INDUSTRIAL WAREHOUSE ALTERATION AND ADDITION

10533 KEELE STREET VAUGHAN, ON

ISSUED FOR CLIENT REVIEW

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
ABBREVIATIONS	
E	EXISTING TO REMAIN
R	EXISTING TO BE DEMOLISHED/REMOVED
ER	EXISTING IN RELOCATED POSITION
RR	REMOVE AND RELOCATE
RL	REMOVE AND RELOCATE
C	CEILING MOUNTED CONNECTION
W	WALL MOUNTED CONNECTION
F	FLOOR MOUNTED CONNECTION
℄	CENTRE LINE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
O/C	OVER COUNTER
U/C	UNDER CABINET
U/F	UNDER RAISED FLOOR
CCT	CIRCUIT
CTE	CONNECT TO EXISTING
ARCI	ARC FAULT CIRCUIT INTERRUPTER
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
IG	ISOLATED GROUND
TL	TWIST LOCK
TR	TAMPER RESISTANT
WG	WIRE GUARD
WP	WEATHER PROOF
R/I	ROUGH-IN ONLY
NIC	NOT IN CONTRACT
SIM.	SIMILAR TO
TYP.	TYPICAL
ABBREVIATIONS - CODES AND STANDARDS	
ANNOTATIONS	
CL	CLOSET
WR	WASHROOM
FIRE PROTECTION	
SPK	SPRINKLER HEAD
FHC	STANDPIPE FIRE HOSE CABINET
HVAC	
⊙	THERMOSTAT OR TEMPERATURE SENSOR
EBBH	ELECTRIC BASEBOARD HEATER (SUPPLY AND INSTALL BY 'EC')
EFFH	FORCED FLOW HEATER (SUPPLY AND INSTALL BY 'EC')
ERV	ENERGY RECOVERY VENTILATOR
HRU	HEAT RECOVERY UNIT
MUA	MAKE-UP AIR UNIT
EF	EXHAUSTS FAN - PROVIDE RELAY
CONDUIT AND BOXES	
—⊐	CONDUIT WITH END BUSHING
—○	CONDUIT UP
———	CONDUIT CONTINUES

JB	JUNCTION BOX
PB	PULL BOX
CONNECTIONS TO EQUIPMENT	
DW	DISHWASHER
FR	FRIDGE
MW	MICROWAVE
HD	HAND DRYER. ALLOW UP TO 208V-1PH-20A
PSC	PLUMBING SENSOR CONTROL (TOUCHLESS FAUCETS)
PTP	PLUMBING TRAP PRIMER
▲	DIRECT CONNECTION, 1 OR 3 PHASE CONNECTION, 'EC' TO PROVIDE ALL ACCESSORIES TO SUIT.
W	ADJACENT TO 3-PHASE DIRECT CONNECTION, DENOTES WALL SYSTEM FURNITURE FEED FOR POWER AND COMMUNICATIONS.
LIGHTING CONTROLS REFER TO SPECIFICATIONS AND RESPECTIVE SCHEDULES FOR EXACT REQUIREMENTS	
$	SWITCH OR OTHER USER INTERFACE DEVICE AS DESCRIBED ON LIGHTING CONTROLS SCHEDULE.
DIM	ADJACENT TO SWITCH, DENOTES DIMMING SWITCH.
K	ADJACENT TO SWITCH, DENOTES KEY SWITCH.
M	ADJACENT TO SWITCH, DENOTES MASTER CONTROL FOR ALL LUMINAIRES IN A ROOM OR SPACE, OR AS NOTED.
OC	WALL MOUNTED AND/OR CEILING MOUNTED SWITCH/OCCUPANCY SENSOR. 'PASSIVE INFRARED', DT DENOTES 'DUAL PASSIVE INFRARED/ULTRASONIC'. LINE VOLTAGE TO SUIT CONTROLLED CIRCUIT.
RP	RELAY PANEL
PP	POWER PACK
3	THREE WAY LIGHTING DEVICE (SWITCH/DIMM.)
T	TIMER SWITCH.
P	PHOTOCELL SENSOR.
PC	PHOTOCELL SENSOR. 'PC' DENOTES CLOSED LOOP PHOTOCELL CONTROL, 'PO' DENOTES OPEN LOOP PHOTOCELL CONTROL
DISTRIBUTION EQUIPMENT	
▬	SURFACE MOUNTED LIGHTING AND RECEPTACLE PANELBOARD
▬	RECESSED RECEPTACLE PANELBOARD
◻	DISCONNECT SWITCH
POWER RECEPTACLES AND BOXES	
⊜	120V GROUND DUPLEX RECEPTACLE.
⊞	120V QUAD RECEPTACLE.
⊙	SPECIAL RECEPTACLE. VERIFY OUTLET REQUIREMENTS PRIOR TO ROUGH-IN.
⊜	120V DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER TOP OR AS INSTRUCTED ON SITE.
⊜	SPLIT RECEPTACLE IN GUEST SUIT (SEPARATE LINE/ NEUTRAL)
FHC	FLOOR (UNDER GROUND) FLOOR BOX C/W 2 RECEPTACLES AND 2 VOICE AND DATA OUTLETS
DETAIL REFERENCES	
1	SHEET KEYNOTE
1	REVISION NUMBER

LIGHTING FIXTURES SYMBOLS IN ACCORDANCE WITH IES DG-3-00 WHERE NOT DETAILED OTHERWISE HERE. REFER TO LIGHTING FIXTURE SCHEDULE FOR FURTHER DETAILS AND EXACT FIXTURE REQUIREMENTS.	
▭	SURFACE OR PENDANT MOUNTED LINEAR LUMINAIRE
▱	RECESSED MOUNTED LUMINAIRE
▭	WALL MOUNTED LINEAR LUMINAIRE
▭	SUSPENDED PENDANT LUMINAIRE: PENDANT, CHAIN, STEM, OR CABLE HUNG AS NOTED IN SCHEDULE.
▨	AS ABOVE, CONNECTED TO NIGHT LIGHT CIRCUIT
▨	AS ABOVE, CONNECTED TO EMERGENCY LIGHTING CIRCUIT
⊙	RECESSED DOWNLIGHT
⊙	ROUND PENDANT LUMINAIRE
EM	CONNECTED TO EMERGENCY CIRCUIT
NL	CONNECTED TO NIGHT LIGHT CIRCUIT
Z1, Z2, ETC.	DENOTES ZONING/CIRCUTING ASSIGNMENTS FOR LUMINAIRES AND CONTROLS IN THE SAME SPACE.
EMERGENCY LIGHTING REFER TO EMERGENCY LIGHTING FIXTURE SCHEDULE FOR EXACT FIXTURE REQUIREMENTS.	
▣	CEILING OR WALL MOUNTED ILLUMINATED RUNNING MAN EXIT SIGN. SHADED AREA INDICATES ILLUMINATED FACE/HARROWS AND EXACT DIRECTIONS TO BE COORDIANTE ONSITE. PROVIDE DIRECTIONAL ARROWS AS INDICATED ON PLANS. COORDINATE WITH 'OBC' AND WITH ARCHITECTURAL PLANS TO SUIT.
RM	DENOTES 'RUNNING MAN' STYLE PICTOGRAM EXIT SIGNS
SL	DENOTES 'SELF-LUMINOUS' EXIT SIGN
▣	EMERGENCY LIGHTING BATTERY UNIT.
●	ONE AND TWO HEAD WALL MOUNTED EMERGENCY LIGHTING REMOTE UNITS.
⊘	RECESSED EMERGENCY REMOTE HEAD.
EM	DENOTES 'EMERGENCY"
COMMUNICATIONS (DIV.16 TO PROVIDE 3/4"C C/W PULL STRING PER OUT)	
●	SYSTEM FURNITURE FEED.
W	ADJACENT TO SYSTEM FURNITURE FEED, DENOTES WALL SYSTEM FURNITURE FEED FOR COMMUNICATIONS.
◀	WALL MOUNTED DATA (D) OR VOICE (V) OUTLET. PROVIDE 1V AND 1D UNLESS NOTED OTHERWISE.
◀	WALL MOUNTED VOICE (TELEPHONE) OUTLET. PROVIDE 1V UNLESS NOTED OTHERWISE.
◁	WALL MOUNTED DATA OUTLET. PROVIDE 1D UNLESS NOTED OTHERWISE.
TV	WALL MOUNTED TELEVISION OUTLET.
ACCESS CONTROL	
▣	BARRIER FREE DOOR OPERATOR PUSH BUTTON
PB	PUSH BUTTON
WS	TOUCHLESS "WAVE SWITCH" FOR DOOR OPERATOR CONTROL

SINGLE LINE DIAGRAM	
⌒	CIRCUIT BREAKER
⌒	DISCONNECT (UNFUSED)
▭	FUSE
▣	METER
≋	TRANSFORMER
ATS	AUTOMATIC TRANSFER SWITCH
C	CONTACTOR
DP	DISTRIBUTION PANELBOARD
LP	LIGHTING PANELBOARD
MCB	MOBILE CONNECTION BOX
MTS	MANUAL TRANSFER SWITCH
RP	RECEPTACLE PANELBOARD
SPD	SURGE PROTECTIVE DEVICE
STS	STATIC TRANSFER SWITCH
SWBD	SWITCHBOARD
TX	TRANSFORMER
UPS	UNINTERRUPTIBLE POWER SUPPLY

THIS LEGEND IS GENERIC. ALL SYMBOLS LISTED MAY NOT BE APPLICABLE FOR THIS PROJECT. REFER TO FLOOR PLANS TO DETERMINE USED DEVICES AND EQUIPMENT.

DRAWING LIST

E00	ELECTRICAL LEGEND
E01	ELECTRICAL SPECIFICATION
E02	ELECTRICAL SITE PLAN (NOT ISSUED)
E03	GROUND FLOOR LIGHTING PLAN
E04	GROUND FLOOR POWER AND SYSTEM PLAN
E05	2ND FLOOR LIGHTING PLAN
E06	2ND FLOOR POWER AND SYSTEM PLAN
E07	ROOF PLAN

Contractor must check and verify all dimensions and be res- ponsible for same, reporting any discrepancies to the Engineer before commencing work.
Prints shall not be used for construction until signed 'Approved For Construction' by the Engineer.
Prints are not to be scaled.
All drawings, prints and specifications are the property of the Engineer and shall be returned to him on completion of the work.
All work shall be performed in accordance with the latest edition of the ONTARIO BUILDING CODE, NATIONAL BUILDING CODE and regulatory regulations of the City Of Vaughan Building Department.
These notes are to be read in conjunction with all drawings and specifications.

The Contractor shall check all dimensions and other data from the job and report any discrepancies to the Architects before proceeding.

No.	Date:	Revision:
1	AUG.14,2026	ISSUED FOR PERMIT

REGION FILE NO.: SP.24.V.0097
CITY FILE NO. : DA.24.032

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Project:
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INDUSTRIAL WAREHOUSE ALTERATIONS & ADDITION
10533 KEELE STREET
VAUGHAN, ONTARIO

Sheet title:		Job. no.
ELECTRICAL LEGEND		24-020
Scale: N.T.S.	Date: JUNE 2026	Dwg. no.
Drawn: G.M.	Checked: G.M.	E00

ELECTRICAL SPECIFICATION

ISSUED FOR CLIENT REVIEW

1. CODES & STANDARDS

1.1 Complete the installation of the work in accordance with latest editions of the Ontario Building Code, Provincial Electrical Safety Code, C.S.A. Standards, U.L.C., N.F.P.A., and other Codes, as required. All electrical work shall be performed in compliance with base building standards and Landlord's requirements.

2. INTENT

2.1 Where differences occur, between drawings and specifications, the maximum condition shall govern.
2.2 Any miscellaneous items, hardware, devices, wiring, etc., not specifically described, but required for the operation of the system, must be provided and included as part of the bid.
2.3 It is the intent of these drawings and specifications that the Contractor provide complete and operational systems as required.

3. DEFINITIONS

3.1 Wherever the words "provide" or "supply and install", are used, it shall be understood to mean "provide and install, inclusive of all labour, materials, installation, testing, and connections" for the item to which it references.

4. PERMITS AND FEES

4.1 Submit to the local Electrical Safety Authority, the necessary number of Documents for examination, special inspection and approval, prior to the commencement of the work, and pay all costs and associated fees.
4.2 Provide Certificate(s) of Acceptance from the Electrical Safety Authorities, upon completion of work.

5. INSURANCE

5.1 Provide and maintain insurance to protect the Landlord, Tenant and Trades from all possible claims. Submit with Bid proof of insurance for an amount acceptable to the Landlord and the Tenant.

6. EXISTING CONDITIONS

6.1 Visit the site and examine the existing conditions affecting the work of this Division. No claim for extra payment shall be made for extra work made necessary by circumstances above ceiling.

7. CONTRACT DOCUMENTS

7.1 The drawings for the Electrical work are diagrammatic performance drawings only, intended to convey the scope of work and indicate the general arrangement and approximate location of electrical equipment. The drawings do not intend to show Architectural, Interior Design, Mechanical, Structural or base building details. Be responsible for a thorough knowledge of same before proceeding with the work.
7.2 Do not scale or measure drawings. Obtain information regarding accurate dimensions from Designer/Architect's drawings.
7.3 Report any discrepancies between drawings and/or specifications and existing conditions or designer's drawings prior to installation.
7.4 Cooperate and coordinate with other trades in laying out of work so as not to conflict with the work of other trades. Carry out work promptly as per construction schedule and coordinate with work of other trades.
7.5 Make, at no additional cost, any changes or additions to materials and equipment necessary to accommodate structural conditions (offsets around beams, column, etc.)

8. SHOP DRAWINGS

8.1 Submit four (4) copies of shop drawings of all specified equipment for review and records before commencement of work.
8.2 Each shop drawing shall be checked and stamped by electrical and general contractor prior to submission to the engineer for review.

9. IDENTIFICATION

9.1 Provide lamacoid nameplates on all panels, disconnect switches, splitters, etc., to match base building. Nameplates shall identify equipment name, voltage, phase, current rating, and use. Nameplates shall be white, with 1/4" black letters,mechanically attached to equipment.
9.2 Provide typewritten directories for new and existing panels. Confirm existing identification and correct where necessary.
9.3 Clearly mark all exposed conduit, pullboxes, junction boxes, etc., to indicate the nature of the service to match base building standards.

10. MATERIALS AND EQUIPMENT

10.1 All materials and equipment shall be new, C.S.A. certified and manufactured to the standards specified.
10.2 Where there is no alternative to supplying equipment which is not C.S.A. certified, obtain special approval from the Local Electrical Safety Authority.

11. LOCATION OF OUTLETS

11.1 Refer to Designer/Architect's drawings for exact locations of all outlets.
11.2 Alter location of outlets at no cost or credit, providing distance does not exceed 3m (10'-0") and information is given before rough-in.
11.3 All outlets to be marked on job site for approval by Consultant prior to installation.

12. PLYWOOD

12.1 Plywood backboards shall be 19mm (3/4") thick, of highest quality fire retardant fir. Refer to drawings for size. Prime and paint backboards with fire retardant paint equal to CGSB Spec. #1-GP-151M, of a colour as selected by the Consultant.

13. INSERTS, HANGERS AND SLEEVES

13.1 Provide hangers, inserts, sleeves and supports as required.
13.2 Inserts are to be of a lead shield type.
13.3 Hangers must not be welded to structural steel members and burning of holes in structural steel is prohibited.
13.4 Do not use any base building supports or equipment, including ceiling support system.

14. CUTTING AND PATCHING

14.1 All cutting and patching required to the existing building structure for the work shall be included under this contract and be acceptable to the Landlord. Obtain written approval from Landlord before any cutting is carried out.
14.2 Where conduits pass through fire rated walls or floors, provide CSA approved or ULC listed fire stopping material and maintain same fire rating of building elements.

15. ACCESS DOORS

15.1 Wherever any base building equipment requires accessibility, maintenance or adjustment, provide access doors approved by Design Consultant/Architect and Landlord.

16 CORE DRILLING

16.1 Before core drilling floor slab or structural walls, X-ray slab or walls and have the locations accepted by the Landlord in writing.
16.2 Any existing building service damaged by core drilling must be repaired immediately at no cost to Landlord or Tenant.
16.3 Floor drilling to be carried out after normal working hours and at a time acceptable to Landlord and allowances for this work shall be included in bid price submitted.

17 NOISE AND VIBRATION

17.1 Electrical equipment is to operate without objectionable noise or vibration. If, in the opinion of the Consultant, the equipment operates with excessive noise or vibration, then the equipment must be replaced or noise or vibration eliminated.
17.2 Connections to noise-producing and vibrating equipment must be made with flexible conduit. This includes transformers, dimming equipment racks, and motors. Use a minimum of 1m (3 ft) of flexible cable with slack at each device.
17.3 Vibration isolators are to be provided where indicated or required. Transformers to be isolated from the structure, with spring and rubber isolators when wall mounted or suspended and 12mm (1/2") high density neoprene sandwich pads (type MWP) when floor mounted.

18. TENANT'S EQUIPMENT

18.1 Where specified, install all equipment provided by the Tenant. Receive, store and install equipment and accept full responsibility for its correct operation. Provide conduit, wire, boxes, switches, outlets, devices, flex connections, etc., as required.
18.2 Confirm power requirements of all equipment supplied and also ensure that all electrical equipment supplied by other trades is suitable for the respective voltage.

19. WORK IN NEW AND RENOVATED AREAS (N/A)

19.1 When deleting and/or making safe existing electrical work, ensure that it includes removal of all disconnected wiring back to the associated panelboard.
19.2 Disconnect and remove existing luminaires, devices, outlets, etc., which are not to be reused. Such items shall be cartoned and turned over to the Landlord at a place designated by the Landlord. Cut back and cap unused raceway and outlets and remove unused wiring back to panelboard in an approved manner. Remove all redundant communications cables back to hub rooms and/or telephone riser rooms.
19.3 Ensure that all existing equipment which is to be reused and/or relocated is thoroughly inspected and refurbished to ensure correct operation when put back into service and to meet Ontario Hydro approval.
19.4 All existing electrical equipment which is no longer required shall be removed and disposed of, off site.
19.5 Where existing outlet boxes or conduits are removed from existing underfloor ducts, plug and cap existing holes flush with floor using approved fittings.
19.6 Be responsible and pay for any damage to the base building incurred by work of this division, or repair to the satisfaction of the Consultant.
19.7 Carry out the work with a minimum of noise, dust and disturbance.
19.8 Provide daily clean up and proper disposal of debris generated by daily operations. On completion of the work, all tools, surplus materials and waste materials shall be removed and the premises left in a clean and perfect condition.
19.9 Provide tools and clean up equipment. Obtain the Landlord's permission for the use of electrical, elevator, plumbing or drainage outlets.

20 INTERRUPTION OF SERVICES

20.1 The contractor shall assume full responsibility for any interruptions or disruptions to the existing services. All existing building services must be kept operational at all times.
20.2 Interruptions shall be performed only after regular office hours. Include in the bid price all cost associated with this work.
20.3 Arrange work such that interruptions in services occure only at scheduled times suitable to the Landlord.
20.4 Interruptions shall shall be scheduled at least 48 hours in advance with the Landlord

21. VALUATION OF CHANGES

21.1 Provide complete breakdown of material, labour, overhead, profit, etc., when submitting quotations for change notices on this project.
21.2 The hourly labour rate shall be inclusive of all charges for supervision, variable labour factors, hand tools, payroll burdens, height factors, warranties, storage, rentals, additional bonding, parking, clean-up, as-built drawings, hoisting, freight and delivery, but exclusive of overhead and profit.
21.3 The labour hours shall be based on the latest issue of the National Electrical Contractors Association (NECA) labour units
21.4 The material prices shall be based on the current National Prices System (NPS) catalogue less applicable trade discounts.

22. COMPLETION OF CONTRACT

22.1 All equipment must be cleaned and tested before final acceptance by Consultant.
22.2 Prior to contacting the Consultant for Final Inspection, The Contractor must correct all deficiencies as specified on the Deficiency List.
22.3 After completion of work provide a copy of Final Hydro Inspection Certificate. Fire Alarm Verification Certificate (As per Standard ULC 537) must be provided when the Fire Alarm System was modified under the contract.
22.4 Provide a written guarranty for one year covering all equipment, materials and workmanship from the date of acceptance of the installation by the Owner. Include in the operations and maintenance manual.
22.5 Where required by Municipal Authorities having jurisdiction provide emergency lighting level test results. Submit test report to Consultant and Authorities for review. Where battery unit system is used for emergency lighting the Contractor shall provide a written statement from the Manufacturer indicating that the system has been installed in accordance with Manufacturer recommendations and the readings of the emergency lighting level comply with The Ontario Building Code. Reading report and manufacturer statement as shown above shall occur prior occupancy.
22.6 Any defects or deficiencies which originate or become evident during the warranty period must be repaired or corrected at no extra cost to the Owner.
22.7 Replace, at no cost, all incandescent lamps burned-out during a thirty (30) day period and all burned-out fluorescent and HID lamps for a period of ninety (90) days after date of issuance of certificate of "Substantial Performance" for the contract for the work.
22.8 If, during the warranty period, transformers, ballasts or other noise and vibration producing equipment are considered by the Consultant to exceed acceptable standards, then these must be replaced without delay or additional cost to the Owner. All work relating to the replacement of defective items, must be carried out after normal working hours and at a time which is acceptable to the Tenant.

23. AS-BUILT DRAWINGS

23.1 At the completion of work and before final acceptance, provide As-Built drawings of the installation (hard copies red line format). Consultant will prepare the AutoCAD -As Builts as per ORC standards.
23.2 Incorporate all changes and deviations from tender drawings, utilizing normal recognized drafting procedures that match the original drafting methodology.
23.3 Remove the Electrical Engineer's stamp and company name from all drawings.
23.4 All main branch conduit runs, junction box locations, conduit runs for all floor outlets, etc., must be reflected on the drawings.
23.5 Clearly indicate the words "As-Built" in the title block column of the drawings as well as the Electrical Contractor's name and address.
23.6 Submit a print to Consultant for review. When found acceptable, the Consultant shall submit three (3) sets of prints together with Autocad disks for presentation to Landlord and Tenant.

24. OPERATION AND MAINTENANCE MANUALS

24.1 Provide 2 (two) sets of operation and maintenance manuals. Include the following information in the Operations and Maintenance manuals:
- Technical data, product data, supplemented by bulletins, component illustrations, exploded views, technical descriptions of items, and parts lists. Advertising or sales literature is not acceptable.
- The Consultants reviewed shop drawings.
- Certificate(s) of acceptance from Authorities having jurisdiction
- Verification reports and certificate(s) for any new fire alarm components or tie-ins and any base building tie-ins for miscellaneous systems (i.e. security, lighting control, digital metering).
- Load balance report
- Data/communication drawings, test reports and installation details.
- Written warranty - 2 years for labor and materials.
- As Built Drawings.

24.2 Review information provided in the maintenance instructions and manuals with the Tenant's operating personnel and Landlord's operating personnel where base building systems are revised, to ensure a complete understanding of the electrical equipment and systems and their operation.

MATERIALS AND INSTALLATION

1. CONDUITS AND CONDUIT FITTINGS

1.1 Provide all conduit up to and including 100mm (4") size, as EMT thinwall with steel set screw couplings and connectors.
1.2 Provide flexible metal conduit for connection to motors and transformers.
1.3 Install conduits to conserve headroom, parallel and perpendicular to building lines. Do not caddie clip conduits to ceiling hangers.
1.4 All empty conduits shall be complete with nylon fish wire.
1.5 All data/communication conduits shall be installed complete with plastic bushings at each end.
1.6 Conduits for data/communication shall be EMT, min 20mm(3/4"), terminated 150mm(6") above T-bar ceiling or as per data/communication consultant requirements.
1.7 No more than two (2) - 90 deg. bends shall be installed between any two adjacent pull boxes. Size all conduits based on RW 90XLPE wiring only.
1.8 Size all conduits for max. 40% fill. To include dedicated insulated ground wire.

2. JUNCTION BOXES AND PULL BOXES

2.1 Junction boxes and pull boxes shall be suitable for surface mounting and be of welded steel construction with screw-on flat covers.
2.2 For flush-mounted pull and junction boxes, provide covers with 25mm (1") minimum extension all around.
2.3 Install junction and pull boxes in inconspicuous but accessible locations.
2.4 A minimum of one pull box shall be installed for every 100 ft.(30m) of conduit. (Note: each 90 deg. bend shall equate to a 30 ft. (9m) length of conduit).

3. OUTLET BOXES

3.1 Outlet boxes shall be electro-galvanized steel, sized as required by code.
3.2 Provide each light switch, receptacle, communication and other outlet with an outlet box. Install plumb and true. Provide 76mm (3") deep 1004 boxes for dimming switches.
3.3 Adapt all outlet boxes to their respective locations and support independently of the conduit. Do not caddie clip to ceiling hangers.
3.4 Provide blank coverplates for boxes without wiring devices.
3.5 Do not install outlet boxes back to back in partitions. Stagger to prevent sound transfer.
3.6 Two or more outlet boxes that occur at the same location shall be ganged together in the same coverplate unless otherwise noted.
3.7 Floor mounted boxes, flush poke-thru device assembly, with prewired 15A quad receptacle and communication outlets, slide covers, snap back, similar to Wiremold series RC9.

4. WIRE AND CABLE

4.1 All wire and cable shall be copper, minimum 12 AWG, with RW 90XLPE insulation. Wires #12AWG and #10 shall be solid. Wires #8 and larger shall be stranded type.
4.2 BX type wiring may be used in ceiling space for lighting fixture connection to junction boxes or in partitions. BX runs in ceiling space not to exceed 3048mm(10'-0") in length.
4.3 Size all wires for maximum 2% voltage drop to Code requirements.
4.4 All home runs to be in EMT conduit.
4.5 Do not run cables or conduits horizontaly in partition walls.

5. LOCAL SWITCHES

5.1 All devices shall be specification grade, local 20A, 120 V or 347 (240) V switches, A.C. type with matching white colour coverplate:(M.H. at 42"A.F.F.)
240 Volt:
P&S #2601-I Series
Hubbell #hbl 2121I Series
Leviton #5691-2I Series

6. RECEPTACLES

6.1 All receptacles shall be specification grade, 15A, 120 V, "U" ground, duplex type with matching white coverplates: (M.H. 12"A.F.F.)
P&S #26252 Series Hubbell #HBL2152I Series Leviton #16262I Series

8. SERVICE EQUIPMENT

8.1 All new panelboards, disconnect switches, meters, transformers, etc., to be same manufacture, I.C. rating and type as base building equipment unless otherwise noted. Moulded case circuit breakers to be bolt-on and same manufacturer, rating and type as base building breakers. If unable to match base building equipment, one of the following manufacturer's equipment must be provided:
FPL Cutler Hammer Square D Siemens

9. CABLE TROUGHS

9.1 Cable troughs shall be complete with all accessories and fittings as per CSA C22.2-126 and manufactured to EMAC F5.1.
9.2 Cable trays for power systems and data/communications shall be made of steel, ventilated type, Class C1, without cover, sized as indicated unless otherwise indicated on data/comms consultant drawings.
9.3 Supports shall be rod and channel of a size to suit total load.
9.4 Supply all bends, elbows, end plates, drop outs, tees, wyes and expansion joints for a complete system as required. Ground cable trays as required by Code.
9.5 Remove all sharp edges to prevent cable damage or injury to personnel

10. GROUNDING

10.1 Ground all equipment in accordance with latest edition of the Electrical Safety Code. Provide separate green insulated ground conductor in every conduit to all devices, luminaires and feeders (panelboards, splitters, disconnect switches, etc.).

11. MECHANICAL TRADES WIRING

11.1 All starters and control wiring are provided by Division 15. Division 16 shall receive all starters and install all startersand thermostats supplied by mechanical trade and provide all power wiring.
11.2 Supply, install and connect all required disconnect switches.
11.3 Confirm electrical requirements and exact locations of all mechanical equipment with Division 15 prior to installation. Coordinate with mechanical drawings, as required.

12. LUMINAIRES (General lighting, exit, emergency)

12.1 Provide and install new lighting fixtures as shown on lighting layout.
12.2 All new exit lighting shall be complete with new lamps, ballasts and mounting accessories.

Unless written confirmation can be provided that the existing base building ceiling has been designed and constructed to support the additional weight of the base building luminaires, the Electrical Contractor shall provide additional supports on all new luminaires being added and on all relocated existing luminaires. Include cost in tender price.
Cooperate with all other trades for the proper installation of all luminaires.

MEGGERING AND BALANCING

Megger all power circuit feeders. If ground resistance on any circuit is less than that required by CSA or other governing regulations, such circuits are to be considered defective and must be replaced.

Measure phase current to panelboards with normal loads operating at time of acceptance. Adjust branch circuit connections as required to obtain best balance of current between phases and submit a report for insertion into manuals.

DATA/VOICE SPECIFICATION

1. MATERIALS AND INSTALLATION

Horizontal Cabling

1.1 Provide and install all horizontal data cabling as indicated. Horizontal Data Cables shall be 4-pair, UTP, 24 AWG, CMR/CMP, FT6/FT4 fire rated, certified to EIA/TIA Category 6 specifications, and blue in colour. The full end to end 100 meter channel that includes a worst case of four terminations (including consolidation point and cross connect) must meet all of the criteria (as a minimum) as defined in Section 1.10. The Channel performance specificatios all of the parameters in Section 1.10 must be tested (and published) up to and including 155 MHz and Warrantable up to and including 100MHz for a minimum period of 25 years.
1.2 When installed in conduit, FT4 type cables can be used.

2. Modular Jacks and Adaptors

2.1 Provide and install all modular jacks as indicated.
2.2 Modular Jack Current rating: 1.5 amperes maximum
Modular Jack Durability: 750 mating cycles
Modular Jack Contact Pressure: 100 grams, minimum per contact
Dielectric Voltage Strength: 1000V RMS at 60Hz.
2.3 The UTP modules must be matched appropriately with the Voice and Data Cables to ensure that end to end Vendor Warranties will be applicable. All UTP Data and Voice Cables shall be terminated with the jack colors as described below:
Data module color - blue
Voice module color - white
The color of the UTP modules may be changed at the discretion of the Consultant.

3. Testing

3.1 Provide test reports for both data and voice cabling.
3.2 UTP CAT 6 testing shall include:
- Attenuation
- Near End Crosstalk (NEXT)
- SPL and characteristic
- Power Sum (PS-NEXT)
- Return Loss (RL)
- Equal Level Far End Crosstalk (ELFEXT)
- Power Sum ELFEXT (PS-ELFEXT)

4. Grounding

4.1 Refer to electrical drawings for grounding details.
4.2 Ground wire shall be stranded #6AWG copper wire, green insulated jacket.
4.3 All racks and cabinets must be grounded. Provide and install one ground wire from each rack or cabinet to the nearest approved electrical ground.

GENERAL NOTES

1. All UTP category CAT 6 cabling must be installed in accordance to EIA/TIA category 6 installation requirements.
2. All cables shall be neatly bundled and tie-wrapped. Secure bundles to available vertical and horizontal supports and neatly fasten to patch panels.
3. Route all cables to maintain minimum separations from sources of lighting, power cables, HVAC and other electrical equipment. Provide additional materials in order to meet the minimum separation requirements.
4. All data cables are to be pulled in continuous runs. No cable splices are allowed.
5. All cabling must be routed to minimize cross-overs and congestion.
6. Exercise caution when pulling cables to ensure that the manufacturer's maximum pull-force and minimum bend radii specifications are adhered to.
7. All cabling shall be neatly dressed and combed along back of backboard and at all termination locations.
8. Provide cable supports, harnesses and sleeves as required. All free running cables shall be securely fastened to appropriate cable supports and harnesses with a maximal intersupport cable sag of 150mm. All cables shall be completely supported by the harnesses so that no weight is transferred to any other existing fixture or ceiling space structure. Cable supports shall be CADDY CABLECAT or equivalent.
9. When terminating the cable at modular jacks and termination panels, the length of unjacketed conductors shall not exceed 1"(25 mm). The amount of untwisting of cable conductors must not be greater than 1/2" (13 mm) after termination.
10. Each cable and termination jack shall be labelled with mechanically printed identification label. Cable labels to be self-laminating vinyl construction with white mark-on colour and clear overlaps. Cable label shall be a minimum of 2"(50mm) wide and of sufficient length to permit clear overlap to be wrapped completely around cable at least one and a half times.
11. The contractor shall indicate the exact routing of all communications cables on a record drawing set. This drawing must show the exact routing through conduit or pathway structure.
12. Coordinate installation of all communication outlets with electrical and interior design drawings.

NOTES

1. Electrical contractor shall provide empty conduit c/w string, junction boxes and all necessary accessories to facilitate the proper installation of voice/data cabling.
2. Contractor to verify all data cables and provide certification report.

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1	AUG.14,2026	ISSUED FOR PERMIT

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CITY FILE NO. : DA.24.032

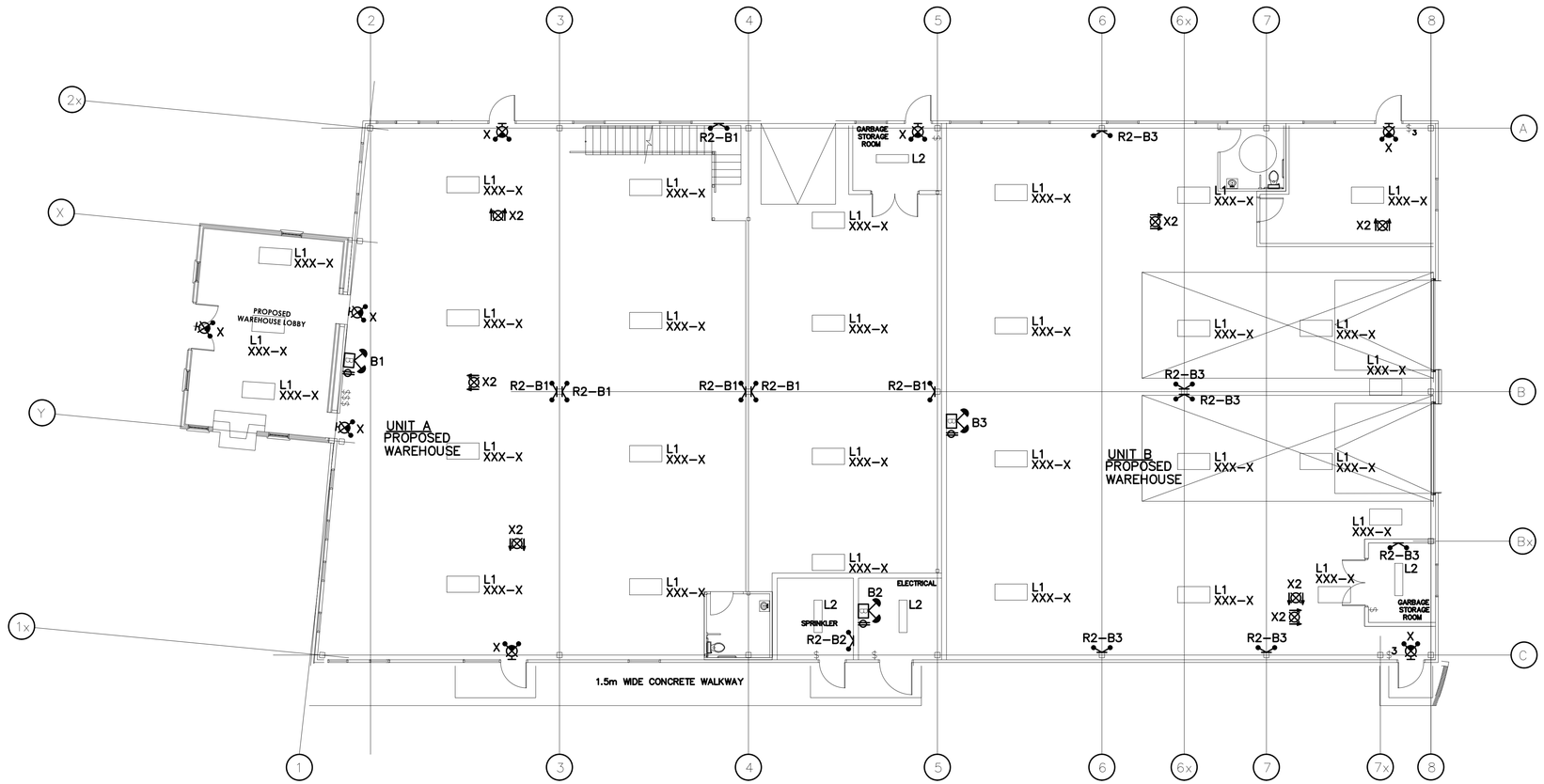
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Project:
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10533 KEELE STREET
VAUGHAN, ONTARIO

Sheet title:		Job. no.
ELECTRICAL SPECIFICATION		24-020
Scale: N.T.S.	Date: JUNE 2026	D'wg. no.
Drawn: G.M.	Checked: G.M.	E01

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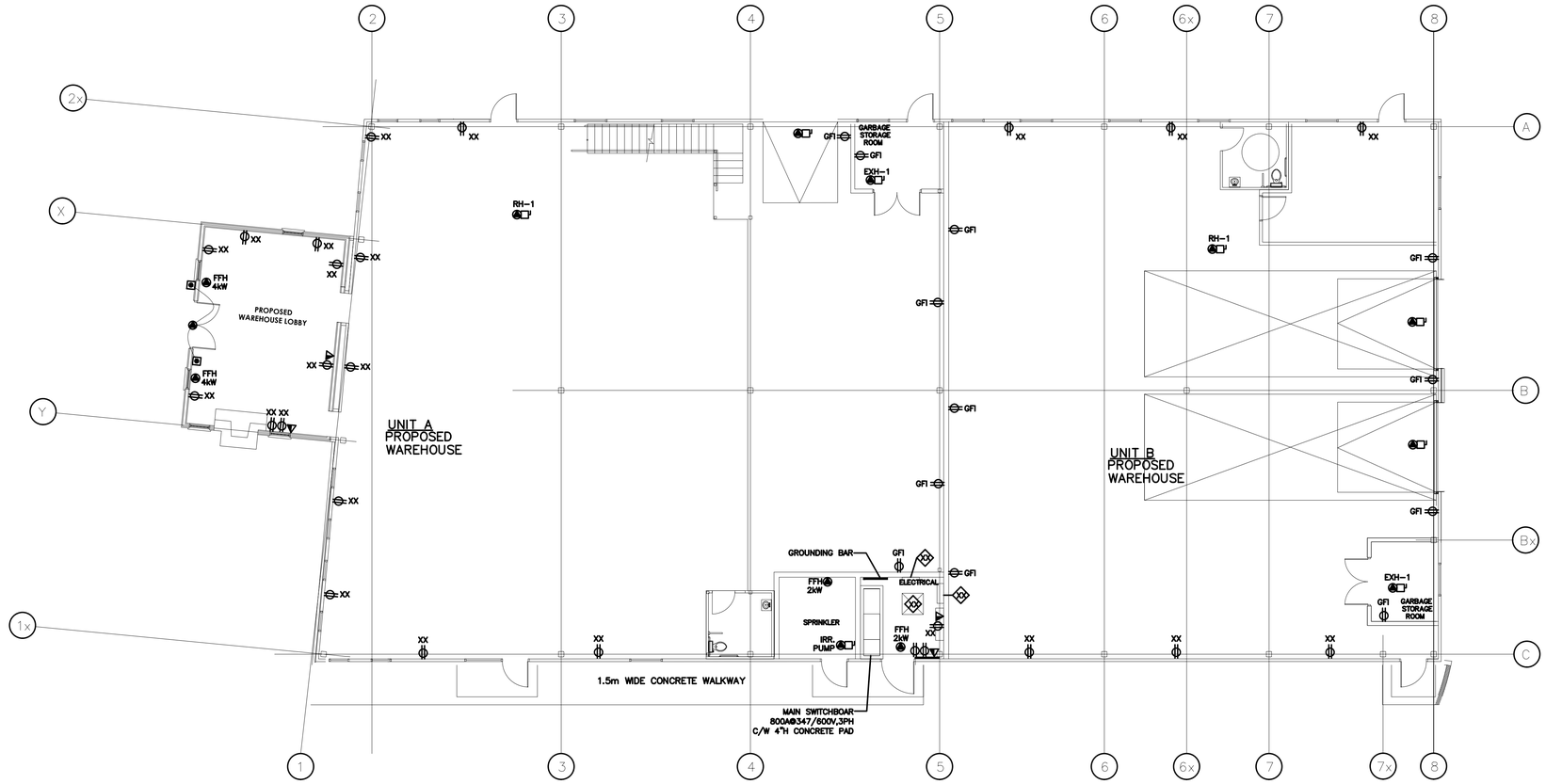
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Sheet title:		Job. no.
GROUND FLOOR LIGHTING PLAN		24–020
Scale: 1:100	Date: JUNE 2026	D'wg. no. E03
Drawn: G.M.	Checked: G.M.	

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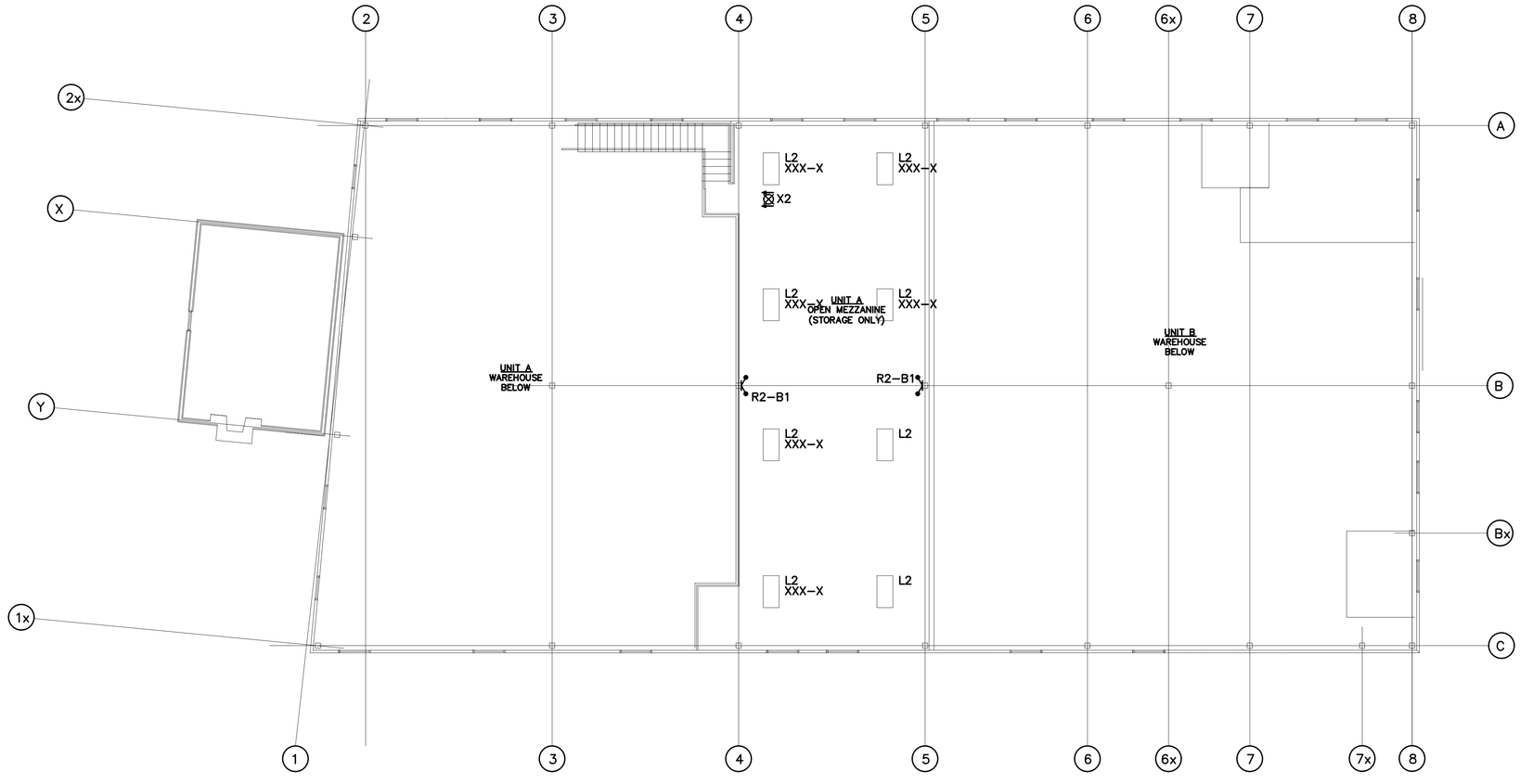
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Sheet title:		Job. no.
GROUND FLOOR POWER & SYSTEM PLAN		24-020
Scale: 1:100	Date: JUNE 2026	Dwg. no. E04
Drawn: G.M.	Checked: G.M.	

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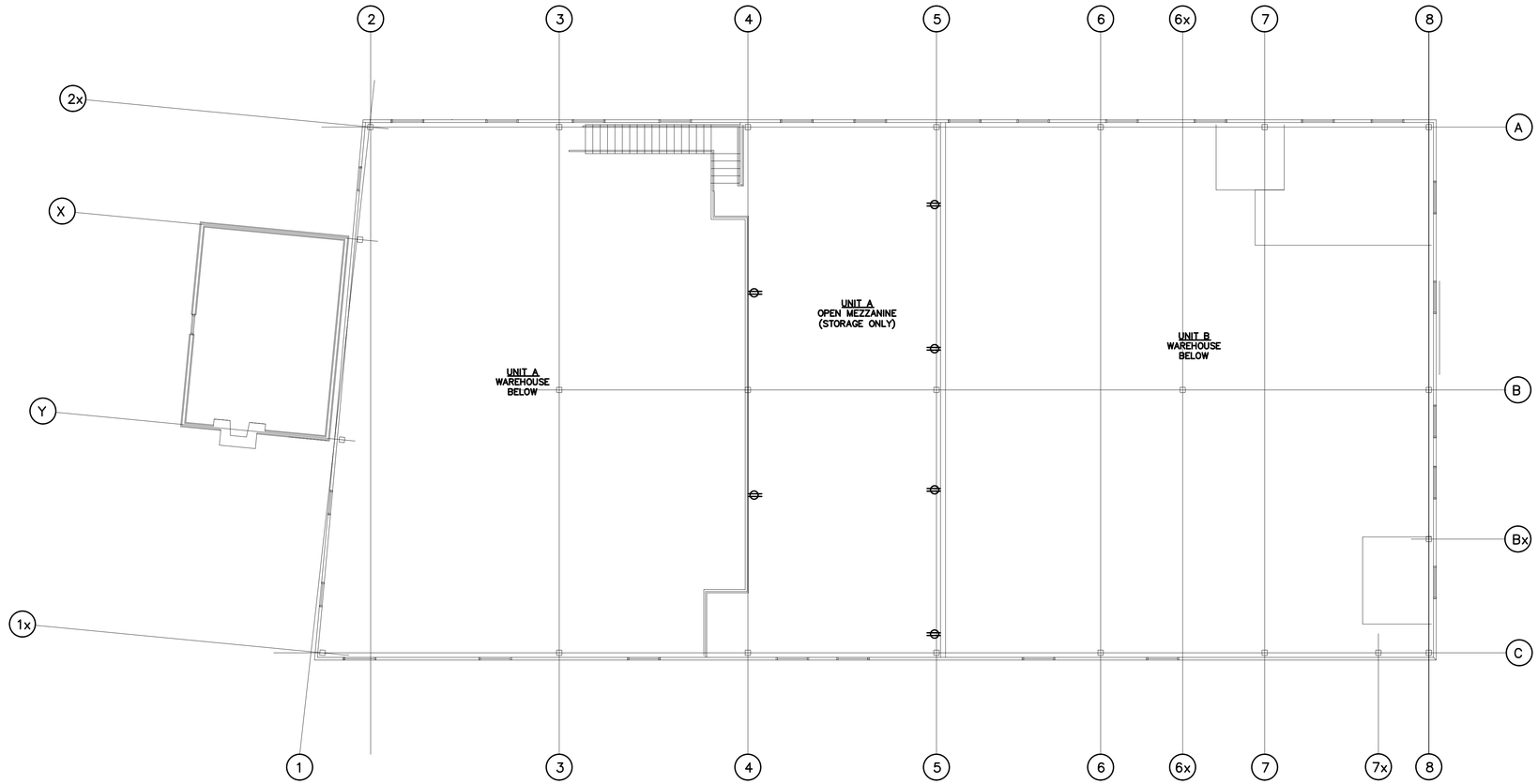
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Sheet title:	Job. no.
2ND FLOOR LIGHTING PLAN	24–020
Scale: 1:100 / Date: JUNE 2026	D'wg. no.
Drawn: G.M. / Checked: G.M.	E05

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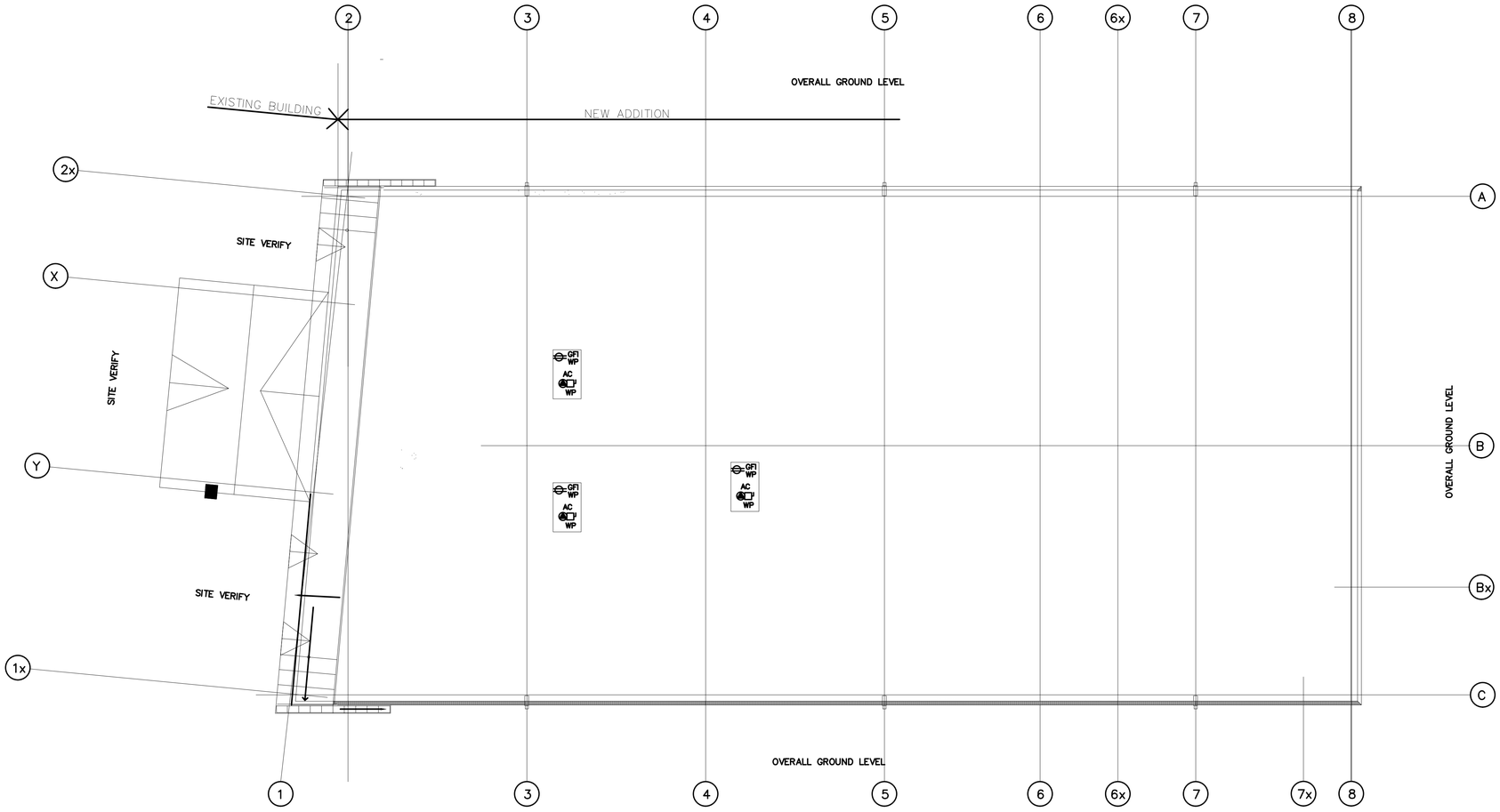
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Job. no. 24–020

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ROOF PLAN		24–020
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