Note:

1. All dimensions and conditions must be verified on site.
2. Reproduction of this drawing is not permitted without the written authorization of EVEREST ENGINEERING LIMITED.
3. Drawings are not to be used for construction or pricing unless signed by the Engineer and labelled "ISSUED FOR CONSTRUCTION"

PROPERTY LINE

REGISTERED PLAN 23 pin 04263 – 0054

PARISEN STREET (Formerly George Street) pin 04263 – 0052

TRIOLE ST.

ST. LAURENT BOULEVARD

REGISTERED PLAN LOT 26 63

LOT 43

LOT 27

LOT 44

PROPOSED EXPANSION
2 STOREY BUILDING
GF 350 M2 (3,767 SqFt)

Existing end wall to be demolished

SHOWROOM EXISTING HIGH ROOF

1325 ST.LAURENT
2 STOREY BUILDING
EXISTING

pin 04263 – 0050

pin 04263 – 0055

pin 04263 – 0043

FIRE LANE

NEW LIGHT STANDARD TO MATCH EXISTING.

NEW LIGHT STANDARD TO MATCH EXISTING.

REMOVE EXISTING LIGHTING STANDARD.

EXISTING PAD MOUNT TRANSFORMER TO BE UPGRADED TO A 300KVA V PAD MOUNT PROVIDE NEW CONCRETE ENCASED 2X4" DIA. DUCTS AND WIRE FEED INTO BUILDING.

Approximate Location of Snow Bank

Metal Gate

26.61 | 18.144 | 46.14 | 11.33 | 7.48 | 29.55 | 54.54 | 58.63 | 34.48 | 20.75 | 60.83

IDENT SYMDESC INV.1 INV.2 INV.3 INV.4

EX.LS | HP | CLF | Sign

N

NO.	REVISION/ISSUE	DATE
1	ISSUED FOR BUILDING PERMIT	OCT. 18/23

NORTH

STAMP

REGISTERED PROFESSIONAL ENGINEER G. LASCHEWSKI PROVINCE OF ONTARIO

EVEREST ENGINEERING LIMITED
15 Bass Road, Lombardy, Ontario K0G 1L0
(613) 851-5454 everestengineering@bellnet.ca
MECHANICAL & ELECTRICAL ENGINEERS

PROJECT

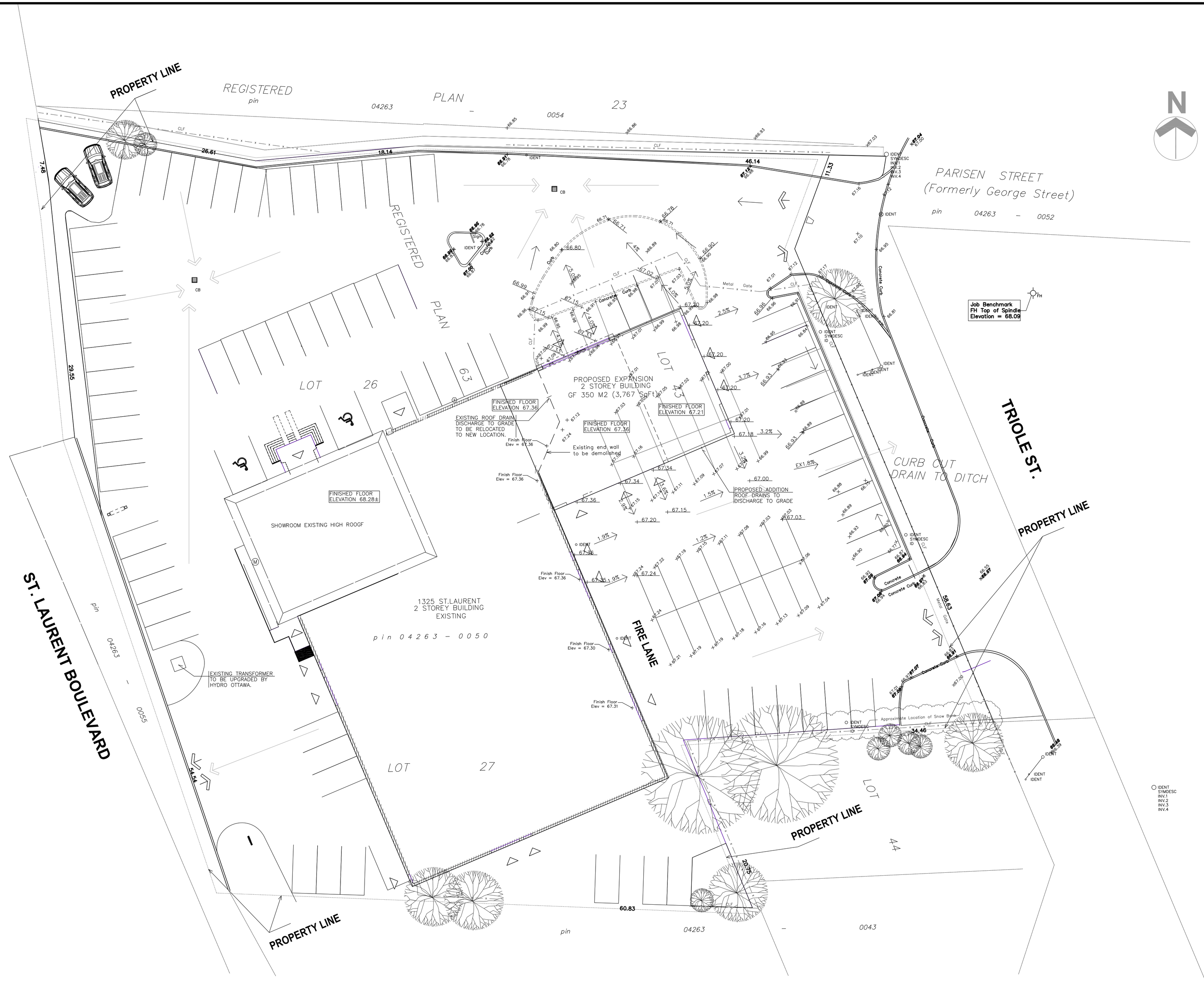
Bytek Volkswagen

1325 St Laurent Blvd,
Renovation
OTTAWA — ONTARIO

SCALE	1:200	DRAWN BY	C.V.A.
ISSUED		CHECKED BY	G.L.
DATE	MARCH 2023	PROJECT NO.	

DRAWING NUMBER: ESP – 1 | REV. NO.

TITLE: SITE PLAN



Note:

1. All dimensions and conditions must be verified on site.
2. Reproduction of this drawing is not permitted without the written authorization of EVEREST ENGINEERING LIMITED.
3. Drawings are not to be used for construction or pricing unless signed by the Engineer and labelled "ISSUED FOR CONSTRUCTION"

LEGEND

	RISER UP
	RISER DOWN
	RISE OR DROP
	BRANCH TOP CONNECTION
	BRANCH BOTTOM CONNECTION
	CATCHBASIN
	MANHOLE–CATCHBASIN
	MANHOLE
	GATE VALVE
M	WATER METER
RM	REMOTE WATER METER
G	GAS METER
	FIRE DEPARTMENT SIAMESE CONN.
	EXISTING FIRE HYDRANT
	PROPOSED FIRE HYDRANT
+ 100.00	EXISTING ELEVATION
+ 100.00	PROPOSED ELEVATION
	SLOPE

NOTES:
1. EXISTING GRADING TAKEN FROM SITE SURVEY BY ANNIS O'SULLIVAN VOLLBEKK DATED FEB 21/23.
2. SEE ARCHITECTURAL DRAWINGS FOR CONSTRUCTION OF NEW ASPHALT, CURBS AND SIDEWALKS.

NO.	REVISION/ISSUE	DATE
1	ISSUED FOR BUILDING PERMIT	JAN 19/24

NORTH

STAMP

LICENSED PROFESSIONAL ENGINEER
C. N. VAN ALSTINE
PROVINCE OF ONTARIO

EVEREST ENGINEERING LIMITED
15 Bass Road, Lombardy, Ontario K0G 1L0
(613) 831-5454 everestengineering@bellnet.ca
MECHANICAL & ELECTRICAL ENGINEERS

PROJECT

Bytek Volkswagen
1325 St Laurent Blvd,
Renovation
OTTAWA — ONTARIO

SCALE 1:200	DRAWN BY C.V.A.
ISSUED	CHECKED BY G.L.
DATE JANUARY 2024	PROJECT NO.

DRAWING NUMBER	REV. NO.
GP–1	

TITLE

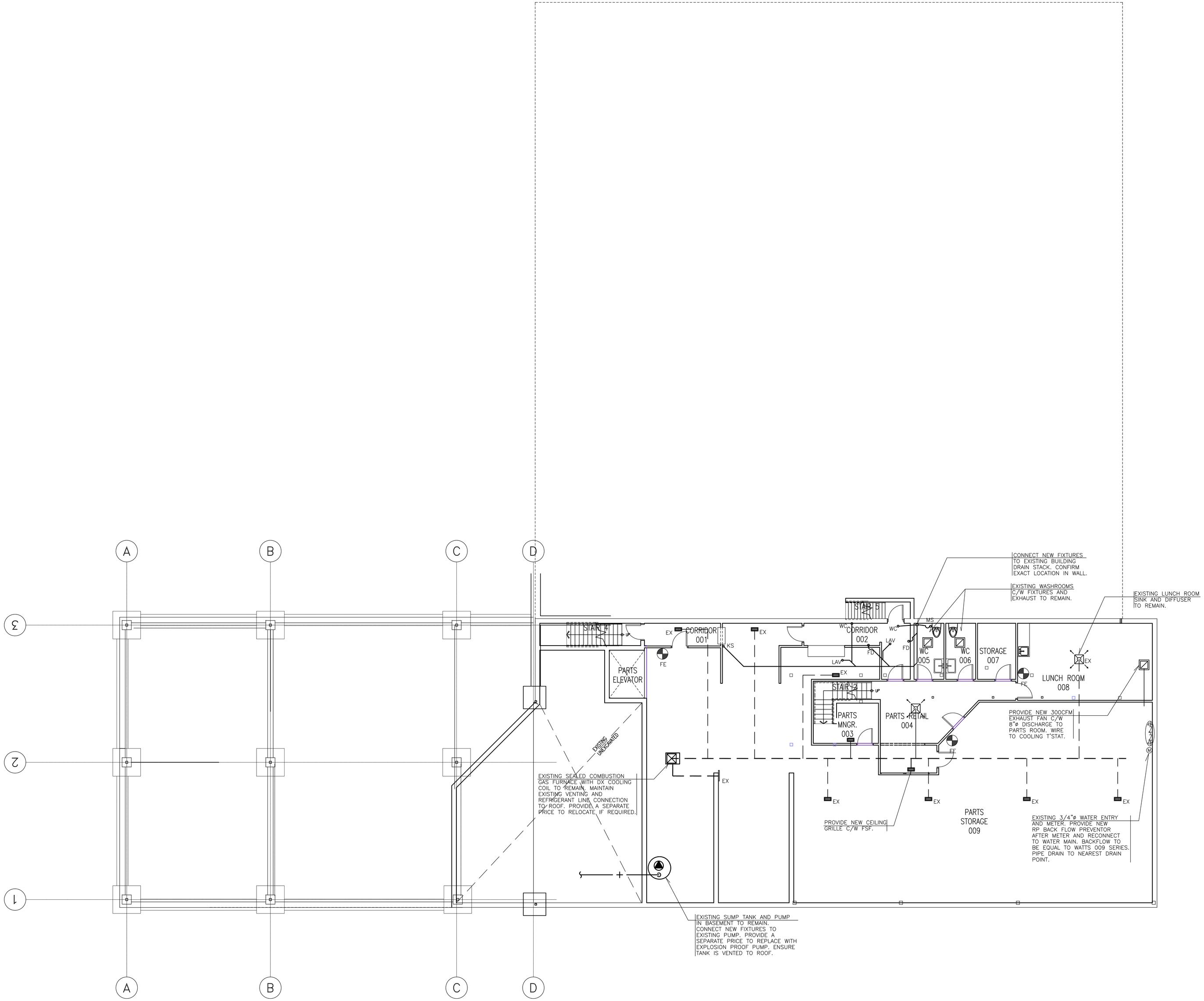
SITE PLAN
GRADING PLAN REVISIONS

Note:

1. All dimensions and conditions must be verified on site.
2. Reproduction of this drawing is not permitted without the written authorization of EVEREST ENGINEERING LIMITED.
3. Drawings are not to be used for construction or pricing unless signed by the Engineer and labelled "ISSUED FOR CONSTRUCTION"

LEGEND

	EXIST. SANITARY SEWER BELOW GRADE
	SANITARY SEWER BELOW GRADE
	SANITARY SEWER ABOVE GRADE
V	VENT
	EXIST. STORM SEWER BELOW GRADE
	STORM SEWER BELOW GRADE
	STORM SEWER ABOVE GRADE
	EXIST. COLD WATER
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	DOMESTIC HOT WATER RECIRC.
F	FIRE MAIN
G	GAS
	RISER UP
	RISER DOWN
	RISE OR DROP
	BRANCH TOP CONNECTION
	BRANCH BOTTOM CONNECTION
	UNION
C.O.	CLEAN OUT
H	HUB DRAIN
FD	FLOOR DRAIN
RD	ROOF DRAIN
	WALL HYDRANT
NFHB	NON-FREEZE WALL HYDRANT
M	WATER METER
M	GAS METER
	GATE VALVE
	GLOBE VALVE
	CHECK VALVE
PRV	PRESURE REDUCING VALVE
	STRAINER
	FIRE DEPARTMENT SIAMESE CONN.
	FIRE EXTINGUISHER
T	THERMOSTAT
H	HUMIDISTAT
	SUPPLY DUCT
	RETURN OR EXHAUST DUCT
BD	BALANCING DAMPER
	ACOUSTICALLY INSULATED DUCT
	THERMALLY INSULATED DUCT



NO.	REVISION/ISSUE	DATE
1	ISSUED FOR BUILDING PERMIT	OCT 18/23
0	PRELIMARY REVIEW	APRIL 2022

NORTH

STAMP

LICENSED PROFESSIONAL ENGINEER
C. R. VAN ALSTINE
PROVINCE OF ONTARIO

EVEREST ENGINEERING LIMITED
15 Bass Road, Lombardy, Ontario K0G 1L0
(613) 831-5454 Email: everestengineering@bellnet.ca
MECHANICAL & ELECTRICAL CONSULTING ENGINEERS

PROJECT

Bytek Volkswagen

1325 St Laurent Blvd,
Renovation
OTTAWA ONTARIO

SCALE 1:100	DRAWN BY C.V.A.
ISSUED	CHECKED BY G.L.
DATE MARCH 2023	PROJECT NO.

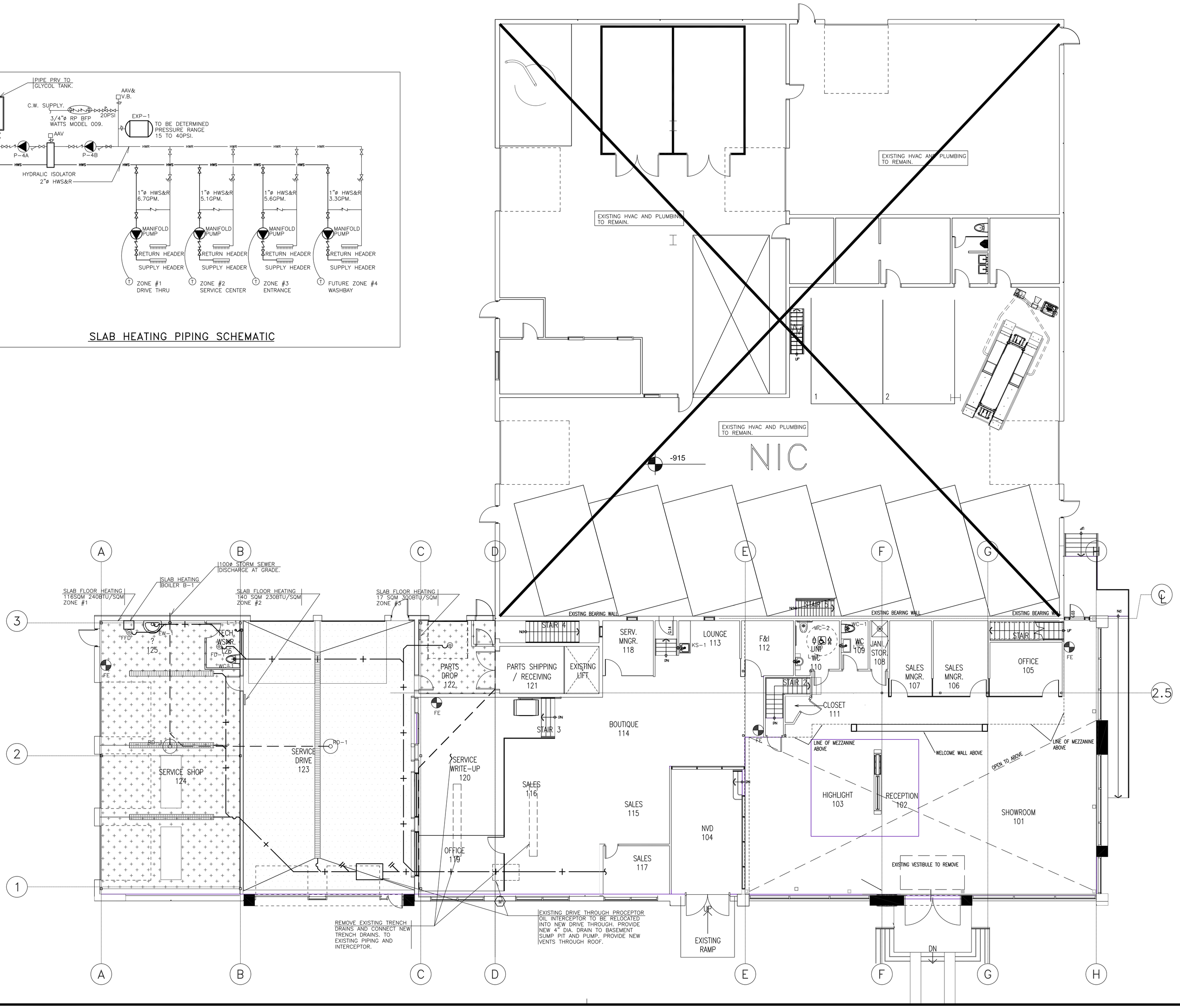
DRAWING NUMBER M-1 OF 5

REV. NO.

TITLE

BASEMENT PLAN

SLAB HEATING PIPING SCHEMATIC



Note:

1. All dimensions and conditions must be verified on site.
2. Reproduction of this drawing is not permitted without the written authorization of EVEREST ENGINEERING LIMITED.
3. Drawings are not to be used for construction or pricing unless signed by the Engineer and labelled "ISSUED FOR CONSTRUCTION"

NO.	REVISION/ISSUE	DATE
2	REVISED PER PERMIT COMMENTS	JUN 11/24
1	ISSUED FOR BUILDING PERMIT	OCT 18/23
0	PRELIMARY REVIEW	APRIL 2022

NORTH

STAMP

LICENSED PROFESSIONAL ENGINEER
C. R. VAN ALSTINE
PROVINCE OF ONTARIO

EVEREST ENGINEERING LIMITED
15 Bass Road, Lombardy, Ontario K0G 1L0
(613) 831-5454 Email: everestengineering@bellnet.ca
MECHANICAL & ELECTRICAL CONSULTING ENGINEERS

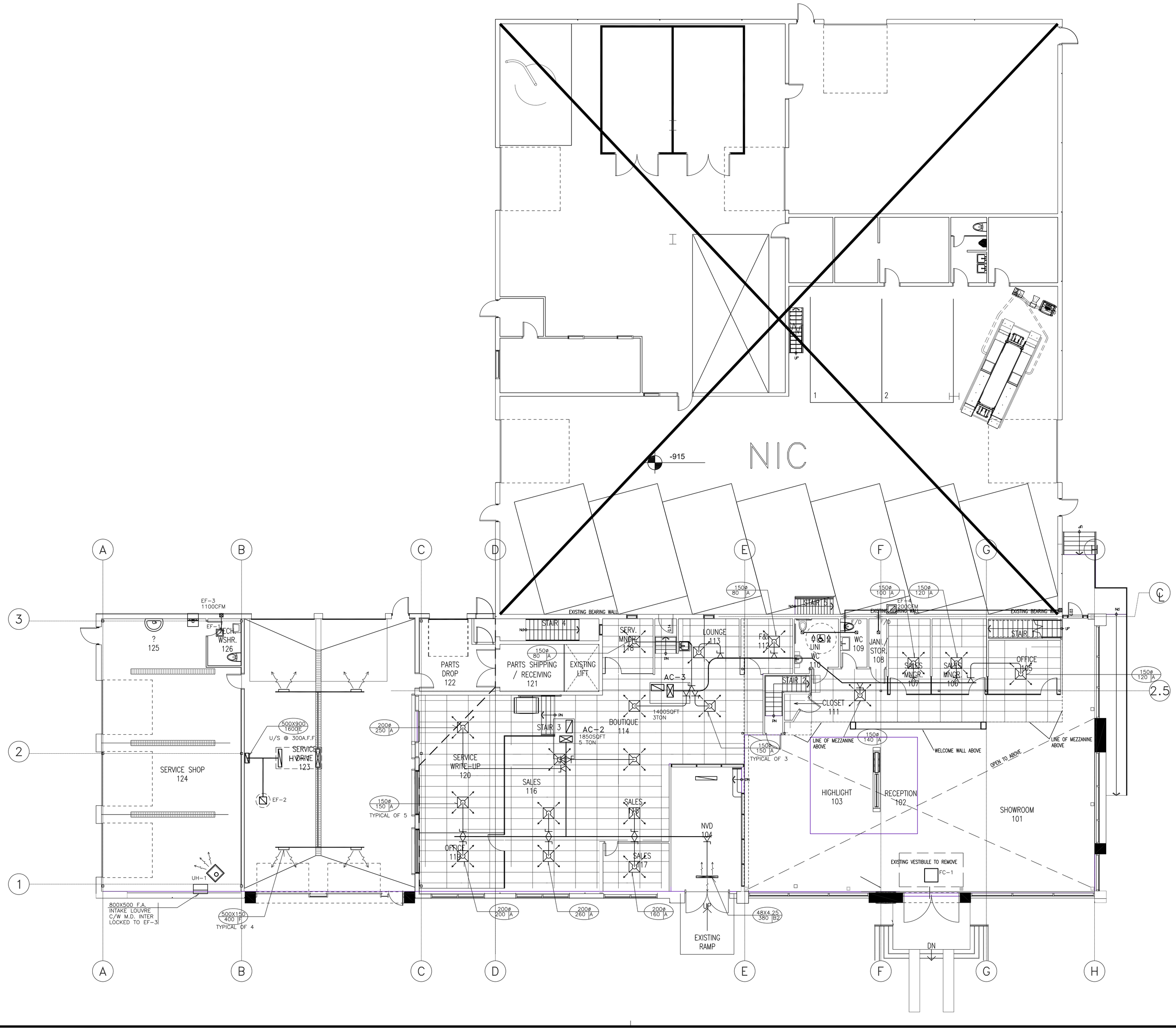
PROJECT

Bytek Volkswagen
1325 St Laurent Blvd,
Renovation
OTTAWA ONTARIO

SCALE 1:100	DRAWN BY C.V.A.
ISSUED	CHECKED BY G.L.
DATE MARCH 2023	PROJECT NO.

DRAWING NUMBER M-2 OF 5 | REV. NO.

TITLE
GROUND FLOOR PLUMBING



Note:

1. All dimensions and conditions must be verified on site.
2. Reproduction of this drawing is not permitted without the written authorization of EVEREST ENGINEERING LIMITED.
3. Drawings are not to be used for construction or pricing unless signed by the Engineer and labelled "ISSUED FOR CONSTRUCTION"

NO.	REVISION/ISSUE	DATE
2	REVISED PER PERMIT COMMENTS	JUN 11/24
1	ISSUED FOR BUILDING PERMIT	OCT 18/23
0	PRELIMARY REVIEW	APRIL 2022

NORTH

STAMP

LICENSED PROFESSIONAL ENGINEER
C. R. VAN ALSTINE
PROVINCE OF ONTARIO

EVEREST
ENGINEERING LIMITED
15 Bass Road, Lombardy, Ontario K0G 1L0
(613) 831-5454 Email: everestengineering@bellnet.ca
MECHANICAL & ELECTRICAL
CONSULTING ENGINEERS

PROJECT

Bytek Volkswagen
1325 St Laurent Blvd,
Renovation
OTTAWA — ONTARIO

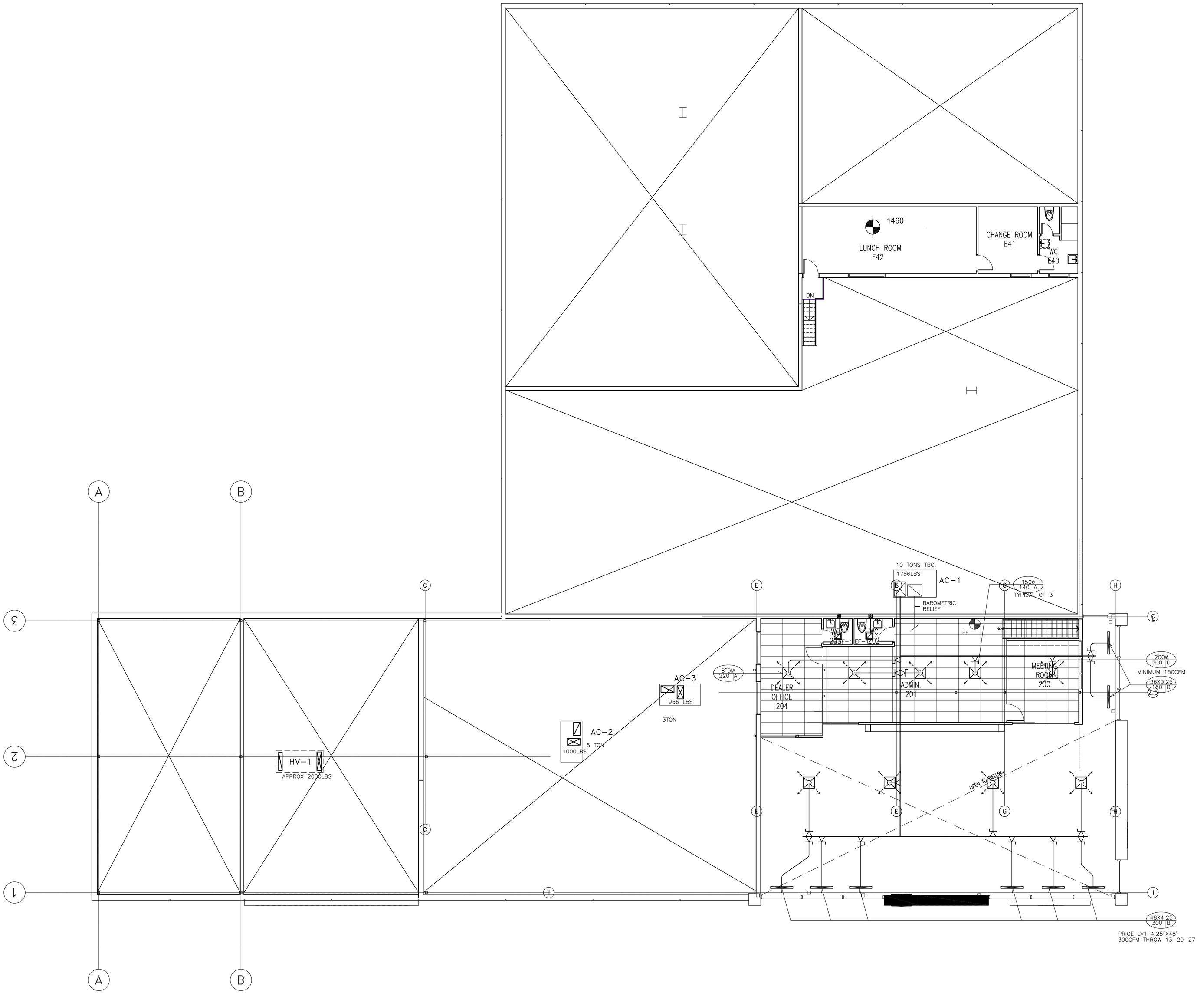
SCALE 1:100	DRAWN BY C.V.A.
ISSUED	CHECKED BY G.L.
DATE MARCH 2023	PROJECT NO.

DRAWING NUMBER M-3 OF 5

REV. NO.

TITLE

GROUND FLOOR
H.V.A.C.



Note:

1. All dimensions and conditions must be verified on site.
2. Reproduction of this drawing is not permitted without the written authorization of EVEREST ENGINEERING LIMITED.
3. Drawings are not to be used for construction or pricing unless signed by the Engineer and labelled "ISSUED FOR CONSTRUCTION"

NO.	REVISION/ISSUE	DATE
1	ISSUED FOR BUILDING PERMIT	OCT 18/23
0	PRELIMARY REVIEW	APRIL 2022

NORTH

STAMP

LICENSED PROFESSIONAL ENGINEER
C. R. VAN ALSTINE
PROVINCE OF ONTARIO

EVEREST
ENGINEERING LIMITED
15 Bass Road, Lombardy, Ontario K0G 1L0
(613) 831-5454 Email: everestengineering@bellnet.ca
MECHANICAL & ELECTRICAL
CONSULTING ENGINEERS

PROJECT

Bytek Volkswagen
1325 St Laurent Blvd,
Renovation
OTTAWA ONTARIO

SCALE	DRAWN BY
1:100	C.V.A.
ISSUED	CHECKED BY G.L.
DATE MARCH 2023	PROJECT NO.

DRAWING NUMBER M-4 OF 5 REV. NO.

TITLE
MEZZANINE PLANS

Mechanical Specifications

GENERAL

1. The general conditions and supplementary general conditions as indicated in the Architectural Specifications shall apply to Division 15.

2. Scope

   Provide complete heating/cooling ventilating system, plumbing and gas distribution as generally shown on drawings and described herein. Coordinate installation with the various trades.

   Pay for and obtain all permits, inspections, fees and licences as required by the authorities having jurisdiction. Submit drawings to the authorities as required.

   All work shall conform to the latest code requirements of the Provincial Building Code, Energy Act, Fire Marshall's Act, Municipal bylaws and other authorities having jurisdiction.

   The installation shall be in accordance with eh appropriate standards of CSA, ULC, ASPE, SMACNA, NFPA and ASHRAE. Follow all recommendations for installation outlined by the manufacturer. Drawings are to be read in conjunction with the aforementioned codes and standards with installation performed only by contractors licensed and familiar with these codes.

   Furnish Inspection Certificates prior to final payment to shown that all work conforms with the drawings and specifications and with bylaws and regulations of all authorities having jurisdiction.

3. Drawings and Specifications

   1. Project drawings and specifications are complementary to this General Specification. In cases of conflict, ambiguity or doubt apply to the Engineer for a ruling in writing prior to tender.
   2. Drawings in part are diagrammatic and intended to convey the scope of work and general layout of mechanical systems. Do no scale drawings.
   3. All jobs must be complete, performed and finished in a workmanlike manner. Work and material of an incidental nature, necessary by implication to produce the finished jobs as specified, shall be supplied even when not listed or described in detail.
   4. No deviations from the specifications or drawings will be allowed without written permission from the Engineer.

4. Certified Roughing Dimensions

   Dimensions for mechanical services shall be obtained from the equipment suppliers in advance of the building construction and shall form part of the contract drawings.

   Prior to fabrication, field measure for conflict between structural members, lighting, sprinklers, piping, diffusers and ductwork. Report discrepancies to consultant.

5. Examination of Site

   Submission of tender is deemed to be confirmation that the contractor has inspected the site and examined all contract documents. No extras will be considered for failure to comply with the above.

6. Shop Drawings

   Submit five (5) copies of shop drawings for all mechanical system components c/w descriptive data. Review of drawings indicates only that the quality and general design of the equipment is acceptable it is not an approval. Each shop drawing shall indicate:
   - Name of project
   - Name of contractor
   - Name of consultants
   - Name of component and service for which it is used.

   1. Overall Dimensions, roughing-in dimensions and clearance Dimensions.
   2. Certified performance data indicating operating flows, pressures, maximum temperature and pressures, entering and leaving conditions of air and fluid, operating weight, electrical characteristics and brake horsepower requirements.
   3. Gauge of fabricated material and type of finish
   4. Verification of space allotment, available voltages on site and the location of connections to the equipment shall be the full responsibility of the Contractor.

7. As Built Drawings

   Show all revisions and alterations of the entire mechanical contract on one set of prints and submit to engineer prior to substantial completion of job. As builts are to be kept on site and updated weekly. No changes to the original layout or specification will be permitted without written authorization from the consultant. As built drawings to be transposed onto reproducible sepias by the Contractor before final inspection for review by the consultant. Good drafting procedures are to be maintained.

8. Equipment and Maintenance Manuals

   Supply three (3) copies of maintenance and operation manuals for each piece of major apparatus and equipment. Include names of spare parts suppliers, and addresses. Copies shall be compiled in sets in hard cover three-ring-binders with an index page and indexing tabs.

9. Hoisting and Rigging

   In accordance with the construction schedule, provide for transportation of equipment and material to the site and for rigging, hauling, storage and setting in place of equipment.

10. Concealment

    Conceal all piping and ductwork in partitions, walls and between floor and ceilings. Provide access doors (for installation by others) at all valves, cleanouts, and fire dampers, etc. in finished areas or where shown.

11. Cutting and Patching

    Cutting, drilling and patching required by the passage of pipes, and ducts through existing walls, floors and roof structures does not form part of this contract, and is to be the responsibility of the general contractor.

12. Pipe and Duct Sleeves

    Supply and locate all pipe and duct sleeves, generally fabricated from 22 gauge minimum galvanized sheet steel. Where pipes are insulated, sleeves shall be of sufficient diameter to accommodate insulation.

    During new construction coordinate all new openings with general trades.

13. Escutcheon Plates

    Provide where pipes run through walls, floors and ceilings in all finished area.

14. Materials Specified

    Materials and equipment described on the drawings are used to establish a standard of materials and workmanship to which contractor and subcontractor shall adhere. Where manufacturer's trade names are used, the tender price shall be based upon those products. Contractor may list other manufacturers' equipment as alternates only at the time of tender. Submission of alternates will not be allowed after tender closing. All alternates must be approved in writing by the consultant prior to tender closing and approval issued by addendum. No addendum will be issued for this purpose within two working days of tender closing.

15. Workmanship

    Maintain on site, a competent foreman to supervise the work for the duration of the contract. Coordinate and supervise installation of all building services including gas, water and sewers and the building owner, local utilities and other trades. Coordinate start-up of equipment with other trades and ensure that all work and inspections are complete and equipment is functioning as designed.

16. Protection and Cleaning

    Protect all materials and equipment supplied during construction until the building is formally accepted by the Owner.

    Store materials and equipment delivered to the site in a safe, dry location. After installation, protect all equipment and plumbing, fixtures using shipping crates, cartons or tarpaulins.

    After completion of the contract, remove all debris, and replace any damaged components. Clean equipment, lubricate fan and motor bearings and install new air filters.

17. Access Doors

    Supply access doors for installation by others, for all concealed valves, fire dampers, cocks, cleanouts, air vents, dampers, and any other equipment which requires maintenance or adjustment.

18. Scaffolding

    Supply, erect and remove all scaffolding necessary for the performance of the work.

19. Guarantee

    The contractor shall furnish the Owner with a written guarantee for the satisfaction of all work and equipment installed under this contract and replace (at no cost to the Owner) immediately, any part which may fail or prove defective within a period of 12 months after final acceptance of the complete contract.

    No certificate given, payment made or use of the equipment by the Owner shall be construed as acceptance of defective work or improper materials.

    This general guarantee shall not act as a waiver to any specified guarantee that is greater than 12 months.

PLUMBING

1. General

   The plumbing and drainage systems shall be in accordance with the Ontario Water Resources Commission Act and with Municipal and Provincial codes and by-laws having jurisdiction.

2. Reference Standards

   1. Provide pipe fittings and valves to the following standards
      .1 Pipes and fittings: CSA, ASTM, ANSI.
      .2 Valves: ANSI.
      .3 Fixtures: CSA 815.
   2. Ontario Regulation 815.

3. Piping Installation

   Arrange and install piping, approximately as indicated. Form right angles on parallel lines with building walls. Slope piping to achieve proper drainage and air elimination. Provide Drain valves on all low points of the piping systen.

   All piping shall be new, clean and free from cutting burrs and defects in structure or threading and shall be thoroughly brushed and scale blown out. Flush and clean all piping systems after final testing.

   For domestic water service use 95-5 solder on all sizes. Provide dielectric unions at all couplings of ferrous and non-ferrous pipe. All groups of fixtures shall have shock absorbers of the sealed manufactured type, sized to suit the number of fixtures served.

4. Pipe Supports and Hangers

   Auxiliary structural members shall be provided where piping or ducts must be suspended between joists and beams. Obtain approval from the Structural Engineer before installation.

   Isolate copper piping from hanger or other piping where electrolytic action can occur.

   The hangers supporting insulated piping shall fit around the outside of the insulation. Insulation shields shall be supplied and installed.

   DO NOT suspend one pipe from another. Support spacing in accordance with ASHRAE and ASPE standards with vibration isolators to minimize vibration transmission and amplification.

5. Expansion

   Provide anchors, guides and loops to compensate for expansion and contraction of the pipework based on a 150 deg.F temperature differential. Erect piping so that the weight does not fall upon the cast connections or apparatus.

6. Testing of Piping

   Fill all new water systems with water and hydraulically test the a pressure of one and one-half time the working pressure and maintain such pressure for 24 hours. Should leaks appear during the tests, repair the defect, and retest.

7. Piping Material Schedule

Service	Material	Joint	Pressure rate
H & C.W. domestic below ground	4" & larger ductile iron cement mortar lined ton ANSI A21.51 or AWWA C151	mechanical	Plumbing Code
	3" & smaller copper type 'K'	Solder	
H & C.W. domestic above ground	Copper type 'L' or to ASTM B88	Solder	Plumbing Code
sanitary, storm, vent below ground	PVC (DWV) to CSA B181.2 ABS (DWV) to CSA B181.1 cast iron to CSA B70	Solvent welded bell & spigot	Plumbing Code
sanitary, storm, vent above ground	cast iron to CSA90 copper (DWV) to ASTM B306 (not for storm	bell & spigot or mechanical solder	Plumbing Code
building sewer	PVC-SDR-35	solvent welded	Plumbing Code

   ABS may be used only with the approval of the engineer and must comply with all codes including not passing through fire separations and it may not be installed in air plenums.

8. Valves
   1. All valves to be from one manufacturer.
   2. All valves to be suitable for repacking under pressure. Valves for throttling purposes and by-pass valves to be globe type.
   3. Unless otherwise specified or noted, valves to be ANSI Class 200 WOG or 125/200 WOG non-shock, screwed or soldered ends, malleable iron handle. In equipment rooms, provide DS & Y.
   4. Specified product for domestic cold and hot water valves:

Valves	Crane Model No. screwed	solder	flange
gate 2"& under	428	1320	---
gate 2 1/2" & over	---	---	465
globe 2" & under	7	1310	---
globe 2 1/2" & over	---	---	351
check 2" & under	37	1342	---
check 2 1/2" & over	---	---	373

   5. Fit composition disc globe valves for domestic hot water service with discs suitable for hot water maximum temperature of 170°F.

   6. Install valves for isolation of equipment at all fixtures, risers and where shown on drawings.

9. Floor Drains
   Install level and in a manner which provides a water tight seal at the floor. All traps to be protected by 1/2" Watts trap seal primers supplied from the nearest fixture. Run type 'K' copper under slabs to traps fron primers. 1 trap primer shall not serve more that 3 traps.

10. All drains to be sized and located as noted on drawings. All roof drains to have metal dome strainers (epoxy coated), extension rings and deck pans.

11. Provide backflow preventers as required by code to protect potable water supply. All hose bibs shall have vacuum breakers. Pipe all equipment requiring drain connections to the nearest floor drain or hub drain. Install drain valves at eh low points of all systems and automatic air vents at the high points of heating lines.

HEATING, VENTILATING AND AIR CONDITIONING

1. 1. Unless otherwise noted, all ductwork shall be fabricated from galvanized steel (1/4lb zinc coating min.).
      .1 Use 26ga. thick up to 12" longest side.
      .2 Use 24ga. thick up to 30" longest side.
      .3 Use 22ga. thick up to 54" longest side.
   2. All rectangular ductwork shall be manufactured from 'cross broken sheets. Provide balancing dampers at each branch take-off
   3. Details, construction, and materials not specified herein shall be as per the latest edition ASHRAE and SMACNA standards.
   4. Fabrication ductwork in a workmanlike manner, with air tight seams. Curved sections of ductwork shall have an inside radius of not less than the width of the duct.
   5. Brace and support duct in such a manner that prevents sagging or vibration when fans are operating at high speed, stopping or starting, in accordance with ASHRAE and SMACNA standards. Support hangers size, spacing and support rod diameter in accordance with ASHRAE and SMACNA standards.
   6. Joints up to 18" to standard drive slips. Joints 18" an over to be Pittsburgh seam longitudinal drive slip.
   7. Duct leakage shall no be more than 5% of total system design when system is operating at design capacity.
   8. All duct sizes listed are clear inside dimensions. Contractor to allow for additional sizing for acoustic insulation.

2. Turning Vanes

   All 90 degree elbows shall have double wall turning vanes. 90 degree elbows shall not be used in lieu of long radius elbows.

3. Access Doors

   Provide duct access doors as indicated or required for access to fire or other dampers and for service or inspection, cleanouts, and where required on specialty items. Hinged type access doors 16"x20" unless otherwise stated, compete with two sash locks. Access is required to both sides of hinged fire dampers. Submit sample for approval.

4. Dampers

   1. Splitter: Shall be manufactured from the same thickness of metal at the duct and securely hinged at the leaving edge and made of two thickness of metal so that the entering edge has a rounded surface.
   2. Balancing Provide manual dampers at each branch take-off in all low pressure ductwork. Fabricate from 18 gauge galvanized steel or heavier.
   3. Backdraft: Automatic multi-blade low leakage louvre type constructed of light gauge aluminum. Blades to be joined with a tie bar, have rustproof shafts and bronze bushings. Blades to have felt edges.
   4. Fire: Provide in-duct fusible link for 'out of air stream' type fire dampers as shown and where required by code in conformance with NFPA-90A local authorities and manufacturers' details. Equipment must bear ULC label and must not contain asbestos. Acceptable products, Tuttle & Bailey & Ruskin.
   5. Motorized: Provide multi-blade low leakage positive sealing on blades and sides equal to Ruskin.

5. Thermostats (Under 50V)

   Thermostats shall be installed and wired by Division 15. All thermostats located in public areas shall be protected by clear, key operated plastic covers. All the thermostats in entrance foyer's shall be protected with sturdy metal tamper proof, key operated covers.

6. Pitot Tube Test Holes

   1. Provide test openings in all ductwork at all fan discharges, at all

   2. Do not locate holes closer than size feet fron elbows. Space openings every 6' across the air stream. Provide neoprene plugs tor test openings.

7. Grilles and Diffusers

   To be specified on drawings and supplied with integral balancing dampers.

   Provide bird screens on all exterior louvres and duct openings as well as insect screens where shown and on all exterior opening to residential spaces.

8. Flexible Ductwork

   Shall be aluminum spiral wound with diameter as specified on drawings maximun length of individual runs to be 5'-0". Duct work to be attached with stainless steel gear clamps.

9. Air Balancing

   1. The entire installation shall be balance to deliver air flow rates as specified and indicated on the drawings.
   2. Provide a single line sketch of the air distribution systems showing Pitot tube test hole location, duct sizes and air speed measured t those locations. and the adequate air quantities.
   3. Air balancing shall be conducted by an independent certified balancing contractor approved by the consultant for this project.
   4. Final payments will be withheld until balancing report has been approved.

10. Gas Piping

    Coordinate the installation of the gas service. Gas piping to be in accordance with the Ontario Department of Labour Gas Utilization Code, Ontario Regulation 826. All pressure testing shall be done utilizing nitragen gas at (2) twice the working pressure over 24 hr period.

11. Equipment

    Secure all fans and equipment to structure with isolators to provide quiet rattle-free operation. Connect fans to ductwork with flexible fabric connectors.

INSULATION

1. Piping

   1. Apply the insulation when the required hydrostatic tests have been completed.
   2. Insulation shall be applied to clean dry pipes and ducts, all joints butted firmly and lapped with 4" wide strip of approved adhesive backed vapour proof tape.
   3. Cover all pipe fittings using fabricated section from the pipe covering.
   4. Apply an approved vapour barrier over all pipes having cold surfaces and ensure a suitable seal.
   5. Insulation jacket or adhesives not to have a flame spread rating over 25, smoke developed, and fuel contributed rating not over 50, in accordance with ULC standards and the Ontario Fire Marshall.
   6. Work shall be performed by licensed journey-man.
   7. Insulate all domestic hot water supply and return and heating supply and return lines with 1; (25mm) fibreglass pipe insulation. Insulate cold or chilled water pipes with 1" (25mm) performed fibreglass insulation with vapour barrier. No insulation is required on domestic hot or cold water exposed in suites.
   8. Exposed piping on the roof to have minimun 2" thermal insulation with waterproofing and aluminun jacket with S/S clamps and preformed elbows. Exposed piping in mechanical and service spaces to have heavy canvas

   elbows.

2. Rainwater Piping

   Provide 1" thick fibreglass flexible insulation faced with 'RFFRK' vapour barrier. Adhere insulation with 4" strips of insulation bonding adhesive at 8" O.C. Tape all joints as per suppliers instructions. Insulate all horizontal rain water leaders and underside of roof drain bodies and pans and vertical leaders.

3. Ductwork (Thermal)

   Insulate all A/C ductwork where shown with 1" fibreglass insulation and anti-sweat vapour barrier. Insulate all exterior duct work with 2" fibreglass insulation and 'RFFRK' vapour barrier c/w 2 layers of waterproofing. Insulate all exhaust or fresh air ductwork passing through an exterior wall or roof 10'-0" back from wall with 2" fibreglass insulation and anti-sweat vapour barrier.

4. Ductwork (Acoustic)

   Provide 1" thick rigid Fibreglass with a density of 2lb/cu.ft. Coat the exposed surface with black neoprene compound. Liner to be glue and screw fastened with metal edging.

Mechanical Specifications:

Heating/Cooling Rooftop Units:
Supply and install a single package combination air to air DX cooling and indirect gas heating system complete with automatic controls. Unit shall be C.S.A. and C.G.A. approved. All units shall be shipped completely factory assembled, precharged, piped and wired internally for field connections. Unit to be complete with the following options unless otherwise noted:
—economizer c/w mixing dampers and mixed air controller, automatic minimum fresh air damper and differential enthalpy controls, relief damper.
—factory fabricated roof curb to be field insulated by the contractor.
Contractor to verify roof slope prior to purchase and shall ensure that the roof curb is square and level prior to installation.
—low voltage 7 day programmable thermostat with automatic changeover. two stages heat.
—5 year compressor warranty
—plumber to provide 'P' trap on condensate drain.
—contractor to ensure roofcurb is square and level prior to installation of unit.
—high efficiency blower motor, and a main electrical disconnect.

AC—1
Manufacturer: equal to Lennox
Model no.: ZGB120S4MS1J
Heating input: 85/130 MBH
Heating output: 104 MBH
Total cooling capacity: 115 MBH
(At a.r.i. 340/360 test conditions)
Air flow: 4000 cfm at .6"E.S.P.
Fan motor: 3 h.p at 970 RPM
Electrical data: 575/3/60 MCA=18, MOCP=20A.
Unit Weight: 1757 lbs
c/w horizontal economizer with barometric relief dampers. Tstat to be complete with two stage fan control.

AC—2
Manufacturer: equal to Lennox
Model no.: SGH060H4MM3J
Heating input: 81/108 MBH
Heating output: 87 MBH
Total cooling capacity: 59 MBH
(At a.r.i. 340/360 test conditions)
Air flow: 2000 cfm at .6"E.S.P.
Fan motor: 1.5 h.p ECM
Electrical data: 575/3/60 MCA=10, MOCP=15A.
Unit Weight: 1000 lbs

AC—3
Manufacturer: equal to Lennox
Model no.: SGH036H4ES3J
Heating input: 53/70 MBH
Heating output: 57 MBH
Total cooling capacity: 36 MBH
(At a.r.i. 340/360 test conditions)
Air flow: 1200 cfm at .4"E.S.P.
Fan motor: 1.5 h.p ECM
Electrical data: 575/3/60 MCA=8, MOCP=15A.
Unit Weight: 966 lbs

HV—1:
Drive Thru area heating and ventilating unit to be equal to EngA outdoor indirect fired model FWE-60/DJX-40. The unit is to be capable of heating 1600 cfm through a temperature rise of 70°F. The unit is to be equipped with a mixing box and motorized low leak dampers, filters, insect screen, nominal 5 ton DX cooling coil, modulating gas valve, c/w all safeties and controls. The unit will be controlled by a 7 day programmable room thermostat with fan on/auto switches and summer/winter switch. The unit shall have a discharge controller to maintain a discharge temperature of 65 deg.F. during winter operation. The room thermostat on call for heating will override the discharge controller and bring on full heat until the thermostat is satisfied. During summer operation the thermostat upon call for cooling will start the condenser and provide cooling until satisfied. The motorized dampers shall be interlocked to the carbon monoxide sensor and shall open the dampers for make up air mode having 80% fresh air and closing the return air motorized dampers by a corresponding amount. Through its interlock with corresponding exhaust fan EF—2 shall start. The supply fan shall be capable of providing 1300 cfm at 0.5"E.S.P. 575/3/60 1hp. Unit to be complete with magnetic motor starter for low voltage control and a full perimeter roofcurb. Under normal operation balance the unit to provide 10% fresh air. Unit weight 2000 lbs.
FC—1
Provide a separate price to supply and install a wall mounted ductless split system and matching condenser CU—1. having a nominal 2 ton cooling capacity. Unit shall have a SEER of minimum 13. Power connection to be 120V 15A.
CU—1
Provide a separate price to supply and install a remote condensing unit matching ducless split FC—1. Unit to have a nominal cooling capacity of 2 tons with low ambient operation down to —30 deg.C. The unit to be mounted on PTP sleepers on the roof and isolated with RSR pads. Electrical conn: 208/1/60, MCA=tbd, Max fuse tbdA. Unit weight 212 lbs. Contractor to provide suction and liquid line connections to FC—1. Unit to be CSA approved and ASHRAE90.1 compliant.
UH—1
Supply and install a gas fired unit heater with sealed combustion venting equal to Lennox TUA series. Unit to have a gas input of 200MBH. c/w low voltage programmable thermostat. Suspend unit at 12' AFF or tight to U/S of ceiling. Provide venting in accordance with the manufactures listing though the roof. Provide low voltage programmable thermostat with fan switch.
B—1
Supply and install a condensing boiler for slab heating purposes equal to IBC SFT—199 having a gas input of 200MBH and a heating capacity of 10.1gpm @ 35deg.F. temp rise. Unit shall be complete with a discharge contoller to maintain the supply water temperature 120 to 140deg.F. The boiler shall be interlocked to supply pump P—1. Provide sealed combustion venting through the roof as per the manufacturers recommendations.
P—1
Supply and install a boiler circulation pump equal to Bell and Gossett Series 80 all iron 1.5X1.5X7 1750RPM having a capacity of 10gpm @ 40' of head. 120V 1ph 1/2hp. Supply pump P—1 shall be interlocked and shall start and run on call from any connected zone.
P—2
Supply and install a domestic hot water recirculation pump bronze fitted having a pumping capacity of 2 gpm at 15' head. 120V 1ph. frac. hp. Pump to be controlled by a time clock and shall run continuously durring occupied hours.
ZP—1A through ZP—3
These are the slab heating zone pumps sized and supplied by the slab heating contractor. 120V 1ph.. Piped and installed by Div. 15.
EXP—1
Supply and install an bladder type expansion tank equal to Expanflex. Size to be determined based on final system volume. Pressure range for tank to be 15 to 40psi. System temperature range to be 45 to 140 deg.F.
Slab Heating System:
Contractor to supply and install a slab heating system with inslab PEX—a piping equal to Wirsbo. System shall consist of piping, layout, headers, isolation valves, controls etc for a complete system. Controls shall consist of a floor temperature sensor, air temperature sensor. Provide a programmable thermostat for each zone interlocked to the boiler.

Grilles and Diffusers:
Contractor to supply, install and balance the grilles and diffusers as indicated. Finish to be white baked enamel unless otherwise specified. Finish to be confirmed by the architect prior to ordering.
Type A
Supply and install a square ceiling diffuser suitable for drywall or T Bar installation equal to E.H. Price model SPD with 24X24" or 12X12" face as shown, neck size as indicated. Finish to be white baked enamel, Confirm colour with architect. Balance to air quantities indicated.
Type B
Supply and install a round ceiling diffuser equal to E.H. Price model RCDA. Neck size as shown. finish to be primed for field painting. Balance to air quantities indicated.
Type C
Supply and install a fixed blade return air grille equal to E. H. Price model C60L, aluminum construction having 45 degree deflection and 3/4 inch spacing. Provide frame for mounting on return air ductwork c/w opposed blade balancing dampers. Finish to be primed for field painting. Confirm colour and finish type with architect. Size as shown.
Type D
Supply and install a return air exhaust air grille having aluminum construction equal to E. H. Price model C80 12mm eggcrate grid. Provide concealed frame for mounting in drywall or in tee bar. Finish to be white backed enamel. Confirm finish with architect. Size as shown. Balance to air quantities indicated. Provide opposed blade balancing dampers where ducted into drywall ceiling.
Type E
Supply and install a two way throw t'bar diffuser equal to E.H. Price model TBD1375 diffuser to have two 19mm width slots. Finish to be anodized aluminum confirm with architect. Balance to air quantities indicated.
Type F
Supply and install a double deflection supply air register equal to E.H. Price model C520 complete with opposed blade damper. Size as shown. Balance to air quantity indicated. Finishe to be white baked enamel, confirm finish with Architect.
Type G
Supply and install a round ceiling diffuser with helical discahrge equal to NAD model DAL358—R complete with integral balancing damper. The 6" dia. diffuser shall be model DN—400, the 8" dia. shall be model DN500, the 10" dia. shall be DN600. Finish to be baked enamel colour RAL 9016 confirm with architect. Balance to air quantities indicated.
Type H
Supply and install a linear vane diffuser equal to E.H. Price model LV1 with a 5" width and a 60" length. Provide a discharge plenum with 1/2" accoustic insulation and a 10" dia. neck, balance to an air flow of 350cfm. Provide a plaster frame and finish to be white baked enamel. Confirm colour with architect.
T.O.
Supply and install a transfer grille equal to E.H. Price model STG. Size as shown. Finish to be primed for field painting.
T.O.
Contractor to provide transfer openings above suspended ceilings to ensure adequate air flow back to unit return air duct. Transfer openings to be sized based on a face velocity of 300 fpm or as indicated.
Louvres
Unless otherwise specified all exhaust louvres to be equal to Airolite model K609 Finish to be baked enamel colour by architect. Size as noted. Louvre to be complete with insect screen and low leakage B.D.D. Fresh air louvres to be identical except no B.D.D. Provide low leakage motorized damper as noted.
FE
Supply and install a multipurpose dry chemical fire extinguisher equal to Wilson & Cousins ABC10 having a 10 lb capacity. Extinguisher shall be ULC listed and rated 4A 60BC. Provide wall mounting bracket.

Note:
1. All dimensions and conditions must be verified on site.
2. Reproduction of this drawing is not permitted without the written authorization of EVEREST ENGINEERING LIMITED.
3. Drawings are not to be used for construction or pricing unless signed by the Engineer and labelled "ISSUED FOR CONSTRUCTION"

NO.	REVISION/ISSUE	DATE
1	ISSUED FOR BUILDING PERMIT	OCT 18/23
0	PRELIMARY REVIEW	APRIL 2022

NORTH

STAMP

LICENSED PROFESSIONAL ENGINEER
C. R. VAN ALSTINE
PROVINCE OF ONTARIO

EVEREST
ENGINEERING LIMITED
15 Bass Road, Lombardy, Ontario K0G 1L0
(613) 831-5454 Email: everestengineering@bellnet.ca
MECHANICAL & ELECTRICAL
CONSULTING ENGINEERS

PROJECT
Bytek Volkswagen
1325 St Laurent Blvd,
Renovation
OTTAWA — ONTARIO

SCALE 1:100	DRAWN BY C.V.A.
ISSUED	CHECKED BY G.L.
DATE MARCH 2023	PROJECT NO.

DRAWING NUMBER M—5 OF 5 | REV. NO.

TITLE
SPECIFICATIONS

LIGHTING IS SHOWN FOR INDICATIVE PLACEMENT ONLY. CONFIRM THE LIGHTING LEVELS WITH THE LIGHTING ENGINEER.

INTERIOR LIGHT LEGEND

LT-1A	DOWNLIGHT, REFLECTOR ANGLE 15°
LT-1B	DOWNLIGHT, REFLECTOR ANGLE 40°
LT-1C	DOWNLIGHT, REFLECTOR ANGLE 60°
LT-1D	POWER TRACK MOUNTED SPOTLIGHTS
LT-2A	SUSPENEDED LIGHT FRAME RGB LED
LT-2B	SUSPENEDED LIGHT PANEL RGB LED
LT-3	DOWNLIGHT LOW CEILING
LT-4	WALL FLOODLIGHT FOR THE WELCOME WALL
LT-5	CEILING MOUNTED LIGHT FRAME RGB LED
LT-6	LIGHT CHANNEL, SUSPENDED GENERAL
LT-7	LIGHT CHANNEL, SUSPENDED NVD AND BOARDROOM
LT-8	LIGHT CHANNEL, WALL MOUNTED PUBLIC WASHROOMS
LT-9	LED HIGH BAY FIXTURE
LT-10A	FLUORESCENT WRAP AROUND
LT-10B	FLUORESCENT WASH BAY
LT-11A	FLUORESCENT STRIP LIGHT C/W WIRE MESH PARTS
LT-11B	FLUORESCENT FIXTURE - SHOP WATER PROOF
LT-12	SQUARE POT LIGHTS
LT-13	VESTIBULE
LT-17	UNDER CABINET LED STRIP

EXTERIOR LIGHT LEGEND / OUTLETS

ELT-1	LOT LIGHTING
ELT-2	WALL PACK LIGHTS
ELT-3	BOLLARD LIGHTS
	SHOWROOM FLOOR OUTLET

NOTES:

- THIS LEGEND IS TO BE READ IN CONJUNCTION WITH LIGHTING SCHEDULE.
- PLEASE PROVIDE AT LEAST ONE IN FLOOR POWER BOX UNDER EACH WORK STATION AND UNDER EACH VEHICLE.
- PROVIDE PHOTOMETRIC CALCULATIONS CONFIRMING SHOWROOM LIGHTING LEVELS. LIGHTING TO MEET MINIMUM 500 LUX STANDARDS AS NOTED ON PAGE 50 OF DCD.

CEILING FINISH LEGEND

- C1 - 2'x4' ACOUSTIC TILE CEILING WHITE
- C2 - GYPSUM BOARD CEILING PAINTED DARK GREY
- C3 - GYPSUM BOARD CEILING PAINTED WHITE
- C4 - EXPOSED STRUCTURE PAINTED WHITE

Note:
1. All dimensions and conditions must be verified on site.
2. Reproduction of this drawing is not permitted without the written authorization of EVEREST ENGINEERING LIMITED.
3. Drawings are not to be used for construction or pricing unless signed by the Engineer and labelled "ISSUED FOR CONSTRUCTION"

LEGEND

	DUPLEX RECEPTACLE
	DUPLEX RECEPTACLE., SEPERATE CIRCUIT
	SPLIT DUPLEX RECEPTACLE
	SPECIAL RECEPTACLE SIZE AS NOTED
	DIRECT CONNECTION
	DUPLEX RECEPTACLE C/W TOP SWITCHED
	DUPLEX RECEPTACLE ISOLATED GROUND
	FLUORESCENT LIGHT, CEILING MOUNTED
	FLUORESCENT LIGHT, WALL MOUNTED
	INCANDESCENT CEILING LIGHT FIXTURE
	WALL MOUNTED LIGHT FIXTURE
	SINGLE PHASE MOTOR CONNECTION
	THREE PHASE MOTOR CONNECTION
$	SINGLE POLE LIGHT SWITCH
$3	3 WAY LIGHT SWITCH
$4	4 WAY LIGHT SWITCH
	FUSIBLE DISCONNECT SWITCH
	UNFUSED DISCONNECT SWITCH
	ELECTRICAL BREAKER PANEL
	TELEPHONE OUTLET
	TELEPHONE AND DATA OUTLET
	FIRE ALARM THERMAL DETECTOR
	IONIZATION DETECTOR
	SELF CONTAINED SMOKE DETECTOR
F	FIRE ALARM PULL STATION
F	FIRE ALARM BELL
F F	FIRE ALARM PULL STATION AND BELL
	FIRE ALARM CONTROL ANNUNCIATOR PANEL
	EMERGENCY BATT. PACK W/2 HEADS
	REMOTE EMERGENCY LIGHT HEAD
	EXIT FIXTURE CEILING MOUNTED
	EXIT FIXTURE WALL MOUNTED
U/G	UNDERGROUND
W.P.	WEATHER PROOF
R	END OF LINE RESISTOR
T	TELEPHONE PULL BOX SIZE AS NOTED
C	CABLE TV. PULL BOX SIZE AS NOTED
HP	HYDRO POLE
	ELECTRIC FAN FORCED HEATER
	BASEBOARD HEATER
M	MAGNETIC MOTOR STARTER

NO.	REVISION/ISSUE	DATE
1	ISSUED FOR BUILDING PERMIT	OCT. 18/23
0	PRELIMARY REVIEW	APRIL 2023

NORTH

STAMP

REGISTERED PROFESSIONAL ENGINEER G. LASCHEWSKI PROVINCE OF ONTARIO

EVEREST ENGINEERING LIMITED
15 Bass Road, Lombardy, Ontario K0G 1L0
(613) 831-5454 everestengineering@bellnet.ca
MECHANICAL & ELECTRICAL ENGINEERS

PROJECT

Bytek Volkswagen
1325 St Laurent Blvd,
Renovation
OTTAWA ONTARIO

SCALE 1:100	DRAWN BY C.V.A.
ISSUED	CHECKED BY G.L.
DATE MARCH 2023	PROJECT NO.

DRAWING NUMBER E-1 OF 4 REV. NO.

TITLE
BASEMENT PLAN

LIGHTING IS SHOWN FOR INDICATIVE PLACEMENT ONLY. CONFIRM THE LIGHTING LEVELS WITH THE LIGHTING ENGINEER.

INTERIOR LIGHT LEGEND

LT-1A	DOWNLIGHT, REFLECTOR ANGLE 15º
LT-1B	DOWNLIGHT, REFLECTOR ANGLE 40º
LT-1C	DOWNLIGHT, REFLECTOR ANGLE 60º
LT-1D	POWER TRACK MOUNTED SPOTLIGHTS
LT-2A	SUSPENEDED LIGHT FRAME RGB LED
LT-2B	SUSPENEDED LIGHT PANEL RGB LED
LT-3	DOWNLIGHT LOW CEILING
LT-4	WALL FLOODLIGHT FOR THE WELCOME WALL
LT-5	CEILING MOUNTED LIGHT FRAME RGB LED
LT-6	LIGHT CHANNEL, SUSPENDED GENERAL
LT-7	LIGHT CHANNEL, SUSPENDED NVD AND BOARDROOM
LT-8	LIGHT CHANNEL, WALL MOUNTED PUBLIC WASHROOMS
LT-9	LED HIGH BAY FIXTURE
LT-10A	FLUORESCENT WRAP AROUND
LT-10B	FLUORESCENT WASH BAY
LT-11A	FLUORESCENT STRIP LIGHT C/W WIRE MESH PARTS
LT-11B	FLUORESCENT FIXTURE - SHOP WATER PROOF
LT-12	SQUARE POT LIGHTS
LT-13	VESTIBULE
LT-17	UNDER CABINET LED STRIP

EXTERIOR LIGHT LEGEND / OUTLETS

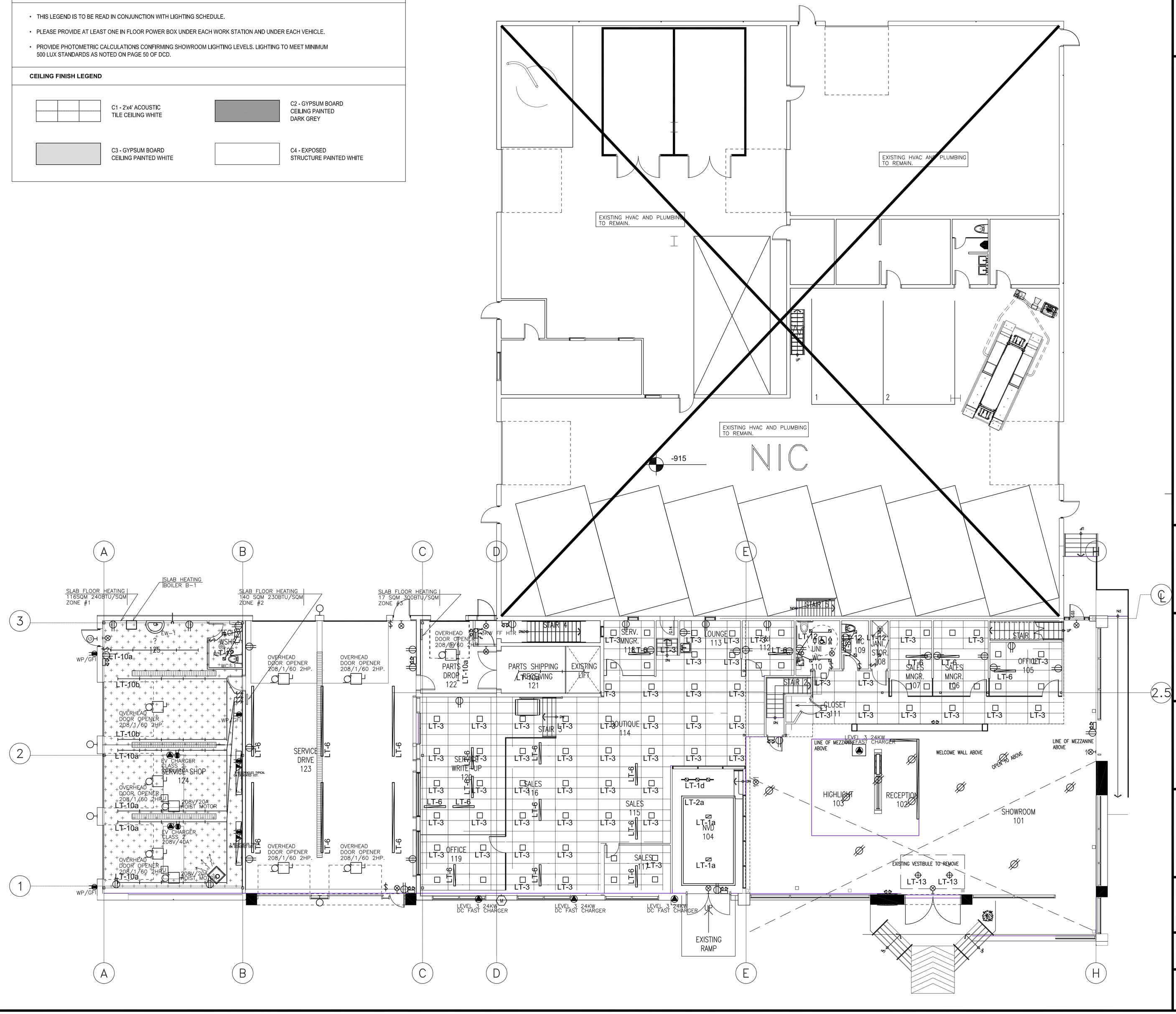
ELT-1	LOT LIGHTING
ELT-2	WALL PACK LIGHTS
ELT-3	BOLLARD LIGHTS
	SHOWROOM FLOOR OUTLET

NOTES:

- THIS LEGEND IS TO BE READ IN CONJUNCTION WITH LIGHTING SCHEDULE.
- PLEASE PROVIDE AT LEAST ONE IN FLOOR POWER BOX UNDER EACH WORK STATION AND UNDER EACH VEHICLE.
- PROVIDE PHOTOMETRIC CALCULATIONS CONFIRMING SHOWROOM LIGHTING LEVELS. LIGHTING TO MEET MINIMUM 500 LUX STANDARDS AS NOTED ON PAGE 50 OF DCD.

CEILING FINISH LEGEND

- C1 - 2'x4' ACOUSTIC TILE CEILING WHITE
- C2 - GYPSUM BOARD CEILING PAINTED DARK GREY
- C3 - GYPSUM BOARD CEILING PAINTED WHITE
- C4 - EXPOSED STRUCTURE PAINTED WHITE



Note:
1. All dimensions and conditions must be verified on site.
2. Reproduction of this drawing is not permitted without the written authorization of EVEREST ENGINEERING LIMITED.
3. Drawings are not to be used for construction or pricing unless signed by the Engineer and labelled "ISSUED FOR CONSTRUCTION"

NO.	REVISION/ISSUE	DATE
2	REVISED PER PERMIT COMMENTS	JUN 11/24
1	ISSUED FOR BUILDING PERMIT	OCT. 18/23
0	PRELIMARY REVIEW	APRIL 2023

NORTH

STAMP

REGISTERED PROFESSIONAL ENGINEER G. LASCHEWSKI PROVINCE OF ONTARIO

EVEREST ENGINEERING LIMITED
15 Bass Road, Lombardy, Ontario K0G 1L0
(613) 831-5454 everestengineering@bellnet.ca
MECHANICAL & ELECTRICAL CONSULTING ENGINEERS

PROJECT

Bytek Volkswagen
1325 St Laurent Blvd,
Renovation
OTTAWA — ONTARIO

SCALE 1:100	DRAWN BY C.V.A.
ISSUED	CHECKED BY G.L.
DATE MAR. 2023	PROJECT NO.

DRAWING NUMBER E-2 OF 4 | REV. NO.

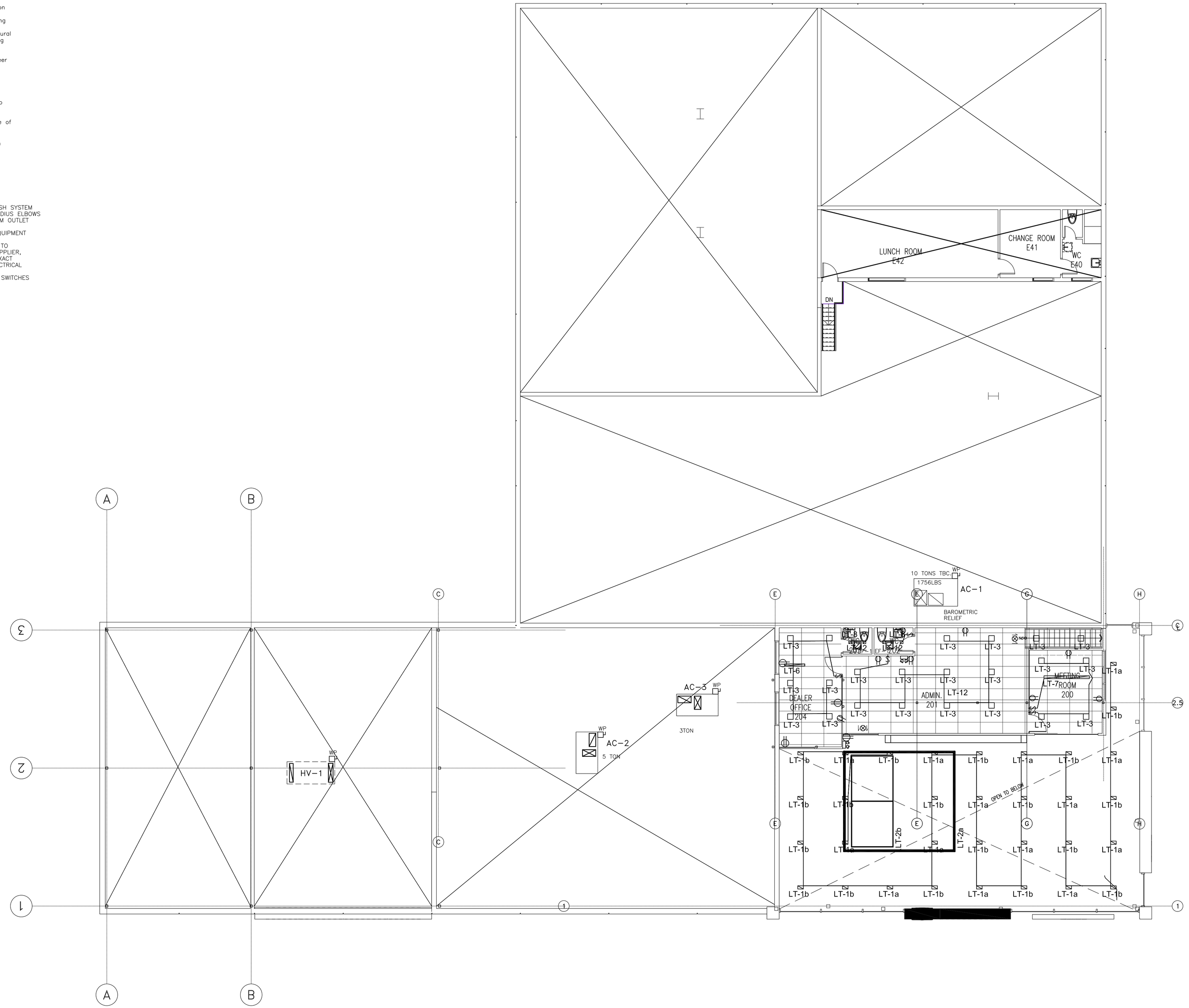
TITLE
GROUND FLOOR PLAN

Typical Electrical Notes:

1. All work shown or implied on there drawings and performed by the electrical contractor and associated sub trades shall conform to all rules, regulations and requirements of the local municipality and the latest edition of the Canadian Electrical Safety Code.
2. Electrical contractor to visit the site prior to submitting a bid price for the electrical work.
3. Electrical contractor to review all mechanical architectural and structural drawings and be responsible for coordinating with other trades.
4. All materials, workmanship and equipment used by electrical contractor shall meet the approval of the engineer and/or owner. The electrical contractor will be obliged to rectify disapprovals to the satisfaction of the engineer and/or owner at no extra cost to project.
5. Electrical contractor to ensure that all wire/cable sizes are in accordance with the safety code in regards to voltage drop and increase wire/conduit sizes to suit at no extra cost to the project.
6. Hydro allowance paid by owner where required.
7. All wiring to be copper with smallest permissible size of #12 AWG and 19 mm conduit unless otherwise noted.
8. Obtain permit and pay all fees for inspections.
9. In no case will exposed wire/conduit be acceptable in finished areas.

ADDITIONAL NOTES:

1. PROVIDE A 1"ø CONDUIT WITH NYLON PULLCORD FOR CASH SYSTEM OUTLETS BACK TO TELEPHONE BACKBOARD. USE LONG RADIUS ELBOWS
2. PROVIDE A 3/4"ø CONDUIT WITH NYLON PULL CORD FROM OUTLET TO CEILING PLENUM ON ALL TELEPHONE OUTLETS.
3. CONTRACTOR TO COORDINATE EXACT LOCATION OF ALL EQUIPMENT WITH ARCHITECTURAL AND KITCHEN EQUIPMENT DRAWINGS.
4. CONTRACTOR PRIOR TO STARTING HIS WORK, IS OBLIGED TO COORDINATE HIS WORK WITH THE KITCHEN EQUIPMENT SUPPLIER, AND MECHANICAL CONTRACTOR AND SHALL COORDINATE EXACT VOLTAGE AMPERAGE, MOUNTING HEIGHT AND TYPE OF ELECTRICAL CONNECTION FOR EACH PIECE OF EQUIPMENT.
5. SUPPLY AND INSTALL LAMACOID PLATES OVER THE LIGHT SWITCHES TO INDICATE THEIR USE AS SHOWN ON THE DRAWINGS.



Note:
1. All dimensions and conditions must be verified on site.
2. Reproduction of this drawing is not permitted without the written authorization of EVEREST ENGINEERING LIMITED.
3. Drawings are not to be used for construction or pricing unless signed by the Engineer and labelled "ISSUED FOR CONSTRUCTION"

NO.	REVISION/ISSUE	DATE
1	ISSUED FOR BUILDING PERMIT	OCT. 18/23
0	PRELIMARY REVIEW	APRIL 2023

NORTH

STAMP

REGISTERED PROFESSIONAL ENGINEER G. LASCHEWSKI PROVINCE OF ONTARIO

EVEREST ENGINEERING LIMITED
15 Bass Road, Lombardy, Ontario K0G 1L0
(613) 831-5454 everestengineering@bellnet.ca
MECHANICAL & ELECTRICAL ENGINEERS

PROJECT

Bytek Volkswagen
1325 St Laurent Blvd,
Renovation
OTTAWA ONTARIO

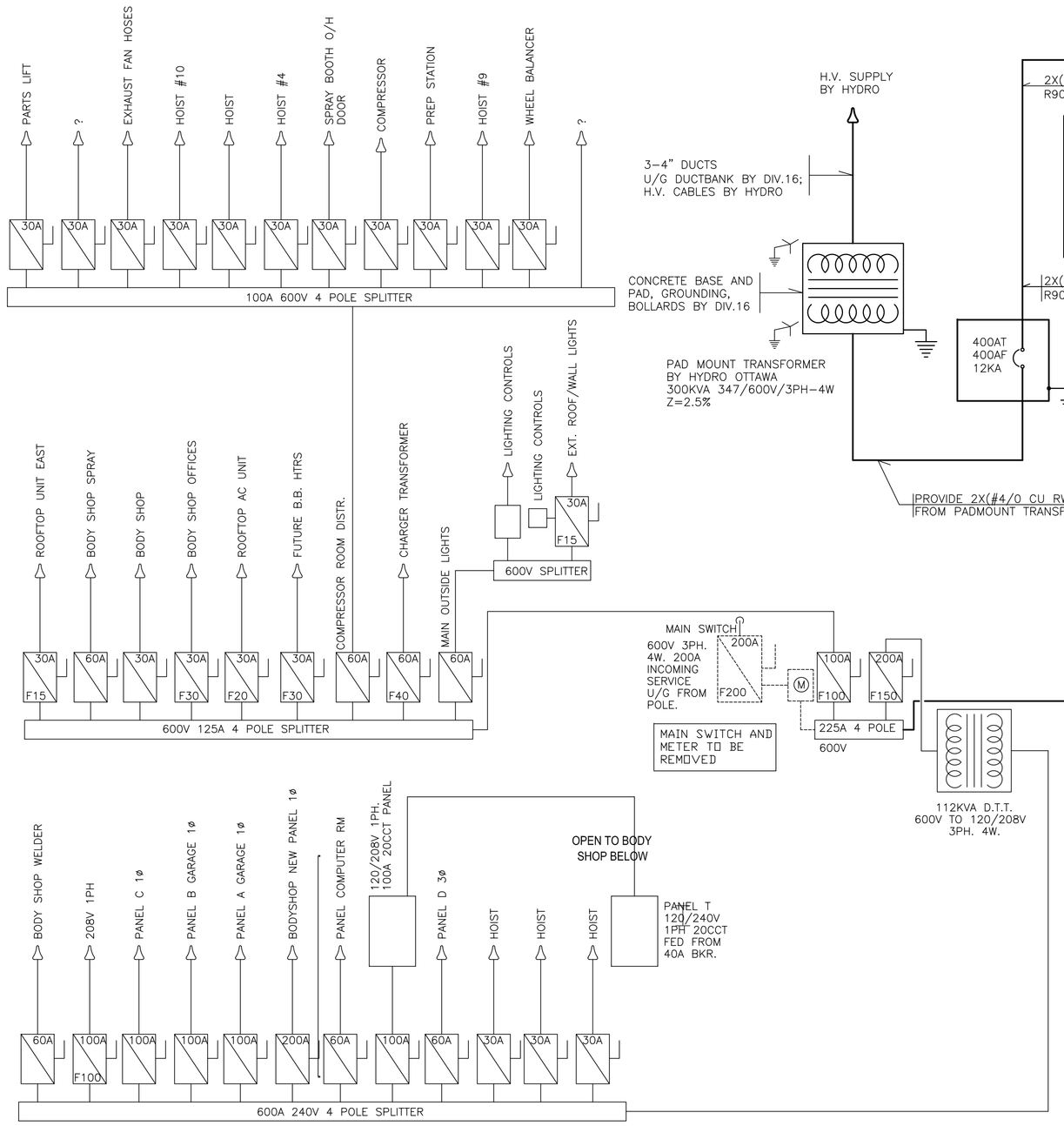
SCALE	1:100	DRAWN BY	C.V.A.
ISSUED		CHECKED BY	G.L.
DATE	MAR. 2023	PROJECT NO.	

DRAWING NUMBER E-3 OF 4

REV. NO.

TITLE

SECOND FLOOR PLAN



SINGLE LINE DIAGRAM
EXISTING AND REVISED

Electrical Specifications

1. General Conditions

a) The Electrical contractor shall furnish all labour, material, tools, equipment, etc., required to complete wall work shown and implied on the drawings and herein specified. The work shall be in accordance with rules and regulations of all authorities having legal jurisdiction items not specifically called for bu required to complete the intended installation.

b) The Engineer reserves the right to approve the quality of material and workmanship and to call for any tests which he deems necessary during the progress of the work and a complete test of each system at the completion of the work. The cost of such tests are to be considered as part of the electrical contract.

c) The electrical contractor shall comply with the general condition of the contract.

d) Electrical contractor to review all mechanical architectural and structural drawings and be responsible for coordinating with other trades.

2. Scope of Work

The work shall consist of, but not limited to the following:

a) Lighting and power distribution system as shown on the drawings.

b) Supply and installation of lighting fixtures and lamps, switches and receptacles.

c) Motor circuits.

d) All necessary wiring and connections for a complete installation.

e) Connection of all mechanical equipment as shown on the drawings.

f) Empty conduit systems for telephone, communications and TV (complete with 1/4" poly pull rope in all underground conduit)

g) All excavation and backfill will be by the General Contractor.

h) Local hydro service charges will be paid directly by the Owner.

i) Baseboard and force flow heaters as indicated on the drawings.

3. Codes, Permits And Inspections.

a) This contractor shall obtain all required permits, inspections, etc., and pay for same as required.

b) All permits shall be delivered to the Owner at the completion of work.

4. Drawings

This contractor shall prepare at his own expense any large scale of working drawings which may be required by the examining authorities.

5. As Built Drawings

This contractor shall keep a separate set of prints on the site and note all changes and deviations from the original design. Two sets of drawings showing all as-built conditions shall be forwarded to the Engineer at the completion of this contract and be fore applying for final payments.

6. Shop Drawings

Submit 5 copies of manufacturer's shop drawings for approval, these shop drawings will consist of distribution equipment, lighting fixtures, emergency lighting and other special equipment. Submit shop drawings to Engineer no later than 2 weeks after the awarding of the contract.

7. Examination of Site

a) This contractor shall visit the site of the project and familiarize himself with all conditions pertaining to his work prior to submitting his tender.

b) Any deviation from the distribution diagram(s) shown on drawings, shall be reported to the Engineer's representative before submitting tender.

8. Construction Schedule

This contractor shall schedule and perform his work to meet the completion schedule. Any overtime work shall be included in his tender.

9. Revisions and Extras

No additional money over the contract price will be paid unless an approved change order is issued by the Engineer Claims for extras shall be submitted with a complete breakdown of material, labour, hourly rates, etc.

10. Clean Up

This contractor shall be responsible for cleaning of his installation. He shall clean lighting reflectors, lenses and other lighting surfaces that have been exposed to construction dust and dirt. He shall touch up any scratches on painted equipment, using rust paint where necessary.

11. Cutting And Patching

Electrical contractor shall be responsible for all cutting and patching, openings, etc., but he shall install sleeves or openings required in sufficient time to prevent unnecessary cutting.

12. Delivery Dates

This contractor shall place an order for all material and equipment immediately after signing of the contract. He shall submit a list of delivery dates for each type of equipment within 10 days of the awarding of the contract. the list shall include manufacturers' names.

13. Equipment And Material

All equipment all material unless specifically noted otherwise shall be new and without blemish or defect. All material and equipment shall be of the type subject to factory mutual, Underwriters' Laboratories of Canada or Canadian Standards Associations Inspection and approval and shall bear U.L.C. or C.S.A. labels.

14. Testing

Perform Test on each system to the satisfaction of the Engineer and submit test results for approval prior to the final acceptance of the work.

a) panels shall be balanced within 5%.

b) test power system neutral for grounds. Remove all grounds until neutral meggers clear.

c) test all system grounding conductors for phase to ground loads, ammeter shall read less than one ampere.

d) voltage drop calculations shall be done prior to installation of any wiring.

15. Demonstration of System

Demonstrate the function and operation of each system to the maintenance staff or Owner's representative.

16. Identification

Provide lamacoid identification nameplates. These shall be black with white engraved letters and shall be installed with screws on all equipment, disconnect switches, panels, etc., indicated the load served. Each panel shall have a typewritten directory showing lights or equipment connected on each circuit. Directories shall be mounted on the inside of the panel door with a transparent plastic cover.

17. Co-Ordination

This contractor shall be responsible for coordinating the installation of equipment, conduit work, lighting fixtures, etc., with the other trades prior to the actual installation

18. Accessibility

All work shall be installed so as to be readily accessible for operation maintenance and repairs.

19. Responsibility

This trade shall be responsible for his work until the completion and final acceptance, for replacing and item, that may be defective, damaged lost or stolen without additional cost to the Owner or delay to the completion of the project.

20. Conduit And Fittings

a) Conduit sizes shall be as indicated on the drawings and shall not be reduced in size without authorization. Conduit in finished area shall be concealed.

b) Unless otherwise noted, conduits for concealed branch circuit wiring shall be in EMT or flexible metal conduit attached to the structure.

c) Conduit installed outdoors or in damp location shall be rigid galvanized or rigid PVC and provide sealing fittings where conduit passes through outside wall and or roof.

d) Clean interior of all conduits to remove water ad debris before pulling wire.

21. Guarantee

This contractor shall guarantee all work and apparatus installed under this contractor against all defects of workmanship and material for a prior of one year after acceptance of same by Owner.

22. Pull And Junction Boxes

a) Boxes shall be code gauge and sized to meet the electrical code requirements. Sheet steel boxes for concealed work and cast boxed for exposed work.

b) Provide barriers in boxes where different voltages are used and identify clearly.

c) Provide pull boxes on feeders at 50-foot intervals.

d) Boxes shall be supported independently of conduit.

e) Boxes installed outdoors shall be of the type weatherproof (W.P.) with gasket.

23. Installation of Outlets

The drawings show approximate location of outlets, exact locations shall be coordinated on the site with owner, architectural drawings, etc. Outlets inaccurately located shall be readjusted or relocated at the contractor's expense. Unless otherwise noted on the drawings, locate outlets as follows:

1. Receptacles and telephone outlets 12" above finished floor.
2. Outlets over counter, 42" above floor and coordinated on job.
3. Outlets in service garage area to be 48" above floor.
4. Light switches 54" above floor.
5. Confirm mounting heights in handicap accessible areas with current codes and standards.

24. Wire And Cable

a) Unless otherwise noted all wires shall be copper RW-90. No aluminum wire is to be used.

b) The minimum permissible size for branch circuit wiring shall be #12, except where special permission is given.

c) Branch wiring exceeding 100 feet to furthers outlet from a lighting panel shall be #10 at 120 volts.

d) Wires and Cables shall be rated at 1000/600 V except for low voltage control wiring.

e) All wires shall be new and delivered to the site in their original packing. Wires #10 and larger shall be stranded. Wires shall be factory identified, showing size, voltage rating and insulation type.

f) Neutral conductor shall be white throughout.

g) Provide dedicated neutrals for each 120v and 347v circuit.

h) Final connections to lighting fixtures shall originated from an outlet box - connections - fixture body to fixture body is not acceptable.

i) Code approved wire shall be for final fixture or appliance connections.

j) Where branch circuit wiring is run in partitions, ceilings, floors, etc. Armoured cable ("BX") will be accepted, depending on electrical code restrictions.

25. Connectors For Wires

Provide an approved type wire connector similar to ideal or super-nut.

26. Grounding

The entire electrical system shall be grounded and bonded in accordance with the requirements of the electrical code and local utility authorities.

27. Power Distribution Systems

a) The power distribution system shall be as shown on the drawings and as hereinafter specified.

b) Safety Switches

1. Heavy duty, fusible, quick-make, quick-break, voidable cover interlock, lockable in "OFF" position with neutral bar where required.
2. Fuse holders as required to suit rating and type fuses specified.
3. Enclosure shall be CEMA 1 except where weatherproof switches are required.
4. All switches shall be of the same manufacturer.
5. Main service switch shall be approved for such usage.

c) Panels

1. The panels shall be of the voltage indicated in the drawings complete with circuit breakers, mains shall be as shown on drawing and maximum branch breakers. Bus to be copper.
2. Flush or surface as indicated and confirmed with architectural and/or electrical floor plans complete with keyed lock, latch and directory.
3. Circuit breakers shall be thermal magnetic with bimetallic elements for the delay overload protection. Two pole breakers shall have internal common trip. Breakers shall be bolt-in field interchangeable.
4. All panels shall be of the same manufacturer
5. Provide typed panel legends showing all branch circuits.

28. Motors And Controls

Confirm all motor and starters with div. 15. Starters as shown on the drawings shall be provided by the electrical trades, electrical trades shall bring power to the motor or starter locations and terminate with a disconnect switch. All starters not provided by Division 15 to be supplied and installed by Division 16. All control low voltage wiring shall be by Division 15 the mechanical trades unless otherwise noted on drawings.

29. Wiring Devices

a) Duplex receptacles shall be ivory, grounding type rated for 15A, 120V, Bryant Cat. #5252-1 or equal. These shall have break-off line to allow for split wiring on 2 circuits.

b) Single receptacles shall be of the specification grade type.

c) Cover plated shall be ivory.

d) Telephone cover plates shall be as above except with bushing.

e) Outdoor devices shall be fitted with W.P. cover and gasket.

f) Confirm color of all coverplates, switches and receptacles, with architect/Owner.

30. Low Voltage Fuses

a) Fuse sizes shall be as indicated on the drawings. Any changes needed to convert the equipment to hold the specified fuses shall be at this contractor's expense.

b) Fuses shall be C.S.A. approved HRC. Voltage as required FORM 1, class "J" non-renewable, dual element aeroflex.

31. Lighting Fixtures And Lamps

a) Provide fixtures and lamps as indicated on the lighting schedule, these shall be completed with all necessary plaster frames, hangers, lamps, louvres, diffusers, canopies, supports, etc.

b) Contractor shall include in his tender price for fixture types specified. If an equivalent manufacturer is named, it is mandatory that the fixture be equivalent in all respects, i.e., same lens, equivalent frame, performance paint finish ballast, construction quality, etc. Alternate manufacturers or alternate fixture types must be offered as an alternate only, to the base bid, with the amount of savings stated in the tender. Low bidder will be determined on the basis of the specified items not on the "alternate savings".

c) Florescent ballasts shall be rated over 90% power factor, sound rated "A", rapid start, internal thermal protection, electronic with THD<20%.

d) Fluorescent, Metal Halide and incandescent lamps shall be the type indicated on lighting schedule.

e) Co-ordinate the mounting and locating of luminaires with owner and other trades to avoid conflicts.

f) Junction boxes in suspended ceiling spaces shall be accessible through the fixtures or by removable ceilings.

g) Where required by local authorities, provide safety chain on fixtures.

h) Where light fixtures pierce fire rated ceilings, the electrical contractor shall be responsible for providing fire rated boxes over light fixtures to maintain the integrity of the fire separation.

i) Confirm mounting heights and locations of all light fixtures with architectural/designers drawings.

j) Metal halide ballasts to be HPF, outdoor units to be rated for -40 C. Indoor units are to be equipped with quartz standby.

32. Telephone, Communication and TV Conduit System

a) Provide proper Conduit sizes as shown. on the drawings or required by the utility companies.

b) This contractor shall provide and/or co-ordinate the types, sizes and location of the incoming conduits with the telephone and TV company.

c) Conduit (other than incoming) shall be EMT (thinwall). (refer to the conduit section of this specification.)

d) A poly rope shall be pulled and left in each conduit run to facilitate the future pulling of wires.

33. Miscellaneous

Aluminum conduit shall not be used in concrete slab. Where EMT conduit is used in slab use concrete tight couplings.

34. Notes

The drawings for the work accompanying these specifications are made as accurately as possible, but absolute accuracy of dimensions cannot be guaranteed. They are intended to supplement and simplify the general contract drawings. No claim for extra payment on account of the difference of actual and estimated dimensions shall be allowed.

In the case of discrepancy of figure dimensions on the drawings, the matter shall be immediately submitted to the engineers for their decision. Without the decision, the discrepancy shall not be adjusted by the contractor save at his own risk, and in the settlement of any complications arising from such adjusting, the sub-contractor shall bear all extra expense involved.

Circuiting shown on drawings is not intended to shown actual circuit numbers, This circuiting is intended to show lighting or receptacle grouping only. Circuiting is to be done in accordance with the latest edition of the electrical safety code of Ontario. Where circuit numbers are not shown, the contractor shall be responsible to provide power to the equipment and confirm source of power with Engineer at no extra cost to the contract.

35. Heaters

a) Supply and install all electric heaters as shown. on electrical drawings.

b) Provide thermostats as shown. on drawings. Where no thermostat is shown. on the drawings , assume there is to be a wall mounted thermostat and 30 feet of wire. Confirm location with Engineer.

c) Provide disconnect switches for fan forced heaters as required.

d) Contractor shall confirm voltages with electrical service drawings.

e) Contractor shall confirm on site that heaters will fit in locations shown on drawings in case of discrepancies in building construction. Notify Engineer immediately after discovery of discrepancies.

36. Contactors

a) Lighting contactors, EEMAC 1 enclosure, 600vac/30amp/3pole c/w 347vac/60hz coil.
b) Photocell, outdoor rated at 347vac/1500va to control all contactor coils for outdoor lighting.

Note:

1. All dimensions and conditions must be verified on site.
2. Reproduction of this drawing is not permitted without the written authorization of EVEREST ENGINEERING LIMITED.
3. Drawings are not to be used for construction or pricing unless signed by the Engineer and labelled "ISSUED FOR CONSTRUCTION"

NOTE:
HORSEPOWER AND AMPACITIES OF GARAGE EQUIPMENT IS ASSUMED FOR ESTIMATING AND DESIGN PURPOSES. CONFIRM ALL EQUIPMENT WITH OWNER PRIOR TO ROUGH-IN.

NOTES:
1. All type 'A' baseboard heating to be on separate contactor or panel and shall be de-energized at an outdoor temperature above 5 deg.C. and at night by a time clock.
2. All exterior lighting, & powered signage to be controlled by a photocell and contactor. Contractor to provide a relay with sufficient number of poles. Provide an manual override switch for the photocell.
3. Contractor to provide sufficient breakers and shall increase the panel size as required to accomdate all equipment shown plus a 10% spare capacity for each panel.
4. Contractor to circuit in accordance to electrical code and balance loads on all 3 phases.
5. Contractor to increase the wire size as required to compensate for any voltage drops beyond allowable by code.

NO.	REVISION/ISSUE	DATE
1	ISSUED FOR BUILDING PERMIT	OCT. 18/23
0	PRELIMARY REVIEW	APRIL 2023

NORTH

STAMP

REGISTERED PROFESSIONAL ENGINEER
G. LASCHEWSKI
PROVINCE OF ONTARIO

EVEREST
ENGINEERING LIMITED
15 Bass Road, Lombardy, Ontario K0G 1L0
(613) 831-5454 everestengineering@bellnet.ca
MECHANICAL & ELECTRICAL
ENGINEERS

PROJECT

Bytek Volkswagen
1325 St Laurent Blvd,
Renovation
OTTAWA ONTARIO

SCALE	DRAWN BY
NTS	C.V.A.
ISSUED	CHECKED BY G.L.
DATE MAR. 2023	PROJECT NO.

DRAWING NUMBER E-4 OF 4 | REV. NO.

TITLE
ROOF PLAN