



110 Drewry Avenue
Toronto (Ontario) M2M 1C8
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Addendum # 2

2026-16

GC Services for New-Build Elementary School in Cobourg

Closing Date:

April 23, 2026, at 2:00:00 pm local time

This Addendum forms part of the Contract Documents and amends the original Bids Documents and Specifications as noted below.

Ensure all parties submitting bids are aware of all items included in this Addendum.

Acknowledge receipt of this Addendum by inserting its number on the Bid Form. Failure to do so may subject bidder to disqualification.

INVITATION AND SUBMISSION INSTRUCTIONS

Item 1.5 Mandatory Site Visit
.1 Refer to Mandatory Site Visit sign-in sheet included within this addendum.

PART I - QUESTIONS AND ANSWERS

Question 1:

Is there a pre-selected fire alarm vendor for this project or is it the responsibility of the electrical contractor to select a vendor and carry the vendors costs?

Answer 1:

Refer to Addendum No. 1 Answer 23

Question 2:

I can not find the fire protection drawings. Have these been included? We require them to do a proper take off for pressure switches, flow switches, monitored valves, and any other mechanical wiring for the fire system.

Answer 2:

Refer to Addendum No. 1 Answer 4

Question 3:

Architectural drawing Code Data Matrix shows the building as a sprinklered building. However, we failed to find sprinkler drawings for this project. Please clarify.

Answer 3:

Refer to Addendum No.1 Answer 4

Question 4:

Allowances in the specifications section 01 21 00 do not exactly match with allowances noted in Appendix C section (a2), page 23 of 33.

Section 01 21 00 includes Telephone Services and Window Shades. Section (a2) in Appendix C includes Storm, Sanitary and disconnection of existing services. it also includes the Controls BAS Metering connection.

On one Page, please advise what is included as Cash allowances.

Answer 4:

For the proper listing of allowances please refer to APPENDIX C -Pricing, item (a2) Cash Allowances. This schedule supersedes allowances listed in Section 01 21 00 Allowances

Question 5:

In Appendix C section (a2) Cash Allowances, please confirm that only BAS Metering connection (Hydro, Gas and Water) is included in the cash allowances. Please confirm the BAS system should be included in the base Bid.

Answer 5:

All costs related to the supply, installation and commissioning of the new BAS shall be included in the Base

Question 6:

Regarding Section 09650 Resilient Flooring –

Omnisport 7.1 has been discontinued. The new comparable product is Omnisports MultiFlex. Specifications and tech data can be provided upon request.

Vsport 7.1 is not equal to the Omnisports material in the spec. Refer to the list of concerns below. Documentation can be provide upon request.

Lack of Testing Information: The absence of ASTM F2772 testing (London Catholic DSB requested this info and it could not be provided) and a Canadian Fire Rating is a big red flag, especially when working with school boards. These certifications are crucial for

safety and compliance, and without them, it's understandable that school boards would hesitate to consider the product.

Private Label and Manufacturer Confusion: The fact that the product is a private label from TopFlor but is being presented as Funktion's own could lead to credibility issues. If TopFlor is the actual manufacturer, it might create confusion or concerns about product quality and authenticity, which could be concerning for stakeholders who expect clarity in sourcing.

Warranty Concerns: An 8-year warranty, while not necessarily a deal-breaker, does seem short compared to other products in the market, especially when school boards often look for long-term durability. This might signal that the manufacturer has less confidence in the product's lifespan or quality. The Omnisports warranty is 25 years.

Lack of Transparency: Finally, the biggest issue might be the lack of transparency from the company. If they are not forthcoming with the necessary information or if there is any sense of withholding crucial details, it can be frustrating and can erode trust—especially when you're dealing with something as important as safety-related products for educational environments.

Answer 6:

- .1 Refer to Addendum No.1 PART II REVISIONS TO ARCHITECTURAL SPECIFICATIONS AND DRAWINGS item 2.05 SECTION 09650**
- .2 Omnisport MultiFlex is an acceptable substitution for specified Omnisport 7.1**

Question 7:

Roofing Specifications Section 07 51 13, page 3 of 13, item 1.9 refers to a prequalified list of roofing contractors in the Owner's Instructions to Bidders. We were unable to locate this list. Please advise where it can be found.

Answer 7:

Refer to Section 07 51 13 Modified Built-up Asphalt Roofing and delete item 1.9

Question 8:

We note that the submission requirements for this RFQ are extensive and time-consuming, which may increase the risk of inadvertent administrative errors at closing.

In particular, the requirement to complete detailed pricing breakdowns across multiple divisions, along with separate breakdowns for three scenarios (base, 30 days, and 60 days), is quite onerous and will be challenging to fully compile accurately within the tender period.

Additionally, the volume of mandatory forms, executed annexes, and supporting documentation required at closing makes the submission process complex and prone to

omissions that could result in disqualification.

Would the Board consider allowing a simplified submission at tender closing (e.g., pricing, bid form, and bid security), with the remaining administrative, technical, and detailed supporting documents/breakdowns to be submitted within 24–48 hours post-closing?

This approach would help improve accuracy and reduce administrative risk while maintaining full compliance before award.

Thank you for your consideration.

Answer 8:

Refer to answer 3 in addendum 1.

Question 9:

We reviewed the drawings and specs, and there are no schedules for the grilles, registers, diffusers, VAV boxes, fans, etc.

Will the HVAC schedules be issued?

Answer 9:

Refer to PART II REVISIONS TO SPECIFICATION AND DRAWINGS item 5.0 MECHANICAL within this addendum for Mechanical Addendum No. M1 .

Question 10:

Could you please provide the fixture manufacturers the client would like to use with the specifications on the fixtures as I can't find anything in the spec's or drawings

Answer 10:

Refer to PART II REVISIONS TO SPECIFICATION AND DRAWINGS item 6.0 ELECTRICAL within this addendum for Electrical Addendum No. E1 .

Question 11:

Please confirm that the elevations shown on drawing ESC1 represent the existing site elevations, and that we should base our grading volumes on these elevations.

Answer 11:

For existing site grade elevations , refer to PART II REVISIONS TO SPECIFICATIONS AND DRAWINGS item 2.0 TOPOGRAPHICAL SURVEY for survey inadvertently omitted from bid documents

Question 12:

DWG E1 Communications (voice/data) legend: Indicates to provide CAT 6 FT6 cabling for the communication outlets. Please confirm all this cabling is part of cash allowance.

Answer 12:

All cabling is through the Cash Allowance. All infrastructure for Communications (backbox, conduit, cable tray, etc.) is part of the Base Tender Price of the Electrical Contractor.

Question 13:

Specification 01 21 00 Allowances: 3.0 Allowances Schedule: CA TABLE: Item 2 indicates Hydro Work performed by Lakefront Utility Services Inc. (hydro transformer, primary and secondary cables, hydro meter). Please confirm the secondary cables are part of electrical contractor scope for supply and install as shown on DWG E11 and not by Lakefront Utility Services.

Answer 13:

Primary and Secondary Cable supply/install is the responsibility of the Electrical Contractor as part of the Base Tender Price.

Question 14:

Specification 01 21 00 Allowances: 3.0 Allowances Schedule: CA TABLE: Item 2 indicates Hydro Work performed by Lakefront Utility Services Inc. (hydro transformer, primary and secondary cables, hydro meter). Please confirm the primary cables are part of lakefront Utility Services scope for supply and install.

Answer 14:

Primary and Secondary Cable supply/install is the responsibility of the Electrical Contractor as part of the Base Tender Price.

Question 15:

DWG E2 Drawing Note 2 indicates to provide a new gym sound system. Please provide specification.

Answer 15:

Refer to PART II REVISIONS TO SPECIFICATION AND DRAWINGS item 6.0 ELECTRICAL within this addendum for Electrical Addendum No. E1 .

Question 16:

DWG E2 Drawing Note 4 indicates to provide a new assistive listening system in the gym. Please provide specification.

Answer 16:

Refer to PART II REVISIONS TO SPECIFICATION AND DRAWINGS item 6.0 ELECTRICAL within this addendum for Electrical Addendum No. E1 .

Question 17:

Electrical Specification Index 26 00 00: Indicates a specification 27 51 16 Public Address System. It is not included in the electrical specifications. It is missing. Please provide.

Answer 17:

Refer to PART II REVISIONS TO SPECIFICATION AND DRAWINGS item 6.0 ELECTRICAL within this addendum for Electrical Addendum No. E1 .

Question 18:

Specification 26 50 00 Lighting Systems: 2.3 Fixture Schedule: Refer to Drawings for Specifications. Luminaire Fixture Schedule is not on the drawings. Please provide.

Answer 18:

Refer to PART II REVISIONS TO SPECIFICATION AND DRAWINGS item 6.0 ELECTRICAL within this addendum for Electrical Addendum No. E1 .

Question 19:

DWG E11 Detail 1 Single Line Diagram: Note 6 indicates that all new electrical panels shall come with an integrated digital meter as well as surge suppression. Please confirm and clarify all panels that get both of these items. The branch panel schedules do not indicate any digital meter or SPD.

Answer 19:

Yes, all branch panels are to have digital meter and SPD.

Question 20:

DWG E11 Detail 1 Single Line Diagram: Switchboard 6A has a digital meter but no SPD. Does switchboard 6A get an SPD?
Switchboard 2A has a digital meter but no SPD. Does switchboard 2A get an SPD?

Answer 20:

Both Switchboards are to come with SPD.

Question 21:

Specification 28 46 00 Fire Alarm System: 1.5.1 General: Indicates the fire alarm system shall be Simplex 4100ES or equivalent system from Notifier. Are we able to get Edwards or Mircom added to the equivalent fire alarm system manufacturers?

Answer 21:

No. Acceptable Manufacturers are as listed.

Question 22:

DWG E6 Electrical Site Plan Layout: Indicates to provide a level 2 charger 'EVSE-1' as scheduled at the four (4) parking spots. DWG E12 Electric Vehicle Charging Station Schedule indicates 'EVSE-1' as a 2 port EV charger on a single pedestal. I assume 2

'EVSE-1' total to cover (4) four parking spots? Please confirm how many we are providing total 'EVSE-1' for this project as it is a bit confusing with all the EV symbols with circles on DWG E6 for those that are future.

Answer 22:

Correct. Two (2) EVSE-1 will cover 4 Parking Spots as each EVSE-1 covers 2 parking spots.

Question 23:

DWG E1 Clock System Legend: The first symbol is used on the floor plans as a digital clock tied to a wired master clock system. Please provide specification, details and wiring diagram on the digital wired master clock system.

Answer 23:

Refer to Electrical Addendum E1 within this addendum. All Clocks are to be digital clocks supplied under the P/A System Supply/Installation. All costs for the installation of the P/A and Clock System shall be part of the Base Tender Price including all cabling and rough-ins required for the P/A and Clock System.

Question 24:

Please provide the list of contractors who attended the mandatory meeting on March 26th 2026.

Answer 24:

Refer to list of Bidders attending the Mandatory Site Meeting March 26, 2026 included within this addendum.

Question 25:

Control Chem is listed as the standard of acceptance for Chemical Service Providers (23 25 13, Subsection 1.7). No alternates are listed. Can you confirm if any alternates will be accepted?

Answer 25:

Only Control Chem.

Question 26:

Can a plumbing fixtures & HVAC equipment schedule be provided.

Answer 26:

Refer to PART II REVISIONS TO SPECIFICATION AND DRAWINGS item 5.0 MECHANICAL within this addendum for Mechanical Addendum No. M1.

Question 27:

Based on the drawing legend drawings SD1 and D1 cannot be found, please confirm.

Answer 27:

Refer to PART II REVISIONS TO SPECIFICATION AND DRAWINGS item 4.0 CIVIL within this addendum.

Question 28:

Can the topographic study mentioned in the drawings be provided.

Answer 28:

Refer to PART II REVISIONS TO SPECIFICATION AND DRAWINGS item 2.0 TOPOGRAPHICAL SURVEYL within this addendum

Question 29:

Referencing Civil plan SG1, can you please provide Section A-A as noted.

Answer 29:

Refer to PART II REVISIONS TO SPECIFICATION AND DRAWINGS item 4.0 CIVIL within this addendum. Section A-A can be found on new drawing SG1.

Question 30:

Please confirm there is only 2 civil drawings; or is there missing sheets with details?

Answer 30:

Refer to PART II REVISIONS TO SPECIFICATION AND DRAWINGS item 4.0 CIVIL within this addendum.

Question 31:

Could you please confirm whether the phrase “including, without limitation” can be removed from the fifth line of SC 7.0(3)?

Answer 31:

This condition has been validated by our legal team and will not be altered.

Question 32:

Scale appears to be missing from mechanical plans. Please advise of scale used.

Regards,

Answer 32:

Scale for Drawing M2, M6-8 is 1:150. M-10 is 1:25

Question 33:

I am trying to locate the lighting schedule for this project however I do not see it anywhere in the tender package. Could you please provide this?

Regards,

Answer 33:

Refer to PART II REVISIONS TO SPECIFICATION AND DRAWINGS item 6.0 ELECTRICAL within this addendum for Electrical Addendum No. E1 .

PART II - REVISIONS TO SPECIFICATIONS & DRAWINGS

1.0 CHANGES TO ARCHITECTURAL SPECIFICATIONS

1.01 SECTION 01 21 00 ALLOWANCES

.1 Refer to item 3.0 Allowance Schedule and delete CA Table. For the proper listing of allowances refer to APPENDIX C -Pricing, item (a2) Cash Allowances.

1.02 SECTION 08 14 16 FLUSH WOOD DOORS

.1 Refer to new specification section included within this addendum

2.0 TOPOGRAPHICAL SURVEY

2.01 Please find the TOPOGRAPHICAL SURVEY, inadvertently omitted from Bid Documents, now included within this addendum

3.0 LANDSCAPE

3.01 Refer to HKLA landscape Addendum No. 1 dated 2026 04 10 included within this addendum.

4.0 CIVIL

4.01 Please find drawing SD1 STANDARD DETAILS, inadvertently omitted from Bid Documents, now included within this addendum

4.02 Please find, included within this addendum, drawings SG1 SITE SERVICING AND GRADING and ESC1 EROSION AND SEDIMENT CONTROL which replace same drawings issued with bid documents

4.03 Delete all references to D1 STORM DRAINAGE AREA PLAN

5.0 MECHANICAL

5.01 Refer to Suri & Associates Ltd Mechanical Addendum No. M1 included within this addendum

6.0 ELECTRICAL

6.01 Refer to Suri & Associates Ltd Electrical Addendum No. E1 included within this addendum

END OF ADDENDUM 2

INVITATION AND SUBMISSION INSTRUCTIONS

Item 1.5 Mandatory Site Visit

- .1 Refer to Mandatory Site Visit sign-in sheet included within this addendum.**

PART II - REVISIONS TO SPECIFICATIONS & DRAWINGS

1.0 CHANGES TO ARCHITECTURAL SPECIFICATIONS

1.01 SECTION 01 21 00 ALLOWANCES

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1.02 SECTION 08 14 16 FLUSH WOOD DOORS

- .1 Refer to new specification section included within this addendum**

1.0 A CHANGES TO ARCHITECTURAL DRAWINGS

- .1 Refer to revised drawing A6-0 Partial Floor Plans Reflected Ceiling Plans included in this addendum which replaces previously issue drawing.**
- .2 Refer to revised drawing A6-1 Partial Floor Plans Reflected Ceiling Plans included in this addendum which replaces previously issue drawing.**

2.0 TOPOGRAPHICAL SURVEY

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6.0 ELECTRICAL











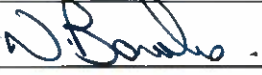
6.01 Refer to Suri & Associates Ltd Electrical Addendum No. E1 included within this addendum

Site Meeting Report

110 Drewry Avenue
 Toronto (Ontario) M2M 1C8
 Tel. : 416-397-6564 or 1-800-274-3764

Location: 849 New Amherst Boulevard, Cobourg ON
 Start Date: March 26, 2026 11:00 AM
 End Date: December 31, 9999 11:59 PM

Name 2026-16 - GC Services for New-Build Elementary School in Cobourg
Status Open
Description On-site contact: Dieudonné Ngandu, Project Officer, Cell : 647-394-3427

Company Name	Attendee Name	Time In	Time Out	Attendee Signature
152610 Canada Inc. O/A Laurin & Company	Mehdi Kazemi	10:45		
Anacond Contracting Inc.	JP Santoli	10:45		
ANVI SERVICES LTD.				
Creative Seating Solutions				
Dalren Limited	Matt James	10:45		
DSH BUILDERS INC.				
Ferguson Electric Company Ltd				
Gedco Excavating Ltd.				
Magil Construction Canada Inc.	Michael Amirthanathan	10:30		
McFaul Fencing Ltd				
Merit Restoration Inc.				
MITCHELL DIVISION 10 LTD.				
PRE-ENG CONTRACTING LTD.	Rutul Satyalanka	10:35		
Quad Pro Construction Inc.	Amir Kakhani	10:30		
Ritestart Limited	Aidan Siskell	10:30		
Torcom Construction Inc	Alex Arelian	10:30		
Triforce General Contracting				
Trinity Construction Management Limited	Irteza Amin	11		
Van Horne Construction Ltd.	ILHAN SOZER	10:58		
Verly Construction Group Inc	Nick Bowles	10:45		

COMBINED APP		11:00AM		Hej.

GARLITANO BROS
LTD

SIMON
GARLITANO

10:45am


Total Attendees: 2

PART 1 - GENERAL

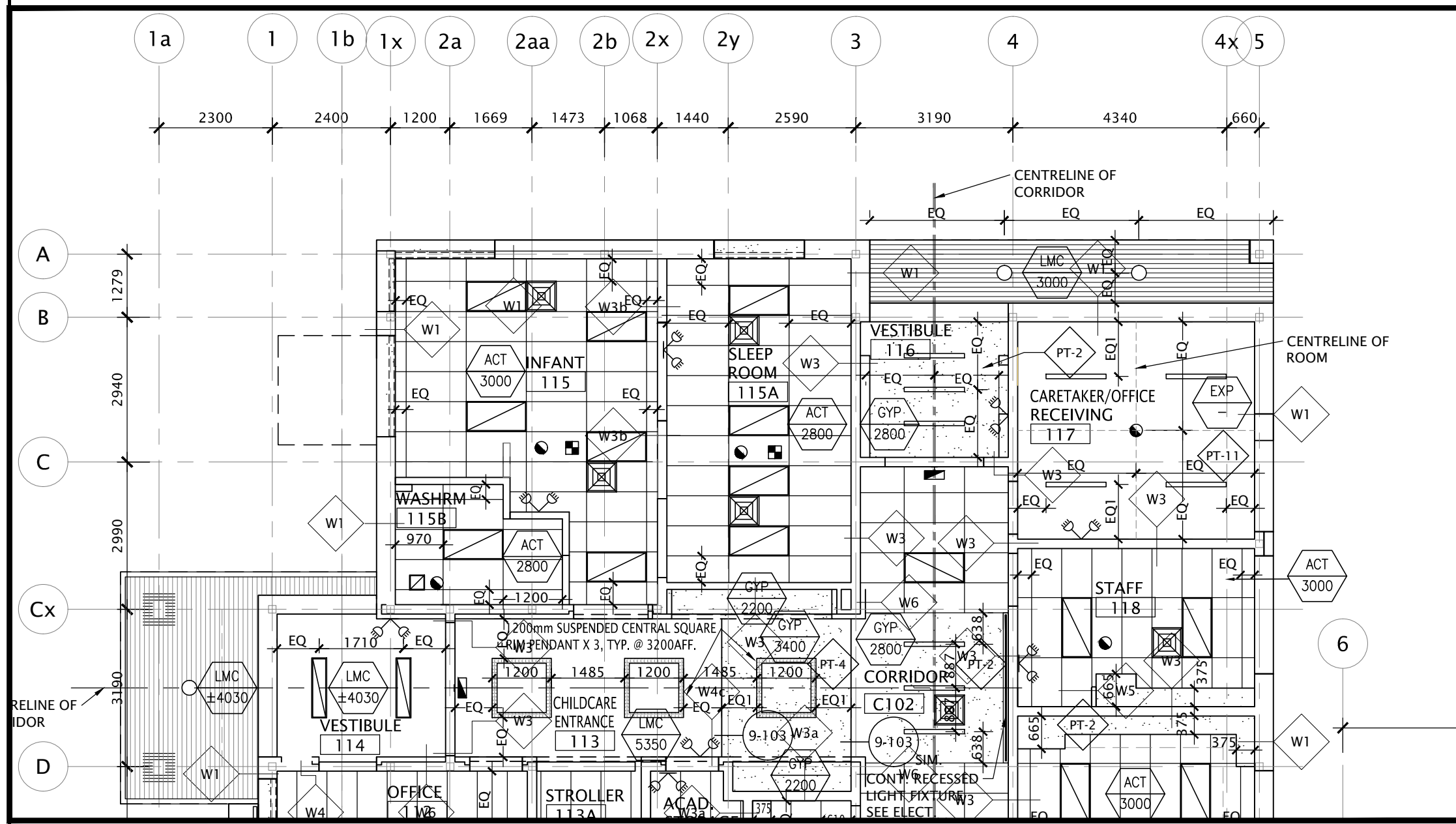
- 1.1 **General Requirements** .1 The General Conditions of the Contract, Supplementary Conditions, and the General Requirements of Division 1, form part of this section, and must be read in conjunction with the requirements of this section. The work of this section shall comply with all requirements of Division 1 – General Requirements.
- 1.2 **Section Includes** .1 Provision of all labour, materials, equipment and incidental services for the provision of Interior solid core wood doors.
- 1.3 **Reference Standards** .1 Meet requirements of CSA Standard 0132.2-M1977 except where specified otherwise and AWMAC premium standards for custom curved doors and wood frames.
.2 Fire rated doors shall bear ULC label.
- 1.4 **Guarantee** .1 Provide the following guarantee in accordance with the General Conditions, notwithstanding the time provisions therein to remedy any defects in work, due to defects in doors for the following period.
Three years on material and labour
.2 Defects covered under guarantee shall include warp exceeding 3 mm.
.3 Guarantee shall cover all costs for replacement of defective doors including hanging, fitting and finishing.
- 1.5 **Submittals** .1 Submit shop drawings in accordance with the General Conditions.
.2 Submit 300 mm x 300 mm sample section of door complete with specified finish.
- 1.6 **Product Delivery & Storage** .1 Protect doors from dampness. Arrange for delivery after work causing high humidity has been completed.
.2 Store doors in a warm dry location flat on a level bed off the ground and protect from excessive dampness or dryness.
.3 Protect doors from scratches, handling marks and other damage. Individually package doors in scuff and water resistant wrappings.
.4 Label each door with manufacturer's name, product identification, door size and type.
- 1.7 **Allowable Tolerances** .1 Tolerance of plus or minus 1.5 mm on specified height, width and thickness dimension shall be allowed.
.2 Regardless of tolerances allowed all four corners of doors shall be square. The length of the diagonal measurement of the face of the door from the upper right hand corner to the lower left hand corner, shall be within 3 mm of the length of the reciprocal diagonal.

PART 2 - PRODUCTS

- 2.1 **Solid Core Doors**
- .1 Solid core doors shall be 45 mm thick, Bison Core doors by Dormond Industries Ltd., or similar by Cambridge Door Co. Ltd., Premium Doors, Boleo Doors, Superstructure Door Co.
 - .2 Construct fire doors in accordance with fire test requirements.
 - .3 Core: solid particleboard, to CAN3-188.1, Type II Grade E. For fire rated doors, provide core in accordance with fire test requirements.
 - .4 Door facing: Select rift cut maple, book matched, minimum 3 ply door skin.
 - .5 Edge bands: maple 19 mm thick for stiles, two pieces of 19 mm thickness for top and bottom edges. Laminate edge bands to core with urea resin adhesive.
 - .6 Adhesive: urea resin by hot plate process for laminating crossbanding to core.
 - .7 Glazed openings: prepare openings where indicated to receive glazing. Provide hardwood glazing stops 12 x 21 mm, installed as detailed, mitred at corners. Provide glazing stops for fire rated doors, in accordance with fire test requirements.
 - .8 Prepare openings as required for door louvres.
 - .9 All wood doors and frames are to be shop prepared for hardware and shop finished with stain and clear lacquer to consultants approval.
- 2.2 **Installation**
- .1 Prepare doors in accordance with templates supplied by Section 08710.
 - .2 Accurately fit doors into frames to ensure smooth operation without binding. Doors shall have 1.5 mm clearance at head and jambs and 6 mm over finished floor surfaces unless otherwise indicated.
 - .3 Undercut doors where shown on Drawings.
 - .4 Install louvres and stops.
 - .5 Secure transom and side panels by means of concealed fasteners or countersunk screws concealed by means of plugs matching panel.
 - .6 Install door grilles where shown on drawings.
 - .7 Install hardware in accordance with hardware supplier's instructions.
 - .8 Readjust doors and hardware just prior to completion of the building to function freely and properly.

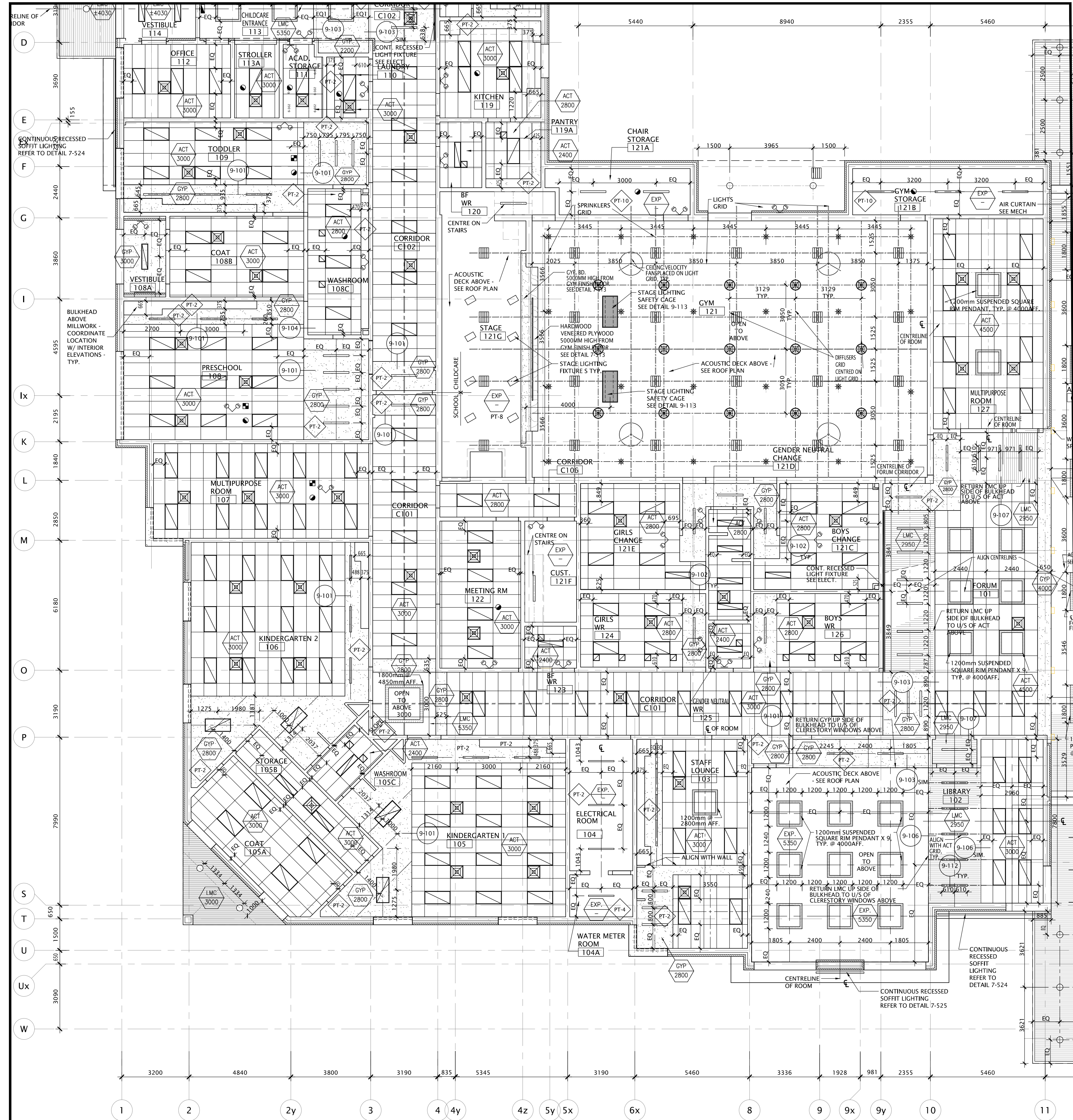
End of Section

REFER TO DWG 2/A6-1 FOR CONTINUATION



REFER TO DWG 1/A6-1 FOR CONTINUATION

2 PARTIAL FLOOR PLAN
SCALE: 1:100



1 REFLECTED CEILING PLAN
SCALE: 1:100

REFLECTED CEILING PLAN LEGEND (SEE MECH. & ELEC.)			
	CEILING TYPE		PAINT COLOUR
	METAL LINEAR CEILING		ACoustic GYPSUM CEILING
	ACoustic GYPSUM CEILING TILES & T-GRID		GYPSUM CEILING/BULKHEADS
	RETURN AIR GRILLE-SEE MECH.		NEW DIFFUSER-SEE MECH.
	DETECTOR		HEARING ASSIST SPEAKER
	MOTION/OCCUPANCY SENSOR		DAYLIGHT HARVESTING SENSOR
	P.A. SPEAKER		WATERPROOF P.A. SPEAKER
	HEARING ASSIST SENSOR		FIRE ALARM HORN/STROBE
	CEILING VELOCITY FAN		HEAT DETECTOR
	SMOKE DETECTOR		PULL STATION
	OCCUPANCY INDICATOR		IT RACK
	RECEPTACLE CONTROL		CEILING MOUNTED VAV POWER
	CEILING MOUNTED WIRELESS ACCESS POINT		DIRECT CONNECTION C/W DISCONNECT
	HAND DRYER		WALL OR CEILING MOUNTED FORCED FLOW HEATER-SEE MECH.
	UNIT HEATER-SEE MECH.		EXHAUST FAN TYPE 2-SEE MECH.
	EXHAUST FAN TYPE 1-SEE MECH.		RETURN-SEE MECH.
	SPRINKLER HEAD-SEE MECH.		CCTV CAMERA
	SUSPENDED LIGHTING FIXTURES- GYM SERIES		A/C UNIT
	610mm X 610mm, 1220mm RECESSED LIGHT FIXTURE		305mm X 1220mm RECESSED LIGHT FIXTURE
	305mm X 1220mm SURFACE MOUNTED LIGHT FIXTURE		610mm, 1220mm, 1830mm, 2440mm X 87mm SUSPENDED LINEAR LIGHT FIXTURE - LENGTHS VARY
	610mm, 1220mm, 1830mm, 2440mm X 87mm RECESSED LINEAR LIGHT FIXTURE - LENGTHS VARY		WALL MOUNTED LINEAR LIGHT FIXTURE
	CEILING MOUNTED EMERGENCY LIGHT FIXTURE		WALL MOUNTED EMERGENCY LIGHT FIXTURE
	WALL MOUNTED SINGLE/DOUBLE EMERGENCY LIGHT FIXTURE TIED TO THE CALL-FOR-ASSISTANCE SYSTEM		EMERGENCY LIGHTING BATTERY UNIT
	CW NUMBER OF HEADS SHOWN		EMERGENCY PUSH BUTTON
	CEILING MOUNTED WALL WASHER LIGHTING		EMERGENCY LIGHTING, CEILING - MOUNTED EXIT SIGN
	EMERGENCY LIGHTING, WALL - MOUNTED EXIT SIGN		DIRECTIONAL 2 SIDED EMERGENCY LIGHTING
	CEILING MOUNTED EXIT SIGN		WALL MOUNTED EXIT SIGN
	DIRECTIONAL EMERGENCY LIGHTING, WALL - MOUNTED EXIT SIGN		WALL MOUNTED LIGHT FIXTURE
	WATERPROOF WALL MOUNTED LIGHT FIXTURE		CEILING MOUNTED RIM SQUARE LIGHT PENDANT FIXTURE (1200mm/1800mm) - SEE SPECS
	WALL MOUNTED OCCUPANCY INDICATOR & AUDIO/VISUAL INDICATOR TIED INTO THE CALL-FOR-ASSISTANCE SYSTEM		WALL MOUNTED THERMOSTAT
	CEILING MOUNTED THERMOSTAT		CEILING MOUNTED RECESSED POTLIGHT FIXTURE
	CONTROL PANEL (HEIGHTS VARY ACC. TO CEILING HEIGHTS)		CARD READER
	PUSH TO LOCK BUTTON		AUTOMATIC DOOR OPERATOR B.F. PUSH BUTTON

NOTES:
1. WHEREVER OBVIOUSLY ALIGN ALL ROWS OF FIXTURES WITH INTERIOR WALLS AND WINDOW GRINDS TYP.
2. INSTALL PREFIN. ALUM. TRIM ABOVE WHERE INDICATED.
3. INDICATED SPACING IS THE WIDTH OF THE EXTERIOR WALL TO MATCH CURTAINWALL FRAME ALL WINDOW CEILING TO BE 6" DEEP 1" WIDE PREFIN. BLACK FINISH STAINLESS STEEL CABLE TRAYS, LEGRAND CABLOFIL IN THE CORRIDOR & ROOMS.

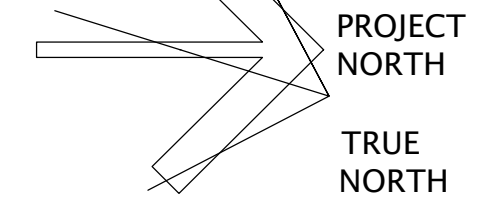
REFER TO DWG A6-2 FOR CONTINUATION

NO.	DATE	REVISION
7	26/09/23	ISSUED FOR ADDENDUM #2
6	26/09/23	ISSUED FOR TENDER
5	26/09/23	ISSUED FOR 2ND SPA SUBMISSION
4	09/07/23	ISSUED FOR PERMIT
3	24/06/23	ISSUED FOR SPA
2	24/06/23	ISSUED FOR 80% REVIEW
1	26/07/23	ISSUED FOR CLIENT REVIEW
0	20/11/23	ISSUED FOR CLIENT REVIEW

DO NOT SCALE DRAWINGS. ALL DIMENSIONS TO BE CHECKED AND VERIFIED ON THE JOB. ALL DRAWINGS REMAIN THE PROPERTY OF THE ARCHITECTS.

- GENERAL NOTES
- ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE REQUIREMENTS OF THE ONTARIO BUILDING CODE, LATEST EDITION, AND ALL OTHER ACTS ADMINISTERED BY ALL AUTHORITIES HAVING JURISDICTION.
 - THESE DRAWINGS TO BE READ IN CONJUNCTION WITH ALL OTHER CONTRACT DOCUMENTS, AND SPECIFICATIONS.
 - THE DESIGN LOADS SHALL NOT EXCEED LOADS SHOWN ON DRAWINGS.
 - ALL DIMENSIONS, SHOWN ON THE DRAWINGS, SHALL BE CHECKED BY THE CONTRACTOR BEFORE PROCEEDING WITH THE WORK.
 - THE STABILITY OF THE STRUCTURAL FRAME IS DEPENDENT ON THE FULL INTERACTION OF ALL STRUCTURAL COMPONENTS. THE GENERAL CONTRACTOR SHALL PROVIDE ALL NECESSARY TEMPORARY BRACING DURING CONSTRUCTION.
 - ALL DIMENSIONS GIVEN ARE IN METRIC.

- LEGEND:
- 2440mm BIGASS FANS
 - 1200mm SQUARE SUSPENDED SQUARE RIM PENDANT LIGHT
 - 1800mm SQUARE SUSPENDED SQUARE RIM PENDANT LIGHT



Kingsland ARCHITECTS INC.

KINGSLAND + ARCHITECTS INC.
110 Cumberland Street, Suite 202
Toronto, Ontario M5R 3V5
ph 416.203.7799
fax 416.203.7763



EEC COBURG
ELEMENTARY SCHOOL & CHILDCARE CENTRE
NEW CONSTRUCTION

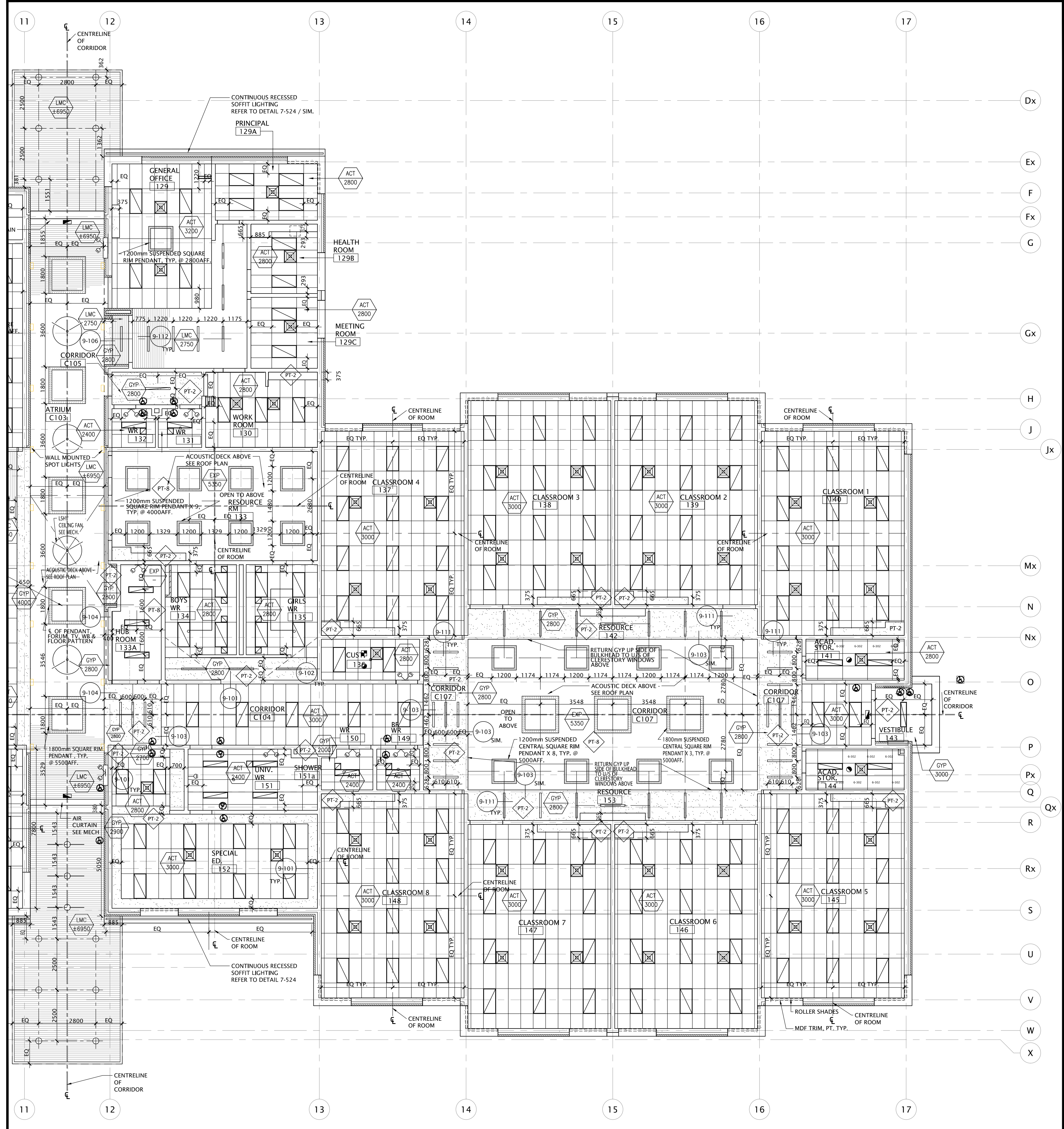
10719 NEW AMHERST BLVD.,
COBURG, ONTARIO
K9A 0G4

DRAWING TITLE: PARTIAL FLOOR PLANS - REFLECTED CEILING PLAN	
PROJECT NO: A23002	SCALE: 1:100
DRAWN: K+	DRAWING NO.: REV.
CHECKED: K+	A6-0 7
DATE: JULY, 2023	

REFLECTED CEILING PLAN LEGEND (SEE MECH. & ELEC.)					
	CEILING TYPE		CEILING HEIGHT		PAINT COLOR
	METAL LINEAR CEILING		SEAMLESS ACOUSTIC GYPSUM CEILING		ACOUSTIC GYPSUM CEILING TILES & T-GRID 1220X610
	GYPSUM CEILING/BULKHEADS		RETURN AIR GRILLE-SEE MECH.		NEW DIFFUSER-SEE MECH.
	DETECTOR		HEARING ASSIST SPEAKER		MOTION/OCCUPANCY SENSOR
	DAYLIGHT HARVESTING SENSOR		P.A. SPEAKER		WATERPROOF P.A. SPEAKER
	HEARING ASSIST SENSOR		FIRE ALARM HORN/STROBE		CEILING VELOCITY FAN
	HEAT DETECTOR		SMOKE DETECTOR		PULL STATION
	OCCUPANCY INDICATOR		IT RACK		RECEPTACLE CONTROL
	VAV POWER		CEILING MOUNTED WIRELESS ACCESS POINT		DIRECT CONNECTION C/W DISCONNECT
	HAND DRYER		WALL OR CEILING MOUNTED FORCED FLOW HEATER-SEE MECH.		UNIT HEATER-SEE MECH.
	EXHAUST FAN TYPE 2-SEE MECH.		EXHAUST FAN TYPE 1 / RETURN-SEE MECH.		SPRINKLER HEAD-SEE MECH.
	WALL MOUNTED LINEAR LIGHT FIXTURE		CEILING MOUNTED EMERGENCY LIGHT FIXTURE		WALL MOUNTED EMERGENCY LIGHT FIXTURE
	WALL MOUNTED SINGLE/DOUBLE EMERGENCY LIGHT FIXTURE		EMERGENCY LIGHTING BATTERY UNIT		EMERGENCY LIGHTING WALL WASHER
	EMERGENCY LIGHTING, CEILING MOUNTED EXIT SIGN		DIRECTIONAL 2 SIDED EMERGENCY LIGHTING		DIRECTIONAL EMERGENCY LIGHTING, WALL MOUNTED EXIT SIGN
	WALL MOUNTED LIGHT FIXTURE		WATERPROOF WALL MOUNTED LIGHT FIXTURE		CEILING MOUNTED RIM SQUARE LIGHT PENDANT FIXTURE
	CEILING MOUNTED RECESSED POTLIGHT FIXTURE		PUSH TO LOCK BUTTON		AUTOMATIC DOOR OPERATOR
	AUTOMATIC DOOR OPERATOR		PUSH BUTTON		

NOTES:
 1. WHEREVER OBVIOUS ALIGN ALL ROWS OF FIXTURES
 2. INSTALL GYPSUM BOARD BULKHEAD ABOVE ALL INTERIOR DOORS AND WINDOWS OPENINGS. TYP.
 3. INSTALL PREFIN. ALUM TRIM ABOVE WHERE INDICATED WITHIN THE WIDTH OF THE EXTERIOR WALL TO MATCH CURTAIN WALL FRAME
 4. ALL WIRING & CABLING TO BE IN 6" DEEP 1 1/2" WIDE PREFIN. BLACK FINISH STAINLESS STEEL CABLE TRAYS/LEGAND CABLE/IN IN THE CORRIDOR & ROOMS.

REFER TO DWG A6-0 FOR CONTINUATION



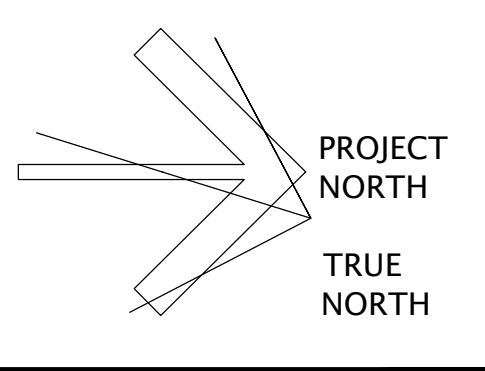
1 PARTIAL FLOOR PLAN - REFLECTED CEILING PLAN
 A6-1 SCALE: 1:100

NO.	DATE	REVISION
7	20/04/23	ISSUED FOR ADDENDUM #2
6	20/02/23	ISSUED FOR TENDER
5	22/09/21	ISSUED FOR 2ND SPA SUBMISSION
4	09/03/21	ISSUED FOR PERMIT
3	24/04/20	ISSUED FOR SPA
2	24/04/20	ISSUED FOR 10% REVIEW
1	24/07/17	ISSUED FOR CLIENT REVIEW
0	22/09/16	ISSUED FOR CLIENT REVIEW

DO NOT SCALE DRAWINGS. ALL DIMENSIONS TO BE CHECKED AND VERIFIED ON THE JOB. ALL DRAWINGS REMAIN THE PROPERTY OF THE ARCHITECTS.

- GENERAL NOTES**
- ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE REQUIREMENTS OF THE ONTARIO BUILDING CODE, LATEST EDITION, AND ALL OTHER ACTS ADMINISTERED BY ALL AUTHORITIES HAVING JURISDICTION.
 - THESE DRAWINGS TO BE READ IN CONJUNCTION WITH ALL OTHER CONTRACT DOCUMENTS, AND SPECIFICATIONS.
 - THE DESIGN LOADS SHALL NOT BE EXCEEDED DURING CONSTRUCTION.
 - ALL DIMENSIONS, SHOWN ON THE DRAWINGS, SHALL BE CHECKED BY THE CONTRACTOR BEFORE PROCEEDING WITH THE WORK.
 - THE STABILITY OF THE STRUCTURAL FRAME IS DEPENDENT ON THE FULL INTERACTION OF ALL STRUCTURAL COMPONENTS. THE GENERAL CONTRACTOR SHALL PROVIDE ALL NECESSARY TEMPORARY BRACING DURING CONSTRUCTION.
 - ALL DIMENSIONS GIVEN ARE IN METRIC.

- LEGEND :**
- 2440mm BIGASS FANS
 - 1200mm SQUARE SUSPENDED SQUARE RIM PENDANT LIGHT
 - 1800mm SQUARE SUSPENDED SQUARE RIM PENDANT LIGHT



Kingsland + ARCHITECTS INC.

KINGSLAND + ARCHITECTS INC.
 110 Cumberland Street, Suite 202
 Toronto, Ontario M5R 3V5
 ph 416.203.7799
 fax 416.203.7763



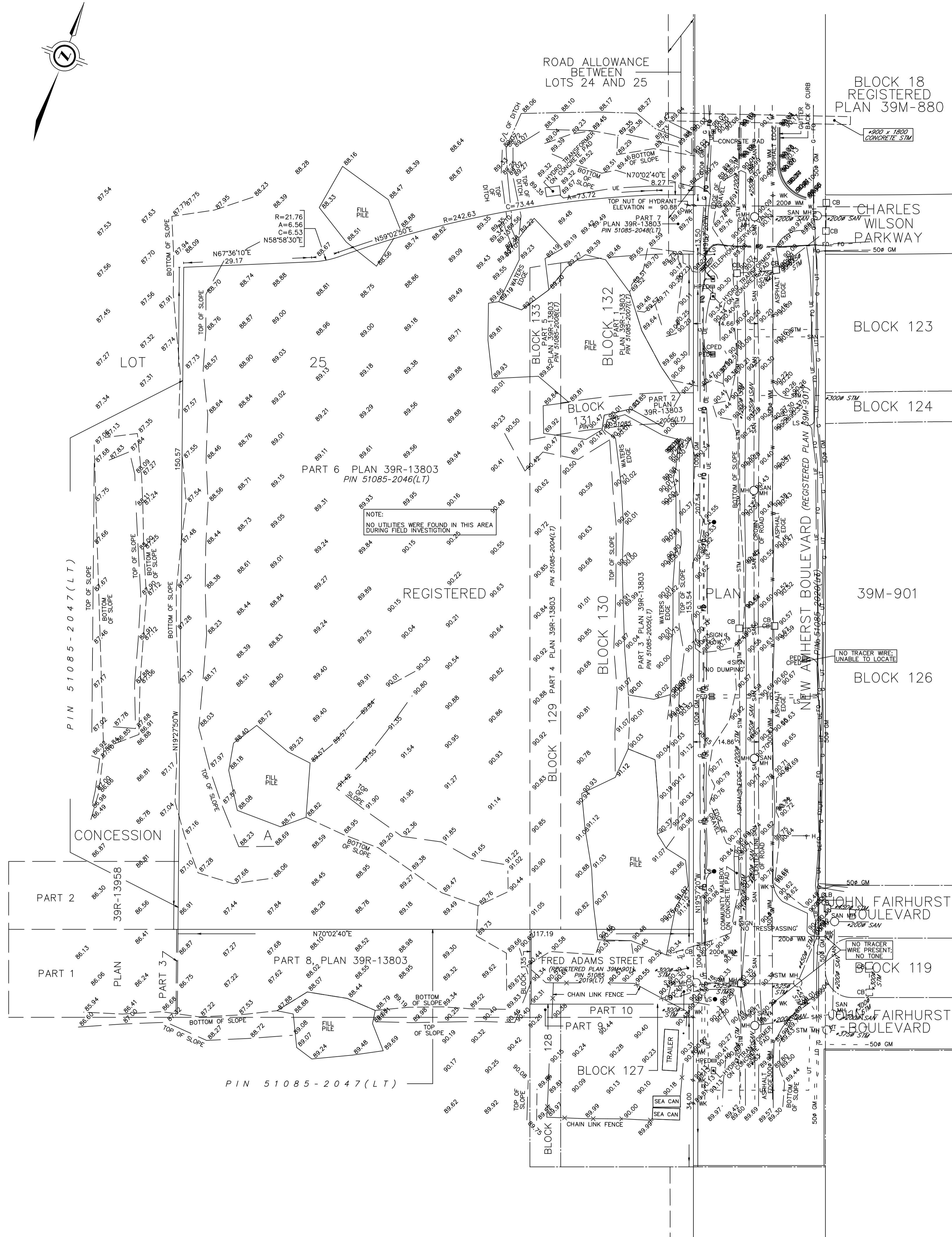
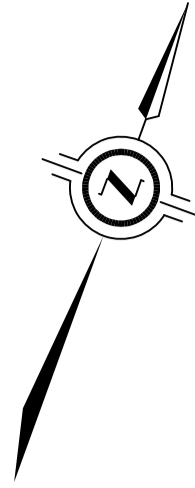
MonAvenir
 CONSEIL SCOLAIRE CATHOLIQUE

EEC COBourg
 ELEMENTARY SCHOOL & CHILD CARE CENTRE
 NEW CONSTRUCTION

10719 NEW AMHERST BLVD.,
 COBourg, ONTARIO
 K9A 0G4

DRAWING TITLE:
**PARTIAL FLOOR PLAN
 REFLECTED CEILING PLANS**

PROJECT NO: A23002	SCALE: 1:100
DRAWN BY: K+	DRAWING NO.: REV.
CHECKED BY: K+	A6-1 7
DATE: JULY, 2023	



SKETCH TO ILLUSTRATE GROUND ELEVATIONS AND TOPOGRAPHIC FEATURES OF BLOCKS 129, 130, 131, 132, AND 133 REGISTERED PLAN 39M-901 AND PART OF LOT 25 AND PART OF THE ROAD ALLOWANCE BETWEEN LOTS 24 & 25 CONCESSION A GEOGRAPHIC TOWNSHIP OF HAMILTON NOW IN THE TOWN OF COBURG COUNTY OF NORTHUMBERLAND

SCALE 1 : 500

J.D. BARNES LIMITED

ONSITE LOCATES INC. © COPYRIGHT 2023

METRIC DISTANCES AND/OR COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

NOTES

BEARINGS ARE GRID AND ARE REFERRED TO THE WESTERLY LIMIT OF NEW AMHERST BOULEVARD, REGISTERED PLAN 39M-901, HAVING A BEARING OF N 19°57'20" W REFERRED TO THE CENTRAL MERIDIAN OF UTM ZONE 17 (81°WEST LONGITUDE) NAD 83 (CSRS)(2010.0).

THE COMBINED AREA OF PARTS 1 - 7, PLAN 39R-13803 IS 1.85 HECTARES OR 4.58 ACRES

BENCHMARK AND ELEVATIONS

ELEVATIONS SHOWN ON THIS PLAN ARE CGVD28(HV2.0) DATUM AND ARE REFERRED TO COSINE BENCHMARK No. 001196009506 HAVING A PUBLISHED ELEVATION OF 79.92 METRES.

LEGEND

- DENOTES SURVEY MONUMENT FOUND
- DENOTES SURVEY MONUMENT SET
- SSIB DENOTES SHORT STANDARD IRON BAR
- IB DENOTES IRON BAR
- M DENOTES MEASURED
- CB DENOTES CATCHBASIN
- HPED DENOTES HYDRO PEDESTAL
- MH DENOTES MANHOLE
- LS DENOTES LIGHT STANDARD
- IPED DENOTES TELEPHONE PEDESTAL
- ←WK DENOTES WATER KEY

UTILITY LEGEND

- SAN — DENOTES UNDERGROUND SANITARY SEWER
- STM — DENOTES UNDERGROUND STORM SEWER
- G — DENOTES UNDERGROUND GAS LINE
- W — DENOTES UNDERGROUND WATER LINE
- UE — DENOTES UNDERGROUND HYDRO LINE
- UT — DENOTES UNDERGROUND TELEPHONE LINE
- FO — DENOTES UNDERGROUND FIBRE OPTIC LINE
- SAN MH DENOTES SANITARY MANHOLE
- STM MH DENOTES STORM MANHOLE
- H — DENOTES FIRE HYDRANT
- ENDICAP — DENOTES ENDICAP
- HT DENOTES HYDRO TRANSFORMER
- GLB DENOTES GROUND LEVEL BOX
- CPED DENOTES CABLE TV PEDESTAL

NOTE:

WORKSPACE UNDER CONSTRUCTION; UNABLE TO INVESTIGATE SEWER FEATURES, EITHER WITH COVER OR NO ACCESS

UNDERGROUND UTILITY NOTES

THE UTILITY DATA DEPICTED ON THIS DRAWING WERE ACQUIRED IN ACCORDANCE WITH ASCE STANDARD 38-02. THE INFORMATION IS SHOWN BY ATTRIBUTED QUALITY LEVELS WHICH ARE DEFINED AS FOLLOWS:

DATA QUALITY LEVEL

HIGHEST QUALITY

- QUALITY LEVEL A
- QUALITY LEVEL B
- QUALITY LEVEL C
- QUALITY LEVEL D

LOWEST QUALITY

QUALITY LEVEL "A" - INFORMATION OBTAINED BY ACTUAL PHYSICAL EXPOSURE OF TARGETED UTILITIES AND SUBSEQUENT MEASUREMENT OF THE EXPOSED PRECISE HORIZONTAL AND VERTICAL POSITION.

QUALITY LEVEL "B" - INFORMATION OBTAINED USING GEOPHYSICAL LOCATE TECHNIQUES TO IDENTIFY THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION OF THE DESIGNATED UTILITIES.

QUALITY LEVEL "C" - INFORMATION OBTAINED BY SURVEYING AND PLOTTING VISIBLE UTILITY FEATURES AND BY USING PROFESSIONAL JUDGMENT IN CORRELATING THIS INFORMATION TO THE QUALITY "D" INFORMATION OBTAINED.

QUALITY LEVEL "D" - INFORMATION DERIVED FROM UTILITY RECORDS OR VERBAL RECOLLECTIONS

ALL SERVICES ARE QUALITY "D" UNLESS NOTED OTHERWISE. LEVEL "D" RECORD INFORMATION SHOWN ON THIS PLAN HAVE BEEN PLOTTED APPROXIMATELY AS PER THE RECORDS FOUND AND COULD NOT BE FIELD VERIFIED WITHIN THE SCOPE OF THIS PROJECT. IF FURTHER VERIFICATION IS REQUIRED, IT IS SUGGESTED THAT LEVEL "A" METHODOLOGIES BE EMPLOYED.

LOST SIGNAL - DENOTES/INDICATES A POINT WHERE OL-B METHODS COULD NO LONGER ASCERTAIN THE HORIZONTAL POSITION OF A FACILITY.

QUALITY LEVEL "D" INFORMATION COMPILED FROM RECORDS PROVIDED BY BELL CANADA MU#0654; ENBRIDGE FILE NAME 20231729000 AS-BUILT.PDF; AND FROM CLIENT FILE NAME A_503 ET NEW AMHERST PHASE 3 PRIMARY LAYOUT PLAN.PDF, 2_411 FRED ADAMS PLAN AND PROFILE.PDF AND 3_10719 NAB A PP 2022 AA 07.PDF

CAUTION: CALL BEFORE YOU DIG

THIS PLAN IS INTENDED FOR DESIGN PURPOSES ONLY. OTHER BURIED UTILITIES MAY EXIST WHICH ARE NOT SHOWN DUE TO INSUFFICIENT INFORMATION OR IMPROPER INSTALLATION. CONTACT ALL POTENTIAL OWNERS OF UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION OR BREAKING GROUND. IT IS THE RESPONSIBILITY OF THE CONTRACTOR/BUILDER TO ENSURE THE APPROPRIATE LEGAL REQUIREMENTS ARE MET.

SUBSURFACE UTILITY FIELD WORK WAS COMPLETED ON THE 25TH DAY OF MAY, 2023

<p>ONSITE LOCATES INC. UTILITY LOCATE SERVICES A wholly owned subsidiary of J.D. Barnes Ltd.</p> <p>140 RENFREW DRIVE, SUITE 100, MARKHAM, ON L3R 6B3 T: 1-800-805-6155 www.onsitelocates.ca</p>		<p>Elliott and Parr (PETERBOROUGH) A Division of J.D. Barnes Limited</p> <p>211 SHERBROOKE ST PETERBOROUGH, ON K9J 2N2 T: (705) 745-8444 F: (705) 745-5314 www.jdbarnes.com</p>					
				<p>DRAWN BY: AB</p>	<p>CHECKED BY: VAC</p>	<p>REFERENCE NO.: 23-46-34135</p>	<p>DRAWN BY: MF</p>
<p>FILE: G:\23-19-097\00\Drawing\Merged Onsite Plan\23-46-34135.dwg</p>				<p>FILE: HAN A-25</p>			

April 10, 2026

From:
Henry Kortekaas & Associates Inc.
230 Westney Road, Suite #308
Ajax, ON
L1S 7P9



Addendum

Re: [EEC Cobourg – MonAvenir] (Job No. 2023-028)

Addendum No.	Date
1	2026-04-10

Prepared by Henry Kortekaas & Associates, Landscape Architects, for the construction of:

[EEC COBOURG - MONAVENIR]

[NEW ELEMENTARY SCHOOL AND CHILDCARE]

Item 1.1) Fence Replacement and Gate Upgrade (Bus Loop) - L-L1 Landscape Plan, L-D2 & L-D3 Details

Replace the existing 1.2m high chain-link fence along the bus loop (116.7 linear metres, Detail 1/L-D2) with 1.2m high black vinyl-coated chain-link fence in accordance with Detail 5/L-D3. This replacement is intended to match the fencing surrounding the childcare areas.

Replace the existing 1.2m high double swing gate at the bus loop with a Canadian Eagle II double swing gate, 1.2m height. Refer to Appendix A for product specifications.

Item 1.2) 1.8m Height Gates - L-L1 Landscape Plan, L-D2 & L-D3 Details

Provide 1.8m high gates in conjunction with all 1.8m high fencing, in accordance with Detail 3/L-D3.

At the northeast corner of the school and along the northwest walkway connection to the adjacent property, provide Canadian Eagle II double swing gates, 1.8m height. Refer to Appendix A for product specifications.

HK/RW
X:\JOBS\2023\2023-028 Cobourg ES & CC - Kingsland\TENDER\2026-03-12\ADDENDUMS\2023-028 Addendum #1.docx



Appendix A

[Product Detail – Double Swing Gate – 1.2/1.8m Ht.]

94.00" [2388mm]

60.0" [1524mm]

3.0" [76mm]

CANE BOLT

FINISHED GRADE

GATE OPENINGS	FROM:	TO:
UP TO 6 FT. HIGH	94" [2388mm]	220" [5588mm]
7 FT. AND HIGHER	94" [2388mm]	136" [3454mm]

NOTE: CUSTOM SIZES AVAILABLE UPON REQUEST

SPECIFICATIONS:

POSTS RAILS & PICKETS: EXTRUDED MARINE ALUMINUM 6061-T6 PRIME ALUMINUM, NORTH AMERICAN PRODUCED

FINISH: SEVEN STAGE ARCHITECTURALLY CERTIFIED PRETREATMENT AS PER AAMA 2604. SUPER DURABLE ELECTROSTATICALLY APPLIED POWDER COAT - MIN THICKNESS 2.5 MILS

POSTS: 76mm x 76mm (3"x3"), .188WALL.
OPTION: 102mm x 102mm (4"x4"), .188WALL

POST CAPS: PYRAMID OR BALL

UPRIGHTS: 51mm x 51mm (2" x 2") .188 WALL

RAILS: 38mm x 64mm (1 1/2" x 2 1/2"), .120 WALL

PICKETS: 19mm x 38mm (3/4" x 1 1/2"), .065 WALL

WELDS: ALUMINUM - FULL BEAD ON PUBLIC SIDE
- TACK WELD ON PRIVATE SIDE

COLOUR: STANDARD COLOURS ARE BLACK, SEMI-BLACK BROWN, GREEN, WHITE AND FOREST GREEN (CUSTOM COLOURS AVAILABLE UPON REQUEST)

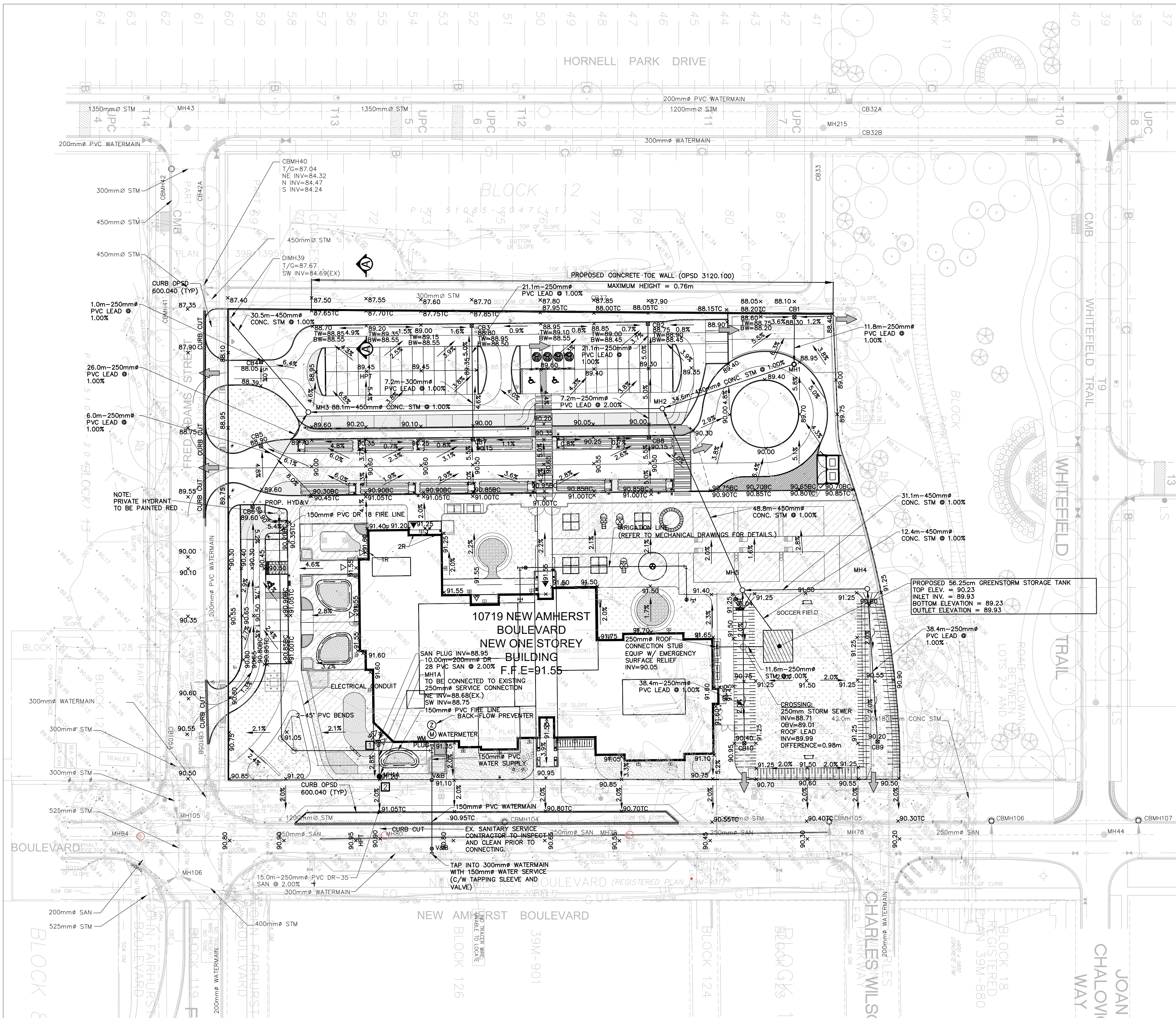
SECTION A-A

FITTINGS

COMMENTS: DOUBLE SWING GATE

	TITLE	DRAWING No.
	<h2 style="margin: 0;">IRON EAGLE II ALUMINUM</h2> <h2 style="margin: 0;">CANADIAN EAGLE II DOUBLE SWING GATE</h2>	<h1 style="margin: 0;">C-AD1</h1>
IRON EAGLE INDUSTRIES	CHK'D	DATE: JAN 12, 2019

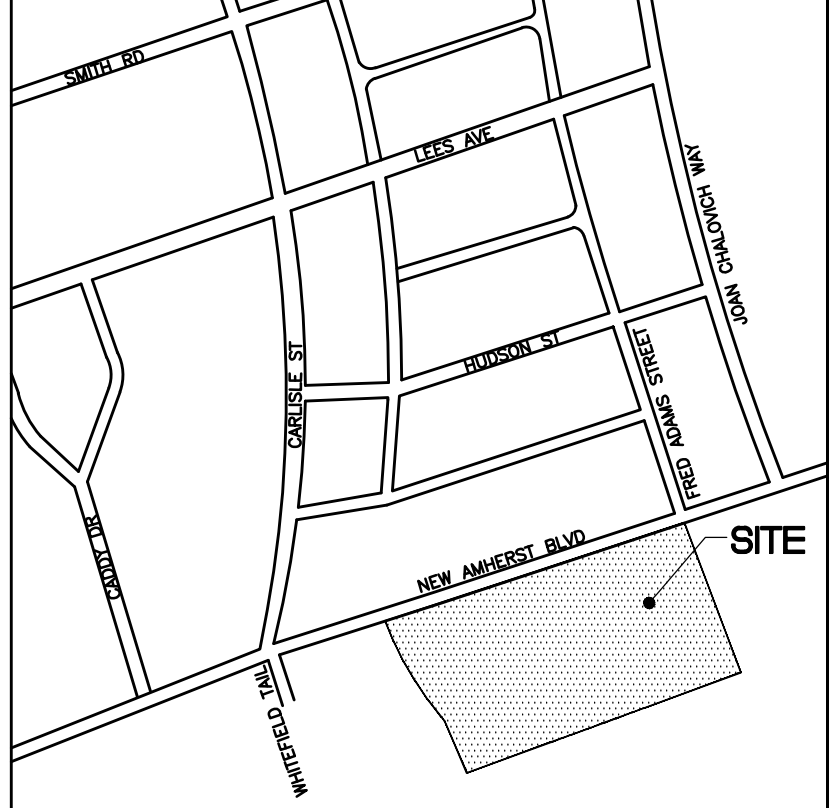
IRON EAGLE INDUSTRIES 1256 CARDIFF BLVD., MISSISSAUGA, ON L5S 1R1 www.ironagleind.com info@ironagleind.com TEL: 905 670-2558 FAX: 905 670-2538



GENERAL NOTES:

1. NORTHUMBERLAND COUNTY PLUMBING INSPECTION SERVICES ARE REQUIRED TO INSPECT ALL SITE SERVICING INCLUDING STORM DRAINAGE PIPING, FIRE MAIN, DOMESTIC MAIN AND SANITARY AND STORM BUILDING SEWERS, PRIOR TO COVERING.
2. NORTHUMBERLAND COUNTY PLUMBING INSPECTION SERVICES ARE REQUIRED TO WITNESS TESTING OF ALL SERVICE PIPING AND STRUCTURES.
3. A PLUMBING PERMIT IS TO BE OBTAINED FROM THE MUNICIPALITY FOR SITE SERVICING.
4. CAST IRON FRAMES AND COVERS FOR MAINTENANCE HOLES AND CATCH BASINS TO CONFORM TO CAN/CSA-B170.1.

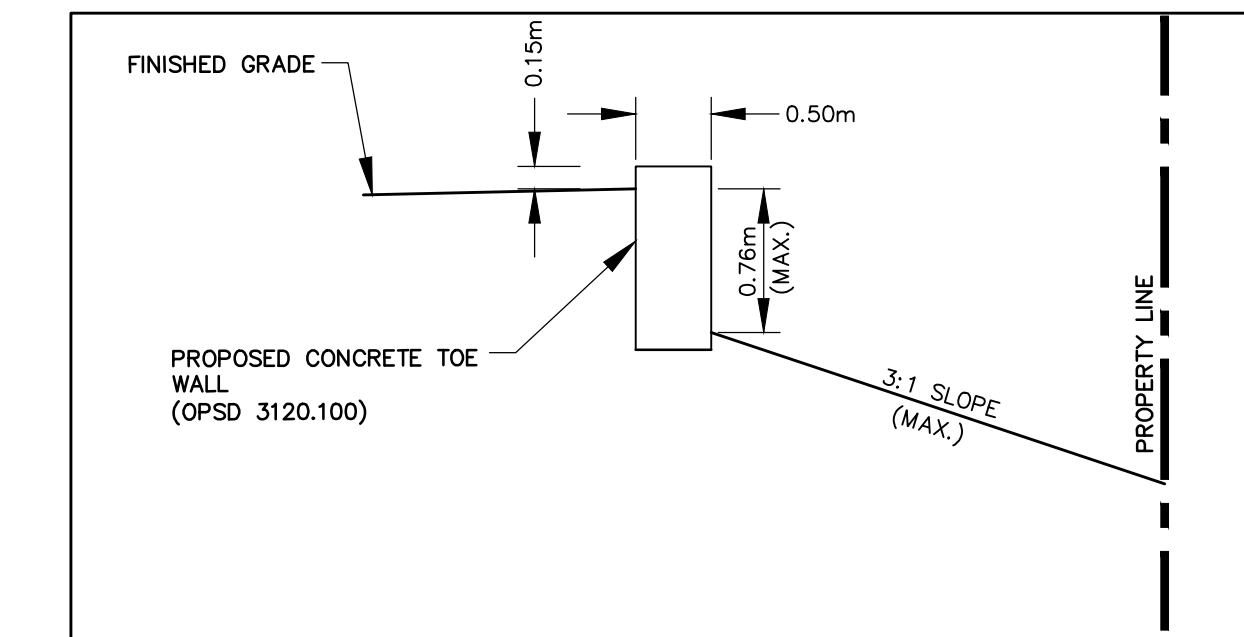
STORM SEWER INFORMATION		
STRUCTURE	TOP OF COVER	INVERTS
CB1	T/G=88.30	INV=86.85
CB2	T/G=88.75	INV=87.30
CB3	T/G=88.80	INV=87.35
CB4	T/G=88.05	INV=86.60
CB5	T/G=88.90	INV=87.45
CB6	T/G=89.60	INV=88.15
CB7	T/G=90.15	INV=88.70
CB8	T/G=90.15	INV=88.70
CB9	T/G=90.20	INV=88.75
CB10	T/G=90.40	INV=88.95
MH1	T/G=89.95	W INV=86.73 SE INV=86.41
MH2	T/G=90.00	NW INV=86.06 NE INV=86.06 S INV=86.00
MH3	T/G=89.60	N INV=85.12 SE INV=81.86 SW INV=85.06
MH4	T/G=91.25	E INV=88.33 S INV=86.92
MH5	T/G=91.25	N INV=86.61 SW INV=86.52 E INV=88.53



KEY PLAN

LEGEND:

- PROPERTY LINE
- +325.64 EXISTING ELEVATION
- x89.75 PROPOSED ELEVATION
- MH1 PROPOSED STORM MANHOLE
- MH1A PROPOSED SANITARY MANHOLE
- CB PROPOSED CATCHBASIN
- ⊗ VB PROPOSED VALVE & BOX
- ➔ EMERGENCY OVERLAND FLOW



SECTION A-A - TYPICAL WALL SECTION
1:100

PAVEMENT LAYER	MINIMUM PAVEMENT STRUCTURE	
	HEAVY DUTY	HEAVY DUTY
SURFACE COURSE ASPHALT	40mm-HL3 OR HL4	40mm-HL3 OR HL4
BINDER COURSE ASPHALT	50mm-HL8	60mm-HL8
GRANULAR BASE	150mm- OPSS 1010 GRANULAR 'A'	150mm- OPSS 1010 GRANULAR 'A'
GRANULAR SUBBASE	300mm- OPSS 1010 GRANULAR 'B' TYPE 1	300mm- OPSS 1010 GRANULAR 'B' TYPE 1

NOTE: REFER TO FINAL GEOTECHNICAL INVESTIGATION REPORT FOR FINAL PAVEMENT STRUCTURE BEFORE THE START OF THE CONSTRUCTION.

CROSSING TABLE		
CROSSING No.	INVERT/OVERT	VERTICAL CLEARANCE
1	SAN OVB=89.16 WM INV=89.70	0.54m
2	SAN & WATER HORIZONTAL SEPARATION	13m

WATERMAIN INFORMATION	
PIPE SIZE(mm)	LENGTH(m)
150mm	95m

NO.	DESCRIPTION	DATE	BY
1	RESPOND TO PLUMBING COMMENTS	2025.12.03	S.D.L.
2	RE-ISSUED FOR SPA	2025.05.28	S.D.L.
3	ISSUED FOR BUILDING PERMIT	2025.03.14	S.D.L.

REVISIONS

CDI CANDEVCON GROUP INC.
CONSULTING ENGINEERS AND PLANNERS
3336 GOREWAY DRIVE TEL: (905) 794-0600
BRAMPTON ON L6P 0M7 FAX: (905) 794-0611

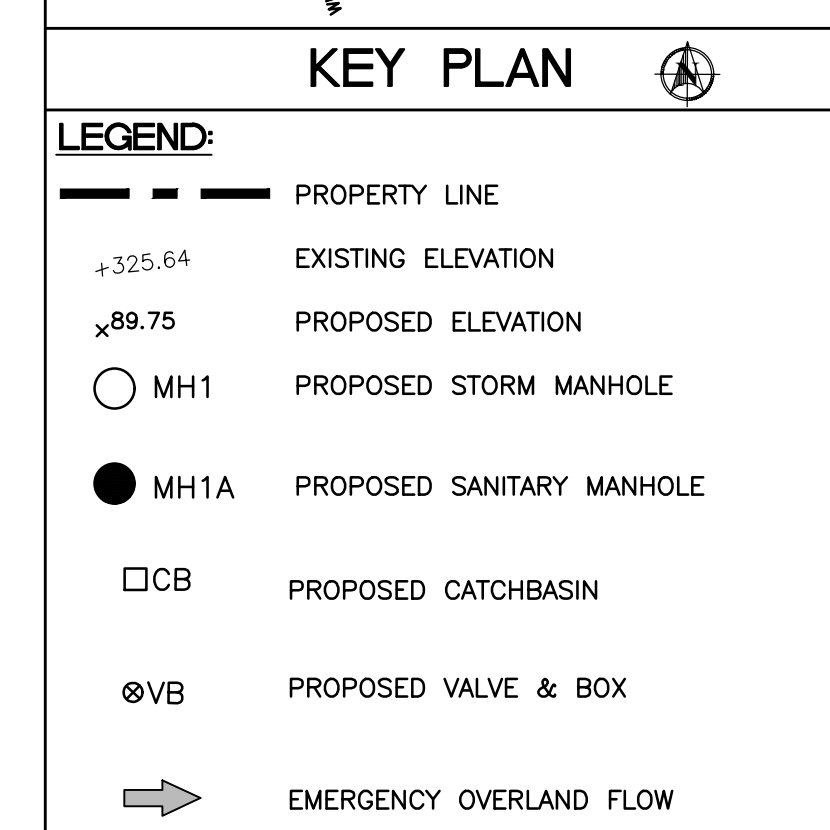
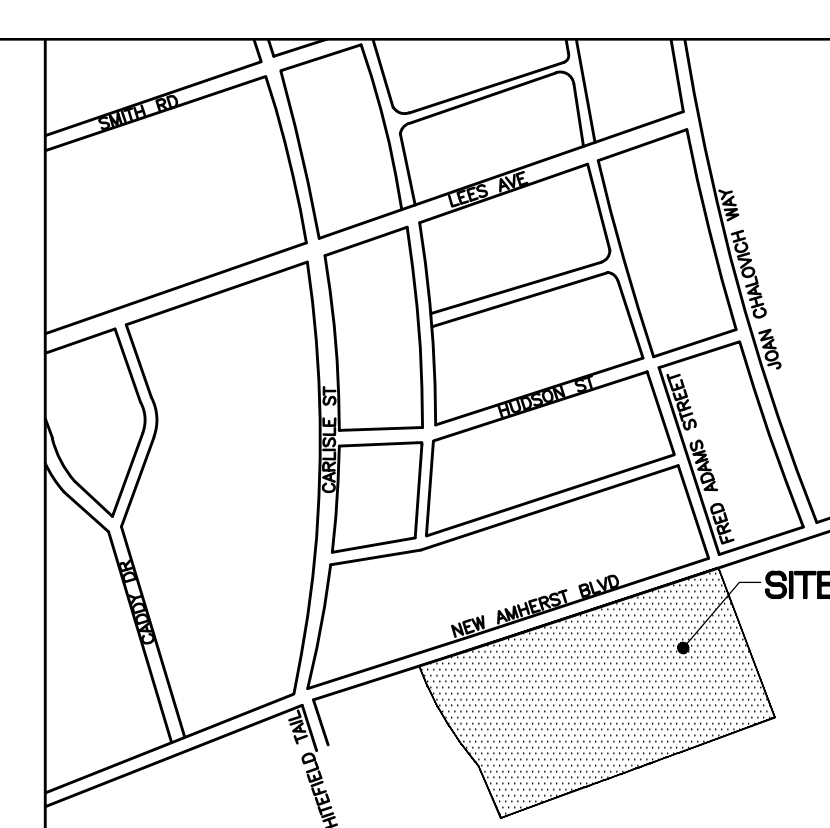
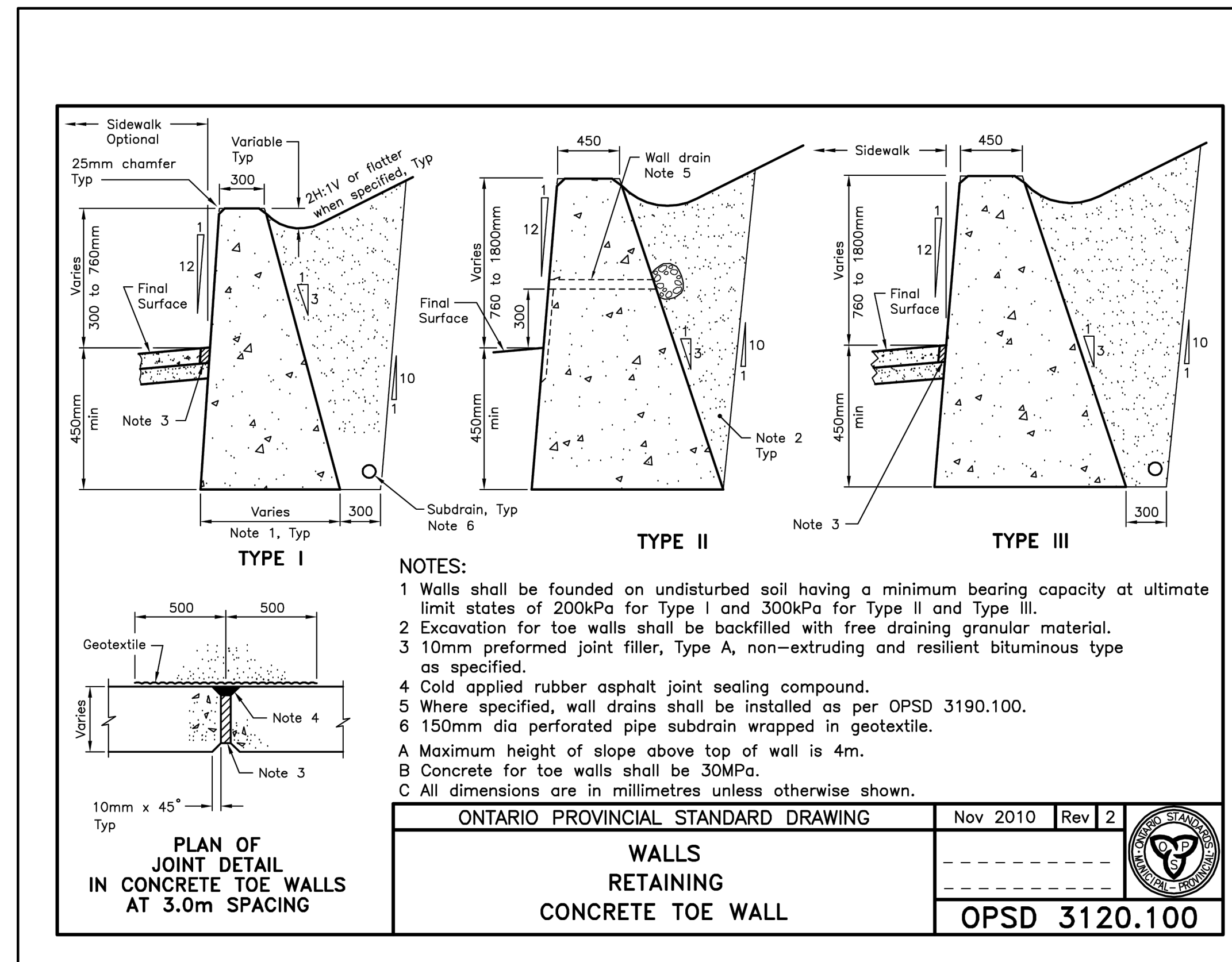
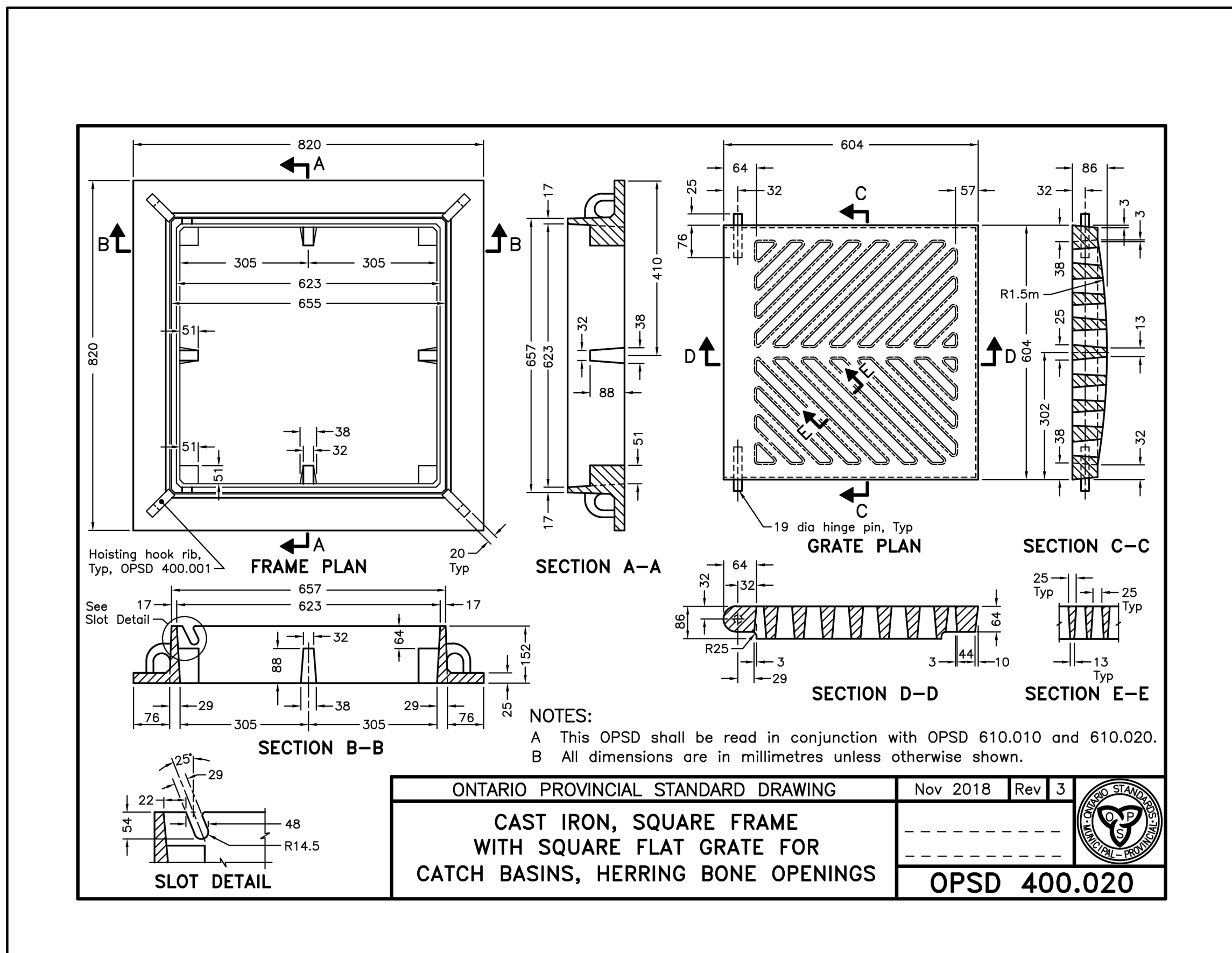
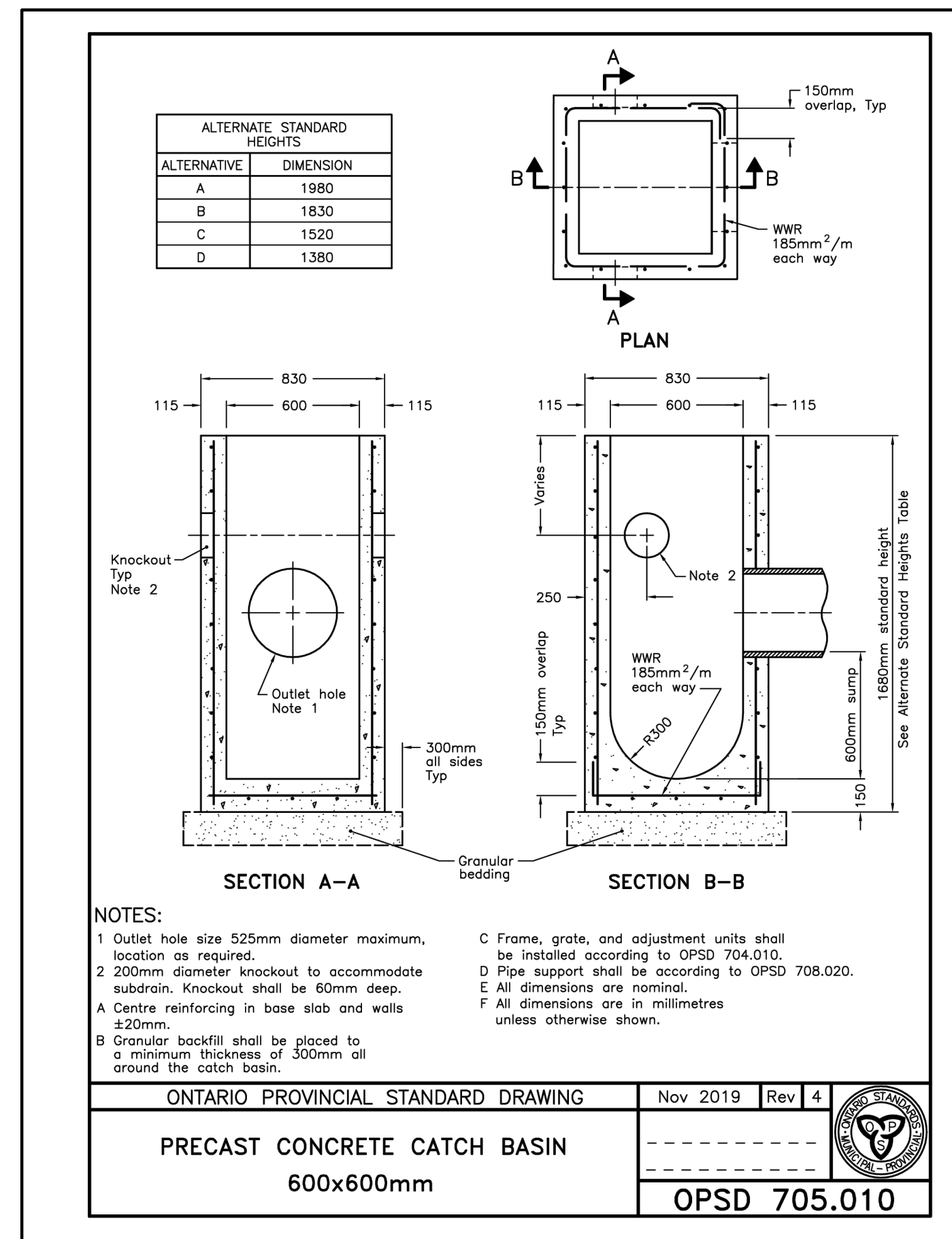
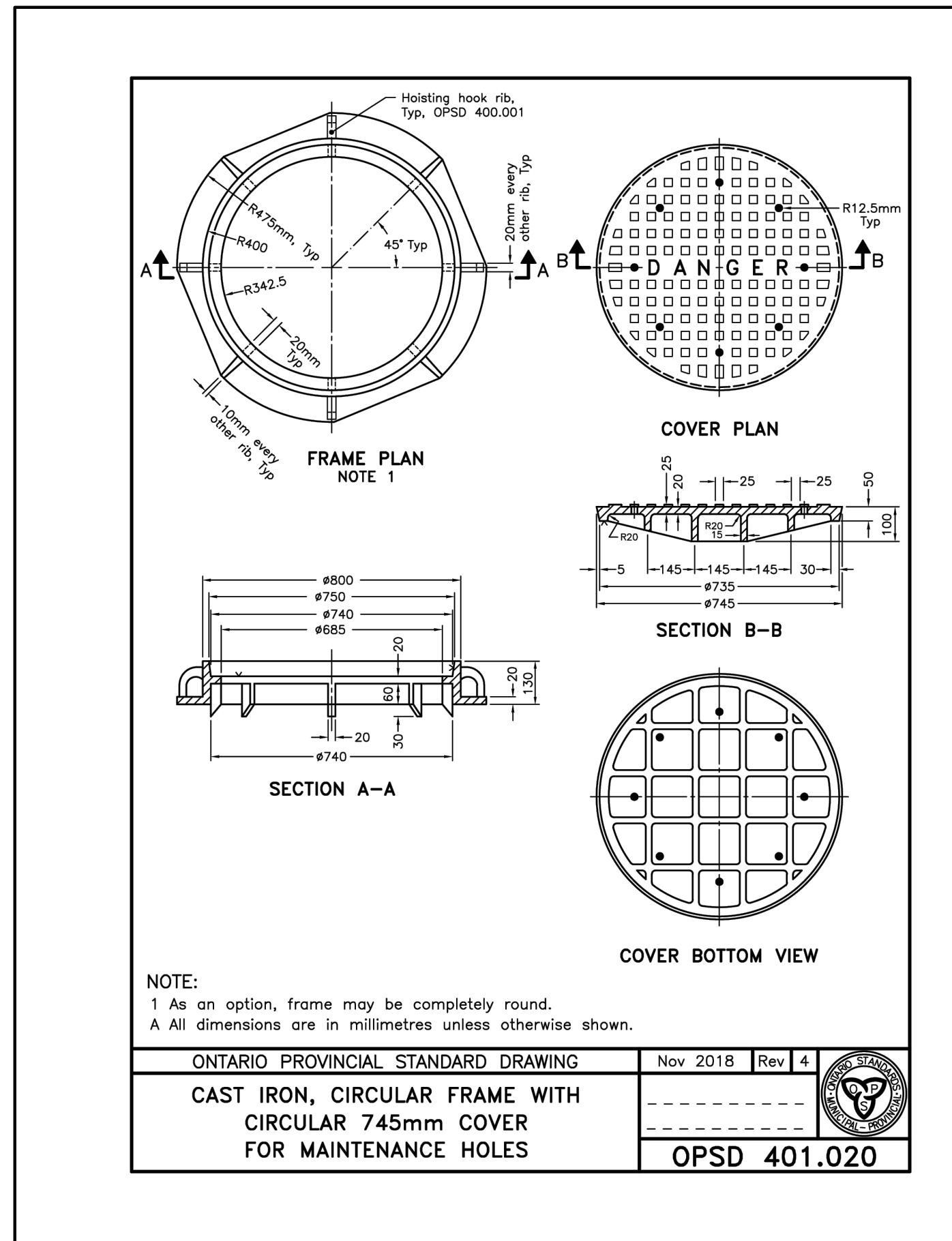
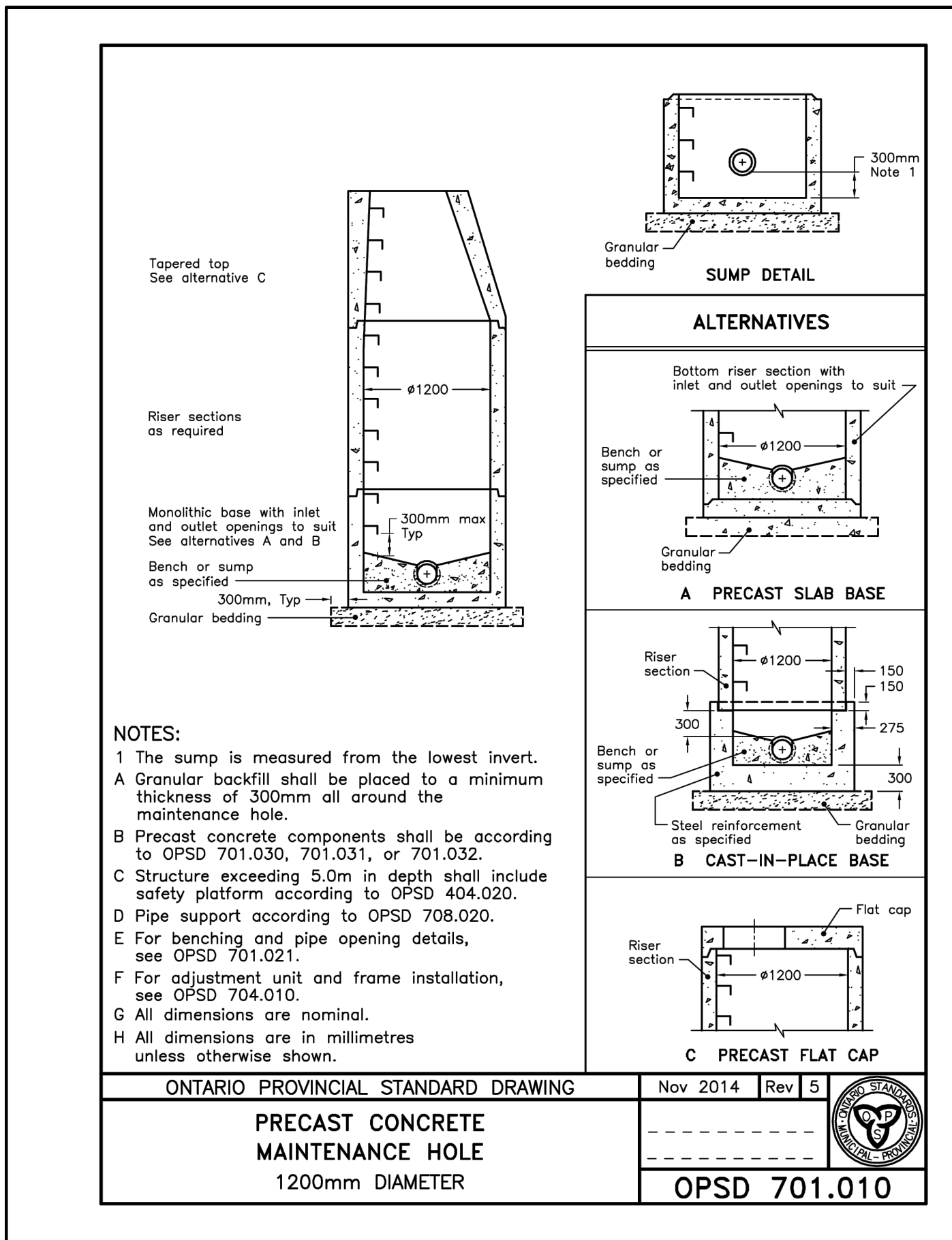
REGISTERED PROFESSIONAL ENGINEER
S. D. LANG
MEMBER 11, 1998
PROVINCE OF ONTARIO

CONSTRUCTION NORTH

ELEMENTARY SCHOOL AND CHILDCARE CENTRE
10719 NEW AMHERST BOULEVARD
COBOURG, ONTARIO

SITE SERVICING AND GRADING PLAN

DRAWN BY: R.V.M	PROJECT No: W23170
CHECKED BY: R.N	DRAWING No.
SCALE: 1:500	SG1
DATE: DEC. 05, 2023	



NO.	DESCRIPTION	DATE	BY

REVISIONS

303 CANDEVCON GROUP INC.
 CONSULTING ENGINEERS AND PLANNERS
 3038 GOREWAY DRIVE TEL: (905) 794-0600
 BRAMPTON ON, L6P 0M7 FAX: (905) 794-0811

S. D. LANG
 REGISTERED PROFESSIONAL ENGINEER
 OCTOBER 3, 2005
 PROVINCE OF ONTARIO

**ELEMENTARY SCHOOL AND
 CHILDCARE CENTRE**
 10719 NEW AMHERST BOULEVARD
 COBOURG, ONTARIO

SHEET TITLE:
STANDARD DETAILS

DRAWN BY: R.V.M	PROJECT No. W23170
CHECKED BY: R.N	DRAWING No.
SCALE: 1:500	SD1
DATE: DEC. 05, 2023	

**EEC COBOURG
NEW ELEMENTARY SCHOOL & CHILD CARE
APRIL 10, 2026
MECHANICAL ADDENDUM M1**

The following document is hereby made a part of the Contract Documents.

The following revisions and/or additions shall be made to Drawings and/or specifications and the cost shall be included in Tender Price.

Specification Section 22 44 13 – Plumbing Fixtures and Trim:

1. Replace the Specification Section in the Tender Documents with the copy attached herein.

Drawing M3 – Above-Ground Drainage Plan:

1. Replace the Drawing in the Tender Documents with the copy attached herein.

Drawing M20 – Schedules:

1. Add the attached Drawing to the Drawing Set and Contract Documents.

Diffuser/Grille/Register & Kitchen Hood Schedule:

1. Kitchen Hood shall be Broan BCS330SSC or approved equal.
2. Diffusers/Grilles/Registers shall be as per the following:
 - a. Diffuser Type 'S1' – E.H. Price SPD-B12, 24"x24", White Finish, 6" Neck
 - b. Diffuser Type 'S2' – E.H. Price SPD-B12, 24"x24", White Finish, 8" Neck
 - c. Diffuser Type 'S3' – E.H. Price SPD-B12, 24"x24", White Finish, 10" Neck
 - d. Diffuser Type 'C1' – E.H. Price RCD, 6" Neck, Custom Colour Finish
 - e. Diffuser Type 'C2' – E.H. Price RCD, 8" Neck, Custom Colour Finish
 - f. Diffuser Type 'C3' – E.H. Price RCD, 14" Neck, Custom Colour Finish, Complete with Wireguard
 - g. Diffuser Type 'DL' – E.H. Price HCD-6x18
 - h. Grille Type 'R1' – E.H. Price 80-B12, White Finish, Size: 24"x12".
 - i. Grille Type 'R2' – E.H. Price 80-B12, White Finish, Size: 10"x10"
 - j. Grille Type 'R3' – E.H. Price 80-B12, White Finish, Size: 24"x8".

END OF ADDENDUM M1

1 GENERAL

1.1 Conform to Sections of Division 1 as applicable.

1.1.1 Conform to General Mechanical Requirements, Section 20 05 11 Mechanical General Requirements as applicable.

1.1.2 All plumbing fixtures depicted on the Drawings with a "Fixture Tag" ('WC-1' or WC-1) is a new plumbing fixtures and to be supplied and installed by the Mechanical Contractor in full complete with all necessary cold/hot water supply, drainage and vent piping.

1.2 REFERENCES

ANSI/ARI	Drinking Fountains and Self-Contained, Mechanically Refrigerated Drinking Water Coolers.
ANSI/ARI 1020	Application and Installation of Drinking Fountains and Drinking Water Coolers.
CAN/CSA-B45 Series-02	CSA Standards on Plumbing Fixtures.
CAN/CSA-B125-01	Plumbing Fittings.

1.3 SUBMITTALS**1.3.1 Product Data**

1.3.1.1 Submit product data in accordance with the Mechanical General Requirements.

1.3.1.2 Indicate dimensions, construction details and roughing-in dimensions for all fixtures and trim.

1.3.2 Maintenance Data

1.3.2.1 Provide maintenance data for incorporation into manual specified in the Mechanical General Requirements.

1.3.2.2 Data to include:

- Description of plumbing fixtures and trim giving manufacturers name, type, model, year capacity and flow.
- Details of operation, servicing and maintenance.
- Recommended spare parts list.

1.4 FIXTURES AND TRIM

1.4.1 Manufacture plumbing fixtures in accordance with CAN/CSA-B45 Series. Conform to latest code requirements for water saving features noted in the Ontario Building Code.

1.4.2 Manufacture plumbing fittings in accordance with CAN/CSA-B125.

1.4.3 Architectural drawings to govern in determination of number and location of fixtures.

- 1.4.4 Fixtures in any one washroom or location to be product of one manufacturer and of same type, unless otherwise noted.
- 1.4.5 Trim in any one washroom or location to be product of one manufacturer and of same type, unless otherwise noted.
- 1.4.6 Exposed plumbing brass to be chrome plated.
- 1.4.7 The type number and letter allocated to each style of fixture identifies that particular fixture on Mechanical Drawings.

2 PRODUCTS

2.1 FLOOR-MOUNTED WATER CLOSET, "WC-1" [BARRIER FREE]

- 2.1.1 Water Closet: American Standard "Madera" Elongated # 3461.128 vitreous china floor mounted elongated syphon jet action bowl, 1-½" (38mm) top spud, bolt caps.
- 2.1.2 Flush Valve: Flush Valve & Supplies: American Standard Sensor-Operated Selectronic DC Power #6065.121.002 (Top Spud) complete with 120V-to-DC Power Supply (concealed installation).
- 2.1.3 Seat: Centoco #AM820STS toilet seat, elongated heavy duty plastic open front with cover, reinforced S.S. check hinge, post, washers and nuts. Power for device by electrical trade. Ensure that sensor clear seat cover.
- 2.1.4 Coupling: Mission Heavy Weight #HW Coupling, couplings, constructed of four extra wide corrugated type 304 stainless steel bands, connect from 100mm (3-15/16") MJ to 100mm (3-15/16") MJ, from cast iron to cast iron, heavy duty worm drive clamps.

2.2 FLOOR-MOUNTED WATER CLOSET, "WC-2"

- 2.2.1 Water Closet: American Standard "Madera" Elongated # 3451.128 vitreous china floor mounted elongated syphon jet action bowl, 1-½" (38mm) top spud, bolt caps.
- 2.2.2 Flush Valve: Flush Valve & Supplies: American Standard Sensor-Operated Selectronic DC Power #6065.121.002 (Top Spud) complete with 120V-to-DC Power Supply (concealed installation).
- 2.2.3 Seat: Centoco #AM820STS toilet seat, elongated heavy duty plastic open front with cover, reinforced S.S. check hinge, post, washers and nuts. Power for device by electrical trade. Ensure that sensor clear seat cover.
- 2.2.4 Coupling: Mission Heavy Weight #HW Coupling, couplings, constructed of four extra wide corrugated type 304 stainless steel bands, connect from 100mm (3-15/16") MJ to 100mm (3-15/16") MJ, from cast iron to cast iron, heavy duty worm drive clamps.

2.3 FLOOR-MOUNTED WATER CLOSET, “WC-3”

2.3.1 Water Closet: American Standard “Madera” Elongated # 3451.128 vitreous china floor mounted elongated syphon jet action bowl, 1-½” (38mm) top spud, bolt caps.

2.3.2 Flush Valve: Flush Valve & Supplies: American Standard Sensor-Operated Selectronic DC Power #6065.121.002 (Top Spud) complete with 120V-to-DC Power Supply (concealed installation).

2.3.3 Seat: Centoco #AM820STS toilet seat, elongated heavy duty plastic open front with cover, reinforced S.S. check hinge, post, washers and nuts. Power for device by electrical trade. Ensure that sensor clear seat cover.

2.3.4 Coupling: Mission Heavy Weight #HW Coupling, couplings, constructed of four extra wide corrugated type 304 stainless steel bands, connect from 100mm (3-15/16”) MJ to 100mm (3-15/16”) MJ, from cast iron to cast iron, heavy duty worm drive clamps.

2.4 FLOOR-MOUNTED WATER CLOSET, “WC-4”

2.4.1 Water Closet: American Standard “Madera” Elongated # 3451.128 vitreous china floor mounted elongated syphon jet action bowl, 1-½” (38mm) top spud, bolt caps.

2.4.2 Flush Valve: Flush Valve & Supplies: Sloan Regal #111-XL-CP, exposed manual Flushometer for Top Spud toilet, chrome plated, 6L (1.6 US Gal) factory set flow, quiet action diaphragm type, non-hold open feature, A. D. A oscillating handle, back-check angle stop (screwdriver operated), flush tube for 292mm (11-1/2”) rough-in, vacuum breaker.

2.4.3 Seat: Centoco #AM820STS toilet seat, elongated heavy duty plastic open front with cover, reinforced S.S. check hinge, post, washers and nuts. Power for device by electrical trade. Ensure that sensor clear seat cover.

2.4.4 Coupling: Mission Heavy Weight #HW Coupling, couplings, constructed of four extra wide corrugated type 304 stainless steel bands, connect from 100mm (3-15/16”) MJ to 100mm (3-15/16”) MJ, from cast iron to cast iron, heavy duty worm drive clamps.

2.5 WATER CLOSET, “WC-5”: FLOOR MOUNTED - VITREOUS CHINA – FLUSH VALVE TYPE:

2.5.1 Water Closet: Baby Devoro low consumption, flush valve toilet: floor mounted, vitreous china, syphon flush action bowl, 2" (50mm) fully glazed internal trapway, 10" x 9" (254mm x 229mm) large water surface, 6 LPF (1.6 GPF) per flush, with cast sanitary guard on bowl for china to china tank assembly, bolt caps (toilet bowl rough-in at 10" (254mm). Model : 2282.001 by: American Standard.

2.5.2 Flush Valve: Flush Valve & Supplies: Sloan Regal #111-XL-CP, exposed manual Flushometer for Top Spud toilet, chrome plated, 6L (1.6 US Gal) factory set flow, quiet action diaphragm type, non-hold open feature, A. D. A oscillating handle, back-check angle stop (screwdriver operated), flush tube for 292mm (11-1/2”) rough-in, vacuum breaker.

- 2.5.3 Seat: Baby heavy duty toilet seat, 'SCALLOPED DESIGN' round bowl open front, white solid plastic, open front less cover, SCALLOPED DESIGN, reinforced stainless steel check hinges, metal flat washers stainless steel posts and nuts. Model: AM2300STSCC.001 By: Centoco
- 2.5.4 Provide Floor Flange, (same material as the connecting pipe drain), with all brass bolts and with rubber gasket.
- 2.6 **LAVATORY, "LV-1" [BARRIER FREE]**
- 2.6.1 Lavatory: American Standard "Murro" #0954.123EC - 22" x 21" x 5-7-1/2" deep, wall hung, vitreous china, rear overflow, for concealed arm carrier. American Standard #0059 020EC shroud/knee contact guard to cover exposed piping.
- 2.6.2 Faucet: Delta Electronic AC Faucet Surface Mount, Model #: 591T0290. 5" Long, 5.3" High, Hands-Free Activation, Adjustable sending range, auto shut-off, metering mode and periodic rinse feature, 2.5" maximum deck thickness, complete with Transformer, 4" (102 mm) cast spout, vandal-resistant spray outlet.
- 2.6.3 Balancing Valve: Supply to hot water side of faucet and cold water supply to cold water side of faucet. Mechanical mixing valve with thermostatic limit stop by Lawler model TMM-1070 with temperature adj. dial & with integral back checks. Set valve temperature at 115F, shut-off at 120F. ASSE1070 approved. Provide tee, adaptor and flex copper tubing to suit installation.
- 2.6.4 Supplies: McGuire #H170BVRB supplies, C.P., polished brass, rigid short horizontal integral copper sweat tube nipples 1/2"x5" long, all brass ¼ turn ball valve angle stops with combination V.P. loose key, and handles, escutcheons and S.S. braided flexible risers. McGuire #8872C-17T 'P' trap, C.P. brass adjustable body, 17 gauge, 1-1/4" and escutcheon.
- 2.6.5 Carrier: Jay R. Smith #0700-Z-M basic carrier, with concealed arms and block base feet support with semi-pedestal supported plate.
- 2.7 **LAVATORY, "LV-2"**
- 2.7.1 Lavatory: Vitreous china, wall hung, front overflow, self-draining faucet ledge, contoured back and side splash shield. Model:0356.421 (Lucerne) By: American Standard
- 2.7.2 Faucet: Delta, Metering faucet, slow close cartridge, single hole mount faucet, polished chrome plated finish, vandal resistant brass handle activator, two body mounted stainless steel anti-rotation locking pins, mixing tee and inlet checks, vandal resistant spout outlet total flow not to exceed 0.25 gallon per handle activation Model:87T111 with lever handle By: Delta Faucet
- 2.7.3 Tempering Valve: Tempering valve, HydroGuard T/P series e480 Under-the-Counter Combination Tempering Valve, solid brass body, corrosion-resistant, temperature adjustment stem with lock nut to prevent tampering, integral checks with screens to prevent cross flow, factory set at 105F.
- 2.7.4 Drain: open grid drain, chrome plated cast brass one piece top, 1.5mm (1/16") tubular 32mm (1-1/4") tailpiece. Model:155AC By: McGuire

- 2.7.5 Supplies: chrome finish polished brass Faucet Supplies, heavy duty angle stop, 10mm (3/8") I. P. S. Inlet x 76mm (3") long rigid horizontal nipple, V. P. Loose key, escutcheon and flexible copper riser. Model:H165LKN3 By: McGuire
- 2.7.6 P-trap: P-Trap, 32mm (1-1/4") inlet, shallow wall flange and seamless tubular wall bend. Model:8872C By: McGuire
- 2.7.7 Carrier: Single Carrier, mounted on concrete floor, heavy duty one piece construction steel pipe legs welded to narrow block base feet support, concealed arms, locking device and leveling screws. Minimum space required: for one unit: 102mm (4") for two to six units in a row: 152mm (6") finished metal stud wall to back of pipe space. Model:0700-Z By: Jay R. Smith
- 2.8 **TRIPLE WASHFOUNTAIN, "WF-1"**
- 2.8.1 **Bradley ELX-3 Express Lavatory System – ELX-Series.** Seamless, one-piece lavatory is a cost effective upgrade to traditional fabricated counters with seams, Accommodates one, two, or three users. These units handle washroom traffic quickly and economically, while providing each user with their own personal space. Robust design meets or exceeds the ANSI load requirements. This system can be mounted at different heights to accommodate hand washing for adults, children, young children and those with disabilities.
- Model ELX-3-S53-3700-R-T-5-BB-AC**
- 2.8.2 Tempering Valve: Tempering valve, HydroGuard T/P series e480 Under-the-Counter Combination Tempering Valve, solid brass body, corrosion-resistant, temperature adjustment stem with lock nut to prevent tampering, integral checks with screens to prevent cross flow, factory set at 105F.
- 2.8.3 Drain: open grid drain, chrome plated cast brass one piece top, 1.5mm (1/16") tubular 32mm (1-1/4") tailpiece. Model:155AC By: McGuire. Provide multiple as necessary to suit the Wash Fountain.
- 2.8.4 Supplies: chrome finish polished brass Faucet Supplies, heavy duty angle stop, 10mm (3/8") I. P. S. Inlet x 76mm (3") long rigid horizontal nipple, V. P. Loose key, escutcheon and flexible copper riser. Model:H165LKN3 By: McGuire. Provide multiple as necessary to suit the Wash Fountain.
- 2.8.5 P-trap: P-Trap, 32mm (1-1/4") inlet, shallow wall flange and seamless tubular wall bend. Model:8872C By: McGuire. Provide multiple as necessary to suit the Wash Fountain.
- 2.9 **TRIPLE WASHFOUNTAIN, "WF-2"**
- 2.9.1 **Bradley ELX-3 Express Lavatory System – ELX-Series.** Seamless, one-piece lavatory is a cost effective upgrade to traditional fabricated counters with seams, Accommodates one, two, or three users. These units handle washroom traffic quickly and economically, while providing each user with their own personal space. Robust design meets or exceeds the ANSI load requirements. This system can be mounted at different heights to accommodate hand washing for adults, children, young children and those with disabilities.

Model ELX-3-S53-3700-R-T-5-BB-AC

- 2.9.2 Tempering Valve: Tempering valve, HydroGuard T/P series e480 Under-the-Counter Combination Tempering Valve, solid brass body, corrosion-resistant, temperature adjustment stem with lock nut to prevent tampering, integral checks with screens to prevent cross flow, factory set at 105F.
- 2.9.3 Drain: open grid drain, chrome plated cast brass one piece top, 1.5mm (1/16") tubular 32mm (1-1/4") tailpiece. Model:155AC By: McGuire. Provide multiple as necessary to suit the Wash Fountain.
- 2.9.4 Supplies: chrome finish polished brass Faucet Supplies, heavy duty angle stop, 10mm (3/8") I. P. S. Inlet x 76mm (3") long rigid horizontal nipple, V. P. Loose key, escutcheon and flexible copper riser. Model:H165LKN3 By: McGuire. Provide multiple as necessary to suit the Wash Fountain.
- 2.9.5 P-trap: P-Trap, 32mm (1-1/4") inlet, shallow wall flange and seamless tubular wall bend. Model:8872C By: McGuire. Provide multiple as necessary to suit the Wash Fountain.
- 2.10 **STAINLESS STEEL SINK-SINGLE COMPARTMENT "SS-1"**
- 2.10.1 Sink: Single Compartment Stainless Steel Sink – Franke Commercial #LBS6808P Sink complete with Custom Hole Pattern to suit faucet, 20-1/2"x20"x8", Counter Mounted, Back Ledge, Grade 18-8 Type 302 Stainless Steel, Satin Finish Rim and Bowl, Self-Rimming, with Crumb Cup Strainers Centre Back and Sound Deadening.
- 2.10.2 Faucet: American Standard Selectronic I.C. Electronic Proximity Lavatory Facuet Model: 605B173 complete with 1070_TMV Control Box and PK01.PAC Power Option.
- 2.10.3 Supplies: McGuire #H165LKN3 supplies with angle stops, escutcheons and flexible copper risers. McGuire #8912CB cast brass 'P' trap, 1-1/2" with cleanout, unions and escutcheon.
- 2.10.4 Provide Franke 'Washroom System' offset strainer.
- 2.10.5 Mixing Valve: Mechanical mixing valve with thermostatic limit stop by Lawler Model TMM-1070 with temperature adjust dial & with integral back checks. Set valve temperature at 115 deg. F, shut-off at 120 deg. F. ASSE1070 approved. Tempered water supplied by mixing valve located below sink. Connect tempered water supply to hot water side of faucet and cold water supply to cold water side of faucet. Provide tee, adaptor and flex copper tubing to suit installation. Deck mounted soap dispenser to be specified by architect and provided & installed by the general contractor.
- 2.11 **STAINLESS STEEL SINK-DOUBLE COMPARTMENT "SS-2"**
- 2.11.1 Sink: Double Compartment Stainless Steel Sink – Franke Commercial #LBD6808P Sink complete with Custom Hole Pattern to suit faucet, 20-1/2"x20"x8", Counter Mounted, Back Ledge, Grade 18-8 Type 302 Stainless Steel, Satin Finish Rim and Bowl, Self-Rimming, with Crumb Cup Strainers Centre Back and Sound Deadening.

- 2.11.2 Faucet: American Standard Selectronic I.C. Electronic Proximity Lavatory Facuet Model: 605B173 complete with 1070_TMV Control Box and PK01.PAC Power Option.
- 2.11.3 Supplies: McGuire #H165LKN3 supplies with angle stops, escutcheons and flexible copper risers. McGuire #8912CB cast brass 'P' trap, 1-1/2" with cleanout, unions and escutcheon.
- 2.11.4 P-trap: Provide P-Trap, 38mm (1-1/2") inlet.
- 2.12 **STAINLESS STEEL SINK-SINGLE COMPARTMENT "SS-3"**
- 2.12.1 Sink: Single Compartment Stainless Steel Sink – Franke Commercial #LBS6808P Sink complete with Custom Hole Pattern to suit faucet, 20-1/2"x20"x8", Counter Mounted, Back Ledge, Grade 18-8 Type 302 Stainless Steel, Satin Finish Rim and Bowl, Self-Rimming, with Crumb Cup Strainers Centre Back and Sound Deadening.
- 2.12.2 Faucet: American Standard Selectronic I.C. Electronic Proximity Lavatory Facuet Model: 605B173 complete with 1070_TMV Control Box and PK01.PAC Power Option.
- 2.12.3 Supplies: McGuire #H165LKN3 supplies with angle stops, escutcheons and flexible copper risers. McGuire #8912CB cast brass 'P' trap, 1-1/2" with cleanout, unions and escutcheon.
- 2.12.4 Provide Franke 'Washroom System' offset strainer.
- 2.12.5 Mixing Valve: Mechanical mixing valve with thermostatic limit stop by Lawler Model TMM-1070 with temperature adjust dial & with integral back checks. Set valve temperature at 115 deg. F, shut-off at 120 deg. F. ASSE1070 approved. Tempered water supplied by mixing valve located below sink. Connect tempered water supply to hot water side of faucet and cold water supply to cold water side of faucet. Provide tee, adaptor and flex copper tubing to suit installation. Deck mounted soap dispenser to be specified by architect and provided & installed by the general contractor.
- 2.13 **JANITOR SINK, "JS-1"**
- 2.13.1 Mop Sink: Stern Williams #SB-902 Service / Mop Sink, 610 mm (24") wide x 610 mm (24") x 305 mm (12") high deep, floor mounted, terrazzo composed of pearl gray marble chips and Portland cement ground smooth, sealed to resist stain, without tiling flange, cast brass drain with stainless steel strainer, 3" (76 mm) outlet. Complete with tiling flange (2 sides) and stainless steel cap.
- 2.13.2 Faucet: Chicago Faucets #897-XK-CP Wall Mounted two (2) Handle Faucet, chrome plated, 8" (203 mm) center set, solid brass exposed body, 1/4 turn ceramic disc valve cartridges, unrestricted hose end outlet, 203 mm (8") projection spout with atmospheric vacuum breaker and bucket hook, 60 mm (2-3/8") metal vandal proof lever handles with blue and red index buttons.
- 2.13.3 Hose and Wall Hook: Stern Williams T-35 Hose and Wall Hook 36" (914 mm) long hose with 3/4" (19 mm) chrome coupling, stainless steel wall bracket. Stern Williams T-40 Mop Hanger stainless steel #4 finish, 24" (610 mm) long with 3 rubber spring loaded clips. Stern Williams BP Back Splash Panel 20 GA. (0.9 mm) type 304 stainless steel. Provide P-Trap, same material as

the connecting pipe drain.

2.14 **LAUNDRY TUB, “LT-1”**

2.14.1 Cashel Model 1960-32-22 Heavy Duty Sink; full loaded sink kit, steel legs, granite colour finish; 20 gallon capacity; complete with 4” chrome faucet c/w cold and hot water separate knobs.

2.14.2 Supplies: McGuire #H165LKN3 supplies with angle stops, escutcheons and flexible copper risers. McGuire #8912CB cast brass 'P' trap, 1-1/2" with cleanout, unions and escutcheon.

2.14.3 Provide Franke 'Washroom System' offset strainer.

2.14.4 Mixing Valve: Mechanical mixing valve with thermostatic limit stop by Lawler Model TMM-1070 with temperature adjust dial & with integral back checks. Set valve temperature at 115 deg. F, shut-off at 120 deg. F. ASSE1070 approved. Tempered water supplied by mixing valve located below sink. Connect tempered water supply to hot water side of faucet and cold water supply to cold water side of faucet. Provide tee, adaptor and flex copper tubing to suit installation. Deck mounted soap dispenser to be specified by architect and provided & installed by the general contractor.

2.15 **EYEWASH STATION, “EW-1”**

2.15.1 Haws Model 7260BT-7270BT wall-mounted eye and face wash. Round 11” green ABS plastic receptor, aluminum bracket and tailpiece and trap. Mesh in-line strainer to collect line debris, and ball valve with stainless steel ball and stem for durability. Certified to CSA to meet the ANSI Z358.1 Standard for Emergency Eyewash and Shower Equipment.

2.15.2 Install c/w Thermostatic Mixing Valve Model 9201EW AXION.

2.16 **WASHER/DRYER MACHINE, “WM-1”**

2.16.1 To be supplied by the School and installed by the Contractor (include for installation in the base tender price).

2.16.2 Contractor to provide a metal ‘PPP’ MM-500-MLB Wall Box.

2.16.3 Contractor to provide a Reversomatic LT180F-45 Lint Trap.

2.17 **DISHWASHER, “DW-1”**

2.17.1 To be supplied by the School Board and installed by the Mechanical Contractor (include for installation in the base tender price). Coordinate Specifications of the Dishwasher with the School Board Project Manager prior to commencing any piping rough-ins.

2.17.2 Mechanical Contractor to provide DC&HW piping to the Dishwasher. Provide a PRV for each service.

- 2.17.3 Mechanical Contractor to connect the waste from the Dishwasher indirectly to the waste of the adjacent Sink.
- 2.18 **DISHWASHER, "DW-2"**
- 2.18.1 To be supplied by the School Board and installed by the Mechanical Contractor (include for installation in the base tender price). Coordinate Specifications of the Dishwasher with the School Board Project Manager prior to commencing any piping rough-ins.
- 2.18.2 Mechanical Contractor to provide DC&HW piping to the Dishwasher. Provide a PRV for each service.
- 2.18.3 Mechanical Contractor to connect the waste from the Dishwasher indirectly to the waste of the adjacent Sink.
- 2.19 **DRINKING FOUNTAIN, 'DF-1'**
- 2.19.1 Make: Elkay Model LZSTL8WSLK ezH2O® Bottle Filling Station & Versatile Bi-Level ADA Cooler Filtered Refrigerated Light Gray. Chilling Capacity of 8.0 GPH (gallons per hour) of 50° F drinking water, based on 80° F inlet water and 90° F ambient, per ASHRAE 18 testing. Features shall include Antimicrobial*, Filtered, Green Ticker™, Hands Free, Laminar Flow, Real Drain, Visual Filter Monitor. Furnished with Flexi-Guard® Safety Bubbler. Electronic Bottle Filler Sensor with Electronic Front and Side Bubbler Pushbar activation. Product shall be Wall Mount (On Wall), for Indoor applications, serving 2 station(s). Unit shall be certified to UL 399 and CAN/CSA C22.2 No. 120.
- 2.19.2 Provide Elkay 51600C WaterSentry® Lead + Microplastics NSF/ANSI Certified 3000 Gal 12 Month Filter.
- 2.19.3 Provide Elkay LKAPREZL Cane Apron for EZ Gray.
- 2.19.4 Provide Elkay MLP200 In-wall Carrier for Bi-level On-wall Bottle Fillers Coolers & Fountains.
- 2.19.5 Provide a new P-Trap. Provide a pressure gauge on the existing DCW line to provide the Board the ability to measure the pressure in the piping upstream of the drinking fountain.
- 2.19.6 Supplies: McGuire #LFHST11LK, Drinking Fountain Supply, chrome plated polished brass, straight stops, 10 mm (3/8") I.P.S. Inlet, V.P. Loose key. The cooler is furnished with a nonmetallic strainer. The drain trap shall also be plastic to isolate the cooler from building plumbing system. Provide pressure regulator on the DCW line to limited downstream water pressure to 60 psi.
- 2.20 **SHOWER, 'SH-1'**
- 2.20.1 Shower Valve Set: Chicago Faucets #SH-PB1-00-000 Pressure Balancing Shower Valve set, chrome plated finish, 171 mm (6-3/4") dia trim face plate, On/off and temperature control single lever handle, integral service stops, integral service stops, adjustable hot limit safety stop.

- 2.20.2 Hand Shower Kit: Chicago Faucets #152-ALCP Complete Hand Shower Kit. 5.7 LPM (1.5 GPM) Hand shower, pressure compensating flow control with pause control, complete with 1499 mm (59") long Hose (24-59NF), In-line Vacuum Breaker (E24JKCP) and Wall Supply (622-001CP). Hand Shower with ADA Grab Bar combination, stainless steel construction, 38 mm (1-1/2") dia x 610 mm (24") high bar, adjustable bracket for personal shower, anchors/screws and mounting brackets included.
- 2.20.3 Floor Drain: Watts #FD-100-C-A Floor Drain, epoxy coated cast iron, 5" (127 mm) adjustable round nickel bronze strainer, reversible clamping collar with primary & secondary weepholes. Provide extra floor drain at entrance of shower area. Provide P-Trap, Same material as the connecting pipe drain.

3 EXECUTION

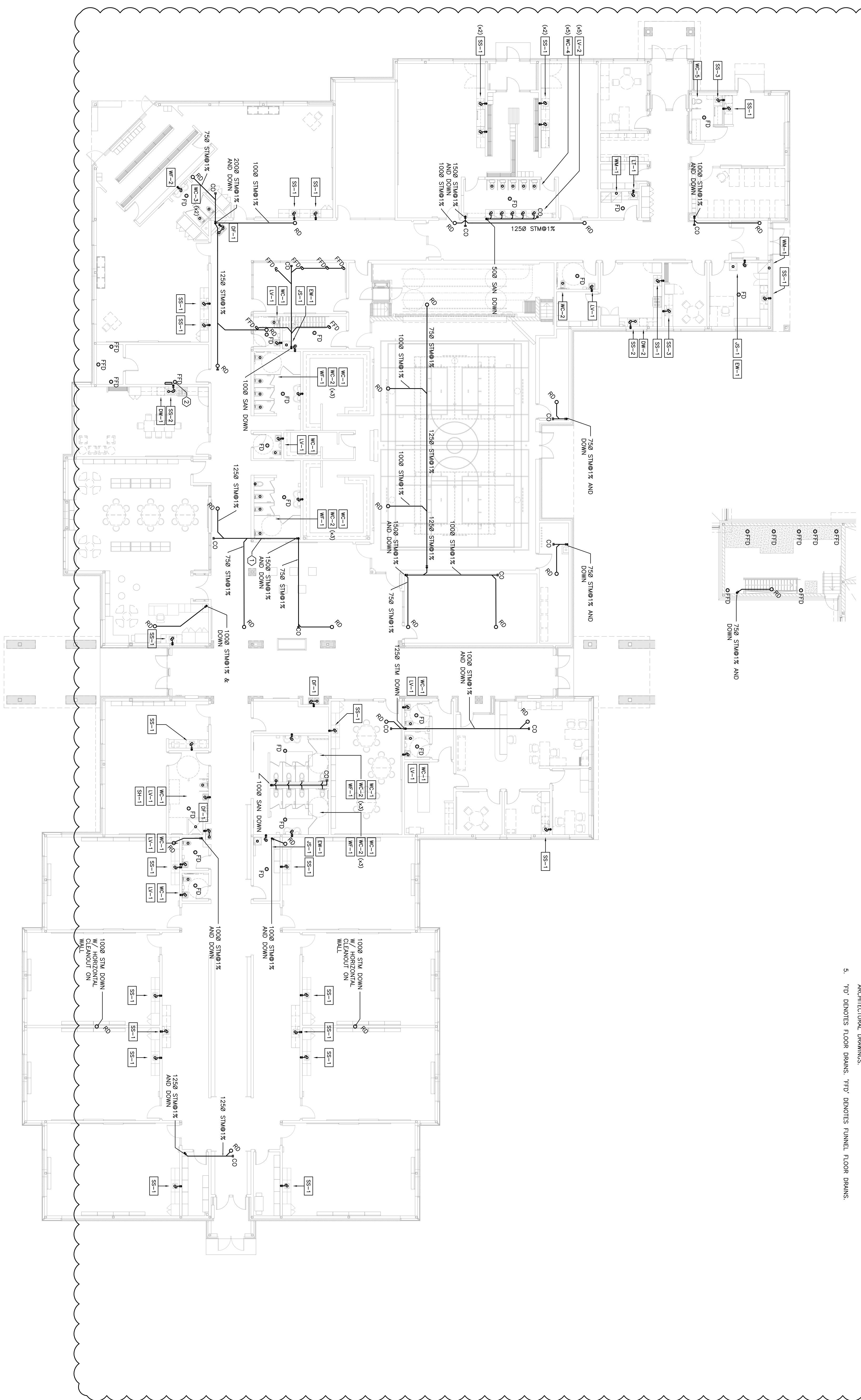
3.1 FIXTURE INSTALLATION

- 3.1.1 Install wall hung lavatory and urinal hanger brackets supplied with fixtures to wall by means of a manufactured chair carrier of MIFAB, Smith, Watts or Zurn.
- 3.1.2 Install wall-hung water closets with chair carriers of MIFAB, Smith, Watts or Zurn manufacture, and of type and model recommended by manufacturer for each particular installation with due regard to construction and piping details.
- 3.1.3 Prior to commencing any work, refer to Architectural Drawings for exact placement location and mounting height of all plumbing fixtures. Failure to do so resulting in an install not complying with the Architectural Drawings or code compliance shall require the Mechanical Contractor to rectify the installation at no extra cost.
- 3.1.4 Insulate indirect waste of handicapped usage lavatory with 25 mm (1") thick insulation as described in Piping Insulation Specification.
- 3.1.5 Adjust flush valves to limit the quantity of water per flush cycle allowed by code. Consult manufacturer for adjustment procedures.
- 3.1.6 Provide institutional grade caulking (clear colour) of all plumbing fixtures at all surfaces where the plumbing fixture interfaces with the wall or floor. Review extent of caulking with the Architect prior to commencing work. Any damage, discolouration or build up of dust resulting in subsequent construction activities by any trade prior to handing over of the Spaces to the Owner shall require removal of the caulking and installation of new. Caulking shall be done in a neat manner.

3.2 ADJUSTMENT

- 3.2.1 Verify maximum settings of thermostatic mixing valves.
- 3.2.2 Adjust stream regulator of drinking fountains as necessary to ensure proper operation.
- 3.2.3 Clean out aerator screens and strainers after lines have been flushed.

END OF SECTION



- DRAWING NOTES:**
1. PROVIDE NEW PLUMBING FIXTURES THROUGHOUT. ALL PLUMBING FIXTURES ARE TO BE SUPPLIED AND INSTALLED BY THE MECHANICAL CONTRACTOR.
 2. SLOPE ALL DRAINAGE PIPING IN ACCORDANCE WITH OBC.
 3. ALL FLOOR DRAINS SHALL BE EQUIPPED WITH TRAP SEAL PRIMERS.
 4. ALL FLOOR DRAINS SHALL BE SUITABLE FOR THE RESPECTIVE FLOOR TYPE IN EACH SPACE. COORDINATE WITH ARCHITECTURAL DRAWINGS.
 5. 'FTD' DENOTES FLOOR DRAINS, 'OFFD' DENOTES FUNNEL FLOOR DRAINS.

NO.	DATE	REVISION
1	03/27/24	ISSUED FOR PERMIT
2	03/27/23	ISSUED FOR 80% COSTING
3	10/14/23	REVIEW/COORDINATION
4	03/13/24	TENDER

DO NOT SCALE DRAWINGS. ALL DIMENSIONS TO BE CHECKED AND VERIFIED ON THE JOB. ALL DIMENSIONS SHALL BE IN METRIC UNLESS OTHERWISE NOTED. DIMENSIONS SHALL REMAIN THE PROPERTY OF THE ARCHITECTS.

- GENERAL NOTES**
1. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE OBC, OMBRO BUILDING CODE, LATEST EDITION, AND ALL OTHER ACTS AND REGULATIONS OF THE PROVINCE OF ONTARIO.
 2. THESE DRAWINGS TO BE READ IN CONJUNCTION WITH THE CONTRACT DOCUMENTS AND SPECIFICATIONS AND EXCEEDING DURING CONSTRUCTION.
 3. THE PERSON LOANS SHALL NOT BE RESPONSIBLE FOR THE WORK.
 4. ALL DIMENSIONS SHOWN ON THE DRAWINGS SHALL BE CHECKED BY THE CONTRACTOR BEFORE PROCEEDING WITH THE WORK.
 5. THE STABILITY OF THE STRUCTURAL FRAME IS DEPENDENT ON THE FULL INTERPRETATION OF THE DRAWINGS. THE GENERAL CONTRACTOR SHALL PROVIDE ALL NECESSARY TEMPORARY BRACING DURING CONSTRUCTION.
 6. ALL DIMENSIONS GIVEN ARE IN METRIC.

Kingsland
 ARCHITECTS INC.

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ECOLOGIC ENGINEERING
 ENVIRONMENTAL ENGINEERS
 NEW CONSTRUCTION

DRAWING TITLE:
 ABOVE-GROUND DRAINAGE PLAN

PROJECT NO:
 23-122

SCALE:
 DRAWING NO: REV:
 M3

CHECKED:
 R.S.

DATE:

VARIABLE AIR VOLUME (VAV) BOX SCHEDULE												
EQUIPMENT DESIGNATION	MANUFACTURER	MODEL NO.	UNIT SIZE	BOX RATED MINIMUM AIR FLOW	BOX RATED MAXIMUM AIR FLOW	SPACE MINIMUM AIR FLOW	SPACE MAXIMUM AIR FLOW	INLET SIZE (mm)	OUTLET SIZE (mm)	RE-HEAT TYPE		
HRU-1-1	E.H. PRICE	SDV-5000	9	76 LPS	661 LPS	190 LPS	381 LPS	225ø	REFER TO FLOOR PLAN	NONE		
HRU-1-2	E.H. PRICE	SDV-5000	9	76 LPS	661 LPS	190 LPS	381 LPS	225ø	REFER TO FLOOR PLAN	NONE		
HRU-1-3	E.H. PRICE	SDV-5000	10	100 LPS	837 LPS	262 LPS	524 LPS	250ø	REFER TO FLOOR PLAN	NONE		
HRU-1-4	E.H. PRICE	SDV-5000	10	100 LPS	837 LPS	262 LPS	524 LPS	250ø	REFER TO FLOOR PLAN	NONE		
HRU-1-5	E.H. PRICE	SDV-5000	10	100 LPS	837 LPS	262 LPS	524 LPS	250ø	REFER TO FLOOR PLAN	NONE		
HRU-1-6	E.H. PRICE	SDV-5000	12	142 LPS	1238 LPS	288 LPS	571 LPS	300ø	REFER TO FLOOR PLAN	NONE		
HRU-1-7	E.H. PRICE	SDV-5000	12	142 LPS	1238 LPS	288 LPS	571 LPS	300ø	REFER TO FLOOR PLAN	NONE		
HRU-1-8	E.H. PRICE	SDV-5000	10	100 LPS	837 LPS	262 LPS	524 LPS	250ø	REFER TO FLOOR PLAN	NONE		
HRU-1-9	E.H. PRICE	SDV-5000	10	100 LPS	837 LPS	262 LPS	524 LPS	250ø	REFER TO FLOOR PLAN	NONE		
HRU-1-10	E.H. PRICE	SDV-5000	10	100 LPS	837 LPS	262 LPS	524 LPS	250	REFER TO FLOOR PLAN	NONE		
HRU-1-11	E.H. PRICE	SDV-5000	6	31 LPS	260 LPS	120 LPS	238 LPS	150ø	REFER TO FLOOR PLAN	NONE		
HRU-1-12	E.H. PRICE	SDV-5000	6	31 LPS	260 LPS	120 LPS	238 LPS	150ø	REFER TO FLOOR PLAN	NONE		
RU-1-1	E.H. PRICE	SDV-5000	5	28 LPS	238 LPS	47 LPS	95 LPS	125ø	REFER TO FLOOR PLAN	NONE		
RU-1-2	E.H. PRICE	SDV-5000	6	31 LPS	260 LPS	60 LPS	120 LPS	150ø	REFER TO FLOOR PLAN	NONE		
RU-1-3	E.H. PRICE	SDV-5000	5	28 LPS	238 LPS	72 LPS	142 LPS	125ø	REFER TO FLOOR PLAN	NONE		
RU-1-4	E.H. PRICE	SDV-5000	5	28 LPS	238 LPS	47 LPS	95 LPS	125ø	REFER TO FLOOR PLAN	NONE		
RU-1-5	E.H. PRICE	SDV-5000	9	76 LPS	661 LPS	214 LPS	428 LPS	225ø	REFER TO FLOOR PLAN	NONE		
HRU-2-1	E.H. PRICE	SDV-5000	9	76 LPS	661 LPS	190 LPS	380 LPS	225ø	REFER TO FLOOR PLAN	NONE		
HRU-2-2	E.H. PRICE	SDV-5000	12	142 LPS	1238 LPS	357 LPS	714 LPS	300ø	REFER TO FLOOR PLAN	NONE		
HRU-2-3	E.H. PRICE	SDV-5000	12	142 LPS	1238 LPS	357 LPS	714 LPS	300ø	REFER TO FLOOR PLAN	NONE		
HRU-2-4	E.H. PRICE	SDV-5000	9	76 LPS	661 LPS	288 LPS	572 LPS	225ø	REFER TO FLOOR PLAN	NONE		
HRU-2-5	E.H. PRICE	SDV-5000	12	142 LPS	1238 LPS	190 LPS	380 LPS	300ø	REFER TO FLOOR PLAN	NONE		
HRU-2-6	E.H. PRICE	SDV-5000	9	76 LPS	661 LPS	288 LPS	572 LPS	225ø	REFER TO FLOOR PLAN	NONE		
HRU-2-7	E.H. PRICE	SDV-5000	12	142 LPS	1238 LPS	190 LPS	380 LPS	300ø	REFER TO FLOOR PLAN	NONE		
HRU-2-8	E.H. PRICE	SDV-5000	6	31 LPS	260 LPS	98 LPS	190 LPS	150ø	REFER TO FLOOR PLAN	NONE		
HRU-2-9	E.H. PRICE	SDV-5000	5	28 LPS	238 LPS	24 LPS	48 LPS	125ø	REFER TO FLOOR PLAN	NONE		
HRU-2-10	E.H. PRICE	SDV-5000	6	31 LPS	260 LPS	98 LPS	190 LPS	150ø	REFER TO FLOOR PLAN	NONE		
HRU-2-11	E.H. PRICE	SDV-5000	6	31 LPS	260 LPS	70 LPS	142 LPS	150ø	REFER TO FLOOR PLAN	NONE		
HRU-2-12	E.H. PRICE	SDV-5000	5	28 LPS	238 LPS	24 LPS	48 LPS	125ø	REFER TO FLOOR PLAN	NONE		
HRU-2-13	E.H. PRICE	SDV-5000	6	31 LPS	260 LPS	70 LPS	142 LPS	150ø	REFER TO FLOOR PLAN	NONE		

NOTES:
1. ALL VAVS SHALL BE CONTROLLED BY THE BUILDING AUTOMATION SYSTEM.
2. ALL VAVS SHALL BE PRESSURE INDEPENDENT, C/W SP300 MULTIPORT INLET SENSOR.
3. ALL VAVS SHALL COME C/W 914mm LONG DISCHARGE ATTENUATOR.
4. BOM CONTROL SHALL BE SUPPLIED BY THE CONTRACTOR PRIOR TO THE DRAWINGS/LAYOUT IS LARGER THAN THE INLET SIZE OF THE VAV, DOWNSIZE THE INLET DUCTWORK TO MATCH THE INLET SIZE.
5. DRAWINGS/LAYOUT AND LOCALTY WITHIN 300mm OF THE VAV, DOWNSIZE THE INLET DUCTWORK TO MATCH THE INLET SIZE.

VARIABLE AIR VOLUME (VAV) BOX SCHEDULE												
EQUIPMENT DESIGNATION	MANUFACTURER	MODEL NO.	UNIT SIZE	BOX RATED MINIMUM AIR FLOW	BOX RATED MAXIMUM AIR FLOW	SPACE MINIMUM AIR FLOW	SPACE MAXIMUM AIR FLOW	INLET SIZE (mm)	OUTLET SIZE (mm)	RE-HEAT TYPE		
HRU-4-1	E.H. PRICE	SDV-5000	10	100 LPS	837 LPS	240 LPS	480 LPS	250ø	REFER TO FLOOR PLAN	NONE		
HRU-4-2	E.H. PRICE	SDV-5000	5	28 LPS	236 LPS	60 LPS	120 LPS	125ø	REFER TO FLOOR PLAN	NONE		
HRU-4-3	E.H. PRICE	SDV-5000	6	31 LPS	260 LPS	71 LPS	142 LPS	150ø	REFER TO FLOOR PLAN	NONE		
HRU-4-4	E.H. PRICE	SDV-5000	6	31 LPS	260 LPS	71 LPS	142 LPS	150ø	REFER TO FLOOR PLAN	NONE		
HRU-4-5	E.H. PRICE	SDV-5000	5	28 LPS	236 LPS	60 LPS	120 LPS	125ø	REFER TO FLOOR PLAN	NONE		
HRU-4-6	E.H. PRICE	SDV-5000	5	28 LPS	236 LPS	36 LPS	72 LPS	125ø	REFER TO FLOOR PLAN	NONE		
HRU-4-7	E.H. PRICE	SDV-5000	9	76 LPS	661 LPS	190 LPS	380 LPS	225ø	REFER TO FLOOR PLAN	NONE		
HRU-4-8	E.H. PRICE	SDV-5000	5	28 LPS	236 LPS	48 LPS	96 LPS	125ø	REFER TO FLOOR PLAN	NONE		
HRU-4-9	E.H. PRICE	SDV-5000	6	31 LPS	260 LPS	71 LPS	142 LPS	150ø	REFER TO FLOOR PLAN	NONE		
HRU-4-10	E.H. PRICE	SDV-5000	10	100 LPS	837 LPS	262 LPS	524 LPS	250	REFER TO FLOOR PLAN	NONE		

NOTES:
1. ALL VAVS SHALL BE CONTROLLED BY THE BUILDING AUTOMATION SYSTEM.
2. ALL VAVS SHALL BE PRESSURE INDEPENDENT, C/W SP300 MULTIPORT INLET SENSOR.
3. ALL VAVS SHALL COME C/W 914mm LONG DISCHARGE ATTENUATOR.
4. BOM CONTROL SHALL BE SUPPLIED BY THE CONTRACTOR PRIOR TO THE DRAWINGS/LAYOUT IS LARGER THAN THE INLET SIZE OF THE VAV, DOWNSIZE THE INLET DUCTWORK TO MATCH THE INLET SIZE.
5. DRAWINGS/LAYOUT AND LOCALTY WITHIN 300mm OF THE VAV, DOWNSIZE THE INLET DUCTWORK TO MATCH THE INLET SIZE.

WALL-FIN HYDROVIC CONNECTOR SCHEDULE												
EQUIPMENT DESIGNATION	MANUFACTURER	MODEL	HWS TEMP.	HWR TEMP.	HEAT OUTPUT	WEIGHTING HEIGHT	ROW QTY	ENCLOSURE HEIGHT	FINISH	CONTROLLED BY	NOTES	
WF-1	ENGINEERED AIR OR EQUAL	WF-1A	180°F	160°F	1,970 BTU/Hr/2.0 FOOT	4" AFF	1 ROW	12" / 300mm	CUSTOM RAL COLOUR	BAS	SEE NOTES BELOW	
WF-2	ENGINEERED AIR OR EQUAL	WF-1B	180°F	160°F	1,710 BTU/Hr/2.3 FOOT	4" AFF	1 ROW	14" / 350mm	CUSTOM RAL COLOUR	BAS	SEE NOTES BELOW	

NOTES:
1. NONE ASYMETRIC ACCESS PANEL SECTION C/W LOCKABLE ACCESS DOOR AT THE END OF EACH CONNECTOR (THE END WHERE THE PIPING ENTERS THE CONNECTOR) FOR ACCESS TO ALL CONTROLS, VALVES, ETC.
2. PROVIDE ALL NECESSARY ACCESSORIES, INCLUDING END CAPS, CORNER PIECES, ETC. AS REQUIRED.
3. COLOUR/FINISH: CUSTOM RAL COLOUR TO BE DETERMINED BY THE ARCHITECT AT THE TIME OF CONSTRUCTION.
4. MOUNTING HEIGHT: LISTED ABOVE, REFERS TO THE DISTANCE TO THE UNDERSIDE OF THE CONNECTOR ABOVE FINISHED FLOOR.

FORCED FLOW HEATER SCHEDULE												
EQUIPMENT DESIGNATION	MANUFACTURER	MODEL	UNIT CONFIG.	UNIT SIZE (mm)	UNIT WEIGHT (KG)	HEATING CAPACITY	HEATING FLOW	WPD (Kw)	AIRFLOW (L/S)	MOUNTING	MOTOR HP (1/25 RPM)	VOLTAGE (V)
FFH-1	ENGINEERED AIR OR EQUAL	CUH-1	16	660x711x241	34	5.8 KW	0.17 LPS	5.8	87	WALL MOUNTED	1050 RPM	120V/1ø/60
FFH-2	ENGINEERED AIR OR EQUAL	CUH-3	16	660x711x241	34	8.7 KW	0.17 LPS	5.8	141	WALL MOUNTED	1050 RPM	120V/1ø/60

NOTES:
1. FOR RECESSED APPLICATIONS, COORDINATE ROUGH-IN OF PIPING AND HEATER FRAME WITH THE MASONRY CONTRACTOR OR CEILING GRID INSTALLER (AS APPLICABLE).
2. HEATERS SHALL BE CONTROLLED BY A WALL-MOUNTED SPACE TEMPERATURE SENSOR (BY CONTRACTOR). BAS WILL ENABLE/DISABLE FAN AS REQUIRED. NO MODULATION OF WATER FLOW REQUIRED.
3. COLOUR/FINISH: CUSTOM RAL COLOUR (FINAL COLOUR SELECTION WILL BE AT THE SHOP DRAWING STAGE BY THE ARCHITECT; COORDINATE WITH THE ARCHITECT).

NO.	DATE:	REVISION
1	03/27/24	ISSUED FOR BOM COSTING
2	03/27/24	ISSUED FOR PERMIT
3	10/14/25	REVIEW/COORDINATION
4	03/13/26	TENDER

DO NOT SCALE DRAWINGS. ALL DIMENSIONS TO BE CHECKED AND VERIFIED ON THE JOB. ALL DIMENSIONS REMAIN THE PROPERTY OF THE ARCHITECTS.

GENERAL NOTES
1. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE LATEST EDITION AND ALL OTHER ACTS ADMINISTERED BY ALL AUTHORITIES HAVING JURISDICTION.
2. THESE DRAWINGS TO BE READ IN CONJUNCTION WITH THE CONTRACT DOCUMENTS, SPECIFICATIONS, CONDITIONS OF CONTRACT AND ALL OTHER ACTS ADMINISTERED BY ALL AUTHORITIES HAVING JURISDICTION.
3. THE DESIGN LOANS SHALL NOT BE EXCEEDED DURING CONSTRUCTION.
4. ALL DIMENSIONS GIVEN ON THE DRAWINGS SHALL BE CHECKED BY THE CONTRACTOR BEFORE PROCEEDING WITH THE WORK.
5. THE STABILITY OF THE STRUCTURAL FRAME IS DEPENDENT ON THE FULL INTERPRETATION OF THE DRAWINGS AND ALL OTHER ACTS ADMINISTERED BY ALL AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY TEMPORARY BRACING DURING CONSTRUCTION.
6. ALL DIMENSIONS GIVEN ARE IN METRIC.

Kingsland
ARCHITECTS INC.

SURI & ASSOCIATES LTD.
ENGINEERING CONSULTANTS

1022 WHITE CLOVER WAY
SCARBOROUGH, ONTARIO
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MECHANICAL
COMMISSIONING
SECURITY

PROJECT NO:	SCALE:
23-122	
DRAWN:	DRAWING NO:
R.S.	M20
DATE:	REV:

EEC COBOURG
NEW ELEMENTARY SCHOOL & CHILD CARE
APRIL 10, 2026
ELECTRICAL ADDENDUM E1

The following document is hereby made a part of the Contract Documents.

The following revisions and/or additions shall be made to Drawings and/or specifications and the cost shall be included in Tender Price.

Specification Section 26 50 00 – Lighting Systems:

1. Replace the Specification Section in the Tender Documents with the copy attached herein.

Specification Section 27 51 16 – I.P. Based Public Address, Phone and Master Clock System:

1. Refer to the attached Specification to be included in the Contract Documents.

Drawing E4 – First Floor & Mechanical Penthouse – Lighting Plan:

1. Replace the Drawing in the Tender Documents with the copy attached herein. Revisions are clouded.

Drawing E6 – Electrical Site Plan Layout:

1. Note the following:
 - a. Supply and installation/construction of the Primary Ductbank is the responsibility of the Electrical Contractor as part of the Base Tender Price.
 - b. Supply and installation/construction of the Secondary Ductbank is the responsibility of the Electrical Contractor as part of the Base Tender Price.
 - c. Supply and installation of the Secondary Cables/Feeder is the responsibility of the Electrical Contractor as part of the Base Tender Price.
 - d. Supply and installation of the Primary Cables/Feeder (4 Runs of #2/0 Compact AL, 28 kV, 100% CN, TR-XLPE, PVCJ, URD, CSA-C68.5) is the responsibility of the Electrical Contractor as part of the Base Tender Price.

Drawing E13 – Schedules & Schematics:

1. Replace the Drawing in the Tender Documents with the copy attached herein. Revisions are clouded.

LUSI Hydro Utility Standards:

1. Find attached the Lakefront Utilities Standards applicable to this project. Ensure the complete installation of the new electrical service is in accordance with the Standards.

END OF ADDENDUM E1

PART 1 - GENERAL

1.1 RELATED INSTRUCTIONS

- .1 Refer to Section 26 05 00 Common Work Results for Electrical.

1.2 WORK INCLUDED

- .1 Provide electrical lighting fixtures and systems scheduled, complete with drivers, mounting kits and necessary accessories required for their installation and performance.
- .2 Obtain and review all information with regards to the proper installation of all lighting systems from the Manufacturer. No installation shall be completed without a thorough review of the Manufacturer's recommendations and guidelines for installation. All installations shall comply with these recommendations and guidelines as well as any other requirements mandated by Authorities having Jurisdiction and local governing codes.

1.3 DRIVER CONDITIONING

- .1 All LED fixtures shall remain energized for a stabilizing period as recommended by the Manufacturer.

1.4 SHOP DRAWINGS

- .1 Conform to requirements of Section 26 05 00 Common Work Results for Electrical.
- .2 Submit for review an electronic submission of shop drawings containing illustrations of each fixture. Illustrations to be complete showing dimensions light distribution and mounting requirements. Illustrations to be noted to indicate special features and finishes. A copy is to be retained by the Contractor on the site, to ensure co-ordination of installation requirements.
- .3 LED fixture shop drawings must indicate Driver Manufacturer and Model No. for each fixture.
- .4 No light fixtures shall be ordered without the review and written approval of the Electrical Engineer. Shop drawings should indicate proposed mounting method and hardware required to facilitate a complete and safe installation.

PART 2 - PRODUCTS

2.1 REFERENCE NUMBERS

- .1 Catalogue reference numbers given for individual fixture types are intended as a guide when read with the description and the fixture as finally applied. Verify catalogue references with description and coordinated with installation conditions, with particular regard to ceiling construction details, type and finish before ordering fixtures.

2.2 LENSES

- .1 Plastic lenses in lighting fixtures shall be acrylic with minimum thickness of 3 mm (0.125 inches) and, providing flame spread and smoke density ratings, complying with applicable Federal and Provincial Codes; Ontario Fire Marshal's Fire Safety Design Standard; and the Ontario Building Code. Paragraph 3.1.13.1 (1).
- .2 Removable components of fixtures (louvres, lenses, wire guards, and the like) to be limited to maximum 1220 mm (48") in length.

2.3 FIXTURE SCHEDULE

Fixture Type 'LS-A'

- Current Kim Lighting UR20-28L-70-3K8-3-L-UNV-A46-DBT-WSP-40F-1 complete with 15' High Aluminum Round Pole.

Fixture Type 'LS-B':

- Current Kim Lighting UR20-68L-115-3K8-3-UNV-A46-DBT-WSP-40F-1 complete with 15' High Aluminum Round Pole.

Fixture Type 'LS-C':

- Current Kim Lighting UR20-68L-115-3K8-4-UNV-A46-DBT-WSP-40F-1 complete with 15' High Aluminum Round Pole.

Fixture Type 'LS-D':

- Current Kim Lighting UR20-68L-115-3K8-3-UNV-A46-DBT-WSP-40F-1 complete with 15' High Aluminum Round Pole.

Fixture Type 'LS-E':

- Current Kim Lighting UR20-68L-115-3K8-3-UNV-A46-DBT-WSP-40F-1 complete with 15' High Aluminum Round Pole.

Fixture Type 'WM-A':

- Current Beacon RDI2-D-30-3K7-WT-UNV-DBT-SCP-20F

Fixture Type 'WM-B1':

- Current Litecontrol 4W-W-D-36'-SOFW-CC-40K9-D125-D00-1C-UNV

Fixture Type 'WM-B2':

- Current Litecontrol 4W-W-D-16'-SOFW-CC-40K9-D125-D00-1C-UNV

Fixture Type 'WM-B3':

- Current Litecontrol 4W-W-D-16'-SOFW-CC-40K9-D125-D00-1C-UNV

Fixture Type 'WM-B4':

- Current Litecontrol 4W-W-D-36'-SOFW-CC-40K9-D125-D00-1C-UNV

Fixture Type 'WM-B5':

- Current Litecontrol 4W-W-D-8'-SOFW-CC-40K9-D125-D00-1C-UNV

Fixture Type 'CP-A':

- Current Prescolite LFCR-4D-MN-30L-30K-9-WD-DM1-LFCR-4RD-T-WD-SS-BT (Suitable for Outdoor Canopy Application).

Fixture Type 'CP-B':

- Current Prescolite LFCR-4D-MN-50L-30K-9-WD-DM1-LFCR-4RD-T-WD-SS-BT (Suitable for Outdoor Canopy Application).

Fixture Type 'A1':

- Current VSY24-40-MWHE-G-ED1-U

Fixture Type 'A2':

- Current VSY24-40-LWHE-G-ED1-U

Fixture Type 'A3':

- Current VSY24-40-HLHE-G-ED1-U

Fixture Type 'A4':

- Current VSY24-40-HLHE-G-ED1-U c/w Drywall Mounting Kit

Fixture Type 'B1':

- Current VSY14-40-LWHE-G-ED1-U c/w Drywall Mounting Kit

Fixture Type 'B2':

- Current VSY14-40-LWHE-G-ED1-U

Fixture Type 'B3':

- Current VSY14-40-HLHE-G-ED1-U

Fixture Type 'B4':

- Current VSY14-40-HLHE-G-ED1-U

Fixture Type 'D1':

- Current Columbia Lighting PEL-2-40-MH-FA-W-ED-U

Fixture Type 'D5':

- Current Columbia Lighting PEL-2-40-LXHE-FA-W-ED-U

Fixture Type 'E1':

- Current Columbia LCL-4-40-HL-ED1-U c/w Aircraft Cable

Fixture Type 'F1':

- Edison Lighting Group ED VECTOR+-DO-4FT-5W/FT-DD-UNV-DL-RS

Fixture Type 'F2':

- Edison Lighting Group ED VECTOR+-DO-4FT-8W/FT-DD-UNV-DL-RS

Fixture Type 'F3':

- Edison Lighting Group ED VECTOR+-DO-4FT-8W/FT-DD-UNV-DL-RS

Fixture Type 'Y1':

- Edison Lighting Group ED SQUARE+-DO-4FTx4FT SQUARE-8W/FT-DD-UNV-DL0-S6B-BW-SM-CF/RAL-40K

Fixture Type 'Y2':

- Edison Lighting Group ED SQUARE+-DO-6FTx6FT SQUARE-8W/FT-DD-UNV-DL0-S6B-BW-SM-CF/RAL-40K

Fixture Type 'Y3':

- Edison Lighting Group ED SQUARE+-DO-4FTx4FT SQUARE-8W/FT-DD-UNV-DL0-S6B-BW-SM-CF/RAL-40K

Fixture Type 'Y4':

- Edison Lighting Group ED SQUARE+-DO-4FTx4FT SQUARE-8W/FT-DD-UNV-DL0-S6B-BW-SM-CF/RAL-40K

Fixture Type 'Y5':

- Edison Lighting Group ED SQUARE+-DO-4FTx4FT SQUARE-8W/FT-DD-UNV-DL0-S6B-BW-SM-CF/RAL-40K

Fixture Type 'Y6':

- Edison Lighting Group ED SQUARE+-DO-6FTx6FT SQUARE-8W/FT-DD-UNV-DL0-S6B-BW-SM-CF/RAL-40K

Fixture Type 'Y7':

- Edison Lighting Group ED SQUARE+-DO-4FTx4FT SQUARE-8W/FT-DD-UNV-DL0-S6B-BW-SM-CF/RAL-40K

Fixture Type 'Y8':

- Edison Lighting Group ED SQUARE+-DO-4FTx4FT SQUARE-8W/FT-DD-UNV-DL0-S6B-BW-SM-CF/RAL-40K

Fixture Type 'Y9':

- Edison Lighting Group ED SQUARE+-DO-4FTx4FT SQUARE-8W/FT-DD-UNV-DL0-S6B-BW-SM-CF/RAL-40K

Fixture Type 'Y10':

- Edison Lighting Group ED SQUARE+-DO-4FTx4FT SQUARE-8W/FT-DD-UNV-DL0-S6B-BW-SM-CF/RAL-40K

Fixture Type 'Y11':

- Edison Lighting Group ED SQUARE+-DO-6FTx6FT SQUARE-8W/FT-DD-UNV-DL0-S6B-BW-SM-CF/RAL-40K

Fixture Type 'Z1':

- Current Prescolite LTC-6SQD-W-RMD-70L-40K-8-XW-DM1-SS-BC-BT-CC-

2.4 LIGHTING HARDWARE

- .1 The Contractor must supply and install all light fixtures as per the Manufacturer's recommendations as well as to the satisfaction of all Authorities having Jurisdiction, Code requirements, the Architect, and the Electrical Engineer.
- .2 Include, in the tender price, for all lighting hardware required for a complete and safe installation.
- .3 Lighting hardware includes, but isn't limited to, the mounting hardware required for each fixture. The Contractor is responsible for reviewing architectural finishes in all areas and providing lighting and mounting hardware to suit.
- .4 All parts used as a part of the installation must be of the same manufacturer as the respective light fixture. Wherever available, all parts must be unique to the respective fixture and purchased with the light fixture from the same supplier and manufacturer.

2.5 PHOTOMETRIC

- .1 The Electrical Contractor is responsible for obtaining a complete photometric of the entire area of lighting installation, both interior and exterior, prepared by a professional, third-party specializing in such work. All fixtures of all types shall be depicted on one layout. Refer to Architectural drawings for ceiling heights. Submit a copy of the interior and exterior photometric with the shop drawing submittal for the light fixtures. The Electrical Contractor in conjunction with the Manufacturer remains responsible for the accuracy of the photometric results and acceptance of fixtures based on this.
- .2 Photometric statistics shall be prepared for each zone/room. Statistics such as max/min and average footcandle readings shall be included in the photometric submittal.
- .3 Photometric shall take into account site condition impacts such as partitions, washroom stall partitions, suspended ceilings, reflectances, etc.

2.6 APPROVED EQUAL PRODCUTS

- .1 The Contractor is permitted to provide alternate products to the base product specified as long as the alternate fixture is equal or superior to the base bid product in all specifications. The Contractor remains responsible for ensuring compliance of the alternate product to the base specifications outlined above.

- .2 All alternate fixtures must be reviewed and approved in writing by the Electrical Engineer or Owner **during pricing**. No substitutions will be permitted to the base product upon award of the Contract.
- .3 Approved Manufacturers: Acuity, Cooper.

PART 3 - EXECUTION

3.1 INSTALLATION

- .1 Provide two new safety chains per light fixture for all light fixtures through the School. Mount from the building structure. Provide unistrut supports throughout as necessary to support the safety chains where obstructions (ductwork, etc.) might prohibit installation without Unistrut.

3.2 RECESSED FIXTURES

- .1 Provide plaster and/or framing rings for recessed fixtures (except for 'Lay-in Tee-Bar' types) the installation of which shall be the responsibility of this Section.

3.3 SUSPENSION STEEL

- .1 Provide angle-iron channels welded to the top side of bottom-chord of the L.S.S.J.'s in the Gymnasium for securing light fixtures.
- .2 Provide supports for light fixtures from separate uni-strut members attached and/or secured to building structure. No supports shall be attached to metal deck.

3.4 SITE AIMING

- .1 Position and aim adjustable lighting equipment as directed on the site. Position outdoor units after daylight hours as directed. Provide labour and materials necessary to accomplish this.

3.5 COMPLETION

- .1 Fixtures shall be clean at the time of final acceptance.

END OF SECTION

1. INTRODUCTION

1.1 GENERAL

- A. Where applicable visit the site, verify all existing items shown on plans or specified, and be familiar with the working conditions, hazards, and local requirements involved. Submission of bids shall be deemed evidence of such visit. All proposals shall take these existing conditions into consideration before bidding.
- B. All materials, unless otherwise specified, shall be new, free from any defects, and of the best quality of their respective kinds. All like materials used shall be of the same manufacture, model, and quality, unless otherwise specified.
- C. Manufacturer's names are listed herein to establish a standard. The products of other manufacturers will only be acceptable if approved by the specifying Engineer 10 days prior to bid submission. These products must: be of equal or better quality than the features specified herein, will serve with equal efficiency and dependability, and satisfy the purpose for which the items specified were intended.
- D. Contractor shall do all necessary cutting and drilling of present walls, floors, ceilings, etc., for the installation of new work; but no structural work shall be cut, unless specifically shown on drawings and/or approved by the Owner. All exposed building surfaces damaged by installation or removal of electrical work shall be patched and finished in the same materials and manner as adjacent areas by this Contractor.
- E. Contractor shall co-ordinate their work with the Owner for times which changeover, removal of existing equipment, and new connections of existing systems can be completed.

1.2 RACEWAYS AND CABLES

- A. Electrical work will conform to the Ontario Electrical Safety Code and applicable local ordinances.
- B. All 120 Volt electrical conductors shall be installed in galvanized electrical metallic tubing with compression type fittings and couplings, minimum 1/2" size conduit.
- C. All low-voltage wires and cables concealed in walls shall be run in EMT conduits from flush outlet boxes to above accessible ceilings. Provide conduits where cables penetrate firewalls above ceilings.
- D. All EMT entering boxes shall be served with insulating throat connectors and locknuts.
- E. No raceway shall be located in proximity of hot water lines or excessive heat.
- F. Where raceways cannot be run concealed in walls, use Wiremold Series surface raceway complete with all fittings, box extension rings, and required accessories. Co-ordinate routing of surface raceways with the Owner.
- G. Use Cast "C" clamps, "U" straps, or ring hangers attached to rods, and/or brackets fastened to structure.
- H. No perforated straps or tie wires permitted for supporting raceways.

- I. Use wire ties for supporting low voltage cables run concealed above ceilings. Do not run cables loose on ceiling tiles. Support from structure above. Group cables in bundles.
- J. Tie mounts, plates, and anchors shall be used.
- K. Ground all electrical apparatus in accordance with the National Electric Code.

1.3 QUALITY ASSURANCE

- A. Manufactures: Firms regularly engaged in manufacture of integrated communication systems, time keeping systems, and ancillary equipment, of types and capacities required, whose products have been in satisfactory use in similar service for no less than five years **and products are manufactured in Canada.**
- B. Installer's Qualifications: Firms with at least five years of successful installation experience with projects utilizing integrated communications systems and equipment similar to that required for this project.
- C. All items of equipment including wire and cable shall be designed by the manufacturer to function as a complete system and shall be accompanied by the manufacturer's complete service notes and drawings detailing all interconnections.
- D. The Contractor shall be an established communications and electronics Contractor that has had and currently maintains a locally run and operated business for at least five years. The Contractor shall be a duly authorized distributor of the equipment supplied with full manufacturer's warranty privileges.
- E. The Contractor shall show satisfactory evidence, upon request, that they maintain a fully equipped service organization capable of furnishing adequate inspection and service to the system. The Contractor shall maintain at their facility the necessary spare parts in the proper proportion as recommended by the manufacturer to maintain and service the equipment being supplied.
- F. Except where specifically noted otherwise, all equipment supplied shall be the standard product of a single manufacturer of known reputation and experience in the industry. The Contractor shall have attended the manufacturer's installation and service school and upon request must show proof of attending such a school.

1.4 SCOPE OF WORK

- A. Furnish and install all materials, labor, equipment, permits, etc., to provide communications system as described herein and illustrated on the drawings for a complete operating system.
- B. All manufactured articles, material, and equipment shall be applied, installed connected, erected, used, cleaned, adjusted, and conditioned as recommended by the manufacturers, or as indicated in their published literature, unless specifically herein specified to the contrary.
- C. All work shall be performed by competent professionals and executed in a neat and professional manner providing a thorough and complete installation. Work shall be properly protected during construction, including the shielding of soft or fragile materials. At completion, the installation shall be thoroughly cleaned and all tools, equipment, obstructions, or debris present as a result of this portion of work shall be removed from the premises.
- D. Program the operational characteristics matching the operation described herein, adjusting for call routing, transfers, priorities, and volume levels.
- E. Remove all existing conduit, wire device, etc., being abandoned due to replacement.
- F. The Contractor shall provide a minimum of eight hours of in-service training with this system. These sessions shall be broken into segments, which will facilitate the training of individuals in the operation of this system. Operator Manuals and User Guides shall be provided at the time of this training.

1.5 SUMMARY

- A. Work Included. The scope of work of this section consists of the design, installation, and programming of all materials to be furnished under this SECTION, and without limiting the generality thereof, consists of providing all labor, materials, equipment, plant, transportation, appurtenances, and services necessary and/or incidental to properly complete all work as shown on the drawings, as described in the specifications, or as reasonable inferred from either or, in the opinion of the Architect and Owner, as being required and in general, is as follows:
1. Supervised Network Intercom and Paging System, including but not limited to:
 - a. Supervised network amplifiers, back boxes, and all equipment, cabling and support required to interface the public address system to the Owner's telephone system via SIP Trunk Interface.
 - b. Supervised network system speakers, and ceiling mounted speakers, wall mounted horn, both interior and exterior.
 - c. Cabling to support the Public Address System (NOTE: Category 6A, Panduit Make).
 - d. Master and secondary clock system, clocks and cabling. Elapsed time indicator control panels where shown on the drawings.
 - e. Supervised network PA override signal to local sound systems.
 - f. Supervised network emergency messaging display/clock capable of receiving and scrolling up to 64 character long custom messages without affecting or replacing display of time segments, and coded messages simultaneous with plain text message (displacement to time segments permissible for coded messages).
 - g. Interactive Graphical User Interface (IGUI) supporting a pictorial view of architectural room locations on a map, and controlling intercom functions including zone or all page, dynamic zone assignments, answering intercom call-ins, selecting and distributing program sources to any and all zones. IGUI will also annunciate, locate and indicate loss of communication to all supervised network devices including speakers, amplifiers, emergency messaging display/clocks, and notification switches.
 - h. Emergency communication shall be initiated by the local console or from a centrally located district office via a District Wide Emergency Communication platform (included/not included in this contract). Emergency communication shall include but not be limited to, pre-recorded audio, live audio, emergency textual message display activation, computer pop-up notification, SMS Text message, and email.

1.6 SUBMITTALS

- A. Submit the shop drawings, product data, and quality control submittals specified below at the same time as a package.
- B. Shop Drawings: Composite wiring and/or schematic diagrams of the complete system as proposed to be installed. Drawing shall include relative position of all major components, typical connections, field components, accessories, and cable types.
- C. Product Data: Include catalogue data sheets, manufacturer's default specifications, user operation guides, and bill of materials.
- D. Quality control shall include the following:
 1. Name, address, and telephone number of the nearest fully equipped service organization.
 2. Submit a certificate of completion of installation and service training from the system manufacturer.
 3. Submit a list of comparable completed projects. Furnish the name, address, telephone number, and contact name of end user.

2. PRODUCTS

2.1 GENERAL DESCRIPTION OF NETWORK INTERNAL COMMUNICATION SYSTEM

- A. Supply and install a complete supervised network-based intercom system. Field wiring shall be CAT 6A cable (Panduit Make), control wiring for power distributions and very long runs, and utilize an optional fiber backbone (when distances exceed normal Ethernet limitations). All station equipment shall utilize standard RJ-45 modular connections. All remote devices utilizing standard structured cabling shall be capable of PoE (Power over Ethernet) or power supplied within the CAT 5E or CAT 6 cable jacket. Wiring shall be capable of either being installed in conduit or cable trays, where shown on the plans.
- B. The system shall be capable of interconnecting with the building LAN (Local Area Network). This connection shall be minimal and utilize only one Ethernet 100 Mbps (or optionally 1 Gb) connection per station to accomplish all intercom operations. Ethernet ports and associated network switches that are required to connect any intercom devices will be provided by the OWNER.
- C. Provide a separate circuit for each room and administrative office so each room, speaker, amplifier, and emergency messaging display/clock can be individually addressed.
- D. Overall intercom communications network shall utilize Ethernet or VoIP communications between all major components: administrative consoles, intercom stations, amplifiers and individual paging speakers, and network switches. Systems not utilizing Ethernet or VoIP communications protocol to each end-point device will not be acceptable. Systems not capable of supervising all networked devices including network amplifiers, network speakers, notification switches, and emergency messaging display/clocks will not be acceptable.
- E. The network shall support a VLAN configuration to separate activity in the intercom system from other in building LAN traffic. In locations where the supervised network communications system will be considered as part of the facilities life safety systems, a dedicated and isolated network shall be required.
- F. The system shall interface to the facilities iPBX via SIP trunk connectivity.
- G. The Communications System shall include master clock support and synchronization of digital secondary clocks, event scheduling, and messaging software allowing the facility to configure multiple schedules per school, multi zone time tone signaling for class changes, and message notification.

2.2 DESCRIPTION OF NETWORK INTERCOM / PA / MESSAGING FEATURES

- A. The system specified is based on the Telecor eSeries Supervised Network based Communications System providing at least the features and functions outlined below. The System shall be installed and programmed by a local authorized and certified Telecor dealer.
- B. The system shall utilize a decentralized network structure not requiring any head-end equipment, central server, or any other control hardware to maintain system operation. Systems utilizing centralized electronics and subject to a single-point-of-failure (power supply, CPU, server, power, etc.) shall not be accepted unless the system has 100% duplication of all centralized operating equipment running concurrently and can automatically take over, including up to the minute programming configuration in the event of a failure of the main system head-end electronics or any required, centralized electronics required to make the system fully operational. Systems that are not based on decentralized structure or systems that do not provide 100% duplication of head-end or systems that operate in a “down-graded” operational mode as the result of a centralized failure are not acceptable.

- C. All station devices shall receive power and data through a Power-Over-Ethernet switch. Once plugged into the LAN through a Power-over-Ethernet network switch, all networked devices shall be immediately operational and as applicable shall place or receive calls and pages from stations as well as page all devices in the network. Consoles, intercom stations, clocks, emergency displays, or speakers connected to the network shall not require any network configuration or administration to function.
- D. Each Intercom Station, Loudspeaker, clock/message display, shall be assignable to all or any combination of Unlimited Paging, Program Distribution or Time Zones in the system.
- E. Each Classroom shall be provided with two Call Stations located in separate locations in order to comply with NEMA Standard SB40 for Emergency Communications in K-12 Schools. One Call switch shall provide the ability to generate normal calls to a designated location while the other shall generate Emergency level calls.
- F. Speech shall be transmitted in the frequency range from 50 Hz to 7 kHz and shall use a maximum of 128 kbps of bandwidth during a call. In order to assure maximum intelligibility, all system audio shall be HD Audio as defined in Intel™ High Definition Audio Specifications, June 17, 2010.
- G. Intercom communications between consoles and system devices shall be non-blocking with no channel restrictions or limitations (other than network capacity) to the number of simultaneous conversations at any time between pairs of intercom stations, intercom station to console, console to console, console to speaker or zone of speakers, program source to a speaker or zone of speakers, or bell tones to a speaker or zone of speakers regardless of number of stations or consoles.
- H. Any and all devices shall have the ability to have their programming downloaded, individually or simultaneously via the network. Programming shall be downloadable in a series of human readable, industry standard comma-separated values (CSV) files that can be saved and edited using common spreadsheet applications. Consoles, intercom stations, clocks, displays, and speakers residing on a network shall have the ability to update their programming, simultaneously from a CSV file. Furthermore, all devices shall also have the capability to be configured directly, such that device numbers, names, zones, and call-in destinations can be altered in real time without the uploading or downloading of their programming. System shall be capable of uploading firmware updates to all device classes simultaneously, via the network, without the requirement of tools, by authorized technician or qualified facility technician or representatives.
- I. Audio communications between all devices shall be accomplished with latency values of a maximum of 0.1 seconds and connection times of 0.01s for 1 to 500 speakers.
- J. The system shall support a minimum of 50 channels of simultaneous duplex communication paths on the intercom system LAN, plus a minimum of 10 simultaneous duplex channels for PBX integration.
- K. The system shall be capable of routing calls from the Public Switched Telephone Network (PSTN) into any classroom, zone or the entire school via the District's SIP enabled Telephone System. This shall allow for remote monitoring and two-way voice communications from outside the facility to classrooms as well as paging into areas of the school. Additional features shall include:
 - a. The ability to place call-ins from classroom call stations to SIP Telephones.
 - b. The ability to initiate calls from SIP Telephones to eSeries Classroom Speakers.
 - c. The ability to initiate zone and all call paging announcements from SIP Telephones to eSeries Speakers throughout the facility.

- d. The ability to make outside calls from Administrative Consoles to the PSTN via the Districts Phone System.
- L. The System shall allow users to configure multiple schedules per school, with an unlimited number of programmable events in each schedule. Each Event shall sound a user selectable tone, play a user provided audio file or an external audio source. In addition, a textual message shall be programmed to display on associated message displays throughout the school. All scheduling assignments shall be performed via a simple to use, Graphical User Interface (GUI) from a non-dedicated PC, residing in the School. Programming shall also be accomplished from a non-dedicated PC at the District Office. The following features and functions shall be provided. Systems that cannot provide these, shall not be acceptable.
 - a. The system schedules shall facilitate the requirements of combined facilities (e.g. elementary and middle schools in a common building) where multiple schedules running concurrently would be required.
 - b. Each event shall play any of the available tones, audio files or audio sources provided. Events shall be directed to any one or more Time Zones in the systems.
 - c. Events shall include textual messages to clock/message displays. These shall be formatted as fixed, flashing or scrolling displays that can include up to 200 characters in length.
 - d. Time Tones may be manually activated from Administrative Consoles or selected SIP phones residing on the schools IP PBX.
 - e. An integral Master Clock shall provide time synchronization to all secondary, digital clock / Message Displays throughout the school. The communications shall be capable of obtaining it's time synch signal from any NTP timeserver.
- M. The System shall be capable of automatically distribute SMS and email notifications to relevant staff members when an emergency event is occurring the facility. Notifications shall be distributed to user alert devices such as mobile phones and smart devices. Mobile phones shall receive the notifications as SMS messages while smart devices shall receive email messages. Emergency events include:
 - a. The activation of emergency-themed element icons on a PC GUI (e.g., Lockdown, Evacuate, etc.)
 - b. Emergency Calls placed from Call Stations located room locations.
- N. The system shall automatically distribute SMS and email notifications to appropriate technical support staff in the event that the system is experiencing a fault.

2.3 SUPERVISED NETWORK ADMINISTRATIVE CONTROL CONSOLE

- A. The Supervised Network Administrative Control Console (subsequently referred to as Console) shall be a Telecor model e300 or approved equal. The Console shall be supervised and allow the operator to establish two-way communications with an intercom station, talkback speaker, or another Console using the handset or speakerphone. VOX functioning shall be automatically enabled when the handset is used. The Push-to-Talk button shall toggle the Console between talk and listen mode when the speakerphone is used. The Console shall provide a 2-line by 20-character LCD display. The display shall be adjusted to a range of angles for optimum viewing. When there are no active calls, the display shall show the Console name and dial number. If a time server is connected to the network, the display shall also show the time and date.

- B. Incoming calls to a Console shall show the originating station dial number and name on the Console display. Calls shall be displayed in the order they are received. The operator shall scroll through the list of calls and answer them out of sequence. Emergency call-ins shall be distinctly annunciated both visually and audibly.
- C. The Console shall allow call-ins to be forwarded to another Console, or for calls to be put on hold or transferred to another Console location. Additionally, call-ins or calls shall be forward/transfer-able to PBX telephone extensions via a SIP trunk interface.
- D. The Console shall select remote audio sources connected at any location on the local area network, and distribute the audio broadcast from the source to all speakers in a facility or to selected areas such as a speaker zone or a selection of speakers. The Console shall be capable of audio source verification by attendant prior to page zone activation. In this manner, attendants shall listen to the audio source locally, including listening to pre-recorded announcements, prior to system broadcast.
- E. The Console shall select a tone or a pre-recorded announcement and broadcast the tone or announcement to all facility speakers or to select areas, such as a speaker zone or a selection of speakers.
- F. The Console shall be equipped with digital volume control that shall allow for the separate adjustment of the speaker listen and handset listen volumes. The levels for intercom listen, tones, and program distributions shall be independently adjusted and stored in memory.
- G. The system shall allow user programming of alphanumeric architectural room names and numbers. The Console shall be capable of using 1 to 7 digit sequences for dial out and call-in identification, and shall display station numbering, station name, and call-in priority.
- H. The end-user shall be allowed to choose and determine the number and location of Consoles. The end-user shall not be limited by pre-set manufacturer limitations of the number of Consoles required by this project; allowing for unrestricted future expansion. Consoles may be added at any time. Consoles added by the end-user that exceed the engineered design for this project shall be at owner's expense. Communication between consoles or consoles and intercom stations or rooms shall not be inhibited by channel number restrictions.
- I. The Console shall be capable of displaying room statuses such as Privacy and Do Not Disturb and shall have the ability to override any status limiting communication between the Console and a station with Privacy or Do Not Disturb status activated. Temporary override shall not interfere with continued activation of Privacy and Do Not Disturb after communication has been established and electively terminated.

2.4 SUPERVISED ETHERNET TERMINATION BOARD UNIT

- A. The Termination Unit shall be a Telecor Model eTBU-MI or approved equal. It shall reside on the facilities LAN providing provide two-way intercom communications between Consoles and industry standard 25 Volt speaker stations.
- B. The Termination Unit shall distribute program audio to speaker locations and detect call-in annunciation from call switches in room locations. It shall selectively transmit Paging, Audio Programs and Time Tone Signals originating on the eSeries Network Devices, to individual rooms, all rooms, selected rooms, or zones of loudspeakers.

- C. The Termination Unit shall be consistent with the ANSI/NEMA SB 40 Standard for Communications Systems for Life Safety in Schools, supporting multiple call-in locations per room. These include the support of call-in devices with LED call assurance and privacy or do-not-disturb indication for each room. Multiple devices at a room location shall be configured to place call-ins with different destinations and priority levels. If the call-in destination of these devices is a Console or an IP-PBX phone extension, the device display shall indicate the calling room location dial number, a textual room name, and the priority level of the call-in. Room locations can be configured with a primary, secondary, and back-up call-in destinations. Emergency priority call-ins placed from a room location shall be configured with a different call-in destination.
- D. The Termination Unit shall support a Message Waiting (MW) feature. This feature shall use the LED on call stations to indicate waiting messages to room occupants. If no one is present in a room location to respond to a call or if the room is in Privacy or DND mode, the caller has the option to activate a MW indication. This causes the LED on the call station to pulse. When a call-in is initiated from the room, it shall be directed to the device that activated the MW indication and the MW indication will be deactivated.
- E. The Termination Unit shall support the Privacy function on Call Stations that are equipped with a Privacy button. When pressed, the Privacy button shall place the room location in privacy mode. This shall prevent monitoring of audio in the room. In privacy mode, the LED on the Call Station shall illuminate to indicate privacy mode. When a call-in is placed from the room location, privacy mode shall automatically be suspended for the duration of the call and re-enabled afterwards. If a call is placed to the room location while in privacy mode, the caller shall be alerted to the privacy mode and given the option to connect the call, leave a message-waiting indication, or to cancel the call.
- F. The Termination Unit shall include support for the Do Not Disturb mode. Call Stations equipped with a Do Not Disturb (DND) button shall place the room in DND mode when pressed. In DND mode, the LED on the Call Station shall flash to indicate that the station is in the DND mode. This shall suspend zone pages and normal priority audio distributions from being broadcast into that room. DND mode shall not prevent emergency priority operations from reaching the location. If a call is initiated from a room location that is in the DND state, the DND shall be automatically suspended for the duration of the call and re-enabled afterwards.
- G. The Termination Unit shall also provide synchronization and correction of traditional Digital and Analog Clocks, as well as Electronic Message Displays. The digital signaling that provides support for these devices shall originate in the eSeries Network. Analog Clock correction formats supported by Legacy T2 or XL systems, shall also be supported by the Termination Unit.
- H. The Termination Unit shall monitor the wiring of all room location call devices for call line failure. It shall analyze the wiring for an open circuit, short circuit, or short to ground conditions. In the event of a fault, the Termination Unit shall detect the fault and provide trouble notification messages to devices equipped with trouble LED and buzzers which will annunciate the trouble signals.
- I. The Termination Unit shall be equipped with an integrated 25 watt, dual-purpose intercom/paging amplifier. It shall be used to provide amplification for two-way intercom communications to room stations, as well as amplification for paging, audio programs, and time tone signals to speaker locations. In the event that the audio load is greater than 25 watts, a line level output shall provide for the connection of an external power amplifier.

- J. All speakers, when connected to the Termination Unit shall reside on an "Off Bus." This shall ensure failsafe operation, where even in the event that network connectivity is lost, a redundant audio source can be connected to the "Off Bus" and emergency paging announcements can be transmitted to all speakers connected to the Termination Unit.
- K. The Termination Unit shall mount in a standard rack panel measuring 19" W x 1.75" H and shall occupy a single rack unit. It shall be ideally suited for use with the Telecor C5PPL patch panel. Alternatively, two 50-pin, RJ-21 connectors shall provide termination facilities to a pair of TM-2X25 terminal blocks for connecting field devices. The unit shall be powered from an external 24 VDC Power Supply.

2.5 SUPERVISED SPEAKER BREAKOUT MODULE

- A. The Speaker Breakout Module shall be a Telecor model eSBM-TB or approved equal. It shall provide the means of integrating traditional analog speakers and call initiating devices to the eSeries System. The Module shall also be a Single Zone Paging Adapter that can drive an amplifier to provide paging coverage in a facility. The Module shall have three relay outputs that can activate automatically during a call processing operation.
- B. The Module shall receive power and data through a Power-Over-Ethernet switch. Once plugged into the LAN through a Power over Ethernet network switch, the Module shall place or receive calls and pages from the eSeries network. The Module shall not require any network configuration or administration to function.
- C. Speech shall be transmitted through the Module in crystal-clear HD Audio. Audio shall be transmitted in the frequency range from 50 Hz to 7 kHz and shall use a maximum of 128 kbps of bandwidth during a call. Audio between the Module and eConsoles shall be non-blocking.
- D. The Module shall support eSTB-12 2x2 Ceiling Inlay Speakers, which shall connect to the eSBM-TB via a standard CAT5 cable or conventional 8Ω/25V/70V speakers to provide paging and talkback operation from eSeries e300 eConsoles or phones via an eSIP and an IP-PBX.
- E. The volume of the speakers shall be adjustable individually, by zone, or across the entire eSeries network via the ePort Management Interface or eCI Control Interface. Volume controls incorporated into certain eCS station models shall also allow a user to adjust the speaker volume locally. Volume levels shall be set by specific functions: intercom, paging, emergency paging, and Public Channel operations.
- F. Call-in capabilities shall be provided with addition of any of Telecor's eSeries Call Stations. The eCS-6 and eCS-3 shall be used to initiate Normal and Emergency calls respectively. Advanced stations that provide additional features shall also be available: the eCS-1 (Privacy and Normal Call), eCS-2 (Do Not Disturb and Normal Call), and eCS-4 (Volume Control, Public Channel Select and Normal Call). All eCS Call Stations shall also provide "message waiting" indication.
- G. The eSBM-TB shall also support placing normal and emergency priority call-ins from simple pushbutton call switches. Pressing the normal call switch shall initiate a normal call-in, and either pressing it three times quickly or pressing and holding it for three seconds shall place an emergency call-in. Pressing the emergency switch once shall place an emergency call-in.
- H. The Module shall have the ability to direct normal and emergency call-ins to different devices. If the device that is configured to receive the call-in loses network connectivity, the Module shall automatically search for an alternate destination. If no other suitable call-in destinations exist, the Module shall audibly and visually indicate a fault.

- I. The Module shall have a call-in roll-over feature where if a call-in to the primary call destination is not answered after a pre-set amount of time, the call shall be automatically copied to a secondary call destination. If both the primary and secondary call destinations are unavailable, the call shall be redirected to a back-up eConsole.
- J. The Module shall have the capability to be configured as a member of one or more paging zones.
- K. The Module shall have a built-in 4-watt audio amplifier that shall drive up to 4 watts of audio to a small zone of 25/70 volt loudspeakers. The module shall provide a line level audio output that can connect to an external power amplifier for applications where the speaker zone load exceeds 4 watts.
- L. The Module shall be monitored for network connectivity. If the Module's network connection is lost, targeted e300 eConsoles shall report that station as absent and display its dial number. When the Module is used with eCS Call Stations, the Module shall also provide full supervision and monitoring for Call Station and call-in destination connectivity. If a wiring fault is detected between an eCS Call Station and the Module, the Module shall audibly and visually indicate the error utilizing the status LEDs on the Module. The eCS Call Stations shall pulse to indicate a trouble condition. In case of a fault, the ePort or eLog shall log the location, time, date and type of fault. If so configured, the ePort, eLog, eCI and eAmplifiers shall also generate an alarm tone.
- M. The Module's status LED that shall flash in different patterns to indicate normal operation, call-in assurance, message-waiting, a call or paging audio in progress, or to indicate an error.
- N. The Module shall be equipped with three relays that can be used to operate auxiliary devices such as strobe lights, tone initiating devices and door locks.
- O. The eSBM-TB shall be wall-mounted using the attached mounting brackets.

2.6 POWER AMPLIFIERS

- A. Power Amplifiers shall be used to drive groups of speakers located in corridors and outdoor locations that are assigned to speaker zones. Amplifier Zones shall be sized at 1 watt per corridor speaker, and 3.5 watts per horn. . The amplifier load shall not exceed 80% capacity.
- B. The amplifiers shall be capable of producing an audio output of 60, 125 or 250 watts RMS at less than 1% distortion with balanced output.
- C. They shall be designed to operate on a line voltage of 115 AC.

2.7 SUPERVISED NETWORK AMPLIFIERS

- A. The Supervised Network Amplifier (subsequently referred to as Network Amplifier) shall provide a minimum of 25 watts for paging and public address and shall be capable of utilizing analog amplifiers to increase the amount of amplified signal from the network amplifier. The Network Amplifier shall be connected directly to the network switch by an RJ45 connector and shall receive signals directly from the network.
- B. The Network Amplifier shall be supervised and in the event that network communications is lost, an audible alert shall sound on the Amplifier. The Network Amplifier shall provide a silence feature to mute the audible alert for 24 hours.
- C. The Network Amplifier shall also be capable of receiving local input from local devices such as tape decks, iPod docks, CD players, etc. The network amplifier shall be capable of transmitting signals received from the local input to other network locations or locally to directly connected 25/70 volt or 8-ohm analog speakers.
- D. Each Network Amplifier shall be capable of providing two audio inputs for local devices and shall be programmable as either a microphone or line-level input.

- E. The Network Amplifier shall be controlled remotely such that audio programs, input, tones, textual messages, or announcements may be initiated by other devices connected at different locations on the local area network.
- F. The Network Amplifier shall have a minimum of 4 local tone/pre-recorded announcement audio message control lines which when activated will distribute tones/pre-recorded audio messages to intended network amplifiers for re-distribution, network talk-back speakers (or a zone), and/or local 25/70 volt or 8-ohm analog speakers directly connected to amplifier. Each network amplifier shall be capable of storing four (4) pre-recorded announcements in addition to a minimum of 16 tones. Tones and announcements shall be activated locally or from other network devices.
- G. The Network Amplifier shall store and transmit companion textual messages for each stored audio announcements. Textual messages shall be automatically broadcasted to the same zones along with the audio messages such that any device programmed for that zone automatically receives both the audio and textual announcement/message and automatically reproduced each or both messages to the extent of the devices' capabilities.
- H. The Network Amplifier shall be capable of transmitting HD level audio as defined by Intel™ High Definition Audio specifications, June 17th, 2010 at a minimum.
- I. The Network Amplifier shall shut down to protect itself should an output short circuit fault or overload occur that jeopardizes the integrity of the Network Amplifier.

2.8 SUPERVISED INTERACTIVE GRAPHICAL USER INTERFACE

- A. The system shall include an Interactive Graphical User Interface (subsequently referred to as IGUI). The software shall reside on Telecor provided PC and should have ability to interface to District Wide Emergency Communication system located in district office.
- B. The IGUI shall be supervised and shall utilize an easy-to-use Graphical User Interface for quick and easy graphically aided navigation to access functionality for all intercom stations, paging zones, and program distribution sources. Emergency operations shall be simplified through the IGUI allowing stored audio files and alphanumeric messages for message displays to be activated from the IGUI. The IGUI shall allow common operations such as daily announcements to become simplified into single touch activated icons; removing multi-step console set ups and dial strings.
- C. The voice device used to originate voice communication for the IGUI to selected locations shall be a system console, telephone handset, or microphone independent from the computer hosting the IGUI. The voice device shall remain functional and accessible regardless of the operational state of a computer supporting the IGUI.
- D. The IGUI shall allow the creation of a custom operating screen(s) based on the floor plans of the facilities. Icons representing intercom stations, zones used for paging, tone distribution, textual Message distribution, and audio program distribution shall be incorporated onto the floor plans. The IGUI software shall provide:
 - a. Simple routine call processing, including: hold, transfer, and forward
 - b. Activation of remote station auxiliary relays for applications such as door lock or release
 - c. Emergency functions
 - d. Paging
 - e. Audio program distribution
 - f. Customizable page elements
 - g. Customizable operating screen
 - h. Element library for emergency event icons

- i. Initiation of emergency and non-emergency messaging, textual and audible
 - j. Remote station volume adjustment
 - k. Remote activation of do not disturb status and/or message waiting status
 - l. Remote station trouble indication
 - m. Remote station background music channel selection
 - n. Dynamic zone management for interactive on-the-fly console specific zones
 - o. Single touch emergency response (supporting both actual emergencies and drills) including but not limited to all or any combination of the following:
 - Live voice notification
 - Pre-recorded audio message
 - Digital plain text messaging with simultaneous numerically coded message capability
 - Remote system activation, i.e., access control systems, CCTV systems, door release systems, etc.
- E. The IGUI must provide an efficient and reliable method of notifying the occupants within the facility of critical situations. A variety of emergency tone signals that reside within the intercom/paging system shall be activated by clicking on pre-programmed buttons on the IGUI screen, initiating the transmission of tone signals to speakers, and alphanumeric messages to message displays/digital clocks. A “lockdown” icon shall be designed as per Owner direction, with Owner selecting the appropriate tone. Whole building macros for emergency or off-normal response shall be built into the internal communication system as directed by the Owner. Each macro shall be capable of being activated by the console, the IGUI as indicated on plans or as directed by the Owner or AHJ. It shall be possible to activate a WAV file message or Owner selected tone coinciding with multi-language textual messages for distributions to zones as directed by the Owner, all from a single activation icon located on the IGUI. Other single action macros shall be activated in similar fashion via the IGUI and a custom-labeled icon. Plain language labeling of all icons on the IGUI shall be user changeable.

2.9 CONTROL INTERFACE

- A. The Control Interface shall be a Telecor model eCI or approved equal. The interface shall provide a Desktop Application for PC interaction with the Intercom and Paging system, a Command Interface Protocol for external system interaction with third party systems, Group Zone functionality, and a Scripting Engine supporting multiple sequential operations.
- B. The system shall incorporate a Windows based Desktop application that makes use of a Command Protocol Interface, allowing external systems to interact with the Network Intercom and Paging System. Combined with the Scripting and Group Zones features, the Desktop application shall generate a preprogrammed series of operations from a single action. These features shall be used in conjunction with a graphical user interface and the Microsoft Windows desktop.
- C. Default Scripts shall be used to generate customized shortcuts according to the needs of a facility. These shortcuts shall then be placed directly on the Windows desktop and shall activate virtually any Intercom and Paging function by clicking on the shortcut icon. These shall include activating:
 - a. Alerts, audio distributions, coded and plain text messages, intercom operations.
 - b. Pre-Recorded Evacuate, Lockdown, and All Clear audio files.
 - c. Companion text messages for audio alerts.
 - d. Coded messages on all secondary digital clocks and displays.

- D. The Desktop Application shall also activate SMS text messages, computer pop-up notifications, and email distributions in conjunction with any Desktop Script. Desktop Icons such as a Panic Button shall send SMS notifications to a crisis team, advance warning to building occupants through pop-ups to heighten the level of awareness.
- E. Any Desktop location running the Application shall have the ability to create and send an instant message using the Desktop's keyboard any display. The textual message can be sent independently or as a companion message to an audible alert.
- F. The Desktop Application shall be capable of utilizing Soft Call and Panic buttons. Soft Call buttons shall be created to operate as a call button on the desktop with a normal or emergency call priority. They shall also be combined with other preset or on-the-fly custom text messages. Panic buttons shall allow a user to unobtrusively activate an audio path from the panic button location to another eSeries device at a security location. This shall allow security personnel to listen to an occurring situation and provide the appropriate response.
- G. The System shall be capable of streaming multiple audio programs over 10 available channels, simultaneously, to speaker locations in the facility. The ability to turn the broadcast on or off to a specific location shall be controlled from the Desktop Application.
- H. A user from the Desktop Application shall enable or disable Do Not Disturb (DND) mode for a group of devices such as speakers or intercom stations.
- I. Volume Adjustments to individual devices, devices in a zone, or all devices in the intercom and Paging System shall be made from the Desktop Application.
- J. The Desktop Application shall be used to create a call directory to provide the user with the ability to quickly and easily place calls to a large number of prospective recipients and locations. The shortcuts shall be customized with the name of the call recipient or location. The call directory shall also contain shortcuts that activate message-waiting indications in addition to the option of placing calls.
- K. The system shall interface with other external systems using a Command Interface Protocol. External systems include integrated security management or building management systems via devices such as computers, programmable logic controllers, or software-based annunciator panels.
- L. The Command Interface Protocol shall be used to send real time commands and receive real time status messages between the third party system and eSeries devices. The Command Interface Protocol shall be an ASCII protocol that includes both outbound messaging, and support for inbound command via a virtual COM port and a physical USB connection.
- M. Scripting shall allow operations to be carried out in sequence. Scripts shall be activated in various ways including: automatically based on the day of week and time of day, using an eConsole or a phone, or by using eDesktop, or from other scripts.
- N. When scripts from an eConsole or PBX phone (via eSIP), the name of the script shall be displayed on the eConsole or phone. Then the user shall be presented with options to enable or disable the script (depending on the current state of the script). eConsoles and PBX phones that dial the script number shall hear voice prompts for enabling or disabling the script.
- O. Scripts shall be used for scheduling time tone programs that include tones, pre-recorded messages, and textual messages displayed on e365-TB Message Display/Clocks reoccurring at specific times and days.
- P. Scripts shall perform cascading evacuation operations where evacuation audio messages are automatically first distributed to zones closest to the location of an emergency before spreading outwards to other zones according to a time schedule, thus reducing evacuation route congestion throughout the facility.

- Q. Group Zones shall allow groups of page zones or devices to be defined as a group zone with a dial number. Group Zones shall be accessed from eDesktop, eConsoles or PBX phones.
- R. Group zones shall be the destination for various functions including textual messages, or audio operations, such as pages or audio program distributions). Group zones shall be assigned customized names, which will appear on eConsole or phone displays when they are dialed.
- S. Group Zones shall make it possible for a dial number to be forwarded to different destinations based on time and day. For example, common audio operations directed to a Group Zone dial number shall be configured to go to the usual destination during regular hours but to a different destination outside of regular hours.
- T. Group Zone shall support designated priorities, such as emergency. Operations that are to a zone with a priority are automatically elevated to override any normal or lower priority operations the devices in that group zone are receiving.

2.10 SUPERVISED SIP TRUNK IP/PBX INTERFACE

- A. The system Session Internet Protocol (SIP) Interface shall be a VoIP PBX phone interface of the same manufacturer as the supervised network intercom and paging system. Third party gateway devices shall not be accepted.
- B. The SIP Interface shall be supervised and shall connected directly to the facilities network and the PBX's network and shall provide the following:
 - a. Establish a barrier gateway between the intercom and paging network and the PBX and/or common computer network.
 - b. Transparent audio operation between VoIP PBX phones and any device on the supervised network intercom and paging system. Paging access from any telephone on the facility system VoIP PBX to any intercom speaker, speaker zone, intercom station, console, all speakers, or paging horns and zones throughout the facility.
 - c. Any call-in from the supervised network intercom and paging system shall be capable of being routed directly to a VoIP PBX phone. Call-in stations can be configured and programmed to automatically dial any number on the publicly switched telephone network, landline, or cellular number through the SIP interface and via the PBX.
 - d. Ability to escalate a call-in to be redirected to a VoIP PBX connected phone via the SIP Interface. Escalation can also include the ability to dial any number on the publicly switched telephone network, landline, or cellular number through the SIP interface via the PBX.
 - e. Ability to initiate alarm and crisis response protocols from any VoIP PBX connected phone.
 - f. Ability to require security access code to utilize the intercom or paging system emergency communication features.
 - g. Minimum of 10 simultaneous telephone channels of access to/from VoIP PBX phone system. Full caller ID support from any supervised network intercom call-in device to a VoIP PBX connected phone identifying the calling station ID/Location.
 - h. Emergency level call-in to be uniquely identified as emergency on the VoIP PBX phones.
 - i. Activation of all supervised networked intercom and paging system emergency tones and pre-recorded announcements from any phone connected to the building VoIP PBX phone system.

- j. The SIP Interface shall additionally allow for calls to be placed from a console to any phone number on the publicly switched telephone network (landline or cellular). Additionally, intercom calls at a console may be transferred to any number on the publicly switched telephone network to any landline or cellular number through the SIP interface via the PBX.
- C. Systems that connect to a building or district phone system and are limited to a SLT or CO connection will not be accepted as a substitute for a fully operational SIP Interface.

2.11 MASTER CLOCK /MESSAGE HOST

- A. The Master Clock / Message Host shall be a Telecor model eMH or approved equal. It shall be a time master device for the eSeries network which enables configuration and activation of eSeries operations from a web-based graphical user interface (GUI). An unlimited number of operations shall be managed for activation by schedules or users. The application shall be web-based and secured via HTTPS certification. It shall be preconfigured with a variety of default operations, schedules, audio, and icons for quick customization. Users shall log into the application from any desktop computer or mobile smart device using a supported web-browser. Supported web browsers shall include Microsoft Edge, Mozilla Firefox, Google Chrome, and Apple Safari.
- B. Master Clock functionality shall include central time keeping and synchronization of all other eSeries devices throughout the eSeries network.
- C. The Master Clock shall manage an unlimited number of calendar-based schedules, which are collections of operations intended to be performed frequently, periodically, or on specific dates and times. For example, a schedule may be a series of bell tones that consistently indicate class changes. Users shall set schedules so that the operations they contain will activate accordingly.
- D. Schedules shall be viewed, enabled or disabled in a calendar. The calendar shall display schedules on a daily, weekly, monthly or yearly basis. The eMH shall support scheduling operations up to 10 years into the future.
- E. An unlimited number of holidays shall be specified and marked on the calendar. This shall indicate days where disabling all schedules may be appropriate.
- F. The Master Clock shall obtain time from and synchronizes with Network Time Protocol (NTP) servers directly or via an NTP-enabled eSIP present on the eSeries network.
- G. Operations shall include several components, including: pre-announce tones, pre-recorded audio, scrolling textual messages, and coded messages. If desired, specific details of the components shall be customized. Customization shall include: the number of times the pre-announce tone plays, the message scroll speed, and the delay before pre-recorded audio repeats. Depending on the operation type, user-activated operations shall be distributed immediately or queued for later distribution.
- H. The Home page shall provide a quick overview of eMH-managed operations. This shall include the next scheduled operation, the schedules that are currently active, and the next scheduled school drill. The eMH shall include user specific short tutorial videos that explain various aspects of the GUI and provides built-in on demand training.
- I. The Live page shall show currently active and upcoming operations. A history of recently performed operations shall confirm operations occurred as intended. Also, users shall easily initiate on-the-fly operations on the Live page by configuring and activating them on demand.
- J. Routine operations shall include an unlimited number of pre-configured common audio distributions. Examples shall include announcements for special assemblies, bus arrivals, staff meetings, and festive events.

- K. Operations shall be associated with eSeries eCI scripts so that they shall be activated by users. The GUI shall indicate if the eCI script is active even if it was activated via other means such as dial access code or Visual Console for eSeries. Other emergency operations (such as Lockdown) shall also be seamlessly integrated with Visual Console for eSeries.
- L. Audio files shall be used for tones or announcements while images shall be used as icons throughout the GUI to represent different operations or schedules. Audio file formats shall include (WAV and MP3) and images to support operations.
- M. Access shall be user-account controlled. An unlimited number of users shall be supported with a high level of individual customization. Users shall be given access to only the pages and operations relevant to their intended roles. For each page, users shall be granted permissions to activate or configure operations and schedules from a desktop or, for certain users, from mobile devices. An administrator account shall have full access to view and make configuration changes on all pages, while an operator account shall be limited to activating routine or emergency operations and enabling or disabling schedules.
- N. Users with administrative privileges shall have the ability to configure the site name, time, time zone, test zone, and import and export databases. To aid installers with initial configuration, a test mode shall be provided as well as a database import/export feature. Test mode shall redirect all activated operations to a test zone (that only the installer occupies) to prevent disrupting other people during configuration and testing. Database import/export shall allow the configuration to be exported for backup purposes or to copy to other installations.
- O. The system shall be configured for an unlimited number of dedicated emergency response operations. A corresponding drill operation shall be automatically created for each emergency situation. Users shall activate emergency response operations from facility PCs or remote mobile devices.
- P. The Master Clock / Message Host shall feature a **Maintenance Portal**. The portal shall provide trouble notifications for faults being experienced by any eSeries device on the eSeries Network.
 - a. The notification includes a details fault report that provides the device name, dial number and the nature of the fault. These shall be easily copied into other documents and emails.
 - b. The Portal shall be configured to use an email account to automatically send trouble notification emails to a list of designated addresses. These emails shall list the details of all the current faults.
 - c. A link to the eMH web interface shall be provided in order for the recipient to perform trouble shooting actions such as viewing up to-date fault information, enabling service mode status, and making configuration changes.

2.12 MOBILE QUICK ACCESS

- A. The system shall include a Mobile Quick Access feature that allows staff members to quickly activate Emergency Notifications. (e.g. Lockdown) using mobile smart devices.
- B. Notifications shall include the broadcast of pre-recorded audio announcements over the facility's public address speakers and textual messages to eSeries displays with a single activation.
- C. The feature shall include emails and SMS messages that shall be delivered to custom lists of recipients.
- D. Button options shall be customizable allowing staff a choice of notifications from their mobile device depending on the staff's authority.

2.13 CALL STATIONS

- A. The Call Stations, as indicated on the drawings, shall be Telecor model CS5-1-MA, CS5-2-MA, CS5-3-MA, CS5-6-MA, and CS5-8-MA or approved equal. The station shall be used to initiated calls from remote locations to eSeries Consoles. Call stations are designed to be used in conjunction with Telecor's Multi Input Buffer Unit (MIBU), IP Termination Unit (Multi-Input) (TBU-IP-MIMA), or the eSeries eTBU-MI Ethernet Termination Unit on a single pair of wires.
- B. The CS5-1-MA, CS5-2-MA, and CS5-6-MA shall have a "PUSH TO CALL" momentary contact touchpoint that initiates a normal priority level call from a remote location. A Call Assurance LED shall provide call confirmation. When a call is placed, the LED shall flash, confirming call placement. The LED shall continue to flash until the call is answered by the console operator.
- C. The CS5-1-MA shall be equipped with an additional "PRIVACY" button that, when pressed, shall place the room into privacy mode, preventing monitoring of audio activity in the classroom. When in privacy mode, the LED on the station illuminates, indicating privacy status. When a call-in is initiated from the room, the privacy status shall be automatically suspended for the duration of the call and automatically re-enabled afterwards. If a console calls a room that is in Privacy, the operator shall be alerted and given the option to cancel the call, leave a message-waiting indication or to connect regardless. If they connect, the room occupants will hear the operator, but the operator will not hear the room until an occupant turns off the Privacy feature.
- D. The CS5-2-MA shall be equipped with an additional "DO NOT DISTURB" (DND) button that, when pressed, places the room into DND mode. When enabled, the LED on the station shall illuminate, indicating DND, and scheduled events, zone pages and normal priority audio programs will not sound in the room. However, emergency pages, manual tones and high priority audio distributions shall continue to be broadcast into the room. When a call-in is initiated from the room, the DND status shall be automatically suspended for the duration of the call, and automatically re-enabled afterwards. If a console calls a room that is in DND, the operator shall be alerted and given the option to cancel the call, leave a message-waiting indication, or to force the connection regardless of DND. If they connect, the intercom call to the room shall proceed normally; this allows an immediate option to reach the rooms occupants in the event of an emergency.

- E. Telecor CS5-1-MA, CS5-2-MA, and CS5-6-MA call stations shall indicate waiting messages to staff members. If no one is present in a room to respond to a call, or the room is in Privacy or Do Not Disturb mode, the console operator shall have the option to leave a Message Waiting indication. If the MW option is chosen, the LED indicator on the room call stations shall begin to pulse. When a call-in is initiated from the room, the MW indication shall be automatically deactivated.
- F. The CS5-3-MA shall be capable of being paired with CS5-1-MA, CS5-2-MA, or CS5-6-MA call stations. The CS5-3 shall be equipped with an "EMERGENCY" contact touchpoint that shall initiate an emergency priority level call-in from a remote location. A Call Assurance LED shall provide call confirmation. Then a call is placed, the LED flashes to confirm call placement. The LED shall continue to flash until the call is answered by the console operator. Consistent with the NEMA SB 40-2008 Communications Systems for Life Safety in Schools standard, the CS5-3-MA shall allow the establishment of multiple call-in locations per room and a separate emergency call-in, without the investment in additional wiring infrastructure. The CS5-3-MA shall be connected with a pair of wires from the associated CS5-1-MA, CS5-2-MA, or CS5-6-MA call station.
- G. The CS5-8-MA Emergency call station shall be similar to the CS5-3-MA. It shall operate independently and shall not need to be paired with another call station.

2.14 LOUDSPEAKERS

The Speakers, as indicated on the drawings, shall be Telecor models STB-12, STB-5, and STB-10 or approved equals.

- A. The 24" x 24" lay-in tile speaker assembly shall a Telecor model STB-12 or approved equal. It shall incorporate an 8" cone loudspeaker, equipped with a dual 25/70 volt line-matching transformer, pre-assembled into a 24" x 24" square perforated steel baffle and combination backbox, designed to be installed flush in a suspended ceiling
- B. The loudspeaker shall have a wide frequency response for general-purpose voice and music reproduction. The line-matching transformer shall have primary taps at 5, 2.5, 1.25, 0.63, and 0.32 watts. The baffle is finished in a mar-resistant, white epoxy coating. The baffle is finished in a mar-resistant, white epoxy coating.
- C. The speaker assembly shall be designed to be installed in a suspended ceiling. Installation is quick and simple as the 24" x 24" is designed to fit into a common 2-foot square ceiling grid. Tie off tabs allow the assembly to be secured to the building structure or ceiling grid to address any safety concerns.
- D. The 12" x 24" lay-in tile speaker assembly shall a Telecor model STB-5 or approved equal. It shall incorporate an 8" cone loudspeaker, equipped with a dual 25/70 volt line-matching transformer, pre-assembled into a 12" x 24" square perforated steel baffle and combination backbox, designed to be installed flush in a suspended ceiling.
- E. The loudspeaker shall have a wide frequency response for general-purpose voice and music reproduction. The line-matching transformer shall have primary taps at 5, 2.5, 1.25, 0.63, and 0.32 watts. The baffle is finished in a mar-resistant, white epoxy coating. The baffle is finished in a mar-resistant, white epoxy coating.
- F. The speaker assembly shall be designed to be installed in a suspended ceiling. Installation is quick and simple as the 12" x 24" is designed to fit into a common 2-foot square ceiling grid. Tie off tabs allow the assembly to be secured to the building structure or ceiling grid to address any safety concerns.
- G. The Pre-assembled 8" packaged ceiling loudspeaker shall be a Telecor STB-10 assembly or approved equal. It shall include the loudspeaker/transformer/baffle assembly.

- H. The loudspeaker size shall be 8 inches in diameter and have a power handling capacity of 15 watts. The voice coil shall be of high-temperature bonded construction, be one inch in diameter and have an impedance of 8 ohms. The speaker shall have a frequency range of at least 65 Hz to 17,000 Hz and an axial sensitivity of 92dB at 1 m, with a 1 watt input signal @ 1000 Hz. The loudspeaker shall be equipped with a factory wired 25/70 volt line-matching transformer. The transformer shall have the primary taps at 5/16, 5/8, 1-1/4, 2-1/2, and 5 watts. The insertion loss shall be no greater than 1.0 dB. The transformer shall be mounted to the speaker with the secondary leads soldered to the speaker terminals.
- I. The assembly shall include a baffle constructed of 22 gauge, cold-rolled steel finished with a mar-resistant white, semi-gloss, epoxy coating. The baffle shall have a diameter of 13".
- J. The STB-10 shall mount to a T7 support bridge, used to attach the assembly to suspended ceilings. The support bridge shall accept an enclosure, model H7, for applications where a protective enclosure is required. The H7 enclosure shall attach to the support bridge with appropriate mounting screws. The enclosure shall be a Telecor H7 or approved equal. A circular molded polystyrene damping pad shall be fitted to the inside top of the enclosure to prevent acoustical and mechanical resonances. The pad's surface shall be molded with a triangular pattern for enhancing low frequencies and shall optimize the audio response of the enclosure.

2.15 RE-ENTRANT HORN/LOUDSPEAKER

- A. The Re-Entrant Horn/loudspeakers, as indicated on the drawings, shall be a Telecor model A-15T or approved equal. It shall be a double re-entrant type, with a flared bell and an integral compression driver rated for 15 watts of continuous audio power. The frequency response shall be 375 -14,000Hz. Nominal sensitivity shall be such that a sound pressure level of 110 dB at 1000 Hz. (on axis) at distance of one meter is produced with an input of one watt. Sound dispersion shall be no less than 100 degrees, regardless of the mounting position. The horn shall contain a weatherproof, built-in, 25/70 volt line-matching transformer. Power taps shall be at 0.48, 0.94, 1.8, 7.5 or 15 watts for a 25V line and 1, 2, 3.8, 7.5 or 15 watts for a 70 V line. The power taps shall be screwdriver adjustable. Impedance selection shall be 5,000, 2500, 1300, 666, 333, 87, or 45 ohms.
- B. The unit shall include a die-cast universal mounting bracket, allowing the horn to be positioned both in the vertical and horizontal planes with a single adjustment. The wiring terminals and the screwdriver power tap shall be enclosed by a clear plastic cover for security and weather protection. The horn shall be finished in a grey epoxy. Dimensions shall be 9 1/4" deep with a diameter of 8".

2.16 SECURITY INTERCOM STATIONS

- A. The Intercom Stations, as indicated on the drawings, shall be a Telecor model ICS-2A or approved equal. The Station shall be tamper-proof in design and construction and shall provide for two-way communications as well as call-in capabilities. The faceplate shall be fabricated from 11-gauge stainless steel with a brushed, mar-resistant finish. The speaker shall be protected against tampering by three barriers located between the faceplate and the speaker cone. A Mylar speaker cone shall be used in order to prevent damage to the speaker from liquids.

- B. The Security Intercom Stations shall mount onto standard, two-gang electrical boxes, of a depth of no less than 2.875". Mounting hardware shall be tamper-proof. The switch actuator shall be fabricated from solid metal, and connected to the faceplate by a pair of welded studs. It shall be no less than 1/2" in diameter and shall be situated flush to the front of the faceplate. The actuator shall activate a momentary contact switch whose movement shall be limited by a mechanical stop to prevent damage caused by heavy impact.

2.17 VANDAL RESISTANT HORN/LOUDSPEAKER

- A. The Vandal Resistant Loudspeakers, as indicated on the drawings, shall be a Telecor STB-16 or approved equal. It shall be a vandal-resistant loudspeaker assembly that utilizes a double re-entrant horn compression type loudspeaker. It shall be used in locations as indicated on the drawings.
- B. These are weatherproof units that are designed for outdoor installation. They are capable of delivering 16 watts of continuous power and include an integral 25/70 volt line-matching transformer. The transformer features color-coded primary taps at 16, 8, 4, 2, and 1 watts. The nominal frequency range is 350 Hz to 10 kHz, with a sensitivity of 96 dB SPL (1 watt/1 meter).
- C. The loudspeaker shall be assembled onto a 16-gauge steel baffle that incorporates a unique interwoven steel security screen for maximum speaker protection while remaining acoustically transparent. This shall prevent any object from penetrating the loudspeaker. The baffle shall be finished in a powder epoxy coating that provides a resilient surface suitable for harsh environments.
- D. The STB-16 shall be secured to the backbox with "pin-in-torx" tamper-proof screws, which are included with the unit. The STB-16 shall be suitable for flush mounting using the H16 Recessed Back Box. Alternatively, surface installations shall be accommodated using the SH-16 Surface Enclosure.

2.18 DIGITAL CALENDAR CLOCK/MESSAGE DISPLAY

- A. The Digital Calendar Clock /Message Displays, as indicated on the drawings, shall be a Telecor model 2484 or approved equal. The unit shall simultaneously display the current time and date. The time is displayed in hours, minutes, and seconds. Hours and minutes are displayed with large 2.25" digits. Seconds are slightly smaller for easy distinction. The date is displayed in plain text by a 10 character, dot matrix display showing the day of the week, followed by the month and date.
- B. These clocks are designed for use in conjunction with the eMH and eTBU's. All secondary clocks shall be synchronized with the eMH Master Clock. Corrections are done instantaneously and all clocks display the identical time and date. In the event of a power failure, the eSeries System maintains accurate timekeeping during the outage. Once power is restored, all clocks shall be immediately updated with the correct time and date.
- C. In addition to displaying the time, the 2484 shall display messages in the dot matrix section of the display. These messages can be used to alert personnel of an emergency or a situation of concern.
- D. Messages shall be programmed using the eSeries Editor software or from a web based Graphical User Interface (GUI). Messages can be activated by the eMH Event Scheduler, allowing text to be displayed at specific times and days of the week. Messages can be displayed using a variety of visual effects including scrolling or flashing single lines of text, as well as alternating between different lines of text. . The dot matrix display defaults back to the date when not displaying messages.

- E. The Calendar Clock /Message Display shall be capable of being used as an elapsed digital timer, providing stopwatch functionality, indicating elapsed time on the six-digit display. Elapsed timer functions shall include the ability to count upwards from zero to 24 hours, as well as counting down to zero from a specified value. The elapsed timer shall be controlled using the Telecor 2481-TBP Timer Button Panel, providing start, stop, and reset functionality. When not operating as an elapsed timer, the Display shall default back to displaying the current time.
- F. The Calendar Clock/Message Display shall be suitable for surface or recessed installations using the appropriate enclosure. For surface installations, the 2431-BBS enclosure is required. For recessed installations, the 2431-BBF enclosure is used. Two surface-mount enclosures shall be mounted back-to-back with a 2423 Dual Mounting Kit, creating a double-faced version.
- G. The Calendar Clock/Message display shall be powered from a 24 VAC power source.

2.19 DIGITAL CLOCKS

- A. The Digital Clocks, shall be Telecor model 2421 or 2431 Digital Secondary Clocks, as indicated on the drawings. These clocks are designed for use in conjunction with the eMH and eTBU's. All secondary clocks shall be synchronized with the eMH Master Clock and shall maintain identical time. They shall display the current time in hours and minutes with a four-digit, seven-segment display utilizing AlGaAs "Super-Bright" LED displays
- B. In the event of a power failure, the eSeries System maintains accurate timekeeping during the outage. Once power is restored, all clocks shall be immediately updated with the correct time.
- C. The 2421 shall incorporate a 2.5" display which can be viewed from up to 120 feet. It shall be suitable for surface or recessed installations using the appropriate enclosure. For surface installations, the 2421-BBS enclosure is required. For recessed installations, the 2421-BBF enclosure is used.
- D. The 2431 shall incorporate a 4" display which can be viewed from up to 200 feet. It shall be suitable for surface or recessed installations using the appropriate enclosure. For surface installations, the 2431-BBS enclosure is required. For recessed installations, the 2431-BBF enclosure is used.
- E. Two surface-mount enclosures shall be mounted back-to-back with a 2423 Dual Mounting Kit, creating a double-faced version.
- F. The clocks shall operate from 24 VAC power sources.

2.20 ANALOG SECONDARY CLOCKS

- A. Analog Secondary Clocks shall be Telecor Model 2461-A-24 and 2463-A-24 as indicated on the drawings. These clocks are designed for use in conjunction with the eMH and eTBU's. All secondary clocks shall be synchronized with the eMH Master Clock and shall maintain identical time.
- B. These Analog Secondary Clocks shall be synchronous 3-wire units with a second hand to mark the fractions of a minute as well as the minute and hour hands. The precision timekeeping is furnished by a microprocessor based movement and correction coil. These clocks shall be powered from a 24 VAC source.
- C. The microprocessor-based movement shall require only 20 mA for operation.
- D. In the event of a power failure, the eSeries System maintains accurate timekeeping during the outage. Once power is restored, all Analog Clocks respond to the corrective signal transmitted by the eTBU.

- E. The 2461-A-24 shall have a 12" diameter display and is housed in a low-profile, semi-flush metal case designed for wall mounting. The low profile design eliminates the need for custom backboxes and all clocks are designed to be mounted onto single gang electrical utility boxes. In locations as indicated on the drawings, where a double face version is required, a model 2473-12-M Double Mount Housing shall be used to mount two single face Analog clocks to create a dual face 12" Analog Clock.
- F. The 2463-A-24 shall have a 16" diameter display and is housed in a low-profile, semi-flush metal case designed for wall mounting. The low profile design eliminates the need for custom backboxes and all clocks are designed to be mounted onto single gang electrical utility boxes. In locations as indicated on the drawings, where a double face version is required, a model 2473-16-M Double Mount Housing shall be used to mount two single face Analog clocks to create a dual face 16" Analog Clock.

2.21 EMERGENCY NOTIFICATION

- A. The system shall be capable of providing emergency notifications by email and SMS to mobile devices and designated PC's. during an emergency utilizing DWConnect LT This feature will notify all relevant staff members so that they are made aware of the emergency event and can respond appropriately. Up to 100 users can be supported directly. When integrated with the facilities email server to effectively distribute notifications to an unlimited number of alert devices.
- B. Alert devices may be mobile phones and smart devices. Mobile phones shall receive the notifications as SMS messages while smart devices shall receive email messages.
- C. When deployed, the Emergency Notification Feature shall support the Fault Monitoring capabilities of the Master Clock/Message Host. Trouble/Fault notifications from eSeries devices shall be annunciated on the visual console with a flashing Icon. Activation of this icon shall distribute notifications of a fault to appropriate technical support staff.

2.22 VUALERT EMERGENCY ALERT

- A. The Emergency Alert Components shall be VuAlert or equal. The VuAlert platform shall consist of Dynamic Displays, Dynamic View Adapters and Integrators as located on the drawings and specifications.
- B. The platform shall allow visual displays to be integrated into Telecor's eSeries. These displays shall show the time, weather, information, alarms, messages, and emergency alarms. Multiple visual layouts and color schemes shall be available for use. The time shall be displayed as either an analog or digital clock. Messages and emergency alarms shall include plain text and audio. Messages shall have the ability to be scheduled to appear at certain times and days of the week. Live local weather at the facility shall also be shown on each screen.
- C. Messages shall be configurable to appear on specific displays and zones (which shall group together multiple displays).
- D. Severe weather notifications issued by the National Oceanic and Atmospheric Administration (NOAA) shall activate weather alerts automatically.
- E. Emergency alarm screens shall be activated from the eSeries Visual Console GUI. This shall allow complete integration with an operational control from the facility's Telecor communications system. VuAlert emergency alarms shall activate in conjunction with the delivery of SMS text messages and email notifications.

- F. The VuAlert platform shall support an unlimited number of displays. All displays shall have adjustable brightness levels. A scheduled sleep mode feature shall be available for further energy conservation. Should a VuAlert display lose power, it shall automatically resume regular operation upon power and network restoration.
- G. Displays shall connect via wired Ethernet or wireless Wi-Fi to the facility LAN which shall have access to the VuAlert cloud-based web portal. This portal shall be used to manage and configure the VuAlert platform and its features. The cloud-based nature of the VuAlert platform shall provide the ability to manage different sites, each with their own sets of displays, through the web portal.
- H. The Dynamic Display shall be a Telecor model VA-DD or approved equal as indicated on drawings. It shall consist of a 22" HD screen. The Dynamic Display shall be equipped with both wired and wireless network adapters for connection to the facility LAN.
- I. The Dynamic Display shall be wall mounted with the VA-B surface mount bracket in either a landscape or portrait orientation.
- J. The Dynamic View Adapter shall be a Telecor model VA-DVA or approved equal as indicated on drawings. It shall allow any third-party display capable of receiving HDMI input to serve as a VuAlert display. This shall include large-format HD resolution displays. The Dynamic View Adapter shall include wired and wireless network adapters to allow the display to connect to the facility LAN.
- K. The Integrator shall be a Telecor model VA-I or approved equal as indicated on drawings. It shall provide integration between Telecor's eSeries System and the VuAlert platform.
- L. VuAlert messages and emergency alarms shall have the ability to be configured so that they can be activated from Visual Console.

2.23 GYM SOUND SYSTEM

- A. Equipment rack shall be wall-mounted on the stage.
- B. XLR wall plate shall be provided on the apron of the stage.
- C. The following is the sound system equipment list that must be supplied and installed under this contract. Provide training to the User Group on the operation of the system.

Description & Part Number	Quantity
Mixer – TOA M-9000M2 CU	1
Amplifier – Crown XTi2002	1
Graphic Equalizer – E-232 Dual 2/3 Octave Graphic Equalizer	1
Mounting Bracket – MB-25B	4
Wireless Receiver – WT-5805 E01	2
Wireless Receiver Mounting Bracket – MB-WT4	2
Dual Unbalanced Line Input Module with RCA Connectors - TOA D-001R	2
Dual Mic/Line Input with DSP Module, Balanced - TOA D-001T	2
Microphone – TOA DM-1300US	2
Wireless Microphone – TOA WM-5225 E01	1
Wireless Transmitter – TOA WM-5325 E01	1
Lapel Microphone – TOA YP-M5300	1
Speakers – TOA HX-5B	2
Mounting Bracket (HX-5B) – TOA HY-WM1B	2
Surge Protector – PD-915R	1

SURI & ASSOCIATES LTD.

IP-BASED P/A, PHONE & MASTER CLOCK SYSTEM

ÉÉC COBOURG

26 50 00-24

NEW ELEMENTARY SCHOOL & CHILDCARE CENTRE

10719 NEW AMHERST BOULEVARD, COBOURG, ONTARIO. K9A ***

Denon DN300 ZB CD, SD, USB Player with BT & AM/FM Receiver	1
Microphone Stand – K&M 210/2	2
Rack Enclosure – Middle Atlantic EWR-16-22	1
Front Door – Middle Atlantic PFD-16	1
Vented Panel – Middle Atlantic EVT1	3
Blank Panel – Middle Atlantic EB2	3
Rack Drawer – Middle Atlantic D3	1
Speaker Cages	2
Sound System Cabling Package	1
Installation Hardware	1
Input Panel with at least 2 XLR Female for Mic Input – IOP	1
25' LO Z Neutrik Cable – Digiflex HXX-25	2
Rack Mount for Dual WT-5800, WT-5805	1

3. EXECUTION

- A. Install the system in accordance with the manufactures printed instructions and recommended cable types.
- B. Provide point-to-point wiring diagrams showing location of all wire pulls. Mark all cables corresponding to point-to-point wiring diagrams.
- C. System Acceptance Test
 - a. Have the company field adviser adjust the completed system to desired volume levels of customer.
 - b. The system shall operate for at least two weeks with no failures or changes required.
 - c. Test every circuit in the system to ensure proper operation.
 - d. Test each daily function school will be using making sure staff is knowledgeable in the operation of the system.
- D. The Contractor shall provide a one-year warranty of the installed system against defects in material and workmanship. All labor and materials shall be provided at no expense to the Owner during normal hours. The warranty period shall begin on the date of acceptance by the Owner.
- E. The Contractor shall, at the Owner's request, make available a service contract offering continuing factory authorized service of this system after the initial warranty period.
- F. The system manufacturer shall maintain engineering and service departments capable of rendering advice regarding installation and final adjustment of the system.

3.2 EQUIPMENT WARRANTY

- A. The contractor shall warrant the equipment to be new and free from defects in material and workmanship, and will, within two (2) years from the date of installation, repair or replace any equipment found to be defective. This warranty shall not apply to any equipment which has been subject to misuse, abuse, negligence, accident, or unauthorized modification.

END OF SECTION 16600

1. General

- 1.1. The Contractor shall obtain locates prior to excavating. Any conflicts shall be brought to the attention of the Engineer and/or the Inspector.
- 1.2. Civil construction for the electrical distribution system shall not start until the roadway curbs and gutters are complete and the road allowance is within 150mm of final grade and free of obstructions.
- 1.3. All work shall be performed in accordance with applicable rules and regulations, including the Occupational Health & Safety Act, Construction Regulations and the Regulations for Industrial Establishments.
- 1.4. Trenches shall be straight and property line offsets shall be maintained consistent with the Town standard. The bottom of the trench shall be maintained as level as possible.
- 1.6.

2. Ducts

- 2.1. All ducts shall be Type DB2/ES2 PVC solid wall manufactured in accordance with CSA-C22.2-#211.1 latest revision.
- 2.2. Ducts to be supported with approved spacers every 1.5m (5').
- 2.3. Joint between ducts, bends and fittings shall be made with an approved solvent cement and left to set for at least 30 minutes prior to backfilling.
- 2.4. Spare ducts shall be equipped with a 10mm (3/8") polypropylene pulling rope.
- 2.5. All ducts ends to be sealed with an approved duct plug immediately after installation to prevent debris from entering the duct.
- 2.6. Ducts terminating at a duct face shall be equipped with bell ends to protect cable.
- 2.7. Ends of duct banks that do not terminate in equipment foundations shall be marked with a buried electronic marker ball and a 2"x4"x8' stake, painted red, for locating in the future.

3. Concrete Encased Ducts

- 3.1. Ducts to be supported with approved spacers every 1.5m (5') and must be anchored so as not to float during pouring of concrete.
- 3.2. Concrete reinforcing bars shall be non-pre-stressed 20mm (3/4") deformed steel reinforcing bars, grade 400, per CSA-G30.18-09, overlapped by 600mm (24"). Rebar shall be placed below the ducts and shall extend beyond the end of the concrete for future duct bank extension.
- 3.3. End of concrete shall be marked for future location with an electronic marker ball.
- 3.4. Concrete shall be 20MPa with 10mm (3/8") pea stone aggregate.

4. Backfill

- 4.1. Any equipment foundations damaged during construction shall be properly repaired, and shall be inspected prior to back-filling.
- 4.2. Direct buried ducts shall be bedded in and covered with clean sand fill as shown on the Standard Construction Drawings. Sand to be uniformly graded clean sand with maximum aggregate size of 2.0mm, and a maximum of 8% passing through a number 200 sieve.
- 4.3. Back fill material shall be clean and free of large rocks, debris or chemical agents that may damage ducts or cables, or prevent future settling.
- 4.4. Road crossings shall be back filled and compacted in accordance with the Town's requirements. Concrete encasement of ducts shall extend past the curbs as per drawing LUI-12-405.
- 4.5. Compaction shall be performed on all trenches to prevent future settlement.
- 4.6. Warning tape to be installed approximately half way between electrical ducts and the surface. Tape to be 152mm (6") wide, red plastic with black lettering, with the words "CAUTION" or "WARNING", "BURIED ELECTRIC CABLES".
- 4.7. Driveway areas shall be backfilled with granular "A", compacted in layers.

5. Joint Use

- 5.1. Joint use facilities are shown for reference only. Refer to the joint use utility standards and construction drawings for installation.

... continued on sheet 2



**Lakefront
Utilities
Inc.**

TITLE:

UNDERGROUND INSTALLATIONS
GENERAL REQUIREMENTS

SIZE A	FILE NAME: LUI-12-001.DWG	DWG No. LU1-12-001	REV. 0
SCALE NTS	DATE: 2016/06/27	SHEET: 1	

...continued from sheet 1.

6. Equipment Foundations

- 6.1. Precast concrete equipment foundations shall be installed level and square to the roadway or property line, suited to final grade as per the construction standards.
- 6.2. Foundations should be installed on a 300mm compacted granular 'A' sub-base as per the construction standards.
- 6.3. Solid bases are required for all foundations. The drain opening should be knocked out to permit draining of ground water.
- 6.4. All ducts entering a foundation shall be equipped with a bell end or flared duct entrance fitting to prevent damage to cables.

7. Cable Installation

- 7.1. Ducts shall be cleaned and swabbed, and proven with a test mandrel 95% of the inside diameter of the duct, prior to the installation of cable.
- 7.2. Cable shall be pulled into the ducts using a suitably rated synthetic pulling tape or wire rope. Twisted poly rope is not to be used as it will damage the duct bends.
- 7.3. All cable pulls shall use a swivel eye to prevent twisting of the cable and/or rope.
- 7.4. Follow the direction of cable pull identified on the design drawings.
- 7.5. If cable is being installed during cold weather, the cable should be stored indoors for 24 hours prior to pulling to improve flexibility and prevent damage.



**Lakefront
Utilities
Inc.**

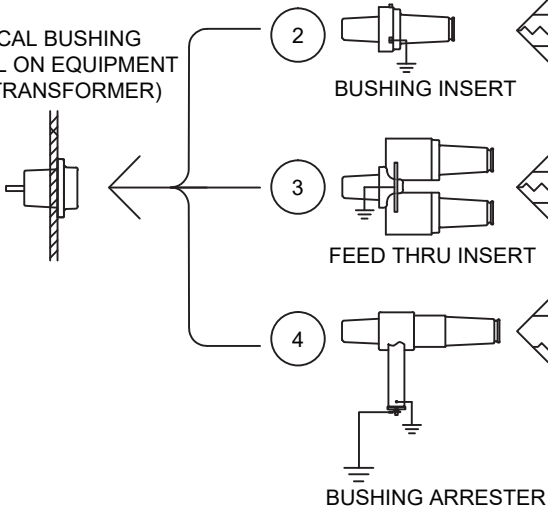
TITLE:

UNDERGROUND INSTALLATIONS
GENERAL REQUIREMENTS

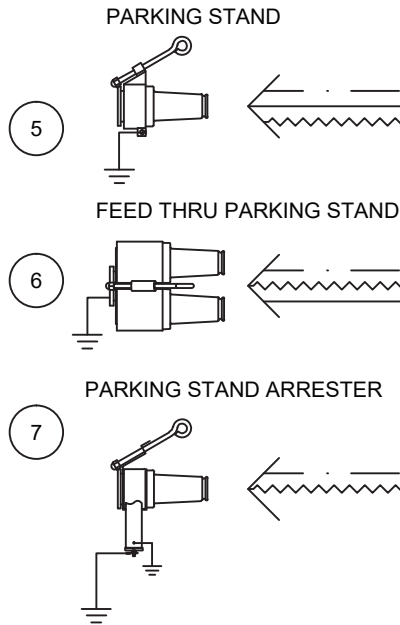
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SCALE NTS	DATE: 2016/06/27	SHEET: 2	

Title: 200A LOADBREAK CONNECTIONS

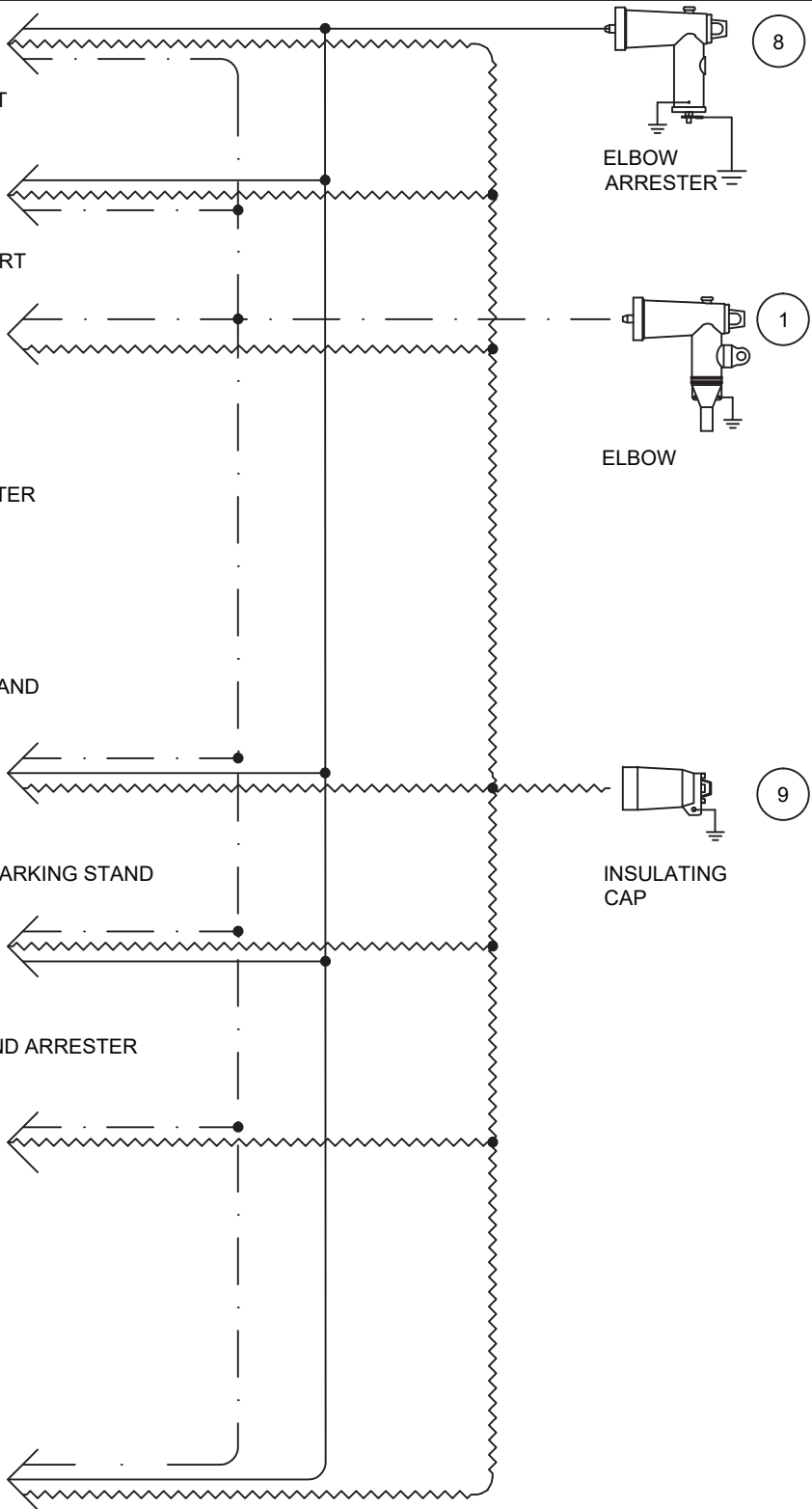
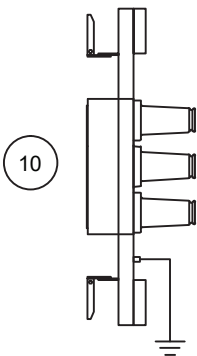
TYPICAL BUSHING WELL ON EQUIPMENT (i.e. TRANSFORMER)



TYPICAL PARKING STAND HOLDER ON EQUIPMENT (i.e. TRANSFORMER)



3-WAY JUNCTION



NOTES:

1. REFER TO 12-202,12-203,12-204 FOR GROUNDING CONNECTIONS

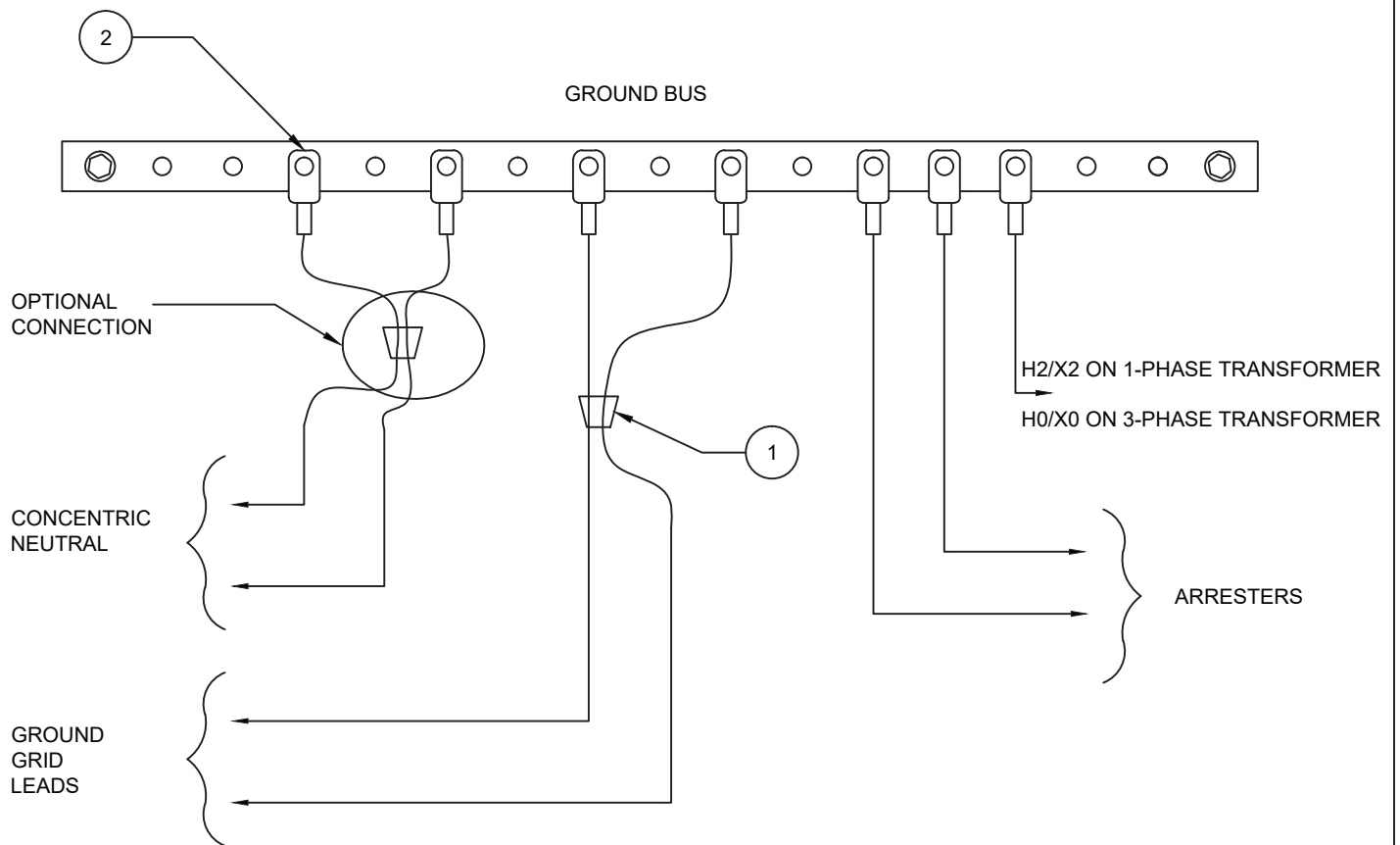
MATERIAL LIST 12-200

Part #	Qty.	Description	Part Number
1	as req'd	Elbow, Load Break	U05511
2	as req'd	Bushing Insert	U06350
3	as req'd	Feed Thru Insert	U05476-U05478
4	as req'd	Bushing Arrester	U10750
5	as req'd	Parking Stand	U10800
6	as req'd	Feed Thru Parking Stand	U05467
7	as req'd	Parking Stand Arrester	U05185-U05187
8	as req'd	Elbow Arrester	U11800
9	as req'd	Insulating Cap	U05473, U06300
10	as req'd	Multy-Way Junction	U06577, U06692



DATE: 2014-11-03	SCALE: NTS	REV: 1	DWG NO.: 12-202
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Title: GROUNDING CONNECTION SCHEMATIC WITH BUS BAR



NOTES:

1. REFER TO 12-204 FOR GROUNDING CONNECTIONS.
2. 1-PHASE CONNECTION SHOWN. REPEAT FOR 3-PHASE.

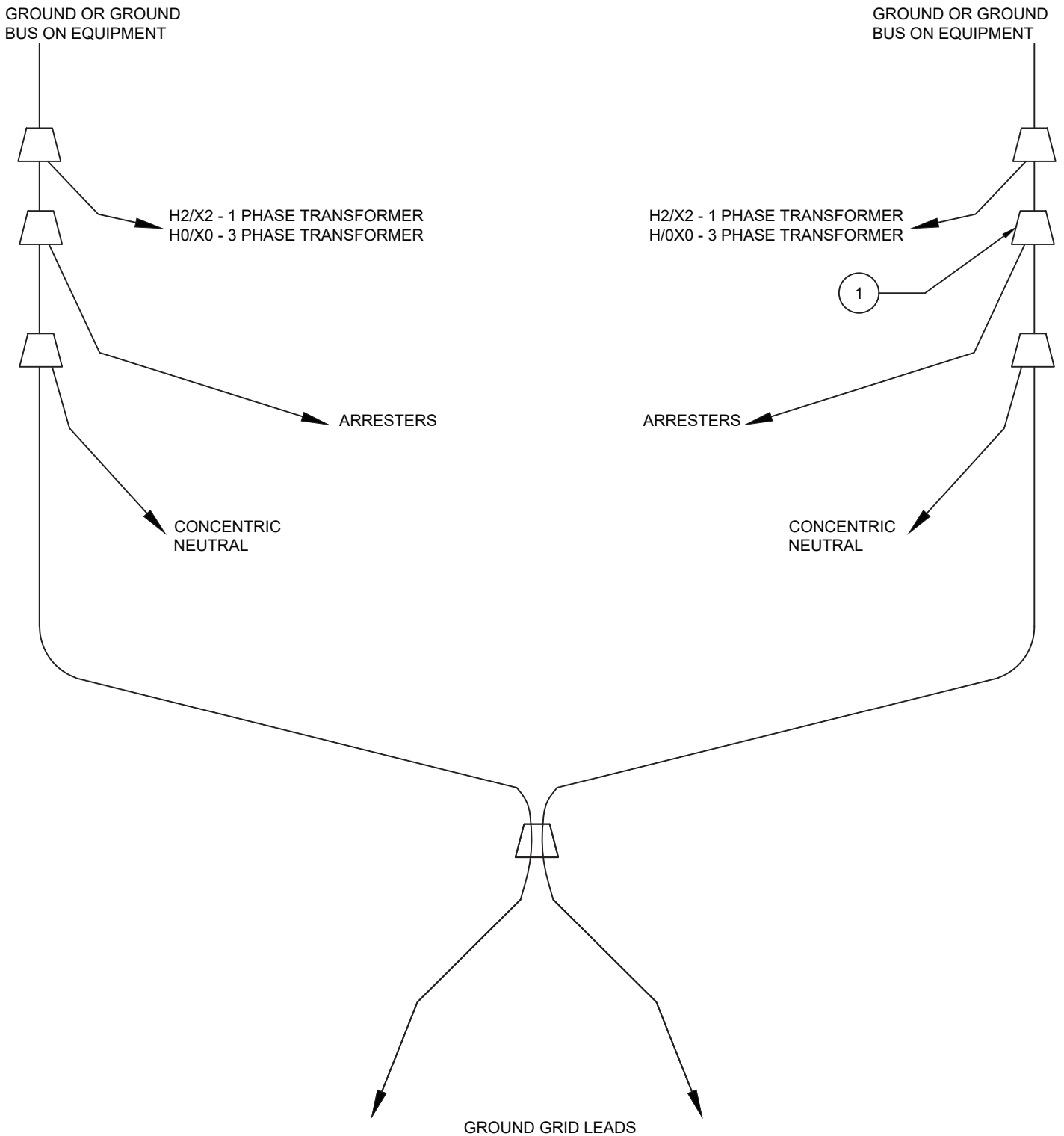
MATERIAL LIST 12-202

Part #	Qty.	Description	Part Number
1	as req'd	Connector	U01144, U05284- U05289
2	as req'd	Connector, Lug	U05610



DATE: 2014-11-03	SCALE: NTS	REV: 1	DWG NO.: 12-203
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Title: GROUNDING CONNECTION SCHEMATIC WITH GROUND GRID



- NOTES:
1. REFER TO 12-204 FOR GROUNDING CONNECTIONS.
 2. 1-PHASE CONNECTION SHOWN. REPEAT FOR 3-PHASE.

MATERIAL LIST 12-203

Part #	Qty.	Description	Part Number
1	as req'd	Connector	U01144, U05284- U05289

Title: GROUNDING CONNECTIONS

FIGURE 1:
LOADBREAK BLEED
WIRES

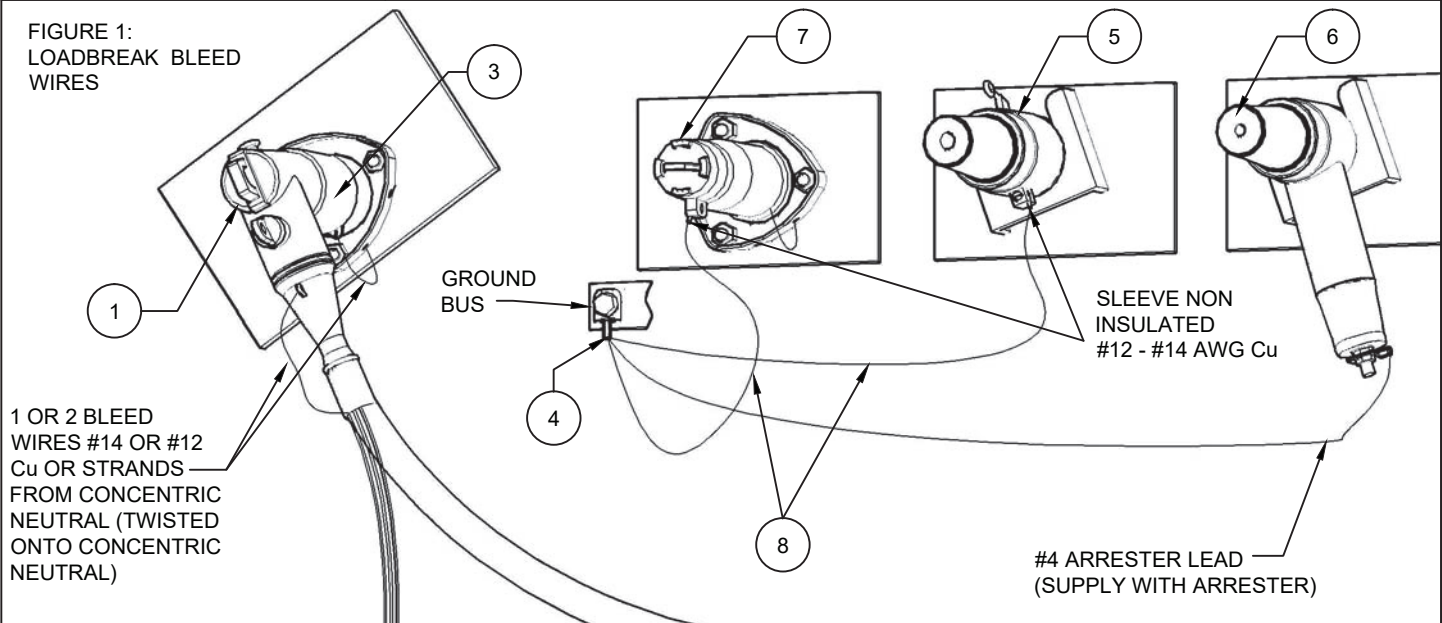


FIGURE 2: CONCENTRIC NEUTRAL WIRES

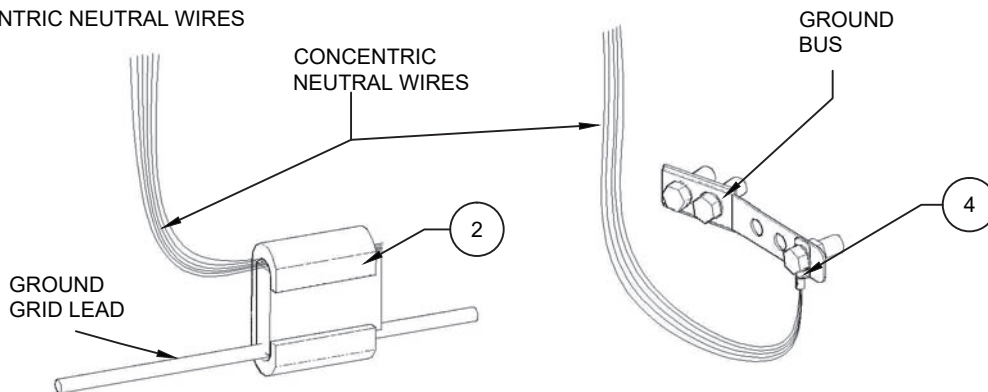


FIGURE 3: GROUND GRID LEADS TO H2 OR GROUND TERMINAL

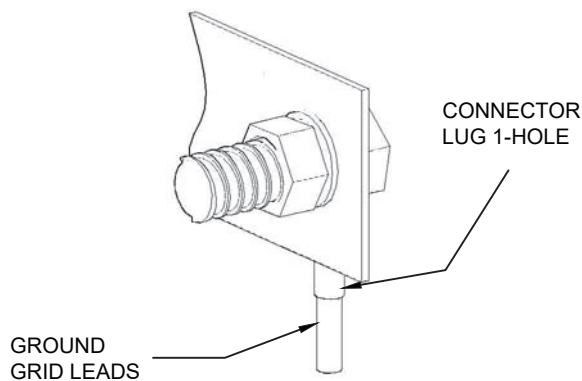
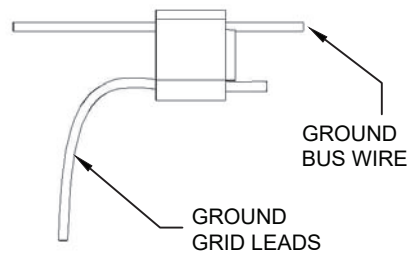


FIGURE 4: GROUND GRID LEADS TO GROUND BUS WIRE



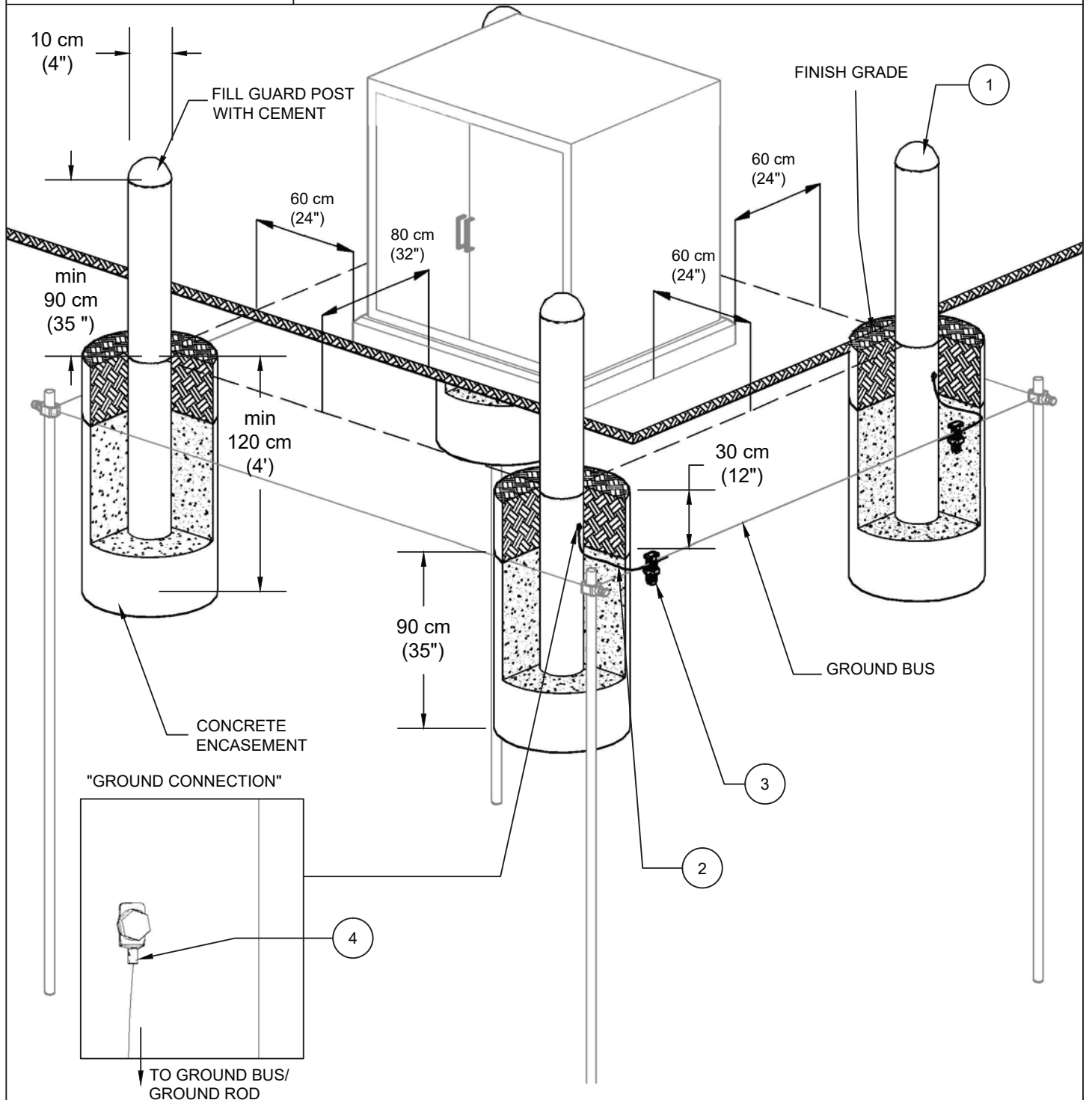
NOTES:

1. GROUND WIRE SHALL BE SIZED AS STANDARD 2/0 AWG Cu BARE.
2. CONNECTORS, TAP WEDGE AND LUG, SHALL DEPEND ON THE SIZE OF CONCENTRIC NEUTRAL WIRES AND/OR GROUND WIRE.

MATERIAL LIST 12-204

Part #	Qty.	Description	Part Number
1	as req'd	Elbow, Load Break	U05511
2	as req'd	Connector, Wedge Type	Refer to Chart 13-01
3	as req'd	Bushing Insert	U06350
4	as req'd	Connector, Lug	U05610
5	as req'd	Parking Stand	U10800
6	as req'd	Parking Stand Arrester	U05185-U05187
7	as req'd	Insulating Cap	U05473, U06300
8	as req'd	Bleed Wire	U11150

Title: DETAIL FOR GUARD POST INSTALLATION AND GROUNDING

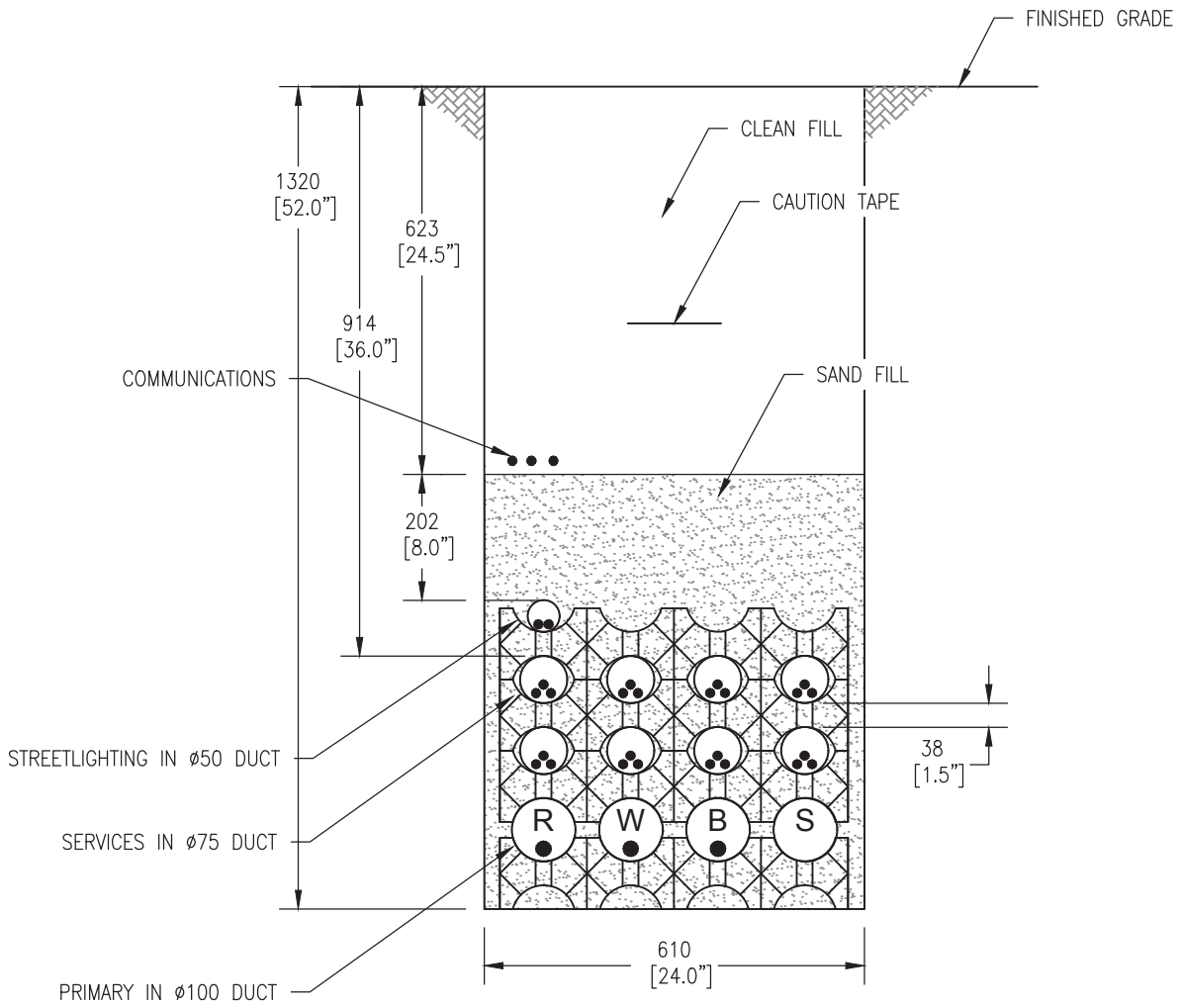


NOTES:

1. GUARD POST SHALL BE GALVANIZED STEEL OR PAINTED WITH RUST-RESISTANT PAINT. PLASTIC COVERS MAY BE INSTALLED.
2. DIMENSIONS EQUIPMENT GIVEN IN THIS FIGURE ARE TYPICAL. ACTUAL DIMENSIONS SHALL BE DETERMINED IN ACCORDANCE WITH THE SPECIFIC EQUIPMENT BEING INSTALLED.
3. EQUIPMENT IN HIGH-TRAFFIC AREA MIGHT REQUIRE ADDITIONAL GUARD POSTS ON THE PERIMETER.
4. GUARD POST LOCATIONS TO BE DETERMINED BASED ON THE DIRECTION OF POTENTIAL THREAT.
5. CARE SHOULD BE TAKEN TO ENSURE THAT THE GUARD POST DOES NOT HINDER THE OPERATION, MAINTENANCE, OR REPLACEMENT OF THE EQUIPMENT.
6. GUARD POST SHALL BE CONNECTED TO GROUND GRID (AS SHOWN) OR TO GROUND ROD AS SHOWN, OR WITH APPROVED CONNECTION.

MATERIAL LIST 12-400

Part #	Qty.	Description	Part Number
1	as req'd	Guard Post	U11100
2	as req'd	Ground Wire 2/0 AWG Cu	U10650
3	as req'd	Connector	U05585
4	as req'd	Connector, Lug	U05610



NOTES:

1. INSTALLATION SHALL BE IN COMPLIANCE WITH CAN/CSA-C22.1-#7 "UNDERGROUND SYSTEMS".
2. MAINTAIN AT LEAST 305mm[12"] HORIZONTAL AND 305mm[12"] VERTICAL CLEARANCE BETWEEN HYDRO DUCTS AND GAS PIPELINES.
3. INSTALLATION TO BE IN ACCORDANCE WITH USF STANDARDS, SECTION 12.
4. DUCTS, BENDS AND FITTINGS TO BE PVC TYPE DB2/ES2 IN ACCORDANCE WITH CAN/CSA-C22.2-#211.1.
5. INSTALL DUCT SPACERS TO MAINTAIN 38mm[1.5"] HORIZONTAL AND VERTICAL SPACING BETWEEN DUCTS.
6. ADJUST QUANTITY OF SECONDARY DUCTS TO SUIT. ADJUST TRENCH DEPTH TO MAINTAIN CLEARANCE DISTANCES SHOWN.
7. INSTALL CAUTION TAPE HALFWAY BETWEEN HYDRO DUCTS AND SURFACE.
8. FOR ROAD CROSSINGS SEE STANDARD DRAWING LUI-12-403.
9. REFER TO LUI-12-001 FOR GENERAL REQUIREMENTS.



**Lakefront
Utilities
Inc.**

TITLE:

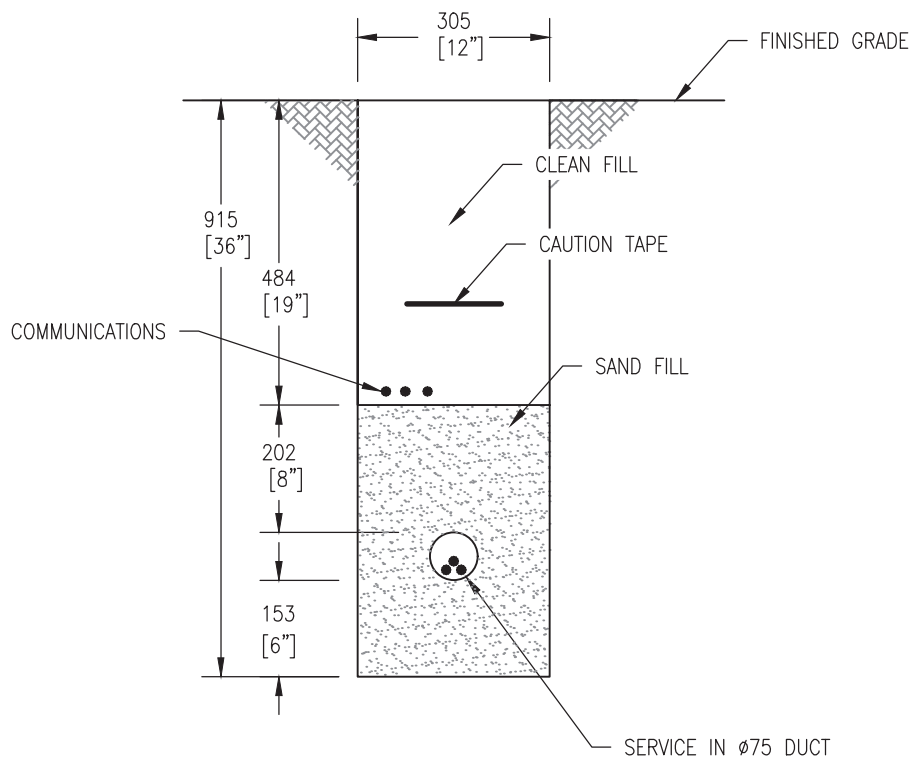
MAIN TRENCH CROSS SECTION

SIZE A	FILE NAME: LUI-12-401.DWG	DWG No. LU1-12-401	REV. 0
SCALE NTS	DATE: 2016/06/27	SHEET: 1	

MATERIAL LIST LUI-12-403

ITEM #	DESCRIPTION	QTY	MANUFACTURER	PART#	STOCK #
1	DUCT, DB2/ES2	++			
2	DUCT SPACERS	++			
3	REBAR, 20mm (3/4")	++			
4	CONCRETE, 20MPa	++			
5	CAUTION TAPE	++			
6	SAND FILL	++			
7	GRANULAR A	++			
8	GRANULAR B	++			

++ QUANTITY/SIZE TO SUIT



NOTES:

1. INSTALLATION SHALL BE IN COMPLIANCE WITH CAN/CSA-C22.1-#7 "UNDERGROUND SYSTEMS".
2. MAINTAIN AT LEAST 305mm[12"] HORIZONTAL AND VERTICAL CLEARANCE BETWEEN HYDRO DUCTS AND GAS PIPELINES.
3. INSTALLATION TO BE IN ACCORDANCE WITH USF STANDARDS, SECTION 12.
4. DUCTS, BENDS AND FITTINGS TO BE PVC TYPE DB2/ES2 IN ACCORDANCE WITH CAN/CSA-C22.2-#211.1.
5. INSTALL CAUTION TAPE HALFWAY BETWEEN SERVICES AND SURFACE.
6. REFER TO LUI-12-001 FOR GENERAL REQUIREMENTS.



**Lakefront
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TITLE:

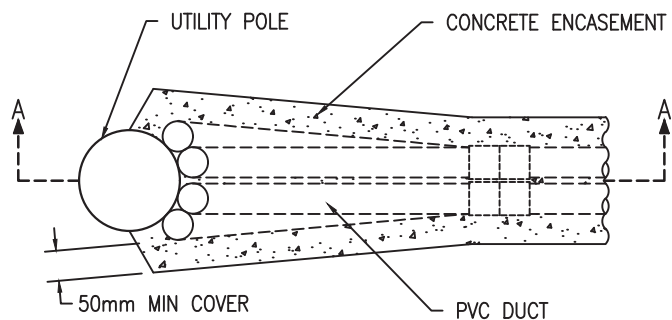
SERVICE TRENCH CROSS SECTION

SIZE A	FILE NAME: LUI-12-406.DWG	DWG No. LU1-12-406	REV. 1
SCALE NTS	DATE: 2016/06/27	SHEET: 1	

MATERIAL LIST LUI-12-406

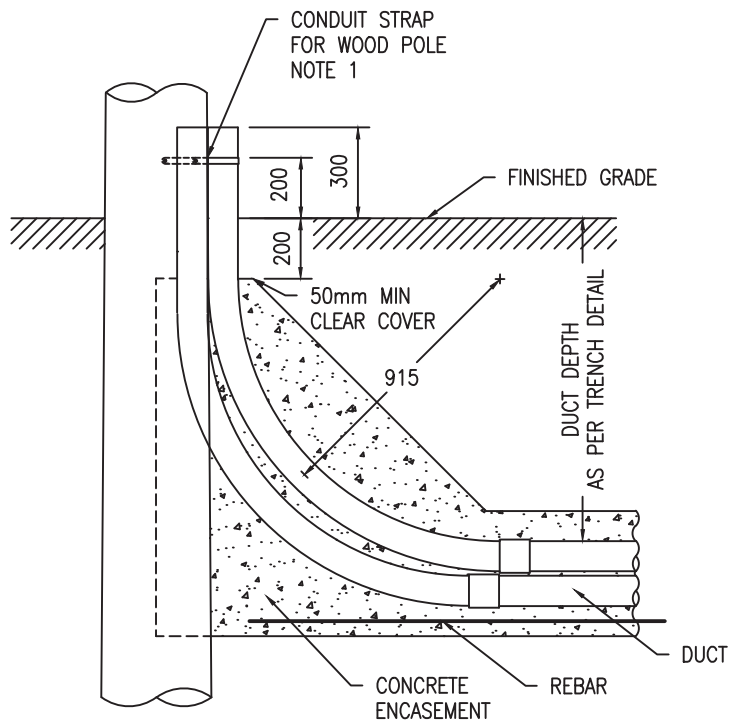
ITEM #	DESCRIPTION	QTY	MANUFACTURER	PART#	STOCK #
1	DUCT, DB2/ES2	++			
2	SAND FILL	++			
3	CAUTION TAPE	++			

++ QUANTITY/SIZE TO SUIT

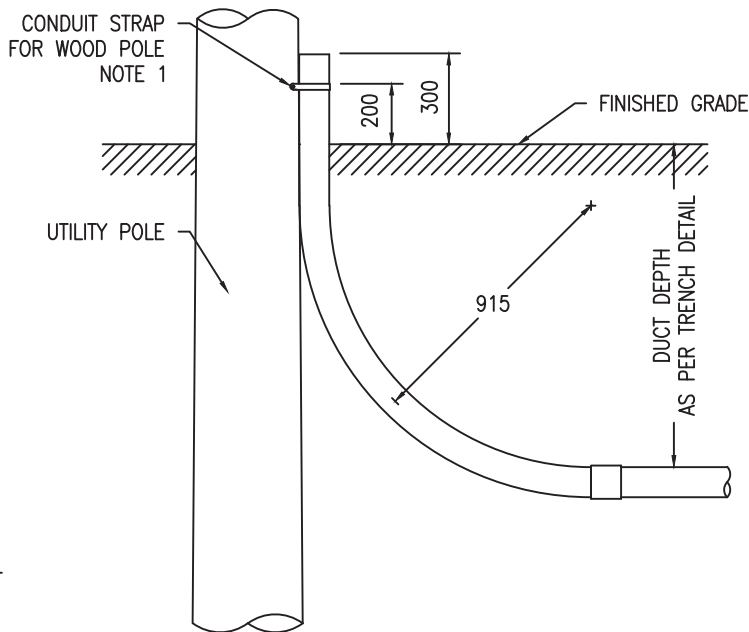


NOTES:

1. USE STAINLESS STEEL BANDING FOR OTHER THAN WOOD POLES.
2. THE SIZE AND NUMBER OF DUCTS TO BE INDICATED IN THE PROJECT DESIGN.
3. ALL DIMENSIONS ARE IN mm.
4. SEE LUI-12-001 FOR GENERAL REQUIREMENTS.



SECTION A-A
CONCRETE ENCASED DUCT
FIG. 1



SECTION A-A
DIRECT BURIED DUCT
FIG. 2



**Lakefront
Utilities
Inc.**

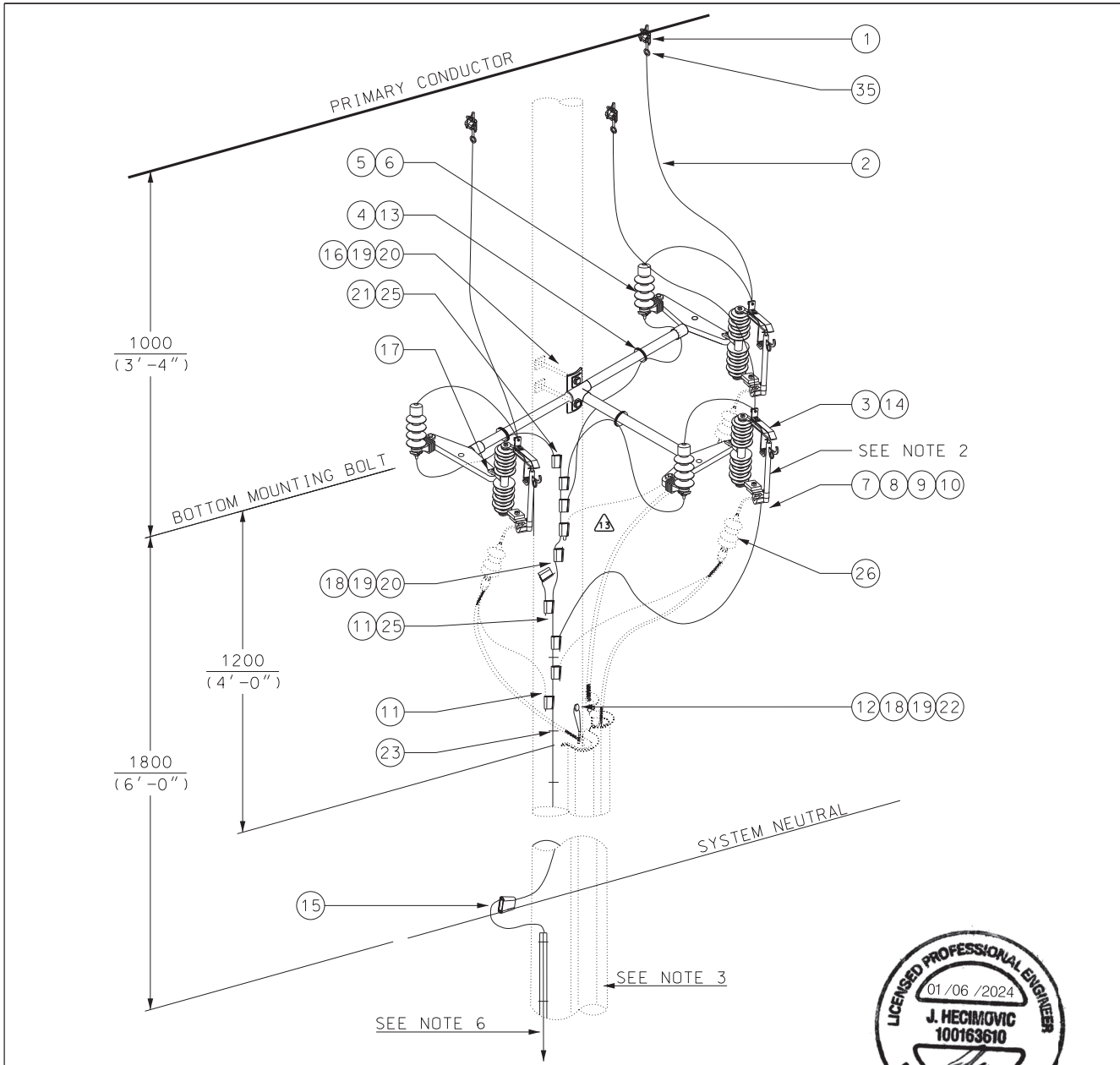
TITLE:

DUCT TERMINATION AT RISER POLE

SIZE A	FILE NAME: LUI-12-410.DWG	DWG No. LU1-12-410	REV. 0
SCALE NTS	DATE: 07/06/2016	SHEET: 1	

MATERIAL LIST LUI-12-410


ITEM #	DESCRIPTION	QTY	MANUFACTURER	PART#	STOCK #
NOT APPLICABLE					



NOTES:

- 1) USED FOR UNDERGROUND LOOP FEED ARRANGEMENT OR RADIAL FEED TO FUSED 3-PHASE PAD-MOUNTED TRANSFORMERS.
- 2) SMU-20 OR FUSELINK FUSES SHALL BE ORDERED SEPARATELY. AND SIZED DEPENDING ON APPLICATION.
- 3) REFER TO STD. USF 04-200-28kV FOR CABLE GUARD RISER INSTALLATION DETAILS.
- 4) POSITION OF CABLES SHALL NOT BLOCK CUTOFF OPERATION.
- 5) TO PREVENT MECHANICAL STRESSES PROVIDE APPROPRIATE SLACK ON CABLE.
- 6) REFER TO STD USF 09-100 FOR GROUNDING.



 Lakefront Utilities Inc.	TITLE				PRIMARY SERVICE RISERS FUSED 3-PHASE 4.16 kV TO 27.6 kV GRD.Y			
	SIZE A	FILE NAME:	DWG NO:	REV: 0	LUI-04-301			
	SCALE NTS	DATE 01/06/2024	dd/mm/yyyy	SHEET: 1/2				

MATERIAL LIST LUI-04-301

ITEM #	DESCRIPTION	QTY		PART # / STOCK #
		4kV	27.6kV	
1	HOT LINE CLAMP GENERAL PURPOSE AL/CU	3	3	REFER TO LUSI MASTER MATERIAL LIST
2	CABLE #47 STR CU DROP	3	3	
3	CUTOUT SWITCH 200 A 25 kV SMD-20 POWER FUSE	-	3	
4	BRACKET ARRESTOR CUTOUT 3 PHASE DOUBLE POSITION	1	1	
5	ARRESTER SURGE 3 kV CLASS FOR 4 kV GRDY	3	-	
6	ARRESTER SURGE 21 kV CLASS FOR 28 kV GRDY	-	3	
7	BOLT MACHINE 3/8" X 1" GALV HEX HEAD C/W NUT	3	3	
8	BOLT CARRIAGE GALV 3/8" X 1 ⁵⁹ / ₆₄ "	3	3	
9	WASHER GALV STEEL 3/8"	3	3	
10	NUT HEX 3/8" - 16 STEEL GALV	3	3	
11	CONNECTOR AMPACT WHITE #2 TO #2	9	9	
12	GRIP CABLE SINGLE OFFSET EYE (KELEM GRIP)	3	3	
13	TIES CABLE 7.80" X 0.184"	3	3	
14	SWITCH CUTOUT UNIVERSAL FUSE 15 kV 100 A	3	-	
15	CONNECTOR AMPACT BLUE #2/0 TO #3/0	1	-	
16	BOLT MACHINE 5/8" X 12" C/W NUT	2	2	
17	BOLT ASSEMBLY EVERDUR HEX 1/2" X 2"	6	6	
18	BOLT MACHINE 5/8" X 14" C/W NUT	2	2	
19	WASHER CURVED SQUARE 2" X 2" FOR 5/8" BOLT	3	3	
20	WASHER GALV STEEL 5/8"	5	5	
21	CONNECTOR AMPACT WHITE #6 TO #2	3	3	
22	LAG SCREW 1/2" X 4" GALV	3	3	
23	STAPLE STEEL GALVANIZED 11/2" X 3/8"	AS REQUIRED		
24	TAPE PVC 3/4" x .0075" MIN 22 yd ROLLS	AS REQUIRED		
25	CARTRIDGE AMPACT WHITE	12	12	
26	OUTDOOR COLD SHRINK 28kV TERMINATOR	3	3	



**Lakefront
Utilities
Inc.**

TITLE

**PRIMARY SERVICE RISERS
FUSED 3-PHASE 4.16 kV TO 27.6 kV GRD.Y**

SIZE
A

FILE NAME:

DWG NO:

LUI-04-301

REV:
0

SCALE

NTS

DATE

01 / 06 / 2024
dd / mm / yyyy

SHEET:

2/2

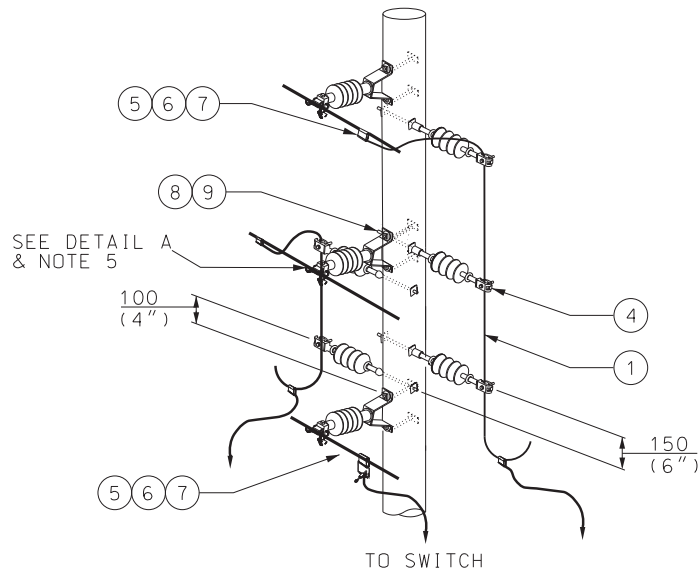
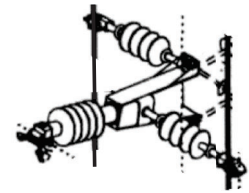


FIGURE 1 : VERTICAL



DETAIL A

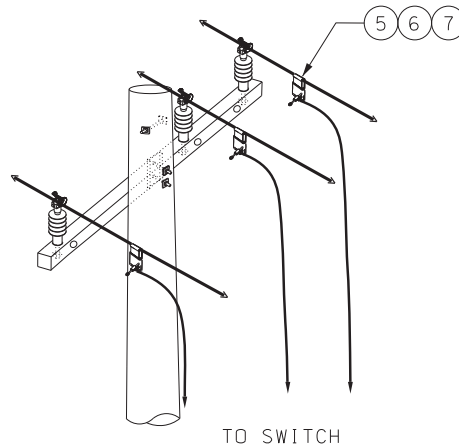


FIGURE 2 : HORIZONTAL



NOTES:

- 1) STANDARD APPLIES TO BOTH BARE AND TREE PROOF CONDUCTORS.
- 2) INSTALL SUPPORTING INSULATORS TO ACHIEVE MAXIMUM PHASE-TO-PHASE CLEARANCE FOR DROP LEADS.
- 3) WHEN CONNECTING CU TO AL USING AMPACT TAPS ENSURE CU CONDUCTOR IS ALWAYS PLACED BELOW AL CONDUCTOR.
- 4) ALL CONNECTION POINTS SHOULD BE IN SAME PLANE FOR EASE OF OPERATION.
- 5) ALTERNATE RISER DROP USING 18" STAND-OFF BRACKETS AS RISER SUPPORT CAN BE USED TO ENSURE FRAMING IS INSULATED USING 18" STAND-OFF BRACKETS PRIOR TO RISER INSTALLATION.



TITLE		PRIMARY SERVICE RISERS PRIMARY DROPS AND CONNECTIONS FOR 3-PHASE SERVICE RISER		
SIZE A	FILE NAME:	DWG NO:	LUI-04-302	REV: 0
SCALE NTS	DATE 01 /06 /2024 dd /mm /yyyy	SHEET:	1/3	

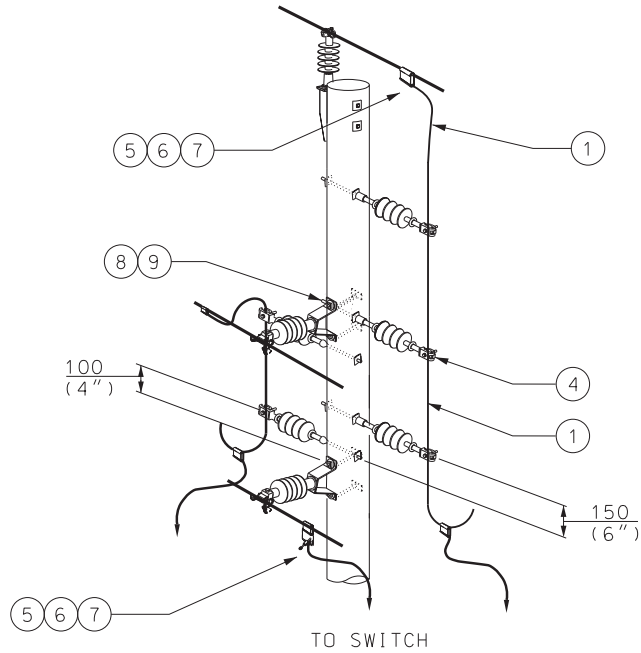


FIGURE 3 : IN-LINE ROLLED

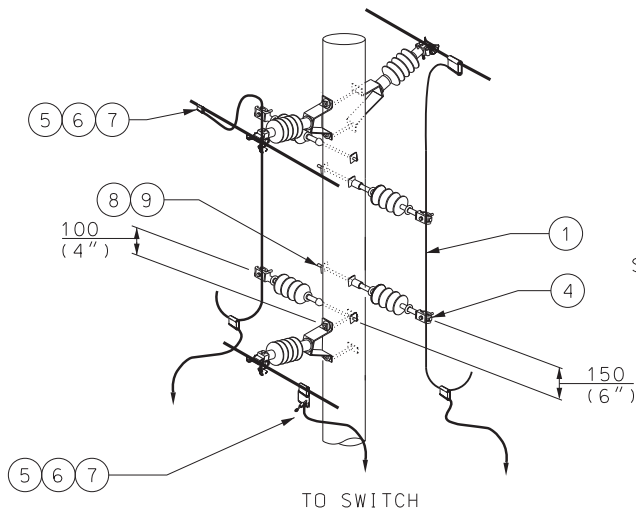


FIGURE 4 : SEMI-TRIANGULAR

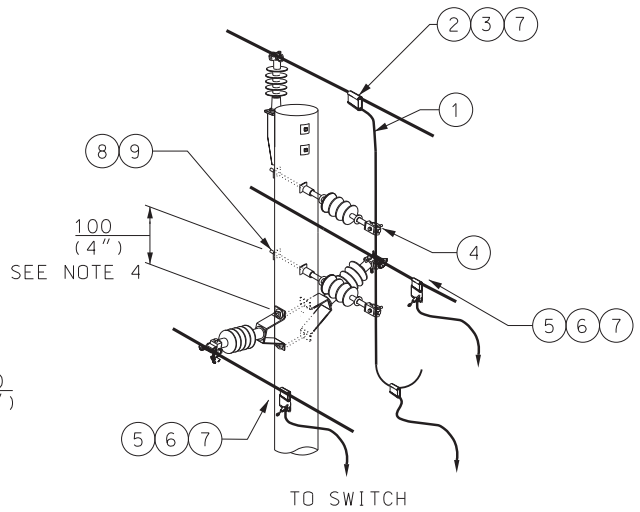


FIGURE 5 : TRIANGULAR



TITLE				PRIMARY SERVICE RISERS PRIMARY DROPS AND CONNECTIONS FOR 3-PHASE SERVICE RISER			
SIZE A	FILE NAME:			DWG NO:	LUI-04-302	REV:	0
SCALE	NTS			DATE	01/06/2024 dd/mm/yyyy	SHEET:	2/3

BOM LEGEND		
	PRIMARY CONDUCTOR SIZE	FRAMING CONFIGURATION
A	#3/0	VERTICAL
		IN-LINE ROLLED
B	#3/0	HORIZONTAL
C	#3/0	SEMI-TRIANGULAR
D	#3/0	TRIANGULAR
E	336 kcmil	VERTICAL
		IN-LINE ROLLED
F	336 kcmil	HORIZONTAL
G	336 kcmil	SEMI-TRIANGULAR
H	336 kcmil	TRIANGULAR

MATERIAL LIST LUI-04-302										
ITEM #	DESCRIPTION	QTY								PART # / STOCK #
		A	B	C	D	E	F	G	H	
1	336 kcmil AL BARE CONDUCTOR	4	-	3	2	2	-	3	2	REFER TO LUSI MASTER MATERIAL LIST
2	CONNECTOR AMPACT #3/0 - 336 kcmil	3	3	3	3	-	-	-	-	
3	CONNECTOR AMPACT 336 kcmil - 336 kcmil	-	-	-	-	3	3	3	3	
4	INSULATOR RISER SUPPORT 35 kV	5	-	4	2	5	-	4	2	
5	LIVE LINE STIRRUP 3/0	1	3	1	2	-	-	-	-	
6	LIVE LINE STIRRUP 336 kcmil	-	-	-	-	1	3	1	2	
7	CARTRIDGE AMPACT YELLOW	3	3	3	3	3	3	3	3	
8	BOLT MACH. 5/8" X 12" SQ GALV W/SQ NUT	5	-	4	2	5	-	4	2	
9	WASHER CURVED SQ 2" X 2" FOR 5/8" BOLT	10	-	8	4	10	-	8	2	



**Lakefront
Utilities
Inc.**

TITLE

**PRIMARY SERVICE RISERS
PRIMARY DROPS AND CONNECTIONS
FOR 3-PHASE SERVICE RISER**

SIZE
A

FILE NAME:

DWG NO:

LUI-04-302

REV:
0

SCALE

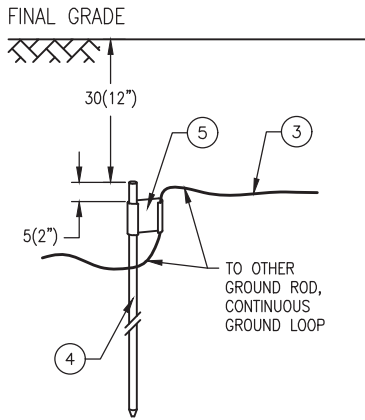
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DATE

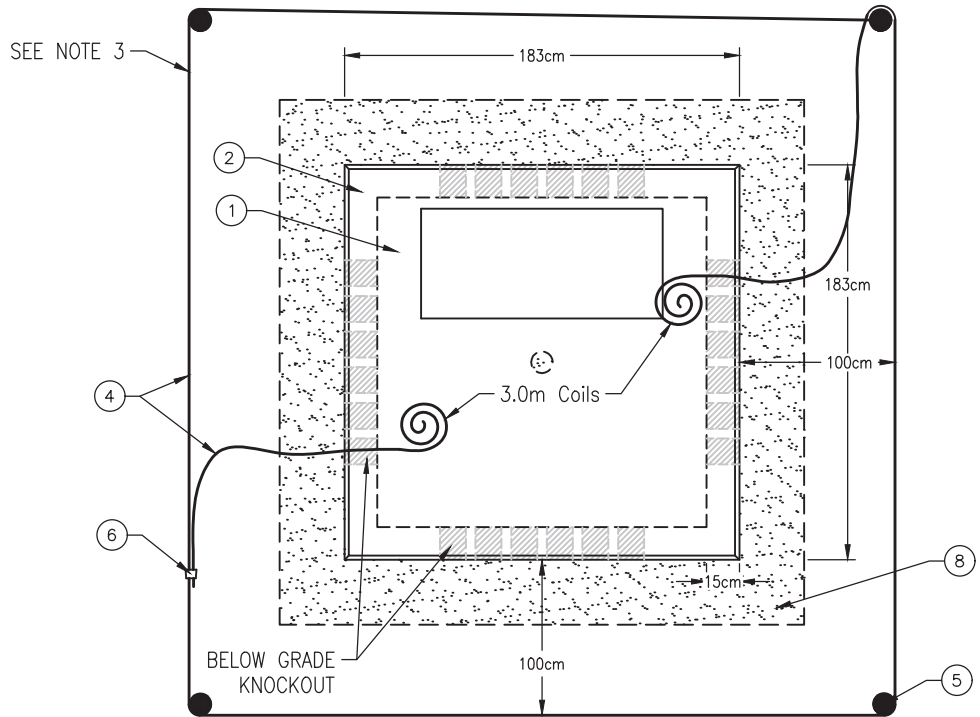
01 /06 /2024
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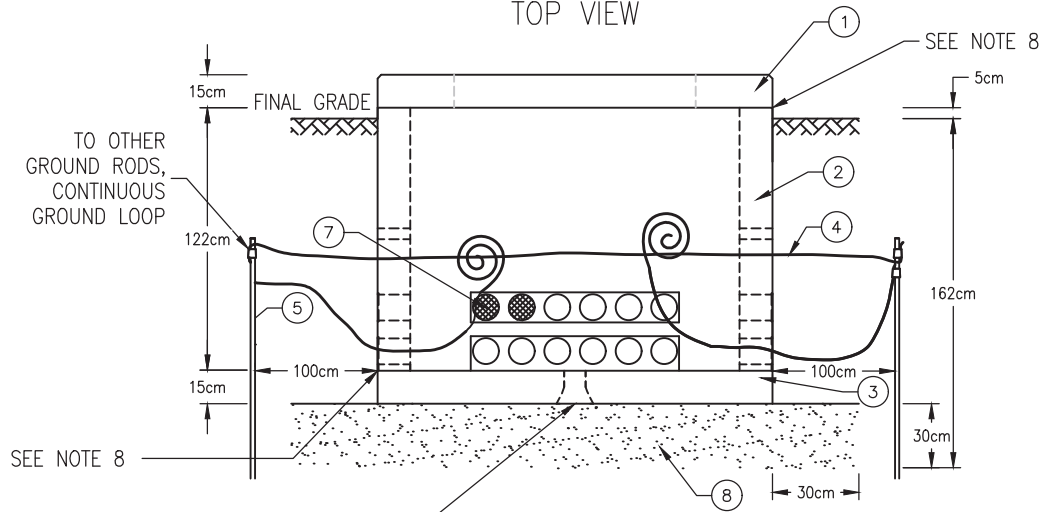
3 /3



GROUND ROD INSTALLATION



TOP VIEW



FRONT VIEW

- NOTES:**
1. ALL DIMENSIONS ARE MINIMUM UNLESS OTHERWISE SPECIFIED.
 2. FOUNDATION TO BE INSTALLED LEVEL WITH A MAXIMUM 1% SLOPE.
 3. ONE OF THE GROUND LEADS ENTERING THE SUPPORT FOUNDATION MUST BE ONE CONTINUOUS PIECE OF WIRE CONNECTING TO ALL FOUR GROUND RODS.
 4. GROUND LEADS MUST ENTER SUPPORT FOUNDATION OPPOSITE EACH OTHER.
 5. SEAL ALL FOUNDATION WALL PENETRATIONS WITH SEALANT.
 6. COMPACT BACKFILL THOROUGHLY IN 30cm (12") LAYERS.
 7. TRANSFORMER INSTALLATION LOCATION TO COMPLY TO OESC RULE 26-242.
 8. SEAL JOINT WITH BUTYL RUBBER SEALANT OR TAPE.



**Lakefront
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TITLE:

**3-PHASE PADMOUNT EQUIPMENT
FOUNDATION AND GROUND GRID**

SIZE
A

FILE NAME:
LUI-12-300.DWG

DWG No.

LU1-12-300

REV.
2

SCALE

NTS

DATE:

2016/06/27

SHEET:

1

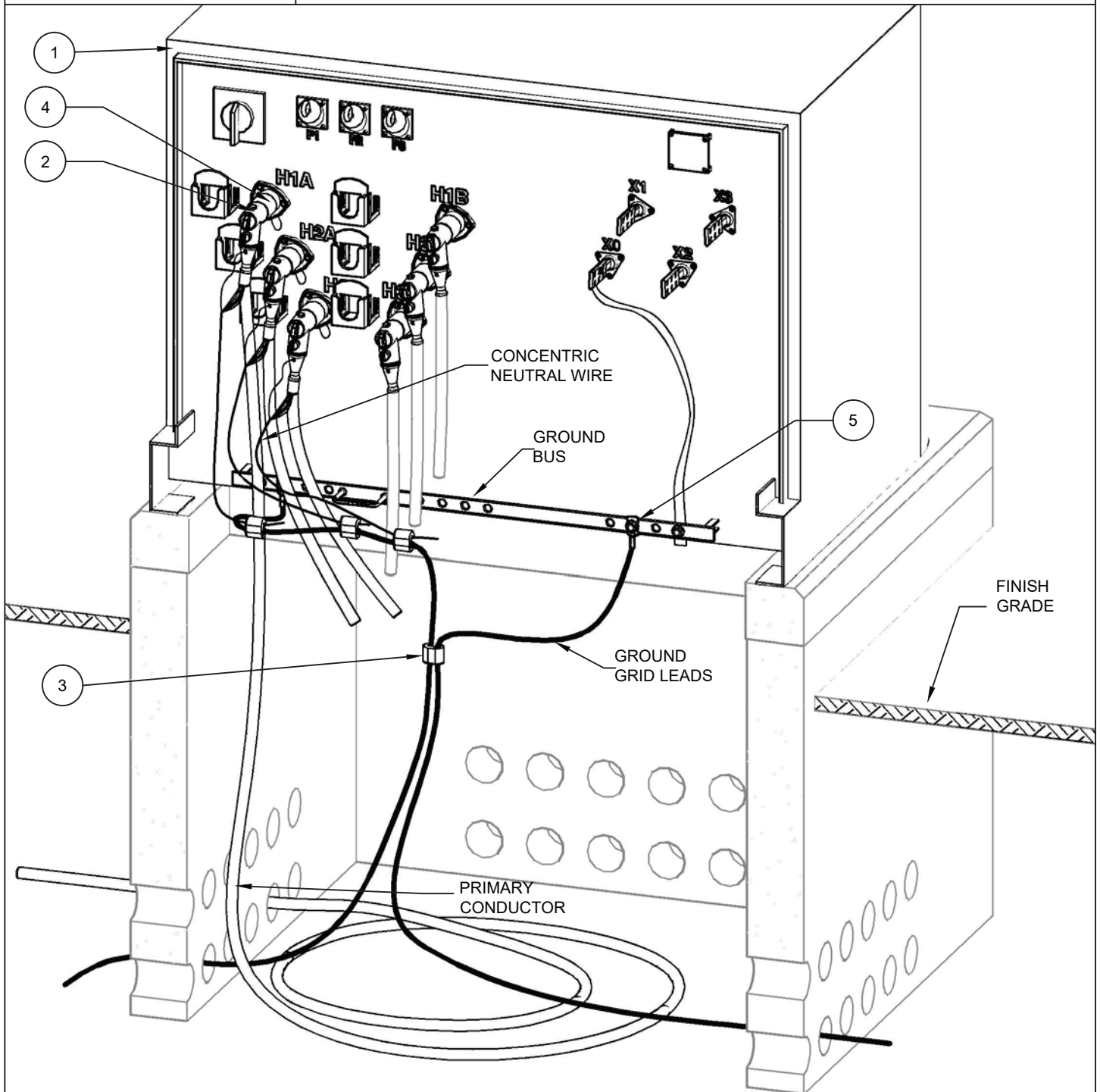
MATERIAL LIST LUI-12-300					
ITEM #	DESCRIPTION	QTY	MANUFACTURER	PART#	STOCK #
1	PRECAST TOP, 72" x 72"	1	BROOKLIN	BCP114T6*	VAUL-0002
				BCP114T6MTHS**	VAUL-0009
2	PRECAST FOUNDATION, 72" x 72"	1	BROOKLIN	BCP114P*	VAUL-0001
				BCP114THS**	VAUL-0010
3	PRECAST BASE, 72" x 72"	1	BROOKLIN	BCP114B	VAUL-0004
4	#2/0 Cu BARE	++			WIRE-0015
5	GROUND ROD, 10' x 3/4"	4	SLACAN	9340SF	RODS-0001
6	CONNECTOR, WEDGE	++			
7	SEALANT, FOAM, DUCT	++			
8	GRANULAR 'A' 3/4" (20mm)	++			

++ QUANTITY/SIZE TO SUIT

* TO BE USED FOR TRANSFORMERS RATED 750KVA AND UNDER

** TO BE USED FOR TRANSFORMERS RATED OVER 750KVA

Title: TYPICAL INSTALLATION AND CONNECTIONS
3-PHASE PADMOUNT TRANSFORMER



NOTES:

1. REFER TO 12-202, 12-203, 12-204 FOR GROUNDING CONNECTIONS
2. CONCENTRIC NEUTRAL IS SHOWN CONNECTED TO GROUND GRID LEAD. CONCENTRIC NEUTRAL WIRES MAY ALSO BE CONNECTED DIRECTLY TO THE GROUND BUS.
3. ALL PRIMARY AND SECONDARY CABLES SHALL BE LABELED AND LOOPED ONCE IN THE BOTTOM OF THE FOUNDATION.
4. SECONDARY CONNECTIONS AS PER 12-205.
5. WHEN INSTALLING FAULT INDICATORS REFER TO MANUFACTURERS INSTRUCTIONS.
6. REFER TO 12-200 FOR LOAD BREAK CONNECTION POINTS AND 12-201 FOR OPEN POINT CONNECTIONS. ADJUST MATERIAL REQUIREMENTS APPROPRIATELY.

MATERIAL LIST 12-301

Part #	Qty.	Description	Part Number
1	1	Transformer, 3-Phase Padmount	U10900
2	as req'd	Elbow, Load Break	U05511
3	as req'd	Connector	U01144, U05284- U05289
4	as req'd	Bushing Insert	U06350
5	as req'd	Connector, Lug	U05610
Optional	as req'd	Feed Thru Insert	U05476-U05478
Optional	as req'd	Bushing Arrester	U10750
Optional	as req'd	Parking Stand	U10800
Optional	as req'd	Feed Thru Parking Stand	U05467
Optional	as req'd	Parking Stand Arrester	U05185-U05187
Optional	as req'd	Elbow Arrester	U11800
Optional	as req'd	Fault Indicators	U05465



4. MATERIAL SPECIFICATIONS

All material supplied and installed by the Developer must meet LUI specifications.

It is the responsibility of the Developer to determine the material requirements for each new Development and obtain Utility approval prior to ordering any material. The Engineer shall submit an itemized material list with the design submission to LUI for review and approval.

There shall be no substitution of material listed in this Guide without written authorization from LUI. Any proposed alternate material shall meet LUI specifications.

LUI reserves the right to revise the material specifications at any time.

<u>Category</u>	<u>Stock Code</u>	<u>Description</u>
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4.1 Primary Switchgear

Where padmount switches or feed-through junctions are required they will be specified by LUI.

4.2 Pad Mount Transformers

Single phase transformers	DT2	LUI Purchasing Spec (Appendix B)
Three phase transformers	DT3	LUI Purchasing Spec (Appendix B)

Note – transformers for use in the Town of Colborne shall be dual voltage (27.6-4.16kV) rated.

4.3 Transformer Bushing Inserts and Accessories

Bushing Insert, 200A, 28kV	XFMR-0004	Elastimold 2701A4-CS854
Insulated Parking Bushing, 28kV	XFRM-0007	Elastimold 272SOP-CS854
Insulating Cap, 200A, 28kV	XFMR-0008	Elastimold 273DRGA-CS854

4.4 Primary Underground Cable

Main Feeder Cable	CABL-0007	1000mcm Al, 28kV, 1/3 CN, TR-XLPE, LLDPEJ, UD, CSA-C68.5
Primary Distribution Cable	CABL-0003	#2/0 Compact Al, 28kV, 100% CN, TR-XLPE, PVCJ, URD, CSA-C68.5

4.5 Primary Cable Terminations

Terminations for 1000mcm Al 2-hole lug for 1000 Al	TERM-0003	3M Cold Shrink QT-III #7656-S-4
Terminations for #2/0 Al 2-hole lug for #2/0 Al	TERM-0002	3M Cold Shrink QT-III #7653-S-4 3M SC 0020 (CSA die #24)

4.6 200A Load Break Elbows

Load Break Elbows for #2/0 Al	ELBO-0001	Elastimold 262LR-C-5240C Cooper LE228CC07TCSA
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4.7 Surge Arresters

Elbow Arrester	ARRE-0005	Elastimold 273ESA-21 Cooper 3238019C21M
Bushing Surge Arrester	ARRE-0006	Elastimold 273BSA-21
Parking Stand Surge Arrester	ARRE-0007	Elastimold 273PSA-21 Cooper 3237758C21M

4.8 Primary Cable Splice

#2/0 Al 28kV - preformed	SPLI-0001	Elastimold 25PCJ1H (c/w connector)
#2/0 Al 28kV – cold shrink	SPLI-0002	3M 5456A
#2/0 Al Connector for SPLI-0002	SPLI-0004	ILSCO ASC-2/0

4.9 Faulted Circuit Indicators, underground

FCl, 1ph, cable	FAUL-0002	Horstmann 29-6028-000
1ph remote indicator, 6’	FAUL-0003	Horstmann 49-6007-206
3ph remote indicator, 10’	FAUL-0004	Horstmann 49-6007-410

4.10 Secondary Underground Cable

200 amp service cable, 75C	CABL-0004	#3/0 Al Triplex, 600V, USEI-75, 100% N, LLDPE, U/G, CSA-C22.2-#52.
200 amp service cable, 90C	CABL-0009	#3/0 Al Triplex, 600V, USEI-90, 100% N, LLDPE, U/G, CSA-C22.2-#52.

4.11 Secondary Connectors

Secondary bus connectors	CONN-0001	Utilco TUT14-250 (14 position)
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4.12 Secondary Underground Splices

Secondary Cable Splice 3/0-3/0	SPLI-0005	ILSCO ASC-3/0 (CSA Die#24)
Heat Shrink Tubing	TUBE-0001	CANUSA CFW1100-48
Ground wire	WIRE-0015	#2/0 Bare Cu 19 strand
	WIRE-0006	#4 Bare Cu 7 strand
Ground rod 10’-3/4”, galvanized	RODS-0001	Slacan 9340S
Ground Wire Connector 2/0-2/0	CONN-AM01	TE Connectivity 1-275187-5
Ground Rod Connectors 2/0-3/4”	CONN-AM02	TE Connectivity 4-276337-8
Ground Rod Connector #4-3/4”	CONN-AM05	TE Connectivity 2-276337-8

4.13 Ducts, Fittings and Accessories

Ducts and fittings shall be PVC Type II DB2/ES2. IPEX Super Duct
 Duct spacers shall be sized to fit the ducts, with 1-1/2” spacing between ducts, horizontal and vertical.



		IPEX Monobloc
Duct, Locator Ball	DUCT-0008	3M 1402-XR Greenlee 50607656
4.14	Precast Concrete Foundation - 1 Phase Padmount Transformer	
Base	VAUL-0008	Brooklin Concrete BCP110B
Foundation	VAUL-0003	Brooklin Concrete BCP110PC
4.15	Precast Concrete Foundation - 3 Phase Padmount Transformer	
	<u>3-Phase Transformers ≤ 750kVA</u>	
Base	VAUL-0004	Brooklin Concrete BCP114B
Foundation	VAUL-0001	Brooklin Concrete BCP114P
Top	VAUL-0002	Brooklin Concrete BCP114T6
	<u>3-Phase Transformers ≥ 1000kVA</u>	
Base	VAUL-0004	Brooklin Concrete BCP114B
Foundation	VAUL-0010	Brooklin Concrete BCP114THS
Top	VAUL-0009	Brooklin Concrete BCP114T6MTHS
4.16	Precast Concrete Foundation - Padmount Switch	
Base	VAUL-0007	Brooklin Concrete BCP330B
Foundation	VAUL-0005	Brooklin Concrete BCP330P
Top	VAUL-0006	Brooklin Concrete BCP330TC
4.17	Miscellaneous Material	
Caution Tape	TAPE-0002	152mm (6"), red with black letters "Warning" or "Caution" and "Buried Cables" or "High Voltage" Seton 64557
Rebar	N/A	20mm (3/4")
Duct rope	N/A	10mm (3/8") polypropylene



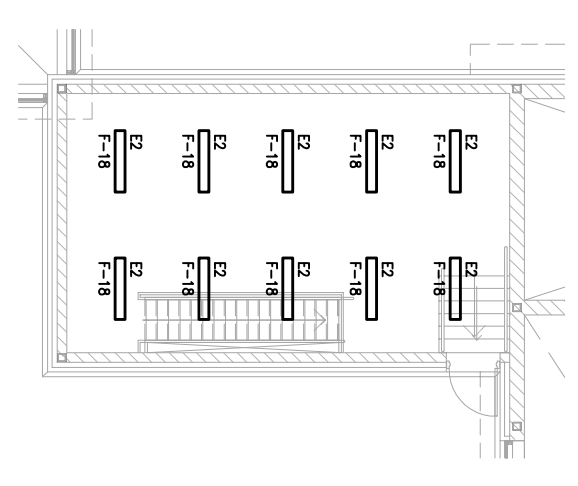
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SUBDIVISION DEVELOPMENT GUIDE

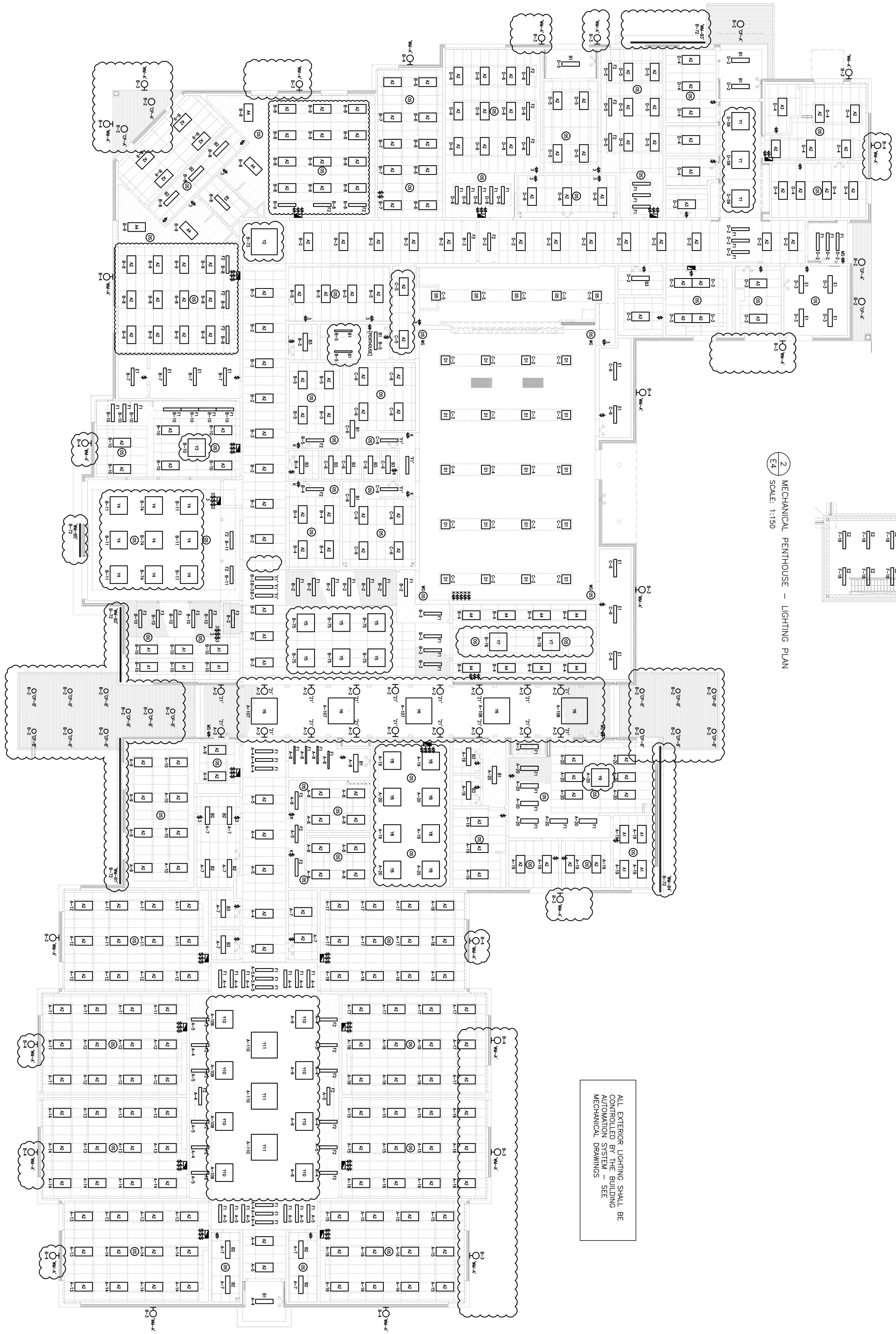
REV 1 – APRIL 2019

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ALL DIMENSIONS SHOWN ON THIS DRAWING IN METERS UNLESS OTHERWISE SPECIFIED. ALL DIMENSIONS SHALL BE CHECKED AND VERIFIED ON THE JOB. ALL DIMENSIONS SHALL BE TO FACE UNLESS OTHERWISE SPECIFIED. ALL DIMENSIONS SHALL BE TO FACE UNLESS OTHERWISE SPECIFIED. ALL DIMENSIONS SHALL BE TO FACE UNLESS OTHERWISE SPECIFIED.



2 MECHANICAL PENTHOUSE - LIGHTING PLAN
SCALE: 1:150



1 GROUND FLOOR - LIGHTING PLAN
SCALE: 1:150

ALL EXTERIOR LIGHTING SHALL BE CONTROLLED BY THE BUILDING AUTOMATION SYSTEM - SEE MECHANICAL DRAWINGS

NO.	DATE	REVISION
1	03/27/24	ISSUED FOR 80% COSTING
2	03/27/23	ISSUED FOR PERMIT
3	10/14/23	REVIEW/COORDINATION
4	03/13/26	TENDER

DO NOT SCALE DRAWINGS. ALL DIMENSIONS TO BE CHECKED AND VERIFIED ON THE JOB. ALL DIMENSIONS SHALL BE TO FACE UNLESS OTHERWISE SPECIFIED. ALL DIMENSIONS SHALL BE TO FACE UNLESS OTHERWISE SPECIFIED.

- GENERAL NOTES
1. ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE REQUIREMENTS OF THE ONTARIO BUILDING CODE, LATEST EDITION AND ALL OTHER ACTS AND REGULATIONS APPLICABLE TO THE WORK.
 2. THESE DRAWINGS TO BE READ IN CONJUNCTION WITH THE CONTRACT DOCUMENTS, AND SPECIFICATIONS.
 3. THE PERSON LOANS SHALL NOT BE EXCEEDED DURING CONSTRUCTION.
 4. ALL DIMENSIONS SHOWN ON THE DRAWINGS SHALL BE CHECKED BY THE CONTRACTOR BEFORE PROCEEDING WITH THE WORK.
 5. THE STABILITY OF THE STRUCTURAL FRAME IS DEPENDENT ON THE FULL INTERPRETATION AND APPLICATION OF THE DRAWINGS. THE GENERAL CONTRACTOR SHALL PROVIDE ALL NECESSARY TEMPORARY BRACING DURING CONSTRUCTION.
 6. ALL DIMENSIONS GIVEN ARE IN METERS.

Kingsland
ARCHITECTS INC.

SURI & ASSOCIATES LTD.
ENGINEERING CONSULTANTS
1122 WHITE CLOVER WAY
L5V 1G9 ONTARIO
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F (905) -247-3460

ELECTRICAL
MECHANICAL
COMMISSIONING
SECURITY

10719 NEW AMHERST BLVD.
CONRO, ONTARIO
M3A 2M9

ECOLOGICAL
DESIGN CENTRE
NEW CONSTRUCTION

DRAWING TITLE:
FIRST FLOOR & MECHANICAL
PENTHOUSE - LIGHTING PLAN

PROJECT NO.	23-122	SCALE	
DRAWN	R.S.	DRAWING NO.	E4
CHECKED	R.S.	REV.	
DATE			

ROOM/ZONE	LIGHT SWITCH	OCCUPANCY SENSORS	POWER PACK REQUIREMENTS	NOTES
LIBRARY (102)	6 x N2SW-ORLO-WH	3 x N2SMD-02MI	3 x N2RGFX-1RD	REQUIRE ULTIMATE RECEPIACLE CONTROL OF THE RECEPIACLES IN THE SPACE AS PER ASHRAE 90.1
STAFF LOUNGE (103)	3 x N2SW-ORLO-WH	2 x N2SMD-02MI	3 x N2RGFX-1RD	REQUIRE ULTIMATE RECEPIACLE CONTROL OF THE RECEPIACLES IN THE SPACE AS PER ASHRAE 90.1
ELECTRICAL ROOM (104)	1 x N2SW-ORLO-WH	N/A	1 x N2RGFX-1RD	-
WATER METER ROOM (104A)	1 x LHM1S-1-G-WH	SEE SWITCH	1 x N2RGFX-1RD	PROVIDE ULTIMATE RECEPIACLE CONTROL OF THE RECEPIACLES IN THE SPACE AS PER ASHRAE 90.1
KINDERGARTEN 1 (105)	3 x N2SW-ORLO-WH	2 x N2SMD-02MI	3 x N2RGFX-1RD	PROVIDE ULTIMATE RECEPIACLE CONTROL OF THE RECEPIACLES IN THE SPACE AS PER ASHRAE 90.1
STORAGE (105B)	2 x LHM1S-1-G-WH	SEE SWITCH	1 x N2RGFX-1RD	-
WASHROOM (105C)	2 x N2SW-ORLO-WH	1 x N2SMD-02MI	3 x N2RGFX-1RD	PROVIDE ULTIMATE RECEPIACLE CONTROL OF THE RECEPIACLES IN THE SPACE AS PER ASHRAE 90.1
KINDERGARTEN 2 (106)	3 x N2SW-ORLO-WH	2 x N2SMD-02MI	3 x N2RGFX-1RD	PROVIDE ULTIMATE RECEPIACLE CONTROL OF THE RECEPIACLES IN THE SPACE AS PER ASHRAE 90.1
MULTIPURPOSE ROOM (107)	2 x N2SW-ORLO-WH	2 x N2SMD-02MI	1 x N2RGFX-1RD 3 x N2RGFX-1RD	PROVIDE ULTIMATE RECEPIACLE CONTROL OF THE RECEPIACLES IN THE SPACE AS PER ASHRAE 90.1
PRESCHOOL (108)	3 x N2SW-ORLO-WH	2 x N2SMD-02MI	3 x N2RGFX-1RD	PROVIDE ULTIMATE RECEPIACLE CONTROL OF THE RECEPIACLES IN THE SPACE AS PER ASHRAE 90.1
COAT (108B)	2 x N2SW-ORLO-WH	1 x N2SMD-02MI	1 x N2RGFX-1RD	-
WASHROOM (108C)	2 x N2SW-ORLO-WH	1 x N2SMD-02MI	3 x N2RGFX-1RD	PROVIDE ULTIMATE RECEPIACLE CONTROL OF THE RECEPIACLES IN THE SPACE AS PER ASHRAE 90.1
TODDLER (109)	3 x N2SW-ORLO-WH	2 x N2SMD-02MI	3 x N2RGFX-1RD	PROVIDE ULTIMATE RECEPIACLE CONTROL OF THE RECEPIACLES IN THE SPACE AS PER ASHRAE 90.1
LAUNDRY (110)	1 x LHM1S-1-G-WH	SEE SWITCH	1 x N2RGFX-1RD	-
ACADEMIC STORAGE (111)	1 x LHM1S-1-G-WH	SEE SWITCH	1 x N2RGFX-1RD	-
OFFICE (112)	1 x N2SW-ORLO-WH	1 x N2SMD-02MI	1 x N2RGFX-1RD	PROVIDE ULTIMATE RECEPIACLE CONTROL OF THE RECEPIACLES IN THE SPACE AS PER ASHRAE 90.1
INFANT (115)	2 x N2SW-ORLO-WH	1 x N2SMD-02MI	2 x N2RGFX-1RD 3 x N2RGFX-1RD	PROVIDE ULTIMATE RECEPIACLE CONTROL OF THE RECEPIACLES IN THE SPACE AS PER ASHRAE 90.1
WASHROOM (115B)	1 x N2SW-ORLO-WH	1 x N2SMD-02MI	1 x N2RGFX-1RD	-
SLEEP ROOM (115A)	1 x N2SW-ORLO-WH	1 x N2SMD-02MI	1 x N2RGFX-1RD	-
CARETAKER/OFFICE (117)	1 x N2SW-ORLO-WH	1 x N2SMD-02MI	1 x N2RGFX-1RD	REQUIRE ULTIMATE RECEPIACLE CONTROL OF THE RECEPIACLES IN THE SPACE AS PER ASHRAE 90.1
STAFF (118)	1 x N2SW-ORLO-WH	1 x N2SMD-02MI	1 x N2RGFX-1RD	-
KITCHEN (119)	1 x N2SW-ORLO-WH	1 x N2SMD-02MI	1 x N2RGFX-1RD	-
PANTRY (119A)	1 x LHM1S-1-G-WH	SEE SWITCH	1 x N2RGFX-1RD	-
BARRIER-FREE WASHROOM (120)	1 x LHM1S-1-G-WH	SEE SWITCH	1 x N2RGFX-1RD	-
GM (121)	5 x V2SERV-2M-SS + N2CI CONTACT CLOSURE	SEE SWITCH	6 x N2RGFX-1RD	PROVIDE WIREGUARDS FOR THE OCCUPANCY SENSORS.
CHAIR STORAGE (121A)	1 x LHM1S-1-G-WH	SEE SWITCH	1 x N2RGFX-1RD	-
CHAIR STORAGE (121B)	1 x LHM1S-1-G-WH	SEE SWITCH	1 x N2RGFX-1RD	-
BOYS CHANGE ROOM (121C)	1 x V2SERV-2M-SS + N2CI CONTACT CLOSURE	2 x N2SMD-02MI	1 x N2RGFX-1RD	PROVIDE WIREGUARD FOR THE OCCUPANCY SENSOR.
GENDER NEUTRAL CHANGE (121D)	1 x V2SERV-2M-SS + N2CI CONTACT CLOSURE	1 x N2SMD-02MI	1 x N2RGFX-1RD	PROVIDE WIREGUARD FOR THE OCCUPANCY SENSOR.
GIRLS CHANGE ROOM (121E)	1 x V2SERV-2M-SS + N2CI CONTACT CLOSURE	2 x N2SMD-02MI	1 x N2RGFX-1RD	PROVIDE WIREGUARD FOR THE OCCUPANCY SENSOR.
CUSTODIAL (121F)	1 x N2SW-ORLO-WH	-	1 x N2RGFX-1RD	-
STAGE (121G)	2 x N2SW-ORLO-WH	-	1 x N2RGFX-1RD	PROVIDE ULTIMATE RECEPIACLE CONTROL OF THE RECEPIACLES IN THE SPACE AS PER ASHRAE 90.1
MEETING ROOM (122)	2 x N2SW-ORLO-WH	1 x N2SMD-02MI	1 x N2RGFX-1RD	PROVIDE ULTIMATE RECEPIACLE CONTROL OF THE RECEPIACLES IN THE SPACE AS PER ASHRAE 90.1
BARRIER FREE ROOM (123)	1 x LHM1S-1-G-WH	SEE SWITCH	1 x N2RGFX-1RD	-
GIRLS WASHROOM (124)	1 x V2SERV-2M-SS + N2CI CONTACT CLOSURE	2 x N2SMD-02MI	1 x N2RGFX-1RD	PROVIDE WIREGUARD FOR THE OCCUPANCY SENSOR.
GENDER NEUTRAL WASHROOM (125)	1 x LHM1S-1-G-WH	SEE SWITCH	1 x N2RGFX-1RD	-
BOYS WASHROOM (126)	1 x V2SERV-2M-SS + N2CI CONTACT CLOSURE	2 x N2SMD-02MI	1 x N2RGFX-1RD	PROVIDE WIREGUARD FOR THE OCCUPANCY SENSOR.
MULTIPURPOSE ROOM (127)	3 x N2SW-ORLO-WH	2 x N2SMD-02MI	3 x N2RGFX-1RD 3 x N2RGFX-1RD	PROVIDE ULTIMATE RECEPIACLE CONTROL OF THE RECEPIACLES IN THE SPACE AS PER ASHRAE 90.1
GENERAL OFFICE (129)	1 x N2SW-ORLO-WH	2 x N2SMD-02MI	1 x N2RGFX-1RD	PROVIDE ULTIMATE RECEPIACLE CONTROL OF THE RECEPIACLES IN THE SPACE AS PER ASHRAE 90.1
PRINCIPAL (129A)	1 x N2SW-ORLO-WH	1 x N2SMD-02MI	1 x N2RGFX-1RD	PROVIDE ULTIMATE RECEPIACLE CONTROL OF THE RECEPIACLES IN THE SPACE AS PER ASHRAE 90.1
HEALTHY ROOM (129B)	1 x N2SW-ORLO-WH	1 x N2SMD-02MI	1 x N2RGFX-1RD	-
MEETING ROOM (129C)	1 x N2SW-ORLO-WH	1 x N2SMD-02MI	1 x N2RGFX-1RD	PROVIDE ULTIMATE RECEPIACLE CONTROL OF THE RECEPIACLES IN THE SPACE AS PER ASHRAE 90.1
WORK ROOM (130)	1 x N2SW-ORLO-WH	1 x N2SMD-02MI	1 x N2RGFX-1RD	PROVIDE ULTIMATE RECEPIACLE CONTROL OF THE RECEPIACLES IN THE SPACE AS PER ASHRAE 90.1
WASHROOM (131)	1 x LHM1S-1-G-WH	SEE SWITCH	1 x N2RGFX-1RD	-
WASHROOM (132)	1 x LHM1S-1-G-WH	SEE SWITCH	1 x N2RGFX-1RD	-
RESOURCE ROOM (133)	4 x N2SW-ORLO-WH	2 x N2SMD-02MI	4 x N2RGFX-1RD 3 x N2RGFX-1RD	PROVIDE ULTIMATE RECEPIACLE CONTROL OF THE RECEPIACLES IN THE SPACE AS PER ASHRAE 90.1
HUB ROOM (133A)	1 x LHM1S-1-G-WH	SEE SWITCH	1 x N2RGFX-1RD	-
BOYS WASHROOM (134)	1 x V2SERV-2M-SS + N2CI CONTACT CLOSURE	2 x N2SMD-02MI	1 x N2RGFX-1RD	PROVIDE WIREGUARD FOR THE OCCUPANCY SENSOR.
GIRLS WASHROOM (135)	1 x V2SERV-2M-SS + N2CI CONTACT CLOSURE	2 x N2SMD-02MI	1 x N2RGFX-1RD	PROVIDE WIREGUARD FOR THE OCCUPANCY SENSOR.
CUSTODIAL (136)	1 x LHM1S-1-G-WH	SEE SWITCH	1 x N2RGFX-1RD	-
CLASSROOM 4 (137)	3 x N2SW-ORLO-WH	1 x N2SMD-02MI	3 x N2RGFX-1RD	PROVIDE ULTIMATE RECEPIACLE CONTROL OF THE RECEPIACLES IN THE SPACE AS PER ASHRAE 90.1
CLASSROOM 2 (139)	3 x N2SW-ORLO-WH	1 x N2SMD-02MI	3 x N2RGFX-1RD	PROVIDE ULTIMATE RECEPIACLE CONTROL OF THE RECEPIACLES IN THE SPACE AS PER ASHRAE 90.1
CLASSROOM 1 (140)	3 x N2SW-ORLO-WH	1 x N2SMD-02MI	3 x N2RGFX-1RD	PROVIDE ULTIMATE RECEPIACLE CONTROL OF THE RECEPIACLES IN THE SPACE AS PER ASHRAE 90.1
ACADEMIC STORAGE (141)	1 x N2SW-ORLO-WH	1 x N2SMD-02MI	1 x N2RGFX-1RD	-
ACADEMIC STORAGE (144)	1 x N2SW-ORLO-WH	1 x N2SMD-02MI	1 x N2RGFX-1RD	-
CLASSROOM 5 (145)	3 x N2SW-ORLO-WH	1 x N2SMD-02MI	3 x N2RGFX-1RD	PROVIDE ULTIMATE RECEPIACLE CONTROL OF THE RECEPIACLES IN THE SPACE AS PER ASHRAE 90.1
CLASSROOM 6 (146)	3 x N2SW-ORLO-WH	1 x N2SMD-02MI	3 x N2RGFX-1RD	PROVIDE ULTIMATE RECEPIACLE CONTROL OF THE RECEPIACLES IN THE SPACE AS PER ASHRAE 90.1
CLASSROOM 7 (147)	3 x N2SW-ORLO-WH	1 x N2SMD-02MI	3 x N2RGFX-1RD	PROVIDE ULTIMATE RECEPIACLE CONTROL OF THE RECEPIACLES IN THE SPACE AS PER ASHRAE 90.1
CLASSROOM 8 (148)	3 x N2SW-ORLO-WH	1 x N2SMD-02MI	3 x N2RGFX-1RD	PROVIDE ULTIMATE RECEPIACLE CONTROL OF THE RECEPIACLES IN THE SPACE AS PER ASHRAE 90.1

NOTES:
1. THE PROPOSED LIGHTING CONTROL SYSTEM IS BASED ON HUBBELL'S CURRENT BY SYSTEM. ALL PRODUCTS LISTED ABOVE BELONG TO THE HUBBELL'S CURRENT BY PRODUCT LINE.
2. THE CONTRACTOR SHALL SUPPLY AND INSTALL ALL DEVICES LISTED ABOVE.
3. PRIOR TO PRICING, THE CONTRACTOR IS EXPECTED TO FAMILIARIZE HIMSELF WITH THE INSTALLATION OF THE SPECIFIED LIGHTING CONTROL SYSTEM AND INCLUDE FOR ALL MATERIAL AND COMPLETE INSTALL. THE COST FOR THE COMMISSIONING SHALL BE INCLUDED FOR IN THE TENDER PRICE.
4. ALL 0-10V AND CATSE WIRING/CABLING REQUIRED FOR THE BASIS OF THE LIGHTING CONTROL SYSTEM IS TO BE SUPPLIED AND INSTALLED UNDER THIS CONTRACT. ALL CATSE CABLING SHALL BE PRODUCED THROUGH HUBBELL ONLY. USE OF ALTERNATE CABLING IS NOT PERMITTED. ALL 0-10V WIRING IS TO BE AS APPROVED BY HUBBELL.
5. ALL LIGHTING ZONES SHALL BE PROGRAMMED WITH MANUAL ON SWITCHING FOR ALL LIGHT SWITCHES AND AUTO OFF VIA OCCUPANCY SENSOR WHEN NO OCCUPANTS ARE IN THE SPACE FOR 20 MINUTES.
6. ALL LIGHTING ZONES SHALL BE PROGRAMMED WITH MANUAL ON SWITCHING FOR ALL LIGHT SWITCHES AND AUTO OFF VIA OCCUPANCY SENSOR WHEN NO OCCUPANTS ARE IN THE SPACE FOR 20 MINUTES.
7. PROVIDE 4-WAY MASTER SWITCHES TO CONTROL THE CORRIDOR AND EXTERIOR VESTIBULE LIGHTING. REFER TO PLAN FOR LOCATION OF SWITCHES (DENOTED WITH 'MS').
8. DISTINGUISH THE RECEPIACLES IN COMPLIANCE WITH ASHRAE 90.1. WIRE THE RECEPIACLE CIRCUITS TO SWITCH OFF BASED ON OCCUPANCY SENSOR DETECTING OCCUPANCY.

1 LOW-VOLTAGE LIGHTING CONTROL SCHEDULE
SCALE: N.T.S.

ROOM/ZONE	LIGHT SWITCH	OCCUPANCY SENSORS	POWER PACK REQUIREMENTS	NOTES
BARRIER-FREE WASHROOM (149)	1 x LHM1S-1-G-WH	SEE SWITCH	1 x N2RGFX-1RD	-
WASHROOM (150)	2 x LHM1S-1-G-WH	SEE SWITCH	1 x N2RGFX-1RD	-
UNIVERSAL WASHROOM (151)	1 x LHM1S-1-G-WH	SEE SWITCH	1 x N2RGFX-1RD	-
SPECIAL EDUCATION CLASSROOM (152)	3 x N2SW-ORLO-WH	2 x N2SMD-02MI	3 x N2RGFX-1RD	-
MECHANICAL PENITHOUSE	1 x LHM1S-1-G-WH	N/A	1 x N2RGFX-1RD	-
ALL CORRIDORS, ALL COMMONAL WASHROOMS, ALL EXTERIOR VESTIBULES	3 x V2SERV-2M-SS + N2CI CONTACT CLOSURE CONTROLLED BY BMS	N/A	12 x N2RGFX-1RD	PROVIDE 4-WAY MASTER SWITCHES TO CONTROL THE CORRIDOR AND EXTERIOR VESTIBULE LIGHTING. REFER TO PLAN FOR LOCATION OF SWITCHES (DENOTED WITH 'MS')

NOTES:
1. THE PROPOSED LIGHTING CONTROL SYSTEM IS BASED ON HUBBELL'S CURRENT BY SYSTEM. ALL PRODUCTS LISTED ABOVE BELONG TO THE HUBBELL'S CURRENT BY PRODUCT LINE.
2. THE CONTRACTOR SHALL SUPPLY AND INSTALL ALL DEVICES LISTED ABOVE.
3. PRIOR TO PRICING, THE CONTRACTOR IS EXPECTED TO FAMILIARIZE HIMSELF WITH THE INSTALLATION OF THE SPECIFIED LIGHTING CONTROL SYSTEM AND INCLUDE FOR ALL MATERIAL AND COMPLETE INSTALL. THE COST FOR THE COMMISSIONING SHALL BE INCLUDED FOR IN THE TENDER PRICE.
4. ALL 0-10V AND CATSE WIRING/CABLING REQUIRED FOR THE BASIS OF THE LIGHTING CONTROL SYSTEM IS TO BE SUPPLIED AND INSTALLED UNDER THIS CONTRACT. ALL CATSE CABLING SHALL BE PRODUCED THROUGH HUBBELL ONLY. USE OF ALTERNATE CABLING IS NOT PERMITTED. ALL 0-10V WIRING IS TO BE AS APPROVED BY HUBBELL.
5. ALL LIGHTING ZONES SHALL BE PROGRAMMED WITH MANUAL ON SWITCHING FOR ALL LIGHT SWITCHES AND AUTO OFF VIA OCCUPANCY SENSOR WHEN NO OCCUPANTS ARE IN THE SPACE FOR 20 MINUTES.
6. ALL LIGHTING ZONES SHALL BE PROGRAMMED WITH MANUAL ON SWITCHING FOR ALL LIGHT SWITCHES AND AUTO OFF VIA OCCUPANCY SENSOR WHEN NO OCCUPANTS ARE IN THE SPACE FOR 20 MINUTES.
7. PROVIDE 4-WAY MASTER SWITCHES TO CONTROL THE CORRIDOR AND EXTERIOR VESTIBULE LIGHTING. REFER TO PLAN FOR LOCATION OF SWITCHES (DENOTED WITH 'MS').

1 LOW-VOLTAGE LIGHTING CONTROL SCHEDULE
SCALE: N.T.S.

NEW PANEL 'F'	TYPE:	100A	LOCATION:	DESCRIPTION	WATS
120V/208V, 3PH, 4W	MAINS: 100A-3P MAIN BRK: 100A-3P		MECHANICAL PENITHOUSE		
BOILER 'B-1'	15A 1	2	BOILER 'B-2'		
DOSES: HOT WATER TANK 'DHW-1'	15A 3	4	DOSES: HOT WATER TANK 'DHW-2'		
DOSES: HOT WATER TANK 'DHW-3'	15A 5	6	DOSES: HOT WATER TANK 'DHW-4'		
DOSES: HOT WATER TANK 'DHW-5'	15A 7	8	DOSES: HOT WATER TANK 'DHW-6'		
AC UNIT 'AC-1'	15A 9	10	AC UNIT 'AC-2'		
	2P 11	12			
	2P 13	14			
CONDENSING UNIT 'CU-1'	2P 15	16	CONDENSING UNIT 'CU-2'		
	15A 17	18			
EXIT SIGNS	15A 19	20	RECEPIACLES		
UNIT HEATERS	15A 21	22	SPARE		
SPARE	15A 23	24	SPARE		
SPARE	15A 25	26	SPARE		
SPARE	15A 27	28	SPARE		
SPARE	15A 29	30	SPARE		
SPARE	15A 31	32	SPARE		
SPARE	15A 33	34	SPARE		
SPARE	15A 35	36	SPARE		
SPARE	15A 37	38	SPARE		
SPARE	15A 39	40	SPARE		
SPARE	20A 41	42	SPARE		

NOTES:
1. PROVIDE PANELBOARD C/W COVERS AND COPPER BUS.
2. PROVIDE PRINTED PANEL DIRECTOR WITH CIRCUIT NUMBER, TYPE AND LOCATION OF ALL LOADS. ALL SPARE STAGING YEAR OF INSTALLATION, PANEL SOURCE LOCATION, OVERCURRENT PROTECTION AND FEEDER SIZE.

Kingsland
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SCARLETON ONTARIO
M1A 1A6

PROJECT NO: 23-122
SCALE: DRAWING NO: REV:
DATE: E13

CHECKED: R.S.
DATE: E13

1. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE CANADIAN BUILDING CODE, LATEST EDITION AND ALL OTHER ACTS ADMINISTERED BY ALL AUTHORITIES HAVING JURISDICTION.

2. THESE DRAWINGS TO BE READ IN CONJUNCTION WITH THE CONTRACT DOCUMENTS AND SPECIFICATIONS.

3. THE PERSON LOANED SHALL NOT BE ENGAGED IN ANY OTHER CONSTRUCTION WORK.

4. ALL DIMENSIONS SHOWN ON THE DRAWINGS SHALL BE CHECKED BY THE CONTRACTOR BEFORE PROCEEDING WITH THE WORK.

5. THE STABILITY OF THE STRUCTURAL FRAME IS DEPENDENT ON THE FULL INTERPRETATION OF THE DRAWINGS. THE GENERAL CONTRACTOR SHALL PROVIDE ALL NECESSARY TEMPORARY BRACING DURING CONSTRUCTION.

6. ALL DIMENSIONS GIVEN ARE IN METRIC.