

## PART 1 - GENERAL

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| <u>1.1 Related Sections</u>              | <p>.1 Section 01 74 21 - Construction/Demolition Waste Management And Disposal.</p> <p>.2 Section 26 05 00 - Common Work Results - Electrical.</p>   |
| <u>1.2 References</u>                    | <p>.1 Canadian Standards Association, (CSA International).<br/>.1 Grounding and bonding equipment to: CSA C22.2 No. 41 - M1987(R1993).</p>   |
| <u>1.3 Waste Management and Disposal</u> | <p>.1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal.</p> <p>.2 Remove from site and dispose of all packaging materials at appropriate recycling facilities.</p> <p>.3 Collect and separate for disposal paper, plastic, polystyrene and corrugated cardboard packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.</p> <p>.4 Divert unused metal materials from landfill to metal recycling facility as approved by Engineer.</p> <p>.5 Fold up metal banding, flatten and place in designated area for recycling.</p> |

## PART 2 - PRODUCTS

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| <u>2.1 Equipment</u> | <p>.1 Grounding conductors: bare stranded copper, un-tinned, soft annealed, unarmoured, size as indicated.</p> <p>.2 Insulated grounding and bonding conductors: green, type as per Section 26 05 21.</p> <p>.3 Ground bus: copper, size 6 mm x 51 mm x 610 mm (1/4" x 2" x 24") or as indicated, complete with insulated supports, fastenings, connectors.</p> <p>.4 Non-corroding accessories necessary for grounding and bonding system, type, size, material as indicated, including but not necessarily limited to:<br/>.1 Grounding and bonding bushings.<br/>.2 Protective type clamps.</p> |
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| 2.1 Equipment     | .4 | (Cont'd)  |
| <u>(Cont'd)</u>   |    |   |
|                   | .3 | Bolted type conductor connectors.                                 |
|                   | .4 | Bonding jumpers, straps.  |
|                   | .5 | Pressure wire connectors.   |
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| 2.2 Manufacturers | .1 | Standard of Acceptance: Burndy Corp., McGraw-Edison (Canada) Ltd. |

### PART 3 - EXECUTION

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| 3.1 Installation         | .1 | Install complete permanent, continuous grounding and bonding systems including, electrodes, conductors, connectors, accessories. Where EMT is used, run ground or bond wire in conduit. Installation should conform to the requirements of the Engineer and Local Authorities having jurisdiction over the installation. |
| <u>General</u>           |    |  |
|                          | .2 | Install connectors in accordance with manufacturer's instructions.   |
|                          | .3 | Protect exposed grounding and bonding conductors from mechanical injury.   |
|                          | .4 | Use mechanical connectors for grounding and bonding connections to equipment provided with lugs.   |
|                          | .5 | Soldered joints not permitted.   |
|                          | .6 | Install bonding wire for flexible conduit, connected at both ends to grounding bushing, solderless lug, clamp or cup washer and screw. Neatly cleat bonding wire to exterior of flexible conduit.  |
|                          | .7 | Make grounding and bonding connections in radial configuration only, with connections terminating at single grounding point. Avoid loop connections.   |
|                          | .8 | Bond single conductor, metallic armoured cables to cabinet at supply end, and provide non-metallic entry plate at load end.  |
|                          |    |  |
| 3.2 System and           | .1 | Install system and circuit grounding connections to neutral of secondary   |
| <u>Circuit Grounding</u> |    | 120/208V system.   |
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| <u>3.3 Equipment Grounding</u>   | .1 | Install grounding connections to typical equipment included in, but not necessarily limited to the following list. Service equipment, transformers, switchgear, duct systems, frames of motors, starters, control panels, and distribution panels. |
| <br>                             |    |  |
| <u>3.4 Grounding Bus</u>         | .1 | Install copper grounding bus mounted on insulated supports on wall of new electrical room.   |
|                                  | .2 | Ground items of electrical equipment in electrical room to ground bus with individual bare stranded copper connections size 2/0AWG.  |
| <br>                             |    |  |
| <u>3.5 Field Quality Control</u> | .1 | Perform tests in accordance with Section 26 05 00 - Common Work Results - Electrical.  |
|                                  | .2 | Perform ground continuity and resistance tests using method appropriate to site conditions and to approval of Engineer and Local Authority having jurisdiction over installation. Provide a written report of results to the Engineer.             |
|                                  | .3 | Perform tests before energizing electrical system.   |
|                                  | .4 | Disconnect ground fault indicator during tests.  |