FILE NAME: 20140852VE0.dwg
DATE: 2014.08.15
SHEET TITLE: ELECTRICAL, FIRE ALARM, DATA SPECIFICATIONS
PROJECT No: 2014-052-02
ADDRESS: 251 DONALD STREET

ELECTRICAL SPECIFICATIONS

1.1. GENERAL CONDITIONS

1. THE CONTRACTOR SHALL BE RESPONSIBLE TO REVIEW AND COORDINATE ALL ARCHITECTURAL, STRUCTURAL AND MECHANICAL DRAWINGS TO ENSURE A COMPLETE FUNCTIONING SYSTEM AS DESCRIBED. THIS INCLUDES COORDINATING WITH OTHER TRADES TO ENSURE EQUIPMENT, CONDUITS, OUTLETS, ETC. ARE INSTALLED AND FUNCTIONING WITHOUT ANY INTERFERENCE. ALSO COORDINATE WITH TRADES TO ENSURE FINAL EQUIPMENT LOCATION CONFORMS TO MANUFACTURERS INSTALLATION AND MAINTENANCE CLEARANCES.

2. REFER TO ARCHITECTURAL, STRUCTURAL, MECHANICAL SPECIFICATIONS AND OTHER GENERAL CONDITIONS.

3. PROVIDE ALL LABOUR, MATERIALS AND EQUIPMENT FOR A COMPLETE AND WORKING INSTALLATION AS HEREIN SPECIFIED AND AS SHOWN ON OTHER DRAWINGS AND SPECIFICATIONS.

4. INSTALLATION OF EQUIPMENT MUST CONFORM TO THE ICC STANDARDS OF THE INTERNATIONAL MECHANICAL CODE, THE NATIONAL BUILDING CODE, INSTALLATION OF AIR CONDITIONING AND VENTILATING SYSTEMS STANDARD, NFPA 90A, ASHRAE, CSA & LOCAL BUILDING, PLUMBING & WASTE WATER CODES. ALL APPLIANCES MUST BE ELECTRICALLY GROUNDED IN ACCORDANCE WITH LOCAL CODES & THE LATEST CANADIAN ELECTRICAL CODE.

5. OBTAIN ALL PERMITS, APPROVALS, LICENSES AND PAY ALL RELATED FEES REQUIRED TO EXECUTE WORK.

6. ALL EQUIPMENT SUPPLIED UNDER THIS CONTRACT SHALL BE NEW (OR AS NOTED) AND CONFORMED TO C.S.A., ULC AND APPLICABLE AGENCIES.

7. COORDINATE ALL CONDUIT RUNS AS SPECIFIED OR AS PER CONTRACT ADMINISTRATOR BEFORE INSTALLATION BEGINS.

8. ARRANGE FOR, AND COORDINATE, ROUGH-IN AND FINAL INSPECTIONS WITH INSPECTION AUTHORITIES & 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 OUTLETS WIRING AND RECEPTACLES.

1.2. EXAMINATION

.1 EXAMINE THE ARCHITECTURAL, STRUCTURAL AND MECHANICAL DRAWINGS TO ENSURE THAT THE 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, CIRCUITS 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 ROUGH-IN, WITHOUT ADDITIONAL COST.

1.5. APPROVAL OF MATERIAL AS EQUAL

.1 REQUEST FOR APPROVAL OF MATERIAL AS EQUALS OR ALTERNATES TO THAT SPECIFIED SHALL BE SUBMITTED TO THE CONTRACT ADMINISTRATOR IN ACCORDANCE WITH BID OPPORTUNITY 97.

1.6. SHOP DRAWINGS

.1 PROVIDE A MINIMUM OF THREE (3) SETS OF SHOP DRAWINGS FOR REVIEW BY THE CONTRACT ADMINISTRATOR. THE SHOP DRAWINGS MUST BE ASSEMBLED INTO COMPLETE BROCHURES, WITH NO LOOSE SHEETS. UNASSEMBLED SUBMISSIONS WILL BE RETURNED AS INCOMPLETE.

.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 BY THE CONTRACT ADMINISTRATOR. TWO SETS SHALL BE SUBMITTED TO LOCAL INSPECTION DEPARTMENT FOR APPROVAL , WHERE REQUIRED.

.4 THE ELECTRICAL SUB-CONTRACTOR SHALL REVIEW ALL MECHANICAL SHOP DRAWINGS - REQUIRING ELECTRICAL CONNECTION AND CONTROLS - AND COORDINATE VOLTAGE AND SIZES WITH DIVISION 15 AND GENERAL CONTRACTOR.

1.7. AS-BUILT DRAWINGS

.1 KEEP A RECORD SET OF DRAWINGS ON THE 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.

.2 SUBMIT A CERTIFICATE OF INSPECTION FROM THE LOCAL INSPECTION AUTHORITY UPON COMPLETION OF WORK AND INCLUDE IN "AS-BUILT" DRAWINGS.

.3 THE CONTRACT ADMINISTRATOR RESERVES THE RIGHT TO RECOMMEND A PORTION OF THE CONTRACT FUNDS BE WITHHELD PENDING SUBMISSION OF AS-BUILT DRAWINGS.

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 OF THE BUILDING.

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. WORKMANSHIP

.1 INSTALL EQUIPMENT, CONDUIT AND CABLES IN A WORKMANLIKE MANNER TO PRESENT A NEAT APPEARANCE TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR. INSTALL CONDUIT AND CABLE RUNS PARALLEL AND PERPENDICULAR IN CHASES, BEHIND FURRING, BENEATH RAISED FLOOR OR ABOVE CEILINGS. IN AREAS WHERE SYSTEMS ARE TO BE EXPOSED, INSTALL NEATLY AND GROUP TO PRESENT A TIDY APPEARANCE.

.2 INSTALL EQUIPMENT AND APPARATUS REQUIRING MAINTENANCE, ADJUSTMENT OR EVENTUAL REPLACEMENT WITH ADEQUATE CLEARANCES AND ACCESSIBILITY FOR SAME.

.3 INCLUDE, IN THE WORK, ALL REQUIREMENTS ON THE SHOP DRAWINGS OR MANUFACTURERS' INSTALLATION INSTRUCTIONS.

.4 REPLACE WORK UNSATISFACTORY TO THE CONTRACT ADMINISTRATOR 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. TYE WRAPS FOR WIRE HANGING AND FASTENING IS NOT ACCEPTABLE. PERFORATED STRAPPING IS ALSO UNACCEPTABLE. ALL ELECTRICAL COMPONENTS MUST BE SUPPORTED INDEPENDENTLY.

.7 ALL ELECTRICAL SUPPORTS AND HANGER SHALL CONFORM TO LATEST EDITION OF CANADIAN ELECTRICAL CODE AND/OR MANUFACTURER'S INSTALLATION INSTRUCTIONS .

2.1. MATERIALS AND INSTALLATION

2.2. OUTLET BOXES

.1 OUTLET, JUNCTION AND SWITCH BOXES SHALL BE GALVANIZED PRESSED STEEL OF SIZE AND TYPE TO SUIT EXISTING OR INDIVIDUAL APPLICATION.

.2 OUTLETS SHALL NOT BE LOCATED ANYWHERE ON THE EXTERIOR WALL. OUTLETS SHOWN SHALL BE MOUNTED ON THE NEAREST DIVIDING WALL 2' FROM OUTSIDE WALL, OR NEAREST FURRED OUT COLUMN.

.3 PROVIDE ALL REQUIRED ACCESS PANELS WITH SUITABLE FIRE RATINGS FOR THE WALL OR CEILING THEY ARE BEING INSTALLED IN.

2.3. WIRING METHODS

.1 UNLESS OTHERWISE SHOWN ON THE DRAWINGS, ALL WIRE SHALL BE COPPER, MINIMUM #12 AWG WITH 90 DEGREES CELSIUS X-LINK INSULATION. WIRING TO BE INSTALLED IN EMT (UNLESS OTHERWISE NOTED). AMPACITY MUST MATCH OR EXCEED CONNECTED PROTECTIVE DEVICE. IF NECESSARY, CABLE SHALL BE UPSIZED TO ALLOW FOR VOLTAGE DROP.

.2 WIRING IN CONCRETE OR MASONRY CONSTRUCTION SHALL BE INSTALLED IN STEEL ELECTRICAL METALLIC TUBING (EMT). PROVIDE A SEPARATE GROUNDING CONDUCTOR IN EMT CONDUIT RUNS EMBEDDED IN CONCRETE SLABS. CONDUITS INSTALLED IN AREAS EXPOSED TO MOISTURE SHALL HAVE WATERTIGHT FITTINGS.

.3 ALL WIRING IN FINISHED AREAS SHALL BE CONCEALED. ALL CONDUCTORS AND CONDUITS SHALL RUN PERPENDICULAR OR PARALLEL TO THE BUILDING CORE WALLS.

.4 CONDUIT AND WIRING SHALL BE GROUPED WHERE POSSIBLE AND CLIPPED IN A NEAT AND WORKMANLIKE MANNER.

.5 EACH CIRCUIT FOR COMPUTER EQUIPMENT, PRINTERS AND COPIERS SHALL HAVE A SEPARATE NEUTRAL CONDUCTOR. .

.6 PROVIDE ONE ISOLATED GROUND CONDUCTOR PER THREE 2 WIRE ISOLATED GROUND CIRCUITS.

.7 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.

2.3. IDENTIFICATION OF EQUIPMENT

.1 ALL EQUIPMENT SHALL BE IDENTIFIED WITH 3/8" X 1-1/2" (1/8" LETTERS) ENGRAVED LAMACOID NAMEPLATES INDICATING PANEL AND CIRCUIT NUMBER. LAMACOIDS SHALL BE EITHER SCREWED OR RIVETED IN PLACE. WITH EXCEPTION TO RECEPTACLES AND LIGHTING SWITCHES, SELF ADHESIVE TYPE IS ACCEPTABLE. LAMACOIDS SHALL BE WHITE LETTERING ON RED FACE FOR EMERGENCY AND FIRE ALARM DEVICES AND WHITE LETTERING ON BLACK FACE TO NORMAL POWER DEVICES AND COMMUNICATION PANELS.

.2 PROVIDE 1" X 3" LAMACOIDS FOR EACH NEW CDP BREAKER, INDICATING PANEL OR FEED BEING FED, IF APPLICABLE.

2.4. CUTTING AND PATCHING

.1 ARRANGE AND PAY FOR ALL CUTTING AND PATCHING AS REQUIRED FOR THE ELECTRICAL INSTALLATION.

.2 PROVIDE & 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.

2.4. DEVICES

.1 COLORS OF RECEPTACLES, SWITCHES, OUTLETS AND COVER PLATES SHALL BE WHITE , UNLESS NOTED OTHERWISE. PROVIDE STAINLESS STEEL COVER PLATES.

.2 SWITCHES SHALL BE HUBBELL, ARROW HART, BRYANT, LEVITON, WOODHEAD, PASS & SEYMOUR, 15 AMPS, VOLTAGE TO SUIT EXISTING.

.3 ACCEPTABLE MANUFACTURERS FOR RECEPTACLES SHALL BE HUBBELL, ARROW HART, BRYANT, LEVITON, WOODHEAD, PASS & SEYMOUR. CATALOGUE NO.5262 FOR ALL MANUFACTURERS. ISOLATED GROUND RECEPTACLES TO BE ORANGE FACE. MOUNT RECEPTACLES 18" ABOVE FINISH FLOOR, UNLESS OTHERWISE NOTED.

.4 PROVIDE STAINLESS STEEL COVER PLATES FOR RECESSED DEVICES.

.5 SUPPLY AND INSTALL DISCONNECT SWITCHES AS INDICATED AND AS REQUIRED BY AUTHORITIES HAVING JURISDICTION (AHJ) AND CODES. EXTERIOR DISCONNECT SWITCHES SHALL BE WEATHERPROOF TYPE.

.6 SUPPLY AND INSTALL EQUIPMENT WITH ALL NECESSARY WIRING, AUXILIARY CONTACTS, CONTROL TRANSFORMERS AS REQUIRED FOR A FULLY-FUNCTIONAL SYSTEM.

2.5. FIRE ALARM SYSTEM .

.1 IN THE EVENT OF A FIRE ALARM FROM ACTIVATION OF PULL STATION, HEAT OR SMOKE DETECTOR, NEW RTU-1 AND NEW DUCT HEATER SHALL SHUT-DOWN AND A SIGNAL WITH BE SENT TO THE CITY OF WINNIPEG FMS.

.2 ALL FIRE ALARM WIRING, INCLUDING WIRING TO STEEL STUD PARTITIONS, SHALL BE IN EMT CONDUIT.

.3 ALL WORK REGARDING FIRE ALARM SYSTEM WILL REQUIRE AN ULC APPROVED FIRE ALARM VERIFICATION. INCLUDE ALL COSTS FOR SAME IN CONTRACT.

.4 THE VERIFICATION INSPECTION REPORT SHALL ACCOMPANY THE "AS-BUILT" DRAWINGS.

.5 TEST THE COMPLETE SYSTEMS IN THE PRESENCE OF THE CONTRACT ADMINISTRATOR AND SUBMIT TEST SHEET BEFORE REQUESTING FIRE INSPECTION.

.6 MAKE ALL PROVISIONS TO WIRE AND CONNECT FIRE ALARM CONTROL PANEL. COORDINATE WITH SYSTEMS INSTALLER.

.7 PROVIDE LABELS ON FIRE ALARM COMPONENTS AND PANEL PER CITY OF WINNIPEG FIRE DEPT. REQUIREMENTS.

3.0. CATEGORY 6 DATA CABLING SPECIFICATIONS

3.1. CONTRACTOR QUALIFICATIONS

.1 THE CONTRACTOR PERFORMING THE DATA CABLING INSTALLATION SHALL HAVE A STRUCTURED CABLING INDUSTRY AFFILIATION SUCH AS BICSI (BUILDING INDUSTRY CONSULTANTS INTERNATIONAL) MEMBERSHIP, RCDD (REGISTERED COMMUNICATIONS DISTRIBUTOR DESIGNER) AND/OR A STRUCTURED CABLING VENDOR CERTIFICATION.

.2 ALL DATA CABLING INSTALLERS SHALL BE LICENSED AND INSURED.

3.2. HORIZONTAL CABLING

.1 CATEGORY 6 CABLING 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.

.2 ALL DATA TELECOMMUNICATIONS JACKS SHALL BE OF CATEGORY 6 CONNECTORS AND SHALL BE TIA CERTIFIED CATEGORY 6. COLOUR TO BE BLUE.

.3 NO INSTALLED CABLING MAY BE EXPOSED TO VIEW OUTSIDE OF THE WIRING ROOM. IT SHALL BE WITHIN THE UNDERSIDE OF THE RAISED FLOOR, RACEWAY, CONDUIT OR ABOVE SUSPENDED CEILING.

.4 ALL HORIZONTAL CABLING RUNS SHALL RUN FROM EACH WORK AREA IN A STAR TOPOLOGY TO A WIRING ROOM OR AS SHOWN. 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 TRAY. ALL EXPOSED CATEGORY 6 CABLING SHALL BE PLENUM-RATED.

.5 NO CABLING RUN MAY EXCEED A LENGTH OF 90 METERS.

.6 ALL CATEGORY 6 CABLING SHALL BE TERMINATED IN THE WIRING CLOSET ON RACK MOUNT CATEGORY 6 PATCH PANELS (MAXIMUM OF 48 JACKS PER PANEL). SUPPLY PATCH PANELS, COMPONENTS, WIRE MANAGEMENT, IF THERE IS INSUFFICIENT DATA PORTS IN EXISTING PATCH PANEL. SUPPLY & INSTALL COMPLETE DATA CABLING FROM PATCH PANEL TO POINT-OF-USE.

.7 THE CATEGORY 6 CABLING IN THE RACKS SHALL BE INSTALLED WITH SUFFICIENT AND APPROPRIATE MOUNTING CLIPS, BRACKETS, AND CABLE MANAGEMENT TO PROVIDE A SECURE AND MAINTAINABLE SYSTEM. CARE SHALL BE TAKEN TO NOT CAUSE THE CABLES TO BE OVERLY CRIMPED.

.8 THE UTP CATEGORY 6 CABLE TAIL SHALL BE TERMINATED WITH A MINIMUM OF 14" OF SLACK BUT NOT TO EXCEED 18".

.9 AFTER DRESSING CABLE TO THE FINAL LOCATION, THE SHEATH SHALL BE REMOVED TO A POINT THAT ALLOWS THE CONDUCTORS TO BE SPLAYED AND TERMINATED IN A NEAT AND UNIFORM FASHION. EVERY EFFORT MUST BE MADE TO MAINTAIN SHEATH INTEGRITY BY REMOVING ONLY AS MUCH AS IS PRACTICAL TO ACCOMPLISH TERMINATION. CABLE PAIR TWIST SHALL BE MAINTAINED UP TO 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.

.10 ANY UNUSED HORIZONTAL CABLING SHALL BE LABELED AND LOOSELY COILED.

.11 CONTRACTOR SHALL SPECIFY CABLES PROPOSED FOR USE AND SUBMIT DOCUMENTATION PROVING THE PROPOSED CABLES MEET THESE SPECIFICATIONS.

3.3. LABELLING

.1 ALL CABLES (NEW & RELOCATED) SHALL BE LABELED WITH TAG WRAPS OR SOME OTHER PERMANENT MARKER CAPABLE OF WITHSTANDING MULTIPLE PULLING OF CABLE THROUGH RACEWAYS. LABELS SHALL BE LOCATED 0.5 METER FROM THE WORK AREA END.

.2 ALL TERMINATIONS SHALL BE CLEARLY IDENTIFIED ON PATCH PANELS IN WIRING ROOM. ALL JACKS IN THE PATCH PANEL MUST BE IN SEQUENTIAL ORDER.

.3 AT EACH WORK AREA, FACEPLATE 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 INDELIBLE PRINTING FOR EACH OUTLET.

3.4. FIELD TEST QUALITY

.1 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.

.2 CONDUCT CABLE TESTING ONLY UPON COMPLETION OF INSTALLATION.

.3 A MINIMUM OF A LEVEL II-E FIELD TESTER SHALL BE USED TO VERIFY CABLING PERFORMANCE.

.4 IN ADDITION TO HARD COPY TEST RESULTS, ACCEPTABLE ELECTRONIC FORMAT FOR TEST RESULTS ARE MICROSOFT EXCEL FOR EACH LINK.

.5 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.

3.5. RECORD DRAWINGS

.1 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.

ABBREVIATIONS

	DESCRIPTION
A	AMPERE, AMPACITY
AFF	ABOVE FINISH FLOOR
CCT	CIRCUIT, CCT: C=PANEL ; CT= CIRCUIT
D	DEMOLITION
DS	DOOR SWITCH
DSW	DISCONNECT SWITCH
DWG	DRAWING
E	EXISTING
FE	FIRE EXTINGUISHER (RECESSED CABINET)
FMS	FACILITY MANAGEMENT SYSTEM
JB	JUNCTION BOX
MD	MOTION DETECTOR
N	NEW
NTS	NOT TO SCALE
PB	PUSH BUTTON
PNL	PANEL
RECP	RECEPTACLE
SW	SWITCH
TYP	TYPICAL
V	VOLT
W	WATT
WP	WEATHERPROOF

ELECTRICAL LEGEND
(SUPPLY & INSTALL,UNLESS OTHERWISE INDICATED)

TYPE	DESCRIPTION
	DUPLEX RECEPTACLE (WALL)
xx	HEIGHT IN INCHES ABOVE FINISH FLOOR TO CENTERLINE OF DEVICE
	DUPLEX RECEPTACLE (IN RAISED FLOOR SERVICE BOX)
S	LIGHT SWITCH, SINGLE
MD	MOTION DETECTOR - SECURITY
CAM	CAMERA - SECURITY
DSW	DISCONNECT SWITCH
PB	DUAL BUTTON HOLD-UP SWITCH, MOMENTARY BUTTON, AUTO-RESET, AMSECO MODEL HUSD-1SBM. C/W WIRING, TRANSFORMER, BUZZER, ETC.TO COMPLETE ALERT SYSTEM.
PANEL XXX	ELECTRICAL PANEL BOARD
JB	JUNCTION BOX
TS	TEMPERATURE SENSOR
CO2	CARBON DIOXIDE (CO2) SENSOR
FP	FIRE ALARM MANUAL PULL STATION
FS	SIREN (EXIST)
	DATA PORT (IN RAISED FLOOR SERVICE BOX)
	PHONE PORT (IN RAISED FLOOR SERVICE BOX)
	DATA PORT (IN RAISED FLOOR SERVICE BOX)
	PHONE PORT (WALL)
	DATA PORT (WALL)

NOTES:

ALSO REFER TO ARCHITECTURAL, STRUCTURAL , MECHANICAL DRAWINGS & SPECIFICATIONS.

No.	REVISION/DESCRIPTION	BY	DATE
0	ISSUED FOR TENDER	DTA	2014.09.22

SEAL

DRAWN	CHECKED	DESIGNED	APPROVED
DTA			
DATE 2014.08.15	USER APPROVAL		

Winnipeg

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

PROJECT

MILLENNIUM LIBRARY

RELOCATION OF LOCAL HISTORY ROOM TO 4TH FLOOR
CONSTRUCTION OF LOCAL HISTORY ROOM

251 DONALD STREET

SHEET TITLE

ELECTRICAL, FIRE ALARM, DATA SPECIFICATIONS
LEGEND, ABBREVIATIONS

SCALE	PROJECT No:	SHEET No:
AS SHOWN	2014-052-02	E2

DRAWING SHEET SIZE: A1 (841mm x 594mm) PLOT 1:1