
27 00 00 COMMUNICATIONS

1.1 GENERAL REQUIREMENTS

1. The specification covering the General Conditions of the Contract, General Specifications, Instructions to Bidders and all associated sections from an integral part of this specification and shall be read in conjunction herewith.

1.2 SCOPE

1. Provide all materials, labour, plant and equipment required for a complete and working installation as herein specified and as shown on the drawings.
2. The electrical installation shall be in accordance with the current edition of the Canadian Electrical Code, Provincial and Municipal codes and regulations.
3. Obtain all permits, approvals and pay all related fees required for this installation.
4. All equipment supplied under this Contract shall be new and be C.S.A. approved.
5. Co-ordinate all telephone conduit runs with MTS before installation begins.
6. Arrange for, and co-ordinate, rough-in and final inspections with City of Winnipeg, Contract Administrator and Building Engineer.

1.3 EXAMINATION

1. Examine the architectural, interior design, structural and mechanical drawings to ensure that the work under this Contract can be satisfactorily carried out. Report any discrepancies to the Contract Administrator prior to submission of tender.
2. Examine the site, local conditions and all existing apparatus if any to be re-used and verify that the condition of this equipment is suitable for its intended use in the new construction.

1.4 SUPERVISION

1. Supervise the work at all times through a responsible and competent supervisor.
2. Full co-operation shall be shown with other trades to facilitate installations and to avoid delays in carrying out the work.

1.5 ACCURACY OF DATA

1. Drawings are schematic; exact locations, distances, levels 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 the Contract Administrator requests relocation before the work has been substantially completed, without additional cost.

1.6 APPROVAL OF MATERIAL

1. Request for approval of material as equals or alternates to that specified shall be submitted to the Contract Administrator with a stamped self-addressed envelope and performance specifications three (3) working days prior to the tender submittal. Samples shall be provided on request.

1.7 SHOP DRAWINGS

1. Submit shop drawings of electrical equipment to the Contract Administrator for review. Fabrication of equipment shall not commence until the Contract Administrator has reviewed shop drawings of such equipment. Two sets shall be submitted with local Inspection Department approval where required.

1.8 "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 circuiting of new and existing equipment to remain. Transfer changes to electronic disc AutoCAD file. Submit disc and hard copy for final review and submission to The City.
2. Submit a Certificate of Inspection from the local Inspection Authority upon completion of work and include with As-builts.
3. The Contract Administrator reserves the right to recommend that a portion of the Contract funds be withheld pending submission of acceptable as-built drawings.

1.9 TEST

1. The electrical installation shall be completely tested demonstrating that the equipment and systems installed perform in the manner intended.

1.10 GUARANTEE

1. The satisfactory operation of all work shall be guaranteed for a period of 12 calendar months after final acceptance of the building.

1.11 GROUNDING

1. The entire installation shall be grounded in accordance with the Canadian Electrical Code.
2. Isolated ground conductors for panels shall be minimum #6 (green insulation) and be in one continuous, separate run, to the building water main (unless noted otherwise). Where required, panels shall be equipped with a separate isolated ground bus connected to the aforementioned ground conductor.

27 05 31 COMMUNICATION RACEWAY AND CABLING SYSTEM

1. Provide a separate and independent Voice/data Conduit System consisting of:
 1. Main Voice/Data equipment backboard (TTB).
 2. Conduit system from each outlet back to the specific closets via ceiling pullboxes.
 3. Outlet boxes.
2. All conduit ends, including vertical stubs in wall cavities, shall be fitted with insulated grommets. The inside radius of a bend in a conduit shall be no less than ten times the internal diameter of the conduit with a maximum of two 90° bends between pull points, unless otherwise specified. All conduits shall be run to existing building rack or terminal board.
3. Provide a 2-gang recessed outlet box complete with single gang reducer mud ring and 1-3/4" stubbed into ceiling space complete with pullwire and plastic bushings at both ends for all voice data outlets.
4. Where the use of concealed or surface conduit shall be used a minimum box size for data/voice termination shall be 4 x 4 x 2/14", complete with either a single gang or double gang mud-ring as required by number of drops specified.
5. Provide j-hook system between conduit stubs and cable tray running down the corridor.
6. Use approved cable clips or hangers at 4'-0" centres to effectively support all multi-cable harnessing.
7. Small numbers of cables splitting off the harness to individual room drops shall be supported by either Velcro straps or combined Panduit wirewraps/nylon ties.
8. Where installation is arranged in a hollow wall construction, MP1 or MP2 plates.
9. Cables dropped in wall cavity shall have insulated bushings fitted to the top wall plate.
10. Cabling installed in ceiling plenum spaces shall be installed in cable tray (centre hung type) and wherever possible shall be run in accessible ceiling space in the corridor. All metal cable trays will be bonded to ground.
11. All data and network cabling shall be 4-pair, Cat 5e, UTP, FT4.
12. Each run shall go to the nearest level to be terminated on the patch panel in a position to be indicated by the Systems Manager. All runs shall be in compliance with Cat 5e standards and be tested for 100 Mbps capacity.
13. The LAN cable and components shall have Mbps capacity.
14. Upon completion of all Category 5e cable installation, the vendor shall complete all EIA/TIA 568 and ISO 11801 recommended Category 5e tests in order to ensure link performance standards.
15. Cat 5e patch cable to be provided for each run for both ends of the run.

END OF SECTION