

1.1 ELECTRICAL SPECIFICATIONS

- THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE, SUBMIT AND FACILITATE ALL ITEMS RELATED TO MANITOBA HYDRO POWER SMART PROGRAM INCENTIVES.
- REFER TO ARCHITECTURAL SPECIFICATIONS AND OTHER GENERAL CONDITIONS
- PROVIDE FOR A COMPLETE AND WORKING INSTALLATION AS HEREIN SPECIFIED AND AS SHOWN ON THE DRAWINGS
- THE ELECTRICAL INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE CANADIAN ELECTRICAL CODE, PROVINCIAL AND MUNICIPAL CODES AND REGULATIONS.
- OBTAIN ALL PERMITS, APPROVALS AND PAY ALL RELATED FEES REQUIRED FOR THIS INSTALLATION.
- ALL EQUIPMENT SUPPLIED UNDER THIS CONTRACT SHALL BE NEW AND BE C.S.A. APPROVED.
- COORDINATE ALL CONDUIT RUNS AS SPECIFIED OR AS PER CONTRACT ADMINISTRATOR BEFORE INSTALLATION BEGINS.
- ARRANGE FOR, AND COORDINATE, ROUGH-IN AND FINAL INSPECTIONS WITH INSPECTION AUTHORITIES, CONTRACT ADMINISTRATOR.
- 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 OUTLETS, WIRING AND RECEPTACLES.

1.2 EXAMINATION

- EXAMINE THE ARCHITECTURAL AND MECHANICAL DRAWINGS TO ENSURE THAT THE WORK UNDER THIS CONTRACT CAN BE SATISFACTORILY CARRIED OUT. REPORT ANY DISCREPANCIES TO THE CONTRACT ADMINISTRATOR.
- THE CONTRACTOR SHALL EXAMINE THE SITE, LOCAL CONDITIONS AND CONSIDER HOW THEY MAY AFFECT THE PROJECT.

1.3 SUPERVISION

- SUPERVISE THE WORK AT ALL TIMES THROUGH A RESPONSIBLE AND COMPETENT JOURNEYMAN ELECTRICIAN / SUPERVISOR.
- 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

- DRAWINGS ARE SCHEMATIC, EXACT LOCATIONS, DISTANCES, LEVELS AND OTHER DIMENSIONS SHALL BE GOVERNED BY THE BUILDING AS CONSTRUCTED.
- 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.
- 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.

1.5 APPROVAL OF MATERIAL

- REQUEST FOR APPROVAL OF MATERIAL AS EQUALS OR ALTERNATES TO THAT SPECIFIED SHALL BE SUBMITTED TO THE CONTRACT ADMINISTRATOR IN ACCORDANCE WITH B6.

1.6 SHOP DRAWINGS

- PROVIDE SHOP DRAWINGS FOR REVIEW BY THE CONTRACT ADMINISTRATOR. THE SHOP DRAWINGS MUST BE ASSEMBLED INTO COMPLETE BROCHURES.
- 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 CORRECTING 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.
- FABRICATION OF EQUIPMENT SHALL NOT COMMENCE UNTIL SHOP DRAWINGS OF SUCH EQUIPMENT HAVE BEEN REVIEWED AND APPROVED BY THE CONTRACT ADMINISTRATOR. TWO SETS SHALL BE SUBMITTED WITH LOCAL INSPECTION DEPARTMENT APPROVAL WHERE REQUIRED.
- THE ELECTRICAL SUB-CONTRACTOR SHALL REVIEW ALL MECHANICAL SHOP DRAWINGS - REQUIRING ELECTRICAL CONNECTION - AND COORDINATE VOLTAGE AND SIZES WITH DIVISION 15 AND GENERAL CONTRACTOR.

1.7 AS-BUILT DRAWINGS

- 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 THE WORK. AS-BUILTS SHALL INCLUDE TAGGING EXISTING AND NEW CIRCUITS AND EQUIPMENT.
- SUBMIT A CERTIFICATE OF INSPECTION FROM THE LOCAL INSPECTION AUTHORITY UPON COMPLETION OF WORK.
- THE CONTRACT ADMINISTRATOR RESERVES THE RIGHT TO RECOMMEND A PORTION OF THE CONTRACT FUNDS BE WITHHELD PENDING SUBMISSION OF ACCEPTABLE ON-SITE REDLINE DRAWINGS.

1.8 TESTING

- THE ELECTRICAL INSTALLATION SHALL BE COMPLETELY TESTED DEMONSTRATING THE EQUIPMENT AND SYSTEMS INSTALLED PERFORM IN THE MANNER INTENDED.

1.9 GUARANTEE

- THE SATISFACTORY OPERATION OF ALL WORK SHALL BE GUARANTEED FOR A PERIOD OF 12 CALENDAR MONTHS AFTER FINAL ACCEPTANCE OF THE BUILDING.

1.10 REQUEST FOR CHANGE

- 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

- THE ENTIRE INSTALLATION SHALL BE GROUNDED IN ACCORDANCE WITH THE LATEST EDITION OF CANADIAN ELECTRICAL CODE (CEC) AND AS SHOWN ON DRAWINGS. ENSURE GROUND RESISTANCE IS SUITABLE FOR GRID LOCATION.
- PROVIDE GROUNDING TO ALL RACEWAYS & EQUIPMENT TO CEC.
- WIRE CONNECTORS, TWIST-ON, BOLT-ON PRESSURE TYPE FOR #10 & SMALLER, HYPRSS COMPRESSION TYPE FOR #8 & LARGER.
- INSTALL SEPARATE 'GREEN' GROUND CONDUCTOR IN SAME CONDUIT WITH CIRCUIT (POWER WIRING) CONDUCTORS. BOND SECURELY TO GROUND SCREW IN EACH OUTLET, JUNCTION PULL BOX & EQUIPMENT ENCLOSURE GROUND CONDUCTOR EQUAL IN AMPACITY TO SIZE OF CIRCUIT AMPACITY OR IN ACCORDANCE WITH CODE FOR EQUIPMENT GROUNDING.
- PROVIDE BONDING & DEDICATED GROUNDING CABLE DIRECTLY TO MAIN GROUND FOR ALL ELECTRICAL DISTRIBUTION EQUIPMENT AS PER LATEST EDITION OF CANADIAN ELECTRICAL CODE (CEC).

1.12 WORKMANSHIP

- 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 RUNS PARALLEL AND/OR PERPENDICULAR TO BUILDING GRID LINES & COLUMNS IN CEILING SPACES, CHASES & BEHIND PLUMBING. IN AREAS WHERE SYSTEMS ARE TO BE EXPOSED, INSTALL NEATLY AND GROUP TO PRESENT A TIDY APPEARANCE.
- INSTALL EQUIPMENT AND APPARATUS REQUIRING MAINTENANCE, ADJUSTMENT OR EVENTUAL REPLACEMENT WITH ADEQUATE CLEARANCES AND ACCESSIBILITY FOR SAME.
- INCLUDE, IN THE WORK, ALL REQUIREMENTS SHOWN ON THE SHOP DRAWINGS OR MANUFACTURERS INSTALLATION INSTRUCTIONS.
- REPLACE WORK UNSATISFACTORY TO THE CONTRACT ADMINISTRATOR WITHOUT EXTRA COST.
- USE OF CLIPS FOR SECURING AC90 TO CEILING SYSTEM IS PROHIBITED.
- ALL CONDUITS MUST BE CLIPPED TO STRUCTURAL CONCRETE BY MEANS OF SUITABLE ANCHORS OR SUPPORTED BY UNISTRUT HANGERS AS CLOSE TO UNDERSIDE AS POSSIBLE. TYE WRAPS FOR WIRE HANGING AND FASTENING IS NOT ACCEPTABLE. PERFORATED STRAPPING IS ALSO UNACCEPTABLE. ALL ELECTRICAL COMPONENTS MUST BE SUPPORTED INDEPENDENTLY.
- ALL ELECTRICAL SUPPORTS AND HANGER SHALL CONFORM TO LATEST EDITION OF CANADIAN ELECTRICAL CODE AND/OR MANUFACTURERS INSTALLATION INSTRUCTIONS.

2.0 MATERIALS AND INSTALLATION

2.1 OUTLET BOXES

- OUTLET, JUNCTION AND SWITCH BOXES SHALL BE GALVANIZED PRESSED STEEL OF SIZE AND TYPE TO SUIT EACH INDIVIDUAL APPLICATION.
- 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.
- PROVIDE PULL BOXES & RATED ACCESS PANELS AS REQUIRED BY THE CEC.

2.2 WIRING METHODS

- EXISTING WIRING INCLUDING INSULATION THAT IS FRAVED, CRACKED OR DEEM NOT TO CODE SHALL BE REPLACED TO MEET CODE.
- UNLESS OTHERWISE INDICATED, ALL WIRING SHALL BE RW-90 COPPER, MINIMUM #12 AWG WITH 90 DEGREES CELSIUS X/ANK INSULATION. ALL WIRING IN EMT.
- WIRING IN CONCRETE OR MASONRY CONSTRUCTION SHALL BE INSTALLED IN STEEL ELECTRICAL METALLIC TUBING (EMT), EXCEPT OUTSIDE INSTALLATION SHALL BE TECK 90 CABLE. PROVIDE A SEPARATE GROUNDING CONDUCTOR IN EMT CONDUIT RUNS EMBEDDED IN CONCRETE SLABS. CONDUITS INSTALLED IN AREAS EXPOSED TO MOISTURE SHALL HAVE WATER TIGHT FITTINGS.
- ALL WIRING IN FINISHED AREAS SHALL BE CONCEALED. ALL CONDUCTORS AND CONDUITS SHALL BE RUN PERPENDICULAR OR PARALLEL TO THE BUILDING CORE WALLS.
- CONDUIT AND WIRING SHALL BE GROUPED WHERE POSSIBLE AND CLIPPED IN A NEAT AND WORKMANLIKE MANNER.
- ALL WIRING IN SERVICE AREAS TO BE IN SURFACE MOUNTED EMT. DO NOT RUN CONDUIT HORIZONTALLY ON WALLS. VERTICAL DROPS ONLY.

2.3 IDENTIFICATION OF EQUIPMENT

- ALL EQUIPMENT SHALL BE IDENTIFIED WITH 3/8" X 1-1/2" (18" LETTERS) ENGRAVED LAMACOID NAMEPLATES INDICATING PANEL AND CIRCUIT NUMBER. LAMACOIDS SHALL BE EITHER SCREWED OR RIVETED IN PLACE. LAMACOIDS SHALL BE WHITE LETTERING ON RED FACE FOR EMERGENCY, LIFE SAFETY AND FIRE ALARM DEVICES AND WHITE LETTERING ON BLACK FACE FOR NORMAL POWER DEVICES AND COMMUNICATION PANELS.
- PROVIDE 1" X 3" LAMACOID FOR EACH NEW PANEL. INDICATE PANEL FED FROM INCLUDING A TYPED PANEL LIST IN A TRANSPARENT LIST HOLDER AFFIX TO THE INSIDE OF THE PANEL DOOR.

2.4 CUTTING AND PATCHING

- ARRANGE AND PAY FOR ALL CUTTING AND PATCHING AS REQUIRED FOR THE ELECTRICAL INSTALLATION.
- PROVIDE & INSTALL ULIC APPROVED FIRE STOP AT ALL FIRE WALL &/OR FLOOR PENETRATIONS. ACCEPTABLE MANUFACTURERS: HILTI, DOW CORNING, FIRE-STOP SYSTEMS (ELASTASEAL) OR G.E. SJOUCHE.
- REFER TO MANUFACTURERS' SPECIFICATIONS FOR PRODUCT AND INSTALLATION DETAILS.

2.5 DEVICES

- COLORS OF RECEPTABLES, SWITCHES, OUTLETS SHALL BE BLACK WITH SST COVER PLATES, UNLESS NOTED OTHERWISE.
- SWITCHES SHALL BE COMMERCIAL QUALITY, HUBBELL, ARROW HART, BRYANT, LEVITON, WOODHEAD, PASS & SEYMOUR, 15 AMPS, 125/147 VAC, MOUNT SWITCHES AS PER EXISTING IN WALL, CAVITY & AS PER EXISTING HEIGHTS, UNLESS OTHERWISE NOTED.

2.6 EQUIPMENT

- ALL EQUIPMENT TO BE RATED & SUPPLIED TO COORDINATE WITH ALL POSSIBLE FAULT CONDITIONS PRESENT AT SITE.
- PROVIDE ADDITIONAL BOLT-ON BREAKERS AS NECESSARY, INCLUDING ALL HARDWARE AND FILLERS ETC.
- 25%V COPPER BUS & BREAKERS RATED FOR SYMMETRICAL INTERRUPTING CAPACITY AS INDICATED. SERVICE ENTRANCE TYPE AS REQUIRED.
- MAINS SUITABLE FOR BOLT-ON BREAKERS, NUMBER OF CIRCUITS & NUMBER & SIZE OF BRANCH CIRCUIT BREAKERS AS INDICATED.
- SURFACE MOUNTED PANEL BOARD FINISH TRIM & LOCKING DOOR TO BE BAKED GRAY.
- CONNECT NEUTRAL CONDUCTORS TO COMMON NEUTRAL BUS WITH RESPECTIVE CIRCUIT(S) IDENTIFIED.
- BREAKER MINIMUM INTERRUPTING RATING (SYMMETRICAL RMS VALUES) SHALL NOT BE LESS THAN 22KAC, HALF-SIZED BREAKERS ARE NOT PERMITTED.
- ACCEPTABLE PANEL BOARD MANUFACTURER: EATON.
- STANDALONE DUAL-GAS DETECTORS (CO & NO₂) - REFER TO ELECTRICAL DRAWING E1.
- MOTORIZED DAMPER ASSEMBLY - REFER TO ELECTRICAL DRAWING E1.

DATA CABLING SPECIFICATIONS

CONTRACTOR QUALIFICATIONS

- THE CONTRACTOR PERFORMING THE DATA CABLING INSTALLATION SHALL HAVE A STRUCTURED CABLING INDUSTRIAL AFFILIATION SUCH AS BICSI BUILDING INDUSTRY CONSULTANTS INTERNATIONAL MEMBERSHIP, RCDI (REGISTERED COMMUNICATIONS DISTRIBUTOR/DESIGNER), AND/OR A STRUCTURED CABLING VENDOR CERTIFICATION.
- ALL DATA CABLING INSTALLERS SHALL BE LICENSED AND INSURED.
- THE DATA CABLING CONTRACTOR SHALL PROVIDE REFERENCES OF SIMILAR PROJECTS.

HORIZONTAL CABLING

- 1.1 TYPES
 - 1.1.1 CATEGORY 5e CABLEING SHALL BE USED FOR NIGHT LIGHTING NETWORK. CATEGORY 5e CABLE SHALL BE CERTIFIED, TESTED TO A MINIMUM OF 100 MHz AND MEET THE MINIMUM TECHNICAL SPECIFICATIONS IN (TELECOMMUNICATIONS INDUSTRY ASSOCIATION) TIA-568A. COLOUR TO BE WHITE AND PLENUM-RATED (FT6).
 - 1.1.2 IF APPLICABLE, CATEGORY 6 CABLEING SHALL BE USED FOR DESKTOP DATA NETWORK. CATEGORY 6 CABLEING SHALL BE CERTIFIED AND TESTED TO A MINIMUM OF 250 MHz. THE CATEGORY 6 HORIZONTAL CABLING SHALL MEET THE MINIMUM TECHNICAL SPECIFICATIONS IN (TELECOMMUNICATIONS INDUSTRY ASSOCIATION) TIA-568A. COLOUR TO BE BLUE AND PLENUM-RATED (FT6).
- 1.2. ALL DATA TELECOMMUNICATIONS JACKS SHALL BE OF THE CATEGORY OF THE USE. CONNECTORS AND SHALL BE TIA CERTIFIED. JACK AND CONNECTOR COLOUR TO MATCH THE CATEGORY.
- 1.3. NO INSTALLED CABLING MAY BE EXPOSED TO VIEW OUTSIDE OF THE WIRING ROOM. IT SHALL BE WITHIN A RACEWAY, CONDUIT, POWER POLE OR BEHIND SUSPENDED CEILING.
- 1.4. ALL HORIZONTAL CABLING RUNS SHALL RUN FROM EACH WORK AREA IN A STRAIGHT TOPOLOGY TO A WIRING ROOM OR AS SHOWN. INSTALL CONDUITS AND CABLE RUNS PARALLEL AND/OR PERPENDICULAR TO BUILDING GRID LINES & COLUMNS IN CEILING SPACES, CHASES & BEHIND PLUMBING. THERE SHALL BE NO CONNECTOR IN THE CABLE RUN BETWEEN THE OUTLET IN THE WORK AREA AND THE WIRING ROOM. EXCEPT FOR DATA ZONE BOXES. ALL CABLES SHALL SUPPORTED BY J-HOOKS OR SUPPORTED BY EXISTING WIRE TRAYS. ALL EXPOSED CATEGORY 6 CABLEING SHALL BE PLENUM-RATED (FT6).
- 1.5. NO CABLING RUN MAY EXCEED A LENGTH OF 90 METERS.
- 1.6. PROVIDE A SEPARATE CATEGORY 6A, 24-PORT PATCH PANEL FOR CATEGORY 6A CCTV NETWORK TERMINATION TO EACH ELECTRICAL ROOM. MOUNT TO EXISTING NETWORK RACKS WITH CONSULTATION WITH CITY OF WINNIPEG CORPORATE B.T.S. THROUGH CONTRACT ADMINISTRATOR.
- 1.7. ALL CATEGORY CABLING SHALL BE TERMINATED IN THE WIRING CLOSET ON RACK MOUNT PATCH PANELS (MAXIMUM OF 48 JACKS PER PANEL). SUPPLY PATCH PANELS TO EQUIPMENT ROOMS. WIRE MANAGEMENT IF THERE IS INSUFFICIENT DATA PORTS IN EXISTING PATCH PANEL, SUPPLY AND INSTALL COMPLETE DATA CABLING FROM PATCH PANEL TO ORIGINAL SOURCE IN BUILDING. CONTACT THE CITY OF WINNIPEG B.T.S. THROUGH CONTRACT ADMINISTRATOR.
- 1.8. ALL CATEGORY CABLING IN THE RACKS SHALL BE INSTALLED WITH SUFFICIENT AND APPROPRIATE MOUNTING CLIPS, BRACKETS AND CABLE MANAGEMENT TO PROVIDE A NEAT AND MAINTAINABLE SYSTEM. CARE SHALL BE TAKEN TO NOT CAUSE THE CABLES TO BE OVERLY CRIMPED.
- 1.9. THE UTP CATEGORY CABLE TAIL SHALL BE TERMINATED WITH A MINIMUM OF 14" OF SLACK BUT NOT TO EXCEED 18".
- 1.10. AFTER DRESSING CABLE TO THE FINAL LOCATION, THE SHEATH SHALL BE REMOVED TO A POINT THAT ALLOWS THE CONDUCTORS TO BE SPREAD AND TERMINATED IN A NEAT AND UNIFORM FASHION. EVERY EFFORT MUST BE MADE TO MAINTAIN SHEATH INTEGRITY BY REMOVING IT AS MUCH AS IS PRACTICAL TO ACCOMPLISH TERMINATION. CABLE PAIR TWIST SHALL BE MAINTAINED UNTIL THE POINT OF TERMINATION AS STATED IN TIA-568A. THE Pairs IN A CABLE SHOULD NEVER BE UNTWISTED MORE THAN 0.5 INCH FROM THE POINT OF TERMINATION. UNDER NO CIRCUMSTANCES SHALL CABLE PAIRS BE UNTWISTED OR OTHERWISE ALTERED PRIOR TO TERMINATION.
- 1.11. ANY UNUSED HORIZONTAL CABLING SHALL BE LABELED AND LOOSELY COILED.
- 1.12. CONTRACTOR SHALL SPECIFY CABLES PROPOSED FOR USE AND SUBMIT DOCUMENTATION PROVING THE PROPOSED CABLES MEET THESE SPECIFICATIONS.

LABELLING

- ALL CABLES SHALL BE LABELED WITH TAG WRAPS OR SOME OTHER PERMANENT MARKER CAPABLE OF WITHSTANDING MULTIPLE POINTING OF CABLE THROUGH RACEWAYS. LABELS SHALL BE LOCATED 18 INCHES FROM THE WORK AREA END.
- ALL TERMINATIONS SHALL BE CLEARLY IDENTIFIED ON PATCH PANELS IN WIRING ROOM. ALL JACKS IN THE PATCH PANEL MUST BE IN SEQUENTIAL ORDER.
- AT EACH WORK AREA, RECEPTACLE OUTLET SHALL BE PROFESSIONALLY PRINTED WITH JACK NUMBERS CLEARLY VISIBLE WITHOUT REMOVING OUTLET FACEPLATE. THE LABELING SHALL BE METAL OR VINYL ADHESIVE TAPE WITH EMBOSSED OR INDENTED PRINTING FOR EACH OUTLET.

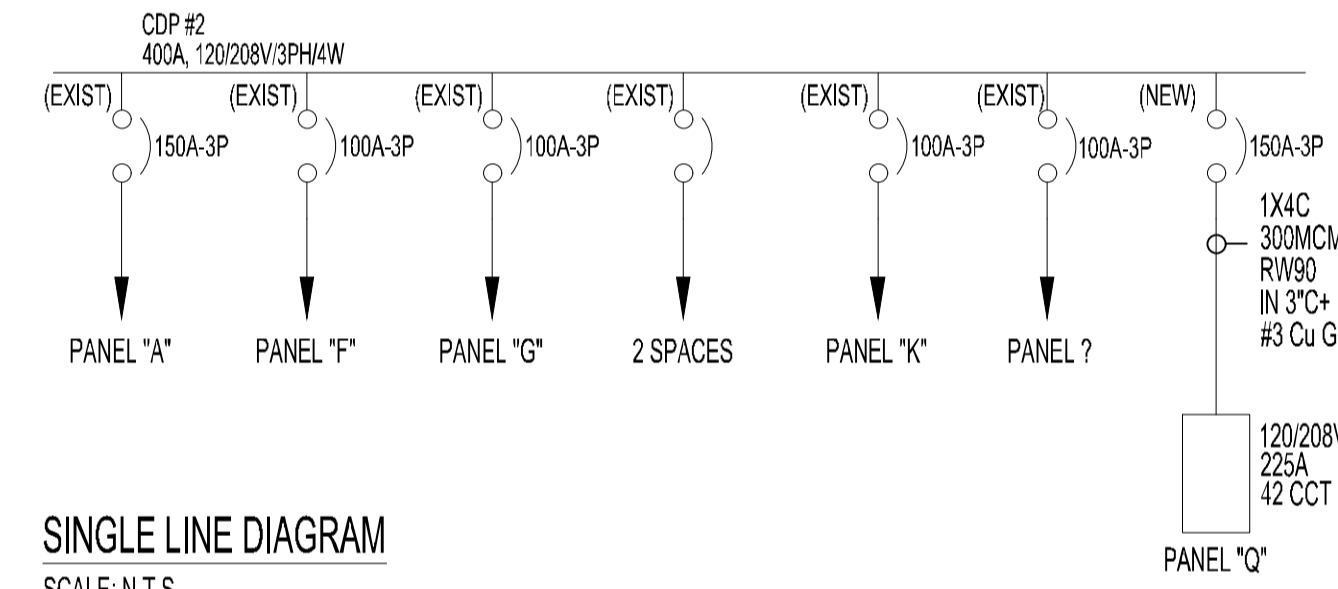
FIELD TEST QUALITY

- THE CONTRACTOR SHALL VISUALLY INSPECT ALL CABLES, CABLE REELS AND SHIPPING CARTONS TO DETECT CABLE DAMAGE INCURRED DURING SHIPPING AND TRANSPORT. VISIBLY DAMAGED ITEMS SHALL NOT BE INSTALLED.
- CONDUCT CABLE TESTING ONLY UPON COMPLETION OF INSTALLATION.
- A MINIMUM OF A LEVEL I/E FIELD TESTER SHALL BE USED TO VERIFY CABLING PERFORMANCE.
- IN ADDITION TO HARD COPY TEST RESULTS, ACCEPTABLE ELECTRONIC FORMAT FOR TEST RESULTS IS MICROSOFT EXCEL FOR EACH LINK.
- THE CONTRACTOR SHALL DESCRIBE IN DETAIL ITS PROPOSED TEST PLAN TO DETECT ANY DEFECTIVE COMPONENTS AND TO DEMONSTRATE THAT THE INSTALLATION COMPLIES WITH THE SPECIFICATION.

RECORD DRAWINGS

- THE CONTRACTOR SHALL KEEP A RECORD SET OF DRAWINGS ON THE SITE AT ALL TIMES RECORDING ALL CHANGES THAT MAY OCCUR. AS-BUILT DRAWINGS ARE TO BE SUBMITTED WITH CONTRACTOR'S NAME, SIGNATURE AND DATE OF AS-BUILT.

PANEL 'Q'		VOLTAGE: 120/208V - 3PH - 4W		REMARKS: CW LOCKABLE DOOR		
MOUNTING: SURFACE		MAIN BUS: 225A				
LOCATION: SEWING REPAIR ROOM						
DESCRIPTION	LOAD W	BKR AMP	CIRCUIT	BKR AMP	LOAD W	DESCRIPTION
WASHING MACHINE (MS-3) (LAUNDRY RM.) #12 AWG RW90 IN 3/4"	2420	20	1-2 3-4 5-6	20	3800	CJ-1, AC-1 (SEWING REPAIR SHOP) #12 AWG RW90 IN 3/4"
WASHING MACHINE (MS-4) (LAUNDRY RM.) #12 AWG RW90 IN 3/4"	2420	20	7-8 9-10 11-12	20	3000	UH-1 (#12 AWG RW90 IN 3/4") BASEBOARD HEATERS (BS-1, BS-2) (SEWING REPAIR SHOP) #12 AWG RW90 IN 3/4"
EXHAUST FAN (F-1) (LAUNDRY RM.) #12 RW90 IN 3/4"	860	15	13-14	15	800	RECEPTACLE (3) (SEWING REPAIR SHOP)
CEILING H/LP FAN (F-2) (DRIVING AREA) #12 AWG RW90 IN 3/4"	2015	15	15-16 17-18 19-20	15	1000	RECEPTACLE (5) (SEWING REPAIR SHOP) RECEPTACLE (3) (LAUNDRY) RECEPTACLE (4) (LAUNDRY, DRIVING)
RECEPTACLE	??	15	21-22 23-24 25-26 27-28 29-30 31-32 33-34 35-36 37-38 39-40 41-42			
TOTAL (kW)	???				???	



SINGLE LINE DIAGRAM SCALE: N.T.S.

NOTES:

No.	REVISION/DESCRIPTION	BY	DATE
1	ISSUED FOR ADDENDUM 1	DTA	2020-10-21
0	ISSUED FOR CONSTRUCTION	DTA	2020-09-30

SEAL



DRAWN	CHECKED	DESIGNED	APPROVED
DTA	DTA	DTA	DTA

THE CITY OF WINNIPEG
PLANNING, PROPERTY AND DEVELOPMENT DEPARTMENT
MUNICIPAL ACCOMMODATIONS DIVISION
3-65 GARRY STREET, R3C 4K4

PROJECT
FPS TRAINING, REPAIR & STORAGE FACILITY
TURN OUT GEAR LAUNDRY ROOM

2546 McPHILLIPS STREET BID OPP: 696-2020

SHEET TITLE
ELECTRICAL SPECIFICATIONS
PANEL SCHEDULE
SINGLE LINE DIAGRAM

SCALE	PROJECT No:	SHEET No:
AS SHOWN	2020-047	E4R1