

**ELECTRICAL SPECIFICATION**

**CLEANING**

1. MAINTAIN THE WORK IN TIDY CONDITION FREE FROM THE ACCUMULATION OF WASTE PRODUCTS AND DEBRIS, OTHER THAN THAT CAUSED BY THE CITY OF WINNIPEG OR OTHER SUBCONTRACTORS NOT ASSOCIATED WITH THIS PROJECT.
2. REMOVE WASTE MATERIAL AND DEBRIS FROM SITE AND DEPOSIT IN WASTE CONTAINERS AT END OF EACH WORKING DAY.
3. CLEAN INTERIOR AREAS PRIOR TO START OF FINISH WORK. MAINTAIN AREAS FREE OF DUST AND OTHER CONTAMINANTS DURING FINISHING OPERATIONS.

**DEMOLITION**

1. ELECTRICAL SUBCONTRACTOR TO VISIT SITE AND INCLUDE REMOVAL OF ALL ELECTRICAL EQUIPMENT BEING DELETED. DELETE ALL WIRING NOT BEING USED FROM DEVICES BACK TO PANEL OR BACKBOARD.

**SCOPE OF WORK**

1. THE ELECTRICAL SUBCONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR, TOOLS, SUPERVISION, ETC. REQUIRED TO INSTALL COMPLETE OPERATIONAL ELECTRICAL SYSTEMS AS DESCRIBED IN THESE PLANS AND SPECIFICATIONS. SUCH INSTALLATIONS SHALL INCLUDE, BUT ARE NOT SPECIFICALLY LIMITED TO THE FOLLOWING:
  - 1.1. INSTALLATION OF RACEWAY AND CIRCUIT WIRING.
  - 1.2. CUTTING, CHANNELING, CORING AND CHASING REQUIRED TO ACCOMMODATE THE INSTALLATION OF ELECTRICAL WORK AND ROUGH PATCHING.
  - 1.3. INSTALLATION OF ANY REQUIRED ELECTRICAL DISTRIBUTION EQUIPMENT.
  - 1.4. INSTALLATION OF HVAC POWER WIRING AND FINAL CONNECTIONS TO HVAC EQUIPMENT.
  - 1.5. INSTALLATION OF CONDUIT, JUNCTION BOXES, PULL BOXES, ETC. REQUIRED FOR THE AFOREMENTIONED EQUIPMENT.
  - 1.6. INSTALLATION OF TELECOM SYSTEMS
  - 1.7. INSTALLATION OF FIRE ALARM SYSTEMS
  - 1.8. INSTALLATION OF PUBLIC ADDRESS SYSTEM

**PANEL BOARDS**

1. A TYPED REVISED DIRECTORY OF CIRCUITS SHALL BE INSTALLED INSIDE OF EACH PANEL BOARD DOOR. THE LIST SHALL INCLUDE AS-BUILT CONDITIONS INCLUDING ALL TYPES OF DEVICES SERVED BY EACH CIRCUIT. EACH PANEL SHALL BE EXTERNALLY TAGGED WITH PERMANENT PHENOLIC PLATE INDICATING PANEL IDENTIFICATION AND VOLTAGE.
2. PHASE LEGS OF PANELS SHALL BE BALANCED. ANY PANEL FOUND WITH UNBALANCED LOADS SHALL HAVE ITS CIRCUITS REARRANGED AS REQUIRED TO BALANCE PHASE LEGS.
3. THE SHORT CIRCUIT RATING OF A PANEL SHALL APPLY TO ALL BRANCH DEVICES. SERIES CONNECTED SHORT CIRCUIT RATING OF BRANCH DEVICES WILL NOT BE ACCEPTED.

**CIRCUIT BREAKERS AND FUSES**

1. CIRCUIT BREAKERS SHALL BE BOLT-IN TYPE. CIRCUIT BREAKERS SHALL BE OF THE SAME MANUFACTURER AND BE COMPATIBLE WITH THE PANEL BOARD.
2. CIRCUIT BREAKERS SHALL BE QUICK-MAKE, QUICK-BREAK COMPENSATED FOR AMBIENT TEMPERATURES AND SHALL HAVE A MINIMUM SHORT CIRCUIT RATING OF 10,000 AMPERES SYMMETRICAL OR HIGHER WHERE NOTED ON PANEL SCHEDULE.
3. CIRCUIT BREAKERS SHALL BE OF THE "THERMAL-MAGNETIC" TYPE HAVING BIMETALLIC ELEMENT FOR TIME DELAY OVER LOAD PROTECTION AND MAGNETIC ELEMENT FOR SHORT CIRCUIT PROTECTION.
4. ALL CIRCUIT BREAKERS FEEDING HVAC EQUIPMENT SHALL BE HACR RATED.
5. FUSES SHALL BE CURRENT LIMITING DUAL ELEMENT TYPE WITH A MINIMUM INTERRUPTING CAPACITY OF 200,000 RMS AMPERES AND OF THE CONTINUOUS CURRENT RATINGS AS SHOWN ON THE DRAWINGS.
6. FUSES SHALL HAVE AN AVERAGE MELTING TIME-CURRENT CHARACTERISTICS TO MEET THE UNDERWRITERS' LABORATORIES' REQUIREMENTS FOR "CLASS K" 0-600 AMPERE FUSES.
7. CIRCUIT BREAKERS AND FUSES SHALL BE SIZED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EQUIPMENT BEING SERVED. VERIFY AND CONFIRM WITH SUPPLIER EQUIPMENT REQUIREMENTS AS NECESSARY PRIOR TO INSTALLATION OF BRANCH CIRCUIT OVER-CURRENT PROTECTION.
8. COORDINATE WITH ALL SUBCONTRACTORS FOR THE ELECTRICAL REQUIREMENTS OF ALL EQUIPMENT TO BE INSTALLED. DO NOT RUN CONDUIT AND CONDUCTORS PRIOR TO THE CONFIRMATION OF THE EQUIPMENT REQUIREMENTS.

**DISCONNECT SWITCHES**

1. THE ELECTRICAL SUBCONTRACTOR SHALL SUPPLY AND INSTALL DISCONNECT SWITCHES AS SHOWN ON THE PLANS, OR AS OTHERWISE REQUIRED BY CODE, WHETHER SHOWN ON PLANS OR NOT.
2. ALL SWITCHES SHALL BE HEAVY DUTY QUICK-MAKE QUICK-BREAK TYPE, RATED AS REQUIRED. EACH SWITCH SHALL HAVE A SUFFICIENT NUMBER OF POLES TO INTERRUPT ALL UNGROUNDED CONDUCTORS. DISCONNECT SWITCHES SERVING MOTOR LOADS SHALL BE HORSEPOWER RATED.
3. FUSES SHALL BE INSTALLED IN ALL FUSED SWITCHES, SIZED AS INDICATED ON PLANS.
4. UNLESS OTHERWISE NOTED, INDOOR SWITCHES SHALL BE PROVIDED WITH NEMA 1 ENCLOSURES; OUTDOOR SWITCHES WITH NEMA 3R ENCLOSURES.

**RACEWAYS**

1. WHERE CONDUIT IS USED, 3/4" MINIMUM CONDUIT SHALL BE PROVIDED.
2. ALL CONDUITS TO BE SUPPORTED BY STANDOFFS. CONNECTION TO CEILING SUPPORTS SHALL NOT BE PERMITTED. ALL CONDUIT SHALL BE RUN CONCEALED WHEN REQUIRED.
3. ALL CONDUITS INSTALLED SHALL BE RIGID GALVANIZED WITH THREADED CONNECTIONS. ALL CONDUITS INSTALLED UNDERGROUND OR IN CONCRETE SLABS SHALL BE RIGID PVC WITH A SEPARATE GROUNDING CONDUCTOR AND CONCRETE ENCASEMENT WHERE REQUIRED.
4. WHEREVER CONDUITS PASS THROUGH FLOORS OR FIRE RATED PARTITIONS, SLEEVES SHALL BE INSTALLED. SLEEVES SHALL BE GROUTED IN PLACE IN THE SUPPORTING WALL OR FLOOR. THE SPACE BETWEEN THE SLEEVE AND CONDUIT SHALL BE PACKED WITH AN APPROVED, NONCOMBUSTIBLE, FIRE STOPPING MATERIAL. ALL NEW HOLES SHALL BE CORE DRILLED. NO CHOPPING SHALL BE PERMITTED, EXCEPT AS APPROVED BY THE PROJECT MANAGER.
5. FLEXIBLE CONDUIT SHALL BE USED TO MAKE FINAL CONNECTIONS TO MOTORS, TRANSFORMERS, EXPANSION JOINTS OR WHERE THE INSTALLATION FOR RIGID CONDUIT IS IMPRACTICAL.
6. WIRING SHALL BE RUN IN WALLS, ABOVE CEILING OR BELOW FLOOR WHERE POSSIBLE. INSTALL CONDUIT PARALLEL TO BUILDING LINES. CLEAR ALL OPENINGS, PIPES, DUCTS, STRUCTURAL COMPONENTS, ETC.
7. INSTALL CONDUIT CONTINUOUS BETWEEN BOXES AND CABINETS WITH NO MORE THAN FOUR 90 DEGREE BENDS. SECURELY FASTEN IN PLACE WITH STRAPS, HANGERS, AND STEEL SUPPORTS AS REQUIRED.
8. DO NOT SUPPORT CONDUIT FROM SUSPENSION WIRES. REAM AND THOROUGHLY CLEAN CONDUIT ENDS BEFORE INSTALLATION. OPENINGS SHALL BE PLUGGED OR COVERED TO KEEP CONDUIT CLEAN.

**WIRE AND CABLE**

1. FOR CONCEALED BRANCH CIRCUIT WIRING, TYPE MC FLEXIBLE METAL CONDUIT SHALL BE USED WHERE PERMITTED BY CODE. TYPE AC FLEXIBLE METAL CONDUIT AND ROMEX MAY NOT BE USED.
2. ALL CONDUCTORS SHALL BE SOFT ANNEALED 98% PURE INSULATED COPPER. ALL CONDUCTORS SHALL HAVE 600 VOLT RATED INSULATION AND RATED 90 DEGREE CELSIUS UNLESS OTHERWISE NOTED. SERVICE ENTRANCE CONDUCTORS SHALL BE TYPE USE-2, RHW-2 OR XHHW-2.
3. CONDUCTORS #8 AWG AND LARGER SHALL BE STRANDED, #10 AND SMALLER SHALL BE SOLID.
4. THE MINIMUM WIRE SIZE FOR BRANCH CIRCUITS SHALL BE #12 AWG. LAYOUT OF BRANCH CIRCUIT WIRING AND ARRANGEMENT OF HOME RUNS SHALL BE FOR MAXIMUM ECONOMY AND EFFICIENCY.
5. FACTORY COLOR CODING SHALL CONFORM TO THE BUILDING STANDARD OR AS REQUIRED BY THE UTILITY COMPANY.
6. TAG ALL FEEDERS IN ALL PULL BOXES AND IN ALL GUTTER SPACE AND WIREWAYS THROUGH WHICH THEY PASS.
7. MAKE SPLICES IN FEEDER TAPS IN PANEL BOX GUTTERS WITH PRESSURE TYPE CONNECTORS.
8. SPLICES IN CIRCUITS SHALL BE TWISTED AND MADE MECHANICALLY TIGHT. SECURE WITH SCOTCHLOCK OR PIGTAIL CONNECTORS. CRIMP TYPE CONNECTORS SHALL NOT BE USED.
9. ELECTRICAL SUBCONTRACTOR TO BAND AND LABEL CONDUIT AS PER CITY OF WINNIPEG STANDARDS.

**PULL BOXES, JUNCTION BOXES AND OUTLET BOXES**

1. PULL BOXES, JUNCTION BOXES AND OUTLET BOXES SHALL BE MANUFACTURED FROM GALVANIZED INDUSTRY STANDARD GAUGE SHEET STEEL.
2. PROVIDE PULL BOXES AND JUNCTION BOXES IN RACEWAYS TO ASSURE THAT CABLES ARE NOT DAMAGED WHEN THEY ARE PULLED AND TO FULFILL MINIMUM CODE REQUIREMENTS.
3. PULL BOXES AND JUNCTION BOXES SHALL BE SIZED SO THAT THE MINIMUM BENDING RADIUS CRITERIA SPECIFIED FOR THE WIRES AND CABLE ARE MAINTAINED.
4. PROVIDE AND INSTALL ALL REQUIRED JUNCTION AND PULL BOXES REGARDLESS WHETHER INDICATED ON DRAWINGS OR NOT.

**GROUNDING**

1. ALL ELECTRICAL SYSTEMS SHALL BE GROUNDED AS REQUIRED BY THE NATIONAL ELECTRICAL CODE, THE LOCAL UTILITY COMPANY AND ALL OTHER LOCAL AUTHORITIES HAVING JURISDICTION. PERMANENTLY AND EFFECTIVELY GROUND ALL METALLIC CONDUITS, SUPPORTS, CABINETS, PANEL BOARDS AND SYSTEM GROUNDING NEUTRAL.
2. A SEPARATE GROUNDING CONDUCTOR SHALL BE INSTALLED IN ALL FLEXIBLE AND NONMETALLIC CONDUITS SIZED IN ACCORDANCE WITH THE EQUIPMENT GROUNDING CONDUCTOR TABLE OF THE NATIONAL ELECTRICAL CODE.
3. GROUND CLAMPS SHALL BE LISTED SPECIFICALLY FOR GROUNDING. WHERE GROUNDING CONDUCTOR IS ENCLOSED IN CONDUIT, GROUND CLAMP SHALL GROUND BOTH CONDUCTOR AND CONDUIT.
4. GROUND ALL CABLE TRAY SECTIONS.

**MECHANICAL EQUIPMENT**

1. ALL CONTROL WIRING ASSOCIATED WITH MECHANICAL EQUIPMENT IS THE RESPONSIBILITY OF THE MECHANICAL SUBCONTRACTOR UNLESS NOTED OTHERWISE. THE ELECTRICAL SUBCONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL LINE VOLTAGE POWER, CONDUIT AND OUTLET BOXES RELATED TO HVAC CONTROLS. COORDINATE ALL WORK WITH THE MECHANICAL CONTRACTOR.
2. COORDINATE WITH MECHANICAL AND PLUMBING SUBCONTRACTORS FOR THE ELECTRICAL REQUIREMENTS OF ALL MECHANICAL EQUIPMENT TO BE INSTALLED. DO NOT RUN CONDUIT AND CONDUCTORS PRIOR TO THE CONFIRMATION OF THE EQUIPMENT REQUIREMENTS.

**SHOP DRAWINGS**

1. SUBMIT TO THE ENGINEER FIVE (5) SETS OF SHOP DRAWINGS.

**SYSTEM SHUT DOWNS**

1. SHOULD IT BE NECESSARY TO SHUT DOWN ANY EXISTING ELECTRICAL SYSTEM, THE CONTRACTOR SHALL NOTIFY THE CONTRACT ADMINISTRATOR AND BUILDING MANAGEMENT, IN WRITING, AT LEAST 3 DAYS PRIOR TO THE REQUESTED DATE. ALL SHUT DOWN WORK SHALL BE DONE AFTER NORMAL BUILDING OPERATING HOURS, IF SO DIRECTED BY THE AFOREMENTIONED PARTIES, AT NO ADDITIONAL COST.

**JOB COMPLETION**

1. AT THE COMPLETION OF THE JOB THE ELECTRICAL SUBCONTRACTOR SHALL THOROUGHLY CLEAN ALL WORK AREA, RESTORING ANY DAMAGED OR DEFACTED SURFACES OF FIXTURES OR EQUIPMENT TO THEIR ORIGINAL CONDITION. THE SUBCONTRACTOR SHALL REMOVE ALL TEMPORARY SYSTEMS UNLESS THE OWNER SPECIFICALLY REQUESTS THAT THEY BE LEFT IN PLACE.
  2. THE ELECTRICAL SUBCONTRACTOR SHALL THOROUGHLY TEST ALL NEW ELECTRICAL SYSTEMS, INCLUDING THOSE INSTALLED BY OTHERS AND WIRED BY ELECTRICAL CONTRACTOR. CORRECT ALL FAULTY CONDITIONS AT NO EXTRA COST. ALL PANELS SHALL BE BALANCED SO THAT THERE IS NO MORE THAN 10% DIFFERENCE IN PHASE CURRENTS UNDER NORMAL OPERATING CONDITIONS. MODIFY PANEL SCHEDULES AS REQUIRED.
  3. THE ELECTRICAL SUBCONTRACTOR SHALL DEMONSTRATE TO THE CITY OF WINNIPEG THAT ALL ELECTRICAL DEVICES AND SYSTEMS ARE FULLY FUNCTIONAL, AND SHALL GIVE INSTRUCTIONS IN THEIR OPERATION AS REQUESTED.
  4. THE ELECTRICAL SUBCONTRACTOR SHALL OBTAIN, AND GIVE TO THE CITY OF WINNIPEG, AN UNDERWRITER'S CERTIFICATE COVERING ALL NEW ELECTRICAL EQUIPMENT. THE ELECTRICAL SUBCONTRACTOR SHALL CORRECT ANY DEFICIENCIES NOTED BY THE INSPECTOR, AT NO EXTRA COST, UNTIL SUCH CERTIFICATE IS RECEIVED.
  5. ALL WORK SHALL BE GUARANTEED TO BE FULLY OPERATIONAL AND FREE OF DEFECTS FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE.
- SUBSTITUTIONS**
1. THE CONTRACTOR IS REQUIRED TO BID ON THIS PROJECT WITH THE UNDERSTANDING THAT ALL EQUIPMENT WILL BE PROVIDED AS SPECIFIED.
  2. ANY SUBSTITUTIONS FROM THE SPECIFIED ITEMS MUST BE INCLUDED WITH A NUMBER INDICATING THE SAVINGS OVER THE SPECIFIED ITEMS THAT THE OWNER WILL REALIZE.
  3. THIS PROVISION IS REQUIRED FOR ALL SPECIFIED ITEMS INCLUDING BUT NOT LIMITED TO SUBSTITUTED "EQUALS", LIGHTING FIXTURES, PANELS AND FIRE ALARM EQUIPMENT.

**FS AND FD CAST DEVICE BOXES**

1. PROVIDE CORROSION RESISTANT C/W MOUNTING FEET FOR SURFACE WIRING OF SWITCHES AND RECEPTACLES.
2. WEATHERPROOF, RAIN TIGHT AND DUST TIGHT.
3. ACCURATELY TAPED, TAPERED CONDUIT THREADS TO PROVIDE TIGHT AND RIGID JOINTS AND GROUND CONTINUITY.

**WORK IN EXISTING BUILDING**

1. THE BUILDING SHALL REMAIN OPEN AND IN NORMAL OPERATION DURING THE CONSTRUCTION PERIOD.
2. WHERE EXISTING SERVICES SUCH AS ELECTRICAL POWER, FIRE ALARM SYSTEM, SOUND SYSTEM, ETC. ARE REQUIRED TO BE DISRUPTED AND/OR SHUT DOWN, COORDINATE THE SHUTDOWNS WITH THE CITY OF WINNIPEG AND CARRY OUT THE WORK AT A TIME AND IN A MANNER ACCEPTABLE TO THEM. CAREFULLY SCHEDULE ALL DISRUPTION AND/OR SHUTDOWNS AND ENSURE THAT THE DURATION OF SAME IS KEPT TO THE ABSOLUTE MINIMUM. ELECTRICAL SUBCONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ANY FIRE ALARM SHUTDOWNS AND SHALL PROVIDE A VERIFICATION CERTIFICATE.
3. SHOULD ANY TEMPORARY CONNECTIONS BE REQUIRED TO MAINTAIN SERVICES DURING WORK IN THE EXISTING BUILDING, SUPPLY AND INSTALL ALL NECESSARY MATERIAL AND EQUIPMENT AND PROVIDE ALL LABOUR AT NO EXTRA COST. SHOULD ANY EXISTING SYSTEM BE DAMAGED, MAKE FULL REPAIRS WITHOUT EXTRA COST, AND TO THE SATISFACTION OF THE OWNER AND CONSULTANT.
4. WHERE EXISTING CONDUITS PASS VERTICALLY THROUGH A FLOOR AREA, RELOCATE THOSE CONDUITS TO BE INSTALLED CONCEALED IN A NEW WALL OR SURFACE MOUNTED IN A SERVICE AREA. EXTEND CONDUIT, WIRING, ETC. AS REQUIRED.
5. EXISTING JUNCTION BOXES IN WALLS AND CEILING SPACES REQUIRED TO MAINTAIN EXISTING CIRCUITS SHALL REMAIN ACCESSIBLE.
6. WHERE SERVICES ARE CONCEALED WITHIN WALLS, FLOORS OR CEILINGS AND CANNOT BE VISUALLY IDENTIFIED, ELECTRICAL SUBCONTRACTOR SHALL PROVIDE ELECTRONIC SCANNING DEVICES OR OTHER APPROVED MEANS TO LOCATE AND IDENTIFY CONCEALED SERVICES PRIOR TO DRILLING.
7. INSTALL BOXES, CONDUIT AND WIRING THROUGH EXISTING AREAS AS REQUIRED FOR THE NEW INSTALLATION.
8. ADD MODULES, SWITCHES, ETC. IN EXISTING CONTROL PANELS, AS REQUIRED, TO EXTEND EXISTING SYSTEMS TO NEW OR RENOVATED AREAS.
9. PATCH AND REPAIR WALLS AND CEILINGS IN EXISTING AREAS THAT HAVE BEEN DAMAGED OR CUT OPEN DUE TO THE NEW ELECTRICAL INSTALLATION.
10. WHERE NEW CABLES OR CONDUITS HAVE BEEN INSTALLED THROUGH EXISTING FIRE RATED WALLS, SEAL OPENING AROUND CABLES AND CONDUIT TO MAINTAIN FIRE RATING.

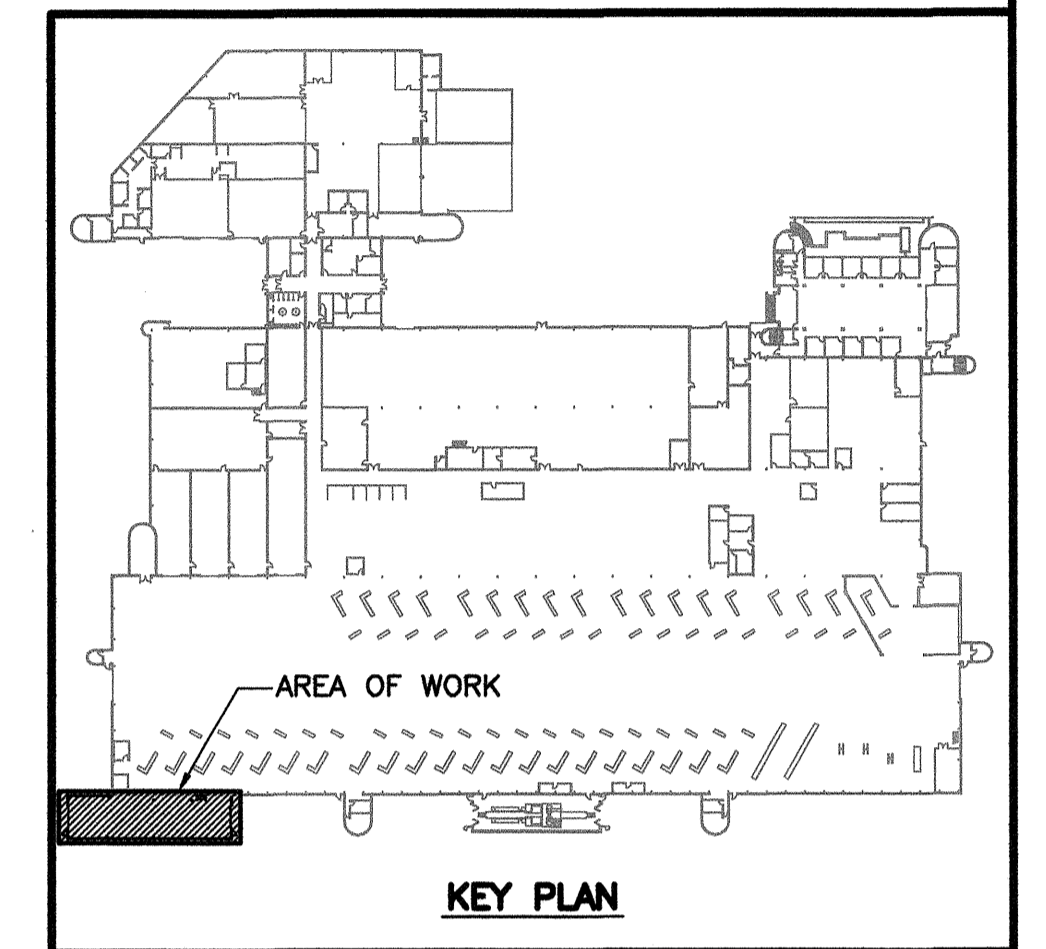
**FIRESTOPPING**

1. FIRE STOP/SMOKE SEAL TO THE FOLLOWING STANDARDS; CAN4-S115M, CAN4-S101M, ASTM E84, ASTM E119, ASTM E814, ULC FIRESTOP SYSTEMS AND COMPONENTS AND THE FACTORY MUTUAL RESEARCH APPROVAL GUIDE. FIRESTOPPING SHALL BE PERFORMED BY THE FOLLOWING CONTRACTORS:
  - NATIONAL FIRESTOP LTD., 405 GUNN ROAD, WPG., MB
  - TOTAL FIRE STOP SYSTEMS LIMITED, STONY MOUNTAIN, MB
  - WESTERN INDUSTRIAL SERVICES LTD., 1475 DUGALD ROAD, WPG., MB
2. THE FOLLOWING MANUFACTURERS PRODUCTS/SYSTEMS SHALL BE USED:
  - 3M FIRE PROTECTION PRODUCTS
  - AD FIRE PROTECTION SYSTEMS INC.
  - HILTI FIRE STOP SYSTEMS
  - JOHNS MANVILLE FIRE PROTECTION SYSTEMS
3. PROVIDE DETAILED SHOP DRAWINGS FOR REVIEW OF METHODS AND MATERIALS INTENDED FOR USE PRIOR TO PERFORMING THE WORK. AS REQUIRED,
4. ASSEMBLY INFORMATION WALL PLATES SHALL BE PROVIDED AT EACH FIRESTOP INSTALLATION SITE.
5. INSTALL FIRE STOPPING AT ALL FIRE SEPARATION PENETRATIONS IN STRICT ACCORDANCE WITH THE MANUFACTURERS INSTRUCTION AND IN COMPLIANCE WITH ALL APPLICABLE CODES AND STANDARDS.

**WIRING DEVICES**

1. INSTALL APPROVED VAPOUR BOXES FOR EACH JUNCTION BOX MOUNTED ON A VAPOUR BARRIER SURFACE. ASSURE THAT ALL THE WIRE PENETRATIONS ARE CAULKED.
2. PROVIDE SERVICE TO CITY OF WINNIPEG EQUIPMENT. WHERE EQUIPMENT IS PLUG-IN TYPE, ENSURE THAT THE RECEPTACLE FITTING SUITABLE FOR CITY OF WINNIPEG EQUIPMENT BEFORE PURCHASE OF RECEPTACLE IS MADE. WHERE CONNECTION TO CITY OF WINNIPEG EQUIPMENT IS DIRECT, REVIEW NAMEPLATE OF THIS EQUIPMENT AND INSTALL CONDUIT, WIRING AND BREAKER IN ACCORDANCE WITH REQUIREMENTS OF NAMEPLATE.
3. ELECTRICAL SUBCONTRACTOR TO INCLUDE ALL REQUIRED CONNECTIONS, REQUIRED TERMINAL BOXES AND BOX TERMINATIONS.

REFERENCE DRAWINGS	
NO.	DESCRIPTION



00	14.01.17	ISSUED FOR CONSTRUCTION	HA	HC	HC	
NO.	DATE	DESCRIPTION	PREPARED	REVIEW	DESIGN	AUTHORIZED
REVISIONS/ISSUE			DRAFTING	ENGINEERING		

PROVINCE OF MANITOBA  
REGISTERED PROFESSIONAL ENGINEER  
CEA CANAS  
Member  
22882

**APEGM**  
Certificate of Authorization  
**TETRA TECH WEI Inc.**  
No. 5313 Date: April 30, 2014

DESIGNED BY:	PREPARED BY:	REVIEWED BY:
HC	BM/HA	HC
AUTHORIZED BY:	DATE:	SCALE:
	13.11.15	AS NOTED

THE CONTENT OF THIS DOCUMENT IS NOT INTENDED FOR THE USE OF, NOR IS IT INTENDED TO BE RELIED UPON BY ANY PERSON, FIRM OR CORPORATION OTHER THAN THE CLIENT AND TETRA TECH WEI Inc. (Tetra Tech). TETRA TECH WEI Inc. (Tetra Tech) DENIES ANY LIABILITY WHATSOEVER TO OTHER PARTIES FOR DAMAGES OR INJURY SUFFERED BY SUCH THIRD PARTY ARISING FROM THE USE OF THIS DOCUMENT BY THEM, WITHOUT THE EXPRESSED WRITTEN AUTHORITY OF TETRA TECH WEI Inc. (Tetra Tech) AND OUR CLIENT. THIS DOCUMENT IS SUBJECT TO FURTHER RESTRICTIONS IMPOSED BY THE CONTRACT BETWEEN THE CLIENT AND TETRA TECH WEI Inc. (Tetra Tech) AND THESE PARTIES PERMISSION MUST BE SOUGHT REGARDING THIS DOCUMENT IN ALL OTHER CIRCUMSTANCES.

SUB-CONSULTANTS:

CLIENT:

**CITY OF WINNIPEG**  
TRANSIT DEPARTMENT

**TETRA TECH**

PROJECT NAME:  
CITY OF WINNIPEG TRANSIT - FORT ROUGE GARAGE  
ARTICULATING BUS MAINTENANCE ADDITION

DRAWING DESCRIPTION:  
**ELECTRICAL SPECIFICATIONS**  
SHEET 1 OF 2

DRAWING NO.:  
1329720500-DWG-E0004

REV: 00