1. GENERAL

1.01 SECTION INCLUDES

.1 Switches, receptacles, wiring devices, cover plates, and their installation.

1.02 RELATED REQUIREMENTS

.1 Section 26 09 23 – Lighting Control Devices.

.2 Section 26 27 26.13 – Floor Box Assemblies.

1.03 UNIT PRICES

.1 [Refer to Document 00 43 00.26.]

.2 Submit with Tender unit prices to provide the following. Include installation in the unit price:

.1 5-15R [specification grade] duplex receptacle, complete with wiring and conduit, based on 10 metre distance from the local panelboard.

.2 5-20R [specification grade] duplex receptacle, complete with wiring and conduit, based on 10 metre distance from the local panelboard.

.3 Unit cost of additional conduit and wire for the above items.

1.04 REFERENCES

.1 CSA Group:

.1 CSA C22.1:21, Canadian Electrical Code, Part 1 (25th Edition), Safety Standard for Electrical Installations.

.2 Ontario Electrical Safety Code (28th edition/2021).

.3 CSA C22.2 No. 14-13, Industrial control equipment.

.4 CSA C22.2 No. 42-10 (R2015), General use receptacles, attachment plugs, and similar devices.

.5 CSA C22.2 No. 42.1-13, Cover plates for flush-mounted wiring devices.

.6 CSA C22.2 No. 55-15 (R2020), Special use switches.

.7 CSA C22.2 No.111-10 (R2015), General-use snap switches.

.8 CSA C22.2 No. 182.1-17, Plugs, receptacles, and cable connectors of the pin and sleeve type.

1.05 INFORMATIONAL SUBMITTALS

.1 Submit shop drawings and product data in accordance with Section 01 33 00.

.2 Product Data: Provide manufacturer's catalogue information showing dimensions, colours, and configurations.

.3 Submit manufacturer's installation instructions.

2. PRODUCTS

2.01 MANUFACTURERS

.1 Eaton.

.2 Hubbell Bryant.

.3 Leviton.

.4 Molex.

.5 Pass & Seymour (Legrand).

2.02 WALL SWITCHES

.1 Single pole, double pole, three-way, four-way switches to: CSA C22.2 No. 55 and CSA C22.2 No.111.

.2 Description: CSA 22.2 No. 111, Commercial Spec Grade, AC only general-use snap switch.

.3 Local switches shall be 20 A, silent, brown coloured, AC type and CSA certified, specification grade. Provide switches rated to suit system voltage 120 V or 347 V.

.4 Manually-operated general purpose AC switches with following features:

.1 Terminal holes approved for 10 AWG wire.

.2 Silver alloy contacts.

.3 Urea or melamine moulding for parts subject to carbon tracking.

.4 Suitable for back and side wiring.

.5 Voltage: 120 V or 347 V, AC as indicated.

.6 Current: 20 A.

.7 Body and Handle: white plastic with toggle handle. Confirm finish colour prior to ordering.

.8 Toggle operated fully rated for tungsten filament and fluorescent lamps, and up to 80% of rated capacity of motor loads.

.9 Example Products (Decorator style):

.1 120 V:

.1 Hubbell HBL2121 series.

.2 347 V:

.1 Pass & Seymour 2601-347 series.

.10 Example Products (Toggle style):

.1 120 V:

.1 Hubbell HBL1221 (single pole).

.2 Hubbell HBL1222 (double pole).

.3 Hubbell HBL1223 (three-way).

.4 Hubbell HBL1224 (four-way).

.2 347 V:

.1 Hubbell HBL18221 (single pole).

.2 Hubbell HBL18223 (three-way).

.3 Pass & Seymour PS372030I.

.11 Local switches and receptacles shall be of the same manufacturer throughout except where a specified item is not made by that manufacturer.

2.03 RECEPTACLES

.1 General

.1 Description: CSA C22.2 No. 42, Commercial Spec Grade general use receptacles.

.2 Device Body: white plastic.

.3 Configuration: Type as specified and indicated.

.4 Convenience Receptacle: Type 5-15, 5-20 where indicated.

.5 GFCI Receptacle: Convenience receptacle with integral ground fault circuit interrupter to meet regulatory requirements.

.6 Data Room Receptacle Types: As indicated on drawings.

.7 Receptacles of one manufacturer throughout project.

.2 Receptacles shall be white coloured, specification grade, unless noted otherwise.

.3 Receptacles shall be as listed below:

.1 15 A, 120 V, single phase grounded duplex receptacle shall be NEMA-U- ground type CSA Configuration 5-15R.

.2 20 A, 120 V, single phase grounded duplex receptacle shall be NEMA-U-ground type CSA Configuration 5-20RA

.3 15 A, 120 V, weatherproof receptacles shall be equal to those above but complete with gasketed cast plate and hinged covers.

.4 Other types of receptacles shall be provided as shown on Drawings.

.5 Duplex receptacles, CSA type 5-15 R, 125 V, 15 A, U ground, to: CSA C22.2 No. 42 with following features:

.1 White urea moulded housing.

.2 Suitable for No. 10 AWG for back and side wiring.

.3 Break-off links for use as split receptacles.

.4 Eight back wired entrances, four side wiring screws.

.5 Triple wipe contacts and riveted grounding contacts.

.6 Single receptacles CSA type 5-15 R, 125 V, 15 A, U ground with following features:

.1 White urea moulded housing.

.2 Suitable for No. 10 AWG for back and side wiring.

.3 Four back wired entrances, 2 side wiring screws.

.7 Other receptacles with ampacity and voltage as indicated.

.8 Example Products (Decorator style duplex 5-15R):

.1 Pass & Seymour 26252 Series.

.2 Hubbell HBL2152 Series.

.9 Ground Fault Circuit Interrupter (GFCI or GFI) Receptacles

.1 Protected by a ground fault circuit interrupter of the Class A type.

.2 Any receptacle within 1.5 m (5 ft) of a sink must be GFCI protected.

.3 Any receptacle located outdoor must be GFCI protected.

.10 Isolated Ground (IG) Receptacles:

.1 Marked as such (green triangle).

.2 Example Products:

.1 Hubbell IG2152 (15 A duplex decorator style, orange faceplate).

.11 Tamper-resistant receptacles.

.1 Marked as such (for example "TR").

.2 To be used in the following spaces:

.1 Child care facilities and kindergarten classrooms.

.2 Guest rooms and suites of hotels and motels.

.3 Preschools and elementary education facilities, including kindergarten facilities.

.4 Dwelling units.

.3 Example Products:

.1 Hubbell BR15WHITR (15 A duplex decorator style).

.2 Hubbell BR20WHITR (20 A duplex decorator style).

.12 USB Charger receptacles: duplex tamper resistant device.

.1 USB ports: one type A and one type C USB charging port, 5 A, 5 V.

.2 Example: Hubbell USB15AC5WWR.

.3 [Weatherproof Cover Plate: Ultra-rugged polycarbonate and synthetic neoprene rubber:

.1 Hubbell ML500GCN series (single-gang):

.1 low profile design which expands from 25 mm (1 in) to 75 mm (3 in) for weatherproof protection while an outlet is in use while maintaining the "Extra Duty" ratings.

.2 Clear window allows for quick/easy visual inspection.

.3 All required gasket and mounting hardware.

.4 Pre-configured for GFCI type receptacles.

.5 Complete with gaskets to accommodate duplex receptacles or Data outlets.

.6 NEMA 3R compliant.

.7 Colour: [Gray].

.2 Hubbell ML2450GCN series (2-gang):

.1 low profile design which expands from 25 mm (1 in) to 75 mm (3 in) for weatherproof protection while an outlet is in use while maintaining the "Extra Duty" ratings.

.2 Clear window allows for quick/easy visual inspection.

.3 All required gasket and mounting hardware.

.4 Pre-configured for GFCI type receptacles.

.5 Complete with gaskets to accommodate quadplex receptacles or Data outlets.

.6 NEMA 3R compliant.

.7 Colour: [Gray].]

2.04 PENDANT RECEPTACLES

.1 Pendant cord mounted single receptacles complete with strain relief device.

.2 Strain relief system: Hubbell Kellems Grips, Molex, or equal.

.3 Refer to equipment schedule and plans for locations and specific requirements.

2.05 HAZARDOUS (CLASSIFIED) LOCATION RECEPTACLES

.1 In accordance with CSA C22.2 No. 159-18, Plugs, connectors, receptacles, and similar wiring devices for use in hazardous locations.

.2 Manufacturers:

.1 Crouse-Hinds.

.2 Appleton Electric.

.3 Killark; Division of Hubbell Inc.

2.06 REGULATORY REQUIREMENTS

.1 Provide products listed and classified by CSA (Canadian Standards Association).

3. EXECUTION

3.01 EXAMINATION

.1 Verify that outlet boxes are installed at proper height.

.2 Verify that wall openings are neatly cut and will be completely covered by wall plates.

.3 Verify that branch circuit wiring installation is completed, tested, and ready for connection to wiring devices.

3.02 PREPARATION

.1 Provide extension rings to bring outlet boxes flush with finished surface.

.2 Clean debris from outlet boxes.

3.03 INSTALLATION

.1 Install to CSA C22.1.

.2 Mounting heights in accordance with Section 26 05 00.

.3 Install devices plumb and level.

.4 Install switches with OFF position down.

.5 Install wall dimmers to achieve full rating specified and indicated after de-rating for ganging as instructed by manufacturer.

.6 Do not share neutral conductor on load side of dimmers.

.7 Install receptacles with grounding pole on bottom.

.8 Connect wiring device grounding terminal to outlet box with bonding jumper.

.9 Install decorative plates on switch, receptacle, and blank outlets in finished areas.

.10 Connect wiring devices by wrapping conductor around screw terminal.

.11 Use jumbo size plates for outlets installed in masonry walls.

.12 Install galvanized steel plates on outlet boxes and junction boxes in unfinished areas, above accessible ceilings, and on surface mounted outlets.

.13 Switches:

.1 Install single throw switches with handle in "UP" position when switch closed.

.2 Install switches in gang type outlet box when more than one switch is required in one location.

.14 Receptacles:

.1 Install receptacles in gang type outlet box when more than one receptacle is required in one location.

.2 Where split receptacle has one portion switched, mount vertically and switch upper portion.

.3 Connect receptacle grounding terminal to the outlet box with an insulated green ground strap.

.4 refrigerators, bathrooms, or sump pumps in accordance with 2021 OESC rule 26-658.]

.5 Receptacles for maintenance of HVAC and similar equipment located on rooftops.

.1 Provide weatherproof GFI 5-20R receptacles on roof, installed at 750 mm (30 in) above finished roof level, complete with wet location “while in use” “extra duty” cover plate.

.2 Locate within 7500 mm (25 ft) of new HVAC equipment, and at least 2000 mm (6.5 ft) away from roof line.

.3 Refer to 2021 OESC rules 2-316, 26-708, and 26-710, and OESC bulletin 26-27-0, or latest edition.

.15 Cover plates:

.1 Protect stainless steel cover plate finish with paper or plastic film until painting and other work is finished.

.2 Install suitable common cover plates where wiring devices are grouped.

.3 Do not use cover plates meant for flush outlet boxes on surface-mounted boxes.

.4 Do not install plates until final painting of room or area is completed. Remove protective covering.

.16 Circuit identification: in accordance with Section 26 05 53.

3.04 FIELD QUALITY CONTROL

.1 Inspect each wiring device for defects.

.2 Operate each wall switch with circuit energized and verify proper operation.

.3 Verify that each receptacle device is energized.

.4 Test each receptacle device for proper polarity.

.5 Test each GFCI receptacle device for proper operation.

3.05 ADJUSTING

.1 Adjust devices and wall plates to be flush and level.

3.06 CLEANING

.1 Clean exposed surfaces to remove splatters and restore finish.

End of Section