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ADDENDUM #2

PROJECT: Three Oaks Senior High School Renovations
TIE Project No 620-15005

DATE: December 23, 2016

This addendum forms part of the Contract Documents and is to be read, interpreted and coordinated with all other parts. The following items and prices shall be added to the tendered price for this project.

1. Owner Salvaged Items: The following equipment shall be turned over to the Owner and should not be considered salvage:

Main Boiler Room 145

.1 1200 Amp Main breaker panel with breakers, Federal Pioneer
.2 1000 amp breaker panel next to main panel with breakers, Federal Pioneer
.3 600 Amp Generator transfer switch
.4 Generator Emergency Breaker panel
.5 Twin compressor tank, pumps, motors, control air, blue in color
.6 Fulton Steam boiler and all associated devices
.7 Premier 40K Water Softener
.8 3 ea. heat transfer coils, 2 ea. in domestic hot water tanks, 1 spare on floor
.9 2 ea. 4"" circulator pumps, motors and isolation valves, (e-block)
.10 Single air compressor, tank, pump and motor, control air
.11 Air Damper Actuator motor, AHU # 8
.12 Circulator pump, Board Office AHU
.13 3-way valve, iso valves and fittings, Board Office AHU
.14 Air Damper Actuator motor, Board Office AHU
.15 Air Dryer, Control air, Devilbiss
.16 2 ea. Circulator pumps and motors, AHU # 8

Mechanical Penthouse MP1

.1 Heating Coil, spare, AHU # 4
.2 Electric Motor, 25 hp, spare, AHU # 4
.3 Refrigeration compressor, wall mounted near roof ladder
.4 Refrigeration compressor, floor mounted

.5 Electric Motor, 3 Hp, kitchen exhaust fan"
.6 All Dri Steem components, taps, valves, fittings, AHU # 5

Mechanical Room 422 (Existing Mechanical Room 105)
.1 AHU Circulating pump and motor
.2 15 Hp motor, AHU
.3 Freeze stat components, AHU
.4 Breaker Panel PP4 with breakers, Federal Pioneer
.5 50 KVA transformer, General Electric

Mechanical Room 207 (Existing Mechanical Room 305)
.1 5 Hp motor, Leeson, AHU #9
.2 30 KVA transformer, Square D

Mechanical Room 579 (Existing Mechanical Room 605)
.1 Boiler expansion tank, support structure, controls and attached hardware

Mechanical Penthouse MP2
.1 Dri Steem components; can, traps, 3-way and iso valves AHU # 10
.2 Circulator pump and motor, AHU # 10
.3 Circulator pump Glycol Loop, AHU # 10
.4 10 Hp motor, Leroy-Somer, Spare on floor

General
.1 25 each electric temperature sensors
.2 25 each pneumatic thermostats
.3 10 each electro-pneumatic transducers
.4 25 each pneumatic zone valves

2. Refer to Specifications Volume 2 of 2, Scope of Work TP#4 – Interior Fit-Up
Modify the Scope of Work for TP #4 – Interior Fit-up as follows:

.1 Add the following to 3.1.65:
xiii. Washroom partitions
xiv. Washroom accessories
xv. Bleachers
xvi. Theater seating
xvii. Finish Carpentry
xviii. Signage
xix. Metal lockers
xx. Overhead coiling doors
xxi. Overhead doors
xxii. The above list is not intended to name all of the work included in this Trade Contract.

.2 Revise 3.5.1 as follows:

"3.5.1 All aluminum framed curtain wall, glazing and entry systems shall be supplied and installed by TP #6 – Aluminum Framed Windows and Entry Systems and are **NIC**. The A/V membrane at the inside perimeter of the glazed openings will be supplied and installed by TP #6 and is NIC. TP #4 - Interior Fit-up shall prepare all window openings c/w all specified cutting, lintels, blocking, etc. Terminate the exterior wall membranes to the outer edge of new and existing window openings."

.3 Add the following:

3.5.7 TP #4 – Interior Fit-up shall demolish and remove the existing large skylight located over Area 2A2, and shall provide and maintain temporary weather protection over the opening until the new skylight is installed.

3.5.8 TP #4 – Interior fit-up shall supply and install all structural steel, rough carpentry, etc at the proposed skylight replacement. TP #4's work at the skylight shall include all work excluding only the roof membrane, the aluminum frame & glazing and the weather sealing between the window units and the finished membrane.

3.9.5 TP #4 – Interior fit-up shall perform the sanding and refinishing the stage floor and the gym floor as specified in the Bid Documents.

3.11.4 TP #4 – Interior fit-up shall perform all cutting, excavation, backfill and patching of the floor in the kitchen areas as required to accommodate the work of TP #16.

3. Refer to Specifications Volume 2 of 2, Scope of Work TP#11 – Plumbing and Heating
Modify the Scope of Work for TP #11 – Plumbing and Heating as follows:

.1 Add the following to 3.1.65:

vii. Pipe Insulation

viii. The above list is not intended to name all of the work included in this Trade Contract.

.2 Revise 3.11.3 as follows:

3.11.3 TP #11 - Plumbing & Heating shall supply, install and connect all sanitary drains, hot and cold water, etc from the building services to the connection points on food service equipment. Coordinate with TP #16 – Kitchen Equipment. Refer to Specification Section 11 40 10 for a more detailed description of the division of work between TP #11 & TP #16.

4. Refer to Specifications Volume 2 of 2, Scope of Work TP#12 – Ventilation and Automatic Controls
Modify the Scope of Work for TP #12 – Ventilation and Automatic Controls as follows:

.1 3 8 TP #10, TP #11, TP #12 & TP #13 - Mechanical & Electrical Trade Packages.

5. Refer to Specifications Volume 2 of 2, Scope of Work TP#13 – Electrical
Modify the Scope of Work for TP #13 – Electrical as follows:

.1 Revise the Following:

3.2.17 Temporary power shall be provided by TP #13 – Electrical in each construction zone. Power can be provided via existing school circuits. TP #13 – Electrical shall provide a construction panel in a central location within areas that are under construction but do not have access to the existing schools power system. No temporary panel shall service an area greater than 1,300 sq.m. Each Temporary panel shall consist of a portable 100Amp, 120/208 volt single phase 42 circuit panelboard complete with breakers and a 100A-2P main breaker. Each panel shall be mounted to plywood backboard stand with minimum of eight split bus 20A duplex receptacles as well as one 50A, 240 volt outlet. See attached sketch. Power utility charges will be paid for by the Owner. Refer to attached ESK-1.

3.2.18 TP #13 - Electrical shall also supply and install temporary construction lighting throughout the work area based on providing construction light levels in compliance with Part 6 of the provincial "Occupational Health and Safety Act", updated in February, 2013. Temporary lights are to be supported from the exposed structure and are to be provided with pigtails to

allow for relocation as the work proceeds. Temporary light shall be provided in all addition areas and in existing areas where lighting is removed. The type of lighting is solely at the discretion of TP #13, but must meet OH&S requirements. TP #13 shall adjust and relocate the lighting as required; and shall allow for repair and maintenance throughout the project.

3.8 TP #10, TP #11, TP #12 & TP #13 - Mechanical & Electrical Trade Packages

3.8.1 The Plumbing & Heating Systems are being constructed by TP #11 – Plumbing and Heating and are **NIC**. ~~TP #13 - Electrical shall supply (only) all in-line control devices to TP #11 – Plumbing and Heating for installation with their systems. TP #13 - Electrical shall provide all wiring and commissioning of controls systems incorporated in the work of TP #11.~~

3.8.3 TP #13 - Electrical shall supply and install all appliances and wiring related to the fire alarm and security system; and shall supply (only) to TP #12 – Ventilation and Automatic Controls all sensors and detectors that are to be placed in the in ductwork and air handling units. TP #13 - Electrical shall provide all wiring and commissioning of the fire alarm system components incorporated in the work of TP #12.

3.8.6 The controls and EMCS systems and all system wiring are being supplied and installed by TP #12 - Ventilation and Automatic Controls and are **NIC**. Refer to the specification for more detail on the division of work between TP #13 and TP #12.

3.11.3 TP #13 - Electrical shall supply, install and connect all specified power and data to connection points on food service equipment. Coordinate with TP #16 - Food Services Equipment. Refer to Specification Section 11 40 10 for a more detailed description of the division of work between TP #13 & TP #16.

6. Refer to Spec Section 00 21 13, Instructions to Bidders

.1 Bidders shall note that a Construction Schedule is not required as part of the Bid Submission.

7. Refer to Spec Section 00 21 30, Supplementary Bid Information Form

.1 Bidders shall replace the Supplementary Bid Information Form in the Specifications with the one attached.

8. Refer to Spec Section 06 40 00, Architectural Woodwork

.1 Refer to the attached ASK-2 for details of Scope of Work Item #10 (Adjustable wall-mount shelving unit) in Janitor Rooms 112, 208, 288, 320, 421, 580 and 610 (see attached ASK-2).

9. Refer to Spec Section 08 71 00, Door Hardware

.1 Bidders are advised that this Section will be replaced in the next Addendum.

10. Refer to Drawing SP1 and SP2, Site Plans

.1 Bidders are advised that SP1 and SP2 will be re-issued in the next Addendum.

11. Refer to Drawing A9, Level 1A Floor Plan

.1 Change Scope of Work #46 in Janitor Room 208 to be #10 (see attached ASK-2).

.2 Change note to read "See Sheet A22 for Details" for Janitor Room 112.

12. Refer to Drawing A11, Level 1C Floor Plan

.1 Change Scope of Work #46 in Janitor Room 288 to be #10 (see attached ASK-2).

.2 Change Scope of Work #46 in Janitor Room 421 to be #10 (see attached ASK-2).

13. Refer to Drawing A14, Level 2C Floor Plan

.1 Delete Scope of Work Item #46 in Janitor 610.

14. Refer to Drawing A22, Washrooms 1

.1 Add Scope of Work Item #10 (Adjustable wall-mount shelving unit) in Janitor Room 112 (see attached ASK-2).

15. Refer to Specification Section 21 05 01

.1 Par. 1.31.1 Change:
This clause shall read, "Clean ductwork in accordance with NADCA ACR Standard".

16. Refer to Specification Section 22 05 00

.1 Par. 2.01.1 Clarification:
All below grade sanitary pipe in Boiler Room 145 shall be cast iron.

.2 Par. 2.01.3 Change:
Delete this clause in its entirety and replace with the following:

Storm Drainage Piping

.1	Pipe: -	Cast iron conforming to CSA-B70-M.
.2	Fittings: -	Same as pipe.
.3	Joints: -	Mechanical joint.

.3 Par. 2.06.3 Change:
Delete requirement for modulating type burner. Burner shall be on/off type, all other aspects of specification still apply.

.4 Par. 2.10.6 Addition:
Add the following clause:
"Propane Flow Meters (three required) – DHW-1 supply branch line (DHW-1 flow) and Hot Water Boilers B-1 and B-2 supply branch lines (B-1 flow & B-2 flow).
Provide propane meters designed and approved for use with Propane gas in sub-metering applications. Meters to be installed in propane supply lines in Boiler Room 145. Meters shall be capable of accurately reading gas flow from minimum flow expected to maximum flow expected (equipment operating at full flow). Accuracy to be +/-1%. Meters to be equipped with totalizer display and pulsed output for remotely recording consumption in the EMCS.

.5 Par. 2.11.1 Change:
Double ball valve turrets to be provided in lieu of single type, Chicago Model 982-WS909CAGCP.

.6 Par. 2.12.1.2.1 Clarification:
Moen will be only acceptable manufacturer for Shower trim.

.7 Sch. A – Fixture P-14 Trim Change:
Moen model L2352 Chateau Posi-Temp pressure balancing mixing valve with lever handle, integral volume control, screw stop to limit handle turn. Provide c/w Moen

Commercial model 52236GBM25 wall/hand shower with integral double check valves with flexible metal hose, wall connection and flange, 900mm slide bar for hand shower mounting.

.8 Sch. A – Fixture P-15 Trim Change:
Moen model L2352 Chateau Posi-Temp pressure-balancing mixing valve with integral volume control and adjustable stop screw to limit handle turn c/w shower head with arm and flange.

17. Refer to Specification Section 23 05 00

.1 Par. 2.29.3 Clarification:
HP-3 and HP-4 shall also be provided c/w single point power and factory installed weatherproof disconnect switch.

.2 Par. 2.35.1.2 Clarification:
This clause shall read, "Little Giant model EC-1K condensate pumps c/w line set covers".

.3 Par. 2.36.5.1.3.2 Change:
Delete requirement for antimicrobial coating, interior finish to be unpainted G-90 galvanized steel.

18. Refer to Specification Section 23 07 13

.1 Par. 2.01.1.2.7 Clarification:
In addition to new piping installed under this contract, all existing exposed steam and condensate piping intended to be reused (ie. Mechanical and Boiler Rooms) are to be provided c/w aluminum jacketing and identified as specified. All other existing piping (ie. Domestic water, hydronic heating water) intended to be reused are to be provided c/w self-sealing PVC jacketing and identified as specified. The intent is to give a uniform appearance of cohesive piping systems that have not been tied into or modified.

19. Refer to Specification Section 23 05 05

.1 Par. 2.14 Change:
Change burner to Weishaupt model WM-G 10/4-A/ZM.

.2 Par. 2.22 Change:
Change electrics on pumps C-5, C-6, C-7, C-8, C-9, C-10, and C-11 to 575V 3Ph.

20. Refer to Specification Section 25 05 01

.1 Par. 3.02.19 Addition:
Add the following clause:

.19 Energy Efficiency Calculations and Monitoring

.1 In addition to the monitoring and control functionality described elsewhere in this section the EMCS shall record, calculate, report and trend log energy consumption and efficiency data of major equipment as identified in this section. Results shall be available for retrieval and use by the Owner. All monitoring points and efficiency information shall be available graphically. Historical Trends shall be available to the user for a minimum of two (2) years.

.2 Schedule of Equipment Energy Monitoring Points:
Note: Values to be calculated/displayed/trended for individual pieces of equipment.

.1 Boilers:
- Inlet Temperature [C]
- Outlet Temperature [C]
- Fuel Consumption [L]
- Boiler Circulator Status [on/off]
- Load [kw] (Calculated)
- Efficiency [%] (Calculated)

.2 DHW System:
- Total DHW flow [L/Min]
- Recirc Temp [C]
- Cold Water Ent. Temp [C]
- Mixed Water Temp Entering DHW Heaters [C]
- DHW Supply Temp [C]
- DHW Consumption [L/Min] (Calculated)
- DHW Recirc. Flow [L/Min] (Calculated)
- Total DHW Load [kw] (Calculated)
- Recirc DHW Load [kw] (Calculated)

.3 Fans:
- Power Consumption [kwh]

.4 AHU's:
- Power Consumption [kwh]
- Return Air Temp [C]
- Supply Air Temp [C]

.5 Heating Pumps:
- Power Consumption [kwh]

.6 Propane Equipment:
- Boiler B-1 Propane Consumption [L]
- Boiler B-2 Propane Consumption [L]
- DHW-1 Propane Consumption [L]

.7 Humidifiers:
- Power Consumption [kwh]

.8 ERV Units:
- Effectiveness Sensible and Latent [%] (Calculated)

.9 Miscellaneous:
- Outdoor Air Temp [C]
- Outdoor Air Rel. Humidity [%RH]
- Wind Speed [m/s]
- Room Temps [C]

.3 Schedule of Equipment Efficiency Calculations:

.1 Nomenclature:

The following nomenclature is used for the calculation in this section:

T = Temperature (°C)
Cp = Specific heat (J/kg-°C)
p = density (kg/m³)
h = enthalpy (kJ/kg)
q = flow rate (m³/s)
P = pressure (kPa)
w = humidity ratio (kg_{water}/kg_{air})
^{superscript} = location or identifier
$_{subscript}$ = material or stream

.2 Boilers:

Each boiler can operate independently, both will have the same supply water setpoint. Efficiencies shall be reported and trended for each boiler independently.

$$Output^{Boiler} = (T^{Suppiy}{}_{water} - T^{Return}{}_{water}) \times q_{water} \times Cp_{water} \times p_{water}$$

$$Input^{Boiler} = q_{oil} \times P_{oil} \times 4.5E7 \text{ [J/kg]}$$

$$Efficiency^{Boiler} = output/input$$

Densities should be corrected to 15°C since cost data is provided at 15°C.

The automation system shall use the last known $Efficiency^{Boiler}$ while the boilers are not operating to calculate $Cost^{Boiler}$. Each boiler shall be trended for efficiency and cost separately while only one is operating.

.3 Domestic Water Heating:

$$Input^{DWH} = (T^{outlet} - T^{inlet}) \times q_{water} \times Cp_{water} \times p_{water}$$

$$Loss^{Recirc} = (T^{supply} - T^{return}) \times q_{recirc} \times Cp_{water} \times p_{water}$$

.4 Energy Recovery Cores:

Energy recovery cores are rated in effectiveness rather than efficiency.

$$Energy\ Recovered^{Core} = (T^{outlet}{}_{outdoorair} - T^{inlet}{}_{outdoorair}) \times q_{outdoorair} \times Cp_{outdoorair} \times p_{outdoorair}$$

$$Effectiveness^{Core}{}_{Sensible} = (T^{outlet}{}_{outdoorair} - T^{inlet}{}_{outdoorair}) / T^{outlet}{}_{outdoorair} - T^{inlet}{}_{exhaustair})$$

$$\text{Effectiveness}^{\text{Core}}{}_{\text{Latent}}=(w^{\text{outlet}}{}_{\text{outdoor}}-w^{\text{inlet}}{}_{\text{outdoorair}})/(w^{\text{outlet}}{}_{\text{outdoorair}}-w^{\text{inlet}}{}_{\text{exhaustair}})$$

$$\text{Core}^{\text{losses}}=(p^{\text{differential}}{}_{\text{total across oil}}) \times q_{air} \times p_{air} + \text{Power}^{\text{wheel}}$$

Note: Core $p^{\text{differential}}$ is measured manually at the magnahelic gauge and input into calculation. Display $p^{\text{differential}}$ on the display so the user can compare to field data.

21. Refer to Drawing M-4

.1 Level 2A Sanitary & Storm Plan Change:
- Provide new RD-1 roof drains at existing locations over Gym 119 (Qty. of 4) and tie into existing piping as required.
- Provide new RD-1 roof drains at existing locations over Gym Storage area (Qty. of 2) and tie into existing piping as required.

22. Refer to Drawing M-5

.1 Level 2B Sanitary & Storm Plan Change:
- Provide new RD-1 roof drains at existing locations over Stage 259 (Qty. of 3) and tie into existing piping as required.
- Provide new RD-1 roof drains at existing locations over Band Room area (Qty. of 4) and tie into existing piping as required.

23. Refer to Drawing M-15

.1 Level 1C Heating Plan Clarification – Culinary Arts Lab 323:
Revise heating piping and radiation arrangement in Culinary Arts Lab 323 per attached sketch MSK-03.

24. Refer to Drawing M-32

.1 Enlarged Boiler Room Clarification:
Existing clothes washing machine, clothes dryer, and service sink basin are to remain in current location on wall between stairs and new Electrical Room.

25. Refer to Drawing M-33

.1 Heating System Schematic Clarification:
Revise Biomass primary side piping and equipment arrangement per attached sketch MSK-02.

26. Reference Drawing M-37

.1 Return Fan Schedule Clarification:
All return fans (RF-1 to RF-5) shall be provided c/w factory installed weatherproof disconnect switch.

27. Acceptable Products

The following manufacturers are accepted as suppliers of the items listed. In each case it is the responsibility of the manufacturer to select specific products that meet the specifications in all significant respects. Products offered will be subject for review and

acceptance at the shop drawing stage. Contractors are to satisfy themselves that products offered meet the specifications and fit in the available space as no extra charge will be considered if they are later found to be unsuitable.

22 05 00	2.12.1.1	Water Closets, Urinals, Lavatories (China)	Kohler
22 05 00	2.16.3	Elevator Sump Pump	See Water Inc. - Oil Smart
22 05 00	2.03	Acid Neutralization	Zurn
22 05 00	2.06	DHW-1	A.O. Smith
22 05 00	2.07.1	Domestic Mixing Valve	Acorn, Leonard
22 05 00	2.12.1.1	Drinking Fountains	Acorn
22 05 00	2.12.1.2	Supplies, Traps, Waste	McGuire
22 05 00	Sch. A	P-24 Fixture	Acorn, Guardian
22 05 00	Sch. A	P-24 Mixing Valve	Acorn, Leonard
23 05 00	2.08.6	Fire Dampers	Alumavent, E.H. Price
23 05 00	2.09	Fire Stop Flaps	Air Management Inc.
23 05 00	2.14.2	Roof & Wall Exhausters	Twin City Fan, Soler & Palau
23 05 00	2.17.3	Louvers	E.H. Price
23 05 00	2.18.4	Gravity Intake Hoods	Twin City Fan, Soler & Palau
23 05 00	2.22.1	KEF-2 Exhaust Hood	Greenheck
23 05 00	2.22.2	KEF-2 Exhaust Fan	Loren Cook, Greenheck, Twin City Fan, Soler & Palau
22 05 00	2.24.6	Pre-Fab Chimneys	Cheminee Lining
23 05 00	2.25	HRV Duct Heating Coils	Vigmark
23 05 00	2.26	RH-1 & RH-2	Broan
23 05 00	2.27.1	KEF-3 Exhaust Hood	Greenheck

23 05 00	2.27.2	KEF-3 Exhaust Fan	Loren Cook, Greenheck, Twin City Fan, Soler & Palau
23 05 00	2.29	HP-3 & HP-4	York
23 05 00	2.32.1	Fume Hoods	Motlab
23 05 00	2.33.1	Chemical Storage Cabinet	Motlab
23 05 00	2.37.6	Hydronic Heating Coils	Madok, Vigmark
23 05 05	2.14.4	Hot Water Boilers	Hurst Boiler
23 05 05	2.24.1	Steam Boiler	Hurst Boiler
23 05 05	2.25.1	Feedwater System	Hurst Boiler
23 05 05	2.26.1	Blowdown Separator	Hurst Boiler
23 05 05	2.31.2	Steam Traps	Watson McDaniel
23 05 05	2.32.2	PRV-1	Watson McDaniel
25 05 01	2.07.21	Control Valves	Belimo Series B ball valves c/w Series TF actuators

28. Refer to Section 26 09 36 – Lighting Control Modular Dimming Control:

.1 Paragraph 2.1 - Manufacturers
  .1 The following system will be considered as an alternate to the specified product.
    .1 Acuity "xCella" system.

29. Refer to Section 26 24 20 – Surge Protection:

.1 Paragraph 1.8 - Performance Ratings
  .1 Sentence .1 – Surge Current Capacity
    .1 Replace "125kA" with "150kA" and "250kA" with "300kA".

.2 Paragraph 1.10 - Submittals
  .1 Sentence .2 – Documentation
    .1 The specifications are to be based on the Liebert 460 Series (Catalog Number #460YD15ARCL2S) not the 570 Series.

30. Refer to Section 26 29 11 – Motor Schedule:

.1 Paragraph 2.1 - Motor Schedule
  .1 Item 10 – HP-1 will consist of an outdoor unit mounted on roof of Mechanical Penthouse #2 and indoor unit located in Mechanical Penthouse #2. Outdoor unit will have a MCA of 24A at 600V, three phase. The indoor unit shall have an MCA of 5A, 600V, three phase. The wiring to the outdoor unit shall be 3#10RW90 + bond in 19mm EMT C. from a 25A-3P breaker (emergency power). The wiring to the indoor unit shall be 3#12RW90 + bond in 16mm EMT C. from a 15A-3P breaker (emergency power).

The weatherproof disconnect for the outdoor unit shall be supplied with the unit by the mechanical contractor. The disconnect for the indoor unit shall be 30ampere, 600V, three pole supplied and installed by the electrical contractor.

.2 Item 11 – HP-2 will consist of an outdoor unit mounted on roof of Mechanical Penthouse #1 and indoor unit located in Mechanical Penthouse #1. Outdoor unit will have a MCA of 24A at 600V, three phase. The indoor unit shall have an MCA of 5A, 600V, three phase. The wiring to the outdoor unit shall be 3#10RW90 + bond in 19mm EMT C. from a 25A-3P breaker (emergency power). The wiring to the indoor unit shall be 3#12RW90 + bond in 16mm EMT C. from a 15A-3P breaker (emergency power).
The weatherproof disconnect for the outdoor unit shall be supplied with the unit by the mechanical contractor. The disconnect for the indoor unit shall be 30ampere, 600V, three pole supplied and installed by the electrical contractor.

.3 Item 12 – HP-3 will have single point connection with weatherproof disconnect supplied with unit by the mechanical contractor.

.4 Item 13 – HP-4 will have single point connection with weatherproof disconnect supplied with unit by the mechanical contractor.

.5 Item 30 – UH-1 will be 1/20HP. Quantity of 5.

.6 Item 31 – FF-1 will be 1/4HP. Quantity of 7.

.7 Item 34 – Feedwater Pump will be labeled as FWP-1.

.9 Items 40 through 45 – Return Fans (RF-1 to RF-5) will have weatherproof disconnect supplied with unit by the mechanical contractor. Starters will be magnetic starters not combination type.

.10 Items 45 through 49 – Exhaust Fans (EF-1 to EF-5) will have weatherproof disconnect supplied with unit by the mechanical contractor.

.11 Item 49 – EF-5 will be 1/100HP.

.12 Item 53 – Exhaust Fan EF-10 will have weatherproof disconnect supplied with unit by the mechanical contractor.

.13 Item 54 – Exhaust Fan EF-11 will be mounted on roof over Electrical Room 146. Provide a magnetic starter not a combination starter. Weatherproof disconnect supplied with unit by the mechanical contractor.

.14 Item 64 – The wiring to the Art Spray Booth shall be explosion proof Class 1 Zone 1. All equipment and wiring within the booth and exhaust ducts shall be classified as Class 1 Zone 1. All equipment and wiring within 1.5m horizontally of the open-face booth and 1m above the goods to be painted (see Section 20-300 and Diagram 4 CEC 22.1) shall be classified as Class 1 Zone 2. Make final connections to the fan with Teck cable and explosion proof connectors. Provide a Class 1, Zone 1 disconnect switch.

.15 Item 66 - Supply Fan SF-6 will have weatherproof disconnect supplied with unit by the mechanical contractor.

31. Refer to Section 26 50 00 – Lighting:

.1 Paragraph 2.3 - Approved Equals:

Type "A" LUMENWERX # NOVRS-24-PMO-HLO-LED-80-4000-35-120-D-1-TB15-W

Type "A1" LUMENWERX # NOVRS-14-PMO-HLO-LED-80-4200-35-120-D-1-TB15-W

Type "A2" LUMENWERX # NOVRS-22-PMO-HLO-LED-80-3200-35-120-D-1-TB15-W

Type "A3" LUMENWERX # NOVRS-24-PMO-HLO-LED-80-5000-35-120-D-1-TB15-W

Type "A4" LUMENWERX # NOVRS-24-PMO-HLO-LED-80-4500-35-120-D-1-TB15-W

Type "B1" LUMENWERX # VIA5RF-HLO-LED-80-500-35-2FT-120-D-1-TB15-W

Type "B2" LUMENWERX # VIA5RF-HLO-LED-80-500-35-4FT-120-D-1-TB15-W

Type "B3" LUMENWERX # VIA5RF-HLO-LED-80-500-35-8FT-120-D-1-TB15-W

Type "B4" LUMENWERX # VIA5RF-HLO-LED-80-500-35-10FT-120-D-1-TB15-W

Type "B5" LUMENWERX # VIA5RF-HLO-LED-80-500-35-12FT-120-D-1-TB15-W

Type "B6" LUMENWERX # VIA5RF-HLO-LED-80-500-35-16FT-120-D-1-TB15-W

Type "B7" LUMENWERX # VIA5RF-HLO-LED-80-500-35-20FT-120-D-1-TB15-W

Type "BB" LUMENWERX # VIA4RF-HLO-LED-80-500-35-4FT-120-D-1-DTR-W

Type "BB1" LUMENWERX # VIA4RF-HLO-LED-80-500-35-8FT-120-D-1-DTR-W

Type "BB2" LUMENWERX # VIA4RF-HLO-LED-80-500-35-10FT-120-D-1-DTR-W

Type "BB3" LUMENWERX # VIA4RF-HLO-LED-80-500-35-16FT-120-D-1-DTR-W

Type "BP2" LUMENWERX # V5PERL-HLO-LED-80-500-35-4FT-120-D-1-DTL-W

Type "BP3" LUMENWERX # V5PERL-HLO-LED-80-500-35-8FT-120-D-1-DTL-W

Type "BP4" LUMENWERX # V5PERL-HLO-LED-80-500-35-10FT-120-D-1-DTL-W

Type "BS1" LUMENWERX # VIA3PD-HLO-LED-80-500-35-4FT-120-D-1-53WAC36-W

Type "BS2" LUMENWERX # VIA3PD-HLO-LED-80-500-35-8FT-120-D-1-53WAC36-W

Type "BS3" LUMENWERX # VIA3PD-HLO-LED-80-500-35-10FT-120-D-1-53WAC36-W

Type "C" GOTHAM # EVO-35/15-6AR-MD-LD-MVOLT-EZ10-TRW

Type "C1" GOTHAM # EVO-35/20-6AR-MD-LD-MVOLT-EZ10-TRW

Type "C2" GOTHAM # EVO-35/30-6AR-MD-LD-MVOLT-EZ10-TRW

Type "C3" LITHONIA # REAL6C-D6MW-ESL-1000L-35K-.65SC-120-LP6LN-1000L

Type "D" LITHONIA # GTL4-33L-EZ1-LP835

Type "D1" LITHONIA # 2GTL4-40L-EZ1-LP835

Type "E" LITHONIA # WL4-40L-EZ1-LP835-N100-NES7-DIM50

Type "F" LITHONIA # ZL1D-L48-3000LM-FST-MVOLT-35K-80CRI-WH (DELIVERS 3800 LUMENS)

Type "G" LITHONIA # FEM-L48-4000LM-LPPFL-MD-MVOLT-GZ10-35K-80CRI

Type "H" LITHONIA # IBH-18000LM-SD080-MD-MVOLT-OZ10-35K-90CRI-WGX-CS93W

Type "J" DECO # DLED-FRET-6-15-35-120-WH-RM

Type "K" DALS # CFLEDSQ10-SN

Type "L" LITHONIA # DSX0-LED-40C-700-40K-T3M-347-WBA-DBLXD-DMG

Type "L1" LITHONIA # DSX0-LED-20C-1000-40K-T3M-347-WBA-DBLXD-DMG

Type "M" Phoenix #VA-W-17LED-CW-FGC

Type "N" ECOSENSE # SCIS-12-35-120-CL c/w #SCI-A-FRLS-12 (2-12" fixtures to equal one 24" type N fixture)

Type "N1" ECOSENSE # SCIS-48-35-120-CL c/w #SCI-A-FRLS-48

Type "P" LITHONIA # DSX0-40C-1000-40K-T3M-347-SPA-PIRH1FC3V-DBLXD c/w Tenon Adapters.

Type "Q" ISAAC & RAE # 4005-WH-120" SUSPENSION KIT W/CORD

Type "Q1" ISAAC & RAE # 4002-WH-120" SUSPENSION KIT W/CORD

Type "T" JUNO # T265LG2-35-N-SL

.2 Provide and install the additional fixtures listed below replace existing exterior light fixtures so that all will match. Turn over existing fixtures to owner.
Type "L" – Quantity of Three (3)
Type "L1" – Quantity of Five (5)
Type "P" – Quantity of Eighteen (18)

32. Refer to Section 27 31 00 – Voice Communications Switching and Routing Equipment:

.1 Cash Allowance
.1 Provide a cash allowance of $6,000 for the work required by the Communications Utility Company.

33. Refer to Drawing E10 – Partial Level 1A Power & Communications Plan:

.1 Plan 1/E10 - Partial Level 1A Power & Communications Plan
.1 In Corridor 201, provide a receptacle and a communications outlet with a single data drop on the exterior wall between the two trophy cabinets. Wire receptacle to new circuit P5A-35.

34. Refer to Drawing E12 – Partial Level 1C Power & Communications Plan:

.1 Plan 1/E12 - Partial Level 1C Power & Communications Plan
  .1 There will be a unit heater UH-1 in the Boiler Room 145. Refer to mechanical drawings for location. Wire with thru a relay and manual motor switch to a 15A,1P breaker circuit E1-61.

.2 Plan 2/E12 – Enlarged Main Electrical Room
  .1 Show a remote meter cabinet on exterior of the main electrical room.

35. Refer to Drawing E13 – Partial Level 2A Power & Communications Plan:

.1 Plan 1/E13 - Partial Level 2A Power & Communications Plan
  .1 There will be a unit heater UH-1 in the Mechanical Penthouse #2. Refer to mechanical drawings for location. Wire with thru a relay and manual motor switch to a 15A,1P breaker circuit E7-9.
  .2 Breaker for HP-1 indoor unit circuit DP7-8,10,12 shall be 15A,1P not 25A,1P.
  .3 In Art Store 561 delete the receptacle adjacent the spray booth on circuit P6C-50. Relocate the other two receptacles at south end (drawing south) north by 2 meters so that no electrical with 1.5 meters of the spray booth.

36. Refer to Drawing E14 – Partial Level 2B Power & Communications Plan:

.1 Plan 1/E14 - Partial Level 2B Power & Communications Plan
  .1 Breaker for HP-2 indoor unit circuit DP4-8,10,12 shall be 15A,1P not 25A,1P.

37. Refer to Drawing E18 – Partial Level 1C Systems Plan:

.1 Plan 1/E18 - Partial Level 1C Systems Plan
  .1 In LAN Room 284 show a sprinkler tamper switch and add a single fire alarm monitor module.

38. Refer to Drawing E19 – Partial Level 2A Systems Plan:

.1 Plan 1/E19 - Partial Level 2A Systems Plan
  .1 In Art Store 561 relocate the PA equipment at south end (drawing south) north by 2 meters so that no electrical with 1.5 meters of the spray booth.
  .2 In LAN Room 549 show a sprinkler tamper switch and add a single fire alarm monitor module.

39. Refer to Drawing E28 – Electrical Schedules:

.1 Detail 1/E28 – Fire Alarm Riser Diagram
  .1 Show an additional five tamper switches for Sprinkler Room 326 and add three additional dual fire alarm monitor modules.

40. Refer to Drawing E26 – PA Riser Diagram Sheet #1:

.1 Detail 1/E26 – PA Riser Diagram
  .1 The Telephone Module should be labeled as "VTM-1" not "VTW-1"
  .2 Add an additional 2 Port FXO Gateway and label as "VG2-2". Wire the PBX telephone switch into this FXO Gateway and provide wiring from this new FXO Gateway to the 24 Port Network Switch labeled "SW-1".

41. Refer to Drawing E29 – Electrical Schedules:

.1 Detail 1/E29 – Panel Schedule
  .1 Panel E1- Add one 15A,1P breaker.
  .2 Panel P5A - Add one 15A,1P breaker.
  .3 Panel DP4 – Delete one 25A,1P and add one 15A,1P breaker.

.4 Panel DP7 – Delete one 25A,1P and add one 15A,1P breaker.
.5 Panel E7 - Add one 15A,1P breaker.

42. Refer to Drawing E30 – Electrical Service Schematic

.1 Detail 1/E30 – Electrical Service Schematic

.1 The meter cabinet shall be located on the exterior of the main electrical room. Provide a 41mm conduit between the meter section of main switchboard the remote meter cabinet. The remote meter cabinet shall be 13 jaw with testing block, Hydrel #CTS130PW-TS.

Supplementary Bid Information Form

APPENDIX A - SubContractors

The following is the List of Sub-Contractors listed in the Scope of Work (Volume 2 of 2 in the Specifications) submitted by:

(Bidder)
For Trade Package _____
dated _____ And which is an integral part of the Bid Form.

The following work will be performed (or provided) by Sub-Contractors and coordinated by us in our role as Trade Contractor:

SECTION OF WORK	NAME OF SUB-CONTRACTOR
.1 _____	_____
.2 _____	_____
.3 _____	_____
.4 _____	_____
.5 _____	_____
.6 _____	_____
.7 _____	_____
.8 _____	_____
.9 _____	_____
.10 _____	_____
.11 _____	_____
.12 _____	_____
.13 _____	_____
.14 _____	_____
.15 _____	_____

.16 _____ _____

.17 _____ _____

.18 _____ _____

.19 _____ _____

.20 _____ _____

.21 _____ _____

.22 _____ _____

.23 _____ _____

.24 _____ _____

.25 _____ _____

.26 _____ _____

.27 _____ _____

.28 _____ _____

.29 _____ _____

.30 _____ _____

.31 _____ _____

.32 _____ _____

.33 _____ _____

.34 _____ _____

.35 _____ _____

APPENDIX B - ALTERNATIVES

The following is the List of Alternatives referred to in Section 00 21 30 - Supplementary Bid Information Form, 1.1.2.2 submitted by:

(Bidder)

dated _____ And which is an integral part of the Bid Form.

The following alternatives are proposed for consideration by the Owner:

SPECIFIED PRODUCT	ALTERNATIVE PRODUCT	ADD/DEDUCT
.1 _____	_____	$_____
.2 _____	_____	$_____
.3 _____	_____	$_____
.4 _____	_____	$_____
.5 _____	_____	$_____

APPENDIX C - UNIT PRICES

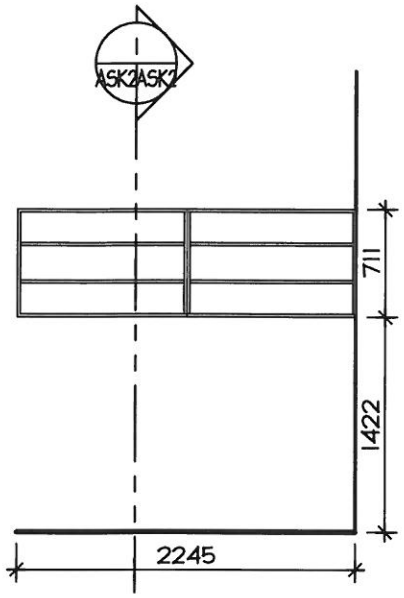
The following is the List of Unit Prices requested and submitted by:

(Bidder)

dated _____ And which is an integral part of the Bid Form.

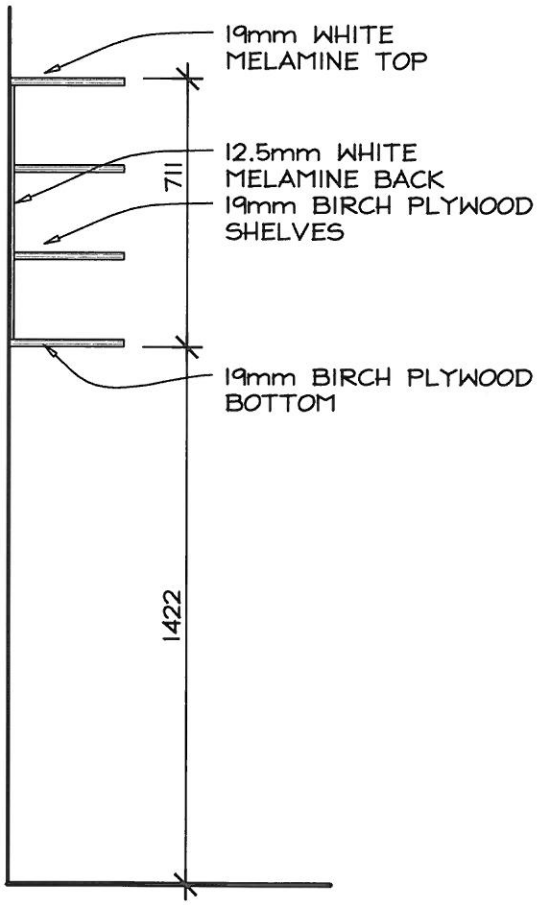
The following unit prices are proposed for consideration by the Owner:

SPECIFIED PRODUCT	VALUE
.1 _____	$ _____
.2 _____	$ _____
.3 _____	$ _____
.4 _____	$ _____
.5 _____	$ _____



JANITOR ELEVATION

SCALE : 1 : 50



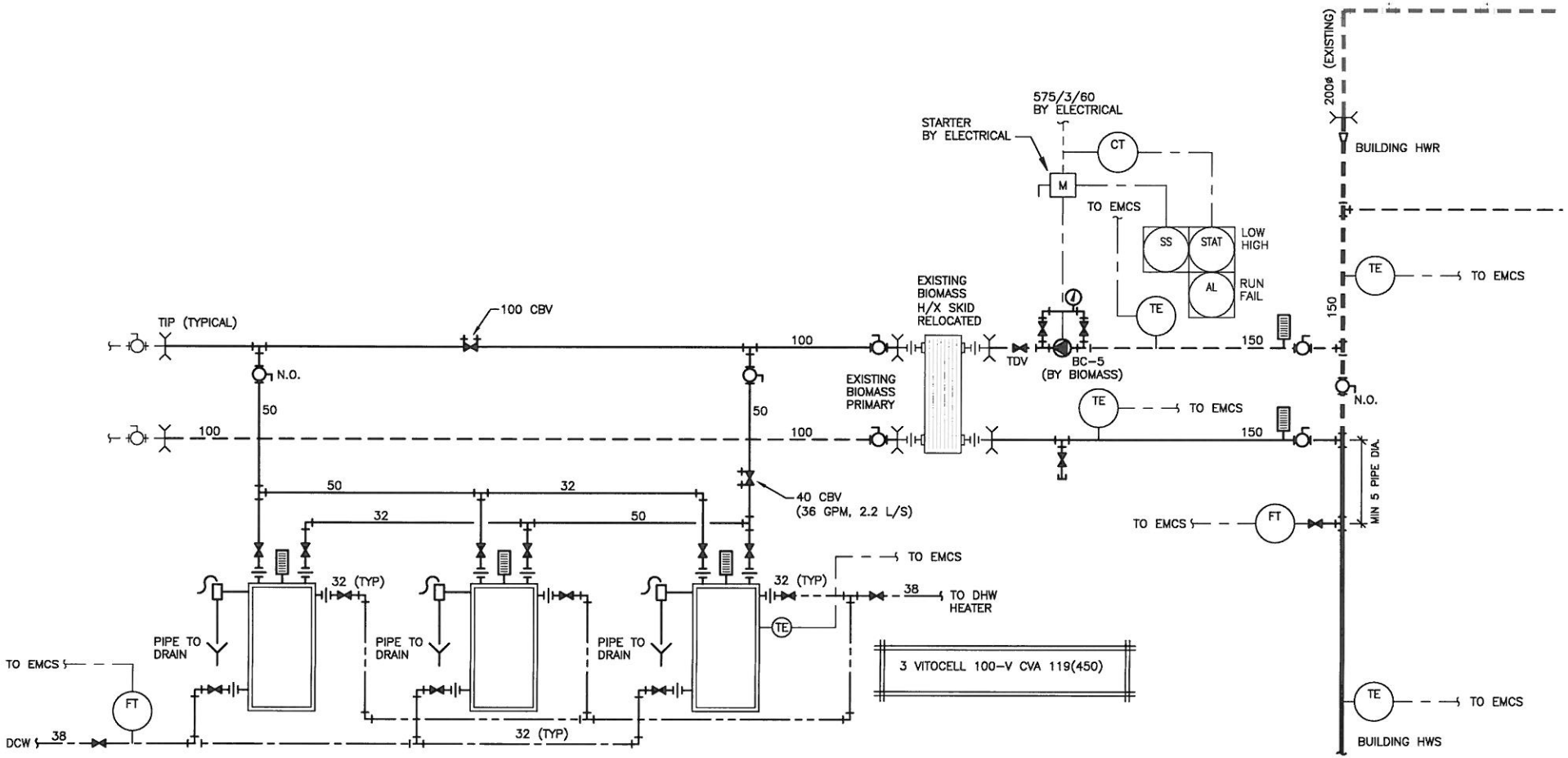
1 ASK2ASK2

SECTION

SCALE : 1 : 20

ASK-2

Project : THREE OAKS SR HIGH SCHOOL RENOVATION TIE #620-15005	Scale AS NOTED	CHANDLER ARCHITECTURE DESIGN MATTERS
	Date NOV 29, 2016	192 Queen Street PO Box 660 Charlottetown Prince Edward Island, Canada C1A 7L1
Sheet Title : JANITOR ROOM SHELVING	Drn BY AJW	Tel: 902 628 6656 Fax: 902 566 9214 www.chandlerarchitecture.ca
	Job No. WWC16-013ASK2	



Client

CHANDLER ARCHITECTURE
DESIGN MATTERS

MCA CONSULTANTS
ENGINEERS - PROJECT MANAGEMENT
902.566.9223 | info@mcaconsultants.ca
www.mcaconsultants.ca

Project

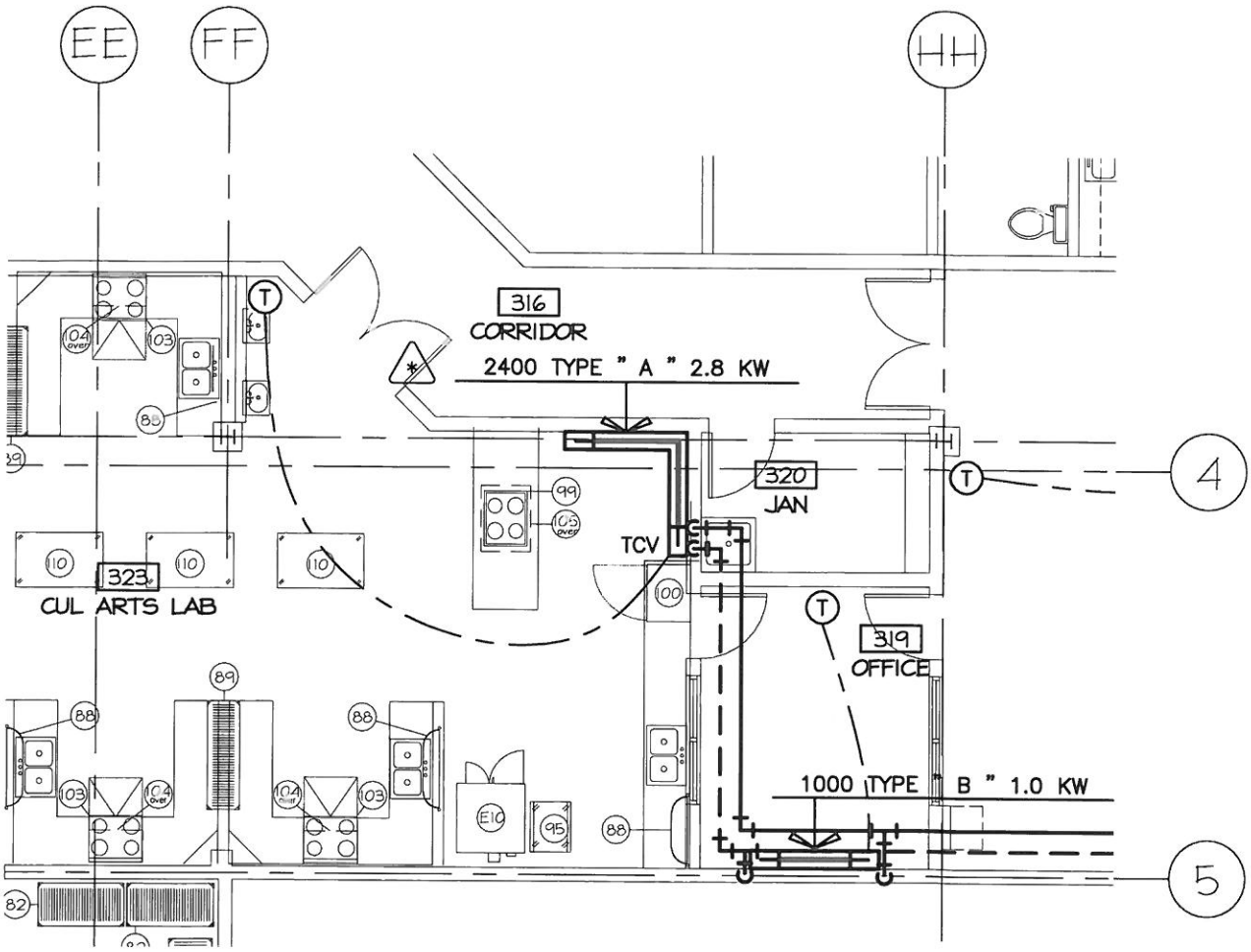
THREE OAKS SENIOR HIGH SCHOOL RENOVATION PROJECT

Sheet Title

DHW BIOMASS PREHEAT

MSK-02

Scale: NOT TO SCALE	Date: DEC 15, 2016
Chk'd By: JDM	Drn By: JAS
Project No. 15-259	



Project THREE OAKS SENIOR HIGH SCHOOL RENO PROJECT

MCA CONSULTANTS LTD
ENGINEERS - PROJECT MANAGEMENT
902.566.9223 | info@mcaconsultants.ca
www.mcaconsultants.ca

Drawing Title
CUL ARTS LAB 323
RADIATION
MODIFICATIONS

Scale	1:100
Date	DEC 15, 2016
Chk'd By	JDM
Project No.	15-259
Sheet No.	MSK-03

NOTES

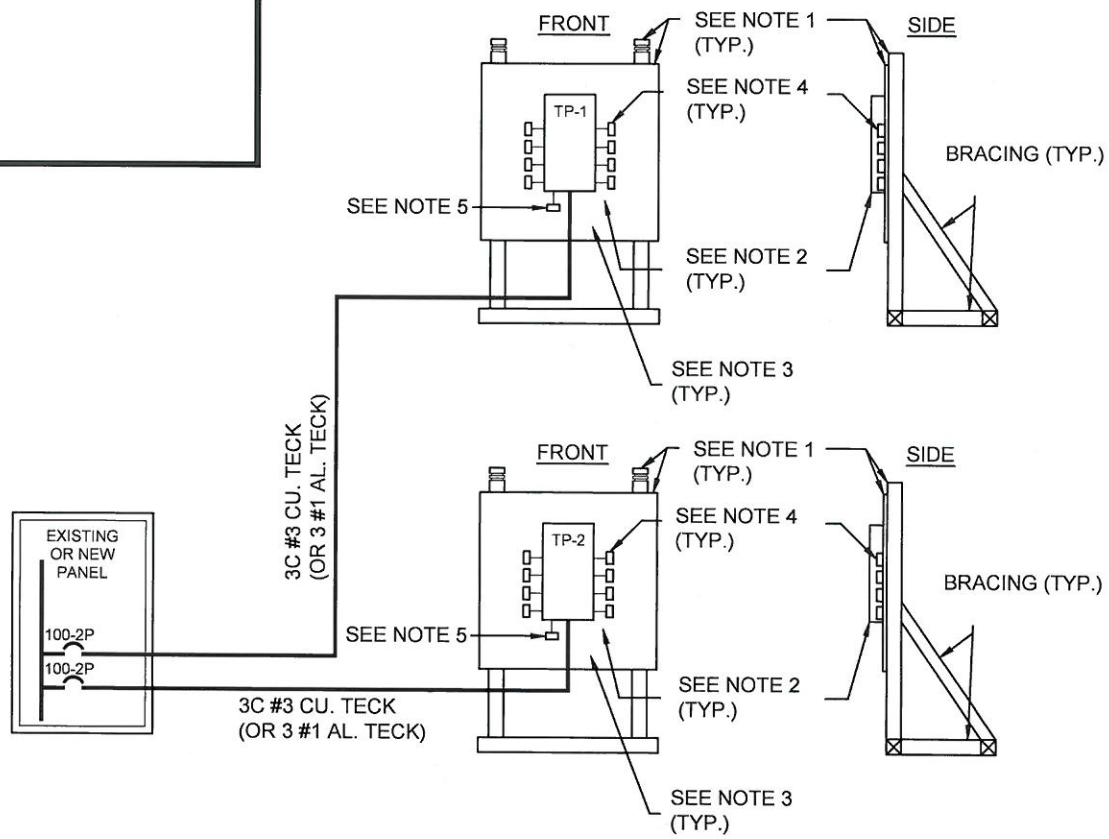
1.) PRESSURE TREATED POSTS AND 1200x 1200x 19mm PLYWOOD BACKBOARD.

2.) 120/208 VOLT, 100 AMPERE, 42 CCT., 1 PHASE PANELBOARD C/W THE FOLLOWING BRANCH BREAKERS; 1@ 50A-2P, 8@ 20A-2P, 4@ 15A-1P.

3.) PANEL COMPLETE WITH 100A,2P AMPERE MAIN BREAKER.

4.) PROVIDE 8@ 20 AMPERE DUPLEX RECEPTACLES. MOUNT ON PLYWOOD BACKBOARD IN PVC BOXES. ALL RECEPTACLES TO BE SPLIT WIRED.

5.) PROVIDE ONE 50A, 250 VOLT OUTLET TYPE 6-50R. MOUNT ON PLYWOOD BACKBOARD IN PVC BOX.



Esk-1

Ref. Dwg. -

RICHARDSON ASSOCIATES (1993) Limited Engineering Consultants

Project	THREE OAKS SR HIGH SCHOOL RENOVATION TIE #620-15005
Detail	ELECTRICAL TEMPORARY POWER
Drawn	JH
Approved	JPG
Project no.	15158
Date	DEC 21, 2016
Sheet no.	ESK-1
Scale	AS NOTED