



**ELECTRICAL POWER AND SYSTEMS NOTES:** "x"

ALSO SEE NOTES & SPECIFICATIONS.  
ALL WIRING & CABLING SHALL BE CONCEALED IN DOOR JAMB &/OR IN WALL CAVITY FOR FINISH SPACES. ALL WIRING & CABLING IN CEILING SPACE SHALL BE PLENUM RATED AS PER LATEST CEC.

- ELECTRICAL CONDUIT SUPPORT
  - 1.1. PROVIDE ANCHORED SUPPORT RODS TO CEILING TO SUPPORT 16" MINIMUM LONG UNISTRUTS ALONG LAYOUT SHOWN. PROVIDE STEEL EMT CLAMPS FOR UNISTRUT MOUNTING. MOUNT HEIGHT TBD.
- COMMUNICATION TRAY SYSTEM
  - 2.1. PROVIDE COMMUNICATION TRAY SYSTEM TO SUPPORT CABLING FOR DATA, CARD ACCESS, TELEPHONE, INTRUSION ALARM, LIGHTING CAT5e & EMERGENCY CALL. SYSTEM SHALL BE LEGRAND "CABLOFIL CABLE MANAGEMENT" WITH CABLOFIL CABLE TRAY OF 105300 (4" HEIGHT x 12" WIDTH) ALL NECESSARY CLAMP KITS, SUPPORTS, BRACKETS, DROP-OUTS, CABLE EXITS, CLIPS, MOUNT HEIGHT TBD. GROUNDING SHALL CONFORM TO LATEST CEC.
  - 2.2. ATTACH CABLE TRAY TO TOP OF ELECTRICAL CONDUIT SUPPORT UNISTRUT.
- POWER DOOR OPERATOR (SEE ARCH. DWG.) TYPICAL
  - 3.1. PROVIDE POWER DOOR OPERATOR. SEE ARCH. DOOR SCHEDULE. WITH 120V, 15A CIRCUIT #122 RW90 IN EMT TO DESIGNATED 15A/1P CIRCUIT BREAKER. SETUP FOR "PUSH & GO" & DOOR SWITCH ACTUATOR (DA).
  - 3.2. PROVIDE HONEYWELL PROFUSION ACCESS CONTROL. CABLE 3195 PLENUM RATED (CMP LISTED) FOR FUTURE HOME RUN CONNECTIONS OF DOOR ELECTRIC STRIKE (ES), CARD ACCESS READER (CA) & DOOR CONTACT (DC) FROM DOOR LOCATION TO NETWORK ROOM. PROVIDE 72" EXTRA CABLE LENGTH AT BOTH ENDS & LABEL CABLE WITH DOOR DESIGNATION AT BOTH ENDS.
    - 3.2.1. DOOR ELECTRIC STRIKE (ES) 18/4 STR (SETUP FOR FAIL-SECURE)
    - 3.2.2. CARD ACCESS READER (CA) 22/6 STR OAS
    - 3.2.3. DOOR CONTACT (DC) 22/2 STR
    - 3.2.4. SPARE 22/4 STR
- PROVIDE (2) DATA DROPS TERMINATED TO A SINGLE DEVICE BOX WITH A TWO-PORT FACEPLATE. HOME RUN & TERMINATE CABLES TO NETWORK DATA PATCH PANEL IN BASEMENT NETWORK ROOM.
  - 4.1. PROVIDE CAT6 CABLE WITH TERMINATED ENDS FOR ACCESS POINT (AP) TO HOME RUN IN CABLE TRAY TO DATA PATCH PANEL IN BASEMENT NETWORK ROOM. "AP" UNIT SUPPLIED & INSTALLED BY CITY AT A LATER DATE. PROVIDE 3 METRES OF COILED LENGTH AT BOTH ENDS.
- AUDIO/VIDEO & FUTURE PROJECTOR
  - 5.1. PROVIDE AUDIO/VIDEO DEVICE WALL BOX (DECORA STYLE) WITH:
    - 5.1.1. AUDIO 3.5mm INPUT STEREO
    - 5.1.2. VGA
    - 5.1.3. HDMI
  - 5.2. PROVIDE CEILING-MOUNTED AUDIO/VIDEO DEVICE WALL BOX (DECORA STYLE) WITH:
    - 5.2.1. AUDIO 3.5mm INPUT STEREO
    - 5.2.2. VGA
    - 5.2.3. HDMI
  - 5.3. BUNDLED CABLING WITH VELCRO STRAPS & ROUTE FROM WALL BOX TO CEILING BOX IN A NEAT MANNER FOLLOWING BUILDING LINES.
- EMERGENCY CALL SYSTEM (ECS)
  - 6.1. PROVIDE ECS. SEE ELECTRICAL LEGEND, WITH ALL REQUIRED WIRING, COMPONENTS & HARDWARE.
  - 6.2. MOUNT HORNSTROBE OUTSIDE & ABOVE UTR DOOR.
  - 6.3. MOUNT PULL CORD SWITCH 1070mm AFF & 1015mm FROM CORNER.
- TRANSFORMER POWER FOR VAVs
  - 7.1. PROVIDE DEDICATED 120V/1PH, 15A CIRCUIT WITH BREAKER TO (2) TRANSFORMER WITH AUTOMATIC SHORT CIRCUIT PROTECTION, 120VAC-24VAC, 100VA RATING. PLATE MOUNTING. MOUNT TRANSFORMERS WITH PLATE SECURELY ON WALL AT 2300mm AFF.
- BASEBOARD HEATERS ALONG GENERAL OFFICE AREAS 1 & 2 SOUTH & WEST WALLS SHALL BE FLOOR MOUNTED WITH ELECTRICAL CONNECTION CONDUIT COMING THROUGH THE FLOOR. DO NOT ATTACH OR LOCATE COMPONENTS TO THE GENERAL OFFICE AREAS 1 & 2 SOUTH & WEST WALLS.
- LINE-VOLTAGE THERMOSTAT WITH 24V RELAY & TRANSFORMER 347V/24V TO CONTROL BASEBOARD HEATER & VAV.
- MOUNT EMERGENCY SIGN/ BATTERY UNIT ABOVE DOOR AT 2400mm AFF.
- MOUNT COMPACT DOUBLE REMOTE EMERGENCY LAMPS AT 2400mm AFF.
- SOLAR (7.6kW) INSTALLATION:
  - 12.1. SUPPLY, INSTALL & COMMISSIONED BY SOLAR MANITOBA, 530 ST. MARY AVENUE, PH: 204-926-8881.
  - 12.2. WIRE WITH #10 RPVU CU 90 IN CONDUIT TO PANEL "BA", SEE ELECTRICAL PANEL SCHEDULE DRAWING E7.
- ROOF MAST CABLING ENTRANCE CONDUIT. REFER TO DRAWING E3, NOTE 11.

**DATA CABLING SPECIFICATIONS**

**CONTRACTOR QUALIFICATIONS**  
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.

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 CABLE SHALL BE USED FOR **MLIGHT 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. CATEGORY 6 CABLE SHALL BE USED FOR **DESKTOP DATA NETWORK**. CATEGORY 6 CABLE 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 CONNECTORS AND SHALL BE TIA CERTIFIED. JACK AND CONNECTOR COLOUR TO BE 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 STAR TOPOLOGY TO NETWORK ROOM USING CABLE TRAY SYSTEM. INSTALL CONDUITS AND CABLE RUNS PARALLEL AND/OR PERPENDICULAR TO BUILDING GRID LINES & COLUMNS IN CEILING SPACES, CHASES & BEHIND FURRING. THERE SHALL BE NO CONNECTOR IN THE CABLE RUN BETWEEN THE OUTLET IN THE WORK AREA AND THE NETWORK ROOM, EXCEPT FOR DATA ZONE BOXES. ALL CABLES SHALL IN CABLE TRAY WITH HAVE NO LENGTH GREATER THAN 1500mm SUPPORTED BY J-HOOKS.

1.5. NO CABLE RUN MAY EXCEED A LENGTH OF 90 METERS.  
1.7. ALL CATEGORY CABLING SHALL BE TERMINATED IN THE NETWORK ROOM ON RACK MOUNT PATCH PANELS (MAXIMUM 48 JACKS PER PANEL).

1.8. ALL CATEGORY 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.

1.9. THE UTP CATEGORY CABLE TAIL SHALL BE TERMINATED WITH A MINIMUM OF 350mm OF SLACK BUT NOT TO EXCEED 460mm.

1.10. 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.

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**

2.1. ALL CABLES SHALL BE LABELED WITH TAG WRAPS OR SOME OTHER PERMANENT MARKER CAPABLE OF WITHSTANDING MULTIPLE PULLING OF CABLE THROUGH RACEWAYS. LABELS SHALL BE LOCATED 460mm FROM THE WORK AREA END.

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

2.3. 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.

**FIELD TEST QUALITY**

3.1. 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.

3.2. CONDUCT CABLE TESTING ONLY UPON COMPLETION OF INSTALLATION.

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

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

3.5. THE CONTRACTOR SHALL DESCRIBE IN DETAIL ITS TEST PLAN TO DETECT ANY DEFECTIVE COMPONENTS AND TO DEMONSTRATE THAT THE INSTALLATION COMPLIES WITH THE SPECIFICATION.

**RECORD DRAWINGS**

4.1. 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.

- NOTES:**
- THESE DRAWINGS SHALL NOT BE SCALED. CONSULT WITH CLIENT AND DESIGNER ON ANY CONCERNS.
  - DIMENSIONS & UNITS SHOWN IN WHOLE NUMBERS ARE IN MILLIMETRES (mm).
  - DIMENSIONS & UNITS SHOWN TO DECIMAL PLACES ARE IN METRES (M).
  - ALSO REFER TO SHEET E1 & ELECTRICAL SPECIFICATIONS.

No.	REVISION/DESCRIPTION	BY	DATE
1	ISSUED FOR ADDENDUM #2. ADDED NOTE 13 & REVISED CABLE TRAY TO BASEMENT LOCATION. FLOOR PLAN WAS 1:100.	DTA	2017.06.20
0	ISSUED FOR CONSTRUCTION	DTA	2017.03.20

ORIGINAL STAMPED BY: XINYU WU, 30166  
DATE: 2017-03-20

DRAWN DATE	CHECKED DATE	DESIGNED DATE	APPROVED DATE
2017.01.27			

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

PROJECT  
BRADY ROAD LANDFILL  
ADMINISTRATION BUILDING  
DEVELOPMENT FOR BRADY LANDFILL  
1777 BRADY ROAD

SHEET TITLE  
MAIN FLOOR PLAN  
ELECTRICAL  
POWER AND SYSTEMS

SCALE	PROJECT No:	SHEET No:
AS SHOWN	2015-037-02	E5-R1