

**ELECTRICAL SPECIFICATION CONT.**

**GENERAL CONDITIONS**

- DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. ELECTRICAL SUBCONTRACTOR SHALL PROVIDE AND INSTALL AND NECESSARY ELECTRICAL EQUIPMENT NECESSARY TO FULFILL APPLICABLE CODES, REGULATIONS, BUILDING STANDARDS AND THE BEST PRACTICES OF THE TRADE FOR INSTALLATION OF ELECTRICAL WORK.
- ALL ELECTRICAL WORK, MATERIALS AND EQUIPMENT SHALL CONFORM WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE, UNDERWRITERS LABORATORIES, BOARD OF UNDERWRITERS, OSHA, NEMA, NFPA, MALL STANDARDS AND ALL AUTHORITIES HAVING JURISDICTION. THE ELECTRICAL SUBCONTRACTOR SHALL PAY FOR AND OBTAIN ALL REQUIRED PERMITS AND CERTIFICATES OF REQUIRED ORDINANCES, AND DELIVER THEM TO THE CITY OF WINNIPEG REPRESENTATIVE.
- THE ELECTRICAL SUBCONTRACTOR SHALL VISIT AND EXAMINE CAREFULLY THE AREAS AFFECTED BY THIS WORK TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND WITH DIFFICULTIES THAT WILL ATTEND THE EXECUTION OF THIS WORK. THE ELECTRICAL SUBCONTRACTOR SHALL PERFORM THIS PRIOR TO SUBMITTING HIS PROPOSAL. SUBMITTING A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE AND LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOUR, EQUIPMENT, OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE.
- UPON REVIEW OF THE DRAWINGS PRIOR TO SUBMITTING HIS PROPOSAL, THE ELECTRICAL SUBCONTRACTOR SHALL INFORM THE CONTRACT ADMINISTRATOR OF ANY DISCREPANCIES WITHIN THE DRAWINGS AND REQUEST CLARIFICATION CONCERNING THE DISCREPANCIES. LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OR MATERIALS SHOULD SUCH PROCEDURE NOT BE FOLLOWED.
- THE ELECTRICAL SUBCONTRACTOR SHALL COORDINATE THIS WORK WITH OTHER SUBCONTRACTORS WHOSE WORK MIGHT AFFECT THIS INSTALLATION. THE ELECTRICAL SUBCONTRACTOR SHALL ARRANGE ALL PARTS OF THIS WORK AND EQUIPMENT IN PROPER RELATION TO THE WORK AND EQUIPMENT OF OTHERS.
- THE ELECTRICAL SUBCONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONDUIT, OUTLET BOXES, POKE-THRU SERVICE FITTINGS REQUIRED TO FACILITATE THE INSTALLATION OF COMMUNICATION WIRING AND DEVICES.
- THE DRAWINGS INDICATE THE SIZE AND GENERAL LOCATION OF WORK. SCALED DIMENSIONS SHALL NOT BE USED. VERIFY SCALE WITH ARCHITECTURAL DRAWINGS. THE EXACT LOCATION AND ELEVATION OF ALL LIGHTING FIXTURES, SWITCHES, RECEPTACLES, ETC. SHALL BE DETERMINED FROM THE ARCHITECTS DRAWINGS.
- THE "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION" AS APPLICABLE, ARE PART OF THE CONTRACT.

**FIRE ALARM SYSTEM**

- THE WORK COVERED BY THIS SECTION OF THE SPECIFICATIONS INCLUDES THE FURNISHING OF ALL PERMITS, FEES, LABOR, EQUIPMENT, MATERIALS, AND PERFORMANCE OF ALL OPERATIONS IN CONNECTION WITH THE INSTALLATION OF THE FIRE ALARM SYSTEM AS SHOWN ON THE DRAWINGS AND AS HEREIN SPECIFIED.
- THE COMPLETE INSTALLATION SHALL CONFORM TO THE APPLICABLE SECTIONS OF NFPA-72, LOCAL CODE REQUIREMENTS AND THE NATIONAL ELECTRICAL CODE.
- EACH AND ALL ITEMS OF THE FIRE ALARM SYSTEM SHALL BE LISTED AS A PRODUCT OF A SINGLE FIRE ALARM SYSTEM MANUFACTURER.
- THE SYSTEM ALARM OPERATION SUBSEQUENT TO THE ALARM ACTIVATION OF ANY INITIATING DEVICE SHALL BE AS FOLLOWS:
  - THE APPROPRIATE INITIATING DEVICE CIRCUIT RED LED SHALL FLASH ON THE CONTROL PANEL.
  - A PULSING ALARM TONE SHALL OCCUR WITHIN THE CONTROL PANEL UNTIL SILENCED.
  - ALL ALARM INDICATING APPLIANCES SHALL SOUND AND OR DISPLAY IN A SYNCHRONIZED CONTINUOUS PATTERN UNTIL SILENCED BY THE ALARM SILENCE SWITCH.
  - A SUPERVISED SIGNAL TO NOTIFY THE LOCAL FIRE DEPARTMENT OR AN APPROVED CENTRAL STATION SHALL BE ACTIVATED.
  - THE MECHANICAL CONTROLS SHALL ACTIVATE THE AIR HANDLING SYSTEMS AS REQUIRED TO SHUTDOWN ALL FANS AND GAS SUPPLY VALVES.
- THE CONTROL PANEL SHALL RECEIVE 120 VAC POWER, VIA A DEDICATED CIRCUIT.
- THE SYSTEM SHALL BE PROVIDED WITH 24 HOUR BATTERY BACK-UP.
- THE CONTRACTOR SHALL WARRANT THE COMPLETED FIRE ALARM SYSTEM WIRING AND EQUIPMENT TO BE FREE FROM INHERENT MECHANICAL AND ELECTRICAL DEFECTS FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF THE COMPLETED AND CERTIFIED TEST OR FROM THE DATE OF FIRST BENEFICIAL USE.

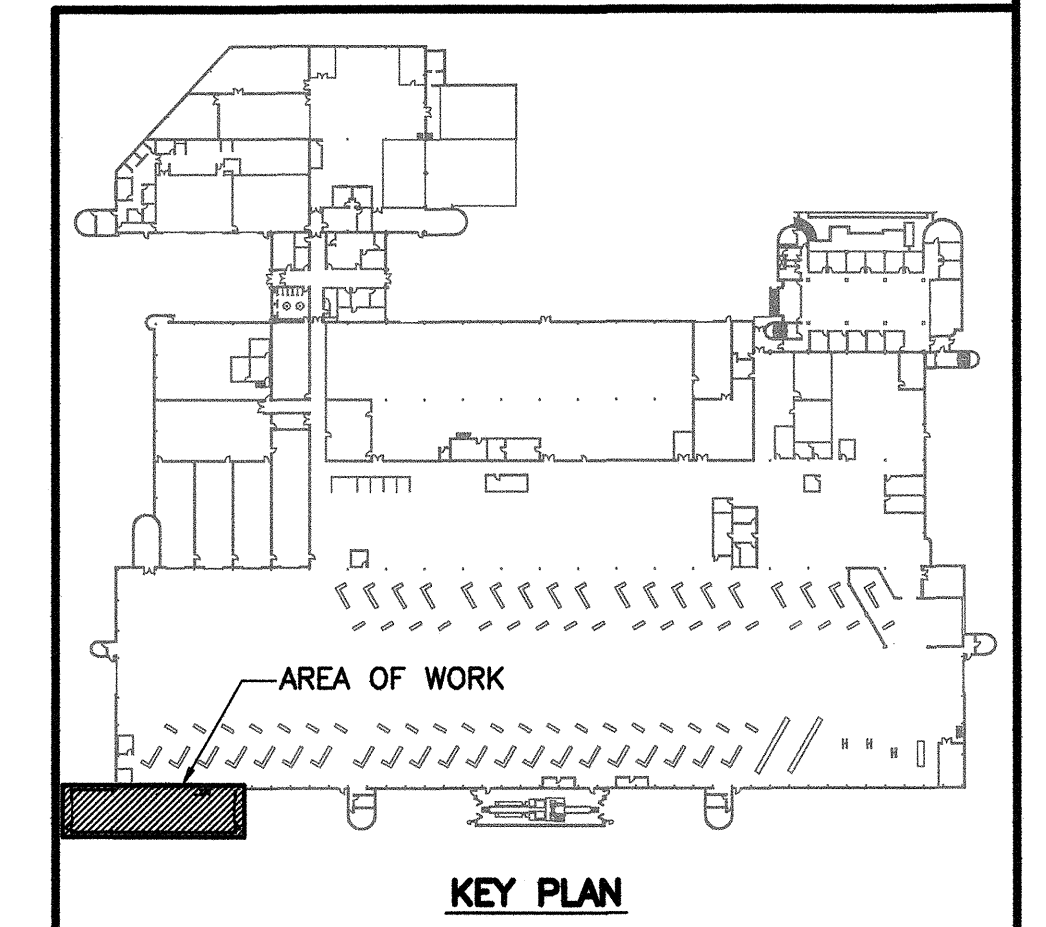
**TEMPORARY POWER**

- FURNISH AND INSTALL WIRING FOR ADEQUATE TEMPORARY LIGHT AND POWER FOR THE PROJECT.
- MAINTAIN THE SYSTEM IN GOOD AND ADEQUATE WORKING CONDITIONS AT ALL TIMES.
- FURNISH AND INSTALL ALL LAMPS, BREAKERS, AND FUSING, AS IS NECESSARY.
- REPLACE BURNED OUT LAMPS, DEFECTIVE BREAKERS OR BLOWN FUSES.
- MAINTENANCE FOR THE ABOVE SHALL BE BASED ON OPERATION 1/2 HOUR BEFORE THE START OF THE FIRST TRADE THROUGH 1/2 HOUR AFTER THE END OF THE LAST TRADE.
- WIRE ADEQUATE FOR ALL CONSTRUCTION NEEDS.

**LIGHTING FIXTURES**

- ALL FIXTURES, LAMPS AND BALLASTS ARE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
- ALL LIGHT FIXTURE MOUNTING HARDWARE SHALL MATCH AND ALL LIGHT FIXTURE MOUNTING HARDWARE SHALL MATCH AND TYPE.
- FLUORESCENT BALLASTS SHALL BE ELECTRONIC, U.L. CLASS "P" AND SHALL CONFORM TO ANSI AND UL SPECIFICATIONS. BALLASTS FOR FLUORESCENT LAMPS SHALL BE OF THE ENERGY SAVING SUPER LOW HEAT DESIGN WITH HIGH POWER FACTOR ELECTRONIC TYPE AS MANUFACTURED BY ADVANCE, UNIVERSAL, MOTOROLA OR GE. BALLASTS SHALL BE APPROVED FOR THE UTILITY COMPANY ENERGY REBATE PROGRAM.
- PROVIDE LAMPS SUITABLE FOR LIGHTING FIXTURES IN WHICH THEY ARE USED AND AS INDICATED ON THE DRAWINGS. FLUORESCENT LAMPS SHALL BE "RAPID START" AND SHALL DELIVER NOT LESS THAN 3150 LUMENS. MINIMUM CHROMATICITY OF LAMPS SHALL BE 4100 KELVIN UNLESS OTHERWISE NOTED. MINIMUM COLOR RENDERING INDEX (CRI) OF LAMPS SHALL BE 86.

| REFERENCE DRAWINGS |             |
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| NO.                | DESCRIPTION |
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| NO.             | DATE     | DESCRIPTION             | PREPARED | REVIEW      | DESIGN | AUTHORIZE |
| 00              | 14.01.17 | ISSUED FOR CONSTRUCTION | HA       | HC          | HC     | HC        |
| REVISIONS/ISSUE |          |                         | DRAFTING | ENGINEERING |        |           |

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

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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 2 OF 2

|                      |      |
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| DRAWING NO.          | REV. |
| 1329720500-DWG-E0005 | 00   |