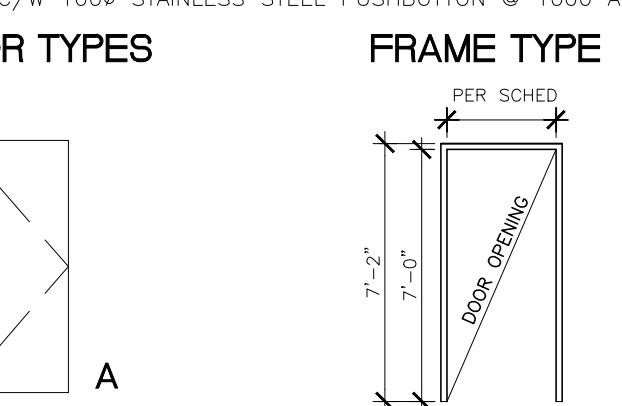


Lower Level Ceiling Fire Rating Plan

Scale : 1/4"=1'-0"

| Item | Data Matrix Part 3 or 9 Modified for Interior Alterations |   | BC Reference   |                                 |
|------|---|---|--|---------------------------------|
|      |   |   | References are to Division B unless noted<br>[A] for Division A or [C] for Division C.   |                                 |
| 1    | Project Description:                                      | <input type="checkbox"/> New <input type="checkbox"/> Part 11<br><input type="checkbox"/> Addition <input type="checkbox"/> Int. Alteration   | 11.1 to 11.4   | 1.1.2 [A] 1.1.2 [A] & 9.10.1.3. |
| 2    | Major Occupancy(e)  | Group A2 - Nightclub  | 3.1.2.1(1)   | 9.10.2.                         |
| 3    | Unit/Suite Area (sq. ft.)                                 | 1929 sq. ft.  | 1.4.1.2 [A]  | 1.4.1.2 [A]                     |
| 4    | Sprinkler System Proposed                                 | <input type="checkbox"/> entire building<br><input type="checkbox"/> selected compartments<br><input type="checkbox"/> selected floor areas<br><input type="checkbox"/> basement <input type="checkbox"/> in lieu of roof rating<br><input type="checkbox"/> not required <input type="checkbox"/> Existing | 3.2.2.0-.83<br>3.2.1.5.<br>3.2.2.17.<br>INDEX  | 9.10.8.2.<br>INDEX              |
| 5    | Mezzanine(s) Area m <sup>2</sup>                          | N/A   | 3.2.1.1(3)-(8)   | 9.10.4.1.                       |
| 6    | Occupant load based on                                    | <input type="checkbox"/> m <sup>2</sup> /person <input type="checkbox"/> design of building <input type="checkbox"/> No Change  | 3.1.17.  | 9.9.1.3.                        |
|      | All areas   | Occupancy A2 Load 200 persons   | 3.1.17. / 3.7.4.3.(5), / 3.7.4.3.E.  |                                 |
| 7    | Barrier-free Design                                       | <input type="checkbox"/> Yes <input type="checkbox"/> No (Explain) EXISTING BUILDING  | 3.8.   | 9.5.2.                          |
| 8    | Hazardous Substances                                      | <input type="checkbox"/> Yes <input type="checkbox"/> No  | 3.3.1.2. & 3.3.1.19.   | 9.10.1.3.(4)                    |
| 9    | Required Fire Resistance (RFR)                            | Demising Walls<br>FRR (Hours)   | Listed Design No. or Description (SG-2)<br>3.2.2.0-.83 &<br>3.2.1.4.   | 9.10.8.<br>9.10.9.              |
| 10   | Plumbing Fixture Requirements                             | <input type="checkbox"/> Male/Female Count @ 50% / 50%,<br>except as noted otherwise<br>ALL AREAS: Occupancy A2   | BC Reference<br><input type="checkbox"/> Part 3 <input type="checkbox"/> Part 9<br>Occupant Load<br>Fixtures Required<br>Fixtures Provided<br>BC Table Number<br>Public 200 10 10 3.7.4.3.E.<br>Staff Shared Shared Shared 3.7.4.3.(F) |                                 |
| 11   | Other (describe)  | (Adjust as Required for Additional Floors or Occupancies)   |  |                                 |

| DOOR AND FRAME SCHEDULE |                      |       |               |           |      |               |        |         |         |                                      | NOTES: |       |        |  |
|-------------------------|----------------------|-------|---------------|-----------|------|---------------|--------|---------|---------|--------------------------------------|--------|-------|--------|--|
| NO.                     | DOOR                 | FRAME |               |           |      |               |        | THRES.  | REMARKS |                                      |        |       |        |  |
|                         |                      | WIDTH | HEIGHT        | THICKNESS | TYPE | MATERIAL      | FINISH |         | TYPE    | MATERIAL                             | FINISH | GLASS | RATING |  |
| D1                      | 3'-0" 7'-0" 1 7/8" A | WOOD  | PAINT 2 COATS | A         | HM   | PAINT 2 COATS |        |         |         | ** PROVIDE LOCKSET                   |        |       |        |  |
| D2                      | 3'-0" 7'-0" 1 7/8" A | WOOD  | PAINT 2 COATS | A         | HM   | PAINT 2 COATS |        |         |         | ** PROVIDE LOCKSET                   |        |       |        |  |
| D3                      | 3'-0" 7'-0" 1 7/8" A | WOOD  | PAINT 2 COATS | A         | HM   | PAINT 2 COATS |        |         |         | ** PROVIDE SELF-CLOSER               |        |       |        |  |
| D4                      | 3'-0" 7'-0" 1 7/8" A | WOOD  | PAINT 2 COATS | A         | HM   | PAINT 2 COATS |        |         |         | ** PROVIDE SELF-CLOSER               |        |       |        |  |
| D5                      | 3'-0" 7'-0" 1 7/8" A | WOOD  | PAINT 2 COATS | A         | HM   | PAINT 2 COATS |        |         |         | ** PROVIDE SELF-CLOSER               |        |       |        |  |
| D6                      | 3'-0" 7'-0" 1 7/8" A | WOOD  | PAINT 2 COATS | A         | HM   | PAINT 2 COATS |        |         |         | ** PROVIDE SELF-CLOSER               |        |       |        |  |
| D7                      | 3'-0" 7'-0" 1 7/8" A | STL.  | PAINT 2 COATS | A         | STL. | PAINT 2 COATS |        | 45 MIN. |         | ** PROVIDE SELF-CLOSER AND PANIC BAR |        |       |        |  |



| WALL TYPES & PARTITIONS SCHEDULE   |  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|--|
| WALL TYPE NOTES  |  |  |  |  |  |  |  |  |  |  |
| 1. FIELD VERIFY STUD SIZE SHOWN. REFER TO STUD SIZING GUIDELINES FOR GAUGE REQUIREMENTS.<br>2. PROVIDE POSITIVE STUD BRACING @ FULL HEIGHT PARTITIONS.<br>3. PROVIDE KICKER BRACING @ NON-FULL HEIGHT PARTITIONS.<br>4. TAPE AND SAND ALL GYP BD PARTITIONS TO ACCEPT NEW FINISH.  |  |  |  |  |  |  |  |  |  |  |
|  PARTITION TYPE P1 1 LAYER 12.5 GYPSUM BOARD (BOTH SIDES) OF 90 METAL STUDS @ 400 O.C. EXTEND TO U/S OF DECK. GYPSUM BOARD TO EXTEND TO 100 ABOVE CEILING. FINISH WALLS AS PER ID. PROVIDE SOUND BATT INSULATION IN STUD CAVITIES  PARTITION TYPE P2 1 LAYER 12.5 MOISTURE RESISTANT GYPSUM BOARD (BOTH SIDES) OF 90 METAL STUDS @ 400 O.C. EXTEND TO U/S OF DECK. GYPSUM BOARD TO EXTEND TO 100 ABOVE CEILING. FINISH WALLS AS PER ID. PROVIDE SOUND BATT INSULATION IN STUD CAVITIES |  |  |  |  |  |  |  |  |  |  |
| GENERAL NOTES:   |  |  |  |  |  |  |  |  |  |  |
| 1. PROVIDE FIRE CAULKING AT ALL PIPES, CONDUITS, WIRES AND FRAMING PENETRATIONS THROUGH FIRE RATED SEPARATIONS. HILTI CANADA FS-ONE INTUMESCENT FIRESTOP SEALANT, HILTI CANADA 1-800-363-4458.   |  |  |  |  |  |  |  |  |  |  |

| STUD SIZING GUIDE   |  |  |  |  |  |  |  |  |  |
|---|--|--|--|--|--|--|--|--|--|
| 1. BASED UPON INTERIOR NON-BEARING PARTITIONS WITH ONE LAYER OF 5/8" GYPSUM BOARD EACH SIDE.  |  |  |  |  |  |  |  |  |  |
| 2. RUNNER TRACK SHALL MATCH GAUGE OF STUD.  |  |  |  |  |  |  |  |  |  |
| 3. WALL OVER 12'-0" HEIGHT SHALL BE LATERALLY BRACED AT 8'-0" O.C. VERTICALLY W/ 1 1/2" 16 GA. COLD-ROLLED CHANNELS CLIP ANCHORED TO METAL STUDS.   |  |  |  |  |  |  |  |  |  |
| 4. STUD SIZE: (MAXIMUM SUPPORT HEIGHT ALLOWED)  |  |  |  |  |  |  |  |  |  |
| 2 1/2" 22 ST 13'-0" 11'-6" 20 ST 13'-10" 12'-0" 3 5/8" 22 ST 17'-3" 15'-0" 20 ST 17'-11" 15'-7" 20 SJ 18'-6" 16'-9" 18 SJ 19'-3" - 16 SJ 20'-0" - 14 SJ 22'-0" - 6" 22 ST 25'-3" 22'-0" 20 ST 26'-1" 22'-10" 20 SJ 26'-8" 23'-8" 18 SJ 28'-0" - |  |  |  |  |  |  |  |  |  |

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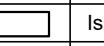
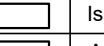
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ENGINEERING DONE UPRIGHT.

310 CHRISTINA STREET  
SARNIA, ONTARIO

PROJECT

PROPOSED NIGHT CLUB  
32 HESS STREET SOUTH  
HAMILTON, ONTARIO

ARCHITECT:

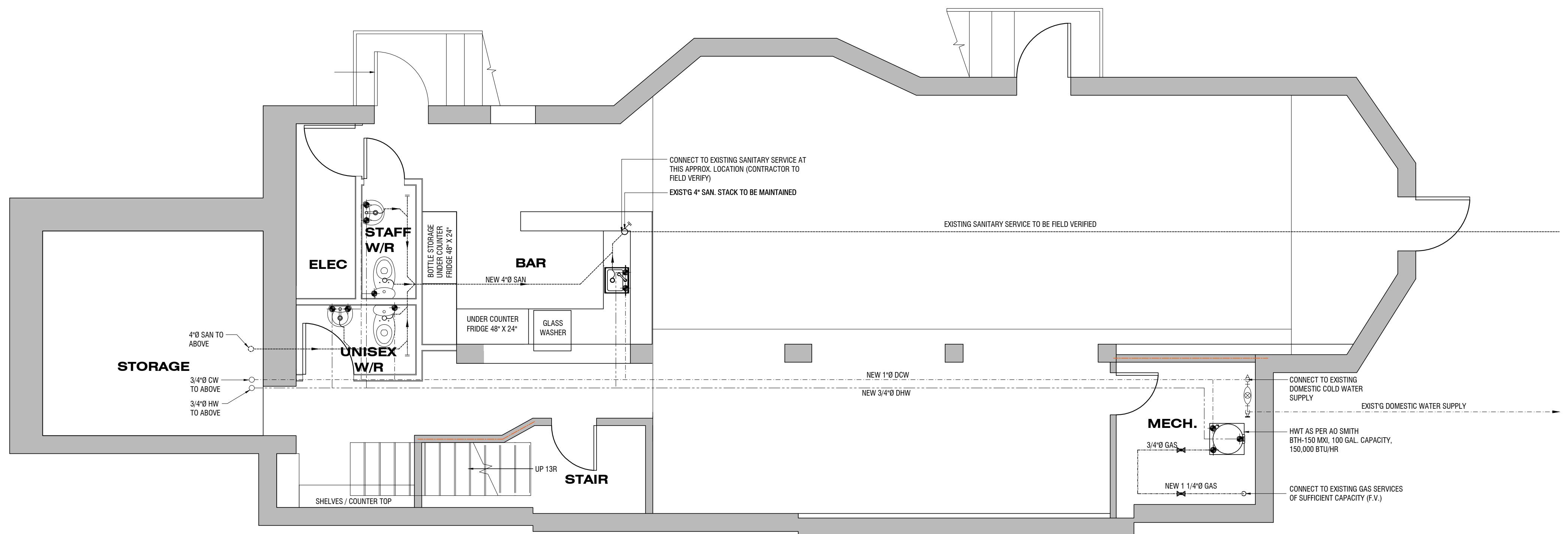
DWG. TITLE

FLOOR PLANS/ NOTES

DATE January, 2024 SCALE 1/4"= 1'-0"

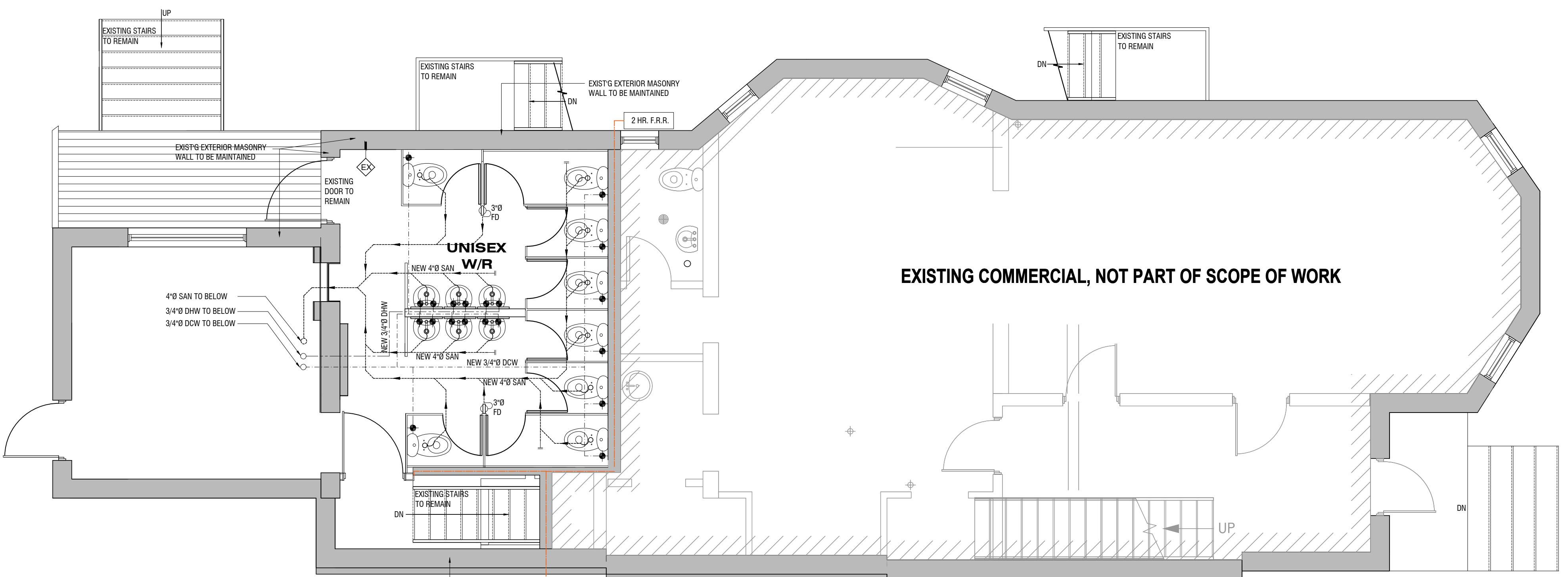
CHECKED BY G. DALE DRAWING NO.:





## LOWER LEVEL WATER SUPPLY

Scale : 1/4"=1'-0"



## MAIN LEVEL WATER SUPPLY

Scale : 1/4"=1'-0"

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| NO.                                 | REVISION                             | DATE       |
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| <input type="checkbox"/>            | Issued for Information Only          |            |
| <input checked="" type="checkbox"/> | Preliminary Design                   | 01/26/2024 |
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**ROBERT E. DALE**  
LIMITED  
CONSULTING ENGINEERS

ENGINEERING DONE UPRIGHT.  
310 CHRISTINA STREET  
SARNIA, ONTARIO

PROJECT:  
**PROPOSED NIGHT CLUB**  
32 HESS STREET SOUTH  
HAMILTON, ONTARIO  
ARCHITECT:  
DWG. TITLE:  
**PLUMBING FLOOR PLANS**  
DATE January, 2024 SCALE 1/4"= 1'-0"  
CHECKED BY G.DALE DRAWING No.:  
DRAWN BY C.CALMEIDA  
PROJ. No. 240241 M1

| PLUMBING FIXTURE SCHEDULE |                        |  |     |      |       |      |  |
|---------------------------|------------------------|--|-----|------|-------|------|--|
| MARK                      | DESCRIPTION            | DESCRIPTION  | C.W | H.W. | WASTE | VENT | REMARKS  |
| WC1                       | WATER CLOSET TANK TYPE | AMERICAN STANDARD 2467-016 CADET, RIGHT HEIGHT, ELONGATED PRESSURE ASSISTED, 6 LPF               | 13  | —    | 75    | 38   | w/ 4142-600 TANK w/ TANK COVER LOCKING DEVICE, VITREOUS CHINA, EVERCLEAN SURFACE, 3483.001 ELONGATED 419mm HIGH BOWL RIM, PRESSURE ASSISTED SIPHON-JET FLUSH ACTION 5905.110 ELONGATED EXTRA HEAVY DUTY OPEN FRONT SEAT LESS COVER   |
| L1                        | WALL-MOUNTED LAVATORY  | AMERICAN STANDARD: MURRO-0954-004EC C/W CONCEALED ARM SUPPORT CARRIER, SHROUD/KNEE CONTACT GUARD | 13  | 13   | 50    | 32   | w/ VITREOUS CHINA, SELF RIMMING, TWO REAR OVERFLOW HOLES, FAUCET CENTER HOLE, 100mm, 7055105 ELECTRONIC HAND DRYER, 1000W, 120V, 60Hz, 1.05A, 100mm, CAST BRASS SPOUT, 1.9 LPM PRESSURE COMPENSATING, VANDAL RESISTANT NON AERATED SPRAY, CR-P2 LITHIUM ION BATTERY, FLEXIBLE STAINLESS STEEL HOSE c/w CHECK & FILTER SCREEN, w/ SINGLE 10mm COMPRESSION CONNECTOR |
| FD1                       | AREA FLOOR DRAIN       | ZURN FD-2209-PV3-VP ADJUSTABLE FINISH  | —   | —    | 75    | —    | ADJUSTABLE PVC HEAD & 127mm <sup>2</sup> NICKEL/BRONZE FRAME & GRATE, 75mm <sup>2</sup> PVC/ABS BODY, c/w OPTIONAL VANDAL PROOF SS SECURING SCREWS, WAST CHROME PLATE BRASS TRAP w/ 38mm <sup>2</sup> TALPIECE   |

| FIRE STOPPING |  |
|---------------|--|
| 1.            | THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL FIRE STOPPING FOR ALL PENETRATIONS CREATED BY THE INSTALLATION OF ANY NEW SYSTEMS.             |
| 2.            | GENERAL: ULC LISTED, INTUMESCENT MATERIAL, SYNTHETIC ELASTOMERS, CAPABLE OF EXPANDING UP TO 8 TIMES WHEN EXPOSED TO TEMPERATURES OF 250 F OR HIGHER. |
| 3.            | ACCEPTABLE PRODUCTS: HILTI FS-ONE, 3M #CP-25 CAULK OR #303 PUTTY, DOW CORNING FIRE STOP FOAM, T&B BURNDY   |
| 4.            | APPLICABLE CODES: CUL SYSTEM #SP2731 – METAL PIPING OR CONDUIT THRU GYPSUM WALL ASSEMBLY (F RATING UP TO 1 HR OR 2HR)                                |
| 4.2.          | CUL SYSTEM #SP2717 – METAL PIPING OR CONDUIT THRU WOOD FLOOR ASSEMBLY (F RATING UP TO 1 HR OR 2HR)   |
| 4.3.          | CUL SYSTEM #WLS029 – INSULATED METAL PIPING THROUGH GYPSUM WALL ASSEMBLY (F RATING UP TO 1HR OR 2HR)   |
| 5.            | CONTRACTOR TO PROVIDE SHOP DRAWINGS WITH DETAILED MATERIAL INFORMATION INDICATING ULC OR CUL RATINGS AS WELL AS APPLICATION INSTRUCTIONS.            |

| INSULATION SCHEDULE |  |
|---------------------|--|
| ITEMS               | INSULATION INSTRUCTIONS  |
| COLD WATER (C.W.)   | INSULATE ALL COLD WATER PIPING WITH 1" PREFORMED FIBREGLASS INSULATION c/w VAPOUR BARRIER, FINISH WITH 6oz. CANVAS WRAP AND PAINT WITH WHITE FIRE RETARDANT PAINT. P.V.C. JACKET IS CONSIDERED ACCEPTABLE IN LIEU OF CANVAS SUCH THAT APPROVAL IS GRANTED BY REDL PRIOR TO ANY WORK.   |
| VENT PIPING         | 12" OF VENT PIPING IS TO BE INSULATED PRIOR TO PENETRATING ROOF. INSULATE ALL VENT PIPING WITH 1" PREFORMED FIBREGLASS INSULATION, FINISH WITH 6oz. CANVAS WRAP AND PAINT WITH WHITE FIRE RETARDANT PAINT. P.V.C. JACKET IS CONSIDERED ACCEPTABLE IN LIEU OF CANVAS SUCH THAT APPROVAL IS GRANTED BY REDL PRIOR TO ANY WORK. |
| EXHAUST DUCTWORK    | FROM EXHAUST FAN 8"-0" DUCTWORK IS TO BE INSULATED WITH 1" RIGID FIBREGLASS INSULATION c/w VAPOUR BARRIER  |
| SUPPLY AIR DUCTWORK | ALL SUPPLY AIR DUCTWORK FOR THE FIRST 12"-0" FROM DISCHARGE IS TO BE INSULATED WITH 1" INTERNAL ACOUSTIC INSULATION. ALL OTHER DUCTWORK SHOWN CROSS-HATCHED TO BE INSULATED. (SEE NOTE) DIMENSIONS SHOWN ON DRAWINGS DOES NOT INCLUDE INSULATION.  |

NOTE: ALL AIR BALANCING REPORTS ARE TO BE SUBMITTED TO THE ENGINEER FOR REVIEW.

| PLUMBING SPECIFICATIONS                                 |  |
|---|--|
| 1.  | THE GENERAL SPECIFICATION SHALL APPLY TO THIS CONTRACTOR FOR THIS JOB AS IF WRITTEN HERE IN FULL.  |
| 2.  | THE FINAL HOOK-UP OF ALL PLUMBING FIXTURES AND EQUIPMENT SHALL BE BY THE PLUMBING CONTRACTOR.  |
| 3.  | PLUMBING INSTALLATION SHALL BE IN ACCORDANCE WITH PLUMBING CODES AND LOCAL AUTHORITY CONTROLLING CODES, REFER TO THE APPROPRIATE CODE, CITY, COUNTY, PROVINCIAL, AND FEDERAL REGULATIONS FOR ACCEPTABLE STANDARDS.   |
| 4.  | ALL EQUIPMENT AND MATERIALS SHALL BE NEW COMMERCIAL GRADE UNLESS OTHERWISE NOTED.  |
| 5.  | PROVIDE ACCESSIBLE SHUT-OFF VALVES ON DOMESTIC HOT AND COLD WATER SUPPLIES AT ALL FIXTURES AND EQUIPMENT.  |
| 6.  | DOMESTIC HOT WATER HEATER SHALL BE AS PER MECHANICAL DRAWINGS FOR THIS PROJECT.  |
| 7.  | PLUMBING FITTINGS TO BE AS BELOW OR APPROVED EQUAL.  |
| FD (FLOOR DRAIN) =                                      | WATTS, JR.SMITH, ENPOCO  |
| CO (CLEAN OUT) =  | WATTS, JR.SMITH, ENPOCO  |
| HD (HUB) DRAIN) =                                       | WATTS, JR.SMITH, ENPOCO  |
| FFD (FLOOR FUNNEL DRAIN) =                              | WATTS, JR.SMITH, ENPOCO  |
| TRAP SEAL PRIMER TO EQUAL TO ANCON SERIES A200 / A200LF | NOTE: ALL FD, HD, FFD, ETC. ARE TO BE FURNISHED WITH TRAP SEAL PRIMER.   |
| 8.  | INSULATE ALL HOT AND COLD WATER PIPES, INCLUDING METAL FITTINGS ON STORM PIPING IN CEILING SPACE, WITH 1/2" PRE-MOULDLED FIBREGLASS INSULATION WITH VAPOUR BARRIER JACKET. SEAL ALL JOINTS OF VAPOUR BARRIER STAPLES ARE NOT TO BE USED.   |
| 9.  | USE CAST IRON (PLASTIC PIPING IS ACCEPTABLE WHERE PERMITTED BY LOCAL CODES) FOR SANITARY SEWER PIPES WITH MECHANICAL JOINTS. USE TYPE 'L' COPPER FOR BURIED WATER PIPES. USE TYPE 'L' COPPER PIPE ABOVE GRADE. ALL PIPING MUST BE SUPPORTED AS PER CODE REQUIREMENTS. USE COPPER TUBING (DW) FOR VENTS. USE CAST IRON TRAP ROOT. |
| 10.   | PROVIDE BACKFLOW PREVENTERS ON EQUIPMENT CONNECTIONS.  |
| 11.   | ONLY LEAD FREE SOLDER IS TO BE USED.   |
| 12.   | INSTALL POLISHED CHROME ESCUTCHEON PLATES ON ALL PIPES WHERE THEY PASS THROUGH WALLS OR CEILINGS IN FINISHED AREA.   |
| 13.   | PROVIDE ALL ACCESS DOORS TO MATCH WALL AND CEILING SURFACES FOR CONCEALED VALVES. HAVE THESE INSTALLED BY THE TRADES IN WHOSE WORK THE DOOR IS LOCATED.  |
| 14.   | ALL WORK IS TO CONFORM TO BASE BUILDING STANDARDS AND SPECIFICATIONS FOR MATERIALS AND WORKMANSHIP.  |

| PLUMBING FITTINGS                                       |             |                 |               |   |
|---|-------------|-----------------|---------------|---|
| DESIGNATION   | ZURN        | SMITH           | WATTS         | REMARKS   |
| F.F.D. (FUNNEL FLOOR DRAIN)                             | ZN-211-BF-P | 2005A-3591-P050 | FD-200-EG-1-7 | CONNECTION TO TRAP SEAL PRIMER SYSTEM REQUIRED. |
| F.D. (FLOOR DRAIN) WITH SEDIMENT BUCKET IN KITCHEN ONLY | ZN-211-B-P  | 2005A-P050      | FD-200-A-1-7  | CONNECTION TO TRAP SEAL PRIMER SYSTEM REQUIRED. |
| H.D. (HUB DRAIN)  | ZN-211-BE   | 2005A-3580-P050 | FD-200-EF-1   | CONNECTION TO TRAP SEAL PRIMER SYSTEM REQUIRED. |

| GENERAL SITE SERVICES NOTES |   |
|-----------------------------|---|
| 1.                          | CONTRACTOR IS TO VERIFY LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.  |
| 2.                          | ALL EXISTING UTILITIES AND SERVICES ARE TO BE MAINTAINED AND SUPPORTED BY THE CONTRACTOR TO THE SATISFACTION OF THE OWNER OF THE UTILITY.   |
| GENERAL DEMOLITION NOTES    |   |
| 1.                          | CONTRACTOR IS TO ENSURE THAT ALL EXISTING SERVICES SERVING EXISTING ARE REMOVED IN SERVICE UNLESS SPECIFIED AS TO BE RETAINED. ALL SERVICES OR OTHER EQUIPMENT AND SYSTEMS IS TO BE REMOVED AS SHOWN.   |
| 2.                          | ALL DISTURBED SURFACES AFTER EQUIPMENT AND SYSTEMS REMOVAL OR RELOCATION ARE TO BE PLACED WITH APPROPRIATE MATERIAL TO MAINTAIN FIRE SEPARATION AND PROTECTION TO THE EXISTING OR NEW.  |
| 3.                          | CONTRACTOR IS TO ENSURE THAT ALL EXISTING REMOVED FIXTURES AND EQUIPMENT REMAIN THE PROPERTY OF THE OWNER, UNLESS DIRECTED FOR DISPOSAL AT THE OWNER'S DISCRETION. COST OF REMOVAL AND DISPOSAL TO BE INCLUDED IN CONTRACT.   |
| GENERAL NOTES               |   |
| 1.                          | REFER TO MECH. SPECIFICATION SECTION FOR ADDITIONAL REQUIREMENTS.   |
| 2.                          | REFER TO SITE AND OWNER INSTRUCTIONS FOR PHASING AND STAGING.   |
| 3.                          | THE CONTRACTOR SHALL COORDINATE WITH THE STRUCTURAL TO PROVIDE OPENINGS AND SLEEVES THROUGH STRUCTURAL ELEMENTS WHERE REQUIRED.   |
| 4.                          | CONTRACTOR SHALL VERTICALLY CEILING FINISHES, AS WELL AS STRUCTURAL FRAMING. CONTRACTOR AND DISCRETE SUPPLIER ARE RESPONSIBLE TO PROVIDE ALL PLASTER AND FINISHING FRAMES, MOUNTING HARDWARE, AND ACCESSORIES TO SUIT ARCHITECTURAL CEILING TYPE. MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE CONTRACTOR FOR DETAILS OF MOUNTING REQUIREMENTS OF DIFFUSERS AND GRILLES IN DRYWALL CEILINGS TO DRYWALL TRADE AND ENSURE EDGES OF OPENINGS ARE FRAMED BY DRYWALL TRADE TO SUPPORT DIFFUSERS AND GRILLES. PROVIDED BY DRYWALL TRADE TO SUPPORT DIFFUSERS AND GRILLES PROPERLY. DIFFUSERS AND GRILLES MUST NOT BE SUPPORTED SOLELY BY HANGER WIRES. |
| 5.                          | THE CONTRACTOR SHALL HAVE ROOF PENETRATIONS MADE AND SEALED BY THE CONTRACTOR IN ACCORDANCE WITH CONTRACTOR'S SPECIFICATIONS.   |
| 6.                          | Penetrations of concrete shall be saw-cut or core bored – impact hammers are not allowed, seal all ductwork & sleeves to prevent leaking thru floor.  |
| 7.                          | Contractor shall review mechanical drawings, architectural reflected ceiling plans and architectural room finish schedules as soon as contract documents are signed. Advise consultant of any conflicts between ceiling type and diffuser/grille type.  |
| 8.                          | DO NOT SCALE DRAWINGS FOR INSTALLATION PURPOSES. OBTAIN ALL DIMENSIONS FROM ARCHITECTURAL DRAWINGS, MANUFACTURER'S SHOP DRAWINGS, AND ON SITE INSPECTIONS.  |
| 9.                          | MECHANICAL, DIV. 2-14 AND ELECTRICAL TRADES SHALL WORK IN CONJUNCTION WITH ONE ANOTHER AS TO AVOID INTERFACINGS BETWEEN DIFFERENT DUCTWORK, CONDUIT, CABLES, ETC.   |
| 10.                         | WORK SHALL BE COORDINATED THROUGH THE GENERAL CONTRACTOR PRIOR TO INSTALLATION OF ANY EQUIPMENT, DUCTWORK, AND CONTROLS. COORDINATE WITH ARCHITECTURAL ELEVATIONS FOR ARCHITECTURAL, MECHANICAL, AND ELECTRICAL SPACES AND LOCATIONS.   |
| 11.                         | PROPERLY SUPPORT CEILING MOUNTED EQUIPMENT AND ANY OTHER EQUIPMENT INDEPENDENT OF CEILING SUPPORT SYSTEM. REFER TO ARCHITECTURAL DETAILS AND COORDINATE WITH STRUCTURAL TRADE.  |
| 12.                         | REFER TO ARCHITECTURAL FOR OWNER SUPPLIED EQUIPMENT. CONFIRM ALL EQUIPMENT IS IN GOOD WORKING ORDER AND PROVIDED SOFT.  |
| 13.                         | REVIEW ARCHITECTURAL, ELECTRICAL, AND STRUCTURAL DRAWINGS AND PROVIDE ON SITE INSPECTIONS TO DETERMINE FULL EXTENT OF PROJECT PRIOR TO SUBMITTING BID.  |
| 14.                         | ALL DUCTWORK FITTINGS SHALL BE RIGID GALVANIZED IRON, UNLESS NOTED OTHERWISE.   |
| 15.                         | FLEXIBLE DUCTWORK SHALL BE LIMITED TO 3'-0" IN LENGTH TOTAL FOR ANY RUMBLE.   |
| 16.                         | NO FLEXIBLE DUCTWORK SHALL BE PERMITTED FOR OFFSETTING.   |
| 17.                         | WHERE MODIFICATIONS HAVE BEEN DONE TO THE EXISTING SYSTEMS, CONTRACTOR MUST REBALANCE THE AFFECTED REMAINING PARTS OF THE SYSTEM.   |
| 18.                         | CUT AND PATH ALL WALLS, ROOFS, CEILINGS FLOORS AS REQUIRED FOR INSTALLATION AND DEMOLITION. MAINTAIN STRUCTURAL AND FIRE SEPARATION INTERFACINGS. CONTRACTOR SHALL MAKE NEW OR EXISTING FINISHES COORDINATE WITH ARCHITECTURAL TRADES.  |
| 19.                         | CAP ALL SERVICES THAT REMAIN AFTER DEMOLITION.  |
| 20.                         | ALL INSTALLATIONS SHALL BE IN ACCORDANCE WITH CODES, AMENDMENTS, BULLETINS ETC. AND REQUIREMENTS OF ALL INSPECTION AUTHORITIES OF THE JURISDICTION.   |

EXISTING MECHANICAL SERVICES SHOWN ON THESE DRAWINGS WERE TAKEN FROM THE ORIGINAL CONTRACT DRAWINGS. THE CONTRACTOR SHALL VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING SERVICES ON SITE AND SHALL REMOVE ALL REDUNDANT SERVICES IN THE AREAS OF CONSTRUCTION.

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CONSTRUCTION MUST CONFORM TO ALL APPLICABLE CODES AND REQUIREMENTS OF ALL MATERIALS AND EQUIPMENT HAVING JURISDICTION.

THE CONTRACTOR WORKING FROM DRAWINGS NOT SPECIFICALLY MARKED FOR CONSTRUCTION MUST ASSUME FULL RESPONSIBILITY AND BEAR COSTS FOR ANY CORRECTIONS OR DAMAGES RESULTING FROM HIS WORK.

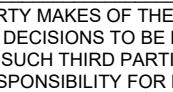
THIS DRAWING IS NOT TO BE SCALED.

NOTE:  
ALL DIMENSIONS AND ELEVATIONS MUST BE SITE MEASURED AND CONFIRMED PRIOR TO FABRICATION AND/OR ERECTION.

SHOP DRAWINGS  
ALL SHOP DRAWINGS SUBMITTED TO THE ENGINEER SHALL BE REVIEWED FOR GENERAL COMPLIANCE WITH THE INTENT OF THE STRUCTURAL DESIGN CONTAINED WITHIN THESE PROJECT DOCUMENTS ONLY.

DO NOT SUBMIT SHOP DRAWINGS AND/OR COVERING TRANSMITTERS MARKED FOR APPROVAL. FOREMENTIONED DOCUMENTS SO MARKED WILL NOT BE REVIEWED.

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| NO.                           | REVISION                             | DATE       |
|-------------------------------|--------------------------------------|------------|
| STAGE OF DESIGN AND DRAFTING: |                                      |            |
|                               | Issued for Information Only          |            |
|                               | Preliminary Design                   | 01/26/2024 |
|                               | Issued for Comments and Coordination |            |
|                               | Issued for Building Permit           |            |
|                               | Issued for Tender                    |            |
|                               | Issued for Construction              |            |
|                               | As Built Record Set                  |            |

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THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS ON SITE AND REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING.

DRAWINGS MUST NOT BE SCALED.

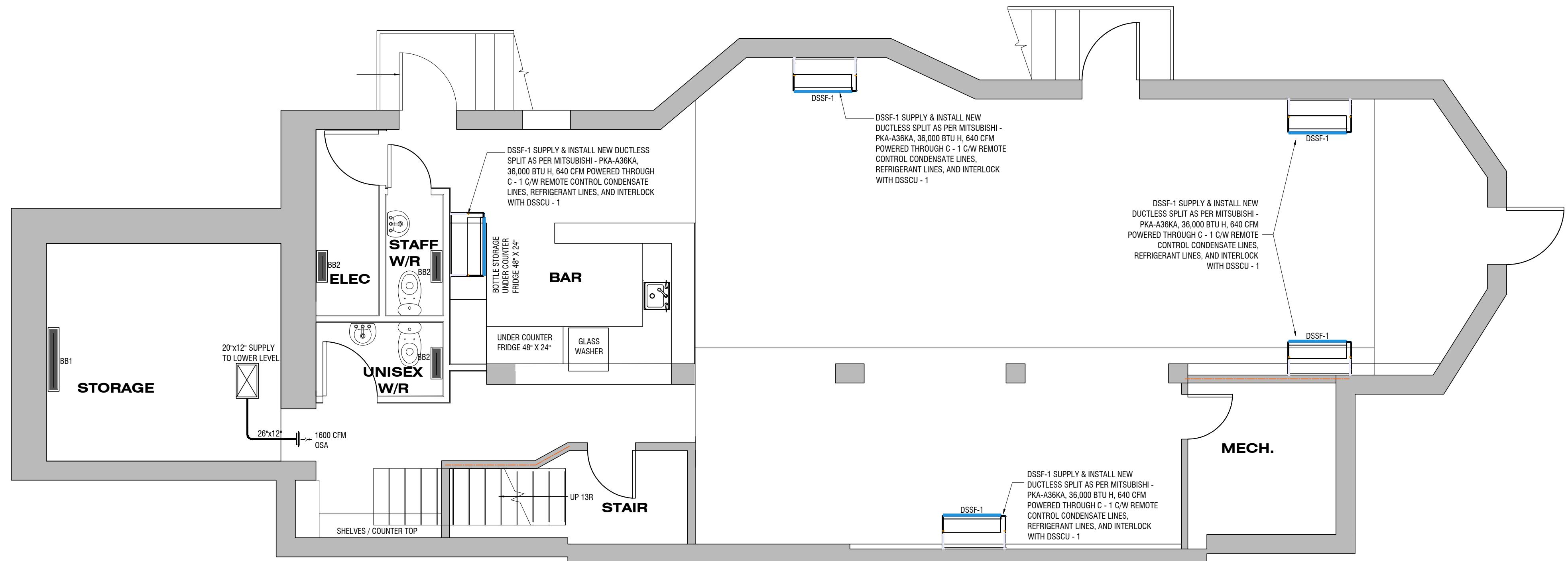
 ROBERT E. DALE  
CONSULTING ENGINEERS

ENGINEERING DONE UPRIGHT.  
310 CHRISTINA STREET  
SARNIA, ONTARIO

PROJECT  
PROPOSED NIGHT CLUB  
32 HESS STREET SOUTH  
HAMILTON, ONTARIO

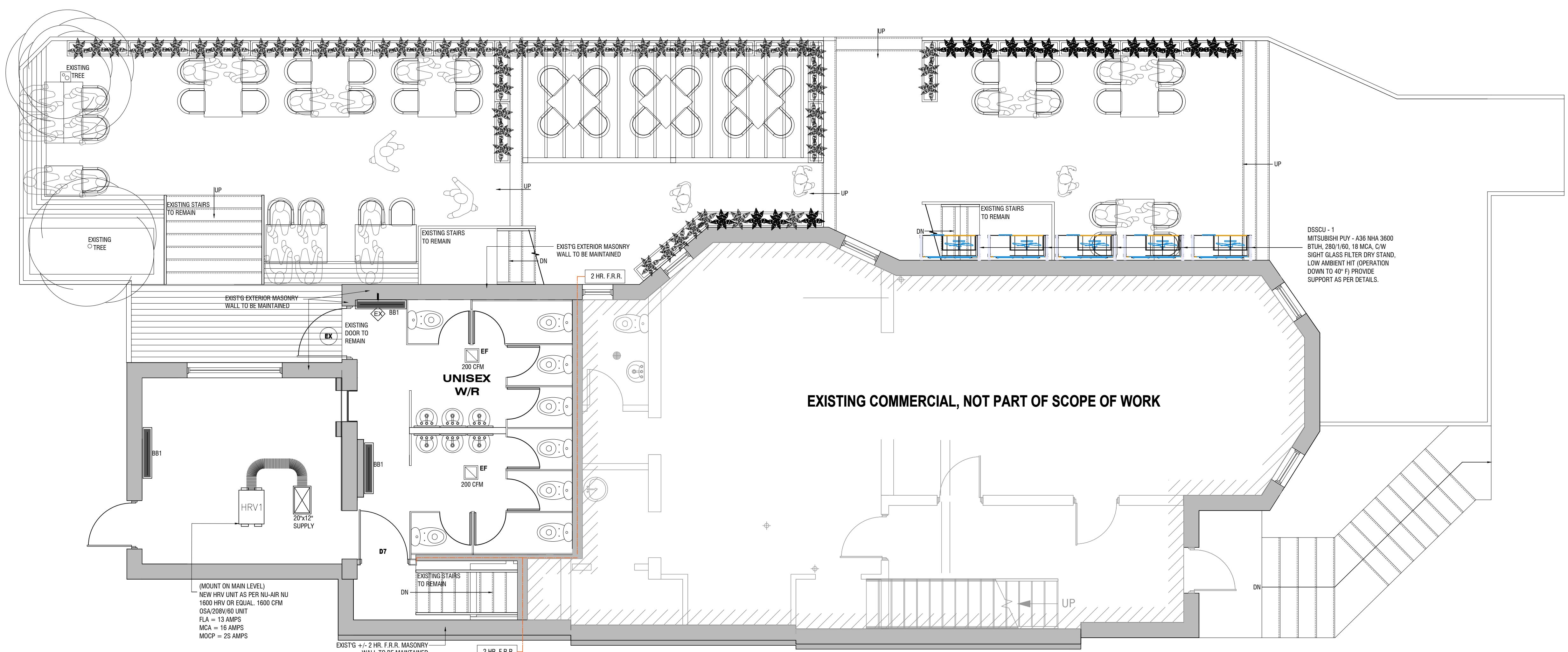
ARCHITECT:  
DWG. TITLE  
PLUMBING NOTES

|            |               |              |            |
|------------|---------------|--------------|------------|
| DATE       | January, 2024 | SCALE        | 1/4"=1'-0" |
| CHECKED BY | G.DALE        | DRAWING NO.: |            |
| DRAWN      |               |              |            |



### LOWER LEVEL HVAC

Scale : 1/4"=1'-0"



### MAIN LEVEL HVAC

Scale : 1/4"=1'-0"

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CONSTRUCTION MUST CONFORM TO ALL APPLICABLE CODES AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.

THE CONTRACTOR WORKING FROM DRAWINGS NOT SPECIFICALLY MARKED FOR CONSTRUCTION MUST ASSUME FULL RESPONSIBILITY AND BEAR COSTS FOR ANY CORRECTIONS OR DAMAGES RESULTING FROM HIS WORK.

THIS DRAWING IS NOT TO BE SCALED.

**NOTE:**  
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**SHOP DRAWINGS:**  
ALL SHOP DRAWINGS SUBMITTED TO THE ENGINEER SHALL BE REVIEWED FOR GENERAL COMPLIANCE WITH THE INTENT OF THE STRUCTURAL DESIGN CONTAINED WITHIN THESE PROJECT DOCUMENTS ONLY.

DO NOT SUBMIT SHOP DRAWINGS AND/OR COVERING TRANSMITTERS MARKED FOR APPROVAL. AFOREMENTIONED DOCUMENTS SO MARKED WILL NOT BE REVIEWED.

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| NO.                                 | REVISION                             | DATE       |
|-------------------------------------|--------------------------------------|------------|
| STAGE OF DESIGN AND DRAFTING:       |                                      |            |
| <input type="checkbox"/>            | Issued for Information Only          |            |
| <input checked="" type="checkbox"/> | Preliminary Design                   | 01/26/2024 |
| <input type="checkbox"/>            | Issued for Comments and Coordination |            |
| <input type="checkbox"/>            | Issued for Building Permit           |            |
| <input type="checkbox"/>            | Issued for Tender                    |            |
| <input type="checkbox"/>            | Issued for Construction              |            |
| <input type="checkbox"/>            | As Built Record Set                  |            |

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THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS ON SITE AND REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING.

DRAWINGS MUST NOT BE SCALED.

**ROBERT E. DALE**  
CONSULTING ENGINEERS

ENGINEERING DONE UPRIGHT.

429 EXMOUTH STREET  
SUITE 208, SARNIA,  
ONTARIO

|            |  |
|------------|--|
| PROJECT    | PROPOSED NIGHT CLUB<br>32 HESS STREET SOUTH<br>HAMILTON, ONTARIO |
| ARCHITECT: |  |
| DWG. TITLE | HVAC FLOOR PLANS   |
| DATE       | January, 2024  |
| SCALE      | 1/4"=1'-0"   |
| CHECKED BY | G.DALE   |
| DRAWN BY   | C.CALMEIDA   |
| PROJ. No.  | 240241   |

M3.00

## FIRE STOPPING

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL FIRE STOPPING FOR ALL PENETRATIONS CREATED BY THE INSTALLATION OF ANY NEW SYSTEMS.
- ULC LISTED, INTUMESCENT MATERIAL, SYNTHETIC ELASTOMERS, CAPABLE OF EXPANDING UP TO 8 TIMES WHEN EXPOSED TO TEMPERATURES OF 250 F OR HIGHER.
- STOP FOAM #RTV, T&G BURNDY
- APPLICATIONS:
  - CUL SYSTEM #SP7311 – METAL PIPING OR CONDUIT THRU GYPSUM WALL ASSEMBLY (F RATING UP TO 1 HR OR 2 HR)
  - CUL SYSTEM #SP7117 – METAL PIPING OR CONDUIT THRU WOOD FLOOR ASSEMBLY (F RATING UP TO 1 HR OR 2 HR)
  - CUL SYSTEM #W15029 – INSULATED METAL PIPING THROUGH GYPSUM WALL ASSEMBLY (F RATING UP TO 1 HR OR 2 HR)
- CONTRACTOR TO PROVIDE SHOP DRAWINGS WITH DETAILED MATERIAL INFORMATION INDICATING ULC OR CUL RATINGS AS WELL AS APPLICATION INSTRUCTIONS.

## HVAC GENERAL NOTES

- THESE PLANS ARE TO BE READ IN CONJUNCTION WITH THE OTHER PLANS, AS WELL AS THE SPECIFICATIONS FOR THE SPECIFIED EQUIPMENT.
- BALANCING**

  - A CONTRACTOR'S MANUFACTURERS INSTRUCTIONS SHALL BE PROVIDED TO THE OWNER FOR BALANCING INSTALLATION.
  - BALANCING SHALL BE CONDUCTED FOR COMMERCIAL OCCUPANCY TO ENSURE MINIMUM/TOTAL AIR FLOWS AT EACH EXHAUST, SUPPLY AIR TRAVERSE. BALANCING SHALL BE PER ASHRAE 62.1 PROVIDED BY A QUALIFIED CONTRACTOR TO THE STANDARDS OF ASHRAE 111-2008 OR SMACNA STANDARDS. WITH A COPY OF THE REPORT BEING PROVIDED TO THE ENGINEER FOR REVIEW.
  - BALANCING IS OPTIONAL FOR RESIDENTIAL OCCUPANCY. IF LANDLORD'S DESIGN, IT SHALL BE PROVIDED TO ENSEURE MINIMUM TOTAL AIR FLOWS AT EACH DIFFUSER, EXHAUST, SUPPLY AIR TRAVERSE. BALANCING SHALL BE PER ASHRAE 62.1. BALANCING SHALL BE COMPLETED BY A QUALIFIED CONTRACTOR TO THE STANDARDS OF ASHRAE 111-2008 OR SMACNA STANDARDS.

- MATERIALS / EQUIPMENT**

  - ALL NEW DUCTS, ASSOCIATED FITTINGS, CONNECTORS AND PLenums SHALL BE OF GALVANIZED STEEL.
  - DUCT SEAMS SHALL HAVE JOINTS THAT ARE SEALED WITH SEALANT COMPOUND, TO SMACNA CLASS 100 AT MINIMUM (LONGITUDINAL & TRANSVERSE JOINTS).
  - DUCTS UP TO 350MM LARGEST DIMENSION SHALL HAVE A WALL THICKNESS OF 0.33mm MINIMUM.
  - DUCTS SHALL BE SECURELY SUPPORTED BY METAL HANGERS, STRAPS, LUGS, OR BRACKETS.
  - ALL ROUND DUCTS SHALL TIGHTLY FITTED AND LAPPED NOT LESS THAN 25mm. RECTANGULAR DUCT CONNECTIONS SHALL BE MADE WITH S OR DRIVE CLEATS OR EQUIVALENT.
  - DUCTS AND PLenums SHALL HAVE A FLAME SPREAD RATING OF NOT MORE THAN 25 AND A SMOKE DEVELOPMENT CLASSIFICATION OF NOT MORE THAN 50.
  - TAPE USED FOR SEALING JOINTS IN AIR DUCTS, PLenums AND OTHER PARTS OF THE AIR DUCT SYSTEM SHALL MEET THE FLAME RESISTANCE REQUIREMENTS FOR FABRIC IN CAN/ULC-S109 STANDARD FOR FLAME TESTS OF FLAME RESISTANT FABRICS AND FILMS.
  - HVAC PIPING SHALL BE INSULATED PER ASHRAE 90.1 TABLE 6.8.3.
  - SETBACK CONTROLS TO BE PART OF THE HEATING SYSTEM CONTROLS.

## INSTALLATION

- ALL WORKS TO BE COORDINATED WITH OTHER TRADES AS REQUIRED.
- CONTRACTOR IS RESPONSIBLE FOR REVIEW OF POTENTIAL INTERFERENCES OF OTHER SYSTEMS.
- REFLECTED CEILING PLAN MAY VARY PER ARCHITECTURAL PLANS.
- EXACT LOCATION OF THE HVAC UNITS MAY VARY SLIGHTLY BASED UPON SITE CONDITIONS, OUTDOOR GRILL/HOOD STYLE AND COVER TO BE COORDINATED BETWEEN THE CONTRACTOR AND LANDLORD.
- A ROOM THERMOSTAT SHALL BE INSTALLED 1.6m A.F.F. IN THE LOCATIONS SHOWN. MODEL OF THERMOSTAT TO BE DETERMINED BY BASE-BUILDING CONSTRUCTION, 7 DAY PROGRAMMING, 24/7, 100% HUMIDITY, 100% VENTILATION.
- RIGID DUCTING SHALL BE INSTALLED TO THE DIFFUSERS.
- MANUAL DAMPERS SHALL BE INSTALLED ON ALL BRANCH DUCTS AND DIFFUSERS, FOR SYSTEM BALANCING.
- ALL EXHAUST DUCTS SHALL HAVE THE 5FT CLOSEST TO THE EXIT POINT FROM THE BUILDING INSULATED. PROVIDE 1" FIBERGLASS INSULATION OUTSIDE OF DUCT.

## GENERAL NOTES

DO NOT SCALE DRAWINGS FOR INSTALLATION PURPOSES. OBTAIN ALL DIMENSIONS ON SITE AND FROM MANUFACTURER'S REVIEWED SHOP DRAWINGS.

COORDINATE THE WORK OF ALL TRADES SO AS TO AVOID ANY INTERFERENCES BETWEEN NEW AND EXISTING PIPING, DUCTWORK, ELECTRICAL CONDUIT, LIGHTING FIXTURES AND EQUIPMENT AND WITH THE FREE USE OF THE BUILDING SPACE.

DISMANTLED EQUIPMENT SHALL REMAIN THE PROPERTY OF THE OWNER AND SHALL NOT BE REMOVED FROM THE SITE WITHOUT THE OWNER'S PERMISSION.

EXISTING MATERIALS AND EQUIPMENT DESIGNATED TO BE DISMANTLED AND NOT REQUIRED BY THE OWNER SHALL BE DEEMED DEBRIS AND SHALL BE REMOVED FROM THE SITE.

PROVIDE ANY ADDITIONAL EXCAVATION REQUIRED TO ACCOMMODATE INSTALLATION OF NEW PIPING MAINS AND BRANCHES. BACKFILL WILL BE BY OTHERS.

## GENERAL SITE SERVICES NOTES

- CONTRACTOR IS TO VERIFY LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
- ALL EXISTING UTILITIES AND SERVICES ARE TO BE MAINTAINED AND SUPERVISED BY THE CONTRACTOR TO THE SATISFACTION OF THE OWNER OF THE UTILITY.

## GENERAL DEMOLITION NOTES

- CONTRACTOR IS TO ENSURE THAT ALL EXISTING SERVICES SERVING EXISTING AREAS REMAIN IN SERVICE UNTIL THESE AREAS ARE RECONNECTED TO NEW SERVICES. ONE THEN OBSOLETE EQUIPMENT AND SYSTEMS IS TO BE REMOVED AS SHOWN.
- ALL DISTURBED SURFACES OF EQUIPMENT AND SYSTEMS REMOVAL OR REROUTING TO BE FILLED-IN WITH APPROPRIATE MATERIAL TO MAINTAIN FIRE SEPARATION DISTANCE FROM ANY EXISTING SERVICES.
- CONTRACTOR IS TO ENSURE THAT ALL EXISTING REMOVED FIXTURES AND EQUIPMENT REMAIN THE PROPERTY OF THE OWNER, UNLESS DIRECTED FOR DISPOSAL AT THE OWNER'S DISCRETION. COST OF REMOVAL AND DISPOSAL TO BE INCLUDED IN CONTRACT.

## GENERAL NOTES

- REFER TO MECH. SPECIFICATION SECTION FOR ADDITIONAL REQUIREMENTS.
- REFER TO OWNER AND OWNER INSTRUCTIONS FOR PHASING AND STAGING.
- THE CONTRACTOR SHALL COORDINATE WITH THE STRUCTURAL TO PROVIDE OPENINGS AND DUCTS THROUGH STRUCTURAL ELEMENTS WHERE REQUIRED.
- CONTRACTOR IS TO ENSURE ALL CEILING UNITS WITH ARCHITECTURAL DRAWINGS, CONTRACTOR AND DIFFUSER/GRILLE SUPPLIED. RESPONSIBLE FOR ALL PLASTER AND FINISHING FRAMES, MOUNTING HARDWARE, AND ACCESSORIES TO SUIT ARCHITECTURAL CEILING TYPES. MOUNTING HARDWARE TO BE PROVIDED BY CONTRACTOR. PROVIDE DETAILS OF MOUNTING REQUIREMENTS OF DIFFUSERS AND GRILLES IN DRYWALL CEILINGS TO DRYWALL TRADE AND ENSURE EDGES OF OPENINGS ARE FINISHED BY DRYWALL TRADE TO SUPPORT DIFFUSERS AND GRILLES PROPERLY. DIFFUSERS AND GRILLES MUST NOT BE SUPPORTED SOLELY BY HANGER WIRES.
- THE CONTRACTOR SHALL HAVE ROOF PENETRATIONS MADE AND SEALED BY THE CONTRACTOR IN ACCORDANCE WITH ARCHITECTURAL SPECIFICATIONS.
- PENETRATIONS OF CONCRETE SHALL BE SAW-CUT OR CORE BORED – IMPACT HAMMERS ARE NOT ALLOWED. SEAL ALL DUCTWORK & SLEEVES TO PREVENT LEAKAGE.
- CONTRACTOR SHALL REVIEW MECHANICAL DRAWINGS, ARCHITECTURAL REFLECTED CEILING PLANS AND ARCHITECTURAL ROOM FINISH SCHEDULES AS SOON AS CONTRACT DOCUMENTS ARE SIGNED. ADVISE CONSULTANT OF ANY CONFLICTS BETWEEN CEILING TYPE AND DIFFUSER/GRILLE TYPE.
- DO NOT SCALE DRAWINGS FOR INSTALLATION PURPOSES. OBTAIN ALL DRAWINGS FROM ARCHITECTURAL PLANS, MANUFACTURER'S SHOP DRAWINGS, AND ON SITE INSPECTIONS.
- MECHANICAL DIV. 2-14 AND ELECTRICAL TRADES SHALL WORK IN CONJUNCTION WITH THE CONTRACTOR SO AS TO AVOID INTERFERENCES BETWEEN PIPING, DUCTWORK, CONDUIT, LIGHTING FIXTURES, ETC.
- WORK SHALL BE COORDINATED THROUGH THE GENERAL CONTRACTOR PRIOR TO INSTALLATION OF ANY EQUIPMENT, DUCTWORK AND CONTROLS. CONTRACTOR SHALL COORDINATE WITH ARCHITECTURAL ELEVATIONS FOR ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING TRADES. PROVIDE THE ADJACENT THERMACE, OWNER AND LANDLORD ON SITE. PROVIDE NEW GAS PIPING DISTRIBUTION AS SHOWN TO SUIT ALL THE TENANT EQUIPMENT. THE GAS FILTER IS TO BE DETERMINED ON SITE FROM GAS METER. COORDINATE THIS WORK WITH THE CONTRACTOR PRIOR TO PRODUCING THIS SCOPE OF WORK. REPORT ANY DISCREPANCIES IMMEDIATELY.
- NEW GAS LINE AND METER REQUIREMENTS ARE TO BE COORDINATED WITH THE TENANT/LANDLORD AGREEMENT AND LOCAL GAS COMPANY PRIOR TO TENDERING THIS SCOPE OF WORK OR ORDERING ANY MATERIALS. EXTEND NEW GAS LINE AS PER BASE BUILDING STANDARDS. SUPPLY AND INSTALL ALL HARDWARE AND MATERIALS TO HANG/ SUPPORT NEW GAS LINE. CONTRACTOR IS TO COORDINATE WITH THE ADJACENT THERMACE, OWNER AND LANDLORD ON SITE. PROVIDE NEW GAS PIPING DISTRIBUTION AS SHOWN TO SUIT ALL THE TENANT EQUIPMENT. THE GAS FILTER IS TO BE DETERMINED ON SITE FROM GAS METER. COORDINATE THIS WORK WITH THE CONTRACTOR PRIOR TO PRODUCING THIS SCOPE OF WORK. REPORT ANY DISCREPANCIES IMMEDIATELY.
- ALL DUCTWORK FITTINGS SHALL BE RIGID GALVANIZED IRON, UNLESS NOTED OTHERWISE.
- ALL DUCTWORK SHALL BE LIMITED TO 3'-0" IN LENGTH TOTAL FOR EACH RUNOUT.
- NO FLEXIBLE DUCTWORK SHALL BE PERMITTED FOR OFFSETTING.
- WHERE MODIFICATIONS HAVE BEEN MADE TO THE EXISTING SYSTEMS, CONTRACTOR MUST REBALANCE THE AFFECTED REMAINING PARTS OF THE SYSTEM.
- CUT AND PATH ALL WALLS, ROOFS, CEILINGS FLOORS AS REQUIRED FOR INSTALLATION AND DEMOLITION. MAINTAIN STRUCTURAL AND FIRE SEPARATION INTERFACINGS. COORDINATE WITH ARCHITECTURAL TRADES TO MATCH NEW OR EXISTING FINISHES. COORDINATE WITH ARCHITECTURAL TRADES.
- CAP ALL SERVICES THAT REMAIN AFTER DEMOLITION.
- ALL INSTALLATIONS SHALL BE IN ACCORDANCE WITH CODES, AMENDMENTS, BULLETINS, ETC. AND REQUIREMENTS OF ALL INSPECTION AUTHORITIES OF THE JURISDICTION.

EXISTING MECHANICAL SERVICES SHOWN ON THESE DRAWINGS WERE TAKEN FROM THE ORIGINAL CONTRACT DRAWINGS. THE CONTRACTOR SHALL VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING SERVICES ON SITE AND SHALL REMOVE ALL REDUNDANT SERVICES IN THE AREAS OF CONSTRUCTION.

## HVAC PLAN CODED NOTES

- WELDED GREASE EXHAUST DUCT RISER FROM HOOD COLLAR. PROVIDE WELDED DUCT TRANSITION FROM HOOD AND FAN COLLAR. PERFORM ALL INSTALLATIONS IN ACCORDANCE WITH APPLICABLE CODES AND REGULATIONS.
- LOCATION OF UTILITY DUCTS, START/STOP STATION CONTROLS & FIRE SUPPRESSION SYSTEMS TO BE PROVIDED BY THE CONTRACTOR.
- ROOF CURB PROVIDED BY THE LANDLORD. EXTEND GROOVED RISER ABOVE ROOF DECK C/W INSECT/BIRD SCREEN. EXTEND NEW MAIN RISER BELOW ROOF DECK AND DISCHARGE NEW SANITARY EXHAUST DUCTS AS SHOWN.
- MUA-1 DISTRIBUTION TO BE FULLY DUCTED TO EXHAUST HOOD PSP PLENUM PROVIDE RISER TO SUIT PSP COLLAR SIZE 30" TO MUA DUCT.
- MANTAIN ALL EXHAUST OUTLETS MINIMUM 10'-0" CLEARANCE TO ANY FRESH AIR / OUTDOOR AIR INLET LOUVRES OR HOODS.
- ELECTRIC HEATER TO BE SUPPLIED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. C/W BUILT IN STAT.
- APPROX LOCATION OF ROOF TOP UNIT BY LANDLORD. EXACT LOCATION TO BE DETERMINED ON SITE. LOCATE THERMOSTAT TO NEW POSITION AS SHOWN AND DISCHARGE DUCT WORK. CONTRACTOR TO INSTALL/REPLACE FILTER. UPON COMPLETION OF CONSTRUCTION, NOTIFY OWNER OF UNIT & REPORT TO OWNER PRIOR TO FABRICATION OF ANY DUCTWORK.

- PROPOSED LOCATION FOR FIRE EXTINGUISHERS. EXACT QUANTITY AND LOCATIONS TO BE COORDINATED WITH ARCHITECT AND FIRE DEPT. SB-10BC RATING.

## RESERVED

- SUPPLY AND INSTALL EGG CRATE TYPE AND GRILLE IN LIEU OF CEILING TILE ABOVE WALK-IN COOLER AND FREEZER E.H. PRICE B1 SERIES.

- LOCATE EXISTING THERMOSTAT TO NEW POSITION AS SHOWN. ENSURE PROPER OPERATION AND REPORT ANY DISCREPANCIES IMMEDIATELY. THERMOSTAT SHOULD NOT BE REMOVED OR RELOCATED ON SITE.

- DUCTWORK INSTALLATION. INSULATE FIRST 10'-0" OF ALL SUPPLY AND RETURN DUCTWORK AS REQUIRED.

## RESERVED

- LOCATE OF GAS METER AND LINE BY THE LANDLORD. INSTALL NEW GAS PIPING AS SHOWN ON PLANS. PERFORM NEW WORK IN ACCORDANCE WITH BASE BUILDING AND LOCAL GAS CO STANDARDS.

- GAS LINE FEED FROM ROOF LEVEL ABOVE. DISTRIBUTE AS SHOWN TO SERVE NEW GAS EQUIPMENT.

- NEW GAS LINE TO BE EXTENDED FROM EXISTING GAS LINE. EXACT LOCATION SITE TO BE VERIFIED. DISTRIBUTE GAS LINE TO SERVE NEW MUA-1 AS SHOWN. EXACT SIZE OF GAS LINE TO BE DETERMINED ON SITE BY GAS FITTER ONCE EXACT LENGTH/STANCE OF PIPING HAS BEEN DETERMINED FROM SITE FROM GAS METER. COORDINATE THIS WORK WITH THE CONTRACTOR PRIOR TO PRODUCING THIS SCOPE OF WORK. REPORT ANY DISCREPANCIES IMMEDIATELY.

- NEW GAS LINE AND METER REQUIREMENTS ARE TO BE COORDINATED WITH THE TENANT/LANDLORD AGREEMENT AND LOCAL GAS COMPANY PRIOR TO TENDERING THIS SCOPE OF WORK OR ORDERING ANY MATERIALS. EXTEND NEW GAS LINE AS PER BASE BUILDING STANDARDS. SUPPLY AND INSTALL ALL HARDWARE AND MATERIALS TO HANG/ SUPPORT NEW GAS LINE. CONTRACTOR IS TO COORDINATE WITH THE ADJACENT THERMACE, OWNER AND LANDLORD ON SITE. PROVIDE NEW GAS PIPING DISTRIBUTION AS SHOWN TO SUIT ALL THE TENANT EQUIPMENT. THE GAS FILTER IS TO BE DETERMINED ON SITE FROM GAS METER. COORDINATE THIS WORK WITH THE CONTRACTOR PRIOR TO PRODUCING THIS SCOPE OF WORK. REPORT ANY DISCREPANCIES IMMEDIATELY.

- ALL DUCTWORK FITTINGS SHALL BE RIGID GALVANIZED IRON, UNLESS NOTED OTHERWISE.
- ALL DUCTWORK SHALL BE LIMITED TO 3'-0" IN LENGTH TOTAL FOR EACH RUNOUT.
- NO FLEXIBLE DUCTWORK SHALL BE PERMITTED FOR OFFSETTING.

- WHERE MODIFICATIONS HAVE BEEN MADE TO THE EXISTING SYSTEMS, CONTRACTOR MUST REBALANCE THE AFFECTED REMAINING PARTS OF THE SYSTEM.

- CUT AND PATH ALL WALLS, ROOFS, CEILINGS FLOORS AS REQUIRED FOR INSTALLATION AND DEMOLITION. MAINTAIN STRUCTURAL AND FIRE SEPARATION INTERFACINGS. COORDINATE WITH ARCHITECTURAL TRADES TO MATCH NEW OR EXISTING FINISHES. COORDINATE WITH ARCHITECTURAL TRADES.

- CAP ALL SERVICES THAT REMAIN AFTER DEMOLITION.

- ALL INSTALLATIONS SHALL BE IN ACCORDANCE WITH CODES, AMENDMENTS, BULLETINS, ETC. AND REQUIREMENTS OF ALL INSPECTION AUTHORITIES OF THE JURISDICTION.

## SUPPLEMENTAL NOTES + SPECIFICATIONS

THE TENDER PACKAGE MAY INCLUDE SUPPLEMENTAL SPECIFICATIONS AND SCOPE OF WORK FOR THIS PROJECT. THE SUPPLEMENTAL SPECIFICATIONS AND SCOPE OF WORK IS TO BE READ IN CONJUNCTION AND FORM OF A PART OF THE TENDER DOCUMENTS. THE TENDER DOCUMENTS AND TENDER DOCUMENTS AND THE WHOLE SHALL CONSTITUTE PART OF THE CONTRACT DOCUMENTS. THE SUPPLEMENTAL SPECIFICATIONS AND SCOPE OF WORK TAKES PRECEDENCE OVER THE DRAWINGS PRECEDENCE OVER THE DRAWINGS.

THE BIDDER IS TO DISTRIBUTE THE DRAWINGS AND SPECIFICATIONS AND SCOPE TO WORK AND ALL OTHER PERTINENT DOCUMENTATION AND INFORMATION TO ALL VENDORS AND SUBCONTRACTORS, AND ENSURE THAT ALL OF THE REQUIREMENTS ARE INCLUDED IN THE TENDER PRICE THE SUPPLIED INFORMATION.

THE ENGINEER IS NOT RESPONSIBLE FOR THE ACCURACY OF THE DRAWINGS. THE CONTRACTOR MUST VERIFY AND ACCEPT RESPONSIBILITY FOR ALL DIMENSIONS AND CONDITIONS ON SITE AND MUST NOTIFY ARCHITECT / ENGINEER OF ANY VARIATIONS FROM THE SUPPLIED INFORMATION.

THE CONTRACTOR MUST CONFIRM THAT THE DRAWINGS ARE FOR THE ACCURACY OF THE DRAWINGS. THE CONTRACTOR MUST VERIFY AND ACCEPT RESPONSIBILITY FOR ALL DIMENSIONS AND CONDITIONS ON SITE AND MUST NOTIFY ARCHITECT / ENGINEER OF ANY VARIATIONS FROM THE SUPPLIED INFORMATION.

CONSTRUCTION MUST CONFORM TO ALL APPLICABLE CODES AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.

THE CONTRACTOR WORKING FROM DRAWINGS NOT SPECIFICALLY MARKED FOR CONSTRUCTION MUST ASSUME FULL RESPONSIBILITY AND BEAR COSTS FOR ANY CORRECTIONS OR DAMAGES RESULTING FROM HIS WORK.

THIS DRAWING IS NOT TO BE SCALED.

NOTE: ALL DIMENSIONS AND ELEVATIONS MUST BE SITE MEASURED AND CONFIRMED PRIOR TO FABRICATION AND/OR ERECTION.

SHOw DRAWINGS

ALL SHOP DRAWINGS SUBMITTED TO THE ENGINEER SHALL BE REVIEWED FOR GENERAL COMPLIANCE WITH THE INTENT OF THE STRUCTURAL DESIGN CONTAINED WITHIN THESE PROJECT DOCUMENTS ONLY.

DO NOT SUBMIT SHOP DRAWINGS AND/OR COVERING TRANSMITTALS MARKED FOR APPROVAL. BEFORE FABRICATION.

THESE DRAWINGS ARE THE PROPERTY OF ROBERT E. DALE LIMITED. CONSULTING ENGINEERS AND SHALL NOT BE USED OR REPLICATED IN THE GENERATION OF SHOP DRAWING PURPOSES.

DISCLAIMER: THESE DESIGN DOCUMENTS HAVE BEEN PREPARED BY ROBERT E. DALE LIMITED FOR THE ACCOUNT OF: ROBERT E. DALE LIMITED. ANY USE WHICH A THIRD PARTY MAKES OF THESE DESIGN DOCUMENTS, OR ANY RELIANCE ON DECISIONS TO BE MADE BASED ON THEM, ARE THE RESPONSIBILITY OF SUCH PERSON. ROBERT E. DALE LIMITED SHALL NOT BE HELD RESPONSIBLE FOR DAMAGES, IF ANY, SUFFERED BY ANY THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS TAKEN BASED ON THESE DESIGN DOCUMENTS.

## AIR BALANCING NOTES

THIS CONTRACTOR SHALL EMPLOY INDEPENDENT BALANCING AND TESTING AGENCY. THE BALANCE REPORT TO BE PERFORMED AS PER THE APPROPRIATE LOCAL REGULATIONS. THE PROJECT SHALL NOT BE CONSIDERED COMPLETE UNTIL THE BALANCE REPORTS HAVE BEEN APPROVED. THE BALANCE REPORT SHALL INCLUDE, BUT NOT LIMITED TO THE FOLLOWING:

A. HVAC UNIT DATA SHEET - MAKE MODEL AND SERIAL NUMBER

B. AIR OUTLET SHEET - OUTLET NUMBER MAKE MODEL - AREA FACTOR, REQUIRED VELOCITY, REQUIRED CFM, ACTUAL CFM, ACTUAL VELOCITY

C. SINGLE LINE DRAWING WITH OUTLETS NUMBERED CORRESPONDING TO AIR OUTLET SHEET

TWO (2) COPIES TO BE SUBMITTED TO THIS ENGINEER FOR APPROVAL PRIOR TO PROJECT SUBSTANTIAL AND PRIOR TO FINAL INSPECTION.

TWO (2) COPIES TO BE SUBMITTED TO OWNER AND TWO (2) TO LANDLORD.

ALL DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF THE ENGINEER, AND MAY NOT BE USED OR REPRODUCED WITHOUT THE ENGINEER'S APPROVAL.

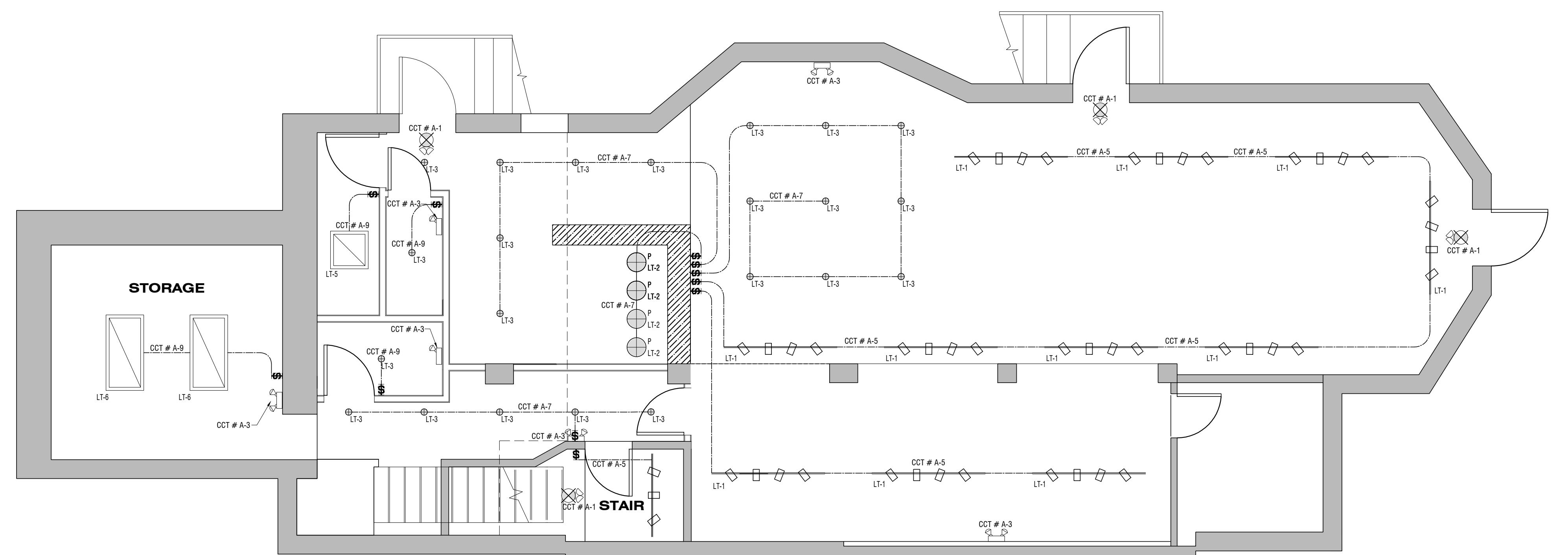
THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS ON SITE AND REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING.

DRAWINGS MUST NOT BE SCALED.

| EXHAUST FAN SCHEDULE |          |             |           |            |     |                   |         |      |      |          |               |       |
|----------------------|----------|-------------|-----------|------------|-----|-------------------|---------|------|------|----------|---------------|-------|
| TAG                  | LOCATION | AREA SERVED | MODEL     | DRIVE TYPE | CFM | TOTAL EXTERNAL SP | FAN RPM | BHP  | HP   | V/C/P    | SONES (INLET) | NOTES |
| EF-1                 |          |             | CUE-090-G | Direct     | 240 | 0.461             | 1,300   | 0.05 | 1/25 | 115/60/1 | 5.9           |       |
| EF-2                 |          |             | CUE-090-G | Direct     | 240 | 0.461             | 1,300   | 0.05 | 1/25 | 115/60/1 | 5.9           |       |

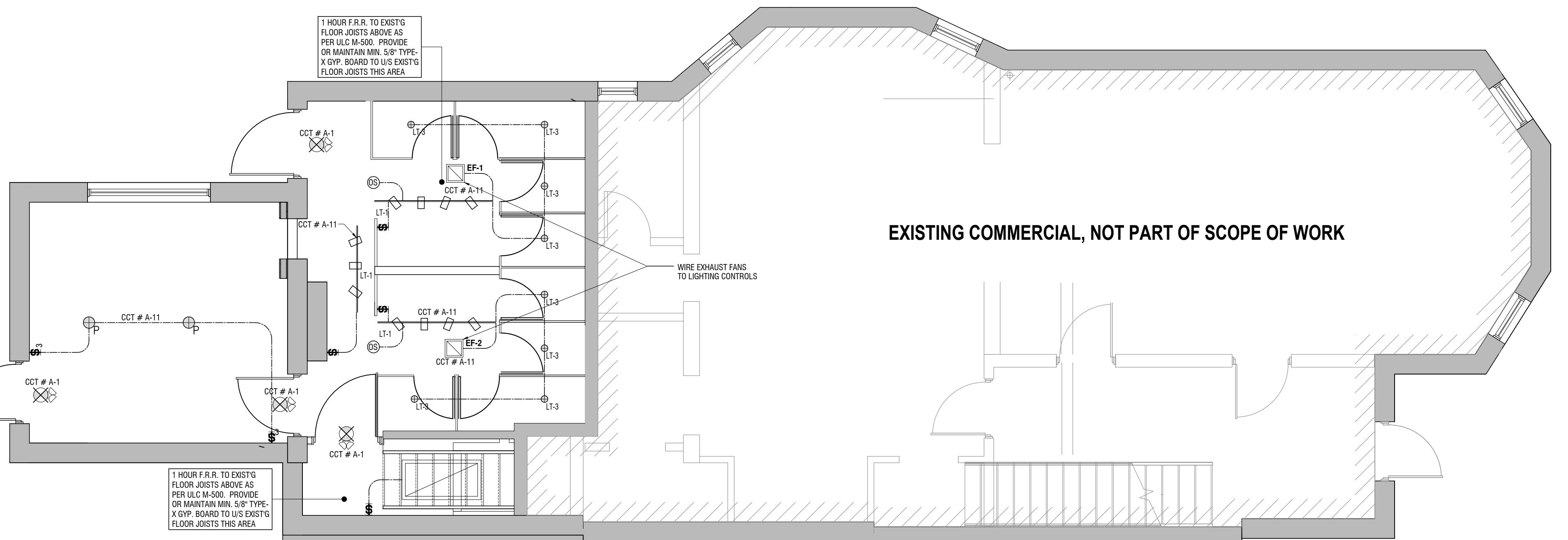
|   |   |  |   |  |
|---|---|--|---|--|
| 1. GENERAL  | ITEM REQUIRED FOR THE COMPLETE MECHANICAL INSTALLATION. THEREFORE, THE CONTRACTOR SHALL MAKE HIS OWN PROVISIONS FOR ALL LABOUR, MATERIALS AND EQUIPMENT DEEMED NECESSARY TO COMPLETE THE MECHANICAL SYSTEM. | 1.14.2. THE ENGINEERS REVIEW SHALL NOT RELIEVE THIS CONTRACTOR FROM RESPONSIBILITY TO PROVIDE MATERIALS AND EQUIPMENT IN ACCORDANCE WITH THE DESIGN INTENT AND CONTRACT DOCUMENTS. ALL DIMENSIONS AND SUITABILITY FOR SITE CONDITIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR. ALL ELECTRICAL CHARACTERISTICS MUST BE COORDINATED WITH THE ELECTRICAL SUB-CONTRACTOR. | 2.4.3. FINISH INSULATION NEATLY AT HANGERS, SUPPORTS AND OTHER PROTRUSIONS. INSULATE FITTINGS AND VALVES.   | 3.2.2. ENGINEER. INSULATION ASSEMBLIES SHALL COMPLY WITH CURRENT EDITION OF ONTARIO BUILDING REGULATIONS WITH FLAME SPREAD AND SMOKE DEVELOPED RATINGS NOT EXCEDING 25 AND 50 RESPECTIVELY.  |
| 1.1. CONTRACTOR RESPONSIBILITIES  |   | 1.3.2. THE SPECIFICATIONS ARE INTEGRAL WITH THE DRAWINGS WHICH ACCOMPANY THEM. NEITHER IS TO BE USED ALONE. ANY ITEM OR SUBJECT OMITTED FROM ONE, BUT IMPLIED ON THE OTHER IS PROPERLY SPECIFIED.  | 2.4.4. PROVIDE INSULATION AND COVERS IN ACCORDANCE WITH AUTHORITIES GOVERNING COMBUSTIBILITY AND FIRE PROOFING OF MATERIALS, AS PER MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS.  | 3.2.2. APPLY 25mm (1") THICK INTERNAL ACOUSTIC INSULATION ON SUPPLY, RETURN, AND EXHAUST AIR DUCTWORK WHERE SHOWN BY CROSS HATCHING OF DUCTWORK ON THE DRAWINGS.   |
| 1.1.1. THE RESPONSIBILITY AND SCOPE OF EACH SUB-TRADE RESTS SOLELY WITH THE CONTRACTOR. EXTRAS WILL NOT BE CONSIDERED BASED ON THE GROUNDS OF DIFFERENCE IN INTERPRETATION OF SPECIFICATIONS AND DRAWINGS AS TO WHICH TRADE INVOLVED SHALL PROVIDE CERTAIN SPECIALTIES OR MATERIALS.  |   | 1.3.3. WHENEVER DIFFERENCES OCCUR IN THE CONTRACT DOCUMENTS, THE MAXIMUM CONDITION WILL GOVERN AND BE INCLUDED IN THE CONTRACT PRICE.  | 2.4.5. PROVIDE NON COMBUSTIBLE INSULATION, JACKETS AND FINISHES HAVING A FLAME SPREAD/SMOKE DEVELOPED RATING OF 25/50 OR LESS, MEETING CAN/ULC S-102 REQUIREMENTS.  | 3.2.3. APPLY 25mm (1") THICK FLEXIBLE FIBROUS GLASS INSULATION WITH FACTORY APPLIED REINFORCED ALUMINUM FOIL VAPOUR BARRIER ON SUPPLY AIR DUCTWORK EXCEPT WHERE INTERNAL ACOUSTIC INSULATION IS PROVIDED.  |
| 1.1.2. CONTRACTOR TO MAKE CERTAIN THAT ALL ADDENDA TO THE SPECIFICATIONS AND ALL REVISIONS TO THE DRAWINGS ARE INCLUDED IN THEIR QUOTATION.   |   | 1.3.4. CONFORM TO MANUFACTURER'S INSTRUCTIONS, DETAILS AND PROCEDURES FOR EQUIPMENT INSTALLATIONS.   | 2.4.6. INSULATE FITTINGS WITH FABRICATED MITERED OR PREFORMED SECTIONS OF SPECIFIED INSULATION.   | 3.2.4. APPLY 50mm (2") THICK FLEXIBLE FIBROUS GLASS INSULATION WITH FACTORY APPLIED REINFORCED ALUMINUM FOIL VAPOUR BARRIER ON COMBUSTION AND OUTSIDE AIR INTAKE DUCTWORK.   |
| 1.1.3. CONTRACTOR TO ENSURE THAT DELIVERY TIME OF ALL MECHANICAL EQUIPMENTS WILL NOT CAUSE DELAY IN THE SCHEDULING OF THIS PROJECT.   |   | 1.3.5. CONFIRM ALL NEW EQUIPMENT LOADING AND SUPPORT WITH STRUCTURAL ENGINEER PRIOR TO INSTALLATION.   | 2.4.7. INSULATE ALL HORIZONTAL VENT PIPE LOCATED IN CEILING SPACES BELOW ROOF DECK WITH 25mm (1") THINK FIBERGLASS HEAVY DENSITY INSULATION WITH ALL SERVICE JACKET.  | 3.2.5. INSULATE VENTILATION EQUIPMENT AND CABINET EXHAUST FAN CASINGS WITH 25mm (1") THICK RIGID FIBERGLASS INTERNAL DUCT INSULATION. INSULATION TO BE FACTORY INSTALLED.  |
| 1.1.4. ALL WORK AND MATERIALS SHALL COMPLY WITH THE CURRENT EDITION OF THE ONTARIO BUILDING CODE, LOCAL BUILDING REGULATIONS, AND ALL CODES AND AUTHORITIES HAVING JURISDICTION.  |   | 1.4. RECORD "AS-BUILT" DRAWINGS  | 1.2.2.1. ALL HANGERS AND HANGER RODS SHALL BE SUPPLIED AND INSTALLED BY THIS CONTRACTOR FOR THE INSTALLATION OF HIS WORK IN THIS DIVISION.  | 3.2.6. INSULATION TO BE 25mm (1") THICK MINERAL FIBRE WITH VAPOUR BARRIER. INSULATE ALL SUPPLY AIR DUCTWORK EXCEPT WHERE ACOUSTICALLY LINED. INSULATE EXHAUST DUCTWORK FOR A DISTANCE OF 1.5m (5') UPSTREAM OF FAN.  |
| 1.1.5. PRIOR TO SUBMITTING A TENDER, THE CONTRACTOR SHALL NOTE ANY DISCREPANCIES AND BRING THEM TO THE ATTENTION OF THE ENGINEER. FURTHER, THE CONTRACTOR IS TO EXAMINE THE SITE, CONDITIONS AND ALL ASSOCIATED TRADES OF WORK THAT FALL UNDER THE CONTRACT AND DETERMINE THAT ALL COSTS FOR THE WORK ARE FULLY COVERED IN HIS TENDER SUBMISSION.   |   | 1.4.1. COMPLY WITH ALL PROVINCIAL AND LOCAL CODES FOR PROVISION OF MATERIALS, LABOUR AND INSTALLATION.   | 1.2.2.2. HANGERS AND SUPPORTS SHALL SECURE PIPES IN PLACE, PREVENT VIBRATION, MAINTAIN GRADE BY ADJUSTMENT, PROVIDE FOR EXPANSION AND CONTRACTION. ALL SUPPORTS SHALL BE DIRECTLY FROM THE STRUCTURE, AND NOT FROM OTHER EQUIPMENTS, PIPING OR DUCTWORK.  | 3.2.7. ALL ADHESIVES, MASTICS, SEALANTS AND COATINGS USED INSIDE THE BUILDING WITH THE INSULATION SHALL BE FIRE RETARDING AND MEET ULC AND ABC STANDARDS WITH A FLAME SPREAD RATING OF NOT OVER 25 AND SMOKE DEVELOPED CLASSIFICATION NOT OVER 50.   |
| 1.1.6. DURING CONSTRUCTION THE CONTRACTOR SHALL ENSURE THAT ALL MATERIAL AND EQUIPMENT IS NEW AND MEETS OR EXCEEDS THE QUALITY AS SET OUT IN THE SPECIFIED EQUIPMENT AND APPLICABLE CODES. THE INSTALLATION OF ALL EQUIPMENT AND MATERIALS SHALL BE OF THE HIGHEST WORKMANSHIP AND QUALITY. ATTENTION TO DETAIL, SAFETY, NEATNESS, ACCESS FOR MAINTENANCE, DURABILITY, ETC. IS EXPECTED AND REQUIRED. |   | 1.4.2. USE TRADESMEN LICENSED BY PROVINCIAL AUTHORITIES FOR THE WORK SPECIFIED IN THIS SECTION.  | 1.2.2.3. PROVIDE SUPPORTS AND CLEVIS TYPE HANGERS ON OUTSIDE OF INSULATION. INSTALLATION SHALL MEET THE REQUIREMENTS OF APPLICABLE CODES.   | 3.3. VOLUME DAMPERS  |
| 1.1.7. IF THE OWNER OR THEIR REPRESENTATIVE PRE-PURCHASES OR SUPPLIES EQUIPMENT OR MATERIALS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE INSTALLATION OF SAME AS PER MANUFACTURERS RECOMMENDATIONS. OWNER FURNISHED ITEMS MUST MEET THE COMPLIANCE REQUIREMENTS OF THE CONTRACT DOCUMENTS.  |   | 1.4.3. USE HIGHEST QUALITY PIPING CONFORMING TO THE APPROPRIATE ASTM AND CSA SPECIFICATIONS.   | 1.2.2.4. USE OF PERFORATED STRAP, WIRE OR CHAIN HANGERS IS NOT PERMITTED.   | 3.3.1. INSTALL WHERE SHOWN OR REQUIRED FOR BALANCING.  |
| 1.1.8. ALL EQUIPMENT IS TO BE SET STRAIGHT AND SQUARE WITH THE STRUCTURE. PIPING AND DUCTWORK IS TO BE INSTALLED PARALLEL OR AT RIGHT ANGLES TO ALL SUPPORTS AND ISOLATION. MEMBERS, HANGER RODS, EQUIPMENT BASES, SUPPORTS AND ISOLATION ARE TO BE SET PLUMB AND SQUARE AND IN VERTICAL ALIGNMENT WHERE APPLICABLE. ALL WORK IS TO BE NEAT AND CLEAN UPON COMPLETION.                                |   | 1.4.4. ALL MUNICIPAL BYLAWS AND NFPA STANDARDS GOVERNING THE INSTALLATION SHALL BE STRICTLY ADHERED TO.  | 1.2.2.5. STEEL PIPES UP TO AND INCLUDING 100mm (4") DIAMETER, USE HEAVY DUTY CLEVIS OR LOOP TYPE HANGERS.   | 3.3.2. RECTANGULAR DUCTS SHALL HAVE OPPOSED BLADE VOLUME DAMPERS.  |
| 1.1.9. THE CONTRACTOR SHALL MAKE NECESSARY REVISION, ALTERATIONS, CHANGES AND ADDITIONS TO ANY AND ALL WORK AS REQUIRED TO ACCOMMODATE OTHER TRADES SCOPE OF WORKS INCLUDING, ARCHITECTURAL, STRUCTURAL AND ELECTRICAL WITHOUT COST TO THE OWNER.   |   | 1.5. INSURANCE   | 1.2.2.6. COPPER PIPES, USE HANGERS IN COPPER PLATE FINISH OR STEEL LOOP HANGER W/ APPROVED ELECTROLYSIS BARRIER (POLY TAPE).  | 3.3.3. ROUND DUCTS SHALL HAVE SPILLER DAMPERS OR BUTTERFLY DAMPERS.  |
| 1.1.10. THE TERM "SUPPLY", "PROVIDE", "INSTALL" SHALL MEAN TO SUPPLY AND INSTALL ALL NECESSARY LABOUR, MATERIALS, TOOLS AND EQUIPMENT AS MAY BE NECESSARY TO INSTALL SAME FOR THE COMPLETE AND FUNCTIONAL OPERATION OF THE MECHANICAL SYSTEMS FOR THIS PROJECT.   |   | 1.5.1. THE CONTRACTOR MUST HAVE COMPREHENSIVE GENERAL LIABILITY INSURANCE COVERAGE OF NOT LESS THAN \$2,000,000.00 INCLUDING NON OWNED CAR COVERAGE, CONTRACTUAL LIABILITY AND CONTAINING A CROSS LIABILITY CLAUSE. COVERAGE SHALL INCLUDE LOSS OR DAMAGE CAUSED BY THE CONTRACTOR.  | 1.2.2.7. CLEANOUTS IN CONCRETE SHALL BE ADJUSTABLE TYPE FOR LEVEL INSTALLATION.   | 3.3.4. HAND BALANCING DAMPERS SHALL BE FABRICATED OF GALVANIZED IRON, TWO GAUGES HEAVIER THAN THAT OF THE DUCT IN WHICH THE DAMPER IS TO BE INSTALLED.   |
| 1.1.11. THE CONTRACTOR SHALL CARRY FULL EMPLOYEE'S LIABILITY INSURANCE IN ACCORDANCE WITH THE WORKERS' COMPENSATION ACT.  |   | 1.5.2. NOTIFY THE OWNER/ENGINEER PRIOR TO STARTING ANY TESTING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES THAT OCCUR AS A RESULT OF TESTING. HE SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH LIABILITY AND REPAIRS AS NECESSARY.   | 1.2.2.8. SUPPORT PIPES IN ACCORDANCE WITH THE CURRENT EDITION OF THE ONTARIO BUILDING CODE. MANUFACTURER'S RECOMMENDATIONS, ASHRAE STANDARDS AND/OR APPLICABLE CODES.   | 3.4. ACCESS  |
| 1.1.12. THE CONTRACTOR SHALL CARRY FULL EMPLOYEE'S LIABILITY INSURANCE IN ACCORDANCE WITH THE WORKERS' COMPENSATION ACT.  |   | 1.5.3. THE CONTRACTOR SHALL CARRY ALL DEFECTS, LEAKS, ETC. SHALL BE REPAIRED OR REPLACED IMMEDIATELY UPON DISCOVERY. LEAKING JOINTS SHALL BE RE-DO AND COMPLETED IN A TIMELY MANNER.   | 1.2.2.9. PROVIDE HANGERS AND SUPPORTS FOR ALL DUCTWORK, IN ACCORDANCE WITH SMACNA - H.V.A.C. DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE™, LATEST EDITION  | 3.4.1. ACCESS SHALL BE PROVIDED TO ALL MECHANICAL EQUIPMENT, BALANCING DAMPERS, VALVES AND ALL OTHER ITEMS REQUIRING SERVICING ACCESS. ACCESS PANELS SHALL BE FIRE-RATED AS REQUIRED, TO MEET CEILING, WALL AND FLOOR RATINGS.   |
| 1.1.13. THE CONTRACTOR SHALL MAKE NECESSARY REVISION, ALTERATIONS, CHANGES AND ADDITIONS TO ANY AND ALL WORK AS REQUIRED TO ACCOMMODATE OTHER TRADES SCOPE OF WORKS INCLUDING, ARCHITECTURAL, STRUCTURAL AND ELECTRICAL WITHOUT COST TO THE OWNER.  |   | 1.6. LIABILITY   | 1.2.3. ELECTRIC MOTORS AND WIRING   | 3.5. AIR OUTLETS   |
| 1.1.14. THE CONTRACTOR SHALL MAKE NECESSARY REVISION, ALTERATIONS, CHANGES AND ADDITIONS TO ANY AND ALL WORK AS REQUIRED TO ACCOMMODATE OTHER TRADES SCOPE OF WORKS INCLUDING, ARCHITECTURAL, STRUCTURAL AND ELECTRICAL WITHOUT COST TO THE OWNER.  |   | 1.6.1. TEST ALL EQUIPMENTS AND MATERIALS WHERE REQUIRED BY SPECIFICATIONS OR AUTHORITIES HAVING JURISDICTION, TO DEMONSTRATE ITS PROPER OPERATION TO THE OWNER'S REPRESENTATIVE. TEST PROCEDURES SHALL BE IN ACCORDANCE WITH APPLICABLE PORTIONS OF THE ASME, ASHRAE, SMACNA, NFPA, CSA AND OTHER RECOGNIZED TEST CODES AS FAR AS FIELD CONDITIONS PERMIT.             | 1.2.3.1. SUPPORT PIPES IN ACCORDANCE WITH THE CURRENT EDITION OF THE ONTARIO BUILDING CODE. MANUFACTURER'S RECOMMENDATIONS, ASHRAE STANDARDS AND/OR APPLICABLE CODES.   | 3.5.1. PROVIDE ALL AIR OUTLETS COMPLETE WITH ACCESSORIES AS SPECIFIED HEREIN AND INDICATED ON THE DRAWINGS. COORDINATE LOCATIONS OF ALL AIR OUTLETS WITH LIGHTING. THE POSITIONS INDICATED ARE APPROXIMATE ONLY. THIS CONTRACTOR SHALL CHECK THE LOCATION OF ALL OUTLETS AND SHALL MAKE ADJUSTMENTS AS REQUIRED AS NECESSARY TO CONFORM WITH ARCHITECTURAL FEATURES AT NO EXTRA COST TO OWNER.   |
| 1.1.15. THE CONTRACTOR SHALL MAKE NECESSARY REVISION, ALTERATIONS, CHANGES AND ADDITIONS TO ANY AND ALL WORK AS REQUIRED TO ACCOMMODATE OTHER TRADES SCOPE OF WORKS INCLUDING, ARCHITECTURAL, STRUCTURAL AND ELECTRICAL WITHOUT COST TO THE OWNER.  |   | 1.6.2. THE CONTRACTOR SHALL CARRY FULL EMPLOYEE'S LIABILITY INSURANCE IN ACCORDANCE WITH THE WORKERS' COMPENSATION ACT.  | 1.2.3.2. CONTROLS (FAN SWITCHES) CONNECTED TO MECHANICAL EQUIPMENTS SHALL BE SUPPLIED BY THE MECHANICAL TRADE AND SHALL BE INSTALLED, WIRED IN AND CONNECTED BY THE CONTROL TRADE.  | 3.5.2. MOUNT MECHANICAL EQUIPMENT ON VIBRATION ISOLATORS TO MINIMIZE THE TRANSMISSION OF VIBRATION TO THE BUILDING STRUCTURE.  |
| 1.1.16. THE CONTRACTOR SHALL MAKE NECESSARY REVISION, ALTERATIONS, CHANGES AND ADDITIONS TO ANY AND ALL WORK AS REQUIRED TO ACCOMMODATE OTHER TRADES SCOPE OF WORKS INCLUDING, ARCHITECTURAL, STRUCTURAL AND ELECTRICAL WITHOUT COST TO THE OWNER.  |   | 1.6.3. ALL TESTS SHALL BE A MINIMUM OF THE REQUIREMENTS OF LOCAL INSPECTION AGENCIES.  | 1.2.3.3. CONFIRM ELECTRICAL SERVICE VOLTAGE AND PHASE WITH ELECTRICAL ENGINEER, AND/OR CONTRACTOR PRIOR TO ORDERING OF MECHANICAL EQUIPMENT.  | 3.6. VIBRATION ISOLATION REQUIREMENTS  |
| 1.1.17. THE CONTRACTOR SHALL MAKE NECESSARY REVISION, ALTERATIONS, CHANGES AND ADDITIONS TO ANY AND ALL WORK AS REQUIRED TO ACCOMMODATE OTHER TRADES SCOPE OF WORKS INCLUDING, ARCHITECTURAL, STRUCTURAL AND ELECTRICAL WITHOUT COST TO THE OWNER.  |   | 1.6.4. ALL TESTS SHALL BE A MINIMUM OF THE REQUIREMENTS OF LOCAL INSPECTION AGENCIES.  | 1.2.3.4. ALL ISOLATION VALVES INSTALLED FOR SHUT-OFF PURPOSES TO BE RED AND WHITE. 45044A BALL VALVES, UNLESS OTHERWISE SPECIFIED.  | 3.6.1. MOUNT MECHANICAL EQUIPMENT ON VIBRATION ISOLATORS TO MINIMIZE THE TRANSMISSION OF VIBRATION TO THE BUILDING STRUCTURE.  |
| 1.1.18. THE CONTRACTOR SHALL MAKE NECESSARY REVISION, ALTERATIONS, CHANGES AND ADDITIONS TO ANY AND ALL WORK AS REQUIRED TO ACCOMMODATE OTHER TRADES SCOPE OF WORKS INCLUDING, ARCHITECTURAL, STRUCTURAL AND ELECTRICAL WITHOUT COST TO THE OWNER.  |   | 1.6.5. DUCTWORK SEE HVAC SECTION FOR LEAK TESTING STANDARD.  | 1.2.3.5. PROVIDE FLEXIBLE PIPE SECTIONS IN PIPING TO PREVENT THE TRANSMISSION OF VIBRATION TO THE BUILDING STRUCTURE.   | 3.6.2. PROVIDE FLEXIBLE DUCT CONNECTIONS AT AIR HANDLING UNITS, FAN COIL UNITS, SUPPLY AND EXHAUST FANS TO PREVENT VIBRATION TRANSMISSION TO DUCTWORK.   |
| 1.1.19. THE CONTRACTOR SHALL MAKE NECESSARY REVISION, ALTERATIONS, CHANGES AND ADDITIONS TO ANY AND ALL WORK AS REQUIRED TO ACCOMMODATE OTHER TRADES SCOPE OF WORKS INCLUDING, ARCHITECTURAL, STRUCTURAL AND ELECTRICAL WITHOUT COST TO THE OWNER.  |   | 1.6.6. DUCTWORK SEE HVAC SECTION FOR LEAK TESTING STANDARD.  | 1.2.3.6. FIXTURE SUPPORT MUST BE SUCH THAT THEY WILL NOT COME LOOSE WITH ORDINARY USAGE AND THAT ANCHORING WILL BE RIGID. REINFORCE WALL BEHIND FIXTURES IF REQUIRED FOR PROPER SUPPORT.  | 3.7. AIR SYSTEM TESTING, BALANCING AND COMMISSIONING   |
| 1.1.20. THE CONTRACTOR SHALL MAKE NECESSARY REVISION, ALTERATIONS, CHANGES AND ADDITIONS TO ANY AND ALL WORK AS REQUIRED TO ACCOMMODATE OTHER TRADES SCOPE OF WORKS INCLUDING, ARCHITECTURAL, STRUCTURAL AND ELECTRICAL WITHOUT COST TO THE OWNER.  |   | 1.6.7. DUCTWORK SEE HVAC SECTION FOR LEAK TESTING STANDARD.  | 1.2.3.7. REFER TO ARCHITECTURAL DRAWINGS FOR MORE INFORMATION.  | 3.7.1. BALANCE SYSTEM FOR RATED AIR FLOW, AIR TEMPERATURE CONTROL AND CURRENT DRAW AFTER INSTALLATION IS COMPLETE AND IN FULL WORKING ORDER. ADJUST CONTROL FOR CONTINUOUS AIR CIRCULATION AND MINIMUM ENERGY CONSUMPTION. ADJUST FAN SPEED AS REQUIRED TO OBTAIN SPECIFIC PERFORMANCES. BALANCE SYSTEM FOR OUTSIDE AIR AS GIVEN IN UNIT PERFORMANCE. FAN SHEAVES SHALL BE ADJUSTED OR REPLACED AS REQUIRED, TO ACHIEVE DESIGN AIR FLOW. |
| 1.1.21. THE CONTRACTOR SHALL MAKE NECESSARY REVISION, ALTERATIONS, CHANGES AND ADDITIONS TO ANY AND ALL WORK AS REQUIRED TO ACCOMMODATE OTHER TRADES SCOPE OF WORKS INCLUDING, ARCHITECTURAL, STRUCTURAL AND ELECTRICAL WITHOUT COST TO THE OWNER.  |   | 1.6.8. DUCTWORK SEE HVAC SECTION FOR LEAK TESTING STANDARD.  | 1.2.3.8. ALL LOW VELOCITY DUCT SYSTEMS, INCLUDING SUPPLY, RETURN AND EXHAUST SHALL BE CHECKED FOR TIGHTNESS. ALL LEAKS SHALL BE REPAIRED BEFORE DUCTS ARE FURRED IN TO ENSURE TOTAL OUTLET CAPACITY IS WITHIN 5% OF THE QUANTITY BEING SUPPLIED BY THE AIR SYSTEMS.   | 3.7.2. ALL LOW VELOCITY DUCT SYSTEMS, INCLUDING SUPPLY, RETURN AND EXHAUST SHALL BE CHECKED FOR TIGHTNESS. ALL LEAKS SHALL BE REPAIRED BEFORE DUCTS ARE FURRED IN TO ENSURE TOTAL OUTLET CAPACITY IS WITHIN 5% OF THE QUANTITY BEING SUPPLIED BY THE AIR SYSTEMS.  |
| 1.1.22. THE CONTRACTOR SHALL MAKE NECESSARY REVISION, ALTERATIONS, CHANGES AND ADDITIONS TO ANY AND ALL WORK AS REQUIRED TO ACCOMMODATE OTHER TRADES SCOPE OF WORKS INCLUDING, ARCHITECTURAL, STRUCTURAL AND ELECTRICAL WITHOUT COST TO THE OWNER.  |   | 1.6.9. DUCTWORK SEE HVAC SECTION FOR LEAK TESTING STANDARD.  | 1.2.3.9. AIR BALANCING SHALL BE CARRIED OUT BY AN INDEPENDENT AGENCY SPECIALIZING IN THIS FORM OF WORK AND IN ACCORDANCE WITH GUIDELINES ESTABLISHED BY THE ASSOCIATED AIR BALANCE COUNCIL.   | 3.7.3. AIR BALANCING SHALL BE CARRIED OUT BY AN INDEPENDENT AGENCY SPECIALIZING IN THIS FORM OF WORK AND IN ACCORDANCE WITH GUIDELINES ESTABLISHED BY THE ASSOCIATED AIR BALANCE COUNCIL.  |
| 1.1.23. THE CONTRACTOR SHALL MAKE NECESSARY REVISION, ALTERATIONS, CHANGES AND ADDITIONS TO ANY AND ALL WORK AS REQUIRED TO ACCOMMODATE OTHER TRADES SCOPE OF WORKS INCLUDING, ARCHITECTURAL, STRUCTURAL AND ELECTRICAL WITHOUT COST TO THE OWNER.  |   | 1.6.10. DUCTWORK SEE HVAC SECTION FOR LEAK TESTING STANDARD.   | 1.2.3.10. TESTING OF LOW VELOCITY DUCTWORK SHALL COMPRIZE REPAIRING AND/OR REPLACING ANY AND ALL AUDIBLE LEAKS OR THOSE THAT ARE NOTICEABLE BY FEEL.  | 3.7.4. TESTING OF LOW VELOCITY DUCTWORK SHALL COMPRIZE REPAIRING AND/OR REPLACING ANY AND ALL AUDIBLE LEAKS OR THOSE THAT ARE NOTICEABLE BY FEEL.  |
| 1.1.24. THE CONTRACTOR SHALL MAKE NECESSARY REVISION, ALTERATIONS, CHANGES AND ADDITIONS TO ANY AND ALL WORK AS REQUIRED TO ACCOMMODATE OTHER TRADES SCOPE OF WORKS INCLUDING, ARCHITECTURAL, STRUCTURAL AND ELECTRICAL WITHOUT COST TO THE OWNER.  |   | 1.6.11. DUCTWORK SEE HVAC SECTION FOR LEAK TESTING STANDARD.   | 1.2.3.11. MECHANICAL SYSTEMS SHALL NOT BE CONSIDERED READY FOR FINAL INSPECTION UNTIL BALANCING RESULTS ARE ACCEPTABLE TO CONSULTANT.   | 3.7.5. MECHANICAL SYSTEMS SHALL NOT BE CONSIDERED READY FOR FINAL INSPECTION UNTIL BALANCING RESULTS ARE ACCEPTABLE TO CONSULTANT.   |
| 1.1.25. THE CONTRACTOR SHALL MAKE NECESSARY REVISION, ALTERATIONS, CHANGES AND ADDITIONS TO ANY AND ALL WORK AS REQUIRED TO ACCOMMODATE OTHER TRADES SCOPE OF WORKS INCLUDING, ARCHITECTURAL, STRUCTURAL AND ELECTRICAL WITHOUT COST TO THE OWNER.  |   | 1.6.12. DUCTWORK SEE HVAC SECTION FOR LEAK TESTING STANDARD.   | 1.2.3.12. ALL ALTERNATES MUST BE SUBMITTED A MINIMUM OF SEVEN (7) DAYS PRIOR TO TENDER CLOSE.   | 4. EQUIPMENT   |
| 1.1.26. THE CONTRACTOR SHALL MAKE NECESSARY REVISION, ALTERATIONS, CHANGES AND ADDITIONS TO ANY AND ALL WORK AS REQUIRED TO ACCOMMODATE OTHER TRADES SCOPE OF WORKS INCLUDING, ARCHITECTURAL, STRUCTURAL AND ELECTRICAL WITHOUT COST TO THE OWNER.  |   | 1.6.13. DUCTWORK SEE HVAC SECTION FOR LEAK TESTING STANDARD.   | 1.2.4. GENERAL  | 4.1. GENERAL   |
| 1.1.27. THE CONTRACTOR SHALL MAKE NECESSARY REVISION, ALTERATIONS, CHANGES AND ADDITIONS TO ANY AND ALL WORK AS REQUIRED TO ACCOMMODATE OTHER TRADES SCOPE OF WORKS INCLUDING, ARCHITECTURAL, STRUCTURAL AND ELECTRICAL WITHOUT COST TO THE OWNER.  |   | 1.6.14. DUCTWORK SEE HVAC SECTION FOR LEAK TESTING STANDARD.   | 1.2.4.1. PROVIDE UNITS FROM MANUFACTURERS REGULARLY ENGAGED IN PRODUCTION OF SUCH UNITS AND WHO ISSUE CATALOGUE DATA ON SUCH PRODUCTS.  | 4.1.1. PROVIDE UNITS FROM MANUFACTURERS REGULARLY ENGAGED IN PRODUCTION OF SUCH UNITS AND WHO ISSUE CATALOGUE DATA ON SUCH PRODUCTS.   |
| 1.1.28. THE CONTRACTOR SHALL MAKE NECESSARY REVISION, ALTERATIONS, CHANGES AND ADDITIONS TO ANY AND ALL WORK AS REQUIRED TO ACCOMMODATE OTHER TRADES SCOPE OF WORKS INCLUDING, ARCHITECTURAL, STRUCTURAL AND ELECTRICAL WITHOUT COST TO THE OWNER.  |   | 1.6.15. DUCTWORK SEE HVAC SECTION FOR LEAK TESTING STANDARD.   | 1.2.4.2. ANY EQUIPMENT THAT THE MECHANICAL CONTRACTOR WISHES TO INSTALL AS AN ALTERNATE MUST BE SUBMITTED FOR APPROVAL BY ENGINEER BEFORE ORDERING AND INSTALLATION. THE CONTRACTOR SHALL PAY THE COST OF THE EQUIPMENT IF THE ENGINEER DEEM IT NECESSARY TO REPLACE THE INSTALLED EQUIPMENT WITH THAT WHICH WAS SPECIFIED AT THE COST OF THE CONTRACTOR.   | 4.1.2. ANY EQUIPMENT THAT THE MECHANICAL CONTRACTOR WISHES TO INSTALL AS AN ALTERNATE MUST BE SUBMITTED FOR APPROVAL BY ENGINEER BEFORE ORDERING AND INSTALLATION. THE CONTRACTOR SHALL PAY THE COST OF THE EQUIPMENT IF THE ENGINEER DEEM IT NECESSARY TO REPLACE THE INSTALLED EQUIPMENT WITH THAT WHICH WAS SPECIFIED AT THE COST OF THE CONTRACTOR.  |
| 1.1.29. THE CONTRACTOR SHALL MAKE NECESSARY REVISION, ALTERATIONS, CHANGES AND ADDITIONS TO ANY AND ALL WORK AS REQUIRED TO ACCOMMODATE OTHER TRADES SCOPE OF WORKS INCLUDING, ARCHITECTURAL, STRUCTURAL AND ELECTRICAL WITHOUT COST TO THE OWNER.  |   | 1.6.16. DUCTWORK SEE HVAC SECTION FOR LEAK TESTING STANDARD.   | 1.2.4.3. THE EQUIPMENT SPECIFIED IS TO BE MINIMUM STANDARD AND QUALITY REQUIRED. ANY ALTERNATE EQUIPMENT MUST MEET OR EXCEED THE STANDARD AND QUALITY OF THAT WHICH WAS SPECIFIED.  | 4.1.3. THE EQUIPMENT SPECIFIED IS TO BE MINIMUM STANDARD AND QUALITY REQUIRED. ANY ALTERNATE EQUIPMENT MUST MEET OR EXCEED THE STANDARD AND QUALITY OF THAT WHICH WAS SPECIFIED.   |
| 1.1.30. THE CONTRACTOR SHALL MAKE NECESSARY REVISION, ALTERATIONS, CHANGES AND ADDITIONS TO ANY AND ALL WORK AS REQUIRED TO ACCOMMODATE OTHER TRADES SCOPE OF WORKS INCLUDING, ARCHITECTURAL, STRUCTURAL AND ELECTRICAL WITHOUT COST TO THE OWNER.  |   | 1.6.17. DUCTWORK SEE HVAC SECTION FOR LEAK TESTING STANDARD.   | 1.2.4.4. ALL ALTERNATES MUST BE SUBMITTED A MINIMUM OF SEVEN (7) DAYS PRIOR TO TENDER CLOSE.  | 4.1.4. ALL ALTERNATES MUST BE SUBMITTED A MINIMUM OF SEVEN (7) DAYS PRIOR TO TENDER CLOSE.   |
| 1.1.31. THE CONTRACTOR SHALL MAKE NECESSARY REVISION, ALTERATIONS, CHANGES AND ADDITIONS TO ANY AND ALL WORK AS REQUIRED TO ACCOMMODATE OTHER TRADES SCOPE OF WORKS INCLUDING, ARCHITECTURAL, STRUCTURAL AND ELECTRICAL WITHOUT COST TO THE OWNER.  |   | 1.6.18. DUCTWORK SEE HVAC SECTION FOR LEAK TESTING STANDARD.   | 5. CONTROLS   | 5.1. GENERAL   |
| 1.1.32. THE CONTRACTOR SHALL MAKE NECESSARY REVISION, ALTERATIONS, CHANGES AND ADDITIONS TO ANY AND ALL WORK AS REQUIRED TO ACCOMMODATE OTHER TRADES SCOPE OF WORKS INCLUDING, ARCHITECTURAL, STRUCTURAL AND ELECTRICAL WITHOUT COST TO THE OWNER.  |   | 1.6.19. DUCTWORK SEE HVAC SECTION FOR LEAK TESTING STANDARD.   | 1.2.4.5. ALL CONTROLS FOR MECHANICAL EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR. CONTRACTOR SHALL INSTALL ON G.C. AND ELECTRICAL CONDUIT AND WIRE AS REQUIRED. DRAFT COST ADD FAN-COIL UNIT CONTROLS onto EXISTING BAS SYSTEM, INCLUDING FILTER STATION, HEATING AND COOLING VALVE STATION, FAN STATION, SUPPLY AIR TEMPERATURE SETPOINT, SUPPLY AIR TEMPERATURE, AND FANCOIL SCHEDULE. | 5.1.1. ALL CONTROLS FOR MECHANICAL EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR. CONTRACTOR SHALL INSTALL ON G.C. AND ELECTRICAL CONDUIT AND WIRE AS REQUIRED. DRAFT COST ADD FAN-COIL UNIT CONTROLS onto EXISTING BAS SYSTEM, INCLUDING FILTER STATION, HEATING AND COOLING VALVE STATION, FAN STATION, SUPPLY AIR TEMPERATURE SETPOINT, SUPPLY AIR TEMPERATURE, AND FANCOIL SCHEDULE.                            |
| 1.1.33. THE CONTRACTOR SHALL MAKE NECESSARY REVISION, ALTERATIONS, CHANGES AND ADDITIONS TO ANY AND ALL WORK AS REQUIRED TO ACCOMMODATE OTHER TRADES SCOPE OF WORKS INCLUDING, ARCHITECTURAL, STRUCTURAL AND ELECTRICAL WITHOUT COST TO THE OWNER.  |   | 1.6.20. DUCTWORK SEE HVAC SECTION FOR LEAK TESTING STANDARD.   | 1.2.4.6. UNLESS OTHERWISE CALLED FOR, WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, THE PROVISION OF THERMOSTATS, CONTROLLERS, OPERATORS, SENSORS, TRANS   |  |





## LOWER LEVEL LIGHTING PLAN

Scale : 1/4"=1'-0"



## MAIN LEVEL LIGHTING PLAN

Scale : 1/4"=1'-0"

| DEMOLITION SPECIFICATION  |  |
|---|--|
| VERIFY ON SITE WITH OWNER. IF THIS NOTE PERTAINS TO EXISTING SITE CONDITIONS, VISIT THE SITE AND EXAMINE ALL EXISTING CONDITIONS AND ALL TENDER DOCUMENTS, DRAWINGS AND SPECIFICATIONS AND MAKE NECESSARY ALLOWANCES IN TENDER PRICE FOR REMOVAL, RELOCATING, REROUTING, RECONNECTION OF EXISTING ELECTRICAL EQUIPMENT AND WIRING. FOR THE EXECUTION AND COMPLETION OF THIS PROJECT, OWNER'S PAYMENT WILL BE MADE LATENT IN THE TENDER PRICE AND OWNER'S PAYMENT WILL BE MADE ON THE BASIS OF THIS EXAMINATION. |  |
| REMOVE AND/OR RELOCATE AND REINSTALL ALL WIRING, FIXTURES AND EQUIPMENT AS INDICATED ON DRAWINGS. WIRING LOCATED IN AREAS BEING ALTERED OR DEMOLISHED BUT FEEDING OUTLETS OR EQUIPMENT REQUIRED TO REMAIN IN SERVICE SHALL BE REROUTED AS REQUIRED TO MANTAIN CONTINUITY OF THESE SERVICES.   |  |
| SUPPLY, INSTALL AND MANTAIN ALL REQUIRED TEMPORARY WIRING IN OCCUPIED AREAS AT ALL TIMES. PROVE ADEQUATE POWER CAPACITY TO EXISTING FIXTURES AND EQUIPMENT SERVING THE EXISTING AND NEW AREAS AND PROTECT ALL WIRING, FIXTURES AND EQUIPMENT FROM BECOMING EXPOSED TO MECHANICAL INJURY OR MOISTURE IN THE COURSE OF ALTERATIONS OR NEW CONSTRUCTION.   |  |
| EXISTING ELECTRICAL EQUIPMENT REMOVED OR INDICATED FOR REUSE SHALL BE CLEANED BEFORE INSTALLATION. ALL UNUSED CONDUIT ENTRANCE OPENING SHALL BE SEALED BEFORE REINSTALLATION.   |  |
| REUSED LIGHTING FIXTURES SHALL BE CLEANED AND RE-LAMPED WITH NEW LAMPS. EXISTING LIGHTING FIXTURES INDICATED FOR REUSE SHALL BE STORED SAFELY ON SITE UNTIL READY FOR INSTALLATION. ALL EXISTING LAMPS AND THE EXISTING FIXTURES NOT BEING REUSED SHALL BE HANDED OVER TO THE OWNER.  |  |
| OBSCURE CABLES AND CONDUIT SHALL BE DISCONNECTED FROM THEIR SOURCE OF SUPPLY, BUT BACK TO A SUITABLE POINT AND LEFT IN PLACE UNLESS THEY INTERFERE WITH NEW WORK, IN WHICH CASE THEY SHALL BE REMOVED.  |  |
| TRIMS IDENTIFIED AS LOSING RELOCATED SHALL BE DISCONNECTED AND RECONNECTED IN A RELOCATED POSITION ALONG WITH ALL ELECTRICAL COMPONENTS. EXTEND WIRING AS EXISTING IN GOOD CONDITION.   |  |
| ALL EXISTING ELECTRICAL EQUIPMENT AND MATERIAL NOT REQUIRED IN THE FINAL INSTALLATION SHALL BE CAREFULLY REMOVED AT THE APPROPRIATE TIME AND DISPOSED OF, RECYCLED OR HANDED OVER THE THE OWNER.  |  |
| ALL EXISTING ELECTRICAL EQUIPMENT AND/OR DEVICES TO REMAIN ARE TO BE PROTECTED AGAINST DAMAGE DURING CONSTRUCTION.  |  |

### IMPORTANT ELECTRICAL ROUGH IN NOTE:

PRIOR TO ANY ROUGH IN WORK OR ORDERING ANY MATERIALS; ALL POWER, RECEPTACLE, ETC. REQUIREMENTS ARE TO BE CONFIRMED WITH EQUIPMENT NAMEPLATE OR SHOP DRAWINGS. NO WORK IS TO BE PERFORMED UNTIL VOLTAGE, AMPS ETC. ARE CONFIRMED, REPORT ANY DISCREPANCIES FROM THESE PLANS.

CC TO ENSURE THAT ALL CIRCUITS HAVE ENOUGH ELECTRICAL LOAD CAPABILITY TO ENSURE NO CIRCUIT TRIPPING.

### FIELD VERIFY ALL CONDITIONS

THIS ELECTRICAL CONTRACTOR MUST REVIEW ALL CURRENT SITE CONDITIONS WITH RESPECT TO NEW DESIGN DRAWINGS AND SPECIFICATIONS, UNLESS OTHERWISE INDICATED BY THE OWNER, ARCHITECT OR DRAWINGS. ALL ELECTRICAL, THERMAL, DATA, FIRE, SMOKE AND OTHER SYSTEMS MUST BE DISCONNECTED FROM THEIR POWER SUPPLY AND RELOCATED AS PER DRAWINGS. ALL BRANCH CIRCUITS MUST BE TAKED FROM CONDUIT, WIRING, SPACER AND MADE. ANY DISCREPANCIES FOR REMOVAL OR RE-USE OF ANY EXISTING EQUIPMENT MUST BE DISCUSSED WITH THE OWNER OR ARCHITECT PRIOR TO PROCEEDING WITH THE WORK. (A SITE VISIT IS RECOMMENDED PRIOR TO TENDER).

BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES, THE PLANS, DRAWINGS AND SPECIFICATIONS NOTWITHSTANDING. THE CONTRACTOR SHALL ALERT ARCHITECT, ENGINEER OR OWNER OF ANY APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN INTENT.

### NOTE:

PLEASE NOTE THE HB-SERIES IS FOR DRY LOCATIONS ONLY.

**EMERGENCY LIGHTING NOTE:** ALL NEW AND EXISTING EMERGENCY LIGHTING FIXTURES SHALL BE DESIGNED FOR TESTED AND VERIFIED FOR 1/2 HOUR OPERATION. THE CONTRACTOR MUST TEST AND PROVIDE A LETTER STATING SUCCESSFUL TESTING OF EMERGENCY LIGHTING WAS CONDUCTED AND FORWARD THE LETTER TO THE CONTRACTOR PRIOR TO OCCUPANCY CERTIFICATE.

| LIGHTING FIXTURES LEGEND |        |  |
|--------------------------|--------|--|
| TAG                      | SYMBOL | SPECIFICATIONS                             |
| LT-1                     | — B —  | TRACK LIGHT                                |
| LT-2                     | ⊕      | DECORATIVE PENDANT                         |
| LT-3                     | ⊕      | 3" POT LIGHT                               |
| LT-5                     | □ B    | CPANL Switchable Lumen LED Flat Panel, 2x2 |
| LT-6                     | □ A    | CPANL Switchable Lumen LED Flat Panel, 2x2 |

### SUPPLEMENTAL NOTES + SPECIFICATIONS

THE TENDER PACKAGE MAY INCLUDE SUPPLEMENTAL SPECIFICATIONS AND SCOPE OF WORK FOR THIS PROJECT. THE SUPPLEMENTAL SPECIFICATIONS AND SCOPE OF WORK IS TO BE READ IN CONJUNCTION WITH AND FORM A PART OF THE DRAWINGS AND SPECIFICATIONS AND TENDER DOCUMENTS AND THE WHOLE SHALL CONSTITUTE PART OF THE CONTRACT DOCUMENTS. THE SUPPLEMENTAL SPECIFICATIONS AND SCOPE OF WORK TAKES PREDENCE OVER THE DRAWINGS.

THE BIDDER IS TO DISTRIBUTE THE DRAWINGS AND SPECIFICATIONS, THE SUPPLEMENTAL SPECIFICATIONS AND SCOPE OF WORK, AND ALL OTHER PROVIDED DOCUMENTATION AND INFORMATION TO ALL VENDORS AND SUBCONTRACTORS, AND INSURE THAT ALL THE PROVIDED REQUIREMENTS ARE INCLUDED IN THE TENDER PRICE. THE BIDDER IS TO REPORT ALL DISCREPANCIES TO THE OWNER PRIOR TO SUBMITTING THE BID.

## GENERAL CONDITIONS:

THE CANADIAN STANDARD FORM OF CONSTRUCTION CONTRACT AND GENERAL CONDITIONS GOVERNING THE SAME CCDC ARTICLES 1 TO 45 INCLUSIVE ARE HEREBY MADE A PART OF THIS SPECIFICATION.

ALL WORK SHALL BE IN FULL ACCORDANCE WITH THE REQUIREMENTS OF THE ONTARIO ELECTRICAL CODE, LOCAL POWER COMMISSION AND THE LOCAL INSPECTION DEPARTMENT REQUIREMENTS.

ELECTRICAL CONTRACTOR SHALL INCLUDE FOR GENERAL ESA FEES. ELECTRICAL CONTRACTOR WILL BE RESPONSIBLE FOR ANY ASSOCIATED FEES FOR THE ESA PLAN REVIEW.

THIS CONTRACTOR SHALL MAINTAIN ADEQUATE LIABILITY INSURANCE.

ALL WORKMANSHIP SHALL BE EXECUTED TO A STANDARD DETERMINED BY GOOD PRACTICE. THE ELECTRICAL CONTRACTOR SHALL GUARANTEE THE INSTALLATION FOR ONE YEAR.

THE ELECTRICAL CONTRACTOR SHALL SUBMIT SIX (6) SETS OF SHOP DRAWINGS TO THE ENGINEER. MATERIALS SHALL NOT BE ORDERED UNTIL REVIEW HAS BEEN COMPLETED. APPROVAL IS FOR GENERAL DESIGN AND ARRANGEMENT ONLY.

THE OWNERS RESERVE THE RIGHT TO ALTER THE LOCATION OF ANY ITEM UP TO TEN (10) FEET (3M) WITHOUT INCURRING AN EXTRA COST, PROVIDED HE DOES SO BEFORE THE ITEM IS INSTALLED.

ALL MATERIAL AND EQUIPMENT USED ON THIS PROJECT SHALL BE C.S.A. APPROVED.

THE CUTTING AND PATCHING FOR ELECTRICAL WORK SHALL BE DONE BY THE GENERAL CONTRACTOR AT THE ELECTRICAL CONTRACTOR'S EXPENSE.

THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE TO FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS BEFORE SUBMITTING HIS TENDER PRICE.

ALL DIMENSIONS SHALL BE TAKEN FROM THE ARCHITECTURAL DRAWINGS.

THE ELECTRICAL CONTRACTOR SHALL SUPPLY ALL LABOUR AND MATERIALS TO PROVIDE ELECTRIC SERVICE COMPLETE WITH ALL BRANCH CIRCUITS AND FINAL CONNECTIONS TO ALL ELECTRICAL EQUIPMENT AS SHOWN ON PLANS.

MOUNTING HEIGHTS

SEE DESIGNER DRAWINGS FOR MOUNTING HEIGHTS.

INCLUDE PROVISION OF FIVE (5) ADDITIONAL RECEPTACLES AND FIVE (5) ADDITIONAL TELEPHONE DATA OUTLETS. INCLUDE FOR ONE 15A, 1P BREAKER, CONDUIT AND CIRCUITING TO SUIT RECEPTACLES.

PROVIDE LABELLING OF ALL ELECTRICAL DEVICES AND EQUIPMENT.

ALL COMMUNICATION CABLING AND CONTROL WIRING SHALL BE FT-4 (CMR) RATED RUNNING THROUGH RETURN AIR PLENUM. COMMUNICATION CABLING AND CONTROL WIRING SHALL BE FT-4 (CMR) RATED RUNNING THROUGH CEILING SPACE NOT BEING USED AS A RETURN PLENUM OR COMPLETELY IN CONDUIT FROM END TO END.

ELECTRICAL CONTRACTOR SHALL COORDINATE AND FACILITATE ALL POWER AND COMMUNICATION SERVICING TO BUILDING. COORDINATE WITH LOCAL PUC AND COMMUNICATION VENDORS AS REQUIRED. ALL COORDINATION SHALL BE COMPLETED PRIOR TO INSTALLATION OF CONDUIT/EQUIPMENT. NOTIFY CONSULTANT OF ANY DISCREPANCIES.

## GENERAL LIFE SAFETY:

ELECTRICAL CONTRACTOR SHALL PROVIDE CIRCUITS FOR ALL NEW EMERGENCY/EXIT LIGHTING WHERE SHOWN. CIRCUIT SHALL BE FED FROM HOUSE PANEL (SEE PANEL DIRECTORIES). PROVIDE BREAKER LOCK AND PAINTED YELLOW BREAKER. IDENTIFY CIRCUIT ON PANEL DIRECTORY.

ELECTRICAL CONTRACTOR SHALL PROVIDE TWO (2) 120V CIRCUITS FROM EACH BATTERY UNIT. EQUALLY DISTRIBUTE REMOTE HEADS ON EACH CIRCUIT AND PROVIDE CORRECT CONDUCTOR SIZE BASED ON MANUFACTURER TECHNICAL DATA.

ALL EXIT LIGHTING SHALL BE FED FROM CIRCUIT AS INDICATED.

EMERGENCY LIGHTING POWER SHALL BE FED FROM CIRCUIT AS INDICATED AND FROM BATTERY UNITS AS INDICATED.

ELECTRICAL CONTRACTOR TO PROVIDE 1 HOUR TEST OF NEW EXIT SIGNS AND EMERGENCY LIGHTING. ONCE TESTED, PROVIDE A LETTER TO ROMBALD INC. STATING A SUCCESSFUL 1 HOUR TEST WAS COMPLETED.

ELECTRICAL CONTRACTOR SHALL PROVIDE FIRE STOPPING TO ALL WALLS AFFECTED BY ELECTRICAL EQUIPMENT PENETRATING SUCH WALLS. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS OF FIRE RATED WALLS.

EXIT AND EMERGENCY LIGHTING ARE TO BE PROVIDED WITHIN THE UNIT/BUILDING IN ACCORDANCE WITH SUBSECTIONS 3.4.5 AND 3.2.7 OF THE ONTARIO BUILDING CODE.

ELECTRICAL CONTRACTOR SHALL PERFORM A 1 HOUR EMERGENCY LIGHTING TEST FOR ALL EXISTING EXIT/EMERGENCY LIGHTING. ONCE TESTED, PROVIDE A LETTER TO ROMBALD INC. STATING A SUCCESSFUL 1 HOUR TEST WAS COMPLETED. ELECTRICAL CONTRACTOR SHALL REPAIR/REPLACE ALL DEFECTIVE UNITS. ELECTRICAL CONTRACTOR SHALL REPLACE ALL DEFECTIVE LAMPS AND BATTERIES AS REQUIRED.

## GENERAL LIGHTING NOTES:

COVER PLATES FOR COMMERCIAL & COMMON AREA LIGHT SWITCHES REQUIRING COVER PLATES AND OTHER LIGHTING DEVICES SHALL BE STAINLESS STEEL TYPE USING LEVITON STYLE-LINE DECORATOR SERIES, USE CATALOGUE # SO26 (SINGLE GANG) AND SO262 (DOUBLE GANG).

SINGLE POLE SWITCHES FOR COMMERCIAL & COMMON AREA SHALL BE OF WHITE SPECIFICATION GRADE AND RATED FOR 120V USING LEVITON MANUFACTURER, USE CATALOGUE #5621-2W.

ELECTRICAL CONTRACTOR SHALL PROVIDE ALL ACCESSORIES, POWER PACKS AND HARDWARE FOR A COMPLETE LIGHTING CONTROL SYSTEM.

THIS DRAWING AS AN INSTRUMENT OF SERVICE IS PROVIDED BY AND IS THE PROPERTY OF ROBERT E. DALE LIMITED.

THE CONTRACTOR MUST VERIFY AND ACCEPT RESPONSIBILITY FOR ALL DIMENSIONS AND CONDITIONS ON SITE AND MUST NOTIFY ARCHITECT / ENGINEER OF ANY VARIATIONS FROM THE SUPPLIED INFORMATION.

THE ENGINEER IS NOT RESPONSIBLE FOR THE ACCURACY OF SURVEY, ARCHITECTURAL, MECHANICAL, ELECTRICAL, ETC. INFORMATION SHOWN ON THIS DRAWING. REFER TO THE APPROPRIATE CONSULTANT'S DRAWINGS BEFORE PROCEEDING WITH THE WORK.

CONSTRUCTION MUST CONFORM TO ALL APPLICABLE CODES AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.

THE CONTRACTOR WORKING FROM DRAWINGS NOT SPECIFICALLY MARKED FOR CONSTRUCTION MUST ASSUME FULL RESPONSIBILITY AND BEAR COSTS FOR ANY CORRECTIONS OR DAMAGES RESULTING FROM HIS WORK.

THIS DRAWING IS NOT TO BE SCALED.

**NOTE:**  
ALL DIMENSIONS AND ELEVATIONS MUST BE SITE MEASURED AND CONFIRMED PRIOR TO FABRICATION AND/OR ERECTION.

**SHOP DRAWINGS:**  
ALL SHOP DRAWINGS SUBMITTED TO THE ENGINEER SHALL BE REVIEWED FOR GENERAL COMPLIANCE WITH THE INTENT OF THE STRUCTURAL DESIGN CONTAINED WITHIN THESE PROJECT DOCUMENTS ONLY.

DO NOT SUBMIT SHOP DRAWINGS AND/OR COVERING TRANSMITTERS MARKED FOR APPROVAL. AFOREMENTIONED DOCUMENTS SO MARKED WILL NOT BE REVIEWED.

THESE DRAWINGS ARE THE PROPERTY OF ROBERT E. DALE LIMITED CONSULTING ENGINEERS AND SHALL NOT BE USED AND OR REPLICATED IN THE GENERATION OF SHOP DRAWING PURPOSES.

**DISCLAIMER:**  
THESE DESIGN DOCUMENTS HAVE BEEN PREPARED BY ROBERT E. DALE LIMITED FOR THE ACCOUNT OF: ANY USE WHICH A THIRD PARTY MAKES OF THESE DESIGN DOCUMENTS, OR ANY RELIANCE ON DECISIONS TO BE MADE BASED ON THEM, ARE THE RESPONSIBILITY OF SUCH THIRD PARTY. ROBERT E. DALE LIMITED SHALL NOT BE HELD RESPONSIBLE FOR DAMAGES, IF ANY, SUFFERED BY ANY THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS TAKEN BASED ON THESE DESIGN DOCUMENTS.

| NO.                                 | REVISION                             | DATE       |
|-------------------------------------|--------------------------------------|------------|
| STAGE OF DESIGN AND DRAFTING:       |                                      |            |
| <input type="checkbox"/>            | Issued for Information Only          |            |
| <input checked="" type="checkbox"/> | Preliminary Design                   | 01/26/2024 |
| <input type="checkbox"/>            | Issued for Comments and Coordination |            |
| <input type="checkbox"/>            | Issued for Building Permit           |            |
| <input type="checkbox"/>            | Issued for Tender                    |            |
| <input type="checkbox"/>            | Issued for Construction              |            |
| <input type="checkbox"/>            | As Built Record Set                  |            |

ALL DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF THE ENGINEER, AND MAY NOT BE USED OR REPRODUCED WITHOUT THE ENGINEER'S APPROVAL.

THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS ON SITE AND REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING.

DRAWINGS MUST NOT BE SCALED.

**ROBERT E. DALE**  
CONSULTING ENGINEERS

429 EXMOUTH STREET  
SUITE 208, SARNIA,  
ONTARIO

PROJECT  
**PROPOSED NIGHT CLUB**  
32 HESS STREET SOUTH  
HAMILTON, ONTARIO

ARCHITECT:  
DWG. TITLE  
**LIGHTING PLAN/NOTES**

DATE January, 2024 SCALE 1/4"=1'-0"  
CHECKED BY G.DALE DRAWING NO.:  
DRAWN BY C. CALMEIDA PROJ. No. 240241  
E2.00

| PANEL 'A'   |                      |             |                                       |              |              |   |    |    |              |              |               |
|---|----------------------|-------------|---------------------------------------|--------------|--------------|---|----|----|--------------|--------------|---------------|
| VOLTAGE: 208 / 120<br>BUS AMPS: 200 A<br>A.I.C RATING: 65,000 A |                      |             | PHASE: 3<br>DEVICE AMPS: 200 A<br>MLO |              |              | WIRE: 4<br>LOCATION : BLD SERVICE ELECTRICAL<br>SUPPLY FROM: PANEL DP-1 |    |    |              |              |               |
| NO. OF CIRCUIT = 54   |                      |             |                                       |              |              |   |    |    |              |              |               |
| BKR<br>OPT  | LOCATION DESCRIPTION | LIG<br>ZONE | LOAD<br>(kVA)                         | LOAD<br>TYPE | TRIP<br>POLE | #   | PH | #  | TRIP<br>POLE | LOAD<br>TYPE | LOAD<br>(kVA) |
|   | EXIT LIGHTS          | ---         | 0.800                                 | A            | 15/1         | 1   | A  | 2  | 20/1         | E            | 1.500         |
|   | EMERGENCY LIGHTS     | ---         | 0.800                                 | A            | 15/1         | 3   | B  | 4  | 20/1         | E            | 1.500         |
|   | GENERAL LIGHTS       | ---         | 1.344                                 | A            | 15/1         | 5   | C  | 6  | 20/1         | E            | 1.500         |
|   | GENERAL LIGHTS       | ---         | 0.736                                 | A            | 15/1         | 7   | A  | 8  | 20/1         | E            | 1.500         |
|   | GENERAL LIGHTS       | ---         | 0.500                                 | A            | 15/1         | 9   | B  | 10 | 20/1         | E            | 1.500         |
|   | WASHROOM LIGHTS/FANS | ---         | 0.800                                 | A            | 15/1         | 11  | C  | 12 | 20/1         | E            | 1.500         |
|   | BAR RECEPTACLE       | ---         | 0.400                                 | B            | 15/1         | 13  | A  | 14 | 15/1         | B            | 1.000         |
|   | GLASS WASHER         | ---         | 1.000                                 | B            | 15/1         | 15  | B  | 16 | 15/1         | B            | 0.360         |
|   | BAR RECEPTACLE       | ---         | 0.720                                 | B            | 15/1         | 17  | C  | 18 | 15/1         | B            | 0.540         |
|   | AREA RECEPTACLE      | ---         | 0.500                                 | B            | 15/1         | 19  | A  | 20 | 15/1         | B            | 0.360         |
|   | AREA RECEPTACLE      | ---         | 0.360                                 | B            | 15/1         | 21  | B  | 22 | 15/1         | B            | 0.360         |
|   | AREA RECEPTACLE      | ---         | 0.360                                 | B            | 15/1         | 23  | C  | 24 | 15/1         | B            | 0.360         |
|   | AREA RECEPTACLE      | ---         | 0.360                                 | B            | 15/1         | 25  | A  | 26 | 15/1         | B            | 0.360         |
|   | AREA RECEPTACLE      | ---         | 0.360                                 | B            | 15/1         | 27  | B  | 28 | 15/1         | B            | 0.540         |
|   | HRV                  | ---         | 1.500                                 | D            | 20/1         | 29  | C  | 30 | 15/1         | B            | 0.720         |
|   | DUCTLESS SPLIT       | ---         | 2.392                                 | D            | 30/2         | 31  | A  | 32 | 30/2         | D            | 2.392         |
|   | DUCTLESS SPLIT       | ---         | 2.392                                 | D            | 30/2         | 33  | B  | 34 | 30/2         | D            | 2.392         |
|   | DUCTLESS SPLIT       | ---         | 2.392                                 | D            | 30/2         | 35  | C  | 36 | 30/2         | D            | 2.392         |
|   | DUCTLESS SPLIT       | ---         | 2.392                                 | D            | 30/2         | 37  | A  | 38 | 30/2         | D            | 2.392         |
|   | DUCTLESS SPLIT       | ---         | 2.392                                 | D            | 30/2         | 39  | B  | 40 | 15/1         | E            | 1.000         |
|   | DUCTLESS SPLIT       | ---         | 2.392                                 | D            | 30/2         | 41  | C  | 42 | 15/1         | E            | 1.000         |
|   | BASEBOARD HEATER     | ---         | 1.500                                 | E            | 20/1         | 43  | A  | 44 | 15/1         | E            | 1.000         |
|   | BASEBOARD HEATER     | ---         | 1.500                                 | E            | 20/1         | 45  | B  | 46 | 15/1         | E            | 1.000         |
|   | HOT WATER HEATER     | ---         | 1.0                                   | F            | 15/1         | 47  | C  | 48 | 15/1         | E            | 1.000         |
|   |                      | ---         |                                       |              |              | 49  | A  | 50 | 15/1         | E            | 1.000         |
|   |                      | ---         |                                       |              |              | 51  | B  | 52 |              |              |               |
|   |                      | ---         |                                       |              |              | 53  | C  | 54 |              |              |               |

PANEL LOAD ANALYSIS

| Load Type              | DESCRIPTION       | Conn. Demand kVA | kVA                       | Load Type            | DESCRIPTION   | Conn. Demand kVA | kVA        |
|------------------------|-------------------|------------------|---------------------------|----------------------|---------------|------------------|------------|
| A                      | Lighting          | 4.98             | 6.23                      | E                    | Heating       | 18.00            | 0.00       |
| B                      | Receptacles       | 8.66             | 8.66                      | F                    | Largest Motor | 1.00             | 1.25       |
| C                      | Kitchen Equipment | 0.00             | 0.00                      | G                    | Other Motors  | 0.00             | 0.00       |
| D                      | A/C Conditioning  | 23.42            | 23.42                     | H                    | Other Loads   | 0.00             | 0.00       |
| Phase A Connected Load | KVA               | BKR              | LO-LOCK DEVICE            | TOTAL CONNECTED LOAD | 58.04         | KVA              | 161.2 AMPS |
| Phase B Connected Load | KVA               | OF1              | GFCI/GRD FAULT BREAKER    | TOTAL DEMAND LOAD    | 41.56         | KVA              | 115.3 AMPS |
| Phase C Connected Load | KVA               |                  | CLP: CURRENT LIMIT. PANEL |                      |               |                  |            |

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THE SUPPLIED INFORMATION.

THE ENGINEER IS NOT RESPONSIBLE FOR THE ACCURACY OF  
SURVEY, ARCHITECTURAL, MECHANICAL, ELECTRICAL, ETC.,  
INFORMATION SHOWN ON THIS DRAWING. REFER TO THE  
APPROPRIATE CONSULTANT'S DRAWINGS BEFORE PROCEEDING  
WITH THE WORK.

CONSTRUCTION MUST CONFORM TO ALL APPLICABLE CODES  
AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.

THE CONTRACTOR WORKING FROM DRAWINGS NOT  
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FULL RESPONSIBILITY AND BEAR COSTS FOR ANY CORRECTIONS  
OR DAMAGES RESULTING FROM HIS WORK.

THIS DRAWING IS NOT TO BE SCALED.

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AND CONFIRMED PRIOR TO FABRICATION AND/OR ERECTION.

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THE STRUCTURAL DESIGN CONTAINED WITHIN THESE PROJECT  
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| NO. | REVISION | DATE |
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**STAGE OF DESIGN AND DRAFTING:**

|                                     |                                      |
|-------------------------------------|--------------------------------------|
| <input type="checkbox"/>            | Issued for Information Only          |
| <input checked="" type="checkbox"/> | Preliminary Design 01/26/2024        |
| <input type="checkbox"/>            | Issued for Comments and Coordination |
| <input type="checkbox"/>            | Issued for Building Permit           |
| <input type="checkbox"/>            | Issued for Tender                    |
| <input type="checkbox"/>            | Issued for Construction              |
| <input type="checkbox"/>            | As Built Record Set                  |

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THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS  
ON SITE AND REPORT ANY DISCREPANCIES TO THE ENGINEER  
BEFORE PROCEEDING.

DRAWINGS MUST NOT BE SCALED.



ENGINEERING DONE UPRIGHT.  
429 EXMOUTH STREET  
SUITE 208, SARNIA,  
ONTARIO

PROJECT  
PROPOSED NIGHT CLUB  
32 HESS STREET SOUTH  
HAMILTON, ONTARIO

ARCHITECT:  
DWG. TITLE:  
ELECTRICAL PANEL  
DATE: January, 2024 SCALE: 1/4"=1'-0"  
CHECKED BY: G.DALE DRAWING No.:  
DRAWN BY: C.CALMEIDA  
PROJ. No: 240241 E3.00  
△

# ELECTRICAL SPECIFICATIONS

## PART 1 - GENERAL

1.1 THE GENERAL CONDITIONS AND INSTRUCTIONS TO BIDDERS AS SET FORTH IN THE GENERAL CONTRACT SPECIFICATIONS AND ALL ADDENDA THERETO SHALL APPLY TO, AND GOVERN ALL PORTIONS OF THE ELECTRICAL WORK.  
 1.2 POINTS NOT SPECIFICALLY MENTIONED SHALL BE IN STRICT ACCORDANCE WITH THE CURRENT VERSION OF THE CANADIAN ELECTRICAL CODE AND REGULATIONS OF THE ELECTRICAL INSPECTION DEPARTMENT, AS PERMITTED AND OBTAINED.  
 1.3 WHERE THE TERMS "FURNISH", "PROVIDE" OR "INSTALL" APPEAR IN THIS DIVISION, OR A MANUFACTURER IS INDICATED WITH ITEM OR PRODUCT CATALOG NUMBER LISTED, IT IS THE CONTRACTOR'S RESPONSIBILITY TO FURNISH AND INSTALL THE ITEM COMPLETE AND OPERATING FOR THE PURPOSE INTENDED, UNLESS OTHERWISE NOTED.  
 1.4 WHERE THE TERM "WORK" APPEARS IN THIS DIVISION, IT INCLUDES ALL LABOUR, MATERIALS AND SERVICES REQUIRED AS DESCRIBED IN THE CONTRACT DOCUMENT.  
 1.5 IN CASES OF CONFLICT(S) WITH HE DRAWINGS AND SPECIFICATIONS, THE SPECIFICATIONS SHALL GOVERN.

1.6 PRIOR TO COMMENCING ANY WORK, THE CONTRACTOR SHALL THOROUGHLY EXAMINE AND VERIFY DRAWINGS, SPECIFICATIONS AND AMENDMENTS FOR ANY ERRORS, INCONSISTENCIES AND DEVIATIONS WHICH MAY BE DISCLOSED BY SUCH EXAMINATIONS. THE CONTRACTOR SHALL NOT PROCEED WITH ANY WORK WHILE UNCERTAIN TO ANY INTERPRETATION ON THE DRAWINGS OR THE SPECIFICATIONS.

## PART 2 - CODES, PERMITS AND INSPECTIONS

2.1 THE INSTALLATION SHALL COMPLY WITH THE REQUIREMENTS OF THE CURRENT EDITION OF THE CANADIAN ELECTRICAL CODE (AS AMENDED BY THE AUTHORITY HAVING JURISDICTION) AND THE LOCAL GOVERNMENT REGULATIONS OF THE ELECTRICAL INSPECTION DEPARTMENT HAVING JURISDICTION.  
 2.2 THE ELECTRICAL TRADE SHALL OBTAIN ALL ELECTRICAL PERMITS REQUIRED AND, AFTER COMPLETION OF THE WORK, SHALL FURNISH TO THE ENGINEER A CERTIFICATE OF FINAL INSPECTION AND APPROVAL FROM THE INSPECTION DEPARTMENT.  
 2.3 FEES FOR ALL PERMITS AND LICENSES REQUIRED FOR THE WORK SHALL BE INCLUDED BY THE ELECTRICAL CONTRACTOR.

## PART 3 - STANDARD OF ACCEPTANCE

3.1 ALL MATERIALS SHALL BE NEW AND OF THE QUALITY SPECIFIED UNLESS SPECIFICALLY SHOWN AS EXISTING TO BE RE-USED IN THE CONTRACT DOCUMENTS. NEW MATERIALS SHALL CONFORM TO THE STANDARDS OF THE CSA AND THE ULC AND APPROVED BY THESE AGENCIES, WHERE APPLICABLE. FOR ANY MATERIAL NOT CSA APPROVED, THE CONTRACTOR SHALL OBTAIN THE APPROVAL OF THE LOCAL INSPECTION AUTHORITY AND SHALL BEAR ALL INSPECTION CHARGES LEVIED AND ANY MODIFICATION COSTS REQUIRED.  
 3.2 ALL PHASES OF THE ELECTRICAL INSTALLATION SHALL BE EXECUTED IN A SATISFACTORY, WORKMANLIKE MANNER AND SHALL PRESENT A NEAT APPEARANCE WHEN COMPLETED. WORK NOT DEEMED SATISFACTORY TO THE ENGINEER SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.

## PART 4 - SETTING OUT THE WORK

4.1 ELECTRICAL WORK IS TO BE CARRIED OUT BY QUALIFIED, LICENSED ELECTRICIANS WHO HOLD A VALID PROVINCIAL LICENSE IN ACCORDANCE WITH THE ELECTRICAL AND GAS CODES.  
 4.2 THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING ALL WORK COMPLETED CONTRARY TO THE INTENT OF THE DRAWINGS AND SPECIFICATIONS AND SHALL BEAR ALL COSTS FOR SAME. WHERE THE INTENT OF THE DRAWINGS AND SPECIFICATIONS ARE NOT CLEAR, THE CONTRACTOR SHALL OBTAIN CLARIFICATION FROM THE ELECTRICAL PRACTICE TO PROCEDURES FOR THE WORK.

4.3 EQUIPMENT SUPPLIED BY THE ELECTRICAL TRADE MUST BE BUILT-IN WITH EQUIPMENT EQUIPMENT SUPPLIED BY THE ELECTRICAL TRADE MUST BE BUILT-IN WITH EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE SUPPLYING OF THE EQUIPMENT TO BE BUILT-IN OR MEASUREMENTS TO ALLOW NECESSARY OPENINGS BE LEFT SO AS NOT TO HOLD UP THE WORK.  
 4.4 THE ELECTRICAL TRADE, IN SETTING OUT OF HIS WORK, SHALL MAKE REFERENCE TO ALL OTHER DISCIPLINES AND SPECIFICATIONS. THE ELECTRICAL CONTRACTOR SHALL CONSULT WITH THE RESPECTIVE TRADES IN SETTING OUT LOCATIONS FOR ALL EQUIPMENT AND WIRING SO THAT CONFLICTS ARE AVOIDED AND SYMMETRICAL SPACING IS MAINTAINED.

4.5 BEFORE SUBMITTING TENDER, CAREFULLY EXAMINE THE SITE OF THE PROPOSED WORK FOR EXISTING CONDITIONS AFFECTING THE WORK, NO EXTRAS WILL BE ALLOWED FOR WORK NECESSITATED BY CONDITIONS ORDINARILY EVIDENT ON THE SITE. REPORT TO THE ENGINEER ANY CONDITIONS THAT MAY AFFECT THE PROPER COMPLETION OF THIS WORK.

4.6 WHERE LIGHTING FIXTURES, SPEAKERS, ETC. OCCUR IN ACOUSTIC TILE CEILING, THESE FIXTURES SHALL BE COORDINATED WITH THE TILE PATTERN AND SHALL BE ADJUSTED, IF REQUIRED TO SUIT THE TILE PATTERN.  
 4.7 WHERE RECEPTACLES ARE MOUNTED ABOVE COUNTERS, BENCHES, BACKSPASHES, ETC., LOCATION AND MOUNTING HEIGHTS SHALL BE COORDINATED WITH THE BUILT-IN UNITS AND ARCHITECTURAL DRAWINGS.

4.8 MOUNTING HEIGHTS SHALL BE COORDINATED WITH ARCHITECTURAL DETAILS AND SHALL BE ADJUSTED, IF REQUIRED, TO SUIT PANELING, DADOS, MASONRY COURSE LINES, ETC.

## PART 5 - TESTING

5.1 PERFORM MEGGER TESTS ON ALL FEEDERS TO ENSURE THAT THE C.E.C. REQUIREMENTS ARE MET. TAKE CURRENT READINGS ON ALL FEEDERS AND IF LOAD UNBALANCE EXCEEDS 15%, RECONNECT LOADS TO BRING WITHIN BALANCE.

## PART 6 - CO-ORDINATION AND CO-OPERATION

6.1 COORDINATE WORK WITH ALL TRADES TO ENSURE A PROPER AND COMPLETE INSTALLATION. NOTIFY ALL TRADES FOR REQUIREMENTS FOR OPENINGS, SLEEVES, INSERTS AND OTHER HARDWARE NECESSARY IN THEIR WORK FOR INSTALLATION OF YOUR SERVICES. COORDINATE WORK WITH ALL TRADES AND OTHER TRADES, CAREFULLY COORDINATE ALL WORK PRIOR TO AND DURING INSTALLATION.  
 6.2 COORDINATE PLAN EXACT LOCATIONS AND ROUTING OF SERVICES WITH ALL TRADES AFFECTED PRIOR TO INSTALLATION. GENERALLY, PIPING REQUIRING UNIFORM PITCH SHALL BE GIVEN RIGHT OF WAY, WITH OTHER SERVICES LOCATED AND ARRANGED TO SUIT.

## PART 7 - GUARANTEE/WARRANTY

7.1 THE ELECTRICAL CONTRACTOR SHALL PROVIDE A WRITTEN GUARANTEE FOR THE FOLLOWING:  
 .1 ALL WORK EXECUTED UNDER THIS CONTRACT WILL BE FREE FROM DEFECTS OF WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION.  
 .2 CONTRACTOR AGREES THAT IT WILL, AT ITS OWN EXPENSE, REPAIR AND REPLACE ALL SUCH DEFECTIVE WORK AND OTHER WORK DAMAGED THEREBY. DEFECTS OR BODS OR BECOMES DEFECTIVE DURING THE TERM OF THE WARRANTY PERIOD PROVIDED SUCH FAILURE IS NOT A RESULT OF IMPROPER USAGE.

.3 THE PERIOD OF THE GUARANTEE SPECIFIED SHALL IN NO WAY SUPPLANT ANY OTHER GUARANTEE OF A LONGER PERIOD, BUT SHALL BE BINDING ON WORK NOT OTHERWISE COVERED.

PART 8 - INTERRUPTIONS TO AND SHUT DOWNS OF EXISTING SERVICES AND SYSTEM  
 8.1 DO NOT SHUT DOWN OR DISCONNECT ANY EXISTING SERVICE OR SYSTEM WITHOUT THE OWNER'S APPROVAL. CONTRACTOR TO PREPARE WORK FOR REQUIRED SHUT-DOWN AND INTERRUPTIONS OF EXISTING SERVICES. THE ACTUAL PERFORMANCE OF THE EXISTING SERVICE OR SYSTEM SHUT DOWN SHALL BE PERFORMED BY THE OWNER'S OWN AUTHORIZED PERSONNEL. ALL SHUT DOWNS SHALL BE COORDINATED WITH THE CONSULTANT ENGINEER AND THE OWNER'S REPRESENTATIVE.

8.2 CONTRACTOR TO OBTAIN WRITTEN APPROVAL A MINIMUM OF FIVE (5) DAYS IN ADVANCE OF SHUT DOWNS AND INTERRUPTIONS, INCLUDE FOR ASSOCIATED COSTS OF WORK PERFORMED DURING NIGHTS, WEEKENDS OR TIMES OUTSIDE OF NORMAL WORKING HOURS, AS NECESSARY TO MAINTAIN SERVICES IN OPERATION OR WITH MINIMUM INTERRUPTIONS COMPLYING WITH THE OWNER'S REQUIREMENTS. TO AFTER HOURS FOR NIGHTS.

## PART 9 - RECORD DRAWINGS

9.1 WHEN WORK BEGINS AT SITE ON A DAILY BASIS, CONTRACTOR TO CLEARLY AND ACCURATELY MARK ON A BOUND SET OF WHITE PRINTS OF CONTRACT DRAWINGS ALL CHANGES AND/OR DEVIATIONS INCLUDING THOSE MADE BY ADDENDAS, CHANGE ORDERS, AND SITE INSTRUCTIONS.

9.2 MAINTAIN A COPY OF THE AS-BUILT WHITE PRINTS AT SITE FOR PERIODIC INSPECTION BY THE CONSULTANT ENGINEER THROUGHOUT THE DURATION OF WORK.  
 9.3 AS-BUILT DRAWINGS ARE TO INCLUDE ROUTING OF ALL FEEDERS, EXCEPT FOR BRANCH CIRCUITS. LOCATION OF ALL JUNCTION BOXES ARE TO BE SHOWN, QUANTITY OF WIRES IN EACH CONDUIT AND CIRCUIT NUMBERS OF WIRES IN EACH CONDUIT.  
 9.4 PRIOR TO APPLYING FOR A CERTIFICATE OF SUBSTANTIAL PERFORMANCE OF WORK, CONTRACTOR TO SUBMIT THE FINAL "AS-BUILT" SITE DRAWING WHITE PRINTS FOR REVIEW BY THE ENGINEER. CONTRACTOR TO MAKE REVISIONS IF REQUESTED BY THE CONSULTANT ENGINEER.  
 9.5 FINAL AS-BUILT PRINTS/PLOTS SHALL NOT CONTAIN MARKINGS OR CORRECTIONS MADE BY THE CONSULTANT ENGINEER.  
 9.6 AS-BUILT PRINTS/PLOTS SHALL BE DELETED FROM THE DRAWINGS/PLANS. FINAL AS-BUILT DRAWINGS SHALL BE IN CAD FORMAT.

## PART 10 - IDENTIFICATION

10.1 LABEL ALL PANELS, STARTERS, DISTRIBUTION CENTRES, LIGHTING CONTROLS, TRANSFORMERS WITH 13MM LAMICOID PLATES, PERMANENTLY ATTACHED TO THE EQUIPMENT.  
 10.2 PROVIDE ADHESIVE LABELS FOR RECEPTACLE CIRCUIT NUMBERS AND VOICE/DATA JACK IDENTIFICATION.

## PART 11 - HAZARDOUS MATERIAL

11.1 IF AT ANY TIME DURING THE COURSE OF WORK ASBESTOS MATERIALS ARE ENCOUNTERED OR SUSPECTED, CONTRACTOR TO CEASE WORK IN AREAS IN QUESTION AND IMMEDIATELY REPORT IN ACCORDANCE WITH ONTARIO REGULATION 654/85 (SECTION 85) TO THE CONSULTANT. DO NOT RESUME WORK IN AFFECTED AREA WITH APPROVAL FROM THE CONSULTANT.  
 11.2 MATERIALS CONTAINING MERCURY SHALL BE PROPERLY DISPOSED FROM SITE IN ACCORDANCE WITH APPROPRIATE FEDERAL AND STATE REGULATIONS.

## PART 12 - CLEAN-UP

12.1 DURING THE COURSE OF THE CONSTRUCTION, CONTRACTOR SHALL KEEP THE SITE REASONABLY CLEAR OF RUBBISH AND WASTE MATERIALS, ON DAILY BASIS. UPON COMPLETION OF WORK, REMOVE RUBBISH AND DEBRIS, ARRANGE AND PAY FOR REPAIR OF DAMAGES CAUSED AND LEAVE PREMISES AND WORK IN GOOD ORDER.

## PART 13 - INSPECTION OF WORK

13.1 CONSULTANTS SHALL HAVE ACCESS TO WORK SITE AT ALL TIMES, AND SHALL BE NOTIFIED OR AGREED UPON TIMES OF STAGES OF WORK.  
 13.2 WHERE STANDARDS OF WORK ARE SPECIFIED OR IMPLIED AND WORK DOES NOT COMPLY WITH THE SPECIFICATION SPECIFIED OR IMPLIED, SUCH DEFECTS SHALL BE CORRECTED AS DIRECTED BY THE CONSULTANT. ANY CHARGES FOR OWNER'S STAFF, CONSULTANT OR OTHER PERSONNEL(S) RELATED TO SUCH RETESTING SHALL ALSO BE AT THE EXPENSE OF THE CONTRACTOR.

## PART 14 - NOISE CONTROL

14.1 WORK WHICH MAY CAUSE NOISE DISTURBANCES MUST BE SCHEDULED AT TIMES APPROVED BY THE CONSULTANT. COORDINATE WORK WITH TRADES TO MINIMIZE NOISE DISTURBANCES.

## PART 15 - CUTTING, PATCHING AND CORE DRILLING

15.1 CUT, PATCH AND CORE DRILL OF EXISTING BUILDING REQUIRED FOR INSTALLATION. MAKE ALL OPENINGS NO LARGER THAN IS REQUIRED FOR THE SERVICES PROVIDED, FOR INDIVIDUAL SERVICES.  
 15.2 PERFORM CUTTING IN A NEAT FASHION WITH PROPER TOOLS AND EQUIPMENT TO OWNER'S APPROVAL.  
 15.3 SUBSTANTIAL APPROVAL FROM THE STRUCTURAL CONSULTANT PRIOR TO CUTTING OR CORE DRILLING OF ANY OPENINGS OR HOLES.  
 15.4 IF CONDUIT IS CUT, REPAIR AND SEAL VENTS BETWEEN OPENINGS AND CONDUIT LENGTH OF OPENING WITH ASBESTOS FREE ELASTOMERIC AND INTUMESCENT ULC LISTED MATERIALS.  
 15.5 INSTALL FIRESTOP AND SMOKE SEAL MATERIALS IN ACCORDANCE WITH ULC AND/OR THE GOVERNING BUILDING CODE REQUIREMENTS.  
 15.6 DO NOT CUT OR EXISTING WORK WITHOUT OWNER'S APPROVAL. IN EXISTING AREAS ALL CUTTING AND CORE DRILLING FOR INDIVIDUAL SERVICES IS PART OF THIS DIVISION WORK.  
 15.7 UPON COMPLETION OF ALL SERVICES, PATCH ALL OPENINGS TO MATCH THE EXISTING FINISHES.  
 15.8 ANY DAMAGES CAUSED TO THE EXISTING BUILDING AND SERVICES BY CUTTING AND/OR CORE DRILLING SHALL BE THE CONTRACTOR'S RESPONSIBILITY.  
 15.9 ALL ASSOCIATED COST OF CUTTING AND PATCHING IS INCLUDED IN THIS DIVISION.

## PART 16 - WIRING METHODS

16.1 ALL WIRING TO BE COPPER, UNLESS OTHERWISE NOTED.  
 16.2 ALL CABLE SHALL BE FT4 RATED EXCEPT IN PLUMINUM SPACES WHICH SHALL BE FT6 RATED. NOTE THAT THE T-BAR CEILING SPACES FOR THIS PROJECT ARE PLUMINUM SPACES SO ALL WIRING WITHIN THAT SPACE SHALL BE FT6.  
 16.3 SPlices SHALL BE MADE IN ACCORDANCE WITH CAN/CSA C22.1-12 TAC90 DRO.  
 16.4 BRANCH CIRCUIT WIRING SHALL BE MINIMUM AWG 14 GA (450mm<sup>2</sup>), MAXIMUM LENGTH OF 28M (90ft).  
 16.5 PROVIDE A BONDING WIRE IN ALL RACEWAYS.  
 16.6 PROVIDE A BONDING WIRE IN WALLS, CEILINGS OR FLOORS, WHERE POSSIBLE. EXPOSED CONDUIT OR WIRING SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES TO THE BUILDING LINES.  
 16.7 PLUG BOXES SHALL BE INSTALLED TO BE AS HIDDEN AS POSSIBLE WITHOUT IMPEDED ACCESS.

## PART 17 - WIRING DEVICES

17.1 LIGHT SWITCHES SHALL BE COMMERCIAL GRADE, DECORA STYLE, 15A OR 20A AS REQUIRED. WHITE FINISH, UNLESS OTHERWISE NOTED.  
 17.2 RECEPTACLES SHALL BE COMMERCIAL GRADE, DECORA STYLE, 15A OR 20A AS REQUIRED. WHITE FINISH, UNLESS OTHERWISE NOTED.  
 17.3 COVER PLATES SHALL BE THERMOPLASTIC IN FINISHED AREAS WITH COLOUR TO MATCH DEVICES. PROVIDE STAMPED METAL COVER PLATES IN UNFINISHED AREAS AND WEATHERPROOF IN-USE COVERS FOR EXTERIOR RECEPTACLES.

## PART 18 - MOUNTING HEIGHTS

18.1 MOUNTING HEIGHTS SHALL BE FROM THE FINISHED FLOOR TO THE CENTRE OF EQUIPMENT, UNLESS OTHERWISE NOTED. IF MOUNTING HEIGHT IS NOT SPECIFIED, VERIFY WITH ENGINEER PRIOR TO INSTALLATION.  
 .1 SWITCHES: 1200MM (48 IN.)  
 .2 RECEPTACLES: 305MM (12 IN.)  
 .3 TELEPHONE/DATATEL/TELEVISION OUTLETS: 450MM (18 IN.)  
 .4 COUNTER-TOP OUTLETS: 1120MM (44 IN.)

## PART 19 - GENERAL CONDUIT AND CONDUCTOR INSTALLATION REQUIREMENTS

19.1 INSTALL CONDUIT AND CONDUCTORS CONCEALED TO DEGREE MADE POSSIBLE BY FINISHES AND PROVIDE INSTALLATIONS IN ACCORDANCE WITH THE LOCAL ELECTRICAL SAFETY CODE (I.E. OESC) AND THE LOCAL GOVERNING STANDARDS.  
 19.2 COORDINATE LOCATIONS AND ROUTING OF SERVICES WITH TRADES PRIOR TO INSTALLATION.  
 19.3 WHERE CONDUITS AND/OR CONDUCTORS ARE EXPOSED, CONTRACTOR TO PREPARE DETAIL DRAWINGS AND SUBMIT TO CONSULTANT/ENGINEER FOR REVIEW PRIOR TO START OF WORK IN THE AFFECTED AREA.  
 19.4 WHERE HORIZONTAL CONDUITS AND/OR CONDUCTORS ARE EXPOSED, INSTALLED AS HIGH AS POSSIBLE. DO NOT INSTALL CONDUITS AND/OR CONDUCTORS WITHIN 6" (150mm) OF HOT PIPES OR EQUIPMENT, UNLESS THEY ARE ASSOCIATED WITH THE EQUIPMENT.  
 19.5 CONDUITS AND/OR CONDUCTORS SHALL BE SUPPORT FROM THE CEILING/WALL STRUCTURE. DO NOT SUPPORT FROM CEILING HANGERS, DUCTWORK, PIPING, CABLE TRAYS, AND ETC.

19.6 AT NO EXTRA COST, ALLOW FOR FINAL RELOCATIONS OF DEVICES UP TO 10' (3M) TO COMPENSATE FOR LUGGAGE POUCHES PRIOR TO INSTALLATION OF WALL CONDUITS.  
 19.7 GENERAL CONDUITS AND/OR CONDUCTORS ARE SIZED IN ACCORDANCE WITH DRAWINGS. IN CASE OF THE TYPE AND SIZING BEING ABSENT IN DRAWINGS, SIZE CONDUITS AND/OR CONDUCTORS REQUIRED FOR THE INTENDED APPLICATION IN ACCORDANCE WITH THE APPLICABLE LOCAL ELECTRICAL SAFETY CODE (I.E. OESC) OR THE LOCAL GOVERNING AUTHORITY REQUIREMENTS.  
 19.8 CONDUIT AND/OR CONDUCTORS AND/OR IN RAISED FLOOR AREAS SHALL COMPLY WITH THE LOCAL BUILDING CODE (I.E. OBC) AND THE LOCAL ELECTRICAL SAFETY CODE (I.E. OESC).  
 19.9 10BX12 MAYBE USED IN CEILING SPACE FROM CEILING DISTRIBUTION BOX DOWN TO CEILING. RECEPTACLES/DIRECT CONNECTION IN PARTITIONS. BX RUNS IN CEILING NOT TO EXCEED 609MM(20') IN LENGTH. DO NOT RUN BX CABLES INTO PANELBOARDS.

## PART 20 - CONDUITS

20.1 INTERIOR CONDUITS SHALL BE GALVANIZED, ELECTRICAL METALLIC TUBING (EMT) IN ACCORDANCE WITH CSA C22.2 NO.83, COMPLETE WITH FACTORY MADE BENDS FOR CASES WHERE SITE BENDING IS NOT POSSIBLE. JOINTS AND TERMINATIONS MADE WITH SET SCREW TYPE CONNECTORS.  
 20.2 FOR SHORT BRANCH CIRCUIT CONNECTORS TO MOTORIZED EQUIPMENT AND/OR TRANSFORMERS (MAXIMUM LENGTH OF 18" (450mm), MAXIMUM LENGTH OF 24" (600mm)) PROVIDE EXTERIOR CONDUITS AND/OR IN RAISED FLOOR (WHERE POSSIBLE) PROVIDE GALVANIZED STEEL (600mm) DIA CONDUIT AND/OR CONDUCTORS.  
 20.3 PROVIDE EXTERIOR CONDUITS AND/OR IN RAISED FLOOR (WHERE POSSIBLE) PROVIDE GALVANIZED STEEL (600mm) DIA CONDUIT AND/OR CONDUCTORS.  
 20.4 FOR UNDERGROUND APPLICATIONS, PROVIDE CSA APPROVED, RIGID PVC CONDUIT WITH ELBOWS, COUPLINGS, AND EXPANSION JOINTS AND ETC. AS REQUIRED.  
 20.5 SUPPORT AND SECURE CONDUITS AS SPACING IN COMPLIANCE WITH THE LOCAL STANDARDS BY MEANS OF GALVANIZED PIPE STRAPS, RING BOLT TYPE HANGERS, CONDUIT CLIPS OR BY OTHER CSA APPROVED MANUFACTURED DEVICES.  
 20.6 CONDUIT AND/OR CONDUCTORS SHALL BE CONSTRUCTED OF THE SAME MATERIAL AS THE CONDUIT AND/OR CONDUCTOR FOR THE APPLICATION.

## PART 21 - CONDUITS

21.1 INTERIOR CONDUITS SHALL BE GALVANIZED ELECTRICAL METALLIC TUBING (EMT) IN ACCORDANCE WITH CSA C22.2 NO.83, COMPLETE WITH FACTORY MADE BENDS FOR CASES WHERE SITE BENDING IS NOT POSSIBLE. JOINTS AND TERMINATIONS MADE WITH SET SCREW TYPE CONNECTORS.  
 21.2 FOR SHORT BRANCH CIRCUIT CONNECTORS TO MOTORIZED EQUIPMENT AND/OR TRANSFORMERS (MAXIMUM LENGTH OF 18" (450mm), MAXIMUM LENGTH OF 24" (600mm)) PROVIDE EXTERIOR CONDUITS AND/OR IN RAISED FLOOR (WHERE POSSIBLE) PROVIDE GALVANIZED STEEL (600mm) DIA CONDUIT AND/OR CONDUCTORS.  
 21.3 PROVIDE EXPOSED EXTERIOR CONDUITS, AND FOR INTERIOR CONDUITS GREATER THAN 2" (50mm) IN DIAMETER AND FOR SURFACE MOUNTED CONDUIT AT HEIGHT LESS THAN 4" (1200mm) PROVIDE RIGID GALVANIZED STEEL IN ACCORDANCE WITH CSA C22.2 NO. 45, COMPLETE WITH FITTINGS, CONNECTORS AND RIGID COUPLINGS.  
 21.4 FOR UNDERGROUND APPLICATIONS, PROVIDE CSA APPROVED, RIGID PVC CONDUIT COMPLETE WITH ELBOWS, COUPLINGS, AND EXPANSION JOINTS AND ETC. AS REQUIRED.  
 21.5 SUPPORT AND SECURE CONDUITS AS SPACING IN COMPLIANCE WITH THE LOCAL STANDARDS BY MEANS OF GALVANIZED PIPE STRAPS, RING BOLT TYPE HANGERS, CONDUIT CLIPS OR BY OTHER CSA APPROVED MANUFACTURED DEVICES.  
 21.6 CONDUIT FITTINGS SHALL BE CONSTRUCTED OF THE SAME MATERIAL AS THE CONDUIT AND SUITABLE FOR THE APPLICATION.

## PART 22 - LIGHTING

22.1 THE ELECTRICAL CONTRACTOR SHALL SUPPLY AND INSTALL ALL LUMINAIRES NOTED ON THE DRAWINGS, COMPLETE WITH LAMPS, HANGERS, ACCESSORIES, ETC. FOR A COMPLETE AND OPERATIONAL INSTALLATION.  
 22.2 LUMINAIRES SHALL BE LEFT CLEAN AT COMPLETION OF THE PROJECT WITH ALL LAMP OPERATIONAL.  
 22.3 DO NOT DAMAGE OR BEND RELOCATED LUMINAIRES. REPLACE DAMAGED AND/OR BROKEN LENSES AND FAULTY BALLASTS. FOR RELOCATED LUMINAIRES, CONFIRM LUMINAIRES ARE FULLY OPERATIONAL.  
 22.4 REFER TO THE LUMINAIRE SCHEDULE FOR EACH TYPE REQUIRED TO MEET THE NEEDS OF THE PROJECT. ALTERNATES MAY BE CONSIDERED DURING THE TENDER PERIOD.

## PART 23 - PANEL BOARDS

23.1 PROVIDE EATON CUTLER-HAMMER TYPE POW RLINE 1" FACTORY ASSEMBLED DEAD FRONT PANELBOARDS, 120/208V, SPHASE 4-WIRE, MANUFACTURED TO CSA STANDARD C22.2 NO.29 AND OESC, AND DESIGNED FOR AN INTERRUPTING CAPACITY OF 10KA SYMMETRICAL AT 208V, UNLESS OTHERWISE NOTED.  
 23.2 INSTALL PANELBOARDS WHERE REQUIRED, COMPLETE WITH FUSE CLIPS OR NON-FUSIBLE, HEAVY DUTY, CSA APPROVED, MOUNT ON CONDUIT TYPE CONDUIT, CONDUCTOR, AND SUPPORT ADAPTERS.  
 23.3 ENCLOSURE TO BE TYPE NEMA 3R SPRINKLER PROOF, AMP RATING, NUMBER OF POLES AND FUSE REQUIREMENTS AS INDICATED ON DRAWINGS.  
 23.4 INCLIDE PROVISION FOR PADLOCKING IN ON-OFF SWITCH POSITION BY THREE LOCKS.  
 23.5 MECHANICALLY INTERLOCKED DOOR TO PREVENT OPENING OF DOOR WHEN IN USE.  
 23.6 FUSE TYPE TO BE CLASS J, CURRENT LIMITING, SIZE AS INDICATED ON DRAWINGS.  
 23.7 FUSE HOLDER TO BE WITHOUT ADAPTERS.  
 23.8 FUSIBLE DISCONNECTS TO BE OF QUICK-MAKE AND QUICK-BREAK TYPE.  
 23.9 PROVIDE ON-OFF SWITCH POSITION ON SWITCH ENCLOSURE.  
 23.10 ACCEPTABLE MANUFACTURES INCLUDE: SIEMENS ELECTRIC AND SQUIRE D.

## PART 24 - PROVIDE DOUBLE LUGGING TO EXISTING PANELBOARDS AS SH