

1 ADDENDUM #3

All clauses set forth in the Bidding Documents, Contract Documents and General Requirements of the original Contract Documents shall apply to and govern this work. The addendum refers to changes and additions to the original Contract Documents and is to be read in conjunction with the same. All other parts of the original Contract Documents are to be considered as applying to the work of this Contract with the exceptions and changes as noted below.

1.1 ADDENDA

- .1 Reference Addendum #2:
 - .1 Reference Specifications Item #15.1.1:
 - .1 Clarification: Material to be Polypropylene or Polyethylene or equal.
 - .2 Reference Specifications Item #15.2.1:
 - .1 The following are acceptable material: JR Smith and Watts.
 - .3 Reference Drawing Item #6.1.3:
 - .1 Delete wording "Air-Shield" and replace with "AIR-SHIELD LM".
 - .4 Reference Drawing Item #7.2.2:
 - .1 Delete wording "Air-Shield" and replace with "AIR-SHIELD LM".
 - .5 Reference Drawing Item #8:
 - .1 The drawing reference for this item is incorrect. Please delete wording "A103 - Owner Supplied Equipment and Furnishings - North" and replace with "Drawing A102 - Floor Plan South.

1.2 SPECIFICATIONS

- .1 Reference Section 01 52 00 - Construction Facilities:
 - .1 Reference Paragraph 1.7.1:
 - .1 Clarification. The Owner does not require this Security. This Paragraph is for the Contractor in securing his Construction site if he chooses.
- .2 Reference Section 03 30 00 - Cast-in-Place Concrete:
 - .1 Reference Paragraph 2.1.12:
 - .1 Delete this paragraph in its entirety. The foundation work has been completed under Phase 5a.
- .3 Reference Section 04 22 00 - Concrete Unit Masonry:
 - .1 Reference Paragraph 2.1: Add new paragraph .3 as follows:
 - .3 Fire Block:
 - .1 2 hour concrete block.
 - .2 Acceptable material:
 - .1 Shaw Brick."
- .4 Reference Section 05 50 00 - Metal Fabrications:
 - .1 Reference Paragraph 2.13:
 - .1 Delete this paragraph in its entirety. The equipment required is included under 2.12 of this Section.
 - .2 Reference Paragraph 2.24:

- .1 Clarification:
 - .1 This paragraph covers the finish of all bollards on site, including interior and exterior bollards. Any reference to painted bollards in the drawings is overwritten by this paragraph.

- .5 Reference Section 07 52 00 - Modified Bituminous Membrane Roofing:
 - .1 Reference Paragraph 2.1:
 - .1 Clarification: Bidders attention is drawn to this Clause regarding compatibility, as it relates to all systems and particularly to the Approved Alternate system. It is the Manufacturers and Installers responsibility to ensure the total system is compatible and included, including adhesives, welding and a mechanical or like mechanically adhered system installation to meet the document requirements.
 - .2 Reference Paragraph 2.4.1.2:
 - .1 Add new paragraph .2 as follows:
"Carlisle CCW725 Vapor Barrier self Adhesive AVB."
 - .3 Reference Paragraph 2.5.2.2:
 - .1 Add new paragraph .2 as follows:
"Carlisle Insulbase Polyisocyanurate Insulation."
 - .4 Reference Paragraph 2.8:
 - .1 Add new paragraph .6 as follows:
"Add Carlisle 60 mil TPO membrane as an Approved Alternative. Color Grey to be approved prior to order."
 - .5 Reference Paragraph 2.9.1.3:
 - .1 Add new paragraph .2 as follows:
 - .1 "Carlisle pre-fabricated flashings and roof system accessories."
 - .6 Reference Paragraph 2.13.1.4:
 - .1 Add new paragraph .2 as follows:
"Carlisle TPO walkways."

- .6 Reference Section 07 72 00 - Roof Accessories:
 - .1 Reference Paragraph 2.3:
 - .1 This Clause to be supplied and installed by the Mechanical Sub-Contractor.

- .7 Reference Section 08 36 13 - Sectional Doors:
 - .1 Reference Paragraph 1.3:
 - .1 Delete wording "1/240" and change to "1/55"
 - .2 Reference Paragraph 2.13.3:
 - .1 Clarification: Provide "High Lift" for door tracks. Refer to the wall sections for track locations.

- .8 Reference Section 10 56 26 - Mobile Storage Shelving:
 - .1 Reference Paragraph 2.1:
 - .1 Add new paragraph .2 as follows:
 - .2 Space saver is approved as an acceptable equal provided the track system is recessed to provide a flush floor as per the specification."
 - .2 Reference Paragraph 2.4.6.1:
 - .1 Note: Low pressure laminate is NOT an acceptable alternate to steel face panels.

- .3 Reference Paragraph 3.2: Add new paragraph .6 as follows:
 - .6 It is the intent that the finish floor of the file room be at the same elevation as the remainder of the building. Therefore the slab is to be depressed and in-filled between the file shelving tracks or the tracks to be installed in local depressions and grouted in."

- .9 Reference Section 10 75 00 - Flagpoles:
 - .1 Reference Paragraph 1.2.1: Delete as written and replace with:
"Flagpole, bases and anchor devices to resist minimum wind velocity of 160 km/h unflagged, 140km/h flagged."

- .10 Reference Section 10 80 00 - Other Specialties:
 - .1 Reference Paragraph 2.3.2:
 - .1 Delete wording "30 degrees" and replace with "30.6 degrees".
 - .2 Reference Paragraph 2.3.11:
 - .1 Delete as written and replace with "Maximum horizontal length available is 7685mm, including a 685mm long horizontal run in at bottom and a 685 long horizontal run out at top."
 - .3 Reference Paragraph 2.3.12:
 - .1 Delete wording "914mm" and replace with "760mm".
 - .4 Reference Paragraph 2.3.13:
 - .1 Delete wording "914mm" and replace with "760mm".

- .11 Reference Section 23 05 16 - Expansion Fittings and Loops for HVAC Piping:
 - .1 Reference Paragraph 2.2.1.1
 - .1 Append the following to paragraph:
"Contractor to provide 150 C-Channel between building structure where required. All supports to be welded or rigidly fastened. Contractor site fabricated anchors will be accepted."
 - .2 Reference Paragraph 2.2.1.2:
Append the following: "Myatt Figure 702".

- .12 Reference Section 23 05 22 - Valves - Bronze:
 - .1 Reference Paragraph 2.8.1: Append following to paragraph: "Apollo".

- .13 Reference Section 23 05 23 - Valves - Cast Iron:
 - .1 Reference Paragraph 2.10.1: Append following to paragraph: "Apollo".

- .14 Reference Section 23 33 16 - Dampers - Fire and Smoke:
 - .1 Add new paragraph 1.6 as follows:
 - "1.6 Acceptable Materials:
 - .1 The following manufacturers are considered acceptable material:
 - .1 EH Price, Greenheck, Nailor, Tamco, Ventex, Ruskin, Air Management or equal."

- .15 Reference Section 23 34 00 - HVAC Fans:
 - .1 Add new paragraph 1.6 as follows:
 - "1.6 Acceptable Materials:
 - .1 The following manufacturers are considered acceptable material:

- .1 ACME, S&P, Twin City, Cook, Cincinnati Fan, Greenheck."
- .16 Reference Section 23 35 16 - Tail Pipe Exhaust Systems:
 - .1 Reference Paragraph 2.1.1.5:
 - .1 Append wording "Monoxivent".
 - .2 Reference Paragraph 2.2.1.7:
 - .1 Add new paragraphs as follows:
 - .5 Monoxivent."
 - .6 Plymovent."
 - .3 Reference Paragraph 2.2.2.7:
 - .1 Add new paragraphs as follows:
 - .5 Monoxivent."
 - .6 Plymovent."
 - .4 Reference Paragraph 2.2.3.6:
 - .1 Add new paragraphs as follows:
 - .5 Monoxivent."
 - .6 Plymovent."
- .17 Reference Section 23 36 00 - Air Terminal Units:
 - .1 Add new paragraph 1.7 as follows:
 - "1.7 Acceptable Materials:
 - .1 The following manufacturers are considered acceptable material:
 - .1 Daikin, Heatcraft, Directcoil, Carrier, York, Aerofin, Bohn, Dunham-Bush, US Coil and Air, Madok, Rosemex, Colmac, Temtrol, EngineeredAir or equal."
- .18 Reference Section 23 37 20 - Louvres, Intakes and Vents:
 - .1 Add new paragraph 1.6 as follows:
 - "1.6 Acceptable Materials:
 - .1 The following manufacturers are considered acceptable material:
 - .1 Ventex, EH Price, Nailor, Ruskin, Alumavent, Trolec."
- .19 Reference Section 23 81 26 - Split Systems:
 - .1 Reference Paragraph 2.1.11:
 - .1 Add new paragraph as follows:
 - ".4 Daikin."
- .20 Reference Section 23 82 19 - Fan Coil Units:
 - .1 Delete paragraph as written and replace with:
 - "Elements: a 4 / 1 or 4 / 2 row split coil, as specified for cooling and heating."
- .21 Reference Section 26 24 02 - Service Entrance Board:
 - .1 Reference Paragraph 2.4:
 - .1 Clarification:
 - .1 Power meter to be provided with integral BACnet IP capability instead of the extreme BACnet Convertor.

- .22 Reference Section 26 24 03 - Surge Protection Equipment:
 - .1 Reference Paragraph 2.1.4:
 - .1 Delete paragraph as written and replace with the following wording:
"Surge protection device to be factory installed and wired in service entrance board with front cover mounted status annunciation, or remotely installed and connected in accordance with the manufactures installation instructions in a dedicated surface mounted enclosure c/w sprinkler hood and front cover mounted status annunciation."

- .23 Reference Section 27 51 16 - Public Address and Mass Notification Systems
 - .1 Delete original section in its entirety and replace with the new section "Section 27 51 16 - Public Address, Mass Notification and Intercom Systems" dated January 29, 2019, attached to and forming part of this addendum.

- .24 Reference Section 28 23 00.01 - Video Surveillance Network - PoE Cameras:
 - .1 Reference Paragraph 2.2.5:
 - .1 Clarification:
CCTV IP address starting at 192.168.99.144-174. Subnet mask is 255.255.255.0 and default gateway is 192.168.99.254. Coordinate exact IP address segments with ITSS on site prior to programming.

1.3 DRAWINGS

- .1 Reference Drawing C101 - Site Plan:
 - .1 Clarifications:
 - .1 Where new services cross over existing services and are to be installed in close proximity to existing light standards. Contractor shall protect existing services and concrete bases to ensure they are not undermined during construction.
 - .2 Reference Site Note 13:
 - .1 The referenced fencing is existing, removed from this site, specifically from the line of the existing fence in the vicinity of the entrance to the existing building, installed within the past 2 years and removed last fall for the foundation work to proceed. It's condition is good. Any problems arising from materials assumed to be "as new" will be dealt with on site. The materials are located on the site.
 - .3 Reference Drawing Notes:
 - .1 Reference note regarding disconnection of services relate to the scale house. Existing sanitary service consists of a holding tank. Owner to arrange pumping of tank. Contractor to remove and reinstate earthworks. Tank to be turned over to the Owner.

- .2 Reference Drawing S101 - Foundation & Ground Floor Plan North:
 - .1 Clarifications:
 - .1 Slabs on grade shall be flat in all locations, except at trench drains slab shall be sloped at 1% for 600mm on each side of drain.
 - .2 Exterior steel base plate detailing may require adjustments to coordinate with as-built anchor bolt locations on each base plate. Documentation to be supplied by consultant prior to construction.

- .2 Add new Note:
 - .1 "This Contract is responsible for concrete and reinforcement work required for installation of oily water separator. See Drawing M103 Detail 3 and Detail 4."

- .3 Reference Drawing S103 - Building & Site Concrete Details & Notes:
 - .1 Reference Detail 4:
 - .1 Clarification: Bollard concrete footing depth shall match the bottom of existing foundation footing (1700mm deep).
 - .2 Bollards that conflict with existing column footings shall have the below revised dimensions:
 - .1 Delete dimension "1600" and replace with "1200".
 - .2 Delete dimension "100" and replace with "500".

- .4 Reference Drawing S104 - Roof Framing Plan North:
 - .1 Reference Roof Deck Fastening Notes:
 - .1 Clarification: Mechanical fastening alternatives are acceptable. Contractor to supply connection shop drawings for consultant approval prior to construction.

- .5 Reference Drawing S201 - Concrete Sections & Details:
 - .1 Reference Detail 7:
 - .1 Clarification: 1000mm drainage gravel base under concrete aprons has been provided under Phase 5a Contractor.
 - .2 Reference Detail 11:
 - .1 Clarification: Top of trench drain shall be adjusted to suit 1% slope for 600mm on each side of drains
 - .2 Delete "152mm wide trench drain depth; as required; refer to Mechanical" and replace with "305mm wide trench drain depth, as required; refer to Mechanical for final trench drain sizing".

- .6 Reference Drawing A101 - Floor Plan - North:
 - .1 Reference Interior Partition Types:
 - .1 Where Lightweight Concrete Block is noted within a wall type, Shaw Brick's 2 hour rated Concrete block is an acceptable equal. See Section 04 22 00 - Concrete Unit Masonry this Addendum.
 - .2 Clarifications:
 - .1 Reference Roof Types:
 - .1 For acoustic roof deck locations see Drawings A501 and A502.
 - .2 There are four (4) housekeeping pads in 172 Mechanical, three (3) in 171 Compressor and two (2) in 210 Machine Shop. The note shown in 172 Mechanical is a general note, typical for all housekeeping pads.
 - .3 The vent pipe routing from the radon pit is shown by the two (2) parallel dashed lines from each of the three (3) radon pits to the adjacent wall then vertically to the roof.

- .7 Reference Drawing A102 - Floor Plan - South:
 - .1 Reference Interior Partition Types:
 - .1 Where Lightweight Concrete Block is noted within a wall type, Shaw Brick's 2 hour rated Concrete block is an acceptable equal. See Section 04 22 00 - Concrete Unit Masonry this Addendum.

- .2 Clarifications:
 - .1 Reference Roof Types:
 - .1 For acoustic roof deck locations see Drawings A501 and A502.
 - .2 There are four (4) housekeeping pads in 172 Mechanical, three (3) in 171 Compressor and two (2) in 210 Machine Shop. The note shown in 172 Mechanical is a general note, typical for all housekeeping pads.
 - .3 The vent pipe routing from the radon pit is shown by the two (2) parallel dashed lines from each of the three (3) radon pits to the adjacent wall then vertically to the roof.

- .8 Reference Drawing A201 - Building Elevations:
 - .1 Reference Detail 3/A201:
 - .1 The Siamese connection shown located between Grids 9 and 8 will be located on Grid W between Grids 17 and 18, outside the Sprinkler Room. Coordinate location with Mechanical.

- .9 Reference Drawing A203 - Roof Plan:
 - .1 Reference Drawing Notes:
 - .1 For the Drawing Notes referring to the 4000mm wide off color perimeter cap sheet, please note it is acceptable to identify the perimeter safety zone using a contrasting color, permanent, pressure tape or other alternate solution rather than using an off-color base sheet.

- .10 Reference Drawing A-303 - Wall Sections:
 - .1 Reference Details 2/A303 and 3/A303:
 - .1 Clarification: The sections are cut through the canopy, not the main building. The canopy roof is not insulated, the main building roof is insulated.

- .11 Reference Drawing M101 - Plumbing Floor Plan North Side:
 - .1 Clarification: Add new drawing note as follows:
"Pressure washer and all associated equipment, Heaters, switches, chimneys, gun/wand assemblies, hoses, hose reels and platforms specified on this drawing is Contractor Supplied and Contractor Installed."
 - .2 Reference Detail 1:
 - .1 Delete requirement for airdrop behind Door 210.3 in the welding bay
 - .2 Add note:
 - .1 "DEF Fluid Tank is a 330 gallon tote with an electric dispensing pump."
 - .3 Reference Note 10:
 - .1 Move Pressure Washer, Domestic Hot Water Tank and Platform 6 M east along wall to clear door track.
 - .3 Reference Drawing Notes:
 - .1 Add new Drawing Notes as follows:
 - .1 "For roof drain locations and above grade storm piping see Drawing M105."
 - .2 "Propane piping to be located exterior to the building on the roof . Final penetration of piping into building shall be located above the pressure washer. See Detail19, M103 for piping supports. See Detail 11, M204 for piping roof penetration."

- .12 Reference Drawing M102 - Plumbing Floor Plan South Side:
- .1 Clarification: Add new drawing note as follows:
"Compressor, Air Dryer, Receiver and all associated equipment specified on this drawing is Contractor Supplied and Contractor Installed."
 - .2 Reference Drawing Notes:
 - .1 Add new Drawing Notes as follows:
 - .1 "For roof drain locations and above grade storm piping see Drawing M105."
- .13 Reference Drawing M103 - Plumbing Schedules and Details:
- .1 Reference Detail 3:
 - .1 Add note: Concrete work by G.C."
 - .2 Reference Detail 4:
 - .1 Add note: Concrete work by G.C."
 - .3 Reference Detail 15:
 - .1 Add note: Concrete work by G.C."
 - .4 Reference Detail 16:
 - .1 Add note: "Static water pressure at the site is 55 psi."
 - .5 Reference Drawing Notes:
 - .1 Add new Drawing Notes as follows:
 - .1 "Detail refers to propane piping shown on Drawing M101".
- .14 Reference Drawing M104 - Plumbing Details:
- .1 Reference Detail 6:
 - .1 Clarification, the mechanical mezzanine does not require spray fireproofing.
 - .2 Add Note: "Supply and installation of the platform and all associated work is within the scope of work of Division 22."
 - .2 Reference Detail 8:
 - .1 Add Note: "Supply and installation of the platform and all associated work is within the scope of work of Division 22."
 - .3 Reference Detail 9:
 - .1 Add Note: "Supply and installation of the platform and all associated work is within the scope of work of Division 22."
 - .4 Reference Detail 10:
 - .1 Add Note: "Supply and installation of the platform and all associated work is within the scope of work of Division 22."
- .15 Reference Drawing M202 - Heating Floor Plan South Side:
- .1 Reference Detail 1:
 - .1 Clarification: Find attached and forming part of this addendum sketch SK-03 as a clarification of pipe routing in the boiler room
- .16 Reference Drawing M203 - Heating Details:
- .1 Reference Detail 2: Add Drawing Note:
 - .1 "Hose kit, including circuit setters, ball valves to be supplied and installed by Division 23. Motorized valves for a four (4) pipe system to be supplied by Division 25 installed by Division 23."
 - .2 Reference Detail 21: Add Drawing Note:
 - .1 "Control valves to be supplied by Division 25, installed by Division 23."

- .17 Reference Drawing M204 - Heating Details and Schedules:
- .1 Reference Pump Schedule:
 - .1 Delete "Pump P-15" from the Scope of Work.
- .18 Reference Drawing M302 - Ventilation Floor Plan South Side:
- .1 Reference Detail 1:
 - .1 Remove Mark L-3 from Drawing and replace with the following note
"Provide 2000 x 1100 intake hood per sketch attached SK-06." Sketch SK-06 is attached and forming part of this addendum.
 - .2 Reference ERV Schedule:
 - .1 Reference "Manuf." Column:
Add manufacturer "Greenheck".
- .19 Reference Drawing M303 - Ventilation Details:
- .1 Reference Steam Humidifier Schedule:
 - .1 Reference "Manuf." Column:
Add manufacturers "Nepronic, Nortec, Armstrong".
 - .2 Reference MUA Schedule:
 - .1 Reference "Manuf." Column:
Add manufacturers "Nepronic, Thermolec".
 - .3 Reference Fan Coil Schedule:
 - .1 Add Note: "Acceptable Materials: York (JCI), US Coil and Air".
- .20 Reference Drawing M304 - Ventilation Details and Schedules:
- .1 Reference Air Handling Unit Schedule:
 - .1 Reference "Manuf." Column:
Add manufacturer "Air Wise".
 - .2 Reference "Comments" Column:
 - .1 Add Note: "Alternate methods of frost control and shoulder season temperature control such as bypass option will be accepted as an alternate to Tilt Control".
 - .2 Reference Louver Schedule:
 - .1 Remove Mark L-3 from Scope of Work.
- .21 Reference Drawing E101 - Electrical Site Plan & Trench Details and Drawing E601 - Power Single Line Diagram & Demand Calculation:
- .1 Provide all material and labour associated with the disconnection, removal, and subsequent replacement of the existing Eaton PRL-3a Series distribution panelboard 'MDP-A' that is located in the Main Electrical Building with a new Eaton PRL-4 Series, 600A MLO, 600V, 42 space, three phase, four wire, 14KAIC, distribution panelboard.
 - .1 The new Eaton PRL-4 Series panelboard is to be surface mounted on the north wall above the existing splitter trough on unistrut supports in the same location as the existing panelboard.
 - .2 Any and all modifications which are required to existing feeders and services are to be provided, including the relocation and reconnection of the adjacent external surge protection unit.
 - .3 All of the existing Eaton HFD Series circuit breakers which are currently located in existing panelboard are to be relocated to the new Eaton PRL-4 Series panelboard, and the new 600A/3P circuit breaker for the

- Phase 5b building is to be installed in the new Eaton PRL-4 Series panelboard as well.
- .4 Coordinate and schedule all associated work with TIE including the afterhours temporary shutdown of the Depots electrical service, and fire-watch if required.
 - .5 Turn over removed Eaton PRL-3a Series panelboard to TIE for future use.
- .22 Reference Drawing E101 - Electrical Site Plan & Trench Details:
- .1 Reference Detail 1/E101:
 - .1 Delete wording "Route cable multimode fiber from an existing media convertor located in the Main Electrical Room" and replace with "Route single mode fiber cables from an existing media convertor located in the Main Electrical Room."
 - .2 Two (2) pedestal mounted electrical vehicle charging stations to be supplied and installed by others. Wire two (2) electrical vehicle charging stations with 4#8, 1#10 bond in 78mm underground conduit to two (2) 40A/2P circuit breakers located in positions 51, 53 and 50,52 of panelboard 'A2' located in Storage 119.
 - .3 Trace out, locate, cut back and cap existing 35mm underground conduit routed from Main Electrical Building to existing panelboard 'A1' located in temporary trailer below. Disconnect and remove existing panelboard 'A1', wiring devices, luminaires and all associated wiring and conduits from the existing temporary trailer . TIE to advise Contractor on exact scope of demolition and removed electrical which is to be turned over to TIE for reuse.
 - .4 Trace out, cut back and cap below grade existing 53mm underground conduit routed from Main Electrical Building to existing wall mounted 24RU communication rack installed in existing temporary trailer. Disconnect and remove existing wall mounted 24RU communication rack from existing temporary trailer and associated communication cabling and outlets.
 - .5 Clarifications:
 - .1 Copper conductors are to be installed in PVC conduits from Main Electrical Building to switchboard in Electrical Room 151. ACM is not an acceptable alternate to copper conductors for this feeder.
 - .2 Reference Detail 2/E101:
 - .1 Reference Trench A:
 - .1 Delete wording "2 runs of 4#250 MCM, 1#4 bond in existing 78mmC" and replace with "2 runs of 4#350 MCM, 1#3 bond in existing 78mmC".
 - .2 Reference Trench B:
 - .1 Delete wording "2 runs of 4#250 MCM, 1#4 bond in existing 78mmC" and replace with "2 runs of 4#350 MCM, 1#3 bond in existing 78mmC".
 - .3 Reference Trench D:
 - .1 Delete in its entirety and replace with Trench D as indicated in attached sketch SK-04.
 - .4 Reference Trench F:
 - .1 Delete in its entirety and replace with Trench F as indicated in attached sketch SK-04.
 - .5 Reference Trench J:

- .1 Add wording "2#10, 1#12 bond in existing 78mmC for light standards" to power conduit.
- .6 Reference Trench K:
 - .1 Delete wording "78mmC for car charging station power" and replace with "2#8, 1#10 bond in 78mmC for car charging station power".
- .23 Reference Drawing E102 - Site Details and Enlargement Plans:
 - .1 Clarification:
 - .1 Reference Detail 3/E102 for additional information on light standards, bases and conduits. Concrete bases, anchor bolts and empty conduits have been installed in Phase 5a. Installation of light standards, poles and branch circuit wiring through the conduits are included in Phase 5b.
 - .2 Reference Detail 1/E102:
 - .1 Delete in its entirety and replace with attached sketch SK-05.
 - .2 Reference Trench I:
 - .1 Replace Trench I located between fuel pumping pedestal with new Trench M as indicated in attached sketches SK-04 and SK-05.
 - .3 Add new Trench N to fuel pumping pedestal and control pedestal as indicated in attached sketches SK-04 and SK-05.
 - .4 Install one (1) intercom outdoor stations mounted to control pedestal located at each side of gasoline/diesel tank and wire each intercom outdoor station with one (1) CAT6 cable to intercom PoE switch hub located in LAN Room 214 in existing 27mmC. Coordinate exact location and mounting of intercom outdoor stations on site with Owner prior to rough-in. Refer to attached sketch SK-05 for additional information on wiring of intercom outdoor stations.
 - .5 The area within and around the gasoline dispenser, fill pipe, and vent pipe is to be considered a Class 1 Zone 1 hazardous area in accordance with CSA 22.1-15 article 20-004. Electrical wiring method in Class 1 Zone 1 hazardous locations is to be threaded rigid metal conduit in accordance with CSA 22.1-15 article 18-102. Provide for EYS sealing of conduit entering/leaving Class 1 Zone 1 and Class 1 Zone 2 hazardous areas in accordance with CSA 22.1-15 articles 18-104 and 18-154. Underground conduit which is headed back to the building from Class 1 Zone 1 or Class 1 Zone 2 hazardous areas around the fuel station is to be appropriately sealed before entering the building.
- .24 Reference Drawing E201 - North Floor Plan - Power:
 - .1 Reference Shop Equipment Schedule:
 - .1 Reference Shop Equipment D11 and E8:
 - .1 Reference "Notes" Column: Add the following wording:
"Provide CSA 5-15R receptacle adjacent to waste oil collection tank and wire with 2#12, 1#14 bond in 21mmC to switched side of associated manual motor starter."
- .25 Reference Drawing E202 - South Floor Plan - Power:
 - .1 Reference Detail 1/E202:
 - .1 In Corridor 183, route 4c#500 MCM teck cable through accessible space and through ladder tray in Heavy Equipment Bays 209 to distribution panel 'DPC' and not 4c#3/0.

- .26 Reference Drawing E402 - South Floor Plan - Communication:
- .1 Reference Note 15:
 - .1 Delete wording "Route 100 pair backbone cable from BIX Block in LAN Room 160" and replace with "Route 50 pair backbone cable from BIX Block in LAN Room 160".
- .27 Reference Drawing E501 - North Floor Plan - Systems:
- .1 Reference Detail 1/E501:
 - .1 In LAN Room 214, mount intercom PoE switch hub to communication backboard located on north wall. Coordinate exact location of intercom PoE switch hub with ITSS prior to installation. Wire intercom PoE switch hub with CAT 6 cable to adjacent ITSS switch and then utilize a SMF pair from the 24 pair single mode fibre between LAN Room 214 and LAN Room 160 for the intercom network.
 - .2 Install one (1) exterior speaker horn located at the exterior façade of Machine Shop 210 above overhead door at 6000mm above finished grade in accordance with manufacturer's installation instructions. Seal around exterior penetrations with low VOC mastic compound. Coordinate exact location and mounting height with General Contractor on site prior to rough-in.
 - .3 Install one (1) exterior speaker horn located at the exterior façade of Heavy Equipment Bays 209 at intersection of Gridlines 5 and C at 6000mm above finished grade in accordance with manufacturer's installation instructions. Seal around exterior penetrations with low VOC mastic compound. Coordinate exact location and mounting height with General Contractor on site prior to rough-in.
 - .4 Install one (1) exterior speaker horn located at the exterior façade of Heavy Equipment Bays 209 at intersection of midpoint of Gridlines 6 and 7 and gridline C at 6000mm above finished grade in accordance with manufacturer's installation instructions. Seal around exterior penetrations with low VOC mastic compound. Coordinate exact location and mounting height with General Contractor on site prior to rough-in.
- .28 Reference Drawing E502 - South Floor Plan - Systems:
- .1 Reference Detail 1/E502:
 - .1 In Crew Training 149, remove one (1) speech reinforcement system recess mounted speaker. Center one (1) remaining recess mounted speaker in the room and wire to wireless tuner with one (1) Cat6 FT6 cable to wireless tuner in 16mmC routed through accessible ceiling space. Wiring of speech reinforcement system to be in accordance with Manufacturer's installation instruction.
 - .2 Install one (1) exterior speaker located at the exterior façade of Dispatch 146 at the midpoint of gridlines N and P at 6000mm above finished grade in accordance with manufacturer's installation instructions. Seal around exterior penetrations with low VOC mastic compound. Coordinate exact location and mounting height with General Contractor on site prior to rough-in.
 - .3 Exterior weatherproof camera mounted to exterior façade of Light Fleet 188 at 7000mm above finished grade to be identified as #24. Exterior weatherproof camera #24 to be wired with Cat 6 cabling to network video recorder with integral switch for PoE camera system rack mounted in floor mounted Data Rack #2 located in Lan Room 160. Seal around exterior penetration with low VOC mastic compound.

- .4 Reference Note 5: Delete wording "Doors are not required to close upon activation of the alarm."
 - .5 In LAN Room 160, mount intercom PoE switch hub to communications backboard, located on south wall. Connect intercom PoE switch hub to adjacent rack mounted ITSS switch with one CAT 6 cable. Coordinate exact location of intercom PoE switch hub with ITSS prior to installation.
 - .6 In Dispatch 146, wire one (1) desk mounted master station with one (1) CAT 6 cable through accessible ceiling space to intercom PoE switch hub mounted to communication backboard in LAN Room 160. Coordinate exact location of master station on site prior to rough-in.
- .29 Reference Drawing E601 - Power Single Line Diagram & Demand Calculation:
- .1 Delete wiring "4c#350MCM, 1#3 bond in 78mmC" between 300A/3P circuit breaker in switchboard 'SWB' and 400A, 600V, three phase, four wire distribution panel 'DPC' located in Electrical Room 215 and replace with "4c#500 teck cable".

END OF SECTION

1 General

1.1 RELATED SECTIONS

- .1 Section 26 05 00 - Common Work Results - Electrical.
- .2 Section 26 05 34 - Conduits, Conduit Fastenings and Conduit Fittings.
- .3 Section 27 05 28 - Pathways for Communications Systems

1.2 REFERENCES

- .1 Industry Canada - Terminal Attachment Program
 - .1 CS-03, Telecommunication Apparatus Compliance Specification, Issue 8.
- .2 Underwriter's Laboratories of Canada (ULC)
 - .1 CAN/ULC S576 Standard for Mass Notification System Equipment.

1.3 SYSTEM DESCRIPTION

- .1 Public address system to be completed with interior/exterior speakers, amplifier, mixer, desktop microphone and intercom system to be completed with outdoor stations, PoE switch and master stations. Provide all associated connections, adaptors, wiring and software required for a fully functional system as indicated on the drawings.

1.4 SHOP DRAWINGS

- .1 Shop Drawings:
 - .1 Submit shop drawings and product data for all public address and intercom system equipment and devices in accordance with Division 01 - General Requirements.
 - .1 All public address and intercom equipment and devices.
 - .2 Include:
 - .1 Riser diagram of complete public address and intercom system.
 - .2 Zoning.
 - .3 Block diagram.
 - .4 Public address and intercom system design criteria.
 - .3 Quality assurance submittals: submit following in accordance with Division 01 - General Requirements.
 - .1 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
 - .2 Instructions: submit manufacturer's installation instructions.
 - .3 Manufacturer's Field Reports: manufacturer's field reports specified.
 - .4 Closeout Submittals:
 - .1 Provide operation and maintenance data for public address and intercom system for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.
 - .2 Include:
 - .1 Operation instructions.
 - .2 Description of system operation.
 - .3 Description of each subsystem operation.
 - .4 List specifying each piece of equipment in system or subsystem by its original manufacturer name and model number.
 - .5 Part list specifying parts used in equipment by identification numbers that are standard to electronic industry

1.5 TRAINING

- .1 Provide training on the use and maintenance of the system after substantial completion of the project to the Client and associated building staff.

2 Products

2.1 PUBLIC ADDRESS SYSTEM

- .1 Equipment:
 - .1 Sound system to include amplifiers, speakers, master stations, mixer, microphone outlets, etc. as specified herein and indicated on the drawings.
- .2 Components:
 - .1 Continuous duty cycle.
 - .2 Modular system design.
 - .3 Solid state.
 - .4 Maximum operating temperature: 65 degrees C.
 - .5 Finish: standard.
 - .6 Grounding conductor for system components.
- .3 Interior Recess Mounted Speakers:
 - .1 Full range dual cone-type speaker to be suitable for recess mounting. Speaker baffle to be constructed of white steel plate. Rear enclosure to be constructed of sheet steel, black paint and speaker grill to be white painted steel.
 - .2 Speaker to be 203 mm diameter, and the rear enclosure no greater than 200 mm above the mounting plane. Provide all necessary mounting kits for the speakers to be mounted in T-Bar or gypsum ceiling assemblies as indicated on the drawings.
 - .3 Speaker to be rated for 5W on 25V and 70.7 V systems. Frequency response 50-16.5 kHz. Minimum sound pressure level 97 dB (1 W at 1 m).
 - .4 Built in 25/70.7 V matching transformer. The front baffle to have screw-driver tap setting of : 5 W, 2 W, 1 W, 0.5 W and 0.25 W taps for 70.7 V and 25 V systems. Speakers to be c/w built in overload protection.
 - .5 Install and wire interior recess mounted speakers to substation interface unit and power amplifier, in accordance with manufacturer's installation and wiring instructions.
 - .6 Acceptable material:
 - .1 TOA #PC-580RU, complete with #BB-580 backbox and #Q-HY-TB2 mounting channel.
- .4 Interior / Exterior Surface Mounted Speaker:
 - .1 Wide range horn speaker suitable for surface mounting and completed with 120 mm cone-type speaker.
 - .2 Speaker enclosure to be IP65 rated, 285 mm (w) x 227 mm (h) x 277 mm (d) and constructed with ABS resin and coated with polyurethane paint.
 - .3 Speaker to be rated for 30W and completed with built-in transformer with 30W, 15W and 7.5W bps at 70.7V line system and 30W, 15W, 3.7W, 1.9W and 7W taps at 25V line system.
 - .4 Sensitivity: 113 dB at 1M with 1W output.
 - .5 Frequency Response: 250 Hz - 10 kHz
 - .6 Speaker to be completed with aluminum, off-white powder coat finish, stainless steel mounting brackets, screws and bolts and polyvinyl chloride insulated speaker cable to provide a fully functional system.
 - .7 Horizontal and vertical dispersion at -6 dB below the on-axis reference at 2 kHz to be 55° (H) x 70° (V).
 - .8 Install and wire surface mounted horn speaker to amplifier in accordance with manufacturer's installation and wiring instructions.
 - .9 Acceptable material:
 - .1 TOA # SC-630T

- .5 Mixer:
 - .1 Provide one (1) digital processor with eight (8) mic / line inputs and eight (8) line outputs.
 - .2 Power requirements: 120 VAC, 60Hz.
 - .3 Power consumption: 150W
 - .4 Mixer to be completed with multiple input priority modes, to set priority order when multiple inputs with the same priority level and output assignments are broadcast..
 - .5 Input sensitivity to be available at 0.IV or IV for module input and direct input.
 - .6 Mixer to be completed with three (3) dual mic / line input with DSP module, one (1) dual line output with DSP module, one (1) ambient noise control module and one (2) ceiling mounted microphone used with the ambient noise control module as required for fully functional system.
 - .7 Ability to mix, combine, zone page application, automatic microphone mixing, EQ and delay.
 - .8 Mixing to be installed and connected in accordance with manufacturer's installation instructions. Provide all associated components and modules for a fully functional system.
 - .9 Acceptable material:
 - .1 TOA #A9060DHM2, complete with 2 x D-00IT, 1 x T-001T, 1 x AN-001T and 2 x AN-9001.
- .6 Amplifier:
 - .1 Provide one (1) four-channel amplifier complete with 500w per channel at 70V and 550 W per channel at 8 ohms.
 - .2 Output voltage per channel: 70 V.
 - .3 Output current per channel: 7.1 A (1kHz, 9.8 ohm).
 - .4 Power output: 500 W (70 V line) x four (4) channels (9.8 ohm).
 - .5 High pass filter -6dB/OCT, cut off frequency at 50Hz.
 - .6 Two (2) control inputs, four (4) speaker outputs, removable 3-pin terminal blocks.
 - .7 Power ON/OFF status of the individual channel, drive voltage 9 V(min) and 14 V (max), protection status of the individual channels, for operation status, two (2) RJ-45 connectors and one (1) Cat 6 cable for LAN connection.
 - .8 Finish: Black aluminum finish.
 - .9 Acceptable material:
 - .1 TOA # DA-500F-HLCU.
- .7 Desktop Microphone:
 - .1 Power source: 24 Vdc from AC adaptor.
 - .2 Dynamic microphone with an integral stand and base suitable for desk mounting.
 - .3 Microphone to be capable of selecting desired speaker zones in a public address.
 - .4 Microphone to be completed with 12 dry contact control signals giving the microphone the ability to select up to twelve (12) speaker zones for paging.
 - .5 Messages to be broadcasted to all zones using the ALL-CALL button or to individual zones using the zone selector button. A clear button is also designed to clear all selections at one touch.
 - .6 LED indicator beside each button shows the status of each zone.
 - .7 Microphone to be wired to Mixer in accordance with manufacturer's installation instructions
 - .8 Microphone to be constructed of high impact ABS resin and a black finish..
 - .9 Provide adaptors, cabling, mounting brackets and other materials for a fully operational system. All wiring to be provided and installed in accordance with

the manufacturer's wiring instructions.

- .10 Acceptable material:
 - .1 TOA #Q-RM9012, complete with #AD-246 adaptor.

2.2 INTERCOM SYSTEM (OUTDOOR FUEL STATION)

- .1 Audio Outdoor Station:
 - .1 Two way outdoor station to be complete with 50mm cone-type speaker with a maximum output of 1W at 8 ohms, one (1) call button to make a call and LED indicator. Incoming calls from indoor device will be answered automatically.
 - .2 Power consumption: maximum 12W.
 - .3 Operating temperature: -20 degrees to 50 degrees.
 - .4 Two channel control inputs and two channel control outputs.
 - .5 Complete with built-in echo canceller to ensure full duplex conversation.
 - .6 Two (2) RJ-45 connectors for connection back to PoE switch hub rack mounted in Data Rack #2 in LAN room for a fully functional system.
 - .7 Enclosure to be IP65 rated to prevent entry of water and debris.
 - .8 Outdoor station to be complete with surface mounted back box equipped with a heating element for installation in cold environment and a tamper switch wired to one of the two control inputs on the outdoor station. Surface mounted back-box to be 24VAC with a 10W maximum consumption.
 - .9 Finish: stainless steel.
 - .10 Acceptable material:
 - .1 TOA #N-SP80AS1 complete with surface mounted back-box #YC-831HSW.
- .2 Master Station:
 - .1 Master station to be power through a PoE switch, 12W power consumption.
 - .2 Supports two (2) way communication.
 - .3 Provides hands-free conversation through 50mm cone-type, 8 ohm speaker with 2W maximum output or handset conversation through 360mm cone-type, 32 ohm speaker with 30 mW maximum output.
 - .4 Equipped with a 7" touch panel screen, 800 x 480 pixels, 16:9 wide screen.
 - .5 Usable as a telephone with a ten-key pad.
 - .6 Complete with built-in camera with a maximum resolution of 1080p.
 - .7 Network protocol: UDP/TCP/IP, RTP/RTCP, ARP/RARP, NAT, NTP, IGMP, SIP.
 - .8 To be constructed with ABS resin and black finish.
 - .9 Provide all connection, wiring and software required for a fully operational system. All wiring to be provided and installed in accordance with the manufacturer's wiring instructions.
 - .10 Acceptable material:
 - .1 TOA #N-SP80MSI.
- .3 PoE Switch Hub:
 - .1 5-port, IEEE 802.3Z compliant wall mounted PoE switch compatible with intercom system as indicated. Maximum power consumption to be 1.8W, auto-negotiation for automatic connection at the highest common speed between switch and an end device, non-blocking switching, LED indicator lights.
 - .2 Acceptable material:
 - .1 Netgear #FS305.

3 Execution

3.1 INSTALLATION

- .1 Install all back boxes, conduit, wiring, etc. in accordance with manufacturers instructions

for a complete system.

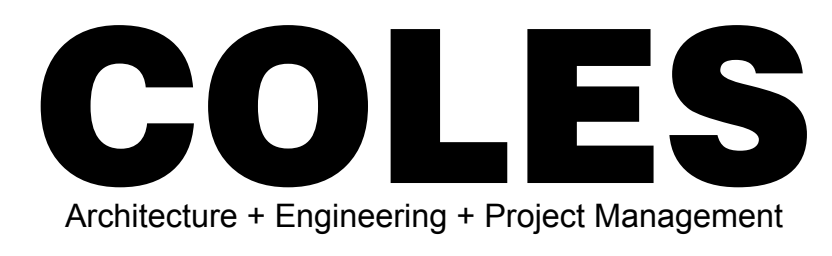
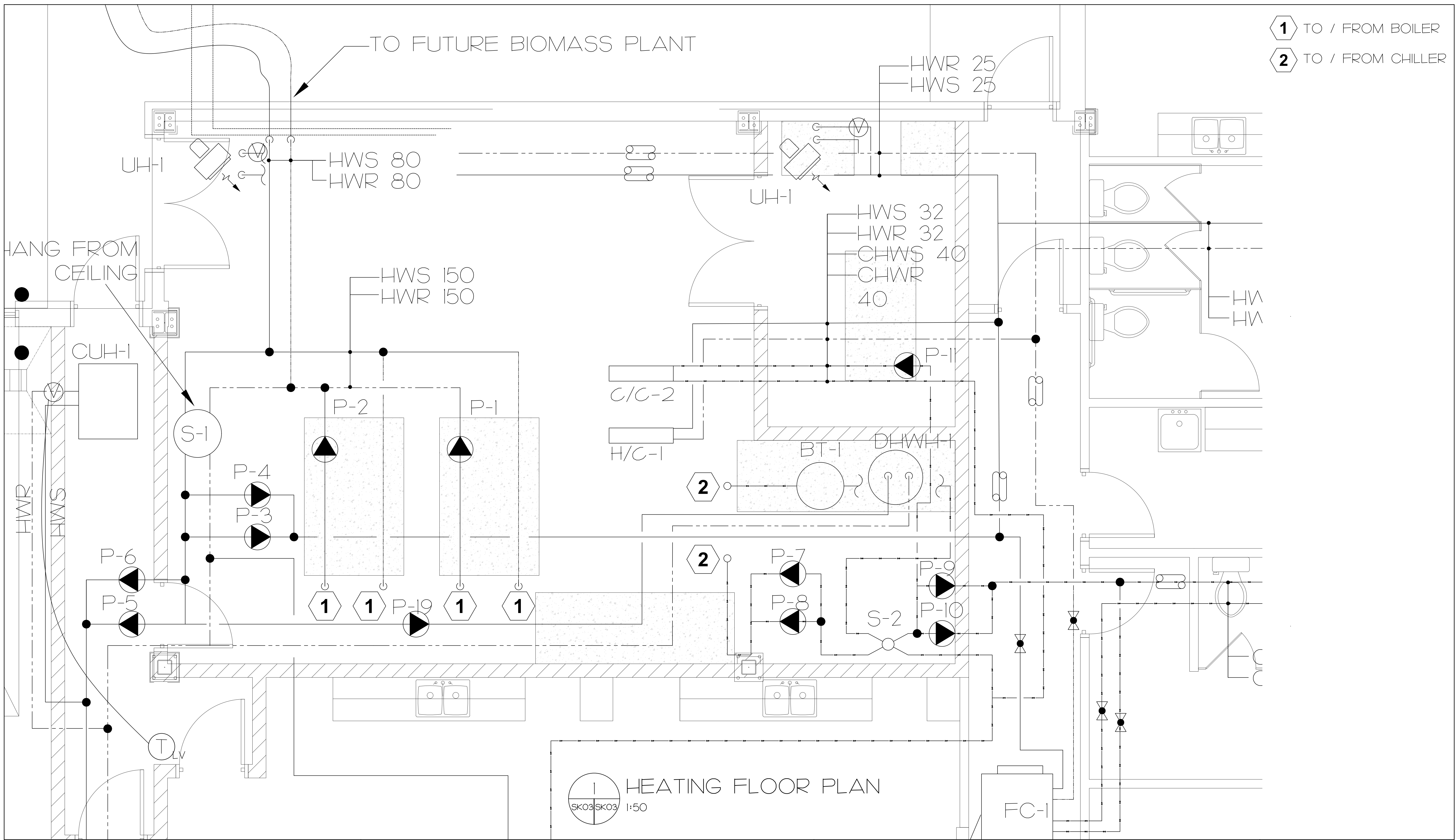
- .2 The manufacturer's representative is responsible for the installation of all equipment specified herein, including those components required for a fully functional system. The testing shall comprise an examination of such equipment for the following.
- .3 Ensure the type of equipment installed is that specified herein.
- .4 Wiring connections to all equipment components to be in accordance with CAN/ULC-S576.
- .5 Ensure all new equipment has been installed in accordance with the manufacturer's installation instructions, and that all existing and new components have been operated or tested to verify their operation.
- .6

3.2 FIELD QUALITY CONTROL

- .1 Manufacturer to review work involved in the handling, installation, protection and cleaning of it products, and submit written reports, in acceptable format, to verify compliance of work with Contract.
- .2 Provide for manufacturer's certified technician to visit, program, commission and verify that the public address system is installed as indicated and operates as intended and that there are no problems.
- .3 Provide Client and building staff with adequate training in the use of the equipment.

END OF SECTION

1 TO / FROM BOILER
 2 TO / FROM CHILLER



Suite 201, 85 Fitzroy Street
 Charlottetown, PEI, Canada, C1A 1R6
 Phone (902) 368-2300
 www.colesassociates.com

Client
**PEI Department of Transportation
 Infrastructure and Energy**

Project Title
**Queens County Depot
 Phase 5b**

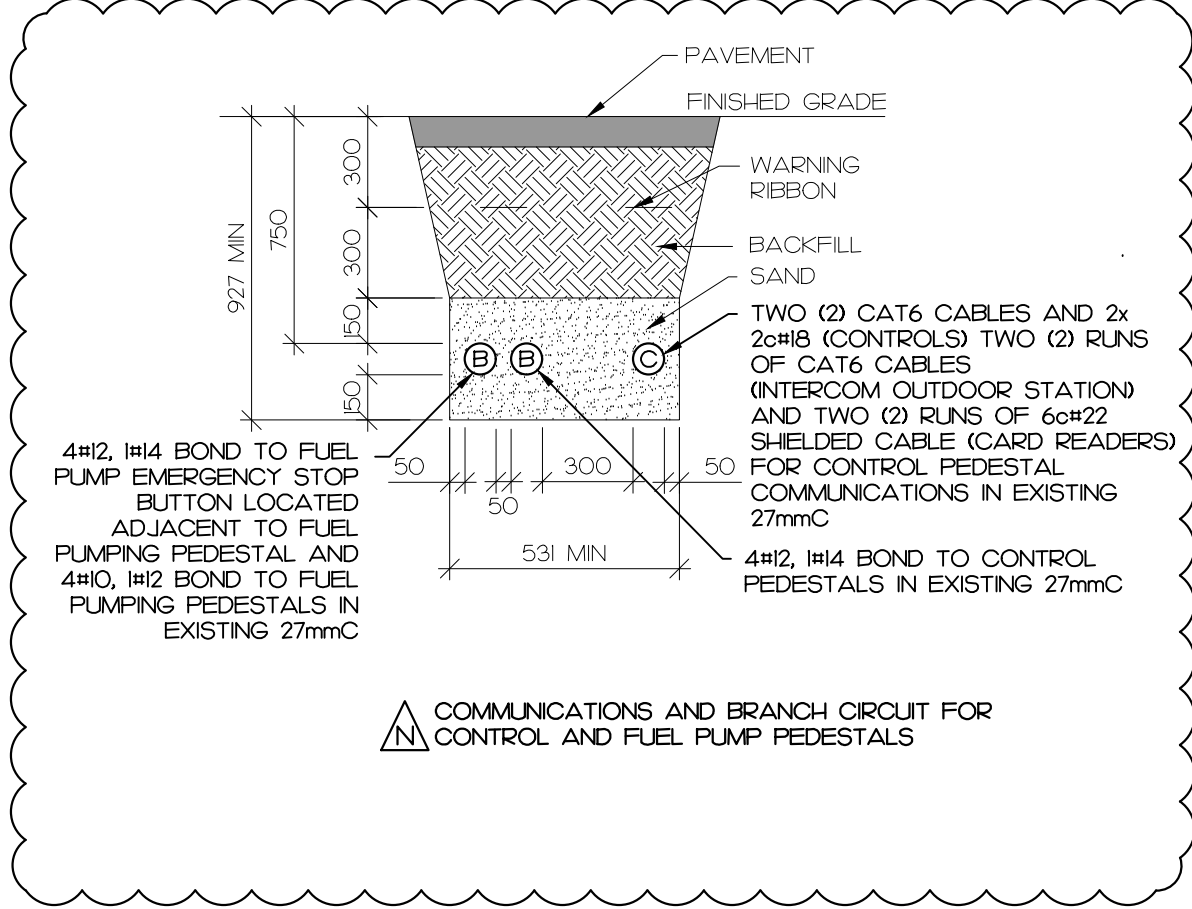
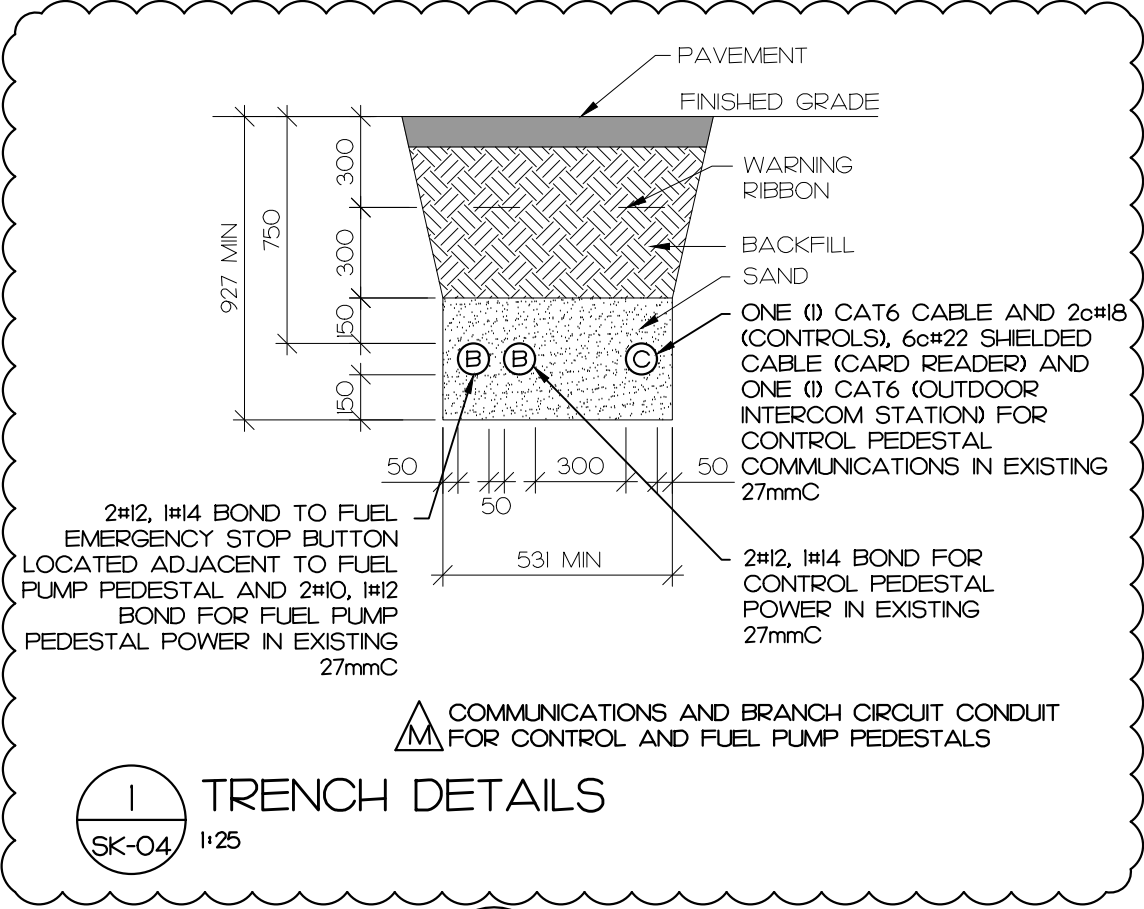
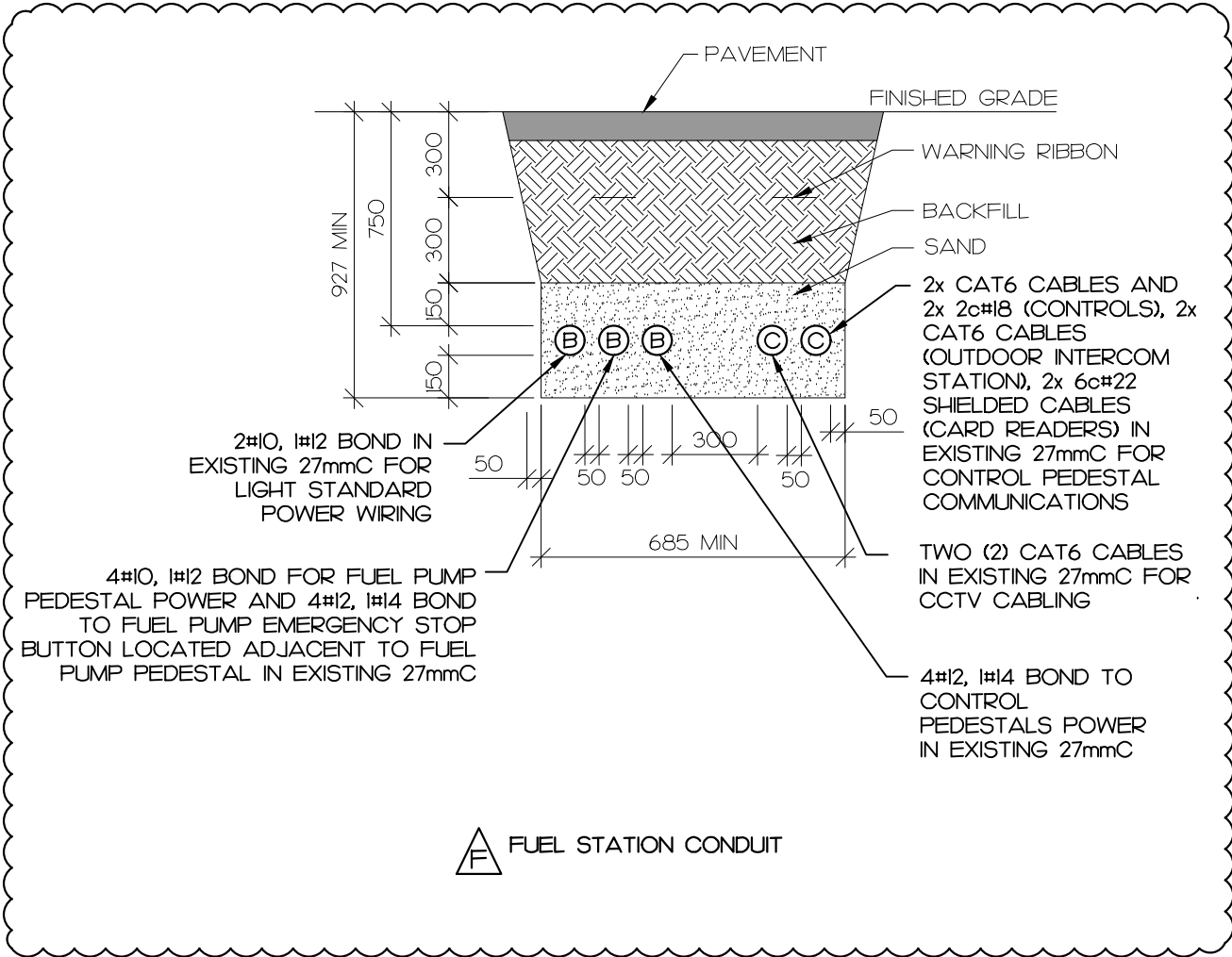
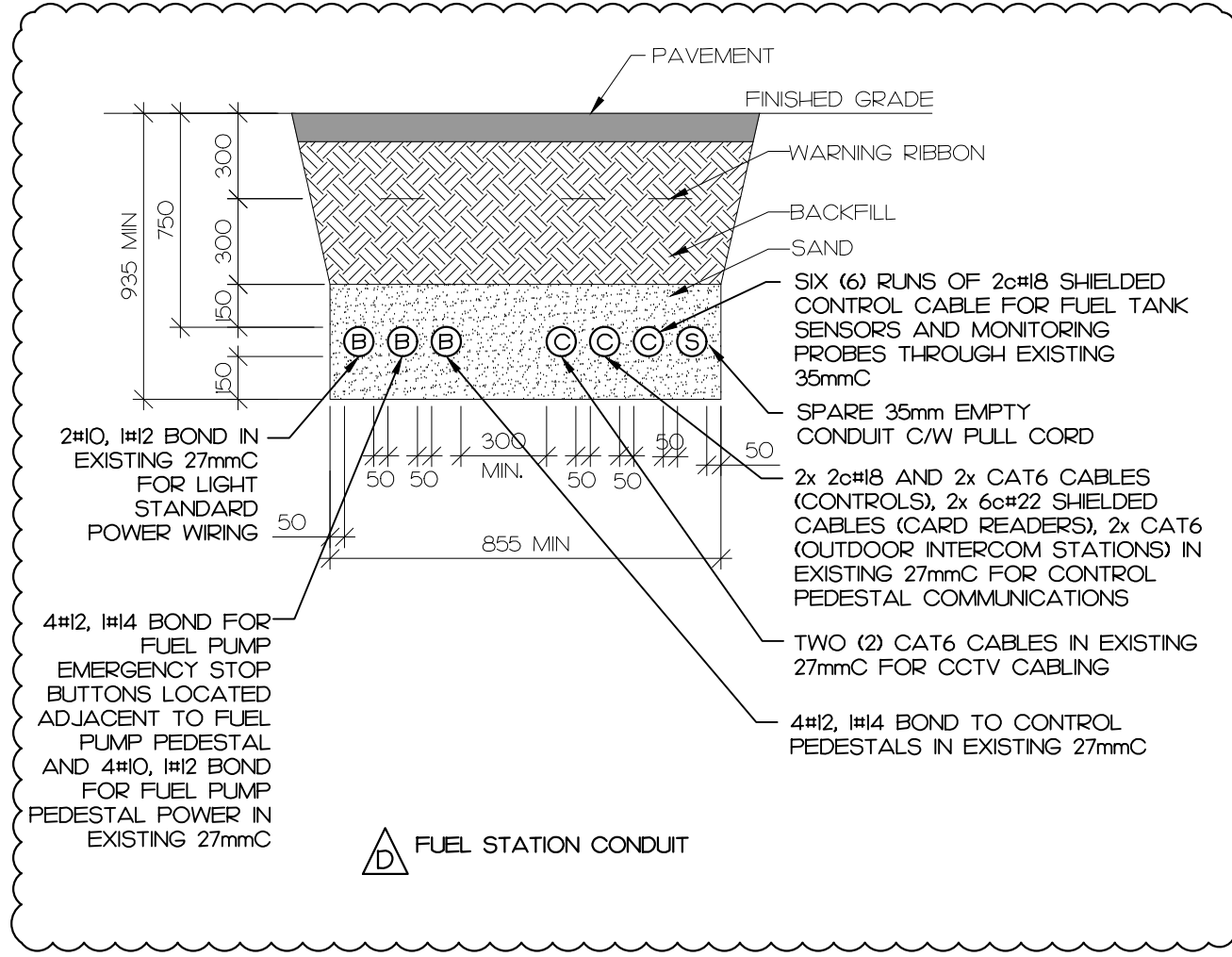
Sheet Title
**Heating Floor Plan
 Updated Boiler Piping Schematic**

Date: **January 24, 2019**

Drn By: **C.L.S.** Chk By: **S.W.W., PEng**

Project Number:
171048

Drawing Number:
SK-03



1 SK-04 1:25 TRENCH DETAILS



CLIENT: PEI Department of Transportation and Energy TIE Project No 16107
 PROJECT TITLE: Revisions to Queens County Depot Phase 5b Trench Details
 SHEET TITLE: Revisions to Trench Details
 DATE: Jan 28, 2019
 DRAWN BY: M.E.M., C.E.T.
 PROJECT NUMBER: 171048
 DRAWING NUMBER: SK-04

Charlottetown, P.E.I., Canada, C1A 7L3 Phone (902) 368-2300 Fax (902) 566-3768 www.colesassociates.com

ELECTRICAL WORK AROUND OUTDOOR DIESEL AND GASOLINE TANK TO BE COMPLETED IN ACCORDANCE WITH CSA 22.1-5 SECTION 18 FOR CLASS 1, DIVISION 2 HAZARDOUS LOCATION.

H3 #10
Cl-8a
H3
WP

CAMERA TO BE MOUNTED TO LIGHT STANDARD AT APPROXIMATELY 6M ABOVE FINISH GRADE WITH POLE BRACKET AND STAINLESS STEEL FASTENERS. ROUTE CAT 6 CABLE THROUGH INTERIOR OF POLE TO EXTERIOR CAMERA. SEAL AROUND CABLING TO PROHIBIT WATER FROM ENTERING INTERIOR OF POLE, COORDINATE EXACT LOCATION OF CAMERA ON SITE PRIOR TO DRILLING HOLE IN POLE (TYPICAL).

ROUTE INTERCOM WIRING THROUGH INTERIOR OF CONTROL PEDESTAL AND CONNECT TO INTERCOM LOCATED ON EXTERIOR FACADE OF CONTROL PEDESTAL ENCLOSURE. COORDINATE EXACT LOCATION OF INTERCOM ON SITE WITH FUEL SYSTEM INSTALLER PRIOR TO ROUGH-IN, (TYPICAL).

STUB CONDUIT UP 600mm ABOVE FINISHED GRADE AND CAP FOR SEPARATE FUEL PUMP PEDESTAL AND CONTROL PEDESTAL WIRING. COORDINATE EXACT STUB UP LOCATION WITH GENERAL CONTRACTOR ON SITE.

STUB CONDUIT UP 600mm ABOVE FINISHED GRADE AND CAP FOR FUEL TANK SYSTEM WIRING. COORDINATE EXACT STUB UP LOCATION WITH GENERAL CONTRACTOR ON SITE.

CONCRETE POLLARDS BY OTHERS

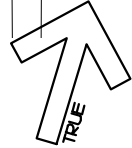
ROUTE PROXIMITY CARD READER WIRING THROUGH INTERIOR OF CONTROL PANEL PEDESTAL AND CONNECT TO PROXIMITY CARD READER LOCATED ON EXTERIOR FACADE OF CONTROL PEDESTAL ENCLOSURE. COORDINATE EXACT LOCATION OF PROXIMITY CARD READER ON SITE WITH FUEL SYSTEM INSTALLER PRIOR TO ROUGH-IN, (TYPICAL)

Cl-8a
H3
#9
Cl-8a
WP

STUB CONDUIT UP 600mm ABOVE FINISHED GRADE AND CAP FOR SEPARATE FUEL PUMP PEDESTAL AND CONTROL PEDESTAL WIRING. COORDINATE EXACT STUB UP LOCATION WITH GENERAL CONTRACTOR ON SITE.

INSTALLATION OF CONCRETE LIGHT STANDARD BASES AT THE CONCRETE FUEL STATION PAD TO BE COMPLETED BY CIVIL CONTRACTOR. COORDINATE EXACT LOCATION ON SITE PRIOR TO STUB UP (TYPICAL).

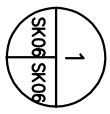
FUEL STATION WIRING SCHEDULE	
ITEM	DESCRIPTION
①	4#12, 1#14 BOND FROM SUB ELECTRICAL ROOM TO CONTROL PEDESTALS.
②	TWO (2) CAT 6 CABLES, TWO (2) RUNS OF 2c#18 SHIELDED CABLE TO CONTROL PEDESTALS
③	TWO (2) RUNS OF CAT6 CABLE FOR INTERCOM OUTDOOR STATION AT CONTROL PEDESTALS
④	SIX (6) RUNS OF 2c#18 SHIELDED CABLES, ALARM PANEL TO TANK SENSORS.
⑤	2#12, 1#14 BOND TO FUEL PUMP EMERGENCY STOP BUTTON LOCATED ADJACENT TO FUEL PUMP PEDESTAL
⑥	2#10, 1#12 BOND TO FUEL PUMP PEDESTAL POWER
⑦	2#10, 1#12 BOND FOR LIGHT POLES AND TWO (2) CAT 6 CABLES FOR CAMERAS.
⑧	2#12, 1#14 BOND FOR CONTROL PEDESTAL POWER.
⑨	ONE (1) CAT 6 CABLE, 2c#18 SHIELDED CABLE TO CONTROL PEDESTAL
⑩	6c#22 SHIELDED CABLE FOR PROXIMITY CARD READER
⑪	TWO (2) RUNS OF 6c#22 SHIELDED CABLE FOR PROXIMITY CARD READERS
⑫	4#12, 1#14 TO FUEL PUMP EMERGENCY STOP BUTTON LOCATED ADJACENT TO FUEL PUMPING PEDESTALS
⑬	2#10, 1#12 BOND FOR LIGHT POLES AND ONE (1) CAT6 CABLE FOR CAMERAS
⑭	CAT6 CABLING FOR INTERCOM OUTDOOR STATION AT CONTROL PEDESTAL
⑮	4#10, 1#12 BOND FOR FUEL PUMP PEDESTAL



1 ENLARGEMENT PLAN: FUEL STATION
SK-05 1:100

www.colesassociates.com
 REVISIONS: Phone (902) 368-2300 Fax (902) 566-3768
 SHEET TITLE: Revisions to Fuel Station
 PROJECT TITLE: Queens County Depot Phase 5b Building & Final Site Work
 CLIENT: PEI Department of Transportation and Energy TIE Project No 16107
 DATE: Jan 28, 2019
 DRAWN BY: M.E.M., C.E.T.
 PROJECT NUMBER: 171048
 DRAWING NUMBER: SK-05





WEATHERHOOD DETAIL
NTS

