS BACK-TO-BACK IN WALL. RECEPTABLES & DATA DEVICE BOXES ON SAME SIDE OF WALL SHALL BE 4" ON CENTER.

- 2.2 WIRING METHODS & SUPPORTS
1. EXISTING WIRING INCLUDING INSULATION THAT IS FRAYED, CRACKED OR DEEM NOT TO CODE SHALL BE REPLACED TO MEET CODE.
2. UNLESS OTHERWISE SHOWN ON THE DRAWINGS, ALL WIRE SHALL BE COPPER, MINIMUM #12 AWG WITH 90 DEGREES CELSIUS X-JUNK INSULATION IN STEEL ELECTRICAL METALLIC TUBING (EMT) CONDUIT (INCLUDING WIRING ON ROOF DECK FLUTES WHERE APPROVED).
3. WIRING IN CONCRETE OR MASONRY CONSTRUCTION SHALL BE INSTALLED IN EMT. PROVIDE A SEPARATE GROUNDING CONDUIT IN EMT EMBEDDED IN CONCRETE SLABS. CONDUITS INSTALLED IN AREAS EXPOSED TO MOISTURE OR OUTSIDE SHALL HAVE WATERTIGHT FITTINGS.
4. ALL WIRING IN FINISHED AREAS SHALL BE CONCEALED. ALL CONDUCTORS AND CONDUITS SHALL BE RUN PERPENDICULAR OR PARALLEL TO THE BUILDING CORE WALLS.
5. CONDUIT AND WIRING SHALL BE GROUPED WHERE POSSIBLE AND CLIPPED IN A NEAT AND WORKMANLIKE MANNER.
6. HOME RUNS SHALL BE IN CONDUIT.
7. EACH CIRCUIT FOR COMPUTER EQUIPMENT, PRINTERS AND COPIERS SHALL HAVE A SEPARATE NEUTRAL CONDUCTOR.
8. PROVIDE ONE ISOLATED GROUND CONDUCTOR PER THREE 2 WIRE ISOLATED GROUND CIRCUITS.
9. CONDUIT RUNS SHALL BE INSTALLED AND INSPECTED BEFORE AC-90 RUNS ARE INSTALLED.
10. THREE WIRE AC-90 SHALL NOT BE USED FOR ISOLATED GROUND WIRING, UNLESS IT INCLUDES A GREEN INSULATED CONDUCTOR FOR THIS PURPOSE.
11. ALL AC90 USED FOR DROPS SHALL BE RUN TIGHT TO DECK AND FOLLOW LINES OF BEAMS AND BUILDING.
12. ALL WIRING IN SERVICE AREAS CAN BE SURFACE MOUNTED EMT. DO NOT RUN CONDUITS HORIZONTALLY ON WALLS. VERTICAL DROPS ONLY.
13. ALL BRANCH CIRCUIT WIRING AND CONDUITS SHALL BE INSTALLED TO MINIMIZE VOLTAGE DROP. INSTALL ADDITIONAL CONDUIT RUNS AS REQUIRED TO TAKE THE MOST DIRECT, SHORTEST ROUTE TO OUTLETS, LIGHT FIXTURES, ETC. AND MEET THE METHODS ABOVE.
14. INSTALLATION IN RACEWAYS
1. ENSURE CONDUITS ARE DRY AND FREE OF DERRIS BEFORE PULLING CABLES.
2. CONDUITS AND BOX COVERS COLOUR CODING AND IDENTIFICATION AS PER CEC AND EXISTING SYSTEM IDENTIFICATION.
3. WIRES IN OUTLETS, JUNCTIONS AND SWITCH BOXES, NOT HAVING A CONNECTION WITHIN BOX SHALL NOT BE SPLICED, BUT SHALL CONTINUE UNBROKEN THROUGH THE BOX.
4. BRANCH CIRCUITS (15A-1P) EXCEEDING 68 FEET SHALL BE #10 AWG, BRANCH CIRCUITS (15A-1P) EXCEEDING 115 FEET SHALL BE #8 AWG OR UNLESS OTHERWISE NOTED.
15. INSTALLATION OF SINGLE CONDUCTOR CABLES
1. SINGLE CONDUCTOR CABLES SHALL BE INSTALLED ONE CABLE DIAMETER APART ON SUSPENDED CABLE TRAY OR CHANNEL SUPPORTS AND SHALL BE CLAMPED WITH CODE COMPLIANT CABLE CLAMPS. CABLES SHALL BE TERMINATED USING NONMAGNETIC CONNECTOR COVERS. CABLE ARMOUR SHALL BE GROUNDED VIA A PLATE AT THE SUPPLY END AND ISOLATED VIA AN INSULATING PLATE, AT THE LOAD END OF THE CABLE. A R80 AWG BARE STRANDED UNLESS OTHERWISE NOTED. COPPER GROUND WIRE SHALL BE INSTALLED WITH EACH FEEDER, CABLE BENDING RADIUS SHALL BE AT LEAST TWELVE TIMES THE OVERALL CABLE DIAMETER AND BENDS SHALL NOT DAMAGE OR DISTORT THE OUTER SHEATH.
2. PLENUM RATED PVC JACKETED CABLES SHALL BE USED IN AIR PLENUMS. NON-PLENUM RATED CABLES ALLOWABLE IF IN EMT.
3. SINGLE CONDUCTOR CABLES INSTALLED UNDERGROUND SHALL BE IN THE INSTALLATION CONFIGURATION OUTLINED IN THE CANADIAN ELECTRICAL CODE TO PROVIDE THE ALLOWABLE AMPACITY REQUIRED FOR THE FEEDER.
16. INSTALLATION OF FLEXIBLE ARMoured CABLE
1. TYPE AC90 ARMoured CABLE (BX) SHALL BE USED FOR CONNECTIONS FROM CONDUIT SYSTEMS TO EQUIPMENT OR RECESSED LUMINAIRES IN ACCESSIBLE CEILINGs. CABLE TO BE OF SUFFICIENT LENGTH TO ALLOW THE LIGHTING FIXTURE TO BE RELOCATED TO ANY LOCATION WITHIN A 6' RADIUS. CABLE SHALL BE CLAMPED BEFORE ENTERING THE LIGHTING FIXTURE AND SHALL BE CLIPPED BEFORE ENTERING THE CONDUIT SYSTEM JUNCTION BOX.
17. INSTALLATION IN EQUIPMENT
1. GROUP AND LACE-IN NEATLY WIRE AND CABLE INSTALLED IN SWITCHBOARDS, PANELBOARDS, CABINETS, WIRE WAYS AND OTHER SUCH ENCLOSURES.
2. TERMINATIONS
3. TERMINATE WIRES AND CABLES WITH APPROPRIATE CONNECTORS IN AN APPROVED MANNER.
18. IDENTIFICATION
1. WIRE IN CONDUIT #2 AWG AND SMALLER SHALL HAVE SOLID COLOURED INSULATION, COLOUR CODED AS PER CANADIAN ELECTRICAL CODE.
2. WIRE IN CONDUIT 10' AWG AND LARGER AND SINGLE CONDUCTOR CABLES FOR NORMAL POWER FEEDERS SHALL BE IDENTIFIED AT EACH OUTLET BOX AND TERMINATION WITH A 6" BAND OF COLOURED VINYL TAPE OF THE APPROPRIATE COLOUR. EMERGENCY POWER FEEDERS SHALL BE PROVIDED WITH AN ADDITIONAL 3-1/2" BAND OF RED VINYL TAPE INSTALLED ADJACENT TO THE 6" BAND OF THE COLOURED PHASE IDENTIFICATION TAPE. AS LISTED BELOW. NEUTRAL AND GROUND CONDUCTORS SHALL BE IDENTIFIED. PAINT OR OTHER MEANS OF COLOURING THE INSULATION SHALL NOT BE USED.
3. IDENTIFY CONTROL CONDUCTORS IN MOTOR CONTROL EQUIPMENT, CONTACTORS, ETC. WITH MYLAR/CLOTH WIRE MECHANICAL MARKERS. HAND WRITING NOT PERMITTED.
19. SUPPORT PRODUCT
1. SUPPORT CHANNELS (GALVANIZED STEEL)
2. U-SHAPE, SIZE 1-1/2" x 1-1/2" x 3/32" (MINIMUM) THICK, SURFACE MOUNTED, SUSPENDED OR SET IN POURED CONCRETE WALLS AND CEILINGs OR AS REQUIRED.
3. MANUFACTURERS: B-LINE, BURNDY, ELECTROVERT, UNISTRUT, PILGRIM, PURSLEY.
20. SUPPORT EXECUTION
1. INSTALLATION
2. SECURE EQUIPMENT TO STRUCTURALLY SOUND MEMBERS WITH APPROVED ANCHORS.
3. SECURE EQUIPMENT TO POURED CONCRETE WITH CAST-IN OR EXPANDABLE INSERTS.
4. SECURE EQUIPMENT TO HOLLOW MASONRY WALLS WITH TOGGLE BOLTS.
5. SUPPORT EQUIPMENT, CONDUIT OR CABLES USING CLIPS, SPRING LOADED BOLTS, CABLE CLAMPS DESIGNED AS ACCESSORIES TO BASIC CHANNEL MEMBERS.
6. FASTEN EXPOSED CONDUIT OR CABLES TO BUILDING CONSTRUCTION OR SUPPORT SYSTEM USING STRAPS.
7. ONE-HOLE MALLEABLE IRON STRAPS TO SECURE SURFACE CONDUITS AND CABLES FOR 2" AND SMALLER.
8. TWO-HOLE STEEL STRAPS FOR CONDUITS AND CABLES LARGER THAN 2".
9. BEAM CLAMPS TO SECURE CONDUIT TO EXPOSED STEEL WORK.
10. SUSPENDED SUPPORT SYSTEMS.
11. SUPPORT INDIVIDUAL CABLE OR CONDUIT RUNS WITH 1/4" (MINIMUM) DIAMETER THREADED RODS AND SPRING CLIPS.
12. SUPPORT (2) OR MORE CABLES OR CONDUITS ON CHANNELS SUPPORTED BY 1/4" (MINIMUM) DIAMETER THREADED ROD HANGERS WHERE DIRECT FASTENING TO BUILDING CONSTRUCTION IS IMPRACTICAL.
13. FOR SURFACE MOUNTING OF TWO OR MORE CONDUITS USE CHANNELS AT 80" O/C SPACING.
14. PROVIDE METAL BRACKETS, FRAMES, HANGERS, CLAMPS AND RELATED TYPES OF SUPPORT STRUCTURES WHERE INDICATED OR AS REQUIRED TO SUPPORT CONDUIT AND CABLE RUNS.
15. ENSURE ADEQUATE SUPPORT FOR RACEWAYS AND CABLES DROPPED VERTICALLY TO EQUIPMENT WHERE THERE IS NO WALL SUPPORT.
16. DO NOT USE WIRE LASHING OR PERFORATED STRAP TO SUPPORT OR SECURE RACEWAYS OR CABLES.
17. DO NOT USE SUPPORTS OR EQUIPMENT INSTALLED FOR OTHER TRADES FOR CONDUIT OR CABLE SUPPORT EXCEPT WITH PERMISSION OF OTHER TRADES AND APPROVAL OF CONTRACT ADMINISTRATOR.
18. INSTALL FASTENINGS AND SUPPORTS AS REQUIRED FOR EACH TYPE OF EQUIPMENT CABLES AND CONDUITS, AND IN ACCORDANCE WITH MANUFACTURERS' INSTALLATION RECOMMENDATIONS.
19. THREADED ROD TO BE MINIMUM 1/4" DIAMETER GALVANIZED OR NICKEL PLATED. BLACK STEEL ROD IS NOT ACCEPTABLE.

- 2.3 IDENTIFICATION OF EQUIPMENT AND WARNING SIGNS
1. ALL NEW EQUIPMENT SHALL BE IDENTIFIED WITH 3/4" HIGH LETTERS/NUMBERS ON 1" HIGH ENGRAVED LAMACOID NAMEPLATES. PROVIDE ADDITIONAL NEW 1/4" HIGH LETTERS/NUMBERS ON 1/2" HIGH ENGRAVED LAMACOID BENEATH TO INDICATE PANEL CIRCUIT OF NEW EQUIPMENT. LAMACOIDs SHALL BE EITHER SCREWED OR RIVETED IN PLACE.
2. RECEPTABLES AND LIGHTING SWITCHES CAN BE SELF ADHESIVE TYPE WITH 1/4" HIGH LETTERS/NUMBERS ON 1/2" HIGH TAPE.
3. NORMAL POWER AND COMMUNICATION DEVICES; MECHANICAL PRODUCED WHITE LETTERING ON BLACK FACE.
4. EMERGENCY POWER CIRCUITS; LAMACOIDs/TAPES SHALL BE MECHANICAL PRODUCED RED LETTERING ON WHITE FACE.
5. FIRE ALARM DEVICES; LAMACOIDs/TAPES SHALL BE MECHANICAL PRODUCED WHITE LETTERING ON RED FACE.
6. PROVIDE MINIMUM 2" HIGH ENGRAVED LAMACOIDs FOR EACH NEW MD, CDP & PANELBOARDS, INDICATING PANEL ID, "V-PH-W", "TED FROM PANEL", "LOCATED IN RM.". ON PANELBOARDS UNUSED CIRCUITS, LABEL "SPARE" OR "SPACE" ON PANEL LIST.
7. MANUFACTURER'S NAMEPLATES, CERTIFICATION LABELS AND CSA LABELS SHALL BE VISIBLE AND LEGIBLE AT EQUIPMENT INSTALLED LOCATIONS.
8. PROVIDE WARNING SIGNS ON EQUIPMENT, AS REQUIRED, TO MEET THE REQUIREMENTS OF THE INSPECTION AUTHORITIES, INCLUDING INDICATION OF MULTIPLE POWER SOURCES, ARC FLASH LABELLING.

- 2.4 CUTTING AND PATCHING
1. ARRANGE AND PAY FOR ALL CUTTING AND PATCHING AS REQUIRED FOR THE ELECTRICAL INSTALLATION.
2. PROVIDE A INSTALL APPROPRIATE FIRE STOP AT ALL FIRE WALL &/OR FLOOR PENETRATIONS. ACCEPTABLE MANUFACTURERS: HILTI, DOW CORNING, FIRE-STOP SYSTEMS (ELASTA-SEAL) OR G.E. SILICONE.
3. REFER TO MANUFACTURERS' SPECIFICATIONS FOR PRODUCT AND INSTALLATION DETAILS.
- 2.5 DEVICES
1. COLORS OF RECEPTABLES, SWITCHES, AND OUTLETS SHALL MATCH EXISTING SYSTEMS, UNLESS NOTED OTHERWISE.
2. SWITCHES SHALL BE COMMERCIAL QUALITY "DECORA" STYLE, HUBBELL, ARROW HART, BRYANT, LEVITON, WOODHEAD, PASS & SEYMOUR, MOUNT SWITCHES 42" ABOVE FINISH FLOOR, UNLESS OTHERWISE NOTED.
3. ACCEPTABLE MANUFACTURERS FOR "DECORA" STYLE RECEPTABLES SHALL BE HUBBELL, ARROW HART, BRYANT, LEVITON, WOODHEAD, PASS & SEYMOUR. MOUNT RECEPTABLES 18" ABOVE FINISH FLOOR, UNLESS OTHERWISE NOTED.
4. PROVIDE STAINLESS STEEL FACEPLATES FOR DEVICES.
- 2.6 MOTOR AND CIRCUIT DISCONNECTS
- 1.1 SUBMIT PRODUCT DATA IN ACCORDANCE WITH THIS SPECIFICATION.
- 1.2 EQUIPMENT
1. FUSIBLE AND NON-FUSIBLE DISCONNECT SWITCHES IN EEMAC 1" ENCLOSURE FOR INTERIOR APPLICATIONS, AND EEMAC 3" ENCLOSURE FOR EXTERIOR APPLICATIONS, UNLESS OTHERWISE NOTED.
2. PROVISION FOR PADLOCKING IN "ON-OFF" POSITION.
3. MECHANICALLY INTERLOCKED DOOR TO PREVENT OPENING WHEN HANDLE IN "ON" POSITION.
4. FUSE HOLDERS IN EACH SWITCH SUITABLE WITHOUT ADAPTORS, FOR TYPE OF FUSE, AS INDICATED.
5. QUICK-MAKE, QUICK-BREAK ACTION.
6. "ON-OFF" SWITCH POSITION INDICATION ON SWITCH ENCLOSURE COVER.
7. SINGLE-PHASE MOTOR DISCONNECT SWITCHES SHALL BE ONE OR TWO-POLE TOGGLE-TYPE, 20 AMP, 120/277 VAC, BLACK HANDLE WITH SIDE AND BACK WIRING COMPLETE WITH PILOT LIGHT.
- 1.3 EQUIPMENT IDENTIFICATION
1. INDICATE NAME OF LOAD CONTROLLED ON SIZE 4 NAMEPLATE.
- 1.4 MANUFACTURERS
1. ACCEPTABLE MANUFACTURERS: EATON, CCE, CUTLER-HAMMER, SQUARE D, SIEMENS.
- 1.5 INSTALLATION
1. INSTALL MOTOR DISCONNECT SWITCHES WHERE INDICATED.
2. INSTALL FUSED CIRCUIT DISCONNECT SWITCHES WHERE INDICATED OR WHERE REQUIRED BY THE INSPECTION AUTHORITIES AND/OR FOR EQUIPMENT AND GROUND CONDUCTORS BY OTHER TRADES.
- GENERAL NOTES:
1. THESE DRAWINGS SHALL NOT BE SCALED.
2. THE WORD "PROVIDE" IS DEFINED AS SUPPLY & INSTALL.
3. ALSO REFER TO ARCHITECTURAL, MECHANICAL, & ELECTRICAL DRAWINGS & SPECIFICATIONS.
4. SUBMISSION OF SITE MARK-UPS, AS-BUILTS, OPERATING & MAINTENANCE MANUALS AND OTHER SUPPORTING DOCUMENTS TO CLIENT ARE MANDATORY AT THE COMPLETION OF THIS PROJECT.
5. THE CONTRACTOR SHALL VISIT THE SITE AND ENSURE ALL DIMENSIONS, DATUM, AND DETAILED INFORMATION SHOWN ARE CORRECT.
6. THE CONTRACTOR IS TO REVIEW AND COORDINATE ALL ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL OPENINGS THROUGH FLOORS, WALLS, AND CEILINGs FOR DUCTS, PIPES & ELECTRICAL RISERS AND ALL OPENINGS NOT SHOWN ON DRAWINGS.
7. ALL OPENINGS THROUGH FIRE ASSEMBLIES INCLUDING FLOORS AND CEILINGs ARE TO BE FIRE STOPPED AND SEALED WITH ULC APPROVED FIRE STOPPING TO MAINTAIN THE INTEGRITY OF THE FIRE SEPARATION, AND PROVIDE A SMOKE-TIGHT BARRIER.
8. ALL PRODUCTS AND MATERIALS TO BE USED AND INSTALLED SHALL CONFORM WITH MANUFACTURERS' SPECIFICATIONS, APPLICABLE CODES AND AUTHORITY HAVING JURISDICTION.
9. THE CONTRACTOR SHALL BE RESPONSIBLE TO PATCH AND MAKE GOOD ALL EXISTING CONSTRUCTION AFFECTED BY THE REMOVAL OF ALL ITEMS FORMING PART OF THE RENOVATION WORK.
10. PROVIDE DYNA LABELS ON ALL & EXISTING SWITCHES, PORTS & RECEPTABLES. PANEL SCHEDULE SHALL BE RETYPED TO REFLECT AS-BUILT CONDITIONS & INSERTED TO INSIDE OF ASSOCIATED PANEL DOOR SLEEVE PROTECTOR. ALSO REFER TO ELECTRICAL SPECIFICATIONS.
11. ALL ABANDONED ELECTRICAL FIXTURES, COMPONENTS, RECEPTABLES & DATA CABLING SHALL BE REMOVED BACK TO SOURCE & TERMINATED AS PER APPLICABLE CODES.
12. RECONNECT & TEST ALL FIRE PREVENTION EQUIPMENT.
- 12.1. PROVIDE REQUIRED WIRING, CONDUITS, END-OF-LINE RESISTORS & BOOSTER POWER SUPPLIES.
- 12.2. INSTALLATION SHALL BE IN CONFORMANCE WITH CANULC-SS244, STANDARD FOR INSTALLATION OF FIRE ALARM SYSTEMS. NOTIFY BUILDING OWNER PRIOR TO PERFORMING A MANDATORY FIRE ALARM VERIFICATION REPORT IN CONFORMANCE WITH CANULC-SS37, STANDARD FOR VERIFICATION OF FIRE ALARM SYSTEMS FOR ZONES AFFECTED.
- WARNING:**
ASBESTOS MAYBE PRESENT BEHIND WALLS, CEILING SPACE & FLOORS. IF ASBESTOS & ANY HAZARDOUS MATERIAL IS FOUND, STOP WORK IMMEDIATELY & CONTACT CITY OF WINNIPEG CENTRAL CONTROL PH: 204-986-2351.

2			-
1			-
0	ISSUED FOR CONSTRUCTION	DTA	07.29.2026
No.	REVISION/DESCRIPTION	BY	DATE

SEAL



DATE 2026.03.26	DESIGN BY: DTA	DRAWN BY: DTA	CHECKED BY:	APPROVED BY:
--------------------	-------------------	------------------	----------------	-----------------



THE CITY OF WINNIPEG
ASSETS & PROJECT MANAGEMENT DEPARTMENT
MUNICIPAL ACCOMMODATIONS DIVISION
3-65 GARRY STREET, R3C 4K4

PROJECT
**ANIMAL SERVICES OFFICES & KENNELS
KENNEL ROOF TOP UNIT REPLACEMENT**

1057 LOGAN AVENUE

SHEET TITLE
**MAIN FLOOR AND ROOF PLAN
ELECTRICAL
POWER AND SYSTEMS**

SCALE AS SHOWN	PROJECT No: 2025-005	SHEET No: E1
-------------------	-------------------------	------------------------