MUNICIPALITY OF CASSELMAN

OFFICE FIT-UP

1 INDUSTRIEL ST., CASSELMAN, ON

ISSUED FOR TENDER
DATE: MARCH 24, 2025
PROJECT NO.: 22045

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NAME OF PRACTICE: Pye & Richards -Temprano & Young Architects inc.
200 - 824 MEATH STREET,
OTTAWA, ONTARIO. K1Z 6E8
T. 613-724-7700 F. 613-724-1289 info@prty.ca
NAME OF PROJECT: Municipality of Casselman - Office Fit-Up
LOCATION: 1 Industriel Street, Casselman

ONTARIO BUILDING CODE 2012
DATA MATRIX - PART 3

TITLE	DESCRIPTION	OBC REFERENCE
PROJECT DESCRIPTION:	INTERIOR FIT-UP OF OFFICE SPACE AND COUNCIL CHAMBER.	1.1.2 (A)
MAJOR OCCUPANCY(S):	GROUP D OCCUPANCY	3.1.2.1.(1)
BUILDING AREA:	EXISTING: 614.8 m2 (6,615 SQ.FT)	1.4.1.2 (A)
GROSS AREA:	EXISTING: 1,190.6 m2 (12,811 SQ.FT)	1.4.1.2 (A)
NUMBER OF STOREYS:	ABOVE GRADE: 2, BELOW GRADE: 0	1.4.1.2 (A) &
NUMBER OF STREETS:	1	3.2.2.10 & 3.2.5
BUILDING CLASSIFICATION:	MAJOR: GROUP D BUSINESS AND PERSONAL SERVICES, SUSIDIARY: GROUP A2 ASSEMBLY	3.2.2.55
SPRINKLERS:	NOT REQUIRED	3.2.2.55
STANDPIPE SYSTEM:	NOT REQUIRED	3.2.9
FIRE ALARM SYSTEM:	NOT REQUIRED	3.2.4
CONSTRUCTION RESTRICTIONS:	BOTH ALLOWED	3.2.2.64
ACTUAL CONSTRUCTION:	NON-COMBUSTIBLE	3.2.2.64
MEZZANINES:	NONE	3.2.1.1.(3)-(8)
OCCUPANT LOAD:	BASED ON AREA PER PERSON AS NOTED BELOW: (EDIT AS REQUIRED)	3.1.17

FLOOR	OCCUPANCY TYPE	AREA (SM)	RATE	PERSONS
SECOND	OFFICES	471	9.3	50
TOTAL BUILDING OCCUPANCY LOAD - THE COUNCIL CHAMBER IS OCCUPIED BY THE SAME PERSONS THAT OCCUPY THE OFFICE SPACE AND ARE OCCUPIED AT ALTERNATING TIMES. THE COUNCIL CHAMBER IS DESIGNED FOR 50 PERSONS AND IT IS ASSUMED THAT OF THE 50 PERSONS, 8 PERSONS HAVE OFFICES. THE TOTAL NUMBER OF PERSONS ALLOWED ON THE FLOOR IS LIMITED BY THE NUMBER OF WASHROOM FIXTURES, TOTALING TO 98 PERSONS. A SIGN WOULD NEED TO BE PLACED ON THE FLOOR INDICATING THE OCCUPANT LOAD IS 98 PERSONS.			**98**	

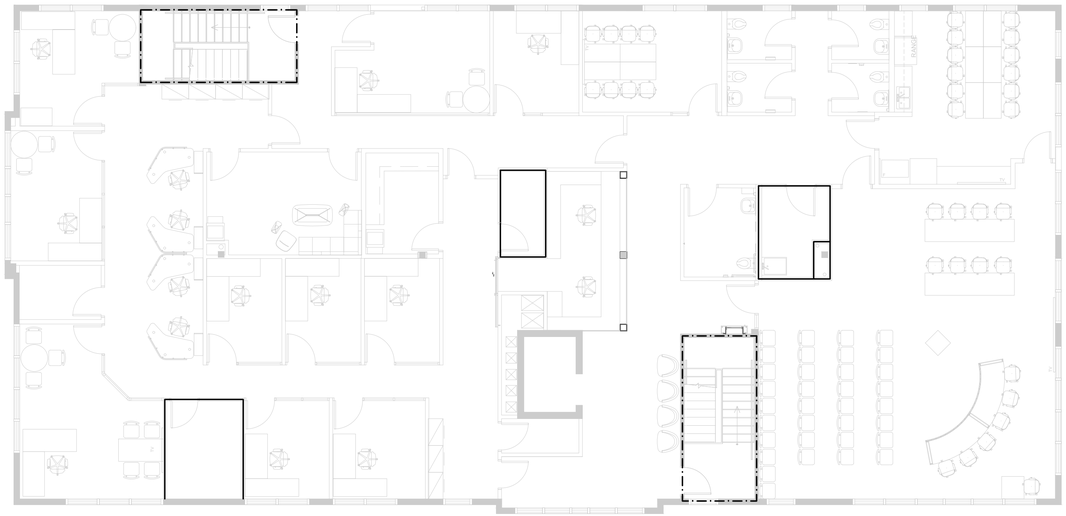
BARRIER FREE DESIGN	YES		3.8
REQUIRED FIRE RESISTANCE RATINGS	FLOORS	45 MIN	3.2.2.55
	ROOF	NONE	3.2.2.55
	MEZZANINE	NONE	3.2.2.55
	SUPPORTING STRUCTURES	SUPPORTING FLOORS - 45 MIN SUPPORTING ROOF - NONE	3.2.2.55
REQUIRED FIRE SEPARATIONS	EXIT ENCLOSURES	45 MIN	3.4.4.1
	JANITOR'S ROOM	1 HOUR	3.3.1.20.(3)
PLUMBING FIXTURE REQUIREMENTS			3.7

MALE/FEMALE @ 50%/50%

FLOOR	OCCUPANCY	AREA / RATE FOR OFFICES	OCCUPANT LOAD PER SEX	BUILDING CODE TABLE #	FIXTURES REQUIRED		FIXTURES PROVIDED		
					M	F	M	F	U
SECOND	OFFICES	471/14	17	3.7.4.7	2	2	2	2	1
	ASSEMBLY	50 PERSONS	25	3.7.4.3.D	1	1	2	2	1
ASSEMBLY OCCUPANCY FALLS WITHIN THE 98 PROVIDED TO WASHROOMS ON THE FLOOR.									

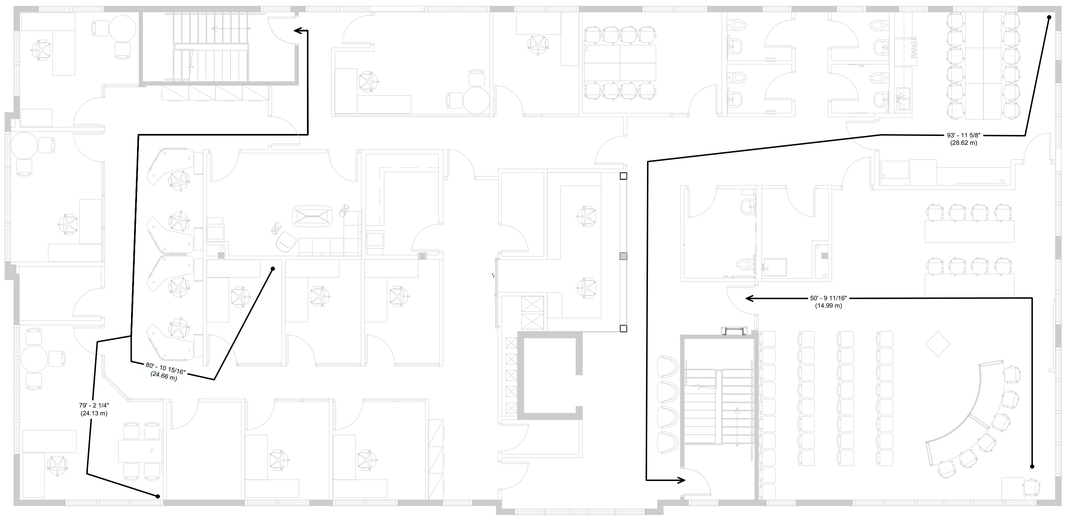
ONTARIO BUILDING CODE 2012
DATA MATRIX - PART 11 (Existing building 5 years old and older)

TITLE	DESCRIPTION		BC REFERENCE
EXISTING BUILDING CLASSIFICATION:	OFFICE SPACE WITH A SUBSIDAIRY COUNCIL CHAMBER CONSTRUCTION INDEX: 3 HAZARD INDEX: 4		11.2.1 T 11.2.1.1A T 11.2.1.1B TO N
ALTERATION TO EXISTING BUILDING IS:	EXTENSIVE RENOVATION		11.3.3.1 OR 11.33.2
REDUCTION IN PERFORMANCE LEVEL	STRUCTURAL	NO	11.4.2.1
	BY INCREASE IN OCCUPANT LOAD	YES	11.4.2.2
	BY CHANGE IN MAJOR OCCUPANCY	NO	11.4.2.3
	PLUMBING	YES	11.4.2.4
	SEWAGE SYSTEM	NO	11.4.2.5
COMPENSATING CONSTRUCTION	STRUCTURAL	NO	11.4.3.2
	BY INCREASE IN OCCUPANT LOAD	NO. EXISTING BUILDING ACCOMODATED THE ADDITIONAL OCCUPANCY AS PER PART 3	11.4.3.3
	BY CHANGE IN MAJOR OCCUPANCY	NO	11.4.3.4
	PLUMBING	NO.	11.4.3.5
	SEWAGE SYSTEM	NO	11.4.3.6



1 C-0 FIRE SEPARATION PLAN
SCALE = N.T.S.

FIRE SEPARATION LEGEND
– · – · – · – 45 MIN FIRE SEPARATION
· · · · · · · · · · · · 1 HR FIRE SEPARATION



2 C-0 TRAVEL DISTANCE PLAN
SCALE = N.T.S.

DESIGN CONSULTANT:
PR-TY ARCHITECTS INC.
824 MEATH STREET, SUITE 100
OTTAWA, ONTARIO, K1Z 6E8
TEL: (613) 724-7700
www.prty.ca

ENGINEERING CONSULTANT:
EXP Services Inc.
2650 QUEENSVIEW DRIVE, SUITE 100,
OTTAWA, ONTARIO, K2B 8H6
TEL: (613) 688-1899
www.exp.com

REV.	DESCRIPTION	DATE
04	ISSUED FOR TENDER	24/MAR/2025
03	ISSUED FOR PERMIT	18/MAR/2025
02	ISSUED FOR 99% REVIEW	24/FEB/2025
01	ISSUED FOR 66% REVIEW	12/MAY/2023

SEAL

PROJECT NORTH

Not for construction unless SEALED and SIGNED

PYE & RICHARDS - TEMPRANO & YOUNG ARCHITECTS INC.
824 Meath St. Suite 200 613. 724. 7700
Ottawa, ON K1Z 6E8 info@prty.ca

PROJECT
MUNICIPALITY OF CASSELMAN
OFFICE FIT-UP
1 INDUSTRIEL STREET CASSELMAN, ON

DRAWING
COVER PAGE

PROJECT NO.	22045	DRAWING NO.	A-000
SCALE -	NTS		
DRAWN -	MH		
CHECKED -	KB		
PLOT DATE -	24/03/2025	PLOTTED BY:	

00 21 13 INSTRUCTIONS TO TENDERERS (Applicable to all Trades)

1. Each tenderer must examine the plans and specifications and visit the site of the work before submitting a tender and must satisfy themselves by personal examination as to the local conditions to be met with during the constructions and conduct of the work. Tenderers are not to claim at any time after submission of the tender that there was any misunderstanding of the terms and conditions of the Contract relating to site conditions.
2. The responsibility and scope of each sub-contractor 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 products or work.
3. It is a condition of this contract that the contractors will, in the performance of the work, comply with any and all municipal, provincial, and federal laws, regulations, and by-laws including, but not limited to, those concerning the environment and the disposal of waste. It is incumbent on the contractors to be knowledgeable of any such legislation and in the event of non-compliance indemnify and hold harmless the owner and consultants from any costs and damages resulting from such non-compliance.

00 70 00 CONDITIONS OF THE CONTRACT

1. Standard Construction Document, CCDC 2 2020, Stipulated Price Contract including Agreement, Definitions, and General Conditions.

00 71 50 AMENDMENTS TO DEFINITIONS

1. Add the following definition: "Proper Invoice means a "proper invoice" as defined in the Payment Legislation, if any, and as may be modified by written agreement between the parties to the extent permitted by such Payment Legislation."
2. Add the following definition: "Submittals are documents or items required by the Contract Documents such as: Shop Drawings, samples, models, mock ups to indicated details or characteristics, before the portion of the Work that they represent can be incorporated into the Work, and As-built drawings and manuals to provide instructions to the operation and maintenance of the Work."

00 73 00 SUPPLEMENTARY CONDITIONS (Applicable to all Trades except for Mechanical & Electrical Trades - refer to Mechanical and Electrical Specifications for amendments and/or additional requirements for these trades)

1. Delete paragraphs 1.1.3 and 1.1.4 in their entirety and replace them with the following: "
   "1.1.3 The Contractor shall review the Contract Documents for the purpose of facilitating and co-ordination and execution of the Work by the Contractor. The Contractor shall report promptly to the Consultant any ambiguities, design issues or other matters requiring clarification made known to the Contractor or that the Contractor may discover from such a review. Such review by the Contractor shall comply with the standard of care described in paragraph 3.9.1 of the Contract."
   1.1.4 Except for its obligation to review the Contract Documents and report the result pursuant to paragraph 1.1.3, the Contractor is not responsible for ambiguities, design issues or other matters requiring clarification in the Contract Documents and does not assume any responsibility to the Owner or to the Consultant for the accuracy of the Contract Documents. Without limiting the foregoing, the Contractor shall not be liable for any damages or costs resulting from any ambiguities, design issues or other matters requiring clarification in the Contract Documents which the Contractor could not reasonably have discovered from such a review in accordance with the standard of care. If the Contractor does discover any ambiguities, design issues or other matters requiring clarification in the Contract Documents, the Contractor shall not proceed with the work affected until the Contractor has received modified or additional information from the Consultant. The impacts of any ambiguities, design issues or other matters requiring clarification in the Contract Documents, including to the Contract Price and Contract Time, shall be addressed by the parties in accordance with Part 6 – CHANGES."
2. Delete all paragraphs of GC 5.4 in their entirety and replace them with the following paragraphs:
   "5.4.1 When the Contractor considers that the Work is substantially performed, or if permitted by the lien legislation applicable to the Place of the Work a designated portion thereof which the Owner agrees to accept separately is substantially performed, the Contractor shall, within five (5) Working Days, deliver to the Consultant and to the Owner a comprehensive list of items to be completed or corrected, together with a written application for a review by the Consultant to establish Substantial Performance of the Work or substantial performance of the designated portion of the Work. Failure to include an item on the list does not alter the responsibility of the Contractor to complete the Contract.
   5.4.2 The Consultant will review the Work to certify or verify the validity of the application and shall promptly, and in any event, no later than 10 calendar days after receipt of the Contractor's application:
   .1 advise the Contractor in writing that the Work or the designated portion of the Work is not substantially performed and give reasons why, or
   .2 state the date of Substantial Performance of the Work or a designated portion of the Work in a certificate and issue a copy of that certificate to each of the Owner and the Contractor.
   5.4.3 Where the holdback amount required by the applicable lien legislation has not been placed in a separate lien holdback account, the Owner shall, no later than 10 calendar days prior to the expiry of the holdback period stipulated in the lien legislation applicable to the Place of the Work, place the holdback amount in a bank account in the joint names of the Owner and the Contractor.
   5.4.4 Subject to the requirements of any Payment Legislation, all holdback amounts prescribed by the applicable lien legislation for the Place of the Work shall become due and payable to the Contractor no later than 10 Working Days following the expiration of the holdback period stipulated in the lien legislation applicable to the Place of the Work, as certified or verified by the Consultant when permitted by any Payment Legislation.
   5.4.5 The Contractor shall submit an application for release of the lien holdback amount in accordance with the lien legislation applicable to the Place of the Work. Except to the extent required by any Payment Legislation, such application for release of the holdback shall not constitute an application for payment that is subject to Proper Invoice requirements.
   5.4.6 Where legislation permits progressive release of the holdback for a portion of the Work and the Consultant has certified or verified that the part of the Work has been performed prior to Substantial Performance of the Work, the Owner hereby agrees to release, and shall release the holdback for such portion of the Work to the Contractor in accordance with such legislation.
   5.4.7 Notwithstanding any progressive release of the holdback, the Contractor shall ensure that such parts of the Work are protected pending the issuance of a final certificate for payment or until the Owner takes early occupancy in accordance with GC12.2, whichever comes first, and shall be responsible for the correction of defects or work not performed regardless of whether or not such was apparent when the holdback was released."
3. Add to the end of paragraph 5.5.1 the following sentence:
   "The application for final payment shall meet the requirements of a Proper Invoice."
4. Add the following to the end of paragraph 5.5.3:
   "Subject to any Payment Legislation, when the Consultant finds the Contractor's application for final payment to be not valid, the Contractor shall revise and resubmit the application when the Contractor has addressed the reasons given by the Consultant."
5. Part 6 Changes in the Work:
6. Add sub-paragraph: "6.2.3 If a change in the Work, not covered by unit prices or estimate and acceptance in a lump sum, results in a net increase in the Contract Price, the charge to the Owner shall be the cost of the work plus:
   1. a maximum charge of 15% covering overhead and profit for work done by the subcontractor's own forces.
   2. a maximum charge of 10% covering overhead and profit for work done by a sub-subcontractor. Sub-subcontractors shall be permitted a maximum percentage of 15% covering overhead and profit for work done by a sub-subcontractor's own forces."
7. Add sub-paragraph "6.2.4 If a change in Work results in a net decrease in the Contract Price, the amount of the credit shall be the net cost, without deduction for overhead or profit. When both additions and deletions covering related work or substitutions are involved in a change in the Work, the allowance for overhead and profit shall be calculated on the basis of the net increase, if any, with respect to that change in the Work."
8. Add sub-paragraph "6.2.5 Labour costs shall be the actual rates paid to the workers plus a documented mark-up (not exceeding 60% of actual wages) to cover contributions, assessments, or taxes incurred for such items as unemployment and other insurance, provincial health insurance, Workplace Safety Insurance, Canada or Quebec Pension Plan, Holiday & Vacation Pay, Travelling time, Travel and Parking, Welfare, Union, Industry Training and Pension Funds, rest periods, down time, personal hygiene, and other benefits paid to workers, personal protection, small tools and the like. Travel time to and from site shall be at no charge to the Owner."
9. Add sub-paragraph "6.2.6 The percentage for office overhead and profit shall also cover financing, project management, estimating and processing of change orders, shop drawing review, record drawings and all site overheads such as superintendence, site facilities, safety, clean-up and items of all plant, equipment and tools and the like."
10. Add sub-paragraph "6.2.7 Complete breakdown of all costs submitted for consideration due to changes in the Work shall be furnished to the Contractor for both subcontractor's work and sub-subcontractors' work.
11. The above conditions are considered the minimum and apply to all subcontractors and their sub-subcontractors except for mechanical and electrical subcontractors and their sub-subcontractors. The above may be amended by the mechanical and electrical specifications. Mechanical and Electrical subcontractors are to review the relevant specifications for different and/or specific requirements as outlined in those specifications. The mechanical and electrical specifications govern over the above for mechanical and electrical subcontractors and their sub-subcontractors in the case of differences with the above. The mechanical and electrical specifications do not apply to all other subcontractors and their sub-subcontractors.

01 00 00 GENERAL INSTRUCTIONS (Applicable to all Trades)

1. Where new work connects with existing and where existing work is altered, cut, patch, and make good to match existing work.
2. Conceal pipes, ducts, and wiring in floor and wall construction of finished areas except where indicated otherwise.
3. Cut and patch existing surfaces as required to accommodate new work, including concealment of new mechanical and electrical services.
4. "Provide" means "supply and install,"
5. Provide all construction barriers and protection. Maintain all emergency egresses from the building at all times as required by code.
6. Authorized, Directed, Required, Requested, Approved, Ordered, Sanctioned and Satisfactory: Unless some other meaning is obvious from the context, the above words mean respectively authorized, directed, … sanctioned by and satisfactory to the Consultant.
7. The specifications are not intended as detailed installation methods but serve to indicate particular requirements of the completed work.
8. Confine operation, storage, access, parking to areas as directed.
9. Maintain all relevant documents at site.
10. Hold job meetings when directed. Record and distribute minutes.
11. Designated sanitary facilities in existing building will not be available, Contractor to provide own facilities for use.
12. Existing power and water at site may be used by Contractor without charge.
13. Provide Owner with min. 48 hours written notice of service shutdown.
14. Keep fire routes and corridors clear. Maintain fire protection systems and equipment in operation at all times.
15. Erect temporary dust screens and fire-rated construction barriers to separate work from remainder of building.
16. Provide "as-built" drawings accurately showing in red all deviations from Contract Drawings, including location of all underground and concealed utilities, footings, and constructions.
17. Follow OAA/OGCA Take Over Procedures, OAA/OGCA Document No. 100-2018, Reissued January 8, 2019.

01 60 00 PRODUCT/WORKMANSHIP REQUIREMENTS (Applicable to all Trades)

1. Conform to or exceed the minimum requirements of the Ontario Building Code (including Part 9), and all Provincial, Municipal, and Utility laws and regulations.
2. All materials, products, workmanship shall conform to the applicable CSA, CGSB, ULC, or OPS standards or in their absence, ASTM standards. The most conservative standard applies. All materials shall be new. Pay for tests that indicate non-compliance with Contract Documents.
3. Apply, install, connect, erect, use, clean all manufactured articles, materials and equipment as recommended by the manufacturer.
4. Execute work in accordance with best standard practice utilizing mechanics skilled in their trades. Erect work true to lines, levels, dimensions, square and plumb. Finish surfaces to be without defect detrimental to appearance.
5. Provide all necessary and appropriate fastenings and supports required to fabricate, erect, and complete the Work.
6. Conceal pipes, conduits, ducts and wiring within floor, wall, or ceiling.
7. In patching, making good, and extending existing surfaces, match in colour and texture all finishes within one area and all items of a similar nature. Maintain fire, air, moisture, and thermal tightness of assembly.
8. Deliver, store, and handle all material and products in a manner to prevent damage and deterioration.
9. Protect all new and existing work against damage until take over by the Owner.
10. Maintain work area free from accumulation of waste materials and rubbish. Remove debris and surplus materials from site.
11. Clean all surfaces and equipment just prior to hand over to Owner.

02 41 00 DEMOLITION

1. The requirements of Division 01 form part of this section.
2. Prevent damage to construction and services to remain.
3. Seal ducts, electrical panels and drains to prevent dust and debris from entering.
4. Sawcut or diamond drill new openings in concrete and masonry. All cuts in concrete to be scanned and reviewed by structural consultant prior to cutting. Approval by structural consultant and landlord required before commencing work.
5. Carry out demolition work in accordance with requirements of authorities having jurisdiction.
6. Remove hazardous and designated substances in accordance with governing regulations.
7. Demolish parts of existing building required to accommodate new construction.
8. Remove items as outlined for removal on the drawings, as required to install new materials, finishes, and equipment indicated and where existing items are no longer required for the functioning of the work.
9. Remove adhesives and fasteners used with demolished material. Existing surfaces to remain to be cleaned and/or made good to the satisfaction of the consultant and Owner.
10. Remove and reinstall existing equipment, services and obstacles where required for functioning of the work.
11. Take special note that drawings do not indicate the amount of demolition necessary, only the condition of the building when complete. Inspect the site and ascertain the correct portions to be removed.

06 10 00 ROUGH CARPENTRY

1. The requirements of Division 01 form part of this section.
2. Lumber: CLSAB identified softwood to CSA O141-05 and NLGA 2014, max. 19% MC, S4S. Finger jointed material unacceptable.
3. Furring blocking, nailing strips, grounds, rough bucks: SPF or DF; boards to be #3 common, dimension sizes to be structural grade.
4. Cants, curbs, nailers, for roofing: #3 structural, northern species.
5. Plywood: DFP to CSA O121-08 or CSP to CSA O151-09.
   1. Fire retardant Treat Wood (FRWT) plywood pressure impregnated with fire retardant chemicals in accordance with CAN/CSA-O80.1 and CAN/CSA-O80.2. Flame Spread Rating, max. 25.
6. OSB: to CAN/CSA O437.0-93.
7. Nails: To NBC 9.23.3, galvanized for exterior, exterior wall, roof work and for pressure treated wood: spiral. [except for floors]
8. Rough hardware, hot dipped galvanized with 600g zinc/m² to CAN/CSA G164-M92 or "Climaseal" or "Sentri" coated. Electroplated galvanizing is not acceptable.
9. Provide furring and blocking for items to be attached. Provide electrical back boards.
10. Rough carpentry indicated shall not be regarded as complete or exact. Conform to OBC Section 9.23 and as additionally indicated.

06 20 00 FINISH CARPENTRY

1. General:
   1. The requirements of Division 01 form part of this section.
   2. Do work to North American Architectural Woodwork Standards 4.0 Errata Edition, custom grade.
   3. Submit shop drawings.
2. Cabinetry:
   1. Construct from minimum 19mm plywood to CSA O115-M1982(R2001).
   2. Countertops: as per drawings.
   3. Hardwood Veneer: min. 0.71mm thick; stain grade.
   4. Use MDF core to ANSI A208.2-2002 for doors > 1.2m in height.
   5. Cabinet Doors: Overlay type.
   6. Plastic laminate: to NEMA LD 3-2005.
   7. Solid Surface: Cast, non-porous mineral filled acrylic polymer to ANSI Z124.3 or 6, Type 6. Maximum flame spread rating 25, maximum smoke developed 30 to ASTM E84. Acceptable Product: Corian by Dupont or equivalent.
   8. Solid Surface Adhesive: 2-part, inconspicuous, chemical bonding, non-porous adhesive, as recommended by the manufacturer.
   9. Accessories as per drawings.

07 21 00 INSULATION

1. Materials:
   1. The requirements of Division 1 form part of this section.
   2. Perimeter Insulation: Celfort 300 or Dow Styrofoam SM in 600 x 2400 boards, min. 65mm thick.
   3. Batt insulation: Glass fibre to CAN/ULC-S702-14, to suit steel studs, RSI or thickness as indicated.
   4. Adhesive: Bakor Air-Bloc 21.
   5. Mechanical Fasteners:
      1. Impale type, perforated 50 x 50mm c/w 25mm dia. self-locking washers.
2. Installation:
   1. Install insulation to provide continuity of thermal protection to building elements and spaces. Fix tightly and neatly to interruption and pack perimeter of interruptions. Eliminate voids behind insulation.
   2. Do not enclose insulation until it has been reviewed.
   3. Where air barrier provided by others, apply adhesive to board perimeters. On rigid boards apply supplemental adhesive in serpentine pattern from side to side. Otherwise install board insulation in min. 3mm thick continuous bed of air/vapour barrier adhesive and butter edges.
   4. Mechanically fasten wall insulation with min. 4 fasteners/board. Double rate on ceilings.
   5. At exterior stud walls: Locate end joints of rigid insulation over studs. Fasten board adjacent to top and bottom at each stud and max. 400mm o.c. between in field and 150mm o.c. between on vertical edges.
   6. Keep insulation other than Rock Wool min. 75mm from heat emitting devices such as lights and chimneys.
   7. Install prefab vents including all requisite accessories.

07 84 00 FIRESTOPPING

1. The requirements of Division 01 form part of this section.
2. Do all firestopping except as specified under other sections.
3. Provide firestopping and smoke seal system and components to CAN4-S115-M85, asbestos free, non-sagging, ULC listed, to equal rating of fire separation: Type F. Materials to suit opening size and type of penetration.
4. Submit shop drawings and product data to suit job conditions.
5. Seal holes or voids at penetrations and at openings, joints and gaps in construction continuity to ensure continuity and integrity of fire separations are maintained.
6. Firestop at:
   1. Penetrations through fire rated masonry, concrete and gypsum board walls, ceilings, roof, and floors.
   2. Top of fire rated gypsum board partitions.
   3. Intersection of fire resistance rated fire rated gypsum board partition walls.
   4. Smoke seal at locations in Item 5 above in unrated fire separations and around stair, elevator and service shafts, interconnected spaces, generator, and boiler rooms.
   5. Firestop at locations in Item 5 above in unrated fire separations where abutting materials cannot be tightly fitted.
   6. Install sealants to standards of Section 07 92 00.

07 92 00 JOINT SEALANTS

1. The requirements of Division 01 form part of this section.
2. For Section 07 92 00, extend GC-12.3 to 3 years. Provide acceptable written warranty for same. Specifically warrant against leakage, running, loss of adhesion or staining adjacent surfaces.
3. Prepare, prime, mask, install joint filler, correct width to depth ratio, to manufacturer's instructions.
4. Apply clear silicone sealant to top of splashbacks. Apply silicone sealant at floor around plumbing fixtures at floors and walls on and above second floor.
5. Apply interior sealant at perimeters of interior non-wraparound doors and frames.
6. Where directed, apply fire bead acrylic-latex to non-moving exposed interior joints to be painted.
7. Apply fire stop sealant around all penetrations of mechanical, electrical and other items penetrating through fire rated construction. Apply to provide required fire rating.

08 11 00 STEEL DOORS AND FRAMES

1. General:
   1. The requirements of Division 01 form part of this section.
   2. Fabricate welded steel doors and frames to CSDMA "Specification for Commercial Steel Doors and Frames 2006". Fire doors and frames: ULC or WHI (Intertek). listed, labelled, and certified to CAN/ULC S104-15 and CAN/ULC S105-16. Install fire-rated doors and frames to NFPA 80-2013.
   3. Submit shop drawings.
   4. Doors and frames within demountable wall systems by Section 10 22 19.
2. Materials:
   1. Sheet steel: Commercial grade to ASTM A568/A586M-19a with ZF001 zinc finish to ASTM A653/A653M-13.
   2. Honeycomb core: Structural core consisting of resin impregnated kraft paper, having 19mm cell size.
   3. Cap tops of exterior doors flush.
   4. Primer: For touch-up to CAN/CGSB-1.181-99.
   5. Glazing stop screws: cadmium plated.
3. Fabrication:
   1. Door faces: Min. 18ga.
   2. Locate screws for glazing stops at maximum 200mm o.c.
   3. Fit butting stops, channels and components tightly to adjacent corners free of sharp corners.
   4. Repair any surface depressions and butted joints with metallic paste filler. Sand to uniform smooth surface.
   5. Touch-up primer where galvanized finish damaged.
   6. Provide black neoprene rubber bumpers.
   7. Astragals: 4.8mm sheet steel, welded in place.
4. Installation:
   1. Set frames plumb and level with maximum diagonal distortion of 2.4mm.
   2. Securely anchor to adjacent construction.
   3. While building in, brace frames at mid-height (and if over 1.2m wide; at centre).
   4. Adjust doors to close without binding. Provide even margins; 1.0mm at hinge, 1.5mm at head and latch side, 13mm at floor.
   5. Reinforce, drill, cut and make good existing frames and doors as required by modifications indicated by drawings and schedules.

08 14 00 WOOD DOORS

1. The requirements of Division 01 form part of this section.
2. Construct doors and use materials conforming to CSA 0132.2 Series-90 and NAAWS 4.0 - North American Architectural Woodwork Standards (AWS), except where specified otherwise.
3. Provide manufacturer's 3 year written warranty against warpage, twist, showing core lines, splitting, delamination and sag for interior doors.
4. Solid core flush doors: framed core of wood particle board with plywood face veneer; use paint/stain grade. Provide solid stiles and rails for adequate fastening of hardware and min. 12mm hardwood edges. Seal top and bottom of doors and edges of cutouts.
5. Adjust doors to close without binding. Provide even margins; 2.4mm at latch side, 2.4 - 3.0mm at head, 9 - 12mm at floor but max. 6.0 mm where fire rated.

08 71 00 DOOR HARDWARE

1. General:
   1. The requirements of Division 01 form part of this section.
   2. Submit hardware and keying schedules prepared by registered AHC member and verified as to its appropriateness. All similar items to be of same manufacture. Submit catalogue cuts.
   3. Provide door and frame manufacturers with necessary templates.
   4. All doors to be keyed different and master keyed [to existing system.] Supplier to turn keys over to Owner directly.
   5. Stainless steel: Types 302 or 304.
2. Hardware Items:
   1. Butts: Refer to drawings.
   2. Locksets: Refer to drawings.
   3. Closers: Refer to drawings.
   4. Stops: Refer to drawings.
   5. Kickplates: Refer to drawings.
   6. Interior Pulls: Refer to drawings..
   7. Thresholds: Refer to drawings.
   8. Weatherstrip: Refer to drawings.
      1. Sweep: Refer to drawings.
   9. Electric Strikes: Refer to drawings.
   10. Robe Hook: Refer to drawings.
3. Hardware Types:
   1. Refer to drawings.
4. Automatic Operators:
   1. Refer to drawings.
5. Installation:
   1. Set thresholds in two continuous beads of butyl sealant. Cope around mullions and frames.
   2. Set angle for stops and holders to Consultant's approval. Mount floor stops out of line of travel.
   3. Set closers and rim exit device strikes over heavy duty weatherstriping.
   4. Mount robe hooks 1.2m from floor in barrier free washrooms.

08 80 00 GLAZING

1. General:
   1. The requirements of Division 01 form part of this section.
   2. Glaze in a manner to ensure rattle free cushioning for interior glazing.
   3. Provide ten-year written warranty against failure of seal and deposits on inner face of glass detrimental to vision for sealed double-glazing units.
   4. Use only compatible glazing materials and sealed units.
2. Glass Materials:
   1. Float glass: To CAN/CGSB-12.3-M91 glazing quality, of thickness indicated, but not less than CAN/CGSB-12.20-M89.
   2. Tempered glass: To CAN/CGSB-12.1-M90, Type 2, Class B, min. 6mm thick.
   3. Mirrors: To CAN/CGSB-12.5-M86, silvered, Type 1A, 6mm thick, unframed, ground, and polished edges.
3. Glazing Materials:
   1. Glazing tape: Tremco "440" Tape, preshimmed for exterior glazing.
   2. Setting blocks and spacer shims: Neoprene, 80 and 40 hardness respectively.
   3. Glazing splines: Neoprene, to suit aluminum extrusions.
   4. Sealant: CAN/CGSB-19.24-M87, Type 2, Class A, compatible with sealed units.
   5. Silicone sealant: Tremco Proglaze.
4. Workmanship:
   1. Set glass on setting blocks properly centered with uniform face and edge clearance, free from distortion causing stress. Make allowance for contraction and expansion.
   2. Install glass to ensure full contact and adhesion at perimeter and on both sides.
   3. Lay out splines on flat warm area to permit recovery of shape. Install splines under compression from corner.
   4. Provide toe bead of sealant along bottom and for 100mm up from bottom corner of interior installed un-vented exterior glazing.
   5. Install mirrors in adjustable stainless steel edge flange holders.

09 21 00 DRYWALL

1. General:
   1. The requirements of Division 01 form part of this section.
   2. Reference Standards: Provide work per CAN/CSA A82.31-M1980, ASTM C754-00, ASTM C840-18b, ASTM C1280-18 and ANSI A108/A118/A136-2024 except where specified otherwise.
   3. Construct fire-rated assemblies to OBC Guidelines, referenced ULC or WHI Designs, or OBMEC Authorizations.
   4. Provide seismic design and final review letter from an Ont. P. Eng. to confirm compliance with OBC for all drywall installations.
2. Framing and Furring:
   1. Non-load bearing channel stud framing: To ASTM C645-18 stud size as shown, roll formed from 25ga. Electrogalvanized steel sheet, for screw attachment of gypsum board. Knock out service holes at 450mm o.c. Ceiling and floor track to suit.
   2. Drywall furring channels: 25ga. electrogalvanized steel channels for screw attachments of gypsum board.
   3. Ceiling runner channels 38 x 19mm x16ga. cold rolled channels, Z275 galvanized.
   4. Runners, hangers, tie wires, inserts, anchors; galvanized.
3. Gypsum Board:
   1. Plain: To ASTM C36/C36M-01, 1200mm wide x max. practical length, ends square cut, edges tapered with round edges.
   2. Fire rated: As item 1., but fire-rated and ULC labelled.
   3. Moisture resistant: To ASTM C630/C630M-01, 1200mm wide x maximum practical length, green facing.
   4. Tile backer: Glass fibre reinforced cement board; CGC Durock, 12.7mm thick.
4. Accessories:
   1. Corner and casing beads: To ASTM C1047-19, fill type, 25ga. galvanized, concealed except as otherwise noted.
   2. Insulating strip: 3mm closed cell neoprene, self sticking.
5. Furring and Framing:
   1. Anchor tracks at maximum 600mm o.c. and at ends to floor, deck, abutting walls, columns.
   2. Frame at 400mm o.c. except as indicated. Frame to structure above except as otherwise noted but allow for structural deflection. Double stud full wall height at each side of openings and secure studs together.
   3. Screw studs to bottom track, but only to top tracks at ceiling height partitions.
   4. Provide two runner channels over head of openings over 1m in width extending out to engage third stud on each side.
   5. Provide reinforcing and backing for items to be attached.
   6. Diagonally brace bulkheads @ max. 1.2m o.c. Run furring channels at 1.2 max. across unfaced wall faces.
   7. Install ceilings to 1:1200 tolerance, walls and furring to 1:1000 tolerance.
   8. Suspend ceiling runner channels at 1.2m o.c. to support furring channels.
   9. Provide for control joints at max. 10m centres in walls and ceilings.
6. Gypsum Board Application:
   1. Use screws. Maximum spacing 300mm o.c. on edges and 400mm o.c. in field, except 300mm for fire rated, 150mm for tile backer and cement board. 200mm for gypsum sheathing.
   2. Offset vertical and horizontal joints between layers of gypsum board. Run ceilings boards perpendicular to furring. Run sheathing horizontally.
   3. Laminate gypsum board to Manufacturer's directions.
   4. Install casing beads where gypsum board butts against surfaces having no trim concealing junction. Install continuous insulating strips where gypsum board abuts exterior window and door frames, and above ceiling height partition tracks.
   5. Install access doors to electrical and mechanical services.
   6. Extend gypsum board to structure except as indicated.
   7. Use moisture resistant gypsum board for washroom walls. At moisture resistant gypsum board to receive tile facing; seal cut edges and fasteners with shellac.
   8. Use tile backer board behind ceramic tile.
   9. Patch; defects in existing drywall construction, where fixtures removed, and where new work installed.
7. At Fire Separations:
   1. Shape gypsum board to fit deck profile.
   2. Box in interfering beams, joists, pipes, conduits to maintain integrity.
   3. Line door frame heads and fire damper openings with gypsum board.
   4. Use ULC or WHI labelled acoustic batts.
   5. Carry column fireproofing to top of columns.
   6. Box in lights recessed in fire-rated gypsum board ceilings.
8. Taping & Filling:
   1. Complete taping, filling and sanding ready for painting: smooth, level, plumb, wave free.
   2. Tape and fill joints covering plastic installation, in acoustic walls, fire separations and behind ceramic tile.
   3. Use CGC Durabond 90 to fill joints of exterior cement board and moisture resistant board.

09 30 00 CERAMIC TILING

1. Reference Standards:
   1. The requirements of Division 01 form part of this section.
   2. Do work to 2019-2021 Specification Guide 09300 Tile Installation Manual produced by TTMAC and ANSI "Specifications for Installation of Ceramic Tile".
2. Manufacture:
   1. Ceramic tile: As per drawings.
3. Materials:
   1. Mortar and grout: Dry set to ANSI A108/A118/A136.1-2024, colour as selected.
   2. Accessory strips by Schluter: Reducer; "Reno", Edge; "Schiene" - AE finish, stair nosings: "Trep-S" colour as selected.
   3. Waterproofing: Laticrete 9235 or Mapai Plaincrete W on lowest floor.
4. Workmanship:
   1. Align patterns. Patterns to be uninterrupted through doorways.
   2. Make internal angles square, external angles bullnosed. Use bullnosed base where no tile finish above.
   3. Use bullnose edged tiles at termination of wall tile panels.
   4. Provide edge or reducer strips at floor terminations. Provide nosing strips at stair and landing edges.
   5. Make joints 2% of tile width, uniform, straight and even. Provide control joints at max. 6.0mm on centre.
   6. Apply slight levelling coat to concrete and masonry.
   7. Thoroughly clean down all work immediately as completed.
   8. Apply floor tile with thin set bond coat to TTMAC Detail 311F-02 and ANSI 108/A118/A136.1-2024.

09 51 00 ACOUSTIC CEILINGS

1. Materials:
   1. The requirements of Division 01 form part of this section.
   2. Acoustic panels: To CAN/CGSB 92.1-M89, square edge, Type D (mineral), pattern D (fissured), square edge 16mm thick, standard white, min. NRC .50-.60, min. CAC 35, min. LLR. 0.75, 610 x 1220mm except as indicated.
   3. Provide seismic design and final review letter from an Ont. P. Eng. to confirm compliance with OBC for all acoustic ceiling installations.
2. Installation:

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REV.	DESCRIPTION	DATE
04	ISSUED FOR TENDER	24/MAR/2025
03	ISSUED FOR PERMIT	18/MAR/2025
02	ISSUED FOR 99% REVIEW	24/FEB/2025
01	ISSUED FOR 66% REVIEW	12/MAY/2023

SEAL

PROJECT NORTH

Not for construction unless SEALED and SIGNED

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PROJECT

MUNICIPALITY OF CASSELMAN
OFFICE FIT-UP

1 INDUSTRIEL STREET CASSELMAN, ON

DRAWING

SPECIFICATIONS

PROJECT NO.	22045
SCALE -	1/8" = 1'-0"
DRAWN -	MH
CHECKED -	KB
PLOT DATE -	24/03/2025

DRAWING NO.

A-001

PLOTTED BY:

1. Install grid to ASTM C636/C635M-22 except as specified. Maximum deflection 1/360th of span. Certify installed ceiling capacity meets O.H.E.P.C. requirements if requested. Do not hang ceiling from metal deck.
2. Hang pairs of 38 x 19 x min. 1.2mm cold rolled channels to supplement structural layout and at interferences.
3. Layout centre lines of ceiling parallel to building both ways to provide balanced borders at room perimeter both ways or as indicated.
4. Do not place ceiling panels until all work in ceiling and the grid have been completed, inspected and approved.
5. Finished ceiling shall present a smooth, flush, even, level continuous surface, without perceptible sag, distortion, or surface defects. Exposed grid shall be straight, square, continuous.

09 65 19 RESILIENT TILE FLOORING

1. Materials:
    1. The requirements of Division 01 form part of this section.
    2. Luxury Vinyl Tile: To ASTM F1066-04(2018), Class A.
        1. Products: As per Finishes Schedule.
    3. Static dissipative vinyl tile: To ASTM F1700, Class 1, Type A, colour to be chosen from manufacturer's full colour range.
        1. Electrical Resistance average 1000 megohms to 1 megohm.
        2. Static Decay 5000V to zero in less than 0.01 sec.
        3. Static propensity: less than 2kv.
        4. Acceptable Products: AmericanBiltrite Electrotile, or equivalent. Refer to Finishes Schedule.
    4. Resilient base: To ASTM F1861-21 top set coved, rubber, 100mm high x 2.5mm thick.
    5. Adhesives and primers: As recommended by Manufacturer of flooring and base. Use colour matching polyurethane for rubber flooring, colour matched epoxy for treads, nosings and risers. Note that adhesive to be conductive as required to provide specified criteria for flooring.
    6. Grounding Strips: 50 x 600 min. and as shown x 0/076mm copper.
2. Installation:
    1. Use latex-cement filler to do levelling, filling, trimming, feathering, etc.
    2. Lay flooring with joints parallel to building lines to produce symmetrical tile pattern. Install patterns as floor is laid.
    3. Install grounding strips in adhesive to manufacturer's instructions. Provide at rate recommended by manufacturer for substrate (slab on grad 1/1000 sf.) or as shown on drawings. Terminate grounding strips, at locations shown to ground. See electrical drawings for details.
    4. Terminate flooring at centreline of door openings. Install metal edge strips at unprotected or exposed edges of flooring.
    5. Set base straight and tight against wall and floor. Minimize joints. Wrap around outside corners without bulging.
    6. Test flooring and provide certification that installed flooring meets the following criteria: average of >106 ohms and < 109 ohms after tested in accordance with ESD.S7d and as recommended by the manufacturer. Recommended that manufacturer provides testing.
    7. Clean, seal and wax floor. Do not wax rubber or static-dissipative tile.
    8. Protect flooring from time of final set of adhesive and cleaning until just prior to final inspection.

09 91 00 PAINTING

1. General:
    1. The requirements of Division 01 form part of this section.
    2. Do painting and finishing to CAN/CGSB 85-GP-14M series standards, MPI Painting Specification Manual and to Material manufacturer's instructions.
    3. Use MPI "premium grade" finish system.
    4. Paint shall be manufacturers "Top-Line" MPI approved product, meeting or exceeding CAN/CGSB "1" series standards as manufactured by Benjamin-Moore, Pittsburgh, ICI, Para, Pratt & Lambert, Sherwin-Williams or Sico.
    5. Submit colour chips for colour selection. [Colours as selected by Consultant from Benjamin-Moore
2. Application:
    1. Paint paintable surfaces in rooms to be finished, except as otherwise noted.
    2. Finishes and number of coats specified in the schedule are intended to cover surfaces completely. If they do not, apply further coats until complete coverage is achieved as required.
    3. When patching or touching up, paint entire plane to Consultant's satisfaction.
    4. Paint shall be uniform in sheen, colour and texture, free from brush or roller marks, sags, runs or other defects.
    5. Finish paint exposed mechanical and electrical equipment occurring in finished areas.
    6. Paint steel and wood doors and frames. Paint top and bottom of wood doors. Paint miscellaneous metal.
    7. Clean existing interior and exterior surfaces to be repainted. Thoroughly remove loose paint and fill flush with suitable material. Clean off bubbled, cracked, crazed or otherwise defective paint by stripping or burning, flatten gloss paint with sandpaper. Leave the entire surface suitable to receive the designated finishes as listed herein and in accordance with the manufacturer's instructions.
    8. Remove from existing surfaces to be coated, rust, scale, oil, grease, mildew, chemicals and other foreign matter. Thoroughly and heavily sand existing alkyd paint and apply conversion coating.
    9. If coatings on existing surfaces have failed so as to affect the proper performance or appearance of the coatings to be applied, or if such coatings can be easily scraped off, remove them and prepare the substrates properly.
3. Schedule:
    1. Use acrylic-latex, two coats, plus one suitable primer [on interior surfaces] except as noted. Use two coats alkyd, plus suitable primer on exterior metal and wood, except as noted.
    2. Gloss:
        - Walls - eggshell.
        - Ceilings - flat.
        - Painted doors, frames, cabinetry - semi-gloss.
        - Service rooms - semi-gloss.
        - Washrooms - semi-gloss.
        - Finish Carpentry - varnish and stain - satin.
        - Where dark colours selected, use higher gloss product so that finish gloss result is equivalent to gloss specified.
    3. Pretreat galvanized steel with cementitious primer.
    4. Prime coat on existing surfaces may be deleted except for touch-up.
    5. Fill holes, splits, scratches with tinted filler which will match local grain condition. Fill open grain wood with tinted filler which will match wood. Work well into grain, wipe excess away.
    6. Hardwood to receive stain and two coats satin polyurethane varnish. Confirm specified finishes suitable for thin veneers before proceeding. Submit samples for approval.

10 00 01 MISCELLANEOUS SPECIALTIES

1. The requirements of Division 01 form part of this section.

10 28 00 TOILET AND BATH ACCESSORIES

1. The requirements of Division 01 form part of this section.
2. Products listed on drawings.
3. Grab bars: Provide steel back plates and concealed screw attachment. Knurl straight runs of tubing. Assembly to withstand 2.2KN downward pull.
4. Schedule:
    1. Refer to drawings.

10 22 19.54 DEMOUNTABLE PARTITIONS - POST AND PANEL

5. General:
    1. Submit manufacturer's printed product literature and data sheets for post and panel demountable partitions and include product characteristics, performance criteria, physical size, finish and limitations.
6. Materials:
    1. Partition System: Demountable and relocatable, non-progressive, extend in four directions at posts without disturbing other panels, accommodate floor to ceiling height variations of 25 mm.
    2. Components: non-combustible or fire resistant, distortion free, uniform in dimension, construction and appearance, made to suit specific function and to have been proven in use.
    3. Minimum STC rating of installed panel partition: STC 45 needs to be met where specified, tested to ASTM E90
    4. General framing and retaining components: extruded aluminum. Metal thickness and configuration to provide rigidity, safe support and fixing of partition system.
    5. Posts: extruded aluminum.
    6. Glazing frames: extruded aluminum with glazing stops, to suit double glazing.
        1. Furnish neoprene glazing gaskets for setting glass.
        2. Prepare for glazing specified in Section 08 80 00 - Glazing.
    7. Door frames: extruded aluminum for doors as indicated on schedule, with fixed stops.
    8. Partition base: recessed or flush type, approximately 100 mm high, of extruded, clip applied.
    9. External Corners: to match posts.
    10. Accessories: Plastic extrusions for batten cover, miscellaneous trim, battens, fasteners, clips, runners or tracks, levelling devices, and other accessories required for installation as recommended by partition manufacturer.
    11. Products: Teknion Altos system or approved equivalent.
7. Execution:
    1. Verification of Conditions: Verify conditions of substrates and surfaces to receive post and panel demountable partitions in accordance with manufacturer's instructions.
    2. Verify dimensions where demountable partitions will be located prior to manufacturing.
    3. Install system after floor finishes have been installed.
    4. Erect partitions plumb, square and level.
    5. Install continuous light/sound seal at junction of ceiling height partitions with floors, ceilings and abutting walls and vertical surfaces.
    6. Adjust post and panel demountable partitions fit accurately in accordance with manufacturer's written recommendations.

REV.	DESCRIPTION	DATE
04	ISSUED FOR TENDER	24/MAR/2025
03	ISSUED FOR PERMIT	18/MAR/2025
02	ISSUED FOR 99% REVIEW	24/FEB/2025
01	ISSUED FOR 66% REVIEW	12/MAY/2023

SEAL

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PROJECT NORTH

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PROJECT

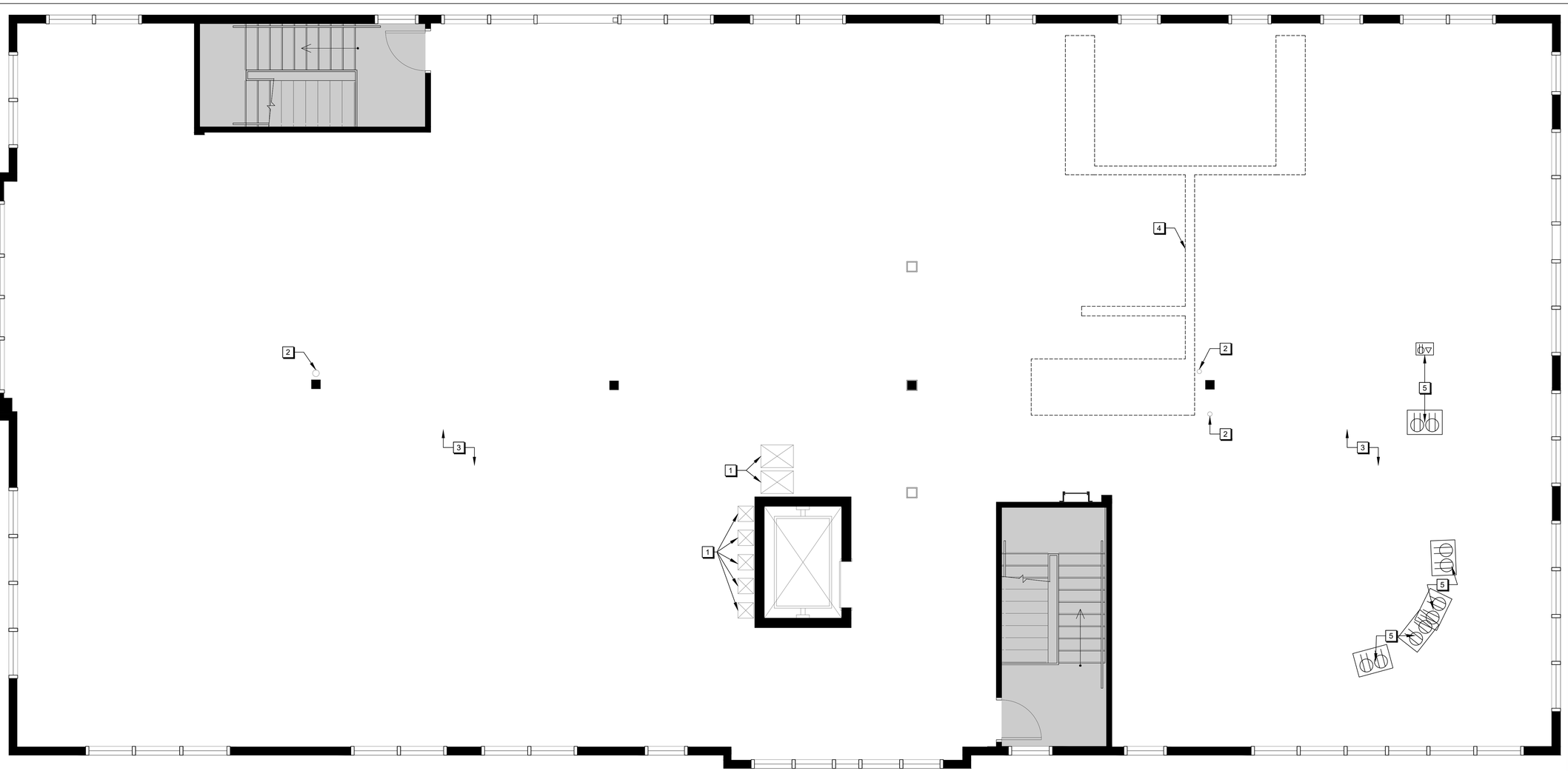
MUNICIPALITY OF CASSELMAN
OFFICE FIT-UP

1 INDUSTRIEL STREET CASSELMAN, ON

DRAWING

SPECIFICATIONS

PROJECT NO.	22045	DRAWING NO. A-002
SCALE -	1/8" = 1'-0"	
DRAWN -	MH	
CHECKED -	KB	
PLOT DATE -	24/03/2025	PLOTTED BY:



1 A-100

LEVEL 2 DEMOLITION PLAN

SCALE = 1/4" = 1'-0"

AREA NOT IN CONTRACT

DEMOLITION PLAN LEGEND

EXISTING PARTITIONS TO REMAIN

EXISTING DOOR, FRAME, AND HARDWARE C/W ALL RELATED COMPONENTS TO REMAIN

NEW FLOOR MONUMENT (SEE ELECTRICAL). REFER TO PAGE A-103 FOR EXACT LOCATION.

DEMOLITION PLAN KEYNOTES

1. EXISTING HVAC DUCTING TO REMAIN (SEE MECHANICAL).
2. EXISTING PLUMBING PIPING RUNNING DOWN COLUMN TO REMAIN (SEE MECHANICAL).
3. EXISTING CONCRETE SLAB FLOOR TO REMAIN
4. AREA OF CORING TO OCCUR FOR INSTALLATION OF NEW SANITARY AND PLUMBING LINES. FLOOR SLAB IS TO BE SCANNED AND SIGNED OFF BY STRUCTURAL ENGINEER PRIOR TO CORING TO VERIFY NO INTERFERENCES WITHIN THE SLAB. CORE LOCATIONS ARE TO BE COORDINATED WITH THE MECHANICAL DRAWINGS AND BASED ON SHORTEST DISTANCE AND LEAST INTERFERENCES.
5. CORE FOR NEW FLOOR MONUMENT AS PER ENGINEERS DRAWINGS. FLOOR SLAB IS TO BE SCANNED AND SIGNED OFF BY STRUCTURAL ENGINEER PRIOR TO CORING TO VERIFY NO INTERFERENCES WITHIN THE SLAB. CORE LOCATIONS ARE TO BE COORDINATED BASED ON SHORTEST DISTANCE AND LEAST INTERFERENCES.

DEMOLITION NOTES

1. CONTRACTOR TO REPAIR AND MAKE GOOD ALL EXISTING SURFACES (FLOOR, WALL AND CEILING) AFFECTED BY DEMOLITION AND NEW WORK, READY TO RECEIVE NEW FINISHES.
2. ALL MATERIALS FROM DEMOLITION TO BE REMOVED.
3. CONTRACTOR TO ENSURE THAT ALL AREAS ARE CLEANED ON AN ONGOING BASIS.
4. CONTRACTOR TO BE RESPONSIBLE FOR ENSURING THERE IS A SECURE AND LEVEL FLOOR SUBSTRATE TO RECEIVE NEW FINISH INSTALLATION.
5. THE CONTRACTOR SHALL PATCH AND REPAIR ALL WALL, FLOOR AND CEILING SURFACES AFFECTED BY DEMOLITION.
6. THIS IS AN OCCUPIED BUILDING. CONTRACTOR IS REQUIRED TO NOTIFY BUILDING MANAGEMENT & PROJECT MANAGER MINIMUM 24 HOURS PRIOR TO STARTING ANY AFTER HOUR WORK AND WORK THAT CREATES NOISE & DIRT. CLEANING PUBLIC ACCESS SPACE IS REQUIRED AT THE END OF EACH WORKING SHIFT.
7. CONTRACTOR TO COORDINATE REMOVAL OF MECHANICAL, ELECTRICAL, VOICE, DATA AND EQUIPMENT. ALL REMOVED SECURITY DEVICES SUCH AS CARD READERS, KEYPADS, BELLS, ALARMS ETC. TO BE TURNED OVER FOR REUSE. ALL EXISTING ELECTRICAL WIRES IN PARTITIONS THAT ARE TO BE REMOVED ARE TO BE PULLED BACK TO SOURCE. SEE ELECTRICAL.
8. ALL ELECTRICAL DEMOLITIONS ARE TO BE BROUGHT BACK TO SOURCE. SEE ELECTRICAL.

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04	ISSUED FOR TENDER	24/MAR/2025
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PROJECT NORTH

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PROJECT

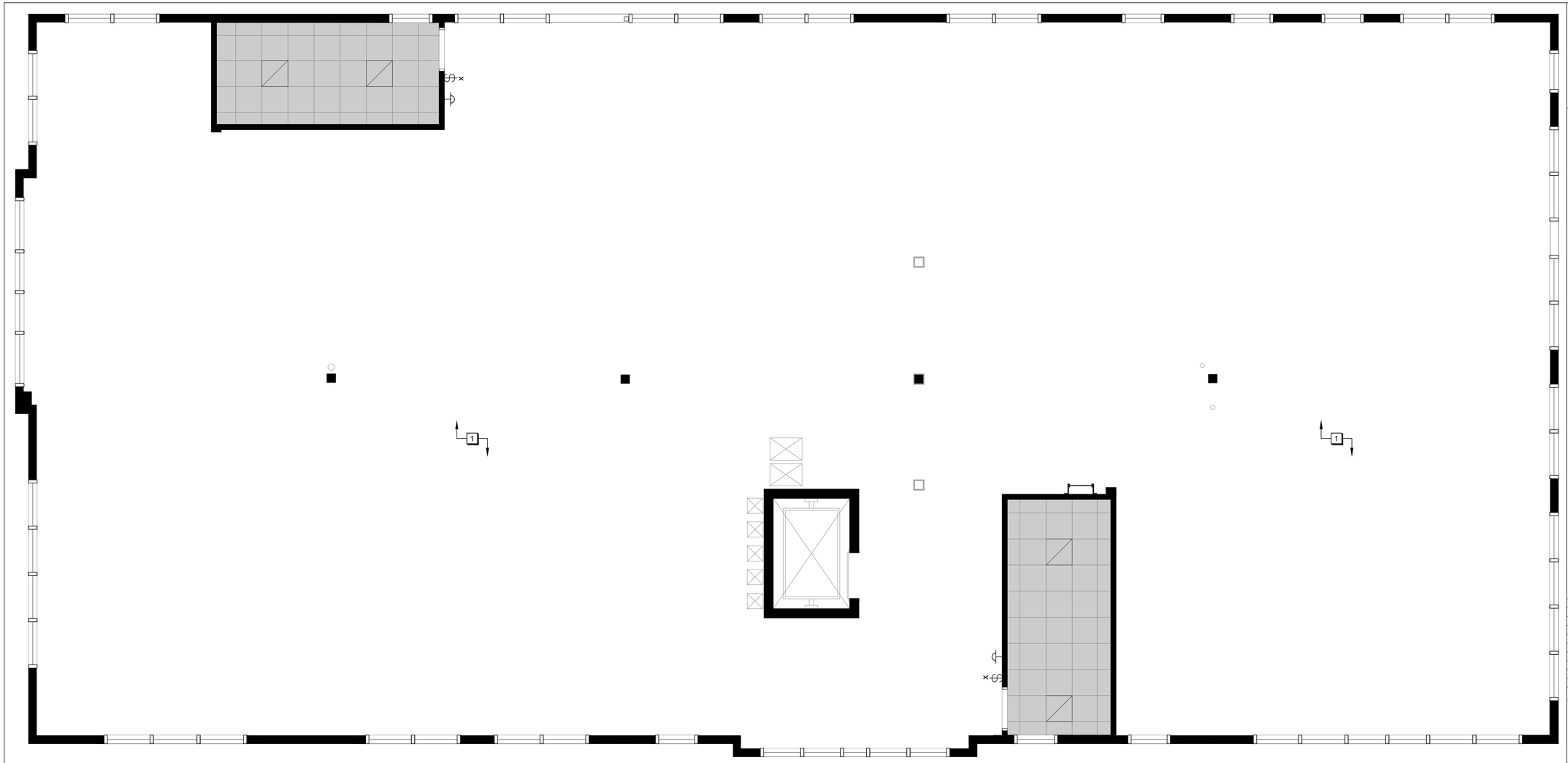
MUNICIPALITY OF CASSELMAN
OFFICE FIT-UP

1 INDUSTRIEL STREET CASSELMAN, ON

DRAWING

LEVEL 2
DEMOLITION PLAN

PROJECT NO.	22045	DRAWING NO.	A-100
SCALE -	1/8" = 1'-0"		
DRAWN -	MH		
CHECKED -	KB		
PLOT DATE -	24/03/2025	PLOTTED BY:	



1 A-101

LEVEL 2
REFLECTED CEILING DEMOLITION PLAN
SCALE = 1/4" = 1'-0"

AREA NOT IN CONTRACT

REFLECTED CEILING DEMOLITION PLAN LEGEND

- EXISTING PARTITIONS TO REMAIN
- EXISTING T-BAR GRID AND CEILING TILES TO REMAIN.
- EXISTING RECESSED FLUORESCENT TROFFER TO REMAIN (SEE ELECTRICAL).
- EXISTING SWITCH TO BE REMOVED (SEE ELECTRICAL).
- EXISTING WALL MOUNTED LIGHT FIXTURE TO BE REMOVED (SEE ELECTRICAL)

REFLECTED CEILING DEMOLITION PLAN KEYNOTES

1 EXISTING EXPOSED TRUSSES & ROOF DECK TO REMAIN.

REV.	DESCRIPTION	DATE
04	ISSUED FOR TENDER	24/MAR/2025
03	ISSUED FOR PERMIT	18/MAR/2025
02	ISSUED FOR 99% REVIEW	24/FEB/2025
01	ISSUED FOR 66% REVIEW	12/MAY/2023

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PROJECT

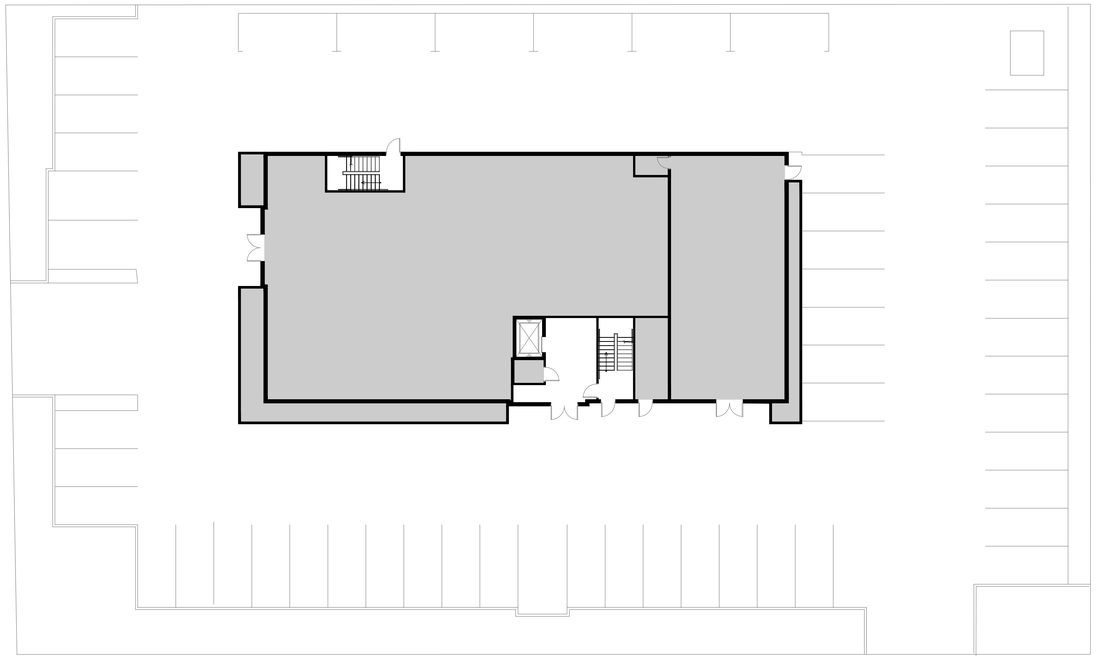
MUNICIPALITY OF CASSELMAN
OFFICE FIT-UP

1 INDUSTRIEL STREET CASSELMAN, ON

DRAWING

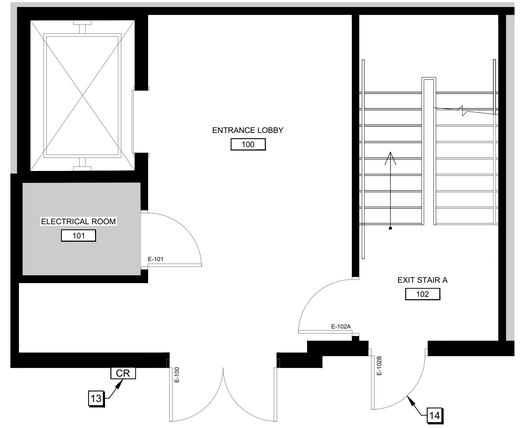
LEVEL 2
REFLECTED CEILING DEMOLITION PLAN

PROJECT NO.	22045	DRAWING NO.	A-101
SCALE -	1/8" = 1'-0"		
DRAWN -	MH		
CHECKED -	KB		
PLOT DATE -	24/03/2025	PLOTTED BY:	

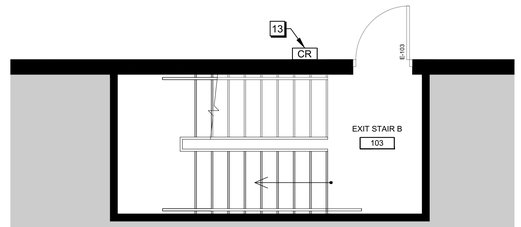


1 A-102 LEVEL 1 KEY PLAN
SCALE = 1/16" = 1'-0"

AREA NOT IN CONTRACT



2 A-102 LEVEL 1 CONSTRUCTION PLAN A
SCALE = 1/4" = 1'-0"



3 A-102 LEVEL 1 CONSTRUCTION PLAN B
SCALE = 1/4" = 1'-0"

CONSTRUCTION PLAN LEGEND

XX / XX — ROOM NAME/ NUMBER FOR IDENTIFICATION PURPOSES ONLY

EXISTING PARTITIONS TO REMAIN

CR — CARD READER AND RELATED SECURITY HARDWARE TO BE INSTALLED BY SECURITY CONTRACTOR (SEE ELECTRICAL). CARD ACCESS READERS TO BE INSTALLED AT 1000MM A.F.F O.C.

CONSTRUCTION PLAN KEYNOTES

1. NEW AND EXISTING PARTITIONS/ COLUMNS TO ALIGN.
2. SUPPLY & INSTALL ONE LAYER OF 16MM G.W.B TO CLOSE IN EXISTING EXTERIOR PARTITIONS. TAPE, SAND AND PREPARE FOR FINAL FINISH AS PER FINISHES PLAN.
3. SUPPLY & INSTALL 6MM CLEAR TEMPERED GLASS, MOUNTED IN U-CHANNEL. GLAZING PANES TO BE ADHERED TOGETHER USING CLEAR SILICONE ADHESIVE FOR ADDED STABILITY. SEE PAGE A-303 FOR DETAILS.
4. 3/4" PLYWOOD WRAPPED AROUND EXISTING COLUMN, SANDED TO MAKE GOOD TO RECEIVE NEW FINISH. PLAM-2 FINISH IS TO BE APPLIED TO ALL EXPOSED FACES OF NEW PLYWOOD. REFER TO PAGE A-303 FOR FURTHER DETAILS.
5. FAUX COLUMNS FROM SLAB TO U/S OF BULKHEAD MADE OF 3/4" PLYWOOD, SANDED TO MAKE GOOD TO RECEIVE NEW FINISH. PLAM-2 FINISH IS TO BE APPLIED TO ALL EXPOSED PLYWOOD FACES. REFER TO PAGE A-303 FOR FURTHER DETAILS.
6. SUPPLY & INSTALL NEW CUSTOM RECEPTION DESK. REFER TO FINISHES SCHEDULE AND PAGE A-303 FOR FURTHER DETAILS.
7. FRAME OUT THE EXISTING STEEL COLUMN AND APPLY 1 LAYER OF ⅝" GWB ON ALL SIDES. REFER TO DETAIL 8/A-104 FOR FURTHER DETAILS.
8. SUPPLY & INSTALL BLOCKING AS REQUIRED TO SUPPORT A THREE-DIMENSIONAL LOGO, O.C OF PARTITION. LOGO TO BE SUPPLIED BY THE CLIENT AND INSTALLED BY THE CONTRACTOR. COORDINATE SIZE OF LOGO AND MOUNTING HEIGHT WITH THE CLIENT.
9. SUPPLY & INSTALL NEW CUSTOM COUNCIL TABLE. PROVIDE SHOP DRAWINGS FOR A 6-PERSON TABLE AND AN 8-PERSON TABLE FOR THE CLIENTS REVIEW AND SELECTION. COORDINATE LOCATION OF TABLE WITH LOCATION OF NEW FLOOR MONUMENTS. REFER TO PAGE A-304 FOR FURTHER DETAILS.
10. SUPPLY & INSTALL NEW CUSTOM MILLWORK DOORS TO ENCLOSE ROOF ACCESS STAIRS. REFER TO 5/A-304 & 6/A-304 FOR FURTHER DETAILS.
11. SUPPLY & INSTALL NEW WALL HOOK, MOUNTED AT 3'-0" A.F.F. COORDINATE LOCATION WITH FURNITURE PLAN.
12. EXISTING STEEL COLUMN TO BE ENCLOSED WITHIN NEW PARTITION.
13. SUPPLY & INSTALL NEW CARD READER. REFER TO HARDWARE PACKAGE FOR DETAILS & SEE ELECTRICAL.
14. SUPPLY & INSTALL NEW DOOR CONTACT. REFER TO HARDWARE PACKAGE FOR DETAILS & SEE ELECTRICAL.

REV.	DESCRIPTION	DATE
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03	ISSUED FOR PERMIT	18/MAR/2025
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01	ISSUED FOR 66% REVIEW	12/MAY/2023

SEAL

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PROJECT NORTH

PYE & RICHARDS - TEMPRANO & YOUNG ARCHITECTS INC.
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PROJECT

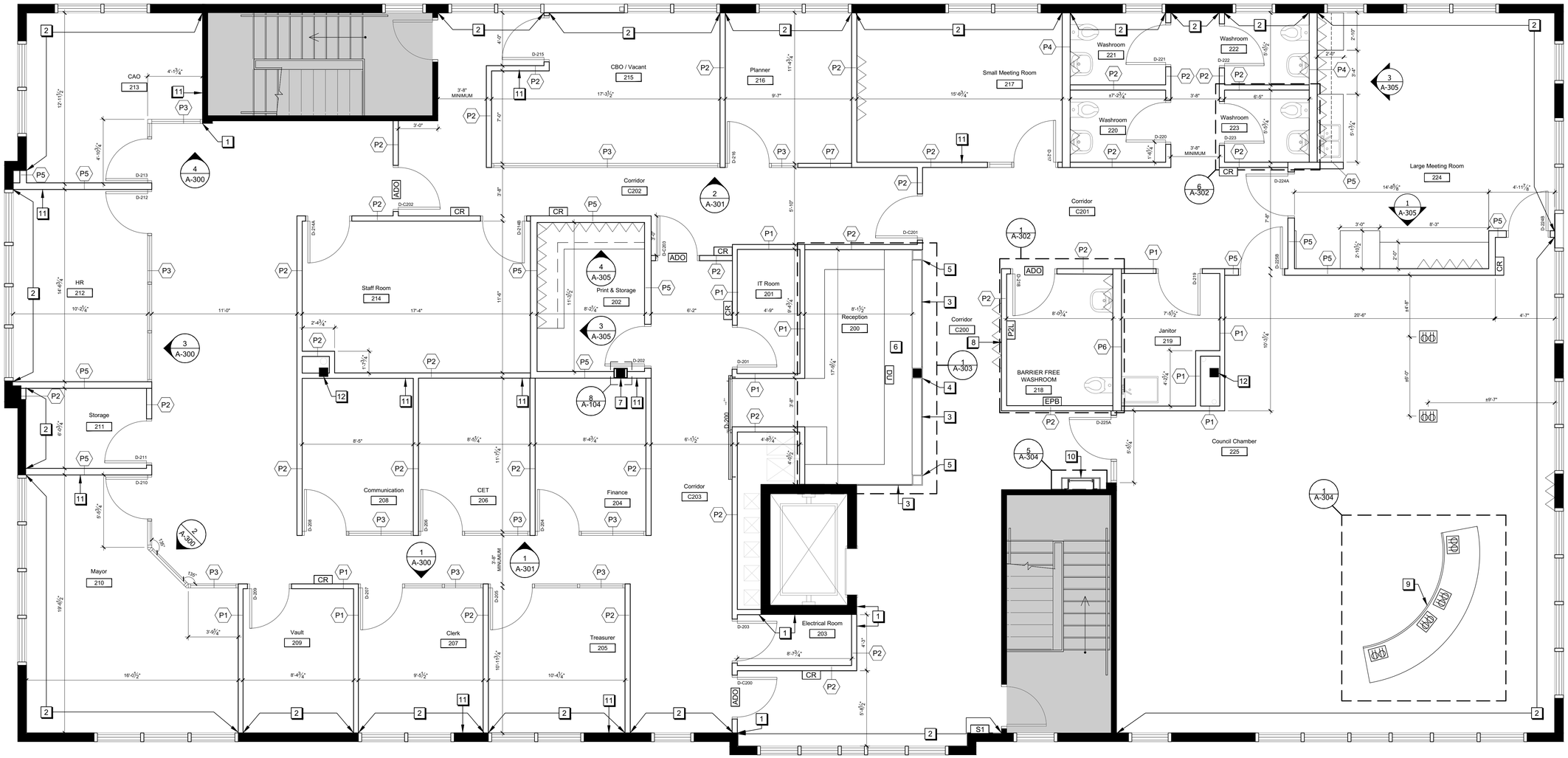
MUNICIPALITY OF CASSELMAN
OFFICE FIT-UP

1 INDUSTRIEL STREET — CASSELMAN, ON

DRAWING

LEVEL 1
CONSTRUCTION PLAN

PROJECT NO.	22045	DRAWING NO.	A-102
SCALE -	1/8" = 1'-0"		
DRAWN -	MH		
CHECKED -	KB		
PLOT DATE -	24/03/2025	PLOTTED BY:	


CAO
213
HR
212
Storage
211
Mayor
210
Staff Room
214
Corridor
C202
CBO / Vacant
215
Planner
216
Small Meeting Room
217
Washroom
221
Washroom
222
Washroom
220
Washroom
223
Large Meeting Room
224
Print & Storage
202
IT Room
201
Reception
200
Corridor
C200
Corridor
C201
BARRIER FREE WASHROOM
218
EPB
Janitor
219
Council Chamber
225
Communication
208
CET
206
Finance
204
Corridor
C203
Vault
209
Clerk
207
Treasurer
205
Electrical Room
203
Corridor
C204
Corridor
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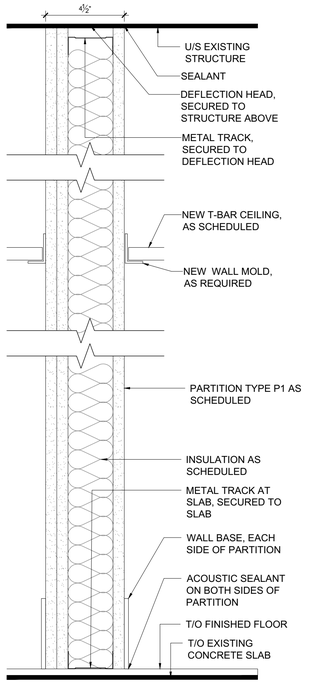
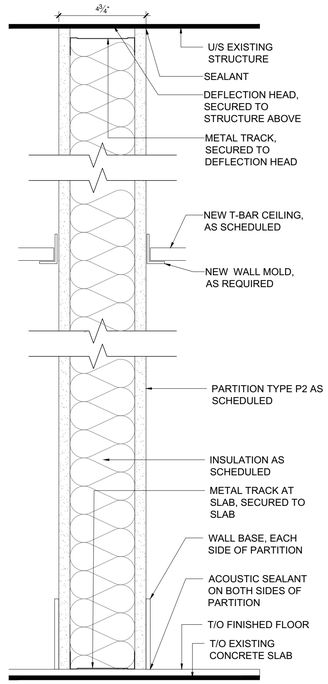


1 A-104 **P1 ASSEMBLY**
SCALE = 3"=1'-0"



2 A-104 **P2 ASSEMBLY**
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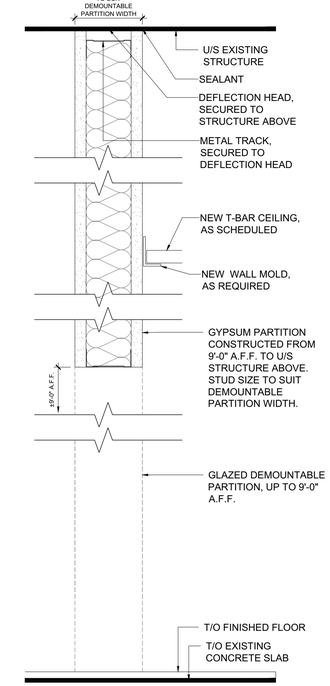

3 A-104 **P3 ASSEMBLY**
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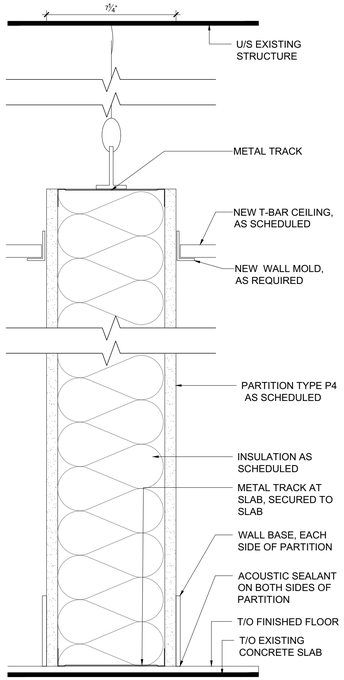

4 A-104 **P4 ASSEMBLY**
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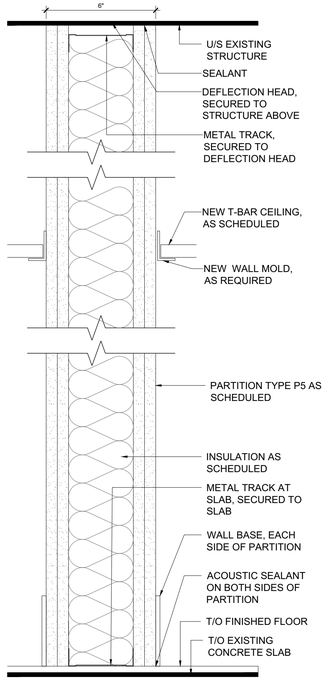

5 A-104 **P5 ASSEMBLY**
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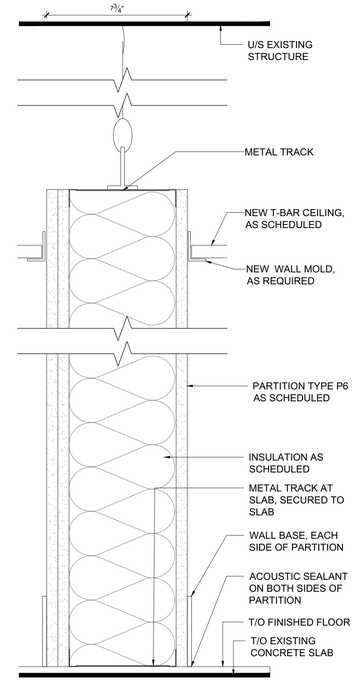
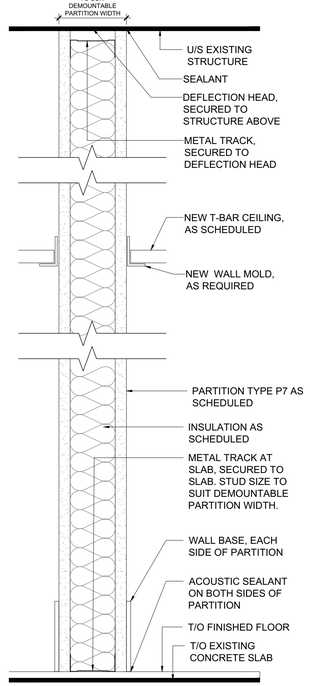
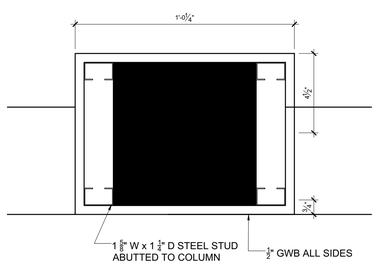


6 A-104 **P6 ASSEMBLY**
SCALE = 3"=1'-0"



7 A-104 **P7 ASSEMBLY**
SCALE = 3"=1'-0"



8 A-104 **NEW PARTITION @ EXISTING COLUMN**
SCALE = 3" = 1'-0"

TYPE	CONSTRUCTION	RATING FRR & STC	NOTES
P1	SUB FLOOR TO U/S OF STRUCTURE, AS PER OBC SB-3, S2B: -2 LAYERS OF 5/8" TYPE "X" GWB -2 1/2" HEAVY DUTY STEEL STUDS @ 24" O.C. C/W INTERNAL BRACING AS REQUIRED -FILL CAVITY WITH SOUND AND FIRE INSULATION -1 LAYER OF 5/8" TYPE "X" GYPSUM BOARD	1HR FRR STC 50	REFER TO 1/A-104 FOR MORE DETAILS
P2	SUB FLOOR TO U/S OF STRUCTURE, AS PER OBC SB-3, S4B: - 5/8" GWB - 3 5/8" STUDS AT 16" O.C. - 3 5/8" SOUND ATTENUATION BLANKETS BETWEEN STUDS - 5/8" GWB (USE CEMENT BOARD ON WASHROOM/KITCHENETTE SIDE OF PARTITIONS)	STC 47	REFER TO 2/A-104 FOR MORE DETAILS
P3	SUB FLOOR TO 9'-0" A.F.F.: GLAZED DEMOUNTABLE PARTITION SYSTEM TO BE PROCURED BY CONTRACTOR AND SUPPLIED & INSTALLED BY MANUFACTURER. DEMOUNTABLE PARTITION SUPPLIER MUST MAXIMIZE THE USE OF EQUAL-SIZED PANELS THROUGHOUT PROJECT. 9'-0" A.F.F. TO U/S OF STRUCTURE: - ±5/8" GWB - STUDS AT 16" O.C., SIZE TO SUIT WIDTH OF DEMOUNTABLE PARTITION - SOUND ATTENUATION BLANKETS BETWEEN STUDS, SIZE TO SUIT STUD - ±5/8" GWB		REFER TO 3/A-104 FOR MORE DETAILS
P4	SUB FLOOR TO 100MM ABOVE FINISHED CEILING (PLUMBING PARTITION) - 5/8" CEMENT BOARD - 6" STUDS AT 400MM O.C. - 6" SOUND ATTENUATION BLANKETS BETWEEN STUDS - 5/8" CEMENT BOARD		REFER TO 4/A-104 FOR MORE DETAILS
P5	SUB FLOOR TO U/S STRUCTURE, AS PER OBC SB-3, S6B -2 LAYERS OF 5/8" GWB -3 5/8" HEAVY DUTY STEEL STUDS @ 16" O.C. C/W INTERNAL BRACING AS REQUIRED -FILL CAVITY WITH SOUND INSULATION -2 LAYERS OF 5/8" GWB	STC 55	REFER TO 5/A-104 FOR MORE DETAILS
P6	SUB FLOOR TO 100MM ABOVE FINISHED CEILING (PLUMBING PARTITION), AS PER OBC-SB-3, S8A - 2 LAYERS OF 5/8" CEMENT BOARD TYPE X - 6" STUDS AT 16" O.C. -FILL CAVITY WITH SOUND AND FIRE INSULATION - 1 LAYER OF 5/8" CEMENT BOARD TYPE X	STC 55 1HR FRR	REFER TO 6/A-104 FOR MORE DETAILS
P7	SUB FLOOR TO U/S OF STRUCTURE - ±5/8" GWB - STUDS AT 16" O.C., SIZE TO SUIT WIDTH OF DEMOUNTABLE PARTITION - SOUND ATTENUATION BLANKETS BETWEEN STUDS, SIZE TO SUIT STUD - ±5/8" GWB		REFER TO 7/A-104 FOR MORE DETAILS

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04	ISSUED FOR TENDER	24/MAR/2025
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PROJECT

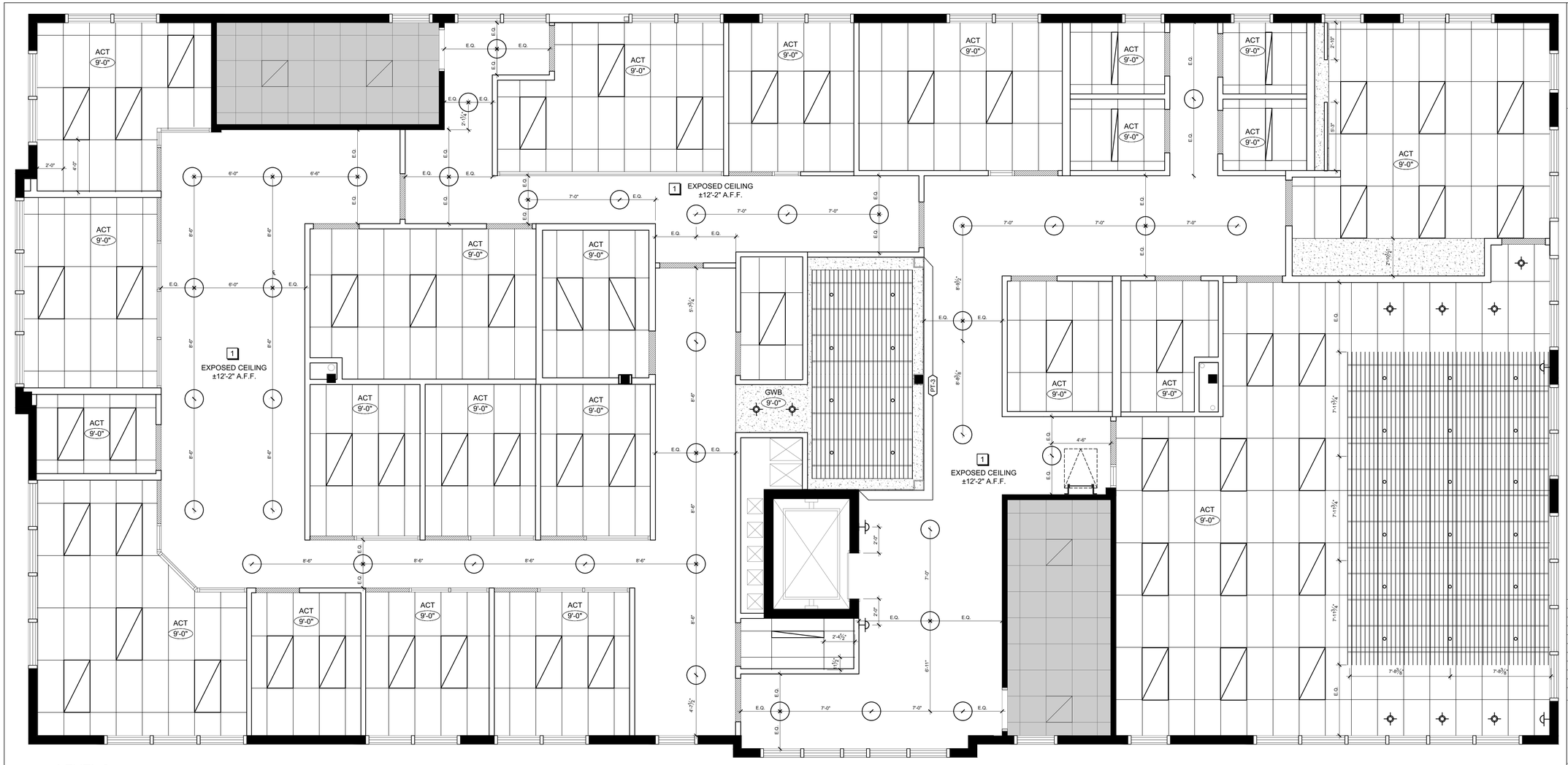
MUNICIPALITY OF CASSELMAN
OFFICE FIT-UP

1 INDUSTRIEL STREET — CASSELMAN, ON

DRAWING

PARTITION ASSEMBLIES

PROJECT NO.	22045	DRAWING NO.	A-104
SCALE -	1/8" = 1'-0"		
DRAWN -	MH		
CHECKED -	KB		
PLOT DATE -	24/03/2025	PLOTTED BY:	



1 LEVEL 2 REFLECTED CEILING PLAN

A-105 SCALE = 1/8" = 1'-0"

AREA NOT IN CONTRACT

REFLECTED CEILING PLAN LEGEND

- EXISTING PARTITIONS TO REMAIN
- EXISTING DOOR HEADER
- NEW DOOR HEADER
- EXISTING SUSPENDED CEILING SYSTEM TO REMAIN. CONTRACTOR TO PROTECT CEILING GRID AND TILES DURING DEMOLITION/ CONSTRUCTION.
- SUPPLY & INSTALL NEW 2' X 4' SUSPENDED CEILING GRID AND TILES. CEILING GRID AND TILES ARE TO BE INSTALLED WITHIN THE CENTER OF EACH ROOM, UNLESS OTHERWISE NOTED.
- SUPPLY AND INSTALL NEW GYPSUM BOARD CEILING SYSTEM. INSTALLED 9'-0" AFF. UNLESS NOTED OTHERWISE. CONTRACTOR TO USE SAG RESISTANT GYPSUM BOARD.
- SUPPLY AND INSTALL NEW 96" EBBS & FLOWS BLADES HANGING KIT FROM ARMSTRONG CEILING. REFER TO PAGE A-106 FOR INSTALLATION DETAILS.

REFLECTED CEILING PLAN LEGEND CON'T

- EXISTING RECESSED FLUORESCENT TROFFER TO REMAIN. ALL BULBS AND DIFFUSERS ARE TO BE REPLACED WITH NEW (SEE ELECTRICAL).
- SUPPLY & INSTALL NEW 2' X 4' LED TROFFER (SEE ELECTRICAL).
- SUPPLY & INSTALL NEW 17" CEILING SUSPENDED LIGHT FIXTURE. FIXTURE TO BE SUSPENDED 9'-0" A.F.F (SEE ELECTRICAL).
- SUPPLY & INSTALL NEW 4" LED POT LIGHT (SEE ELECTRICAL).
- SUPPLY & INSTALL NEW 2.75" DIA. CEILING SUSPENDED LIGHT FIXTURE (SEE ELECTRICAL).
- SUPPLY & INSTALL NEW LED WALL MOUNTED LIGHT FIXTURE (SEE ELECTRICAL).
- SUPPLY & INSTALL NEW UNDER CABINET LIGHTS (SEE ELECTRICAL).
- SUPPLY & INSTALL NEW 4" X 4' LED TROFFER (SEE ELECTRICAL).
- XXXX CEILING HEIGHT

REFLECTED CEILING PLAN KEYNOTES

1. EXPOSED CEILING. ALL DUCTS, JOISTS, BEAMS, ETC TO BE PAINTED BLACK. PAINT MATERIAL TO BE SUITABLE FOR SUBSTRATES (DUCTS, JOISTS, BEAMS, ETC).

REFLECTED CEILING NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND SPECIFICATIONS. REFLECTED CEILING PLAN SHOWS FIXTURE LOCATIONS ONLY. REFER TO ELECTRICAL AND MECHANICAL ENGINEER'S DRAWINGS FOR SPECIFICATIONS, CIRCUITING, SWITCHING, SPRINKLER HEAD, EXIT SIGN, FIRE ALARM, SUPPLY AND RETURN AIR SOURCE LOCATIONS, QUANTITY OF FIXTURES, ETC.
2. ALL NEW FIXTURES AND CONTROLS TO MATCH EXISTING ON SITE UNLESS SPECIFIED OTHERWISE. SEE ELECTRICAL.
3. ALL EXISTING FIXTURES REMAIN UNLESS OTHERWISE NOTED. SEE ELECTRICAL.
4. CEILING TILES ARE TO BE MODIFIED TO ALLOW FOR THE INSTALLATION OF ALL DEVICES SPECIFIED, SEE MECHANICAL/ELECTRICAL. ENSURE ANY CUT SECTIONS OF CEILING TILES ARE STRAIGHT AND CLEAN.
5. CONTRACTOR TO SUPPLY A NEW ACCESS HATCH IN ALL ROOMS WITH GYPSUM BOARD CEILINGS FOR ACCESS TO THE PLENUM SPACE ABOVE.
6. ADEQUATELY PROTECT THE T-BAR AND CEILING TILES DURING CONSTRUCTION ACTIVITIES. PATCH, REPAIR OR REPLACE ANY MISSING, STAINED OR DAMAGED CEILING T-BAR AND OR CEILING TILES AS REQUIRED AND LEAVE THE CEILING IN A "LIKE NEW" CONDITION. CLEAN THE CEILING GRID OF ALL DIRT, STAINS, ADHESIVES, ETC.
7. COORDINATE NEW CEILING TILES FOR ACCESS BY OTHER TRADES, REMOVE AND REPLACE CEILING TILES AS NEEDED.

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PROJECT

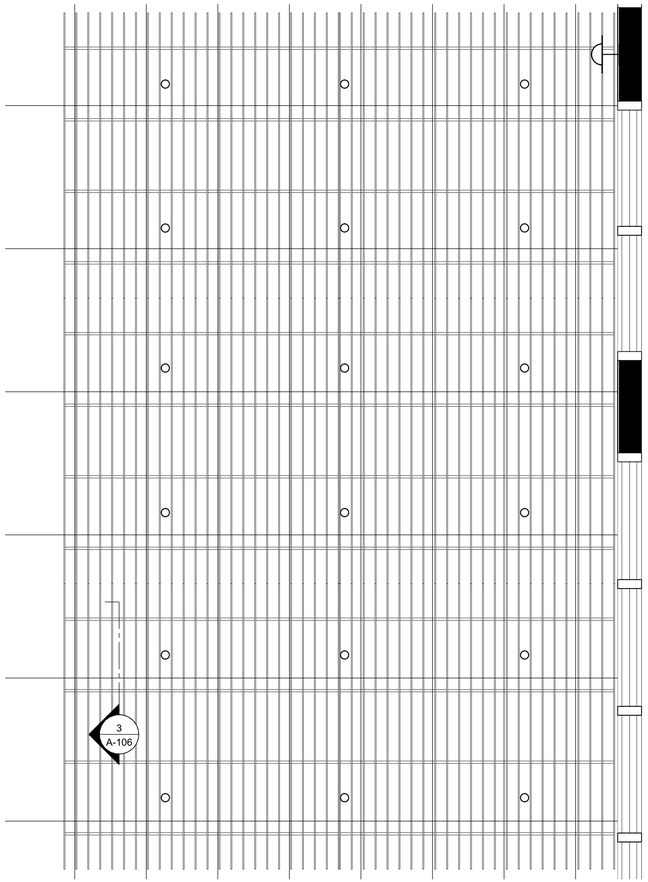
MUNICIPALITY OF CASSELMAN OFFICE FIT-UP

1 INDUSTRIEL STREET CASSELMAN, ON

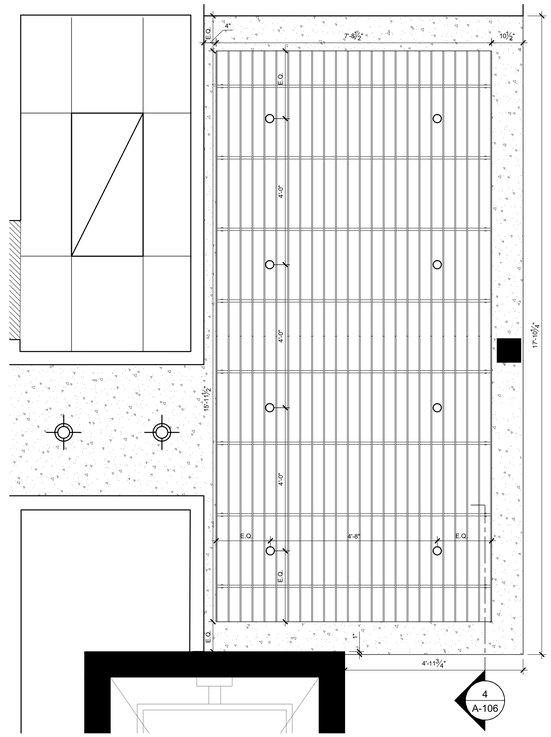
DRAWING

LEVEL 2 REFLECTED CEILING PLAN

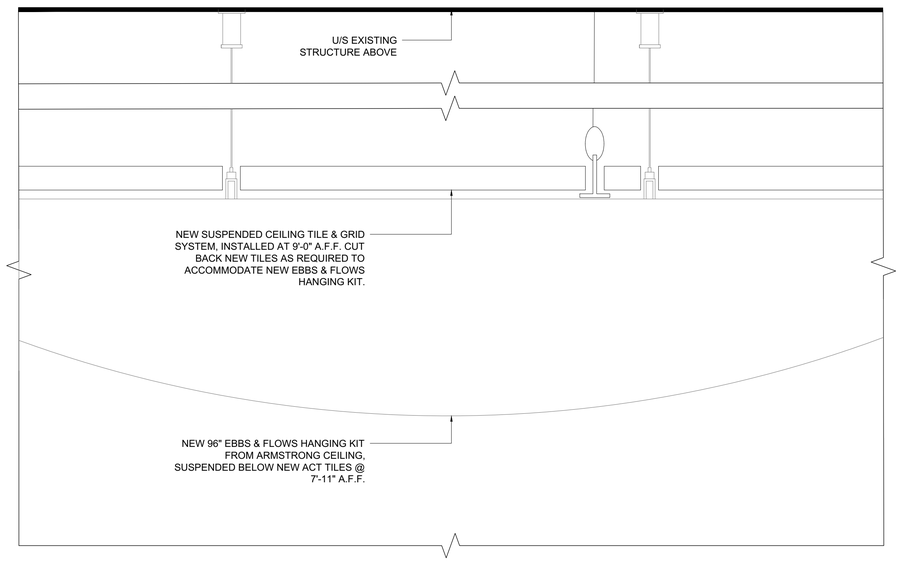
PROJECT NO.	22045	DRAWING NO.	A-105
SCALE -	1/8" = 1'-0"		
DRAWN -	MH		
CHECKED -	KB		
PLOT DATE -	24/03/2025	PLOTTED BY:	



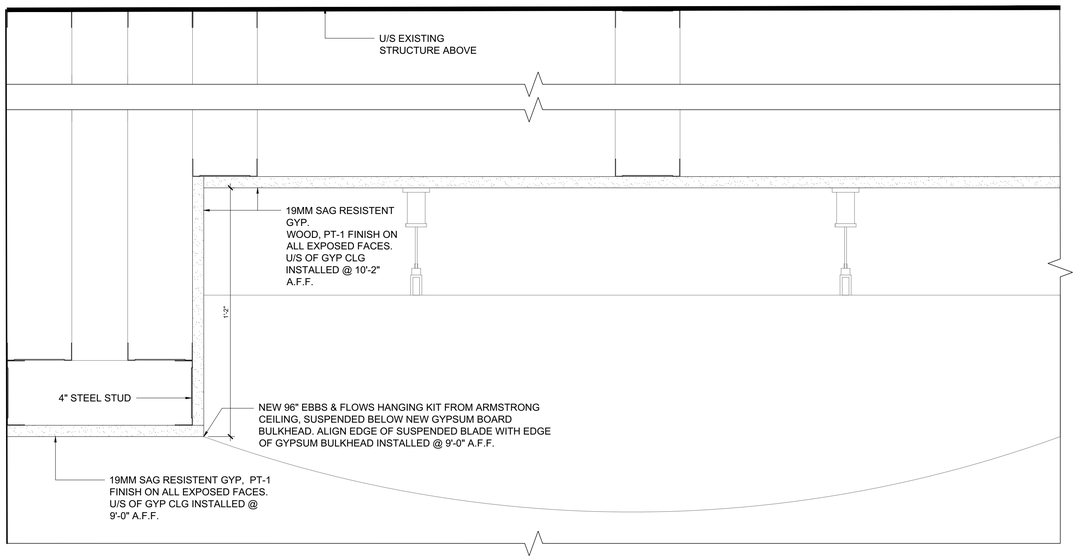
1 A-106 COUNCIL CHAMBER 225
ENLARGED CEILING PLAN
SCALE = 1/2" = 1'-0"



2 A-106 RECEPTION 200
ENLARGED CEILING PLAN
SCALE = 1/2" = 1'-0"



3 A-106 COUNCIL CHAMBER 225
CEILING SECTION
SCALE = 3" = 1'-0"



4 A-106 RECEPTION 200
CEILING SECTION
SCALE = 3" = 1'-0"

REV.	DESCRIPTION	DATE
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PROJECT

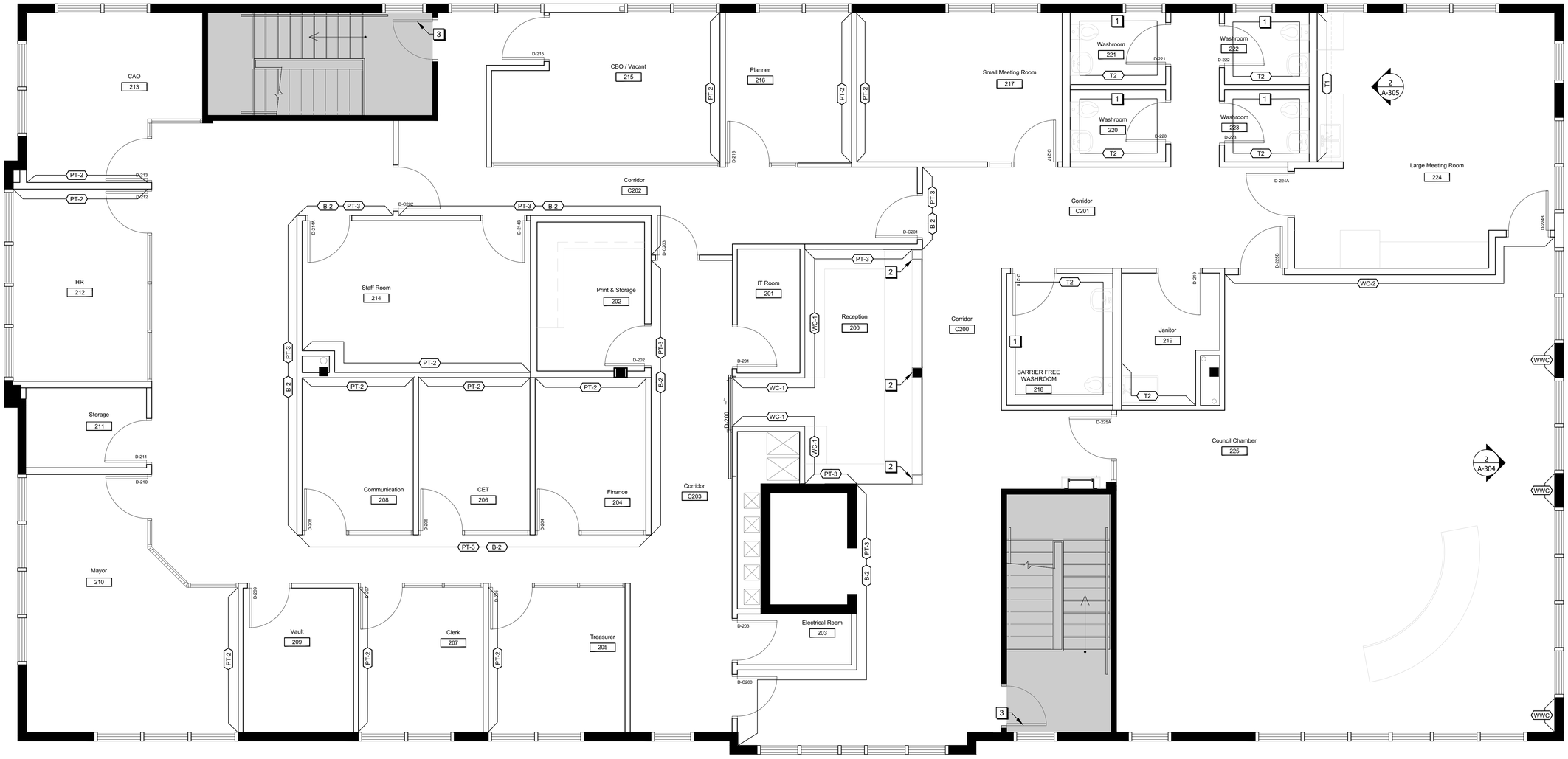
MUNICIPALITY OF CASSELMAN
OFFICE FIT-UP

1 INDUSTRIEL STREET CASSELMAN, ON

DRAWING

LEVEL 2
REFLECTED CEILING PLAN

PROJECT NO.	22045	DRAWING NO.	A-106
SCALE -	1/8" = 1'-0"		
DRAWN -	MH		
CHECKED -	KB		
PLOT DATE -	24/03/2025	PLOTTED BY:	



1 / A-107

LEVEL 2
WALL FINISHES PLAN

SCALE = 1/4" = 1'-0"

AREA NOT IN CONTRACT

WALL FINISHES PLAN LEGEND

- PT-1 **GENERAL WALL PAINT (PT-1)**
  COLOUR: WHITE
  REFER TO FINISHES SCHEDULE FOR COLOUR AND SPECIFICATIONS
- PT-2 **ACCENT WALL PAINT (PT-2)**
  COLOUR: LIGHT BLUE
  REFER TO FINISHES SCHEDULE FOR COLOUR AND SPECIFICATIONS
- PT-3 **ACCENT WALL PAINT (PT-3)**
  COLOUR: NAVY BLUE
  REFER TO FINISHES SCHEDULE FOR COLOUR AND SPECIFICATIONS
- PT-4 **DOOR FRAME PAINT (PT-4)**
  COLOUR: TO MATCH DEMOUNTABLE PARTITIONS
  REFER TO FINISHES SCHEDULE FOR COLOUR AND SPECIFICATIONS
- WC-1 **ACCENT VINYL WALLCOVERING (WC-1)**
  PATTERN: CITY SCAPE, OFF-WHITE
  REFER TO FINISHES SCHEDULE FOR COLOUR AND SPECIFICATIONS
- WC-2 **ACCENT VINYL WALLCOVERING (WC-2)**
  PATTERN: CITY SCAPE, NAVY BLUE
  REFER TO FINISHES SCHEDULE FOR COLOUR AND SPECIFICATIONS
- WWC **WOOD WALLCOVERING (WWC)**
  PATTERN: WOOD GRAIN
  REFER TO FINISHES SCHEDULE FOR COLOUR AND SPECIFICATIONS
- B1 **WALL BASE (B1)**
  COLOUR: WHITE
  REFER TO FINISHES SCHEDULE FOR COLOUR AND SPECIFICATIONS

WALL FINISHES PLAN LEGEND CON'T

- B2 **WALL BASE (B1)**
  COLOUR: NAVY BLUE
  REFER TO FINISHES SCHEDULE FOR COLOUR AND SPECIFICATIONS
- T1 **BACK SPLASH TILE (T1)**
  COLOUR: BLUE
  REFER TO FINISHES SCHEDULE FOR COLOUR AND SPECIFICATIONS
- T2 **WALL TILE (T2)**
  COLOUR: WHITE
  REFER TO FINISHES SCHEDULE FOR COLOUR AND SPECIFICATIONS

WALL FINISHES PLAN KEYNOTES

1. SEE ELEVATIONS ON PAGE A-9 FOR INSTALLATION DETAILS OF T2.
2. PLAM-2 FINISH IS TO BE APPLIED TO ALL EXPOSED PLYWOOD FACES OF THE COLUMN. REFER TO PAGE A-8 FOR FURTHER DETAILS.
3. PREP EXISTING DOOR & FRAME TO BE PAINTED. PAINT EXISTING DOOR TO REMAIN PT-1, ON ALL EXPOSED FACES. PAINT EXISTING FRAME TO REMAIN PT-4, ON ALL EXPOSED FACES.

WALL FINISHES NOTES

1. FOR GYPSUM BOARD SURFACES WHERE PAINT IS APPLIED, CONTRACTOR TO PRIME WITH ONE COAT LATEX SEALER, SAND ALL SURFACES, REPAIR DEPRESSIONS, ETC. WITH DRYWALL COMPOUND. SPOT PRIME ALL PATCHED AREAS. SAND, APPLY ONE FINISH PAINT COAT (COLOUR AS SPECIFIED) AND AFTER COAT HAS DRIED RE-SAND AND FINISH WITH FINAL COAT OF PAINT (COLOUR AS SPECIFIED).
2. ALL GYPSUM BOARD WALLS INCLUDING PERIMETER WALLS, CORE WALLS WITHIN THE CONTRACT AREA ARE TO BE PAINTED WITH GENERAL PAINT FINISH 'P1' UNLESS NOTED OTHERWISE ON THE DRAWING.
3. CONTRACTOR TO REMOVE ALL SIGNAGE, WALL HUNG ITEMS ETC. PRIOR TO PAINTING. PATCH & REPAIR WALLS AS REQUIRED. REINSTALL SIGNAGE, WALL HUNG ITEMS AS PER EXISTING. UPON COMPLETION OF WORK.
4. UNLESS OTHERWISE NOTED, ALL PAINT FINISHES ARE TO BE LATEX PAINT, EGGSHELL FINISH.
5. DO NOT PAINT ANY SPRINKLERS OR FIRE SAFETY EQUIPMENT. REMOVE ALL SPLASHES.
6. WALL BASE
   6.1. LAY OUT BASE TO KEEP NUMBER OF JOINTS TO AT A MINIMUM.
   6.2. SCRIBE AND FIT TO DOOR FRAMES AND OTHER OBSTRUCTIONS.

FINISHES GENERAL NOTES

1. ALL MATERIALS ARE TO BE ORDERED WHEN THE CONSTRUCTION CONTRACT IS AWARDED AND UPON APPROVAL OF SHOP DRAWINGS & SAMPLES. AT THIS TIME THE CONTRACTOR IS TO CONFIRM THAT ALL DELIVERIES WILL MEET CONSTRUCTION SCHEDULE. SUBSTITUTIONS WILL NOT BE ACCEPTED DUE TO LATE ORDERING. IN THE EVENT THAT MATERIALS ARE NOT AVAILABLE IN TIME TO MEET SCHEDULED COMPLETION DATES, THE CONTRACTOR SHALL PROVIDE PROOF OF DATE OF ORDER OF MATERIALS PRIOR TO REQUESTING SUBSTITUTIONS.
2. THE CONTRACTOR SHALL PROVIDE CONTROL SAMPLES FOR APPROVAL BY DESIGNERS OF ALL FINISHES SPECIFIED. SAMPLES TO BE TAGGED ACCORDING TO THE LEGEND ALL SAMPLES SHALL BE APPROVED BY THE CONSULTANT PRIOR TO ORDERING.
3. CEASE OPERATION AND NOTIFY THE PROJECT MANAGER IMMEDIATELY IF ANY ASBESTOS IS DISCOVERED OR SUSPECTED ON-SITE.
4. ALL FINISHES TO BE INSTALLED STRICTLY AS PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
5. CONTRACTOR TO SUBMIT MANUFACTURER'S MAINTENANCE INSTRUCTIONS FOR ALL FINISHES IN OPERATIONS AND MAINTENANCE MANUAL.
6. SHOULD ANY DISCREPANCY OR UNCERTAINTY ARISE, CONTACT DESIGNER BEFORE PROCEEDING WITH APPLICATION OF FINISH.

REV.	DESCRIPTION	DATE
04	ISSUED FOR TENDER	24/MAR/2025
03	ISSUED FOR PERMIT	18/MAR/2025
02	ISSUED FOR 99% REVIEW	24/FEB/2025
01	ISSUED FOR 66% REVIEW	12/MAY/2023

SEAL

Not for construction unless SEALED and SIGNED

PROJECT NORTH

PYE & RICHARDS - TEMPRANO & YOUNG ARCHITECTS INC.
824 Meath St. Suite 200 Ottawa, ON K1Z 6E8
613. 724. 7700 info@prty.ca

PROJECT

MUNICIPALITY OF CASSELMAN
OFFICE FIT-UP

1 INDUSTRIEL STREET CASSELMAN, ON

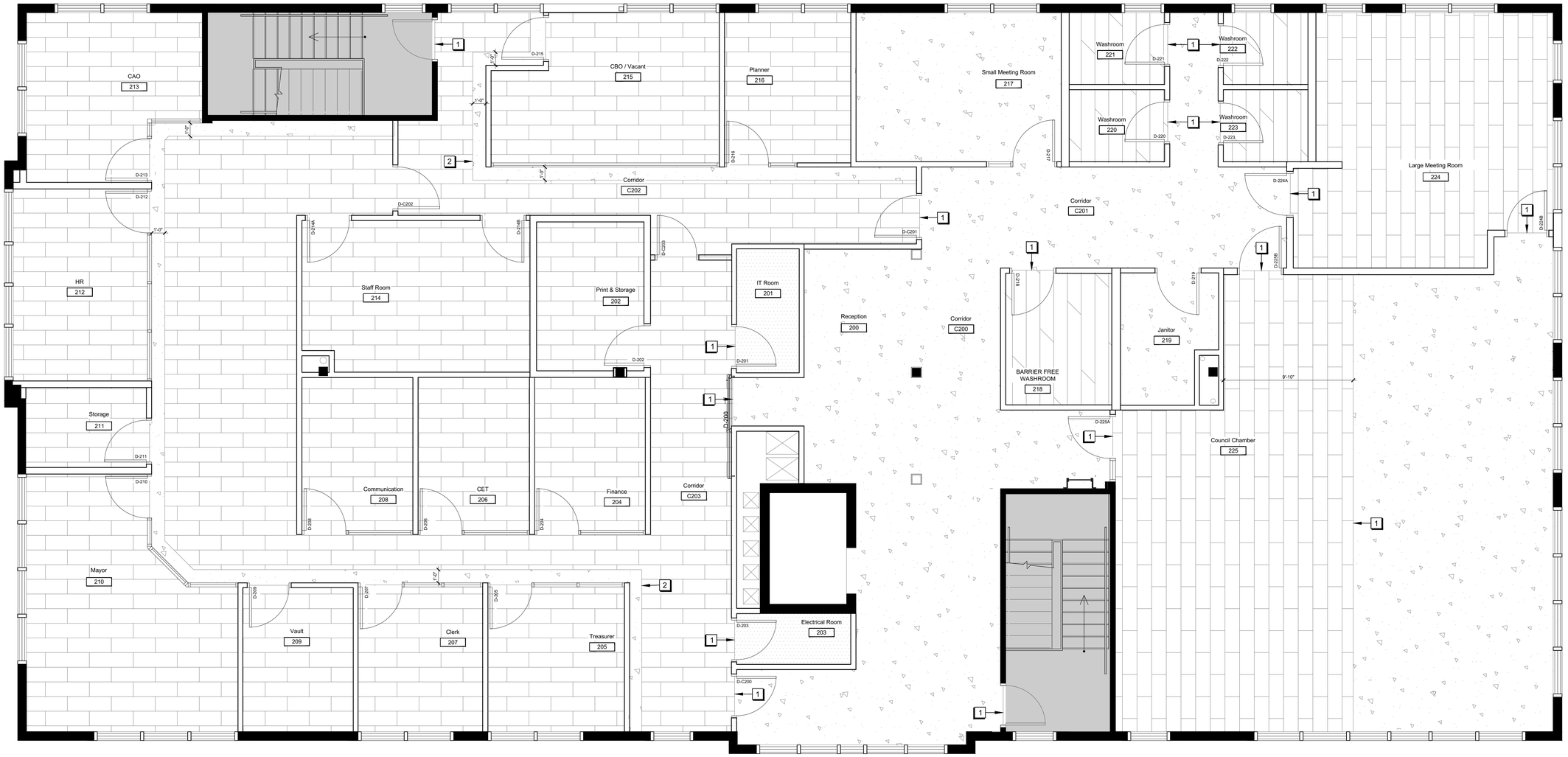
DRAWING

LEVEL 2
WALL FINISHES PLAN

PROJECT NO.	22045
SCALE -	1/8" = 1'-0"
DRAWN -	MH
CHECKED -	KB
PLOT DATE -	24/03/2025

DRAWING NO. A-107

PLOTTED BY:



1 LEVEL 2 FLOOR FINISHES PLAN

A-108 SCALE = 1/4" = 1'-0"

AREA NOT IN CONTRACT

FLOOR FINISHES PLAN LEGEND

EXISTING FINISHES TO REMAIN UNLESS NOTED OTHERWISE

LUXURY VINYL TILE (LVT):
PATTERN: CONCRETE
REFER TO FINISHES SCHEDULE FOR COLOUR AND SPECIFICATIONS

LUXURY VINYL TILE (LVT):
PATTERN: WOOD
REFER TO FINISHES SCHEDULE FOR COLOUR AND SPECIFICATIONS

PORCELAIN TILE (T-3):
PATTERN: WOOD
REFER TO FINISHES SCHEDULE FOR COLOUR AND SPECIFICATIONS

STATIC DISSIPATIVE TILE (SDT-1):
PATTERN: WHITE/GREY
REFER TO FINISHES SCHEDULE FOR COLOUR AND SPECIFICATIONS

FLOOR FINISHES PLAN KEYNOTES

1 PROVIDE TRANSITION STRIP BETWEEN FLOORING CHANGES TO SUIT FLOORING TYPE.

2 ALIGN END OF ACCENT FLOORING WITH END OF WALL

FINISHES GENERAL NOTES

1. ALL MATERIALS ARE TO BE ORDERED WHEN THE CONSTRUCTION CONTRACT IS AWARDED AND UPON APPROVAL OF SHOP DRAWINGS & SAMPLES. AT THIS TIME THE CONTRACTOR IS TO CONFIRM THAT ALL DELIVERIES WILL MEET CONSTRUCTION SCHEDULE. SUBSTITUTIONS WILL NOT BE ACCEPTED DUE TO LATE ORDERING. IN THE EVENT THAT MATERIALS ARE NOT AVAILABLE IN TIME TO MEET SCHEDULED COMPLETION DATES, THE CONTRACTOR SHALL PROVIDE PROOF OF DATE OF ORDER OF MATERIALS PRIOR TO REQUESTING SUBSTITUTIONS.
2. THE CONTRACTOR SHALL PROVIDE CONTROL SAMPLES FOR APPROVAL BY DESIGNERS OF ALL FINISHES SPECIFIED. SAMPLES TO BE TAGGED ACCORDING TO THE LEGEND ALL SAMPLES SHALL BE APPROVED BY THE CONSULTANT PRIOR TO ORDERING.
3. CEASE OPERATION AND NOTIFY THE PROJECT MANAGER IMMEDIATELY IF ANY ASBESTOS IS DISCOVERED OR SUSPECTED ON-SITE.
4. ALL FINISHES TO BE INSTALLED STRICTLY AS PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
5. CONTRACTOR TO SUBMIT MANUFACTURER'S MAINTENANCE INSTRUCTIONS FOR ALL FINISHES IN OPERATIONS AND MAINTENANCE MANUAL.
6. SHOULD ANY DISCREPANCY OR UNCERTAINTY ARISE, CONTACT DESIGNER BEFORE PROCEEDING WITH APPLICATION OF FINISH.

FLOOR FINISHES NOTES

1. CONTRACTOR TO PREPARE SLAB TO RECEIVE FLOORING IN ACCORDANCE WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS.
2. NEW FLOORING & RUBBER BASE IS TO BE SUPPLIED AND INSTALLED BY THE CONTRACTOR.
3. CONTRACTOR TO CHALK ALL FLOORING INSERT/ ACCENT LOCATIONS AND PATTERNS ON SUB-FLOOR AND OBTAIN APPROVAL FROM DESIGNER (PR-TY) BEFORE COMMENCING WORK.
4. CONTRACTOR TO PROVIDE WALK-OFF MATS. TAPE ALL PROTECTION PLASTIC INTO PLACE AND MAINTAIN IN GOOD CONDITION. POLYETHYLENE IS TO BE REMOVED AT COMPLETION OF WORK BY CONTRACTOR.
5. CONTRACTOR TO PROTECT FLOOR USING 6 mil POLY. POLY JOINTS ARE TO BE TAPED; ADHESIVE FROM TAPE IS NOT TO COME IN CONTACT WITH FLOORING. MAINTAIN PROTECTION FOR THE DURATION OF CONSTRUCTION ACTIVITIES.
6. UPON CONSTRUCTION COMPLETION, FLOORING WITHIN CONTRACT AREA IS TO BE THOROUGHLY CLEANED OF CONSTRUCTION DEBRIS.
7. CONTRACTOR TO PATCH AND REPAIR FLOOR FINISHES AS REQUIRED DUE TO CONSTRUCTION ACTIVITIES.
8. COORDINATE INSTALLATION OF FLOORING ON MOBILE SHELVING PLATFORM.
9. CONTRACTOR SHALL PROVIDE SUITABLE TRANSITION STRIPS AT ALL FLOORING CHANGES. CONTRACTOR IS TO PROVIDE A SAMPLE FOR APPROVAL BY DESIGNER BEFORE PROCEEDING WITH INSTALLATION.
10. WHERE FLOORING CHANGES OCCUR AT DOORWAYS, THE INTERFACE OF THE FLOORING SHALL OCCUR SO THAT IT IS CONCEALED BENEATH THE DOOR WHEN IT IS IN A CLOSED POSITION.
11. VINYL COMPOSITION TILE FLOORING
    - 11.1. ALL FLOOR TILES TO BE FROM THE SAME BATCH NUMBER.
    - 11.2. FLOOR TILE, AND ALL NECESSARY COMPONENTS, ARE TO BE INSTALLED AS PER MANUFACTURER'S INSTRUCTIONS.
    - 11.3. CONTINUE FLOORING OVER AREAS WHICH WILL BE UNDER BUILT-IN FURNITURE AND /OR MILLWORKS.
    - 11.4. SCRIBE AND CUT BORDER TILES TO SUIT SITE CONDITIONS.
    - 11.5. COMPLETE INITIAL CLEANING AS PER MANUFACTURER'S INSTRUCTIONS.

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PROJECT

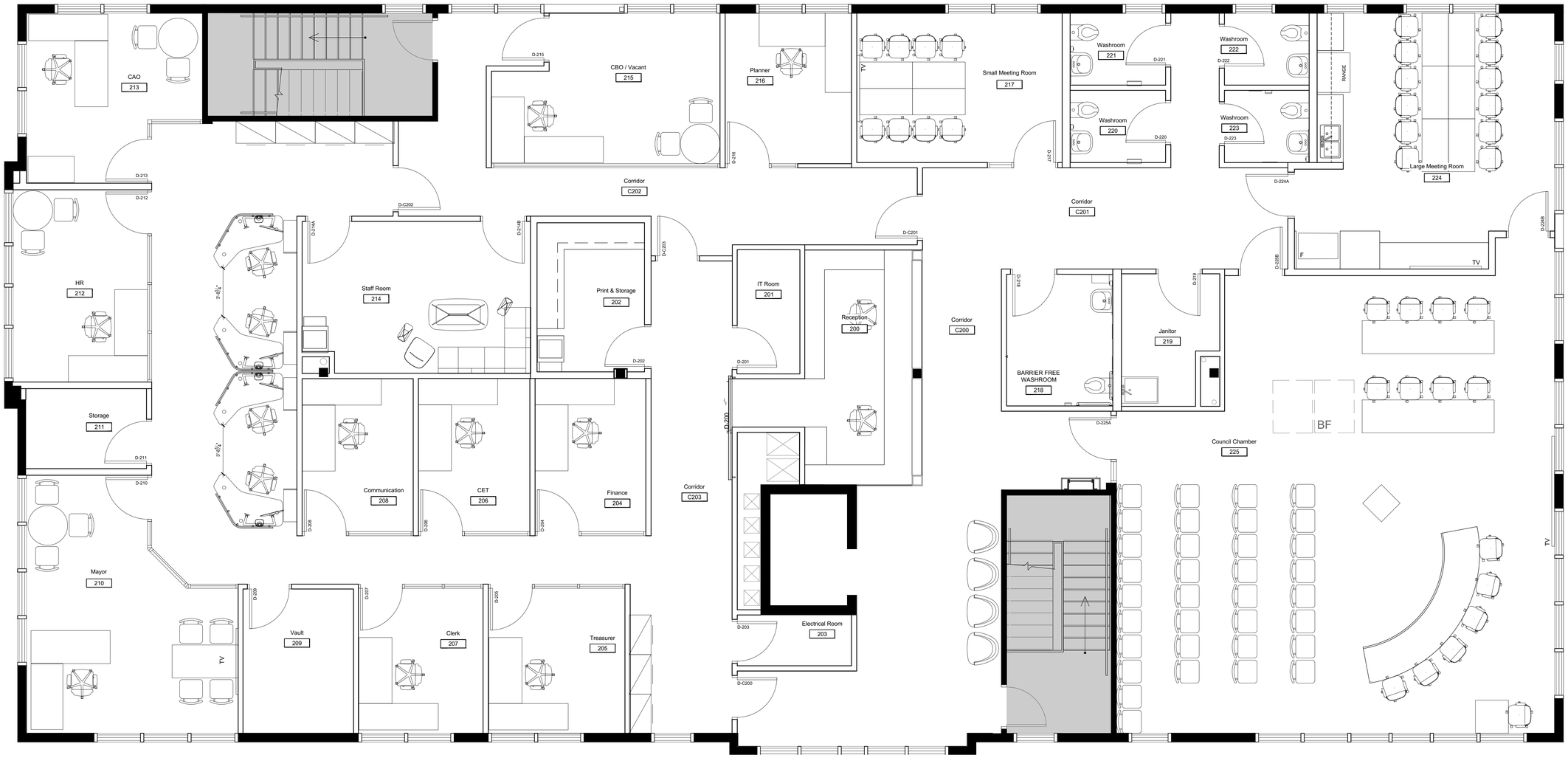
MUNICIPALITY OF CASSELMAN
OFFICE FIT-UP

1 INDUSTRIEL STREET CASSELMAN, ON

DRAWING

LEVEL 2
FLOOR FINISHES PLAN

PROJECT NO.	22045	DRAWING NO.	A-108
SCALE -	1/8" = 1'-0"		
DRAWN -	MH		
CHECKED -	KB		
PLOT DATE -	24/03/2025	PLOTTED BY:	



1 LEVEL 2 FURNITURE PLAN (FOR INFORMATION ONLY)

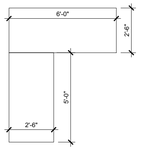
A-109

SCALE = 1/4" = 1'-0"

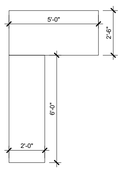
AREA NOT IN CONTRACT

FURNITURE PLAN LEGEND

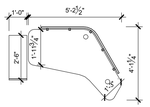
FURNITURE IS TO BE PROCURED BY OTHERS.
THIS PLAN IS FOR INFORMATION ONLY.



WORKSTATION TYPICAL 1
C/W HEIGHT ADJUSTABLE SURFACE(S), DUAL MONITOR ARMS & TABLE LAMP



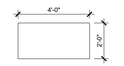
WORKSTATION TYPICAL 2
C/W HEIGHT ADJUSTABLE SURFACE(S), DUAL MONITOR ARMS & TABLE LAMP



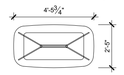
WORKSTATION TYPICAL 3
C/W:HEIGHT ADJUSTABLE SURFACE 23 & 14 D x 42W, PRIVACY SCREEN STORAGE CABINET 30 D x 12 W x 42 H, DUAL MONITOR ARMS & TABLE LAMP

ROUND TABLE

RECTANGULAR TABLE

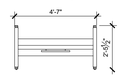


MOBILE, RECTANGULAR TABLE



COFFEE TABLE

TASK SURFACE



TASK SURFACE

TASK CHAIR

CONFERENCE CHAIR

STACKABLE CHAIR

GUEST CHAIR

MID BACK LOUNGE CHAIR, 4 LEGS

FILING CABINETS

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PROJECT NORTH

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824 Meath St. Suite 200
Ottawa, ON K1Z 6E8
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info@prty.ca

PROJECT

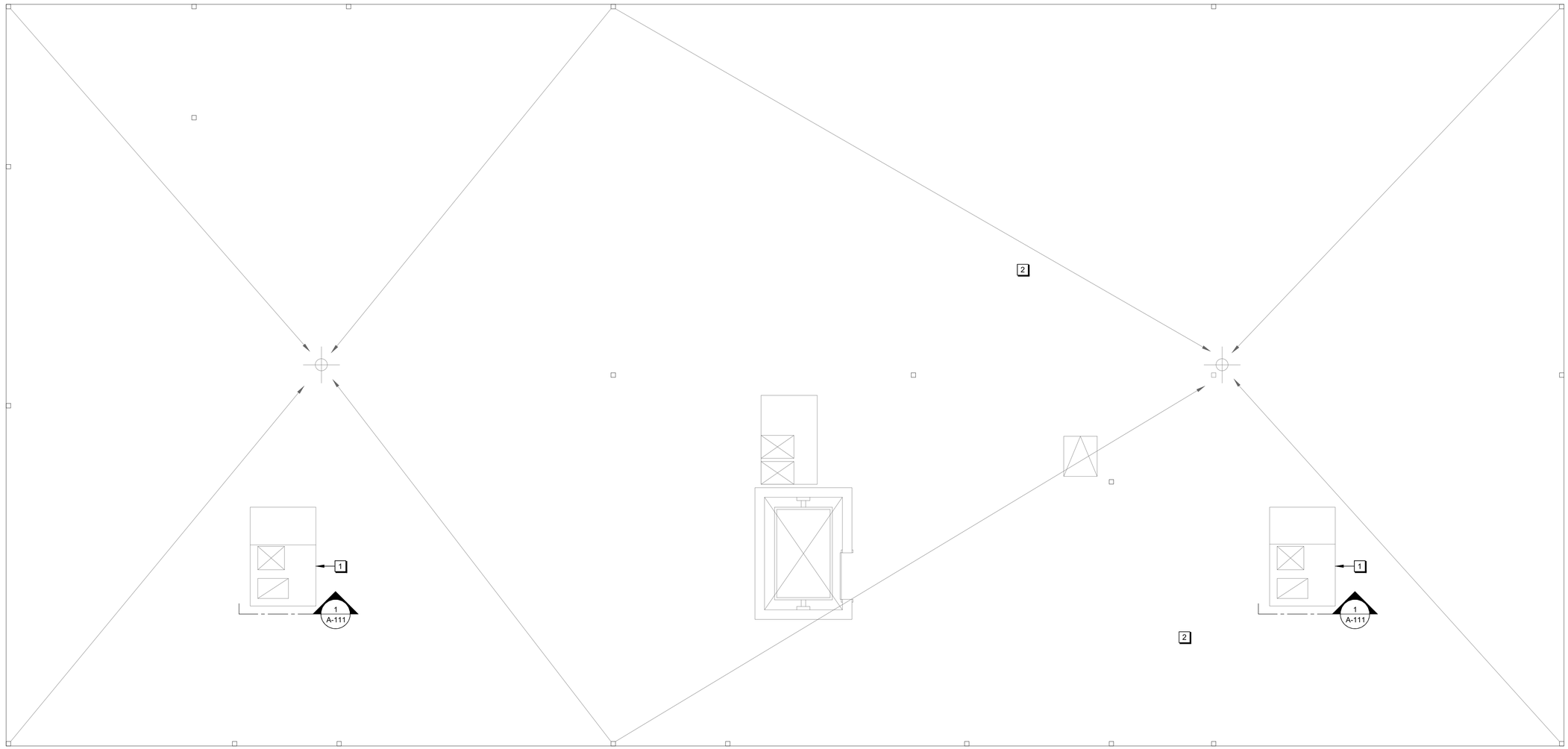
MUNICIPALITY OF CASSELMAN
OFFICE FIT-UP

1 INDUSTRIEL STREET CASSELMAN, ON

DRAWING

LEVEL 2
FURNITURE PLAN (REFERENCE ONLY)

PROJECT NO.	22045	DRAWING NO.	A-109
SCALE -	1/8" = 1'-0"		
DRAWN -	MH		
CHECKED -	KB		
PLOT DATE -	24/03/2025	PLOTTED BY:	



1 A-110 ROOF PLAN

SCALE = 1/4" = 1'-0"

ROOF PLAN KEYNOTES

1 NEW ROOF TOP UNITS. SEE STRUCTURAL & MECHANICAL DRAWINGS FOR DETAILS. ROOFING CONTRACTOR TO PROVIDE NEW ROOF OPENING AND BLOCKING FOR LEVELING AND CURB SUPPORT, NEW FLASHING AND SEALING TO CRCA AND MEMBRANE MANUFACTURERS STANDARDS. REFER TO DETAIL 1/A-111 FOR DETAILS.

2 INVESTIGATE EXISTING HOLES IN ROOF AND REPAIR/MAKE GOOD AS REQUIRED. COST OF REQUIRED REPAIRS TO BE APPLIED TO ROOF REPAIR ALLOWANCE. APPROXIMATE LOCATION ONLY, CONFIRM EXACT LOCATION ON SITE WITH CLIENT.

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PROJECT

MUNICIPALITY OF CASSELMAN
OFFICE FIT-UP

1 INDUSTRIEL STREET CASSELMAN, ON

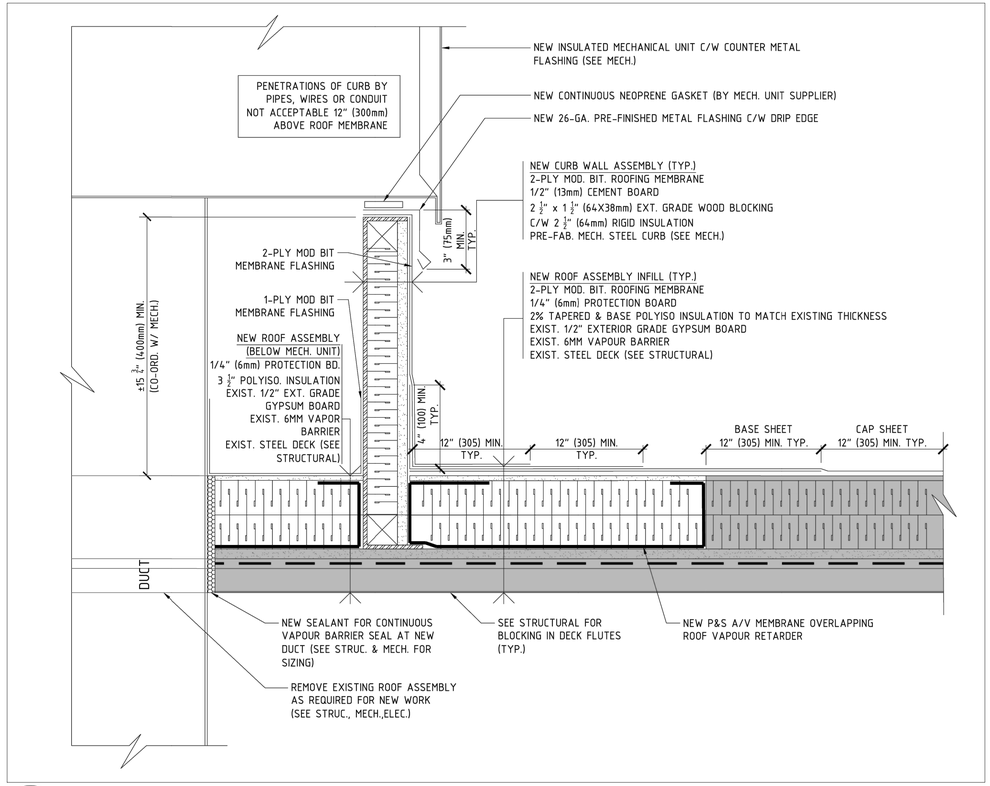
DRAWING

ROOF PLAN

PROJECT NO.	22045
SCALE -	1/4= 1'-0"
DRAWN -	MH
CHECKED -	KB
PLOT DATE -	24/03/2025

DRAWING NO. A-110

PLOTTED BY:



1 A-111 ROOF DETAIL @ NEW MECHANICAL UNIT

SCALE = N.T.S.

REV.	DESCRIPTION	DATE
04	ISSUED FOR TENDER	24/MAR/2025
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PROJECT

MUNICIPALITY OF CASSELMAN
OFFICE FIT-UP

1 INDUSTRIEL STREET — CASSELMAN, ON

DRAWING

ROOF DETAILS

PROJECT NO.	22045
SCALE -	N.T.S.
DRAWN -	MH
CHECKED -	KB
PLOT DATE -	24/03/2025

DRAWING NO. A-111

PLOTTED BY:

DOOR, FRAME & HARDWARE SCHEDULE

			DOOR DESCRIPTION						FRAME DESCRIPTION							
Door No.	From	To	Door Type	Swing	Door Width (inch)	Door Height (inch)	Door Thickness	Door Finish	Frame Type	Frame Material	Frame Finish	Frame Glass Type	Film Type	Hadrware	STC Rating	Remarks
E-100	100	Exterior	EX	RH	EX	EX	EX	EX	EX	EX	EX	-	-	HP-13	-	
E-102B	102	Exterior	EX	RH	EX	EX	EX	EX	EX	EX	EX	-	-	HP-12	-	
E-103	103	Exterior	EX	RH/LH	EX	EX	EX	EX	EX	EX	EX	-	-	HP-11	-	
D-C200	C200	C203	HM-1	RHR	38	80	1.75	WV-1	F1	PS	PT-4	-	-	HP-2	-	
D-C201	C200	C204	HM-1	LH	38	80	1.75	WV-1	F1	PS	PT-4	-	-	HP-3	-	
D-C202	C204	C202	HM-1	LHR	38	80	1.75	WV-1	F1	PS	PT-4	-	-	HP-2	-	
D-C203	C204	C203	HM-1	RHR	38	80	1.75	WV-1	F1	PS	PT-4	-	-	HP-2	-	
D-200	C203	200	W-2	BARN	40	80	1.75	WV-1	F3	-	PT-4	-	-	HP-7	-	SLIDING BARN DOOR
D-201	C203	201	HM-2	RH	38	80	1.75	PT-1	F1	PS	PT-1	-	-	HP-8	-	
D-202	C203	202	W-1	LH	38	80	1.75	WV-1	F1	SCW	PT-4	-	-	HP-3	-	
D-203	C203	203	HM-1	LH	38	80	1.75	PT-1	F1	PS	PT-1	-	-	HP-4	-	
D-204	C202	204	W-1	LH	38	80	1.75	FF	-	AL	FF	-	-	HP-1	-	PART OF DEMOUNTABLE PARTITION
D-205	C202	205	W-1	RH	38	80	1.75	FF	-	AL	FF	-	-	HP-1	-	PART OF DEMOUNTABLE PARTITION
D-206	C202	206	W-1	LH	38	80	1.75	FF	-	AL	FF	-	-	HP-1	-	PART OF DEMOUNTABLE PARTITION
D-207	C202	207	W-1	RH	38	80	1.75	FF	-	AL	FF	-	-	HP-1	-	PART OF DEMOUNTABLE PARTITION
D-208	C202	208	W-1	LH	38	80	1.75	FF	-	AL	FF	-	-	HP-1	-	PART OF DEMOUNTABLE PARTITION
D-209	C202	209	HM-1	RH	38	80	1.75	WV-1	F1	PS	PT-4	-	-	HP-4	-	
D-210	C202	210	W-1	RH	38	80	1.75	FF	-	AL	FF	-	-	HP-1	-	PART OF DEMOUNTABLE PARTITION
D-211	C202	211	W-1	LH	38	80	1.75	WV-1	F1	PS	PT-4	-	-	HP-3	-	
D-212	C202	212	W-1	RH	38	80	1.75	FF	-	AL	FF	-	-	HP-1	-	PART OF DEMOUNTABLE PARTITION
D-213	C202	213	W-1	LH	38	80	1.75	FF	-	AL	FF	-	-	HP-1	-	PART OF DEMOUNTABLE PARTITION
D-214A	C202	214	W-1	RH	38	80	1.75	WV-1	F1	SCW	PT-4	-	-	HP-3	-	
D-214B	C202	214	W-1	LH	38	80	1.75	WV-1	F1	SCW	PT-4	-	-	HP-1		
D-215	C204	215	W-1	RHR	38	80	1.75	WV-1	F1	SCW	PT-4	-	-	HP-10	-	PROVIDE SEPARATE PRICING, SEE HP-1
D-216	C204	216	W-1	LH	38	80	1.75	FF	-	AL	FF	-	-	HP-10	-	PART OF DEMOUNTABLE PARTITION SYSTEM
D-217	C201	217	W-1	RH	38	80	1.75	WV-1	F2	SCW	PT-4	GL1	-	HP-3	-	
D-218	C201	218	W-1	RH	38	80	1.75	WV-1	F1	SCW	PT-4	-	-	HP-6	-	
D-219	C201	219	HM-2	LH	38	80	1.75	PT-1	F1	PS	PT-1	-	-	HP-8	-	
D-220	C201	220	W-1	LH	38	80	1.75	WV-1	F1	SCW	PT-4	-	-	HP-5	-	
D-221	C201	221	W-1	LH	38	80	1.75	WV-1	F1	SCW	PT-4	-	-	HP-5	-	
D-222	C201	222	W-1	RH	38	80	1.75	WV-1	F1	SCW	PT-4	-	-	HP-5	-	
D-223	C201	223	W-1	RH	38	80	1.75	WV-1	F1	SCW	PT-4	-	-	HP-5	-	
D-224A	C201	224	W-1	LHR	38	80	1.75	WV-1	F1	SCW	PT-4	-	-	HP-9	-	
D-224B	225	224	W-1	RH	38	80	1.75	WV-1	F1	SCW	PT-4	-	-	HP-9	-	
D-225A	C201	225	W-1	LHR	38	80	1.75	WV-1	F2	SCW	PT-4	GL1	-	HP-3	-	
D-225B	C200	225	W-1	LHR	38	80	1.75	WV-1	F1	SCW	PT-4	-	-	HP-3	-	

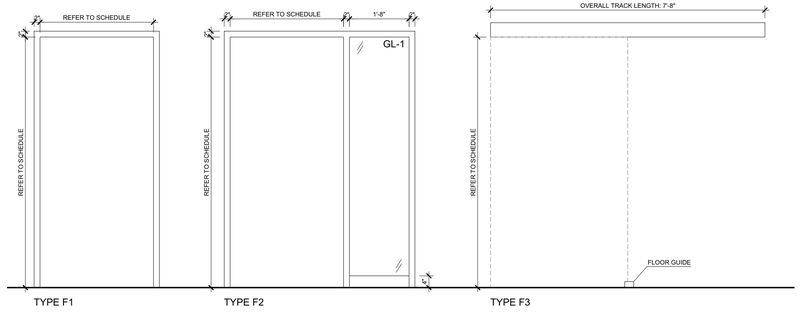
W-1 (TYPE A)
SOLID CORE WOOD
DOOR, PAINT GRADE

W2 (TYPE B)
SOLID CORE WOOD BARN
DOOR, PAINT GRADE

HM-1
HOLLOW METAL DOOR

HM-2
HOLLOW METAL DOOR

1 DOOR TYPE ELEVATIONS
A-200 SCALE = 1/2" = 1'-0"



TYPE F1

TYPE F2

TYPE F3

2 FRAME TYPE ELEVATIONS
A-200 SCALE = 1/2" = 1'-0"

DOOR & FRAME ABBREVIATION LEGEND

DOOR FINISH:

PT PAINT FINISH
FF FACTORY FINISH

FRAME MATERIAL:

PS PRESSED STEEL
SCW SOLID CORE WOOD
AL ALUMINUM

FRAME FINISH:

PT PAINT FINISH
FF FACTORY FINISH

GLAZING LEGEND

GL-1 DOUBLE PANE, 6MM TEMPERED GLASS SUPPLIED AND INSTALLED BY CONTRACTOR
GL-2 DOUBLE PANE, 6MM CLEAR TEMPERED GLASS SUPPLIED AND INSTALLED BY THE DEMOUNTABLE PARTITION SUPPLIER.

DOOR & HARDWARE GENERAL NOTES

1. NEW DOOR, FRAME & HARDWARE TO BE SUPPLIED, INSTALLED & FINISHED AS PER DOOR SCHEDULE. ENSURE PROPER FUNCTION OF ALL DOOR COMPONENTS.
2. IF FLOOR SLAB IS UNEVEN, SHIM DOOR FRAMES TO SUIT AS REQUIRED & PAINT SHIM TO MATCH FRAME.
3. PATCH, REPAIR & REFINISH EXISTING DOORS & FRAMES THAT ARE DAMAGED BY CONSTRUCTION TO MATCH EXISTING.

MANUFACTURERS / MODELS

STANDARD FINISHES:
26D OR MANUFACTURER'S EQUIVALENT

LOCKSETS & LOCK CORES:
GRADE 1 EXTRA HEAVY DUTY OR GRADE 2 HEAVY DUTY AS NOTED
DESIGN SPECIFICATIONS: LEVER HANDLES

KEYING:
ALL DOORS TO HAVE SAME KEY WAY;
SUPPLY 4 MASTER KEYS BY FLOOR;
SUPPLY 2 KEYS PER DOOR
DOORS KEYED SEPARATELY

DOOR CLOSERS:
SURFACE MOUNTED, INTERIOR FACE OF DOOR & FRAME;
MODELS AS NOTED BY HARDWARE PACKAGE NUMBER
MAXIMUM FORCE OF 4.9 POUNDS / 22 NEWTONS TO MET OBC & CSA B651-12 REQUIREMENTS

DOOR PULLS:
SURFACE MOUNTED, EXTRA LONG PULL;
MODEL AS NOTED BY FINISH SCHEDULE ON PAGE A-500

HINGES:
HEAVY DUTY
FULL MORTISED BALL BEARING
MINIMUM 4 PAIRS FOR FULL HEIGHT DOORS

FLOOR STOP:
FLOOR STOP BY GALLERY SPECIALITY HARDWARE, MODEL No. GSH209, PROVIDE RISER AS REQUIRED
DOOR CEILING STOP BY GLYNN JOHNSON, 100 SERIES CONCEALED OVERHEAD STOP

AUTOMATIC DOOR BOTTOM:
MORTISED CT-53F BY K.N. KROWDER, FULL GROOVE

DOOR 'SOUND' SEALS:
PEMKO SOUND SEALS, MODEL No. S773.
INSTALLED AT FRAME HEAD JAMB, LATCH & HINGE SIDES

DOOR PLATES (KICKPLATES):
BY GALLERY SPECIALITY HARDWARE
INSTALLED AT DOOR BOTTOM, TO MATCH DOOR WIDTH
MODEL: 80 KICK PLATE w/ COUNTER-SUNK SCREWS
FINISH: BRUSHED STAINLESS STEEL

HARDWARE NOTES:

A. COORDINATE ALL 'SECURE' HARDWARE PACKAGES WITH THE SECURITY COMPONENT OF THE CONTRACT.
B. ALL CLOSERS ARE TO BE ADA COMPLIANT.
C. ALL DOORS ARE TO BE SUPPLIED WITH:
   a. A DOOR STOP
   b. THE APPROPRIATE NUMBER OF HINGE PAIRS TO MEET THE WEIGHT OF THE DOOR
   c. ACOUSTIC TREATMENT (ALL DOORS IN 40 STC AND UP WALLS):
      ACOUSTIC DOOR SEALS
      MORTISED DROP DOWN NEOPRENE DOOR BOTTOM

HARDWARE PACKAGES

HARDWARE TYPE HP1:

ENCLOSED OFFICES

9 SINGLE DOORS: BY DEMOUNTABLE PARTITION SUPPLIER

D-204, D-205, D-206, D-207, D-208, D-210, D-212, D-213, D-216

BB HINGES	BY DEMOUNT. PART. SUPPLIER
OFFICE LOCKSET (MORTISE)	BY DEMOUNT. PART. SUPPLIER
FLOOR STOP	
SOUND SEALS	BY DEMOUNT. PART. SUPPLIER
AUTO DOOR BOTTOM	BY DEMOUNT. PART. SUPPLIER

NOTES:
1. DEMOUNTABLE PARTITION SUPPLIER TO PREP DOOR TO RECEIVE CONTRACTOR SUPPLIED HARDWARE.
2. CONTRACTOR TO PROVIDE SEPARATE PRICING WITHIN BID DOCUMENT TO CHANGE HARDWARE FOR DOOR D-216 TO THE FOLLOWING:

BB HINGES	BY DEMOUNT. PART. SUPPLIER
MORTISE LOCKSET (STOREROOM FUNCTION)	
BY ELECTRIC STRIKE	
CARD READER	
DOOR CONTACT	
FLOOR DOORSTOP	
DOOR CLOSER	
SOUND SEALS	BY DEMOUNT. PART. SUPPLIER
AUTO DOOR BOTTOM	BY DEMOUNT. PART. SUPPLIER

HARDWARE TYPE HP2:

SECURE OFFICE SUITE ENTRY

3 SINGLE DOORS: BY CONTRACTOR

D-C200, D-C202, D-C203

BB HINGES
MORTISE LOCKSET (STOREROOM FUNCTION)
ELECTRIC STRIKE
CARD READER (ONE SIDE)
DOOR CONTACT
FLOOR STOP
AUTOMATIC DOOR OPERATOR
VERTICAL ACTUATOR (ON BOTH SIDES)

HARDWARE TYPE HP3:

UNSECURED ROOMS

7 SINGLE DOORS: BY CONTRACTOR

D-C201, D-202, D-211, D-214A, D-217, D-225A, D-225B

BB HINGES
PASSAGE SET
FLOOR STOP
SOUND SEALS
AUTO DOOR BOTTOM

HARDWARE TYPE HP4:

KEYED ROOMS

2 SINGLE DOORS: BY CONTRACTOR

D-203, D-219

BB HINGES
MORTISE LOCKSET (STOREROOM FUNCTION)
FLOOR DOORSTOP
DOOR CLOSER

HARDWARE TYPE HP5:

WASHROOMS

4 SINGLE DOORS: BY CONTRACTOR

D-220, D-221, D-222, D-223

BB HINGES
MORTISE LOCKSET (PRIVACY FUNCTION)
FLOOR DOORSTOP
KICKPLATE

HARDWARE TYPE HP6:

BARRIER FREE WASHROOM

1 SINGLE DOOR: BY CONTRACTOR

D-218

BB HINGES
MORTISE LOCKSET (PRIVACY FUNCTION)
ELECTRIC STRIKE
PUSH TO LOCK BUTTON
EMERGENCY CALL KIT
OCCUPIED WHEN LIT SIGNAGE
AUTOMATIC DOOR OPERATOR
VERTICAL ACTUATOR (ON BOTH SIDES)
FLOOR STOP
KICKPLATE

HARDWARE PACKAGES CON'T

HARDWARE TYPE HP7:

RECEPTION

1 SINGLE BARN DOOR: BY CONTRACTOR

BARN DOOR KIT
DOOR PULL LEVER

HARDWARE TYPE HP8:

SERVICE ROOMS

2 SINGLE DOORS: BY CONTRACTOR

D-201, D-209

BB HINGES
MORTISE LOCKSET (STOREROOM FUNCTION)
ELECTRIC STRIKE
CARD READER
DOOR CONTACT
FLOOR STOP
DOOR CLOSER

HARDWARE TYPE HP9:

ACCESS CONTROLLED ROOMS

4 SINGLE DOORS: BY CONTRACTOR

D-214B, D-215, D-224A, D-224B

BB HINGES
MORTISE LOCKSET (STOREROOM FUNCTION)
BY ELECTRIC STRIKE
CARD READER
DOOR CONTACT
FLOOR DOORSTOP
DOOR CLOSER
SOUND SEALS
AUTO DOOR BOTTOM

HARDWARE TYPE HP10:

ENCLOSED OFFICE, KEYED

1 SINGLE DOOR: BY CONTRACTOR

D-215

BB HINGES
OFFICE LOCKSET (MORTISE)
FLOOR STOP
SOUND SEALS
AUTO DOOR BOTTOM

NOTES:
1. CONTRACTOR TO PROVIDE SEPARATE PRICING WITHIN BID DOCUMENT TO CHANGE HARDWARE TO THE FOLLOWING:

BB HINGES
MORTISE LOCKSET (STOREROOM FUNCTION)
BY ELECTRIC STRIKE
CARD READER
DOOR CONTACT
FLOOR DOORSTOP
DOOR CLOSER
SOUND SEALS
AUTO DOOR BOTTOM

HARDWARE TYPE HP11:

EXIT STAIR

1 EXISTING SINGLE DOORS: TO REMAIN

E-103

NEW CARD READER (ONE SIDE)
NEW ELECTRIC STRIKE

NOTE: CONTRACTOR TO VERIFY THAT EXISTING HARDWARE WILL FUNCTION WITH THE NEW HARDWARE. ANY UPGRADES REQUIRED TO EXISTING HARDWARE UPON INVESTIGATION, TO BE APPLIED TO HARDWARE ALLOWANCE.

HARDWARE TYPE HP12:

EXIT STAIR

1 EXISTING SINGLE DOOR: TO REMAIN

E-102B

NEW DOOR CONTACT

NOTE: CONTRACTOR TO VERIFY THAT EXISTING HARDWARE FUNCTIONS AS EXIT ONLY. ANY UPGRADES REQUIRED TO EXISTING HARDWARE UPON INVESTIGATION, TO BE APPLIED TO HARDWARE ALLOWANCE.

HARDWARE TYPE HP13:

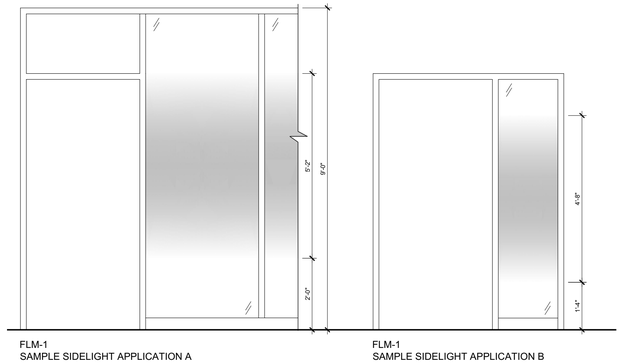
MAIN ENTRANCE

1 EXISTING DOUBLE DOOR: TO REMAIN

E-100

NEW CARD READER

NOTE: CONTRACTOR TO VERIFY THAT EXISTING HARDWARE WILL FUNCTION WITH THE NEW HARDWARE. ANY UPGRADES REQUIRED TO EXISTING HARDWARE UPON INVESTIGATION, TO BE APPLIED TO HARDWARE ALLOWANCE.



FLM-1
SAMPLE SIDELIGHT APPLICATION A

FLM-1
SAMPLE SIDELIGHT APPLICATION B

3 WINDOW FILM ELEVATIONS
A-200 SCALE = 1/2" = 1'-0"

WINDOW FILM LEGEND

GENERAL NOTES:
1. CONTRACTOR IS RESPONSIBLE FOR SUPPLYING AND INSTALLING WINDOW FILM FOR ALL GLAZING TYPES, INCLUDING THOSE SUPPLIED BY DEMOUNTABLE PARTITION SUPPLIER.
2. FILM IS TO BE INSTALLED ON THE INTERIOR SIDE OF GLASS.
3. ALL GLAZING PANELS ARE TO HAVE FILM INSTALLED, EXCLUDING D-225A.
4. FOR INSTALLATION DETAILS ON WINDOW FILM APPLIED TO GLAZING SUPPLIED BY THE CONTRACTOR, REFER TO FLM-1 SAMPLE SIDELIGHT APPLICATION B.
5. FOR INSTALLATION DETAILS ON WINDOW FILM APPLIED TO GLAZING SUPPLIED BY THE DEMOUNTABLE PARTITION SYSTEM, REFER TO FLM-1 SAMPLE SIDELIGHT APPLICATION A.
6. THE FILM PATTERN OF FLM-1 SHOULD START FROM THE CENTER OF THE SIDELIGHT PANEL.

FLM-1 GRADIENT FROSTED FILM, WITH FULL WHITE OPACITY IN CENTER AND GRADIENT TO CLEAR ON TOP AND BOTTOM. REFER TO FINISHES SCHEDULE FOR SPECIFICATIONS

CASSELMAN

REV.	DESCRIPTION	DATE
04	ISSUED FOR TENDER	24/MAR/2025
03	ISSUED FOR PERMIT	18/MAR/2025
02	ISSUED FOR 99% REVIEW	24/FEB/2025
01	ISSUED FOR 66% REVIEW	12/MAY/2023

SEAL

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PROJECT NORTH

PYE & RICHARDS - TEMPRANO & YOUNG ARCHITECTS INC.
824 Meath St. Suite 200
Ottawa, ON K1Z 6E8
613. 724. 7700
info@prty.ca

PROJECT

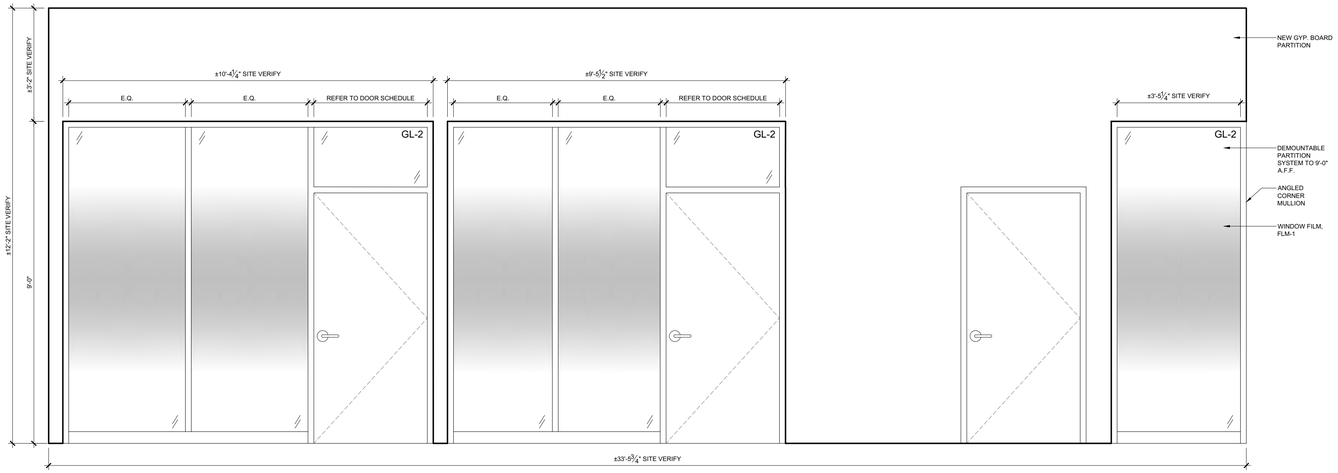
MUNICIPALITY OF CASSELMAN
OFFICE FIT-UP

1 INDUSTRIEL STREET CASSELMAN, ON

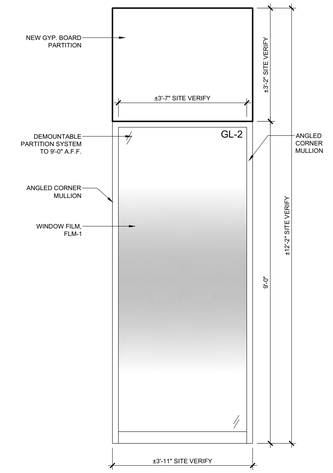
DRAWING

DOOR & HARDWARE SCHEDULE & ELEVATIONS

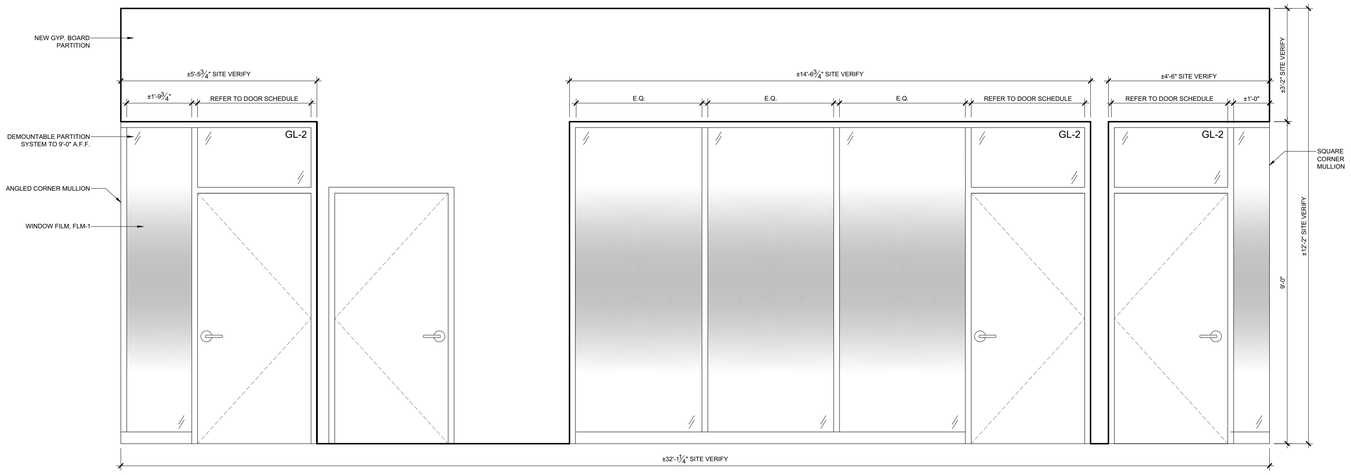
PROJECT NO.	22045	DRAWING NO.	A-200
SCALE -	1/8" = 1'-0"		
DRAWN -	MH		
CHECKED -	KB		
PLOT DATE -	24/03/2025	PLOTTED BY:	



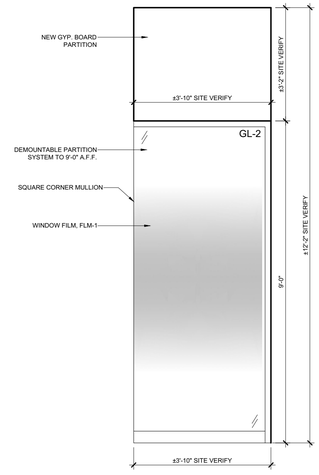
1 A--300 GLAZING ELEVATION A
SCALE = 1/2" = 1'-0"



2 A--300 GLAZING ELEVATION B
SCALE = 1/2" = 1'-0"



3 A--300 GLAZING ELEVATION C
SCALE = 1/2" = 1'-0"



4 A--300 GLAZING ELEVATION D
SCALE = 1/2" = 1'-0"

GLAZING LEGEND

GL-1 DOUBLE PANE, 6MM TEMPERED GLASS SUPPLIED AND INSTALLED BY CONTRACTOR

GL-2 DOUBLE PANE, 6MM CLEAR TEMPERED GLASS SUPPLIED AND INSTALLED BY THE DEMOUNTABLE PARTITION SUPPLIER.

WINDOW FILM LEGEND

GENERAL NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR SUPPLYING AND INSTALLING WINDOW FILM FOR ALL GLAZING TYPES, INCLUDING THOSE SUPPLIED BY DEMOUNTABLE PARTITION SUPPLIER.
2. FILM IS TO BE INSTALLED ON THE INTERIOR SIDE OF GLASS.
3. ALL GLAZING PANELS ARE TO HAVE FILM INSTALLED, EXCLUDING D-225A.
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5. FOR INSTALLATION DETAILS ON WINDOW FILM APPLIED TO GLAZING SUPPLIED BY THE DEMOUNTABLE PARTITION SYSTEM, REFER TO FLM-1 SAMPLE SIDELIGHT APPLICATION A.
6. THE FILM PATTERN OF FLM-1 SHOULD START FROM THE CENTER OF THE SIDELIGHT PANEL.

FLM-1 GRADIENT FROSTED FILM, WITH FULL WHITE OPACITY IN CENTER AND GRADIENT TO CLEAR ON TOP AND BOTTOM. REFER TO FINISHES SCHEDULE FOR SPECIFICATIONS

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info@prty.ca

PROJECT

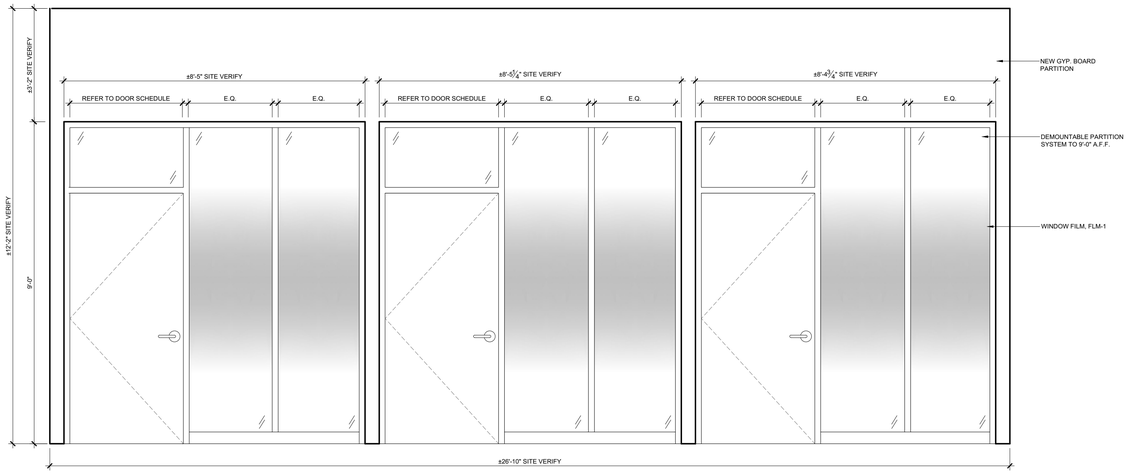
MUNICIPALITY OF CASSELMAN
OFFICE FIT-UP

1 INDUSTRIEL STREET CASSELMAN, ON

DRAWING

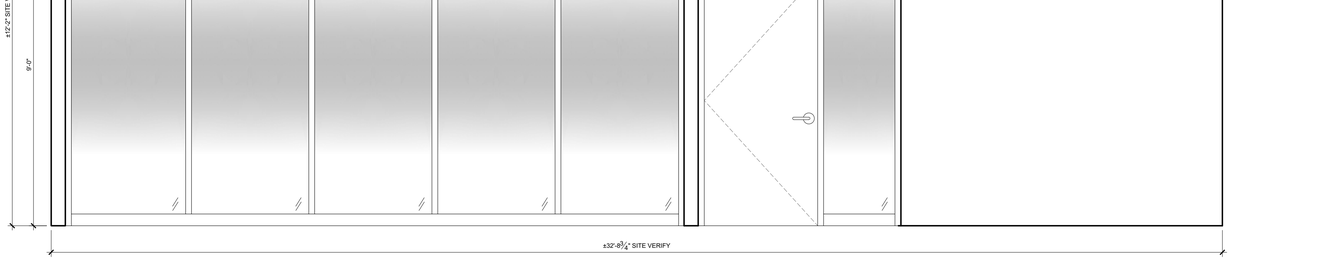
WASHROOM PLANS & ELEVATIONS

PROJECT NO.	22045	DRAWING NO.	A-300
SCALE -	1/2" = 1'-0"		
DRAWN -	MH		
CHECKED -	KB		
PLOT DATE -	24/03/2025	PLOTTED BY:	



1 A-301 GLAZING ELEVATION E

SCALE = 1/2" = 1'-0"



2 A-301 GLAZING ELEVATION F

SCALE = 1/2" = 1'-0"

GLAZING LEGEND

GL-1 DOUBLE PANE, 6MM TEMPERED GLASS SUPPLIED AND INSTALLED BY CONTRACTOR

GL-2 DOUBLE PANE, 6MM CLEAR TEMPERED GLASS SUPPLIED AND INSTALLED BY THE DEMOUNTABLE PARTITION SUPPLIER.

WINDOW FILM LEGEND

GENERAL NOTES:

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5. FOR INSTALLATION DETAILS ON WINDOW FILM APPLIED TO GLAZING SUPPLIED BY THE DEMOUNTABLE PARTITION SYSTEM, REFER TO FLM-1 SAMPLE SIDELIGHT APPLICATION A.
6. THE FILM PATTERN OF FLM-1 SHOULD START FROM THE CENTER OF THE SIDELIGHT PANEL.

FLM-1 GRADIENT FROSTED FILM, WITH FULL WHITE OPACITY IN CENTER AND GRADIENT TO CLEAR ON TOP AND BOTTOM. REFER TO FINISHES SCHEDULE FOR SPECIFICATIONS

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PROJECT NORTH

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Ottawa, ON K1Z 6E8

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PROJECT

MUNICIPALITY OF CASSELMAN
OFFICE FIT-UP

1 INDUSTRIEL STREET CASSELMAN, ON

DRAWING

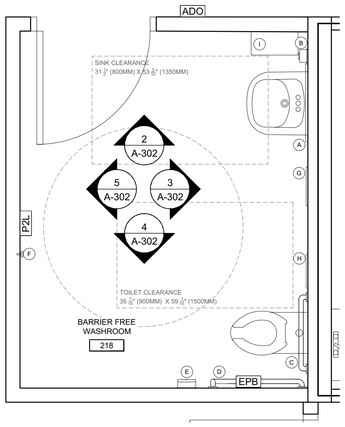
WASHROOM PLANS & ELEVATIONS

PROJECT NO.	22045
SCALE -	1/2" = 1'-0"
DRAWN -	MH
CHECKED -	KB
PLOT DATE -	24/03/2025

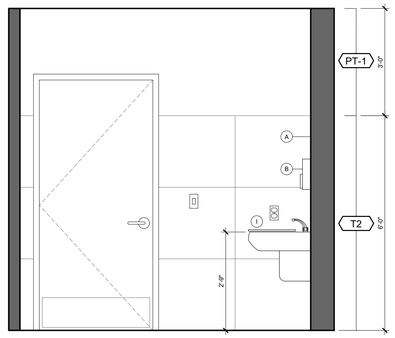
DRAWING NO.

A-301

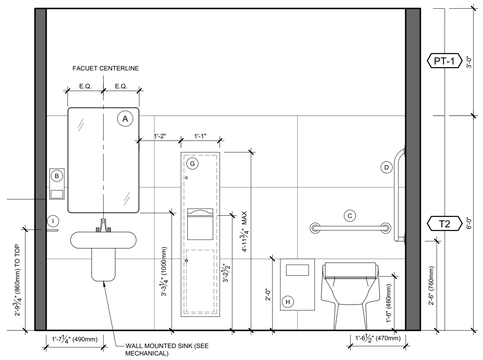
PLOTTED BY:



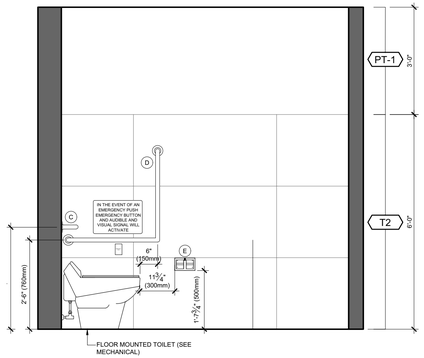
1 A-302 BF WASHROOM - FLOOR PLAN
SCALE = 1/2" = 1'-0"



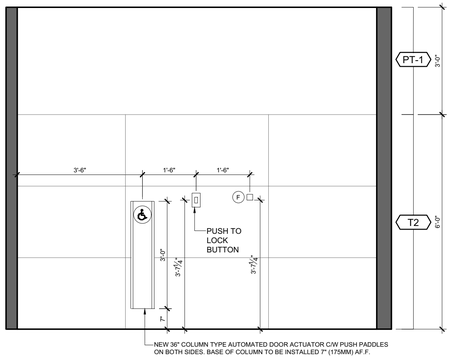
2 A-302 ELEVATION A - BF WASHROOM
SCALE = 1/2" = 1'-0"



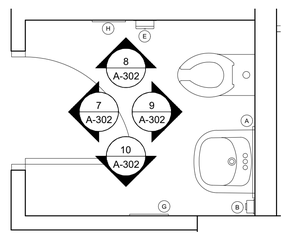
3 A-302 ELEVATION B - BF WASHROOM
SCALE = 1/2" = 1'-0"



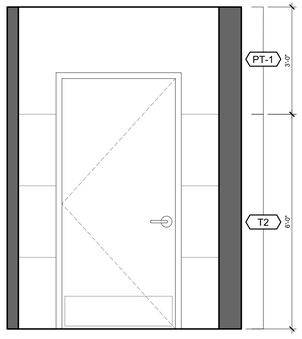
4 A-302 ELEVATION C - BF WASHROOM
SCALE = 1/2" = 1'-0"



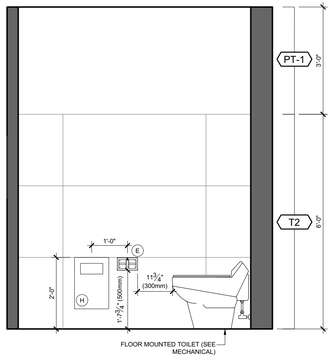
5 A-302 ELEVATION D - BF WASHROOM
SCALE = 1/2" = 1'-0"



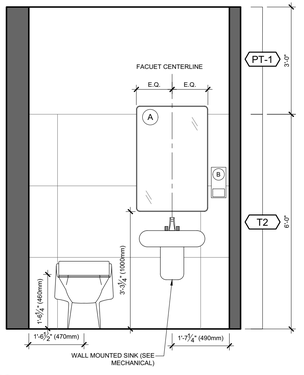
6 A-302 TYP. WASHROOM - FLOOR PLAN
SCALE = 1/2" = 1'-0"



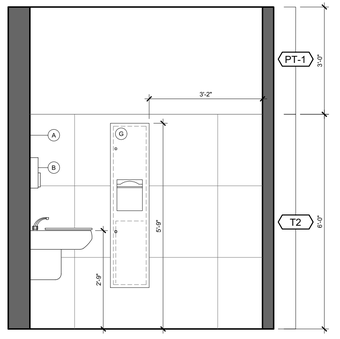
7 A-302 ELEVATION A - TYP. WASHROOM
SCALE = 1/2" = 1'-0"



8 A-302 ELEVATION B - TYP. WASHROOM
SCALE = 1/2" = 1'-0"



9 A-302 ELEVATION C - TYP. WASHROOM
SCALE = 1/2" = 1'-0"



10 A-302 ELEVATION D - TYP. WASHROOM
SCALE = 1/2" = 1'-0"

WASHROOM ACCESSORIES AND FIXTURE LEGEND

NOTE: ALL ACCESSORIES TO BE INSTALLED AS PER MANUFACTURER'S WRITTEN INSTRUCTIONS.

(A) MIRROR:
DESCRIPTION: DEEP-SET METAL FRAME MIRROR, RECTANGULAR C/W ROUNDED EDGES
SIZE: 24" W x 36" H x 1.4" D
FINISH: BLACK
INSTALLATION HEIGHT: BOTTOM EDGE NO GRATER THAN 3'-3" A.F.F.

(B) SURFACE MOUNTED, AUTOMATIC FOAM SOAP DISPENSER:
DESCRIPTION: BOBRICK
MODEL No.: B-2013
FINISH: STAINLESS STEEL
SIZE: 9 9/16" X 4 1/4"
INSTALLATION HEIGHT: 3'-8" A.F.F.

(C) STRAIGHT GRAB BAR:
DESCRIPTION: BOBRICK
MODEL No.: B-5806
FINISH: STAINLESS STEEL
SIZE: 24"
INSTALLATION HEIGHT: AS NOTED

(D) L-SHAPE GRAB BAR:
MANUFACTURER: BOBRICK
MODEL No.: B-6898.99
FINISH: STAINLESS STEEL, SATIN FINISH, PEENED SURFACE
SIZE: 30" X 30"
INSTALLATION HEIGHT: AS NOTED

(E) RECESSED TOILET TISSUE DISPENSER:
MANUFACTURER: BOBRICK
MODEL No.: B-35883
FINISH: SATIN FINISH, STAINLESS STEEL
SIZE: 13 3/8 " X 8 7/16"

(F) ROBE HOOK:
MANUFACTURER: FROST
MODEL No.: 1138-S, 38MM X 51MM X 51MM
FINISH: BRUSHED CHROME
INSTALLATION HEIGHT: NOT MORE THAN 1200MM A.F.F.

(G) RECESSED PAPER TOWEL DISPENSER / WASTE RECEPTACLE:
DESCRIPTION: BOBRICK
MODEL No.: B-380349
FINISH: SATIN FINISH, STAINLESS STEEL
SIZE: 13" X 55 1/2"
INSTALLATION HEIGHT: 69" TO TOP

(H) RECESSED SANITARY DISPOSAL RECEPTACLE:
MANUFACTURER: BOBRICK
MODEL No.: B-35303
FINISH: SATIN FINISH, STAINLESS STEEL
SIZE: 13" X 18 5/8"
INSTALLATION HEIGHT: 2'-5" TO TOP

(I) SHELF:
MANUFACTURER: FROST
MODEL No.: 950-4X18 (100MM X 400MM)
FINISH: SATIN FINISH, STAINLESS STEEL
INSTALLATION HEIGHT: AS NOTED

REV.	DESCRIPTION	DATE
04	ISSUED FOR TENDER	24/MAR/2025
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SEAL

PROJECT NORTH

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824 Meath St. Suite 200 Ottawa, ON K1Z 6E8
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PROJECT

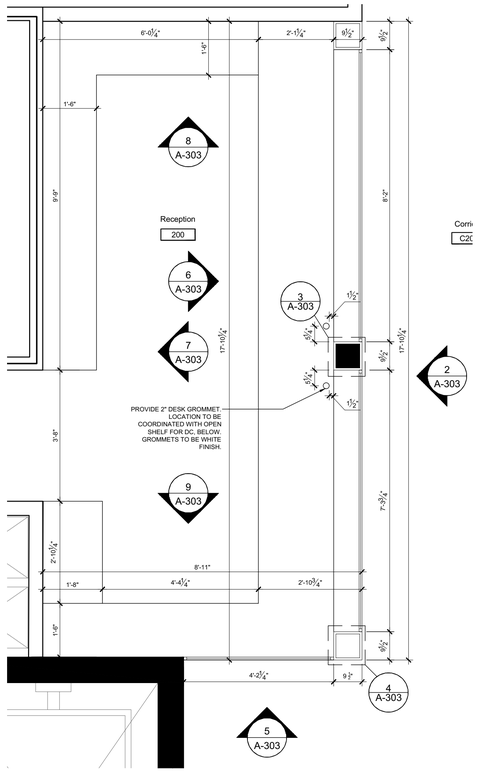
MUNICIPALITY OF CASSELMAN
OFFICE FIT-UP

1 INDUSTRIEL STREET CASSELMAN, ON

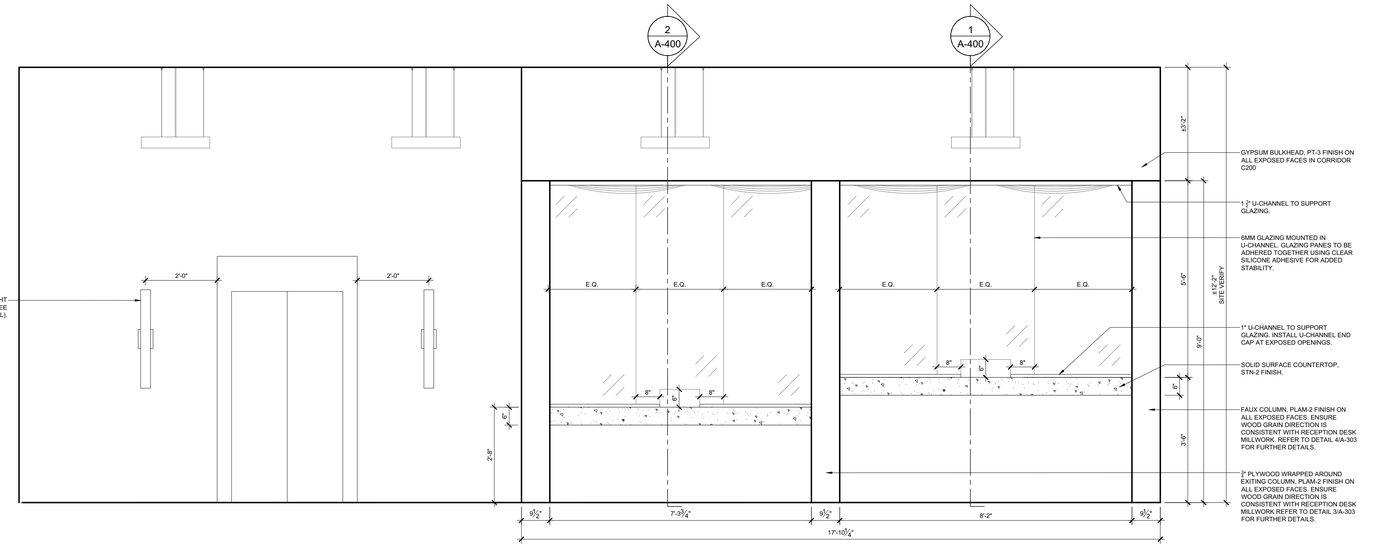
DRAWING

WASHROOM PLANS & ELEVATIONS

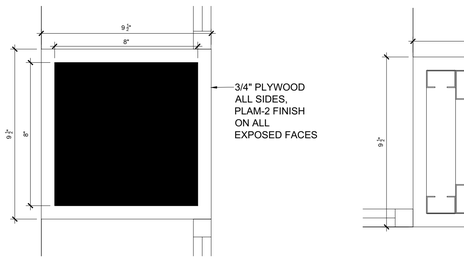
PROJECT NO.	22045	DRAWING NO.	A-302
SCALE -	1/2" = 1'-0"		
DRAWN -	MH		
CHECKED -	KB		
PLOT DATE -	24/03/2025	PLOTTED BY:	



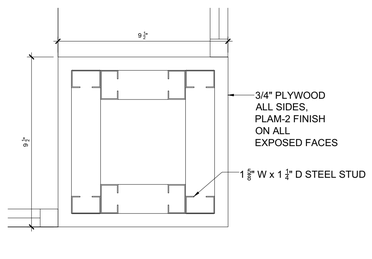
1 A-303 RECEPTION AREA - FLOOR PLAN
SCALE = 1/2" = 1'-0"



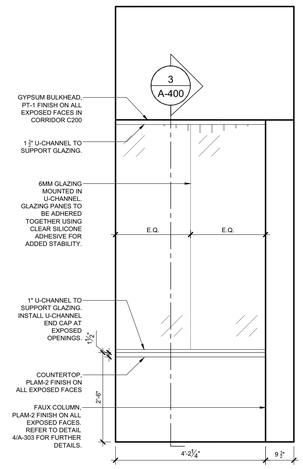
2 A-303 ELEVATION A - RECEPTION DESK
SCALE = 1/2" = 1'-0"



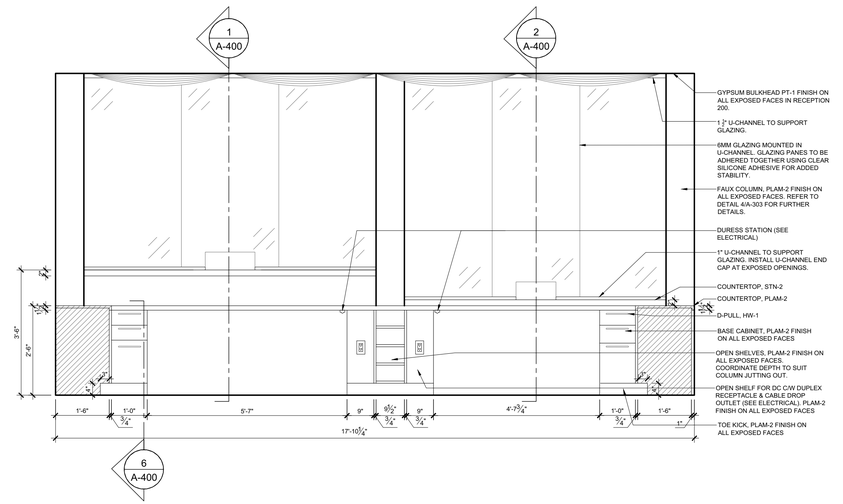
3 A-303 RECEPTION - COLUMN DETAIL
SCALE = 3" = 1'-0"



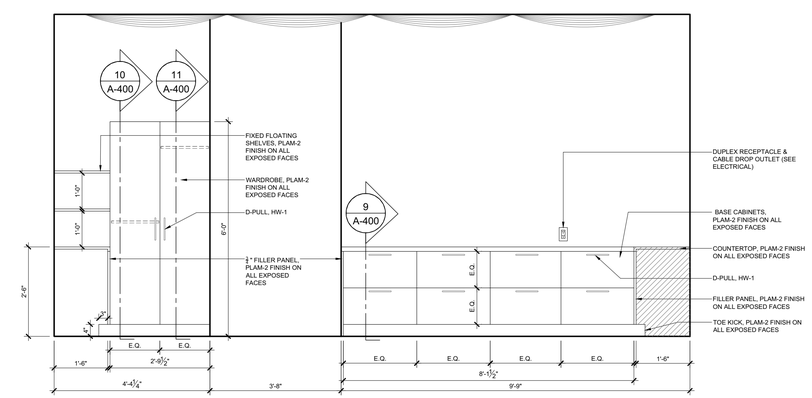
4 A-303 RECEPTION - COLUMN DETAIL
SCALE = 3" = 1'-0"



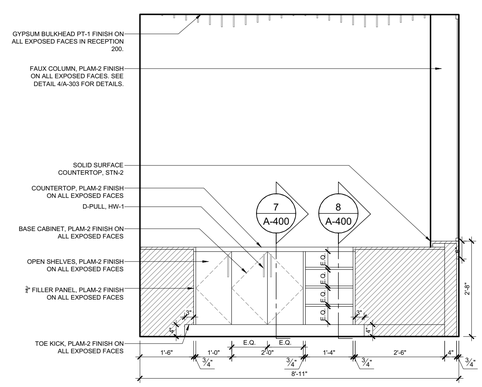
5 A-303 ELEVATION B - RECEPTION DESK
SCALE = 1/2" = 1'-0"



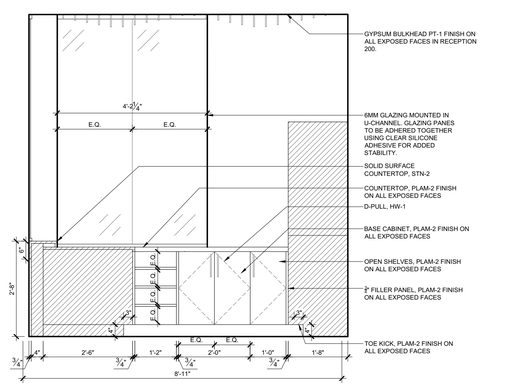
6 A-303 ELEVATION F - RECEPTION DESK
SCALE = 1/2" = 1'-0"



7 A-303 ELEVATION E - RECEPTION DESK
SCALE = 1/2" = 1'-0"



8 A-303 ELEVATION C - RECEPTION DESK
SCALE = 1/2" = 1'-0"



9 A-303 ELEVATION D - RECEPTION DESK
SCALE = 1/2" = 1'-0"

REV.	DESCRIPTION	DATE
04	ISSUED FOR TENDER	24/MAR/2025
03	ISSUED FOR PERMIT	18/MAR/2025
02	ISSUED FOR 99% REVIEW	24/FEB/2025
01	ISSUED FOR 66% REVIEW	12/MAY/2023

SEAL

PROJECT NORTH

Not for construction unless SEALED and SIGNED

PYE & RICHARDS - TEMPRANO & YOUNG ARCHITECTS INC.
824 Meath St. Suite 200
Ottawa, ON K1Z 6E8
613. 724. 7700
info@prty.ca

PROJECT

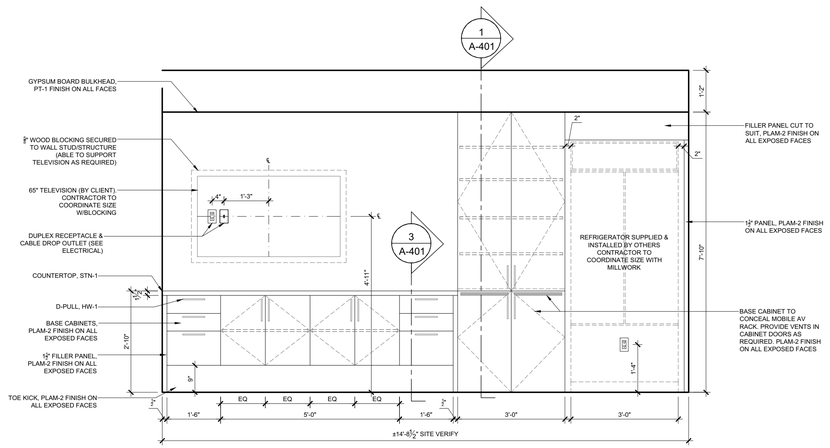
MUNICIPALITY OF CASSELMAN
OFFICE FIT-UP

1 INDUSTRIEL STREET CASSELMAN, ON

DRAWING

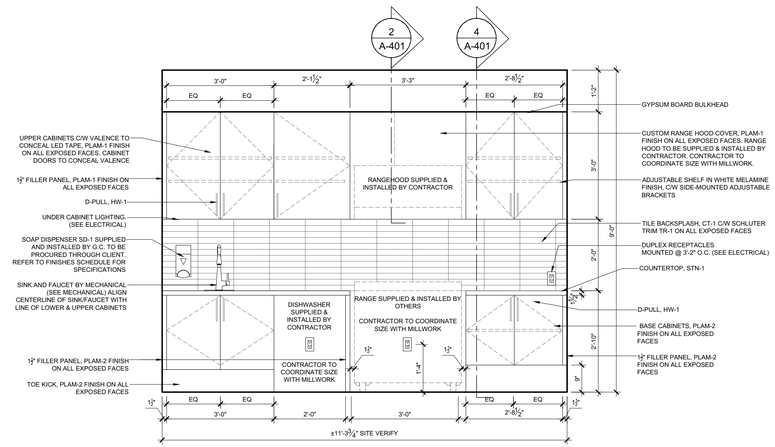
CUSTOM MILLWORK PLANS, ELEVATIONS & DETAILS

PROJECT NO.	22045	DRAWING NO.	A-303
SCALE -	1/2" = 1'-0"		
DRAWN -	MH		
CHECKED -	KB		
PLOT DATE -	24/03/2025	PLOTTED BY:	



1 A-305 LARGE MEETING ROOM 222 - ELEVATION A

SCALE = 1/2" = 1'-0"



2 A-305 LARGE MEETING ROOM 222 - ELEVATION B

SCALE = 1/2" = 1'-0"

3 A-305 PRINT & STORAGE ROOM 202 - ELEVATION A

SCALE = 1/2" = 1'-0"

4 A-305 PRINT & STORAGE ROOM 202 - ELEVATION B

SCALE = 1/2" = 1'-0"

MILLWORK GENERAL NOTES

1. THE CONTRACTOR IS TO REFER TO AND CROSS-REFERENCE NOTES, CONSTRUCTION PLANS AND DETAILS FOR MILLWORK LOCATIONS, INSTALLATION, CONSTRUCTION, AND FINISHING.
2. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR ALL MILLWORK.
3. ALL DIMENSIONS ARE TO BE SITE CONFIRMED AND VERIFIED AGAINST THE DRAWINGS.
4. THE CONTRACTOR IS TO CONFIRM THE ELEVATOR DOOR WIDTHS AND CAB DIMENSIONS, STAIRWELLS AND RELEVANT DOOR WIDTHS TO ENSURE THAT ALL MILLWORK COMPONENTS MAY BE DELIVERED AND INSTALLED.
5. WHERE UPPER UNITS ARE TO BE INSTALLED ENSURE THAT THE NEW OR EXISTING PARTITION CONSTRUCTION ARE ADEQUATELY REINFORCED

MILLWORK CONSTRUCTION QUALITY NOTES

1. IT IS INTENDED THAT ALL ARCHITECTURAL WOODWORK SPECIFIED IS TO MEET A.W.M.A.C. QUALITY STANDARDS AND SHALL CONFIRM TO THE GENERALLY ACCEPTED DEFINITIONS OF GOOD WORKMANSHIP, INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:
   - 1.1. THE WORK SHALL BE FABRICATED AND INSTALLED SQUARE, LEVEL, PLUMB AND STRAIGHT, AND TO THE REQUIRED LINES AND LEVEL.
   - 1.2. THE WORK SHALL BE NEATLY SCRIBED TO ADJOINING SURFACES, WITH MINIMUM CLEARANCES.
   - 1.3. EXPOSED JOINTS SHALL BE NEATLY EXECUTED, RIGID, TIGHT AND FLUSH WITH NO TOOL, MACHINE OR CROSS SANDING MARKS.
   - 1.4. PLASTIC LAMINATE SHALL BE APPLIED TO TOPS ENDS AND OTHER SURFACES SPECIFIED AND STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS. ALL JOINTS SHALL BE TIGHT AND FLUSH; INNER CORNERS LIGHTLY RADIUSED; EDGES BEVELED AND SMOOTHLY FILED OR SANDED WITH NO CHIPPING OR WEARING THROUGH OF SURFACE FINISH.
   - 1.5. FASTENINGS SHALL BE CONCEALED WHEREVER POSSIBLE.
   - 1.6. LAMINATE OR MELAMINE SHELVES ARE TO BE OF SEAMLESS CONSTRUCTION WITH MITRED JOINTS. BALANCE SHEETS AS REQUIRED, AS REQUIRED.

MILLWORK CABINETRY NOTES

1. THE CONTRACTOR IS TO SUBMIT CUTS OF ALL HARDWARE SPECIFIED FOR APPROVAL:
2. ALL CABINETRY UNITS ARE TO TAKE QUALITY LEVELERS AND GLIDES TO SUIT.
   - 2.1. ALL CABINETS TO TAKE SOCKETS AND SUPPORTS AS SPECIFIED; INSTALL FOUR (4) PER SHELF SPACED AT 76.2 MM (3") BEGINNING 152.4 MM (6") FROM THE BASE.
   - 2.2. DOOR AND DRAWER HARDWARE HINGES AND CATCHES AS SPECIFIED. CABINET DOORS TO HAVE HEAVY DUTY, SELF CLOSING HINGES.
   - 2.3. ALL MILLWORK TO HAVE CONCEALED FASTENERS.
   - 2.4. PULLS TO BE EQUIVALENT TO:
3. SURFACES TO BE CONSTRUCTED AS NOTED:
   - 3.1. CABINETRY SHELVING TO BE FIXED OR ADJUSTABLE AS SHOWN ON THE DETAILS.
   - 3.2. PARTICLE BOARD CONSTRUCTION AND ALL SHELVING TO TAKE A 12.7 MM (1./2") HARDWOOD NOSING ON SUBSTRATE.
   - 3.3. TOE SPACE: 3/4" - PRE-FINISHED PARTICLE BOARD OR SIMILAR. FINISH AS NOTED. SURFACE MOUNTED BASEBOARD IS TO BE APPLIED TO ALL EXPOSED MILLWORK BASES, UNLESS INDICATED OTHERWISE ON THE DRAWINGS. INSTALL FINISHING BASEBOARD ONLY AFTER INSTALLATION AND LEVELING OF THE MILLWORK UNIT IS COMPLETED.
   - 3.4. DOOR AND DRAWER FRONTS ARE TO BE CONSTRUCTED OF 15.9 MM (5/8") KILN-DRIED FIR PLYWOOD TO TAKE 1-1/2" SELF- EDGED FRONT APRON (EDGE), PLASTIC LAMINATE FINISH AS SPECIFIED.
   - 3.5. DOOR AND DRAWER FRONTS ARE TO BE RECESSED A MINIMUM OF 1.6 MM (1/16").
   - 3.6. COUNTER TOPS, AND SPLASH BACKS AS APPLICABLE, ARE TO BE CONSTRUCTED OF 19.05 MM (3/4") PARTICLE BOARD OR SIMILAR (NO ADDED UREA FORMALDEHYDE). FINISH AS NOTED: 1-1/2" SELF- EDGED FRONT APRON (EDGE), PLASTIC LAMINATE FINISH AS SPECIFIED.
   - 3.7. ALL CABINET INTERIORS ARE TO BE OF GABLE CONSTRUCTION OF 19.05 MM (3/4") PARTICLE BOARD OR SIMILAR (NO ADDED UREA FORMALDEHYDE). PLASTIC LAMINATE FINISH AS SPECIFIED.
   - 3.8. CONTRACTOR TO S/I FULL GABLES AT END OF UNIT FOR STABILITY. GABLE FINISH TO MATCH CUPBOARD DOORS.
4. CONTRACTOR TO S/I BLOCKING AS REQUIRED.
5. REFER TO ENGINEER'S DRAWINGS FOR DETAILS ON PLUMBING FIXTURES & EQUIPMENT AND ELECTRICAL CONNECTIONS.

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PROJECT NORTH

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824 Meath St. Suite 200 Ottawa, ON K1Z 6E8
613. 724. 7700 info@prty.ca

PROJECT

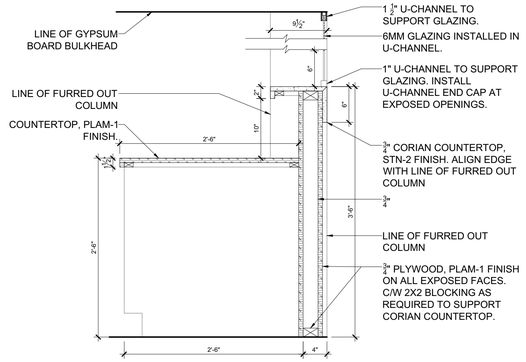
MUNICIPALITY OF CASSELMAN
OFFICE FIT-UP

1 INDUSTRIEL STREET CASSELMAN, ON

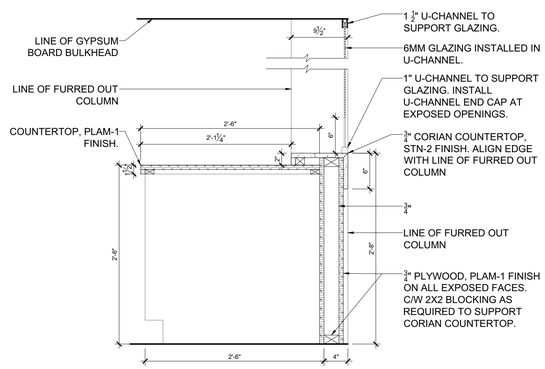
DRAWING

MILLWORK ELEVATIONS

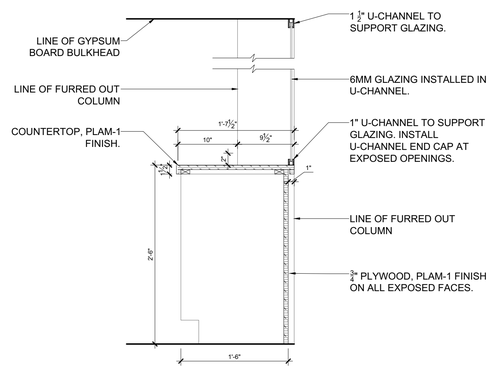
PROJECT NO.	22045	DRAWING NO.	A-305
SCALE -	1/2" = 1'-0"		
DRAWN -	MH		
CHECKED -	KB		
PLOT DATE -	24/03/2025	PLOTTED BY:	



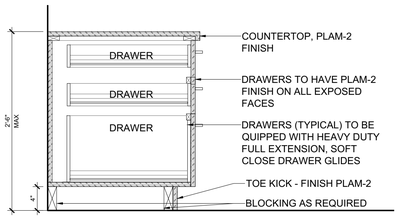
1 A-400 RECEPTION 200
MILLWORK SECTION @ UPPER TRANSACTION SURFACE
SCALE = 1" = 1'-0"



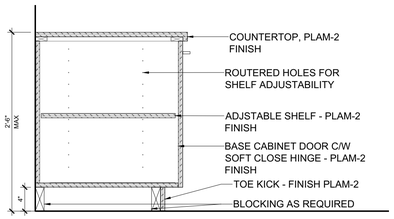
4 A-400 RECEPTION 200
MILLWORK SECTION @ LOWER TRANSACTION SURFACE
SCALE = 1" = 1'-0"



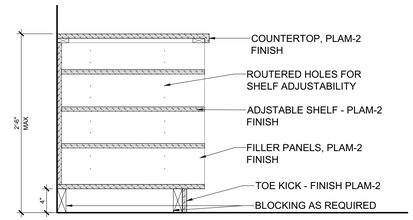
5 A-400 RECEPTION 200
MILLWORK SECTION @ COUNTER
SCALE = 1" = 1'-0"



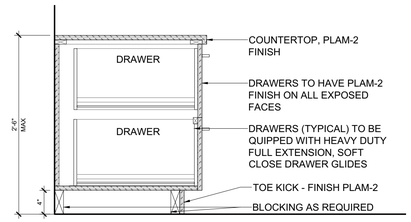
6 A-400 RECEPTION 200
MILLWORK SECTION @ DRAWERS
SCALE = 1" = 1'-0"



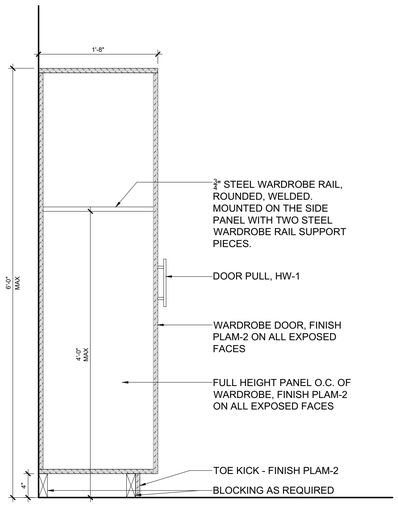
7 A-400 RECEPTION 200
MILLWORK SECTION @ CABINETS
SCALE = 1" = 1'-0"



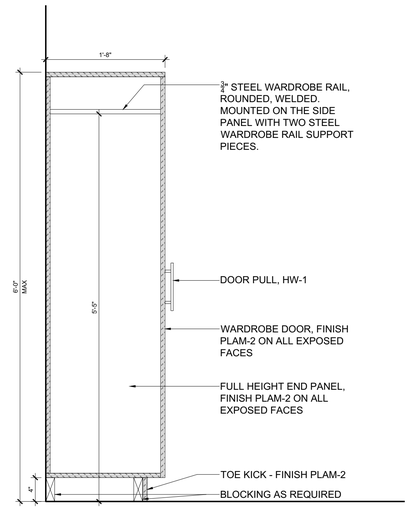
8 A-400 RECEPTION 200
MILLWORK SECTION @ OPEN SHELVES
SCALE = 1" = 1'-0"



9 A-400 RECEPTION 200
MILLWORK SECTION @ FILING CABINETS
SCALE = 1" = 1'-0"



10 A-400 RECEPTION 200
MILLWORK SECTION @ WARDROBE
SCALE = 1" = 1'-0"



11 A-400 RECEPTION 200
MILLWORK SECTION @ WARDROBE
SCALE = 1" = 1'-0"

MILLWORK GENERAL NOTES

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   - 1.3. EXPOSED JOINTS SHALL BE NEATLY EXECUTED, RIGID, TIGHT AND FLUSH WITH NO TOOL, MACHINE OR CROSS SANDING MARKS.
   - 1.4. PLASTIC LAMINATE SHALL BE APPLIED TO TOPS ENDS AND OTHER SURFACES SPECIFIED AND STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS. ALL JOINTS SHALL BE TIGHT AND FLUSH; INNER CORNERS LIGHTLY RADIUSED; EDGES BEVELED AND SMOOTHLY FILED OR SANDED WITH NO CHIPPING OR WEARING THROUGH OF SURFACE FINISH.
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   - 3.2. PARTICLE BOARD CONSTRUCTION AND ALL SHELVING TO TAKE A 12.7 MM (1./2") HARDWOOD NOSING ON SUBSTRATE.
   - 3.3. TOE SPACE: 3/4" - PRE-FINISHED PARTICLE BOARD OR SIMILAR. FINISH AS NOTED. SURFACE MOUNTED BASEBOARD IS TO BE APPLIED TO ALL EXPOSED MILLWORK BASES, UNLESS INDICATED OTHERWISE ON THE DRAWINGS. INSTALL FINISHING BASEBOARD ONLY AFTER INSTALLATION AND LEVELING OF THE MILLWORK UNIT IS COMPLETED.
   - 3.4. DOOR AND DRAWER FRONTS ARE TO BE CONSTRUCTED OF 15.9 MM (5/8") KILN-DRIED FIR PLYWOOD TO TAKE 1-1/2" SELF- EDGED FRONT APRON (EDGE), PLASTIC LAMINATE FINISH AS SPECIFIED.
   - 3.5. DOOR AND DRAWER FRONTS ARE TO BE RECESSED A MINIMUM OF 1.6 MM (1/16").
   - 3.6. COUNTER TOPS, AND SPLASH BACKS AS APPLICABLE, ARE TO BE CONSTRUCTED OF 19.05 MM (3/4") PARTICLE BOARD OR SIMILAR (NO ADDED UREA FORMALDEHYDE). FINISH AS NOTED: 1-1/2" SELF- EDGED FRONT APRON (EDGE), PLASTIC LAMINATE FINISH AS SPECIFIED.
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613. 724. 7700 info@prty.ca

PROJECT

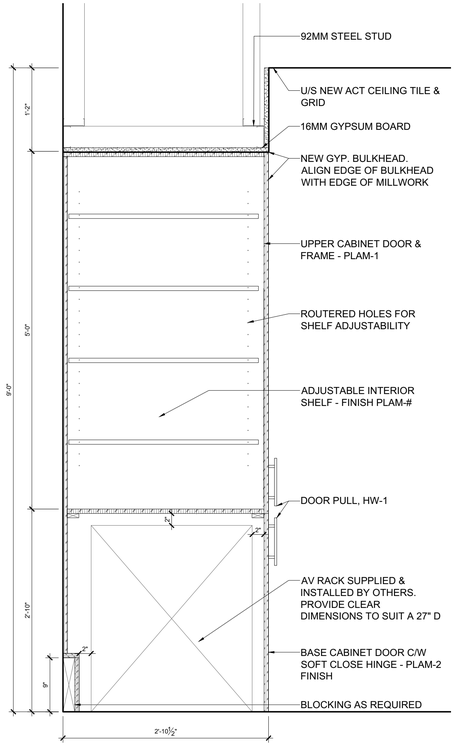
MUNICIPALITY OF CASSELMAN
OFFICE FIT-UP

1 INDUSTRIEL STREET CASSELMAN, ON

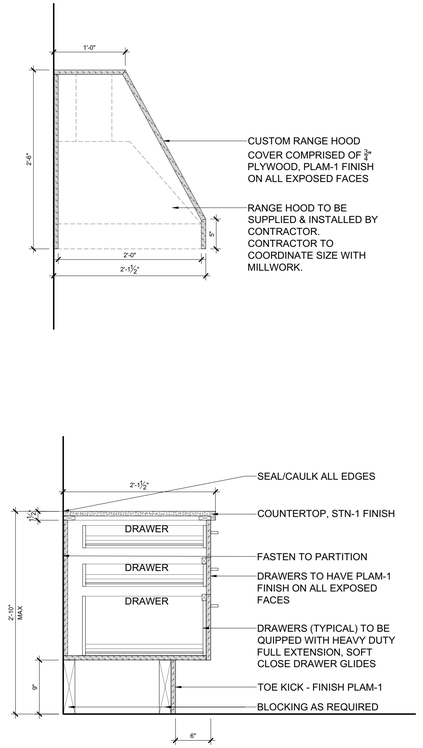
DRAWING

MILLWORK SECTIONS

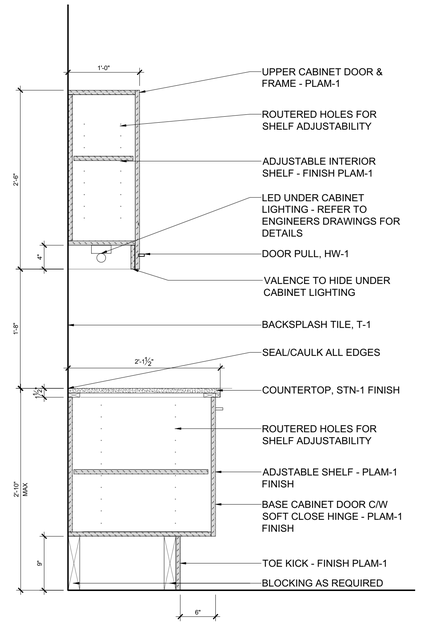
PROJECT NO.	22045	DRAWING NO.	
SCALE -	1/8" = 1'-0"		A-400
DRAWN -	MH		
CHECKED -	KB		
PLOT DATE -	24/03/2025	PLOTTED BY:	



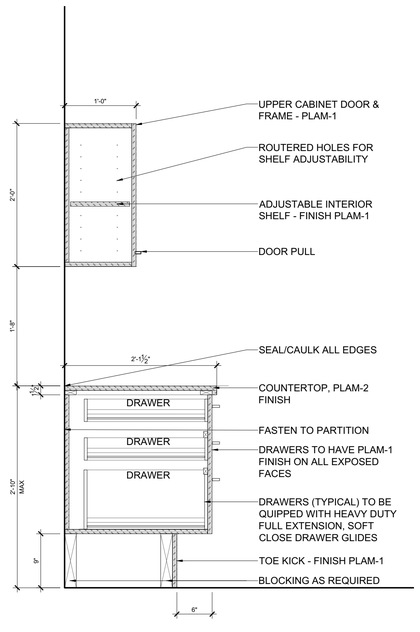
1 A-401 LARGE MEETING ROOM 224
MILLWORK SECTION @ AV CABINET
SCALE = 1" = 1'-0"



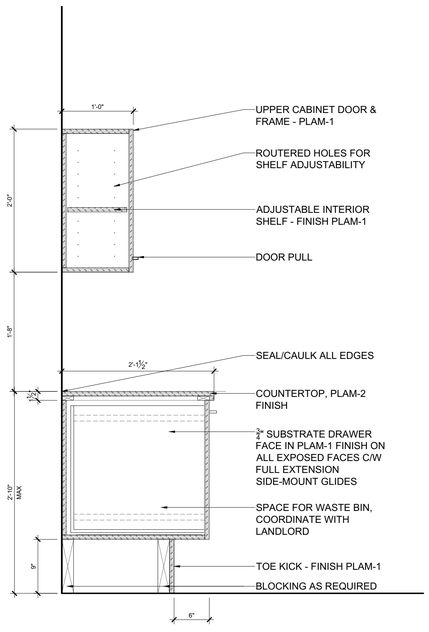
3 A-401 LARGE MEETING ROOM 224
MILLWORK SECTION @ DRAWERS
SCALE = 1" = 1'-0"



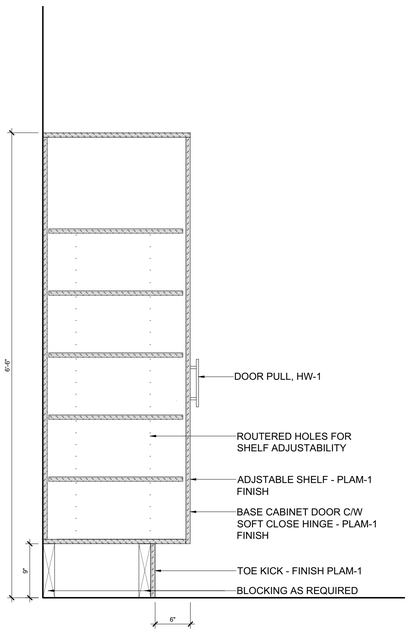
4 A-401 LARGE MEETING ROOM 224
MILLWORK SECTION @ CABINETS
SCALE = 1" = 1'-0"



5 A-401 PRINT ROOM 202
MILLWORK SECTION AT DRAWERS
SCALE = 1" = 1'-0"



6 A-401 PRINT ROOM 202
MILLWORK SECTION @ WASTE BIN
SCALE = 1" = 1'-0"



7 A-401 PRINT ROOM 202
MILLWORK SECTION @ PANTRY CABINET
SCALE = 1" = 1'-0"

MILLWORK GENERAL NOTES

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1. IT IS INTENDED THAT ALL ARCHITECTURAL WOODWORK SPECIFIED IS TO MEET A.W.M.A.C. QUALITY STANDARDS AND SHALL CONFIRM TO THE GENERALLY ACCEPTED DEFINITIONS OF GOOD WORKMANSHIP, INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:
   - 1.1. THE WORK SHALL BE FABRICATED AND INSTALLED SQUARE, LEVEL, PLUMB AND STRAIGHT, AND TO THE REQUIRED LINES AND LEVEL.
   - 1.2. THE WORK SHALL BE NEATLY SCRIBED TO ADJOINING SURFACES, WITH MINIMUM CLEARANCES.
   - 1.3. EXPOSED JOINTS SHALL BE NEATLY EXECUTED, RIGID, TIGHT AND FLUSH WITH NO TOOL, MACHINE OR CROSS SANDING MARKS.
   - 1.4. PLASTIC LAMINATE SHALL BE APPLIED TO TOPS ENDS AND OTHER SURFACES SPECIFIED AND STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS. ALL JOINTS SHALL BE TIGHT AND FLUSH; INNER CORNERS LIGHTLY RADIUSED; EDGES BEVELED AND SMOOTHLY FILED OR SANDED WITH NO CHIPPING OR WEARING THROUGH OF SURFACE FINISH.
   - 1.5. FASTENINGS SHALL BE CONCEALED WHEREVER POSSIBLE.
   - 1.6. LAMINATE OR MELAMINE SHELVES ARE TO BE OF SEAMLESS CONSTRUCTION WITH MITRED JOINTS. BALANCE SHEETS AS REQUIRED, AS REQUIRED.

MILLWORK CABINETRY NOTES

1. THE CONTRACTOR IS TO SUBMIT CUTS OF ALL HARDWARE SPECIFIED FOR APPROVAL:
2. ALL CABINETRY UNITS ARE TO TAKE QUALITY LEVELERS AND GLIDES TO SUIT.
   - 2.1. ALL CABINETS TO TAKE SOCKETS AND SUPPORTS AS SPECIFIED; INSTALL FOUR (4) PER SHELF SPACED AT 76.2 MM (3") BEGINNING 152.4 MM (6") FROM THE BASE.
   - 2.2. DOOR AND DRAWER HARDWARE HINGES AND CATCHES AS SPECIFIED. CABINET DOORS TO HAVE HEAVY DUTY, SELF CLOSING HINGES.
   - 2.3. ALL MILLWORK TO HAVE CONCEALED FASTENERS.
   - 2.4. PULLS TO BE EQUIVALENT TO:
3. SURFACES TO BE CONSTRUCTED AS NOTED:
   - 3.1. CABINETRY SHELVING TO BE FIXED OR ADJUSTABLE AS SHOWN ON THE DETAILS.
   - 3.2. PARTICLE BOARD CONSTRUCTION AND ALL SHELVING TO TAKE A 12.7 MM (1./2") HARDWOOD NOSING ON SUBSTRATE.
   - 3.3. TOE SPACE: 3/4" - PRE-FINISHED PARTICLE BOARD OR SIMILAR. FINISH AS NOTED. SURFACE MOUNTED BASEBOARD IS TO BE APPLIED TO ALL EXPOSED MILLWORK BASES, UNLESS INDICATED OTHERWISE ON THE DRAWINGS. INSTALL FINISHING BASEBOARD ONLY AFTER INSTALLATION AND LEVELING OF THE MILLWORK UNIT IS COMPLETED.
   - 3.4. DOOR AND DRAWER FRONTS ARE TO BE CONSTRUCTED OF 15.9 MM (5/8") KILN-DRIED FIR PLYWOOD TO TAKE 1-1/2" SELF- EDGED FRONT APRON (EDGE), PLASTIC LAMINATE FINISH AS SPECIFIED.
   - 3.5. DOOR AND DRAWER FRONTS ARE TO BE RECESSED A MINIMUM OF 1.6 MM (1/16").
   - 3.6. COUNTER TOPS, AND SPLASH BACKS AS APPLICABLE, ARE TO BE CONSTRUCTED OF 19.05 MM (3/4") PARTICLE BOARD OR SIMILAR (NO ADDED UREA FORMALDEHYDE). FINISH AS NOTED: 1-1/2" SELF- EDGED FRONT APRON (EDGE), PLASTIC LAMINATE FINISH AS SPECIFIED.
   - 3.7. ALL CABINET INTERIORS ARE TO BE OF GABLE CONSTRUCTION OF 19.05 MM (3/4") PARTICLE BOARD OR SIMILAR (NO ADDED UREA FORMALDEHYDE). PLASTIC LAMINATE FINISH AS SPECIFIED.
   - 3.8. CONTRACTOR TO S/I FULL GABLES AT END OF UNIT FOR STABILITY. GABLE FINISH TO MATCH CUPBOARD DOORS.
4. CONTRACTOR TO S/I BLOCKING AS REQUIRED.
5. REFER TO ENGINEER'S DRAWINGS FOR DETAILS ON PLUMBING FIXTURES & EQUIPMENT AND ELECTRICAL CONNECTIONS.

REV.	DESCRIPTION	DATE
04	ISSUED FOR TENDER	24/MAR/2025
03	ISSUED FOR PERMIT	18/MAR/2025
02	ISSUED FOR 99% REVIEW	24/FEB/2025
01	ISSUED FOR 66% REVIEW	12/MAY/2023

SEAL

Not for construction unless SEALED and SIGNED

PROJECT NORTH

PYE & RICHARDS - TEMPRANO & YOUNG ARCHITECTS INC.
824 Meath St. Suite 200 Ottawa, ON K1Z 6E8
613. 724. 7700 info@prty.ca

PROJECT

MUNICIPALITY OF CASSELMAN
OFFICE FIT-UP

1 INDUSTRIEL STREET CASSELMAN, ON

DRAWING

MILLWORK SECTIONS

PROJECT NO.	22045	DRAWING NO.	A-401
SCALE -	1/8" = 1'-0"		
DRAWN -	MH		
CHECKED -	KB		
PLOT DATE -	24/03/2025	PLOTTED BY:	

NOTE: The application/location for the materials indicated is not limited to the list below and is to be used in conjunction with and may be supplemented by the Schedules, and Drawings.

DIVISION 06 – WOOD, PLASTICS AND COMPOSITES

CODE	ITEM	DESCRIPTION	APPLICATION / LOCATION	SAMPLE IMAGE
HW-1	Millwork Hardware - Pulls	Manufacturer: Richelieu Product: Contemporary Steel Pull - 205 Model: 7996160195 Finish: Brushed Nickel Size: 160mm (ctr – ctr), 200mm Total length	Kitchenette & Reception Desk Millwork – Refer to Millwork Drawings	
HW-2	Millwork Hardware – Pull	Manufacturer: Richelieu Product: Contemporary Steel Pull - 205 Model: 7996160195 Finish: Brushed Nickel Size: 298mm (ctr – ctr), 338mm Total length	Ladder Millwork – Refer to Millwork Drawings	
DP-1	Door Pull	Manufacturer: Richelieu Product: Modern Stainless Steel Pull 2849 Model: 28592170 Finish: Brushed Nickel Size: 592mm (ctr – ctr), 656mm Total length	Barn Door D-200	
PLAM-1	Plastic Laminate	Manufacturer: Formica Colour: Pearl 934	Upper Cabinets – Large Meeting Room 224	
PLAM-2	Plastic Laminate	Manufacturer: Formica Colour: Swede Rift Oak 8676	Lower Cabinets – Large Meeting Room 224	

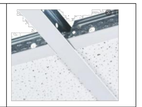
CODE	ITEM	DESCRIPTION	APPLICATION / LOCATION	SAMPLE IMAGE
T-3	Floor Tile	Manufacturer: Centura Product: Lakeland Colour: Haya Size: 6" x 36" Thickness: 9mm Grout Colour: 939 Mist Installation: Brick	Washrooms. Refer to Floor Finishes Plan and Page A-30 for Locations	
PT-1	Paint	Manufacturer: Sherwin Willaims Colour: Pure White SW 7005 Finish: Eggshell	General Paint	
PT-2	Paint	Manufacturer: Sherwin Williams Colour: Bluebird Feather SW 9062 Finish: Eggshell	Accent Paint – Refer to Wall Finishes Plan for Locations	
PT-3	Paint	Manufacturer: Sherwin Williams Colour: In the Navy SW 9178 Finish: Eggshell	Accent Paint – Refer to Wall Finishes Plan for Locations	
PT-4	Door Frame Paint	Manufacturer: Sherwin-Williams Colour: Contractor to match Teknion Demountable Frame Finish Finish: Refer to sheen chart in NMS for paint finish requirements	Door Frames supplied by Contractor & Door Frames that are existing to remain – Refer to Door Schedule	
B-1	Rubber Base	Manufacturer: Tarkett Product: Rubber Base Profile: Traditional Height: 4" Colour: 08 Icicle W	General	
B-2	Rubber Base	Manufacturer: Tarkett Product: Rubber Base Profile: Traditional Height: 4" Colour: To be selected from manufacturers full range of navy blue	Accent	

CODE	ITEM	DESCRIPTION	APPLICATION / LOCATION	SAMPLE IMAGE
STN-1	Quartz	Manufacturer: Hanstone Colour: Calacatta Venato Thickness: 2cm Finish: Polished	Quartz Countertop – Large Meeting Room 224	
STN-2	Solid Surface	Manufacturer: Corian Colour: Glacier White Thickness: ½"	Transaction Surfaces - Reception 200	

DIVISION 08 – OPENINGS

FLM-1	Glazing Film	Supplier: Boss Image Manufacturer: Solyx Style: Symmetric Fine Dot Gradient Number: SJX-0580	Installed where indicated on Glazing Elevations – Refer to drawings for more details	

DIVISION 09 – FINISHES

ACT-1	Acoustic Ceiling Tile	Supply & Install new T-Bar Grid: Manufacturer: Armstrong Style: Prelude XL Size 15/16" Exposed Tee Colour: White Size: 500x1500mm		
	Feltwork Blades	Supply & Install new T-Bar Grid: Manufacturer: Armstrong Style: 8' Ebbs & Flows Kit Size 12" x 96" Edge: Square Thickness: 3/8" Colour: Whisper	Reception Area 200 & Council Chamber 225	

CODE	ITEM	DESCRIPTION	APPLICATION / LOCATION	SAMPLE IMAGE
TR-1	Tile Trim	Manufacturer: Schluter or approved equivalent Type: Jolly AC Material: Colour Coated Aluminum Finish: To be selected from Manufacturer's full range during Shop Drawing Review. Size: Height to suit thickness of backsplash tile.	To be installed on all exposed edges of backsplash tile.	
TR-2	Transition Strip between flooring types	Manufacturer: Schluter or approved equivalent Type: Schiene AE Finish: Satin Anodized Aluminum Size: Height to suit thickness of flooring materials Note: For installation as transition between flooring types – secure transition strip to concrete using contact tape c/w 2mm feather finish as required to secure in place. Feather finish to be gradual build-up starting 24" out from line of transition. Feather up floor on as required to meet height of transition strip. Contractor to provide shop drawing for transition strip installation and to also secure a pre-installation meeting with designer.		
WC-1	Wall Vinyl Covering	Manufacturer: Versa Wallcovering Colour: Pretoria A200-183 Style: Senza Installation: Straight Hang / Align at Arrows Pattern Repeat: V: 24"	Vinyl Wall Covering – Refer to Wall Finishes Plan for Locations	
WC-2	Wall Vinyl Covering	Manufacturer: Versa Wallcovering Colour: Nettuno A-200-327 Style: Senza Installation: Straight Hang / Align at Arrows Pattern Repeat: V: 24"	Vinyl Wall Covering – Refer to Wall Finishes Plan for Locations	

CODE	ITEM	DESCRIPTION	APPLICATION / LOCATION	SAMPLE IMAGE
LVT-1	Heterogeneous Tile	Supplier: Polyflor Collection: Expona Flow PUR Colour: Light Grey Concrete Roll Size: 2m x 20m Thickness: 2.0mm Installation: Brick	Refer to floor finish drawings for locations	
LVT-2	Carpet Tile	Supplier: Ploylfor Collection: Expona Commercial Wood PUR Colour: Wilder Oak Plank Size: 184.2mm x 1219.2mm Thickness: 2.5mm Installation: Brick	Refer to floor finish drawings for locations	
SDT-1	Electrotile Static Dissipative	Manufacturer: American Biltrite or approved equivalent Collection: Electrotile Static Dissipative Colour: White/Grey SDT-130 Size: 77mm x 77mm (3" x 3")	Refer to floor finish drawings for locations.	
T-1	Porcelain Tile	Manufacturer: Olympia Tile + Stone Product: Cristallo Tile Colour: Teal Blue Size: 2"x12" Finish: Glossy Grout Colour: To be selected from Manufacturer's full range during Shop Drawing Review. Installation: Install with long length of tile horizontal. Refer to Elevations on Page A-305.	Backsplash Tile. Refer to Wall Finishes Plan and Page A-305 for Locations	
T-2	Wall Tile	Manufacturer: Centura Product: Neeko Colour: White Size: 24" x 48" Thickness: 9mm Grout Colour: To be selected from Manufacturer's full range during Shop Drawing Review. Installation: Install with long length of tile horizontal. Refer to Elevations on Page A-302.	Washrooms. Refer to Wall Finishes Plan and Page A-302 for Locations	

CODE	ITEM	DESCRIPTION	APPLICATION / LOCATION	SAMPLE IMAGE
WV-1	Door Wood Veneer	Manufacturer: TBD Colour: Contractor to match door finish selected for Demountable Partition Doors, and provide sample during shop drawing review for approval. Note: If solid door laminate colour is selected, then the contractor is to paint the doors supplied by the contractor to match the demountable partition door finish colour.	Doors supplied by the Contractor – Refer to Door Schedule	
WWC-1	Wall Vinyl Covering	Manufacturer: Koroseal Product: Reatec Architectural Film Style: Ash Straight / Flat Grain 3 Code: BC-5493	Vinyl Wall Covering – Refer to Wall Finishes Plan for Locations	

DIVISION 10 – SPECIALTIES

P3	Glazed Demountable Partition System	Manufacturer: Teknion or approved equivalent Product: Altos Demountable System Glazing Type: 6mm Double Glass (laminated-tempered) Trim & Frame Finish: Black, to be selected from Manufacturer's full range of finishes Door Finish: To be selected from Manufacturer's full range of solid and woodprint finishes STC :45	Refer to Construction Plan for Locations	Frame Finish  Door Finish 

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SEAL

PROJECT NORTH

Not for construction unless SEALED and SIGNED

PROJECT

MUNICIPALITY OF CASSELMAN
OFFICE FIT-UP

1 INDUSTRIEL STREET CASSELMAN, ON

DRAWING

FINISHES SCHEDULE

PROJECT NO.	22045
SCALE -	1/8" = 1'-0"
DRAWN -	MH
CHECKED -	KB
PLOT DATE -	24/03/2025

DRAWING NO.

A-500

PLOTTED BY:

PLUMBING PIPING LEGEND

—DCW—	DOMESTIC COLD WATER	—IW—	INDUSTRIAL WASTE ABOVE FLOOR OR GROUND
— CA —	COMPRESSED AIR		
— CAI —	COMPRESSED AIR INTAKE	—IW—	INDUSTRIAL WASTE BELOW FLOOR OR GROUND
—CWW	CLEAR WATER WASTE ABOVE FLOOR	—KW—	KITCHEN WASTE ABOVE FLOOR/GROUND
—CWW—	CLEAR WATER WASTE BELOW FLOOR OR GROUND	—KW—	KITCHEN WASTE BELOW FLOOR/GROUND
		—LPG—	LIQUID PETROLEUM GAS
—CWV—	CLEAR WATER WASTE VENT	— G —	NATURAL GAS
— DI —	DEIONIZED WATER SUPPLY	— HG —	NATURAL GAS – HIGH PRESSURE
— DIR —	DEIONIZED WATER RETURN	— MG —	NATURAL GAS – MEDIUM PRESSURE
—GW—	GRAY WATER ABOVE FLOOR OR GROUND	— PD —	PUMP DISHARGE
—GW—	GRAY WATER BELOW FLOOR OR GROUND	— RW —	RECLAIMED WATER
—DHW—	DOMESTIC HOT WATER	— RO —	REVERSE OSMOSIS WATER
—HW140—	HOT WATER (140˚F)	—ROR—	REVERSE OSMOSIS WATER RETURN
—HWR140—	HOT WATER RETURN (140˚F)	— SAN —	SANITARY SEWER ABOVE FLOOR/GROUND
— HW160 —	HOT WATER (160˚F)	— SAN —	SANITARY SEWER BELOW FLOOR/GROUND
—HWR160—	HOT WATER RETURN (160˚F)	— — V — —	SANITARY SEWER VENT
—DHWR—	DOMESTIC HOT WATER RETURN	— SD —	STORM DRAIN ABOVE FLOOR/GROUND
—SCW—	SOFT COLD WATER	— SD —	STORM DRAIN BELOW FLOOR/GROUND
—SHW—	SOFT HOT WATER	—SSD—	SECONDARY STORM DRAIN ABOVE FLOOR OR GROUND
—SHWR—	SOFT HOT WATER RETURN		
—FOR—	FUEL OIL RETURN	—SSD—	SECONDARY STORM DRAIN BELOW FLOOR OR GROUND
— FO —	FUEL OIL SUPPLY		
— ICW —	INDUSTRIAL NONPOTABLE COLD WATER	—SUB—	SUBSURFACE STORM DRAIN
— IHW —	INDUSTRIAL NONPOTABLE HOT WATER	— TP —	TRAP PRIMER
—IHWR—	INDUSTRIAL NONPOTABLE HOT WATER RETURN	— TW —	TEMPERED WATER
		—TWR—	TEMPERED WATER RETURN
—ISCW—	INDUSTRIAL NONPOTABLE SOFT COLD WATER	—VAC—	VACUUM
		—VEX—	VACUUM EXHAUST
—ISHW—	INDUSTRIAL NONPOTABLE SOFT HOT WATER	— WO —	WASTE OIL
		— —WOV— —	WASTE OIL VENT
—ISHWR—	INDUSTRIAL NONPOTABLE SOFT HOT WATER RETURN		DEMOLITION PIPING
			DEMOLITION EQUIPMENT
— —IV— —	INDUSTRIAL VENT		

GENERAL ABBREVIATIONS

˚F	DEGREES FAHRENHEIT	MFR	MANUFACTURER
˚C	DEGREES CELSIUS	MIN	MINIMUM
ø	DIAMETER	MTD	MOUNTED
AD	ACCESS DOOR	N/A	NOT APPLICABLE
ADJ	ADJUSTABLE	NC	NORMALLY CLOSED OR NOISE CRITERIA
AFF	ABOVE FINISHED FLOOR	NIC	NOT IN CONTRACT
AFG	ABOVE FINISHED GRADE	NO	NORMALLY OPEN OR NUMBER
BFF	BELOW FINISHED FLOOR	NOM	NOMINAL
BHP	BRAKE HORSEPOWER	NTS	NOT TO SCALE
BOD	BOTTOM OF DUCT	OB	OCTAVE BAND
BMS	BUILDING MANAGEMENT CONTROL SYSTEM	OC	ON CENTER
BOP	BOTTOM OF PIPE	OD	OUTSIDE DIAMETER
BTU	BRITISH THERMAL UNIT	OV	OUTLET VELOCITY
BTUH	BRITISH THERMAL UNIT PER HOUR	PD	PRESSURE DROP
CLG	CEILING	PH	PHASE
COL	COLUMN	POC	POINT OF CONNECTION
CUF	CUBIC FEET	POD	POINT OF DEMARCATION
DB	DRY BULB TEMPERATURE	POS	POSITION OR POSITIVE
DN	DOWN	PSIG	POUNDS PER SQUARE INCH GAUGE
DP	DIFFERENTIAL PRESSURE	QTY	QUANTITY
DWG	DRAWING	RC	ROOM CRITERIA (NOISE)
EA	EACH	RET	RETURN
EFF	EFFICIENCY	REQD	REQUIRED
ELEV	ELEVATION	RH	RELATIVE HUMIDITY
ENT	ENTERING	RM	ROOM
EQUIP	EQUIPMENT	RPM	REVOLUTIONS PER MINUTE
EXH	EXHAUST	SCH	SCHEDULE
EXP	EXPANSION	SHT	SHEET
(E)	EXISTING	SPEC	SPECIFICATION
EXTRM	EXISTING TO BE REMOVED	SQ	SQUARE
ETR	EXISTING TO REMAIN	SQFT	SQUARE FEET
FA	FIRE ALARM	STD	STANDARD
FD	FLOOR DRAIN	SUP	SUPPLY
FLR	FLOOR	TEMP	TEMPERATURE
FPM	FEET PER MINUTE	TO	TRANSFER OPENING
FT	FEET	TOD	TOP OF DUCT
FT/SEC	FEET PER SECOND	TON	TONS OF REFRIGERATION
GA	GAUGE	TOP	TOP OF PIPE
GAL	GALLONS	TYP	TYPICAL
GPH	GALLONS PER HOUR	UNO	UNLESS NOTED OTHERWISE
GPM	GALLONS PER MINUTE	UTR	UP THROUGH ROOF
HP	HORSEPOWER	V	VENT
HR	HOUR	VAV	VARIABLE AIR VOLUME
HZ	HERTZ	VEL	VELOCITY
ID	INSIDE DIAMETER	VFD	VARIABLE FREQUENCY DRIVE
IN	INCHES	VOL	VOLUME
KW	KILOWATT	VTR	VENT THROUGH ROOF
LB	POUND	W	WIDTH
LF	LINEAR FEET	W/	WITH
LVG	LEAVING	W/O	WITHOUT
MAX	MAXIMUM	WB	WET BULB TEMPERATURE
MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR	WF	WIDE FLANGE
		WG	WATER GAUGE
MEZZ	MEZZANINE	WT	WEIGHT

AIR SYSTEM LEGEND

	RECTANGULAR SUPPLY/ OUTSIDE AIR DUCT UP	CFM	SPACE PRESSURIZATION ARROW
	RECTANGULAR SUPPLY/ OUTSIDE AIR DUCT DOWN	DL/ UC	DOOR LOUVER / UNDERCUT DOOR
	RECTANGULAR RETURN/ RELIEF AIR DUCT UP		SUPPLY AIRFLOW ARROW
	RECTANGULAR RETURN/ RELIEF AIR DUCT DOWN		RETURN OR EXHAUST AIRFLOW ARROW
	RECTANGULAR EXHAUST AIR DUCT UP		AIR VOLUME TRAVERSE STATION
	RECTANGULAR EXHAUST AIR DUCT DOWN		CEILING DIFFUSER (SUPPLY)
	ROUND SUPPLY/ OUTSIDE AIR DUCT UP		RETURN AIR GRILLE OR REGISTER
	ROUND SUPPLY/ OUTSIDE AIR DUCT DOWN		EXHAUST AIR GRILLE OR REGISTER
	ROUND RETURN/ RELIEF AIR DUCT UP		LIGHT TROFFER DIFFUSER
	ROUND RETURN/ RELIEF AIR DUCT DOWN		
	ROUND EXHAUST AIR DUCT UP		DIFFUSER WITH FLOW DIRECTION. NO FLOW ARROWS INDICATES STANDARD 4-WAY PATTERN.
	ROUND EXHAUST AIR DUCT DOWN		
	DUCT WITH LINING OR SOUND INSULATION		CIRCULAR CEILING DIFFUSER (SUPPLY)
	STAINLESS STEEL DUCT		SIDE WALL GRILLE
	PVC COATED DUCT	H X	HUMIDITY SENSOR / HUMIDISTAT & NUMBER
	DOUBLE WALL DUCT	S X	SENSOR AND NUMBER
ACD	AUTOMATIC CONTROL DAMPER FOR ROUND AND RECTANGULAR DUCT	SW X	SWITCH AND NUMBER
BDD	BACKDRAFT DAMPER FOR ROUND AND RECTANGULAR DUCT	T X	TEMPERATURE SENSOR / THERMOSTAT & ZONE NUMBER
FD	FIRE DAMPER FOR ROUND AND RECTANGULAR DUCT	TS X	TEMPERATURE SENSOR / THERMOSTAT W/ VANDAL GUARD & ZONE NUMBER
SD	SMOKE DAMPER FOR ROUND AND RECTANGULAR DUCT	YM	REMOTE DAMPER OPERATOR
SFD	COMBINATION SMOKE/FIRE DAMPER FOR ROUND AND RECTANGULAR DUCT	DP	DIFFERENTIAL PRESSURE SENSOR
SGD	SLIDE GATE DAMPER FOR ROUND AND RECTANGULAR DUCT	SD	DUCT SMOKE DETECTOR
VD	MANUAL VOLUME DAMPER FOR ROUND AND RECTANGULAR DUCT	SP	STATIC PRESSURE SENSOR
	FLEXIBLE CONNECTION	CO	CARBON MONOXIDE SENSOR
OR	ROOF EXHAUST FAN (SHOWN ON ROOF)	CO_2	CARBON DIOXIDE SENSOR
		AA-## / ##	DIFFUSER TYPE – DIFFUSER SIZE / DIFFUSER CFM
OR	ROOF EXHAUST FAN (SHOWN ON FLOOR PLAN)	CTE	CONNECT TO EXISTING

PLUMBING SYMBOL LEGEND

	PIPING TURN DOWN OR DROP		WALL HYDRANT
	PIPING TURN UP OR RISE		UNION
	PIPING TEE DOWN OR DROP		FLOW SWITCH
	PIPING TEE UP OR RISE		PRESSURE SWITCH
	P-TRAP		EXPANSION JOINT
	GATE VALVE		AUTOMATIC AIR VENT
	CHECK VALVE		PRESSURE GAUGE WITH GAUGE COCK
	BALL VALVE		VALVE ON PIPING RISE OR DROP
	MIXING VALVE		TRAP PRIMER
	BUTTERFLY VALVE		THERMOMETER
	GLOBE VALVE		WATER HAMMER ARRESTOR
	PRESSURE REDUCING VALVE		DIRECTION OF FLOW
	BACKFLOW PREVENTER		SLOPE & DIRECTION OF FALL
	BALANCING VALVE		REDUCER OR INCREASER
	AUTOMATIC FLOW CONTROL VALVE		POINT OF CONNECTION
	TEMP. & PRESSURE RELIEF VALVE		POINT OF DEMARCATION
	PRESSURE RELIEF VALVE	ø	DIAMETER
	MOTORIZED SHUT-OFF VALVE	☐	SQUARE FEET
	SOLENOID VALVE		DRAIN RECEPTOR
	STRAINER		FLOOR DRAIN
	FLOOR CLEAN OUT		AREA DRAIN
	WALL CLEAN OUT		FLOOR SINK
	EXTERIOR CLEAN OUT		ROOF DRAIN
	CAPPED PIPE / CLEAN OUT		SECONDARY ROOF DRAIN
	FLEXIBLE CONNECTION (PIPE)	(E)	EXISTING
	HOSE BIBB		BY-PASS TERMINAL UNIT

TAGS & CALLOUTS

EQUIP #	EQUIPMENT REQUIRING ELECTRICAL SERVICE. REFER TO SCHEDULES FOR PERFORMANCE REQUIREMENTS.	A	REVISION CALLOUT
		1	KEYNOTE CALLOUT
EQUIP #	EQUIPMENT NOT REQUIRING ELECTRICAL SERVICE. REFER TO SCHEDULES FOR PERFORMANCE REQUIREMENTS.		POINT OF CONNECTION
			POINT OF DEMARCATION
1 P3.1	SECTION CALLOUT SECTION DESIGNATION SHEET NUMBER	E	FURNISHED & INSTALLED BY ELECTRICAL
		M	FURNISHED & INSTALLED BY MECHANICAL
A P3.1	DETAIL CALLOUT DETAIL DESIGNATION SHEET NUMBER	P	FURNISHED AND INSTALLED BY PLUMBING
		S 1 / E 1	HEAT TRACE CIRCUIT START AND END HEAT TRACE CIRCUIT NUMBER

FIRE PROTECTION LEGEND

△	PORTABLE FIRE EXTINGUISHER

GENERAL NOTES

1. ALL DRAWINGS ARE DIAGRAMMATIC ONLY. THE ARRANGEMENTS OF EQUIPMENT SHOWN ARE APPROXIMATIONS ONLY AND MAY BE ALTERED BY THE ENGINEERS TO MEET THE REQUIREMENTS OF THE PROJECT. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE ARCHITECT'S, INTERIOR DESIGNER, AND MECHANICAL DRAWINGS FOR LOCATION OF ALL LUMINARIES, SWITCHES, DEVICES, OUTLETS, FURNITURE FEEDING POINTS, DIMENSIONS, MOUNTING HEIGHTS, AND CONSTRUCTION DETAILS.
2. IN EVERY INSTANCE WHERE IT IS REQUIRED IN THE SPECIFICATION OR ON DRAWING THAT EQUIPMENT AND MATERIALS BE REMOVED FROM EXISTING LOCATIONS AND RE-INSTALLED, EITHER IN WHOLE OR IN PART IN NEW LOCATIONS, ALL SUCH EQUIPMENT AND MATERIALS SHALL BE THOROUGHLY CLEANED AND WHERE NECESSARY PUT INTO GOOD OPERATING CONDITION BEFORE BEING RE-INSTALLED IN THE NEW LOCATION. TEST ALL PARTS OF THE RE-USED OR RELOCATED ELECTRICAL EQUIPMENT AND CORRECT ALL FAULTS AND GROUNDS.
3. ALL SLAB OPENINGS SHALL BE X-RAYED AND REVIEWED WITH LANDLORD AND BASE BUILDING STRUCTURAL CONSULTANT. CONTRACTOR SHALL X-RAY THE FLOOR AND SUBMIT TO BASE BUILDING STRUCTURAL ENGINEER FOR WRITTEN APPROVAL AT LEAST 72 HOURS PRIOR TO ANY CORE DRILLING ON THE BUILDING. THE CONTRACTOR SHALL INCLUDE THE COST OF STRUCTURAL ENGINEER. COORDINATE ALL CORE DRILLING WITH LANDLORD'S SITE REPRESENTATIVE AND TENANT. ALL NOISY WORK SHALL BE PERFORMED AFTER HOURS.
4. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LANDLORD'S GUIDELINES AND SHALL ADHERE TO THE REQUIREMENTS STATED IN THE BASE BUILDING CONSTRUCTION MANUAL.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL WORK WITH ALL OTHER TRADES, CONSULTANTS, TENANT & LANDLORD. ALL WORK SHALL BE SCHEDULED AND CARRIED OUT IN SUCH A MANNER TO ENSURE CONTINUED AND NON-INTERRUPTED OPERATION OF EXISTING FACILITY.
6. ALL OPENINGS IN BUILDING RISER, IF APPLICABLE, SHALL BE SEALED WITH APPROVED FIRE STOP MATERIAL. ANY FIRE STOPPING MATERIAL REMOVED WILL BE REPLACED WITH A SUITABLE AND APPROVED FIRE STOPPING MATERIAL AND SHALL BE INSTALLED AS PER BUILDING AND FIRE CODE.
7. ALL PIPE PENETRATIONS THROUGH FIRE RATED WALLS & FLOORS SHALL BE SEALED WITH FIRE STOP MATERIAL. FIRE STOP MATERIAL SHALL BE THAT WHICH IS APPROVED BY THE LANDLORD FOR USE IN THE BUILDING. REFER TO BASE BUILDING CONSTRUCTION MANUAL FOR FIRE STOPPING REQUIREMENTS.
8. SEAL AIR-TIGHT AROUND ALL DUCT, PIPE, CONDUIT & WIRE PENETRATIONS THROUGH PARTITIONS, BAFFLES ABOVE CEILINGS & THROUGH FLOORS THAT ARE NOT FIRE RATED.
9. COORDINATE WITH TENANT & LANDLORD TO CONFIRM EQUIPMENT, SYSTEMS & DEVICES TO REMAIN.
10. PROVIDE TEMPORARY FILTERS ON ALL BASE BUILDING RETURN AIR OPENINGS, AND TRANSFER DUCTS CONNECTING TO THE ADJACENT TENANT SPACE THAT REMAIN OPERATIONAL DURING CONSTRUCTION. FILTERS SHALL HAVE A MERV RATING OF 13. FILTERS SHALL BE REPLACED WEEKLY & SHALL BE REMOVED UPON COMPLETION OF CONSTRUCTION.
11. ALL FILTERS IN BASE BUILDING AIR HANDLING EQUIPMENT SERVING THE CONSTRUCTION AREA SHALL BE REPLACED UPON COMPLETION OF CONSTRUCTION.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REFINISHING OF DAMAGED BUILDING AREAS AND FINISHES AFFECTED BY THE WORK AS OUTLINED UNDER SCOPE OF WORK OF THIS PROJECT.
13. ALL INSTALLATIONS WITHIN EXISTING AREAS SHALL BE COORDINATED WITH LANDLORD AND BASE BUILDING MANAGEMENT. INSTALLATION MUST BE PERFORMED IN A MANNER TO ELIMINATE ANY INTERFERENCES TO STAFF AND NORMAL OPERATION OF THE FACILITY.
14. THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION AND DISTRIBUTION OF TEMPORARY POWER WITHIN THE PREMISES DURING THE CONSTRUCTION PERIOD. EXPOSED ELECTRICAL CORDS OUTSIDE THE LEASED PREMISES SHALL NOT BE PERMITTED.
15. DIMENSIONS ON DRAWINGS ARE EXPRESSED IN METRIC UNITS AND FLOWS ON DRAWINGS ARE EXPRESSED IN IMPERIAL UNITS.
16. ALL HVAC CONTROLS WORK SHALL BE PREFORMED BY THE BASE BUILDING HVAC CONTROLS CONTRACTOR, CONVERGINT TECHNOLOGIES. CONTRACTOR SHALL CARRY BASE BUILDING HVAC CONTROLS CONTRACTOR FOR ALL HVAC CONTROLS WORK. CONTACT OMAR YAKOBI: OMAR.YAKOBI@CONVERGINT.COM OR (905) 602-8622.
17. ALL SPRINKLER AND FIRE PROTECTION WORK SHALL BE PERFORMED BY THE A SPRINKLER CONTRACTOR APPROVED TO DO WORK IN THE BUILDING. REFER TO TENANT DESIGN AND CONSTRUCTION MANUAL.
18. ALL TESTING, ADJUSTING, AND BALANCING (TAB) WORK SHALL BE PERFORMED BY AN INDEPENDENT AIR AND WATER BALANCING CONTRACTOR APPROVED TO DO WORK IN THE BUILDING. REFER TO TENANT DESIGN AND CONSTRUCTION MANUAL.
19. ANY SHUTDOWN, DRAINAGE, AND/OR FILLING OF BASE BUILDING SYSTEMS AND/OR SERVICES SHALL BE DONE BY THE LANDLORD'S BUILDING MANAGEMENT STAFF. SCHEDULE & COORDINATE ANY SHUTDOWNS WITH THE LANDLORD AT LEAST 72 HOURS IN ADVANCE. CONTRACTOR SHALL FOLLOW ALL LANDLORD'S INSTRUCTIONS, & SHALL CARRY ALL COSTS ASSOCIATED WITH THIS WORK IN THE TENDER PRICE.
20. ALL NOISY WORK (CORE DRILLING, ETC.) SHALL BE PERFORMED AFTER HOURS AND SHALL BE COORDINATED WITH THE LANDLORD & THE FACILITY AT LEAST 72 HOURS IN ADVANCE OF THE WORK TAKING PLACE.
21. ALL CORE DRILLING SHALL BE COORDINATED WITH THE CLIENT AND THE LANDLORD AT LEAST 72 HOURS IN ADVANCE OF ANY WORK TAKING PLACE. LOCATIONS OF ALL CORE SHALL BE COORDINATED WITH, AND APPROVED BY THE LANDLORD'S STRUCTURAL ENGINEER.
22. LOCATIONS OF CORES SHALL BE X-RAYED PRIOR TO START OF CORING WORK. COORDINATE X-RAY WORK WITH CLIENT AND LANDLORD AT LEAST 72 HOURS IN ADVANCE.
23. SUBMIT TO TENANT & LANDLORD OPERATIONS & MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT PROVIDED UNDER THIS CONTRACT. OPERATION & MAINTENANCE MANUALS SHALL INCLUDE DATA SHEETS, BROCHURES, MAINTENANCE INFORMATION, RECOMMENDED SPARE PARTS LISTS, LUBRICATION INSTRUCTIONS, & START-UP CERTIFICATES.
24. SUBMIT TO TENANT & LANDLORD A REVIEWED SET OF ALL SHOP DRAWINGS CLEARLY MARKED WITH "REVIEWED" BY THE INSTALLING CONTRACTOR & THE TENANT ENGINEER.
25. SUBMIT TO TENANT & LANDLORD A COMPLETE SET OF AS-BUILT RECORD DRAWINGS. AS-BUILT DRAWINGS SHALL BE PREPARED USING CAD SOFTWARE (I.E. AUTOCAD) & SUBMITTED IN DIGITAL PDF & DWG FORMATS, AND AS A HARD COPY TO EACH THE TENANT & THE LANDLORD. SCANNED REDLINE MARKED-UP DRAWINGS ARE NOT ACCEPTABLE.

DRAWING LIST

M-1	MECHANICAL NOTES AND LEGENDS
M-2	MECHANICAL SPECIFICATIONS
M-3	MECHANICAL SPECIFICATIONS
M-4	MECHANICAL SPECIFICATIONS
M-5	MECHANICAL SCHEDULES AND DETAILS
M-6	MECHANICAL – SECOND FLOOR – PLUMBING & FIRE PROTECTION PLAN
M-7	MECHANICAL – SECOND FLOOR – HVAC PLAN
M-8	MECHANICAL – ROOF PLAN

CLIENT

MUNICIPALITY OF CASSELMAN

PROJECT NORTH

4	ISSUED FOR TENDER	2025-03-24
3	ISSUED FOR PERMIT	2025-03-18
2	ISSUED FOR 99% COORDINATION	2025-02-24
1	ISSUED FOR 66% COORDINATION	2023-05-12
ISSUE	DESCRIPTION	DATE

IT IS THE RESPONSIBILITY OF THE APPROPRIATE CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON SITE AND PROMPTLY REPORT ALL ERRORS AND/OR OMISSIONS TO THE CONSULTANT BEFORE WORK COMMENCES.

ALL WORK IS TO FOLLOW THE OBC 2012 AND ANY OTHER APPLICABLE CODES AND REGULATIONS.

DO NOT SCALE DRAWINGS.

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PROJECT

1 INDUSTRIEL STREET
OFFICE FIT-UP

DRAWING

MECHANICAL
NOTES AND LEGENDS

PROJECT No: MRK-23002008-A0	REVISION:
DRAWN: M. OMAR	DATE: JUNE 2023
APPROVED: B. BROWN	SCALE: AS SHOWN

DRAWING No:

M-1

GENERAL

1. GENERAL REQUIREMENTS

1.1. THE WORK SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE BUILDING CODE, THE MINISTRY OF LABOUR, THE CITY AND ALL CODES HAVING JURISDICTION, WHICH ARE TO BE CONSIDERED AN INTEGRAL PART OF THESE SPECIFICATIONS.

1.2. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION & PROVIDE REPAIR OF ADJACENT EXISTING SURFACES, EQUIPMENT, AREAS & PROPERTY THAT MAY BE DAMAGED AS A RESULT OF ANY DEMOLITION AND / OR NEW WORK.

1.3. PAY FOR AND OBTAIN ALL REQUIRED PERMITS, FEES. LICENSES, CERTIFICATES OF INSPECTION, ETC. PROVIDE AND SUBMIT REQUIRED DRAWINGS TO THE AUTHORITIES HAVING JURISDICTION.

1.4. THE CONTRACTOR SHALL FURNISH ALL MATERIALS, LABOR, EQUIPMENT, TRANSPORTATION & SERVICES NECESSARY FOR COMPLETION OF THE WORK. ALL MATERIALS & WORK SHALL BE IN COMPLIANCE WITH ALL APPLICABLE CODES & GOVERNING REGULATIONS & SHALL MEET WITH THE APPROVAL OF THE CITY & PROVINCIAL FIRE MARSHAL .

1.5. ALL DRAWINGS ARE CONSIDERED TO BE PART OF THE CONTRACT DOCUMENTS . THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVIEW & COORDINATION OF ALL DRAWINGS PRIOR TO ANY CONSTRUCTION, INCLUDING ARCHITECTURAL, STRUCTURAL, AIR CONDITIONING, PLUMBING & ELECTRICAL. ANY DISCREPANCIES THAT OCCUR SHALL BE BROUGHT TO THE ATTENTION OF ENGINEER PRIOR TO THE START OF CONSTRUCTION SO THAT A CLARIFICATION MAY BE ISSUED. ANY WORK PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS OR ANY CODE REQUIREMENT SHALL BE CORRECTED BY THE CONTRACTOR AT HIS OWN EXPENSE, & AT NO EXPENSE TO THE OWNER .

1.6. DO NOT SCALE DRAWINGS – ALL DIMENSIONS & JOB SITE CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE JOB SITE PRIOR TO BID SUBMITTAL, START OF CONSTRUCTION AND / OR FABRICATION OF MATERIALS. IF DISCREPANCIES ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED FOR CLARIFICATION.

1.7. CONTRACTOR TO PROVIDE ANY TEMPORARY HEATING AND OR COOLING MEASURES FOR SPACES THAT REQUIRE THE SHUTDOWN OF AN EQUIPMENT SERVING MULTIPLE AREAS.

1.8. CONTRACTOR TO KEEP A RECORD SET OF DRAWINGS ON SITE AT ALL TIMES. ANY CHANGES SHALL BE RECORDED ON THIS SET FOR AS–BUILT DRAWINGS.

1.9. PROVIDE SEISMIC BRACING FOR MECHANICAL EQUIPMENT BASED ON APPROPRIATE SEISMIC ZONE REQUIREMENTS PER LOCAL AND NATIONAL CODES. CONTRACTOR'S RESPONSIBILITY INCLUDES STRUCTURAL ENGINEER'S CERTIFICATION ON DETAILS SUBMITTED FOR PERMITTING.

2. INTERRUPTION OF SERVICES

2.2. ALL INTERRUPTIONS OF EXISTING MECHANICAL SYSTEMS MUST BE APPROVED BY AND CO–ORDINATED WITH THE OWNER.

2.3. DISRUPTION OF NORMAL OPERATIONS WILL NOT BE ALLOWED. ALL INTERRUPTIONS SHALL OCCUR AFTER THE CLOSE OF NORMAL HOURS. PREMIUM TIME TO BE INCLUDED IN THE TENDER PRICE.

2.1. CONTRACTOR TO ARRANGE WITH THE OWNER FOR NECESSARY SHUTDOWNS FOR ALL SYSTEMS THAT REQUIRE TIE–INS AND WORK WITHIN OTHER TENANT SPACES. SCHEDULING OF THIS WORK TO BE COORDINATED WITH THE OWNER AND OTHER TENANTS.

3. SHOP DRAWINGS

3.1. SUBMIT SHOP DRAWINGS FOR THE FOLLOWING MAJOR EQUIPMENT:

3.1.1. HVAC UNIT
3.1.2. DOMESTIC HOT WATER HEATER
3.1.3. SUPPLY AIR DIFFUSERS, GRILLES & REGISTERS
3.1.4. EXHAUST FANS
3.1.5. FLOOR DRAINS
3.1.6. HUB DRAINS
3.1.7. PLUMBING FIXTURES

3.2. ALTERNATE EQUIPMENT MAY BE SPECIFIED, PROVIDED THAT THE SPACE REQUIREMENTS, QUALITY AND PERFORMANCE CHARACTERISTICS, AIR AND FLUID FLOW REQUIREMENTS, WEIGHTS AND POWER REQUIREMENTS ARE EQUAL TO THE SPECIFIED EQUIPMENT. ACCEPTANCE OF ANY ALTERNATE EQUIPMENT SHALL BE BY THE CONSULTANT.

4. COORDINATION

4.1. COORDINATE AND VERIFY EXACT LOCATIONS, SIZES, POINTS OF CONNECTION AND INVERT ELEVATIONS OF NEW AND EXISTING BUILDING PLUMBING SERVICE LATERALS ON SITE PRIOR TO PERFORMING WORK. NOTIFY ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES. MAKE FINAL CONNECTIONS TO LATERALS.

4.2. COORDINATE ELECTRICAL REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR INCLUDING POWER LOADS OF NEW EQUIPMENT, FIXTURES AND APPLIANCES.

4.3. COORDINATE ACCESS PANEL REQUIREMENTS WITH THE ARCHITECT. PROVIDE PANEL SIZES, FINISH, ELEVATIONS AND LOCATIONS.

4.4. COORDINATE LOCATIONS, SIZES AND ELEVATIONS OF SLEEVES AND PENETRATIONS THRU WALLS, FLOORS, BEAMS (INCLUDING GRADE BEAMS/FOOTINGS) AND SLABS WITH THE ARCHITECT AND STRUCTURAL ENGINEER.

4.5. COORDINATE AND PROVIDE PIPING ROUGH–INS AND CONNECTIONS TO EQUIPMENT, FIXTURES AND APPLIANCES THRU PRE MANUFACTURED CABINET FRAMING SYSTEMS (CHASES).

4.6. THE LOCATION, QUANTITIES AND SIZES OF EXISTING PIPING, FIXTURES, EQUIPMENT, SHUT–OFF VALVES, ETC. INDICATED ON THE PLANS HAS BEEN DERIVED FROM AVAILABLE RECORD DRAWINGS AND FIELD INVESTIGATIONS AND ARE SHOWN DIAGRAMMATICALLY. THE CONTRACTOR SHALL VERIFY ALL SUCH ITEMS PRIOR TO INSTALLATION OF NEW WORK.

4.7. WHERE EXISTING/UNDOCUMENTED PIPING SYSTEMS ARE INSTALLED IN WALLS THAT ARE TO BE REMOVED OR REMODELED, THE CONTRACTOR SHALL IMMEDIATELY IDENTIFY SUCH SYSTEMS TO THE ARCHITECT FOR REVIEW PRIOR TO DEMOLITION OR REROUTE. IF REROUTE IS DEEMED NECESSARY TO MAINTAIN OTHER BUILDING SYSTEM OPERATIONS, THE CONTRACTOR SHALL PROVIDE A SOLUTION TO THE REROUTE FOR REVIEW BY THE ARCHITECT.

4.8. CONTRACTOR SHALL COORDINATE ALL DUCT, PIPE AND EQUIPMENT LOCATIONS WITH ELECTRICAL, STRUCTURAL, PLUMBING AND ALL OTHER TRADES.

4.9. ALL OUTLETS FOR FUTURE CONNECTIONS SHALL BE INSTALLED SO AS TO PERMIT EASY CONNECTION. COORDINATE DUCTWORK, STRUCTURAL CONDITIONS AND ARCHITECTURAL LAYOUT.

5. SLEEVES, CUTTING AND PATCHING

5.1. INSTALL SLEEVES AND FRAMES FOR PIPING AND SIMILAR EQUIPMENT TO BE BUILT INTO THE BUILDING AS THE CONSTRUCTION PROGRESSES. IF THESE ARE NOT INSTALLED AT THE TIME OF CONSTRUCTION, THE COST OF CUTTING AND PATCHING AT A LATER DATE, WILL BE AT THE EXPENSE OF THIS CONTRACTOR.

5.2. THE PRIME MECHANICAL CONTRACTOR IS RESPONSIBLE FOR THE CUTTING AND PATCHING OF ALL HOLES AND OPENINGS UP TO AND INCLUDING 200 mm (8") DIAMETER.

5.3. THE PRIME MECHANICAL CONTRACTOR IS TO LOCATE THE EXACT POSITIONS AND DIMENSIONS OF LARGER OPENINGS FOR CUTTING BY THE GENERAL DIVISION.

5.4. SEAL AROUND SERVICES PASSING THROUGH CUT OPENINGS WITH MATERIALS EQUIVALENT TO THE FIRE RATING OF THE WALL FLOOR OR ROOF. ENSURE SEALING IS WEATHERPROOF FOR OPENINGS THROUGH EXTERIOR WALLS AND ROOFS. PROVIDE ANY PAINTING ON REPAIRED SURFACES IF REQUIRED BEFORE SEALING.

5.5. PROVIDE SLEEVES FOR ALL NEW PIPING PASSING THROUGH FLOOR AND ROOF SLABS, BEAMS, CONCRETE WALLS AND SLAB TO SLAB PARTITIONS, ETC.

5.6. SEAL TO BE AIR–TIGHT AROUND ALL DUCTWORK AND PIPING PENETRATIONS THROUGH PARTITIONS, BAFFLES ABOVE CEILINGS, AND THROUGH FLOORS THAT ARE NOT FIRE RATED.

5.7. PROVIDE ALL SLEEVES REQUIRED FOR DUCTWORK, PIPING AND ACCESS OPENINGS.

5.8. FOR INTERIOR WALLS, EXTERIOR WALLS ABOVE GRADE, NON WATERPROOF FLOORS, PROVIDE SCHEDULE 40 STEEL PIPE, MEDIUM CAST IRON OR 18 GAUGE GALVANIZED STEEL.

6. COMMISSIONING AND CLOSEOUT

6.1. CONTRACTOR SHALL PROVIDE COMMISSIONING AND REPORT FOR ALL THE NEW EQUIPMENT AND ANY ON–SITE TRAINING REQUIRED FOR OPERATION.

6.2. CLEAN ALL EQUIPMENT AND THE OVERALL INSTALLATION. FOLLOW INITIAL MAINTENANCE INSTRUCTIONS FROM THE MANUFACTURER.

6.3. GUARANTEE IN WRITING FOR THE MATERIAL AND WORKMANSHIP INCLUDING THE MANUFACTURER'S GUARANTEE FOR THE PERIOD OF ONE (1) YEAR FROM THE DATE OF ACCEPTANCE.

6.4. PROVIDE ALL DOCUMENTATION REQUIRED CLOSEOUT DOCUMENTATION (AIR/WATER BALANCE REPORT, NFPA 13 COMPLIANCE LETTER, TEST CERTIFICATES, ETC.) PRIOR TO PROJECT CLOSEOUT & CLOSE OF BUILDING PERMIT.

6.5. CERTIFY IN WRITING FOR ALL WORK HAS BEEN COMPLETED IN ACCORDANCE WITH THE SPECIFICATIONS AND DRAWINGS.

6.6. SUBMIT TO TENANT & LANDLORD OPERATIONS & MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT PROVIDED UNDER THIS CONTRACT. OPERATION & MAINTENANCE MANUALS SHALL INCLUDE DATA SHEETS, BROCHURES, MAINTENANCE INFORMATION, RECOMMENDED SPARE PARTS LISTS, LUBRICATION INSTRUCTIONS, & START–UP CERTIFICATES.

6.7. SUBMIT TO TENANT & LANDLORD A REVIEWED SET OF ALL SHOP DRAWINGS CLEARLY MARKED WITH "REVIEWED" BY THE INSTALLING CONTRACTOR & THE TENANT ENGINEER.

6.8. SUBMIT TO TENANT & LANDLORD A COMPLETE SET OF AS–BUILT RECORD DRAWINGS. AS–BUILT DRAWINGS SHALL BE PREPARED USING CAD SOFTWARE (I.E. AUTOCAD) & SUBMITTED IN DIGITAL PDF & DWG FORMATS, AND AS A HARD COPY TO EACH THE TENANT & THE LANDLORD. SCANNED REDLINE MARKED–UP DRAWINGS ARE NOT ACCEPTABLE

FIRE EXTINGUISHERS

7. CODES AND STANDARDS: FIRE EXTINGUISHERS ARE TO BE IN ACCORDANCE WITH THE FOLLOWING CODES AND STANDARDS:
7.1. NATIONAL FIRE CODE OF CANADA;
7.2. NFPA 10, STANDARD FOR PORTABLE FIRE EXTINGUISHERS;
7.3. CAN/ULC–S508–02 (INCLUDING AMENDMENTS 1 AND 2), STANDARD FOR THE RATING AND FIRE TESTING OF FIRE EXTINGUISHERS.

8. GENERAL
8.1. ALL FIRE EXTINGUISHERS ARE TO BE PRESSURIZED (STORED PRESSURE) RECHARGEABLE TYPE, IN ACCORDANCE WITH NFPA 10, AND UL AND/OR ULC LISTED AND LABELLED FOR THE CLASS OF FIRES AND HAZARD LOCATIONS FOR WHICH THEY ARE SPECIFIED.
8.2. EACH EXTINGUISHER IS TO BE COMPLETE WITH:
8.2.1. A MANUFACTURER'S IDENTIFICATION LABEL INDICATING THE EXTINGUISHER MODEL NUMBER, RATING, AND OPERATING INSTRUCTIONS;
8.2.2. AN ANODIZED ALUMINUM OR CHROME PLATED FORGED BRASS VALVE WITH POSITIVE SQUEEZE GRIP ON–OFF OPERATION AND A PULL–PIN SAFETY LOCK;
8.2.3. DISCHARGE HOSE WITH NOZZLE OR HORN AND HOSE SECURING CLIP;
8.2.4. FOR WALL MOUNTED EXTINGUISHERS, A WALL MOUNTING BRACKET.

9. INSTALLATION OF FIRE EXTINGUISHERS
9.1. PROVIDE FIRE EXTINGUISHERS OF TYPE(S) IN ACCORDANCE WITH REQUIREMENTS OF NFPA 10.
9.2. UNLESS OTHERWISE SHOWN OR SPECIFIED, WALL MOUNT EXTINGUISHERS USING WALL BRACKETS SUPPLIED WITH EXTINGUISHERS.
9.3. DO NOT INSTALL EXTINGUISHERS UNTIL AFTER WALL FINISHING WORK IS COMPLETE.
9.4. BE RESPONSIBLE FOR MAINTAINING FIRE EXTINGUISHERS UNTIL SUBSTANTIAL COMPLETION OF THE WORK.
9.5. IF EXTINGUISHERS ARE INDICATED ADJACENT TO A DOOR, LOCATE EXTINGUISHERS AT THE STRIKE SIDE OF THE DOOR.

DOMESTIC WATER PIPING AND VALVES

10. DOMESTIC WATER PIPING AND VALVES ARE TO COMPLY WITH FOLLOWING CODES, REGULATIONS AND STANDARDS (AS APPLICABLE):

10.1. APPLICABLE LOCAL CODES AND REGULATIONS;
10.2. CAN/CSA B125.1, PLUMBING SUPPLY FITTINGS;
10.3. CAN/CSA B125.3, PLUMBING FITTINGS;
10.4. CAN/CSA B137 SERIES, THERMOPLASTIC PRESSURE PIPING COMPENDIUM;
10.5. NSF/ANSI 14, PLASTICS PIPING SYSTEM COMPONENTS AND RELATED MATERIALS;
10.6. NSF/ANSI 61, DRINKING WATER SYSTEM COMPONENTS – HEALTH EFFECTS;
10.7. NSF/ANSI 372, DRINKING WATER SYSTEM COMPONENTS – LEAD CONTENT.

11. PIPE, FITTINGS AND JOINTS
11.1. SOFT COPPER: TYPE "K" SOFT COPPER TO ASTM B88, SUPPLIED IN A CONTINUOUS COIL WITH NO JOINTS IF POSSIBLE, AND COMPLETE WITH, IF JOINTS ARE REQUIRED, COMPRESSION TYPE FLARED JOINT COUPLINGS,
11.2. COPPER PRESSURE COUPLED JOINT: TYPE "L" HARD DRAWN SEAMLESS COPPER TO ASTM B88 WITH "PROPRESS WITH SMART CONNECT FEATURE" COPPER FITTINGS WITH EDPM SEALS, AND PRESSURE TYPE CRIMPED JOINTS MADE BY USE OF A RIGID TOOL CO. MODEL RP 330 OR MODEL RP 210 ELECTRO–HYDRAULIC CRIMPING TOOL.
11.3. SEMI–RIGID POLYETHYLENE TUBING: VERSA FITTINGS AND MFG. INC. ½" DIA., HIGH DENSITY, SEMI–RIGID POLYETHYLENE TUBING, 200 PSI RATED.
11.4. CROSS–LINKED POLYETHYLENE (PEX) TUBING: NON–BARRIER TYPE PEX PIPING IN ACCORDANCE WITH CAN/CSA B137.5, ASTM F876 AND TESTED FOR COMPLIANCE BY AN INDEPENDENT THIRD–PARTY AGENCY, 25/50 FLAME SPREAD/SMOKE DEVELOPED RATED WHEN TESTED TO CAN/ULC S102.2 AND COMPLETE WITH BRASS INSERTS AND CRIMP–RING OR COLD–EXPANSION JOINT FITTINGS AND COUPLINGS.

12. SHUT–OFF VALVES:
12.1. BALL VALVES: CLASS 600, 600 PSI WOG RATED FULL PORT BALL TYPE VALVES, EACH COMPLETE WITH A FORGED BRASS BODY WITH SOLDER ENDS, FORGED BRASS CAP, AND BLOWOUT–PROOF STEM, SOLID FORGED BRASS CHROME PLATED BALL, "TEFLON" OR "PTFE" SEAT, AND A REMOVABLE LEVER HANDLE. VALVES IN INSULATED PIPING ARE TO BE COMPLETE WITH STEM EXTENSIONS. ACCEPTABLE PRODUCTS ARE:
12.1.1. TOYO VALVE CO. FIG. 5049A;
12.1.2. MILWAUKEE VALVE CO. #BA–155;
12.1.3. KITZ CORPORATION CODE 59;
12.1.4. APOLLO VALVES # 77–200;
12.1.5. WATTS INDUSTRIES (CANADA) INC. #FBVS–3.

13. CHECK VALVES
13.1. HORIZONTAL: CLASS 125, BRONZE 200 PSI WOG RATED HORIZONTAL SWING TYPE CHECK VALVES WITH SOLDER ENDS. ACCEPTABLE PRODUCTS ARE:
13.1.1. TOYO VALVE CO. FIG. 237;
13.1.2. MILWAUKEE VALVE CO. #1510;
13.1.3. KITZ CORPORATION CODE 23;
13.1.4. APOLLO VALVES # 61–600.
13.2. VERTICAL: EQUAL TO KITZ CORP. CODE 26, BRONZE, 250 PSI WOG RATED VERTICAL LIFT CHECK VALVE WITH SOLDERING ENDS.

14. DRAIN VALVES
14.1. MINIMUM 300 PSI WATER RATED, 3/4" DIA., STRAIGHT PATTERN FULL PORT BRONZE BALL VALVES, EACH COMPLETE WITH A THREADED OUTLET SUITABLE FOR COUPLING CONNECTION OF 3/4" DIA. GARDEN HOSE, AND A CAP AND CHAIN. ACCEPTABLE PRODUCTS ARE:
14.1.1. TOYO VALVE CO. FIG. 5046;
14.1.2. DAHL BROTHERS CANADA LTD. FIG. NO. 50. 430;
14.1.3. KITZ CORPORATION CODE 58CC;
14.1.4. APOLLO VALVES # 78–104–01;
14.1.5. WATTS INDUSTRIES (CANADA) INC. #B6000–CC.

15. PIPING INSTALLATION REQUIREMENTS

15.1. PROVIDE ALL REQUIRED DOMESTIC WATER PIPING.
15.2. PIPING, UNLESS OTHERWISE SPECIFIED, IS TO BE AS FOLLOWS:
15.2.1. FOR UNDERGROUND PIPING LESS THAN 100 MM (4") DIA. INSIDE BUILDING – TYPE "K" SOFT COPPER;
15.2.2. FOR 12 MM (½") DIA. TRAP SEAL PRIMER TUBING LOCATED UNDERGROUND OR IN CONCRETE OR MASONRY CONSTRUCTION –SEMI–RIGID POLYETHYLENE;
15.2.3. FOR PIPE INSIDE BUILDING AND ABOVEGROUND IN SIZES TO 100 MM (4") DIA., EXCEPT IN VERTICAL SHAFTS AND THROUGH FIRE BARRIERS – RIGID PVC;
15.2.4. FOR BRANCH HOT AND COLD PIPING ABOVEGROUND FROM MAINS AND RISERS TO FIXTURES, FITTINGS, AND EQUIPMENT WHERE FIRE RATED CONSTRUCTION IS NOT PENETRATED –AT YOUR OPTION, PEX TUBING INSTALLED AND JOINED IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS;
15.2.5. FOR UNDERGROUND PIPING OUTSIDE BUILDING TO FIXTURES/OUTLETS AT GRADE LEVEL –FLEXIBLE POLYETHYLENE, SNAKED IN THE TRENCH AND IN A CONTINUOUS LENGTH WHEREVER POSSIBLE;
15.2.6. FOR PIPE INSIDE BUILDING AND ABOVEGROUND IN SIZES TO 100 MM (4") DIA. –TYPE "L" HARD COPPER WITH SOLDER JOINTS OR TYPE "L" HARD COPPER WITH PRESSURE COUPLED MECHANICAL JOINTS.

16. INSTALLATION OF DOMESTIC HOT WATER THERMOSTATIC MIXING VALVES
16.1. PROVIDE A DOMESTIC HOT WATER THERMOSTATIC MIXING VALVE ASSEMBLY AND WALL MOUNT.
16.2. ADJUST EACH VALVE TO DESIGN REQUIREMENTS AND CHECK AND TEST OPERATION. SET MAXIMUM TEMPERATURE LIMIT STOPS.
16.3. IDENTIFY EACH VALVE AND ITS WATER TEMPERATURE DELIVERY SETTING WITH AN ENGRAVED NAMEPLATE.

17. FLUSHING AND DISINFECTING PIPING
17.1. FLUSH AND DISINFECT ALL NEW AND/OR REWORKED DOMESTIC WATER PIPING AFTER LEAKAGE TESTING IS COMPLETE.

DRAINAGE, WASTE & VENT PIPING & VALVES

18. DRAIN AND VENT PIPING INSTALLATION REQUIREMENTS

18.1. PROVIDE ALL REQUIRED DRAINAGE AND VENT PIPING. PIPE, UNLESS OTHERWISE SPECIFIED, IS TO BE AS FOLLOWS:

18.1.1. FOR UNDERGROUND PIPE INSIDE BUILDING AND TO POINTS 1.5 M (5') OUTSIDE BUILDING LINES –RIGID PVC SEWER PIPE, MINIMUM 75 MM (3") DIA.;
18.1.2. FOR PIPE INSIDE BUILDING AND ABOVEGROUND IN SIZES LESS THAN OR EQUAL TO 65 MM (2–½") DIA. –TYPE DWV COPPER;
18.1.3. FOR PIPE INSIDE BUILDING AND ABOVEGROUND IN SIZES GREATER THAN OR EQUAL TO 75 MM (3") DIA. –CLASS 4000 CAST IRON;
18.1.4. FOR PIPE INSIDE BUILDING AND ABOVEGROUND IN LIEU OF TYPE DWV COPPER AND CAST IRON, AT YOUR OPTION AND WHERE PERMITTED BY GOVERNING CODES AND REGULATIONS –RIGID PVC DWV;
18.1.5. FOR DRAINAGE PUMP DISCHARGE PIPE CONNECTIONS FROM PUMP TO AND INCLUDING SHUT–OFF AND CHECK VALVE CONNECTIONS –TYPE "DWV" COPPER WITH VICTAULIC "COPPER CONNECTION" FITTINGS AND COUPLINGS, OR SCHEDULE 40 GALVANIZED STEEL WITH VICTAULIC FITTINGS AND COUPLINGS.

18.2. UNLESS OTHERWISE SPECIFIED, SLOPE HORIZONTAL DRAINAGE PIPING ABOVEGROUND IN SIZES TO AND INCLUDING 75 MM (3") DIA. 25 MM (1") IN 1.2 M (4'), AND PIPE 100 MM (4") DIA. AND LARGER 25 MM (1") IN 2.4 M (8').

18.3. INSTALL AND SLOPE UNDERGROUND DRAINAGE PIPING TO INVERTS OR SLOPES INDICATED ON DRAWINGS TO FACILITATE STRAIGHT AND TRUE GRADIENTS BETWEEN POINTS SHOWN. VERIFY AVAILABLE SLOPES BEFORE INSTALLING PIPES.

18.4. UNLESS OTHERWISE SPECIFIED, SLOPE HORIZONTAL BRANCHES OF VENT PIPING DOWN TO FIXTURE OR PIPE TO WHICH THEY CONNECT WITH A MINIMUM PITCH OF 25 MM (1") IN 1.2 M (4').

18.5. EXTEND VENT STACKS UP THROUGH ROOF GENERALLY WHERE SHOWN BUT WITH EXACT LOCATIONS TO SUIT SITE CONDITIONS AND IN ANY CASE A MINIMUM OF 3 M (10') FROM FRESH AIR INTAKES. TERMINATE VENT STACKS A MINIMUM OF 330 MM (13") ABOVE ROOF (INCLUDING ROOF PARAPETS) IN VENT STACK COVERS. WHERE NOT SHOWN ON DRAWINGS, ROUTE VENT PIPING FROM SOURCE TO BUILDING EXTERIOR AS REQUIRED IN ORDER TO SATISFY LOCAL GOVERNING CODES AND AUTHORITY. COORDINATE VENT ROUTING WITH OTHER BUILDING SERVICES AND ENSURE THERE IS NO ARCHITECTURAL IMPACT.

18.6. PROVIDE CAST BRASS DIELECTRIC UNIONS AT CONNECTIONS BETWEEN COPPER PIPE AND FERROUS PIPE OR EQUIPMENT.

ELECTRIC DOMESTIC WATER HEATERS

19. POINT–OF–USE ELECTRIC HOT WATER STORAGE TANK AND HEATER
19.1. ULC LISTED AND CSA CERTIFIED ELECTRIC HOT WATER HEATER WITH MODEL NUMBER AND PERFORMANCE AS SPECIFIED ON DRAWINGS, AND COMPLETE WITH:
19.1.1. 1035 KPA (150 PSI) RATED (WORKING PRESSURE) STEEL TANK, GLASS LINED, POLYURETHANE FOAM INSULATED, COVERED WITH AN ENAMELLED STEEL JACKET WITH ACCESS PANEL, AND EQUIPPED WITH A BOTTOM HOSE END DRAIN COCK;
19.1.2. IMMERSION HEATING ELEMENT IMBEDDED IN MAGNESIUM OXIDE AND SEALED IN A SEAMLESS COPPER TUBE;
19.1.3. SACRIFICIAL ANODE ROD;
19.1.4. SURFACE MOUNTED ADJUSTABLE THERMOSTAT AND A HIGH TEMPERATURE SAFETY CUT–OUT;
19.1.5. ASME RATED TEMPERATURE AND PRESSURE RELIEF VALVE;
19.1.6. ROUND GALVANIZED STEEL AUXILIARY CATCH PAN WITH DRAIN HOLE AND CONNECTION SPIGOT.

19.2. ACCEPTABLE MANUFACTURERS ARE:
19.2.1. RHEEM CANADA LTD.;
19.2.2. JOHN WOOD (GSW WATER HEATING CO.);
19.2.3. SMITH WATER PRODUCTS CO.;
19.2.4. BRADFORD WHITE CANADA INC.;
19.2.5. PVI;
19.2.6. RBI WATER HEATERS.

19.3. INSTALLATION OF POINT–OF–USE ELECTRIC HOT WATER STORAGE TANK AND HEATER
19.3.1. PROVIDE A POINT–OF–USE DOMESTIC HOT WATER HEATER.
19.3.2. PROVIDE A WALL BRACKET (SUPPLIED BY THE HEATER MANUFACTURER) FOR HEATER MOUNTING AND RIGIDLY SECURE IN PLACE.
19.3.3. MOUNT HEATER IN A CATCH PAN AND:
19.3.4. PIPE TEMPERATURE/PRESSURE RELIEF VALVE OUTLET TO DRAIN;
19.3.5. PIPE AUXILIARY CATCH PAN TO DRAIN;
19.3.6. COORDINATE INSTALLATION WITH ELECTRICAL TRADE WHO WILL CONNECT HEATER WITH POWER WIRING;
19.3.7. CHECK AND TEST HEATER OPERATION AND, UNLESS OTHERWISE SPECIFIED OR INSTRUCTED, SET THERMOSTAT TO PRODUCE 48.8°C (120°F) HOT WATER.

DRAINAGE WASTE PIPING SPECIALTIES

20. SUBMITTALS
20.1. SHOP DRAWINGS/PRODUCT DATA: SUBMIT SHOP DRAWINGS/PRODUCT DATA SHEETS FOR ALL PRODUCTS SPECIFIED IN THIS SECTION.

21. CLEANOUTS
21.1. HORIZONTAL PIPING: TY PIPE FITTING WITH AN EXTRA HEAVY BRASS PLUG SCREWED INTO THE FITTING.
21.2. VERTICAL PIPING: BRONZE OR COPPER CLEANOUT TEES IN COPPER PIPING, EACH COMPLETE WITH A BRONZE FERRULE, AND, FOR CAST IRON PIPING, "BARRETT" TYPE CAST IRON CLEANOUT TEES, EACH GAS AND WATER–TIGHT AND COMPLETE WITH A BOLTED COVER.

22. FLOOR CLEANOUT TERMINATIONS
22.1. FACTORY FINISHED CAST IRON TERMINATIONS, EACH ADJUSTABLE AND COMPLETE WITH A CAST IRON BODY WITH NEOPRENE SLEEVE, SOLID, GASKETED, POLISHED NICKEL–BRONZE SCORIATED TOP ACCESS COVER TO SUIT THE FLOOR FINISH, A SEAL PLUG, AND CAPTIVE, VANDAL–PROOF, STAINLESS STEEL SECURING HARDWARE. ACCEPTABLE PRODUCTS ARE:
22.1.1. WATTS INDUSTRIES (CANADA) LTD.;
22.1.2. JAY R. SMITH MANUFACTURING CO.;
22.1.3. ZURN INDUSTRIES LTD.;
22.1.4. MIFAB INC.
22.2. ALL CLEANOUT TERMINATIONS IN AREAS WITH A TILE OR SHEET VINYL FLOOR FINISH ARE TO BE AS ABOVE BUT WITH A SQUARE TOP IN LIEU OF A ROUND TOP.

23. FLOOR DRAINS, FUNNEL FLOOR DRAINS AND HUB DRAINS
23.1. UNLESS OTHERWISE SPECIFIED OR SCHEDULED, FLOOR DRAINS AND FUNNEL FLOOR DRAINS ARE TO BE VANDAL–PROOF DRAINS IN ACCORDANCE WITH THE DRAWING SCHEDULE, EACH COMPLETE WITH A CAST IRON BODY AND A TRAP SEAL PRIMER CONNECTION. ALL CAST IRON COMPONENTS ARE TO BE FACTORY FINISHED WITH LATEX BASED PAINT COATING.
23.2. ALL FLOOR DRAINS IN AREAS WITH A TILE OR SHEET VINYL FLOOR FINISH ARE TO BE AS ABOVE BUT WITH A SQUARE GRATE IN LIEU OF A ROUND GRATE.
23.3. ACCEPTABLE MANUFACTURERS ARE:
23.3.1. WATTS INDUSTRIES (CANADA) LTD.;
23.3.2. JAY R. SMITH MANUFACTURING CO.;
23.3.3. ZURN INDUSTRIES LTD.;
23.3.4. MIFAB INC.

24. INSTALLATION OF CLEANOUTS
24.1. PROVIDE CLEANOUTS IN DRAINAGE PIPING IN LOCATIONS AS FOLLOWS:
24.1.1. IN THE BUILDING DRAIN OR DRAINS AS CLOSE AS POSSIBLE TO THE INNER FACE OF THE OUTSIDE WALL, AND, IF A BUILDING TRAP IS INSTALLED, LOCATE THE CLEANOUT ON THE DOWNSTREAM SIDE OF THE BUILDING TRAP;
24.1.2. AT OR AS CLOSE AS PRACTICABLE TO THE FOOT OF EACH DRAINAGE STACK;
24.1.3. AT MAXIMUM 50' INTERVALS IN HORIZONTAL PIPE 4" DIA. AND SMALLER;
24.1.4. AT MAXIMUM 100' INTERVALS IN HORIZONTAL PIPE LARGER THAN 4" DIA.;
24.1.5. WHEREVER ELSE SHOWN ON DRAWINGS.
24.2. CLEANOUTS ARE TO BE SAME DIAMETER AS PIPE IN PIPING TO 100 MM (4") DIA., AND NOT LESS THAN 100 MM (4") DIA. IN PIPING LARGER THAN 100 MM (4") DIA.
24.3. WHERE CLEANOUTS IN VERTICAL PIPING ARE CONCEALED BEHIND WALLS OR PARTITIONS, INSTALL CLEANOUTS NEAR FLOOR AND SO COVER IS WITHIN 25 MM (1") OF THE FINISHED FACE OF THE WALL OR PARTITION.

25. INSTALLATION OF FLOOR CLEANOUT TERMINATIONS
25.1. WHERE CLEANOUTS OCCUR IN HORIZONTAL INACCESSIBLE UNDERGROUND PIPING, EXTEND THE CLEANOUT TY FITTING UP TO THE FLOOR, AND PROVIDE A CLEANOUT TERMINATION SET FLUSH WITH THE FINISHED FLOOR.
25.2. IN WATERPROOF FLOORS, ENSURE THAT EACH CLEANOUT TERMINATION IS EQUIPPED WITH A FLASHING CLAMP DEVICE. CLEANOUT TERMINATIONS ARE TO SUIT THE FLOOR FINISH.
25.3. WHERE CLEANOUT TERMINATIONS OCCUR IN FINISHED AREAS, CONFIRM LOCATIONS PRIOR TO ROUGH–IN AND ARRANGE PIPING TO SUIT.
25.4. ENSURE THAT CLEANOUT TERMINATION COVERS IN TILED FLOOR ARE SQUARE IN LIEU OF ROUND.

26. INSTALLATION OF FLOOR DRAINS, FUNNEL FLOOR DRAINS AND HUB DRAINS
26.1. PROVIDE FLOOR DRAINS, FUNNEL FLOOR DRAINS AND HUB DRAINS.
26.2. COORDINATE LOCATION OF FLOOR DRAINS, FUNNEL FLOOR DRAINS AND HUB DRAINS WITH EQUIPMENT PROVIDED BY MECHANICAL DIVISION AND OWNER'S SUPPLIED EQUIPMENT. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
26.3. EQUIP EACH DRAIN WITH A TRAP.
26.4. IN EQUIPMENT ROOMS AND SIMILAR AREAS, EXACTLY LOCATE FLOOR DRAINS TO SUIT THE LOCATION OF MECHANICAL EQUIPMENT AND EQUIPMENT INDIRECT DRAINAGE PIPING. IN WASHROOMS, EXACTLY LOCATE FLOOR DRAINS TO AVOID INTERFERENCE WITH TOILET PARTITIONS.
26.5. CONFIRM THE EXACT LOCATION OF DRAINS PRIOR TO ROUGHING IN. WHERE FLOOR DRAINS OCCUR IN WASHROOMS COORDINATE LOCATIONS WITH TOILET PARTITION INSTALLATIONS.
26.6. TEMPORARILY PLUG AND COVER FLOOR DRAINS DURING CONSTRUCTION PROCEDURES. REMOVE PLUGS AND COVERS DURING FINAL CLEANUP WORK AND WHEN REQUESTED, DEMONSTRATE FREE AND CLEAR OPERATION OF EACH DRAIN. REPLACE ANY DAMAGED GRATES, AND REFINISH ANY AREAS OF THE DRAIN WHERE THE CAST IRON FINISH HAS BEEN DAMAGED OR REMOVED, INCLUDING RUSTED AREAS.

PLUMBING FIXTURES AND FITTINGS

27. GENERAL RE: PLUMBING FIXTURES AND FITTINGS
27.1. FIXTURES AND FITTINGS, WHERE APPLICABLE, ARE TO BE IN ACCORDANCE WITH REQUIREMENTS OF CAN/CSA B45 SERIES, GENERAL REQUIREMENTS FOR PLUMBING FIXTURES, INCLUDING SUPPLEMENTS, ASME A112.1.18.1/CSA B125.1, PLUMBING SUPPLY FITTINGS, AND CSA B125.3, PLUMBING FITTINGS.
27.2. BARRIER–FREE FIXTURES AND FITTINGS ARE TO BE IN ACCORDANCE WITH GOVERNING CODE REQUIREMENTS.
27.3. UNLESS OTHERWISE SPECIFIED, VITREOUS CHINA, PORCELAIN ENAMELLED, AND ACRYLIC FINISHED FIXTURES ARE TO BE WHITE.

TSSA ACT.

30.3. APPLY FOR, ON TSSA FORMS, APPROVAL OF THE GAS SYSTEM DESIGN BY THE TSSA PRIOR TO WORK BEGINNING AT THE SITE AND PRIOR TO ORDERING ANY EQUIPMENT. SUBMIT THE COMPLETED TSSA FORM AND COPIES OF SHOP DRAWINGS/PRODUCT DATA SHEETS AS REQUIRED TO THE TSSA AND OBTAIN AN APPROVAL CERTIFICATE. PAY ALL COSTS FOR THE TSSA REVIEW AND APPROVAL PROCESS. IF THE TSSA REQUIRES REVISIONS TO THE SYSTEM AND THE REVISIONS RESULT IN AN EXTRA COST, A NOTICE OF CHANGE WILL BE ISSUED BY THE CONSULTANT FOR THE REVISION.

31. PIPE, FITTINGS AND JOINTS

31.1. FOR UNDERGROUND PIPING:

31.1.1. COATED BLACK STEEL – WELDED JOINTS: "YELLOW JACKET" SCHEDULE 40 MILD BLACK CARBON STEEL, ASTM A53, GRADE B, FACTORY COATED WITH YELLOW PLASTIC, MILL OR SITE BEVELLED, AND COMPLETE WITH FORGED STEEL BUTT WELDING FITTINGS AND WELDED JOINTS. ALL BARE METAL SURFACES ARE TO BE CLEANED AND CORROSION PROTECTED WITH A SUITABLE DENSO PRIMER AND TAPE CORROSION PROTECTION SYSTEM.

31.1.2. POLYETHYLENE: SAFETY YELLOW COLOURED POLYETHYLENE PIPE, FITTINGS, AND JOINTS TO CSA–B137.4.

31.1.3. COATED COPPER: TYPE "K" SOFT TEMPER COPPER WITH A FACTORY APPLIED EXTERNAL YELLOW PLASTIC COATING AND FLARE FITTINGS WITH FORGED BRASS NUTS TO CAN/CSA–B149.1. NUTS ARE TO BE STAMPED WITH THE DESIGNATION C37700 TO INDICATE THAT THEY ARE FORGED BRASS.

31.2. FOR PIPING ABOVE GROUND:

31.2.1. UNCOATED BLACK STEEL – SCREWED JOINTS: SCHEDULE 40 MILD BLACK CARBON STEEL, ASTM A53, GRADE B, COMPLETE WITH MALLEABLE CAST IRON SCREWED FITTINGS TO ANSI B2.1, AND SCREWED JOINTS.

31.2.2. UNCOATED BLACK STEEL – WELDED JOINTS: SCHEDULE 40 MILD BLACK CARBON STEEL, ASTM A53, GRADE B, MILL OR SITE BEVELLED, COMPLETE WITH FACTORY MADE FORGED STEEL BUTT WELDING FITTINGS AND WELDED JOINTS.

31.2.3. COPPER–UNCOATED: TYPE "G" SEAMLESS COPPER TUBING TO ASTM B837, HARD TEMPER WITH WROUGHT COPPER CAPILLARY BRAZED JOINT TYPE FITTINGS TO ASTM B.61, AND BRAZED JOINTS MADE WITH "SIL–FOS" OR "SIL–FOS 5" BRAZING ALLOY, OR, SOFT TEMPER WITH FLARED BRASS FITTINGS OF A SINGLE 45° FLARE TYPE, FORGED OR WITH A MACHINED LONG NUT AND COPPER TO COPPER THREADED CONNECTORS, AND, WHERE REQUIRED, FLARED BRASS COPPER TO NPS ADAPTERS.

32. PIPING UNIONS

32.1. SCREWED PIPING: MALLEABLE IRON, GROUND JOINT, BRONZE OR BRASS TO IRON OR BRONZE TO BRONZE SEAT SCREWED UNIONS AND UNION ELBOWS WITH A MINIMUM PRESSURE RATING OF 1725 KPA (250 PSI) STEAM AT 260°C (500°F).

32.2. FLANGED PIPING: FORGED CARBON STEEL SLIP–ON TYPE RAISED FACED WELDING FLANGE UNIONS TO ASTM A105, 150 LB. CLASS FOR STEEL PIPE, AND SLIP–ON TYPE 150 LB. CLASS BRONZE FLANGES FOR COPPER PIPE.

32.3. COPPER TO STEEL: EQUAL TO KAMCO PRODUCTS "COPPER STOPPER".

33. EARTHQUAKE ACTIVATED AUTOMATIC SHUT–OFF VALVE

33.1. EQUAL TO KAS INTERNATIONAL OR NIHON KOSO MODEL 315 HPF EARTHQUAKE ACTIVATED, FLANGED, HIGH PRESSURE AUTOMATIC SHUT–OFF VALVE SUITABLE FOR BOTH NATURAL GAS AND PROPANE, ULC LISTED AND IN ACCORDANCE WITH ANSI Z21.70, EARTHQUAKE ACTUATED AUTOMATIC GAS SHUTOFF VALVES.

34. SHUT–OFF VALVES

34.1. BALL TYPE: CGA CERTIFIED, MINIMUM 3100 KPA (450 PSI) WOG RATED, 1/4 TURN, FULL PORT NON–LUBRICATED BRASS BALL VALVES, EACH COMPLETE WITH A TEFLON PTFE SEAT, CHROME PLATED SOLID BALL, REMOVABLE LEVER HANDLE, AND SCREWED ENDS. ACCEPTABLE PRODUCTS ARE:

34.1.1. NEO VALVES INC. #425;

34.1.2. KITZ CORP. CODE 58;

34.1.3. TOYO VALVE CO. FIG. 5044a;

34.1.4. FLOWTEK S85.

35. NATURAL GAS CONVENIENCE OUTLET

35.1. NEO VALVES MODEL 3/375 QUICK–CONNECT TYPE CSA CERTIFIED OUTLET WITH INTERLOCKING SAFETY CAM TO PREVENT RELEASE OF THE APPLIANCE CONNECTOR UNTIL THE VALVE IS OFF, INTEGRAL THERMAL PROTECTION TO PREVENT GAS FLOW IF THE OUTLET IS EXPOSED TO TEMPERATURES EXCEEDING 90°C (195°F), AND A WALL ENCLOSURE BOX. ACCEPTABLE MANUFACTURERS ARE:

35.1.1. NEO VALVES INC.;

35.1.2. FAIRVIEW FITTINGS & MFG. LTD.

36. PRESSURE REGULATORS

36.1. CSA CERTIFIED PRESSURE REGULATORS AS FOLLOWS:

36.1.1. VENTED TYPE: SPRING–LOADED SELF–OPERATED DESIGN, TIGHT CLOSING, SELECTED FOR THE FACILITY GAS PRESSURE AND PIPING PRESSURE LOSS, AND CONNECTED EQUIPMENT LOAD AT FULL FIRING RATE PLUS 20% SPARE, AND COMPLETE WITH:

36.1.1.1. 1035 KPA (150 PSI) RATED CAST IRON BODY FINISHED WITH CORROSIVE RESISTANT EPOXY ENAMEL;

36.1.1.2. ALUMINUM DIAPHRAGM AND SPRING CASE WITH NITRILE DIAPHRAGM, DISC, AND BODY O–RING;

36.1.1.3. THROTTLING TYPE, HIGH FLOW RATE, TIGHT SHUT–OFF RELIEF VALVE SELECTED TO PROTECT EQUIPMENT DOWNSTREAM OF THE REGULATOR IN COORDINATION WITH REGULATOR CAPACITY.

36.1.2. ACCEPTABLE MANUFACTURERS ARE:

36.1.2.1. MAXITROL CO.;

36.1.2.2. FISHER CONTROLS;

36.1.2.3. LESLIE CONTROLS INC.;

36.1.2.4. LAKESIDE PROCESS CONTROLS.

37. EXPANSION LOOPS

37.1. PROVIDE FLEXIBLE HOSE EXPANSION LOOP(S) AS INDICATED ON THE CONTRACT DRAWINGS OR AS REQUIRED TO ACCOMMODATE ANY THERMAL EXPANSION, CONTRACTION, BUILDING SETTLEMENT, OR SEISMIC MOVEMENT OF THE PIPING SYSTEM.

37.2. FLEXIBLE HOSE EXPANSION LOOPS SHALL BE MANUFACTURED COMPLETE WITH TWO PARALLEL SECTIONS OF CORRUGATED METAL HOUSE, COMPATIBLE BRAID, 180 DEG RETURN BEND, WITH INLET AND OUTLET CONNECTIONS. FIELD FABRICATED LOOPS SHALL NOT BE ACCEPTABLE.

37.3. FLEXIBLE LOOPS SHALL BE CAPABLE OF MOVEMENT IN THE ±X, ±Y, AND ±Z PLANES.

37.4. FLEXIBLE HOSE EXPANSION LOOPS SHALL IMPART NO THRUST LOADS TO SYSTEM SUPPORT, ANCHORS OR BUILDING STRUCTURE.

37.5. ALL FLEXIBLE HOSE EXPANSION LOOPS SHALL BE MANUFACTURED IN ACCORDANCE WITH THE DOCUMENTED MANUFACTURERS WELD PROCEDURE SPECIFICATIONS. THE PROCEDURE QUALIFICATION RECORD SHALL BE USED TO DOCUMENT THE EXECUTION OF THIS PROCEDURE AND SHALL FOLLOW THE GENERAL 'GUIDELINES' OF ASME SECTION IX. EACH INDIVIDUAL WELDER SHALL CONFORM TO THE IN–HOUSE PROCEDURE QUALIFICATION RECORD AND BE QUALIFIED PRIOR TO EACH PRODUCTION LOT. THE TESTING OF EACH INDIVIDUAL WELDER SHALL BE DOCUMENTED IN A WELDING PROCEDURE QUALIFICATION RECORD.

37.6. MATERIALS;

37.6.1. FITTINGS SHALL BE STANDARD WEIGHT, CARBON STEEL CONFORMING TO ASTM A234 / ASME B16.9

37.6.2. CORRUGATED HOSE; STAINLESS STEEL, TYPE 321

37.6.3. BRAID; 304 STAINLESS STEEL

37.6.4. END FITTINGS SHALL CARBON STEEL PLATE FLANGES WITH 150 LB. DRILLING.

37.7. FLEXIBLE HOSE EXPANSION LOOPS FOR FLAMMABLE LIQUID OR GAS SERVICE UP TO 4"SHALL BE CSA / AGA LISTED AND BE IN CONFORMANCE WITH UL–536.

37.8. FLEXIBLE HOSE EXPANSION LOOPS TO BE "GAS METRALOOP"AS MANUFACTURED BY THE METRAFLEX COMPANY, OR EQUAL.

38. NATURAL GAS SERVICE

38.1. MAKE ALL REQUIRED ARRANGEMENT WITH THE NATURAL GAS SUPPLY UTILITY ON BEHALF OF THE OWNER FOR INSTALLATION OF NATURAL GAS SERVICE PIPING WITH GAS PRESSURE REGULATOR

38.2. PROVIDE AN EARTHQUAKE ACTIVATED AUTOMATIC SHUT–OFF VALVE IN GAS SERVICE PIPING OUTSIDE THE BUILDING IN ACCORDANCE WITH THE VALVE MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE AN ANGLE IRON FRAMED WIRE MESH ENCLOSURE AROUND THE VALVE AND BOLTED TO THE WALL.

38.3. PROVIDE 2 M (7') HIGH MINIMUM 200 MM (8") DIAMETER SCHEDULE 80 GALVANIZED STEEL CONCRETE FILLED BOLLARDS AT THE METER–REGULATOR LOCATION IN A PATTERN TO PROTECT THE METER–REGULATOR. INSTALL THE PIPE STRAIGHT AND PLUMB A 1.2 M (4') BELOW GRADE IN A CONTINUOUS 600 MM (2') DIAMETER REINFORCED CONCRETE FOOTING. SMOOTHLY CROWN THE TOP OF THE CONCRETE ABOVE THE TOP OF THE PIPE.

39. NATURAL GAS PIPING INSTALLATION REQUIREMENTS

39.1. PROVIDE ALL REQUIRED NATURAL GAS DISTRIBUTION PIPING AND CONNECT GAS FIRED OR OPERATED EQUIPMENT, AND PROVIDE ALL REQUIRED VENT PIPING TO ATMOSPHERE, INCLUDING VENT PIPING FROM PRESSURE REGULATORS. DO ALL PIPING WORK IN ACCORDANCE WITH REQUIREMENTS OF CAN/CSA–B149.1, NATURAL GAS AND PROPANE INSTALLATION CODE, AS AMENDED BY LOCAL GAS CODES.

39.2. PIPING IS TO BE AS FOLLOWS:

39.2.1. FOR UNDERGROUND PIPING, COATED SCHEDULE 40 BLACK STEEL, COATED SOFT COPPER, OR POLYETHYLENE;

39.2.2. FOR ABOVE GROUND PIPING, UNCOATED SCHEDULE 40 BLACK STEEL, HARD TEMPER OR SOFT COPPER, OR, IF PERMITTED, FLEXIBLE STAINLESS STEEL.

40. INSTALLATION OF SHUT–OFF VALVES

40.1. PROVIDE CSA APPROVED BALL TYPE OR LUBRICATED PLUG TYPE SHUT–OFF VALVES TO ISOLATE EQUIPMENT, AND WHEREVER ELSE SHOWN.

40.2. ENSURE THAT VALVES ARE LOCATED FOR EASY ACCESSIBILITY AND MAINTENANCE.

41. INSTALLATION OF NATURAL GAS CONVENIENCE OUTLETS

41.1. PROVIDE NATURAL GAS CONVENIENCE OUTLETS AND WALL MOUNT.

41.2. PROVIDE A SHUT–OFF VALVE IN CONNECTING PIPING, CONFIRM EXACT LOCATION PRIOR TO ROUGHING–IN, AND ENSURE THAT THE OUTLET IS RIGIDLY SECURED IN PLACE.

42. INSTALLATION OF PRESSURE REGULATORS

42.1. PROVIDE PRESSURE REGULATORS IN GAS DISTRIBUTION PIPING WHERE INDICATED AND/OR REQUIRED.

42.2. USE VENTED TYPE PRESSURE REGULATORS FOR ALL OTHER APPLICATIONS.

42.3. INSTALL REGULATING STATIONS IN ACCORDANCE WITH REQUIREMENTS OF CAN/CSA–B149.1.

42.4. PROVIDE 6 MM (¼") DIAMETER TEST PORTS UPSTREAM AND DOWNSTREAM OF EACH REGULATOR ASSEMBLY.

42.5. LOCATE OUTDOOR REGULATING STATIONS A MINIMUM OF 300 MM (12") AWAY FROM WALKWAYS, AND 3 M (10') AWAY FROM EQUIPMENT AIR INTAKES AND BUILDING OPENINGS. PROVIDE ALL REQUIRED VENT PIPING AND TERMINATE VENTS IN A TURN–DOWN ELBOW FITTING WITH BRONZE BUG SCREEN SECURED IN PLACE.

42.6. LOCATE INDOOR REGULATING STATIONS IN LOCATIONS ACCESSIBLE WITHOUT THE USE OF LADDERS OR LIFTS. COMBINE VENTS WHERE PERMITTED AND INCREASE VENT PIPE SIZE ACCORDINGLY. EXTEND VENT PIPING UP THROUGH THE ROOF 3 M (10') AWAY FROM EQUIPMENT AIR INTAKES AND BUILDING OPENINGS AND TERMINATED IN A TURN–DOWN ELBOW FITTING WITH BRONZE BUG SCREEN SECURED IN PLACE.

42.7. INDICATE OPERATING SET–POINTS, RELIEF SETTINGS AND VENT ARRANGEMENTS FOR EACH REGULATING STATION ON AS–BUILT RECORD DRAWINGS.

43. INSTALLATION OF EXPANSION LOOPS

43.1. INSTALL AND GUIDE PER MANUFACTURERS' INSTALLATION INSTRUCTIONS AND MECHANICAL CONTRACTORS ASSOCIATION OF AMERICA 'GUIDELINES FOR QUALITY PIPING INSTALLATIONS'.

43.2. FLEXIBLE HOSE EXPANSION LOOP RETURN FITTING SHALL BE SUPPORTED TO ALLOW MOVEMENT.

HVAC AIR DISTRIBUTION

44. GALVANIZED STEEL DUCTWORK

44.1. GALVANIZED STEEL SHEET IS TO BE HOT DIPPED IN ACCORDANCE WITH REQUIREMENTS OF ASTM A653. G60 GALVANIZING FOR BARE UNCOVERED DUCT TO BE FINISH PAINTED. G90 FOR ALL OTHER GALVANIZING.

44.2. RECTANGULAR

44.2.1. LOCK FORMING GRADE HOT DIP GALVANIZED STEEL, ASTM A653, SHOP FABRICATED, MINIMUM #26 GAUGE.

44.3. ROUND

44.3.1. FACTORY MACHINE FABRICATED, SPIRAL, MECHANICALLY LOCKED FLAT SEAM, SINGLE WALL DUCT, FITTINGS AND COUPLINGS.

44.4. FLAT OVAL

44.4.1. FACTORY MACHINE FABRICATED, SINGLE WALL, 4–PLY SPIRAL LOCK SEAM DUCT, FITTINGS AND COUPLINGS.

45. MANUAL BALANCING (VOLUME) DAMPERS

45.1. FLANGED AND DRILLED, SINGLE OR PARALLEL BLADE (DEPENDING ON DAMPER SIZE) MANUAL BALANCING DAMPERS, EACH CONSTRUCTED OF SAME MATERIAL AS CONNECTING DUCTWORK UNLESS OTHERWISE SPECIFIED, EACH DESIGNED TO MAINTAIN INTERNAL FREE AREA OF CONNECTING DUCT, AND EACH COMPLETE WITH:

45.1.1. HEXAGONAL OR SQUARE SHAFT EXTENSION THROUGH FRAME;

45.1.2. NON–STICK, NON–CORROSIVE SYNTHETIC BEARINGS FOR RECTANGULAR DAMPERS, FLANGE STAINLESS STEEL BEARINGS FOR ROUND DAMPERS;

45.1.3. BLADE STOPS FOR SINGLE BLADE DAMPERS, DESIGNED TO PREVENT BLADE FROM MOVING MORE THAN 90°;

45.1.4. LINKAGE FOR MULTIPLE BLADE DAMPERS;

45.1.5. LOCKING HAND QUADRANT DAMPER OPERATOR WITH, FOR INSULATED DUCTS 50 MM (2") STANDOFF MOUNTING.

45.2. RECTANGULAR DAMPERS: NAILOR INDUSTRIES INC. 1800 SERIES, MAXIMUM SIZE 1.2 M X 1.2 M (4' X 4') FOR A SINGLE DAMPER.

45.3. ROUND DAMPERS: NAILOR INDUSTRIES INC. MODEL 1890, MAXIMUM 600 MM (24") DIAMETER, EQUIPPED WITH A MINIMUM 200 MM (8") DEEP FRAME, AND BLADE STIFFENERS WHERE REQUIRED.

45.4. MULTIPLE RECTANGULAR DAMPER SECTION ASSEMBLY: RECTANGULAR ASSEMBLY SUPPLIED WITH THE DAMPERS OR SITE CONSTRUCTED, OF SAME MATERIAL AS DAMPER AND DESIGNED FOR TIGHT AND SECURE MOUNTING OF INDIVIDUAL DAMPERS.

45.5. ACCEPTABLE MANUFACTURERS ARE:

45.5.1. NAILOR INDUSTRIES INC.;

45.5.2. MORRISON & CO. INC. "TAMCO";

45.5.3. NCA MANUFACTURING LTD.;

45.5.4. GREENHECK FAN CORP.;

45.5.5. RUSKIN CO.

46. FABRICATION AND INSTALLATION OF GALVANIZED STEEL DUCTWORK

46.1. PROVIDE REQUIRED DUCTWORK, RECTANGULAR, ROUND AND/OR FLAT OVAL. WHERE RECTANGULAR DUCTWORK IS SHOWN, ROUND OR FLAT OVAL DUCTWORK OF EQUIVALENT CROSS–SECTIONAL AREA IS ACCEPTABLE.

46.2. IT IS TO BE UNDERSTOOD THAT ALL DUCT DIMENSIONS SHOWN ON DRAWINGS ARE CLEAR INTERNAL DIMENSIONS.

46.3. CONFIRM ROUTING OF ALL DUCTWORK AT SITE AND SITE MEASURE DUCTWORK PRIOR TO FABRICATION. DUCT DIMENSIONS MAY BE REVISED TO SUIT SITE ROUTING AND BUILDING ELEMENT REQUIREMENTS, IF DIMENSION REVISIONS ARE REVIEWED WITH AND APPROVED BY CONSULTANT. DUCT ROUTING AND/OR DIMENSION REVISIONS TO SUIT CONDITIONS AT SITE ARE NOT GROUNDS FOR A CLAIM FOR AN EXTRA COST.

46.4. REFER TO STRUCTURAL DRAWINGS. WHERE DUCTWORK IS TO BE RUN WITHIN OR THROUGH OPEN WEB STEEL JOISTS, DUCTWORK SHOWN ON MECHANICAL DRAWINGS IS SCHEMATIC ONLY AND IS TO BE ALTERED AS REQUIRED TO SUIT STEEL JOIST CONFIGURATION, SPACING, PANEL POINTS, AND CROSS–BRIDGING AT NO ADDITIONAL COST.

46.5. WHEREVER DUCTWORK IS REQUIRED AT LOCATIONS WHERE SPRAYED FIREPROOFING IS APPLIED TO BUILDING CONSTRUCTION, INSTALL DUCTWORK ONLY AFTER FIREPROOFING WORK IS COMPLETE AND DO NOT COMPROMISE FIRE RATING OF SPRAYED FIREPROOFING.

46.6. INSTALL (BUT DO NOT CONNECT) DUCT SYSTEM MOUNTED AUTOMATIC CONTROL COMPONENTS SUPPLIED AS PART OF THE AUTOMATIC CONTROL WORK.

46.7. SUPPORT HORIZONTAL RECTANGULAR DUCTS INSIDE BUILDING IN ACCORDANCE WITH ANSI/SMACNA HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE, BUT USE TRAPEZE HANGERS WITH, UNLESS OTHERWISE SPECIFIED, GALVANIZED STEEL CHANNELS, AND GALVANIZED STEEL HANGER RODS FOR EXPOSED DUCTS AND CONCEALED DUCTS WIDER THAN 500 MM (20"). SUPPORT HARDWARE CONSTRUCTED OF SAME MATERIAL AS DUCT FOR METAL DUCT, AND, UNLESS OTHERWISE SPECIFIED, TYPE 316 STAINLESS STEEL FOR NON–METAL DUCT. SUPPORTS FOR "HEAVY" DUCT SUCH AS CEMENTITIOUS CORE DUCT IS TO BE SUITABLE IN ALL RESPECTS FOR THE APPLICATION AND APPROVED BY CONSULTANT.

46.8. SUPPORT ROUND AND FLAT OVAL DUCTS INSIDE BUILDING IN ACCORDANCE WITH ANSI/SMACNA HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE, BUT, UNLESS OTHERWISE SPECIFIED, FOR BOTH UNINSULATED AND INSULATED DUCTS EXPOSED IN FINISHED AREAS, USE BANDS AND SECURE AT TOP OF DUCT TO A HANGER ROD, ALL SIMILAR TO DUCTMATE CANADA LTD. TYPE "BA". IF DUCT IS INSULATED, SIZE STRAP TO SUIT DIAMETER OF INSULATED DUCT. UNLESS OTHERWISE SPECIFIED, DUCT SUPPORT HARDWARE FOR METAL DUCT IS CONSTRUCTED OF SAME MATERIAL AS DUCT, AND FOR NON–METAL DUCT, TYPE 316 STAINLESS STEEL.

46.9. WHERE FLANGED DUCT JOINTS ARE USED, DO NOT LOCATE JOINTS IN WALL OR SLAB OPENINGS, OR IMMEDIATELY AT WALL OR SLAB OPENINGS. DO NOT USE FLANGED JOINTS FOR EXPOSED UNINSULATED DUCTS IN FINISHED AREAS.

46.10. WHERE WATERTIGHT HORIZONTAL DUCTWORK IS REQUIRED, CONSTRUCT DUCTS WITHOUT BOTTOM LONGITUDINAL SEAMS. SOLDER OR WELD JOINTS OF BOTTOM SIDE SHEETS. SEAL ALL OTHER JOINTS WITH DUCT SEALER. SLOPE HORIZONTAL DUCT TO HOODS, RISERS, OR DRAIN POINTS. PROVIDE DRAIN POINTS. PROVIDE WATERTIGHT DUCTWORK FOR:

46.10.1. DUCTWORK OUTSIDE BUILDING OR OTHERWISE EXPOSED TO THE ELEMENTS;

46.11. LEAKAGE TESTING:

46.11.1. DUCTWORK LEAKAGE IS NOT TO EXCEED FOLLOWING:

46.11.1.1. DUCTWORK TO 2" W.C. CLASS, 1% OF TOTAL AIR QUANTITY HANDLED BY RESPECTIVE FANS;

46.11.2. LEAKAGE TESTING IS TO BE PERFORMED BY THE TESTING, ADJUSTING AND BALANCING (TAB) AGENCY IN ACCORDANCE WITH SMACNA HVAC AIR DUCT LEAKAGE TEST MANUAL AND IS TO BE WITNESSED BY CONSULTANT.

46.11.3. BE RESPONSIBLE FOR FOLLOWING:

46.11.3.1. PREPARING DUCT SYSTEMS FOR LEAKAGE TESTING PRIOR TO INSTALLATION OF EXTERNAL INSULATION INCLUDING CAPPING DUCT RUNOUTS AND PROVISION OF FINAL TAP–IN FOR TEST EQUIPMENT;

46.11.3.2. SCHEDULE TESTING WITH TAB AGENCY IN ADVANCE, BE PRESENT FOR ALL TESTING AND ENSURE NOTICE IS GIVEN TO CONSULTANT SO THEY MAY WITNESS TESTING;

46.11.3.3. RESEALING AND/OR REPLACEMENT OF DEFECTIVE DUCTWORK;

46.11.3.4. BEARING ALL COSTS ASSOCIATED WITH RETESTING DUCTWORK WHICH HAS FAILED TO PASS LEAKAGE TESTING.

46.12. SEAL ALL DUCTWORK IN ACCORDANCE WITH SMACNA SEAL CLASS "A", EXCEPT FOR ROUND DUCT WITH SELF–SEALING GASKETED FITTINGS AND COUPLINGS WHICH DOES NOT REQUIRE SITE APPLIED SEALANT. APPLY SEALANTS BY BRUSH OR GUN TO CLEANED METAL SURFACES. WHERE BARE DUCTWORK IS EXPOSED APPLY NEAT UNIFORM LINES OF SEALANT. RANDOMLY BRUSHED, SLOPPY LOOKING SEALANT APPLICATIONS WILL BE REJECTED AND MUST BE REPAIRED OR REPLACED WITH A NEAT APPLICATION OF SEALANT.

46.13. APPLY SEALANTS BY BRUSH OR GUN TO CLEANED METAL SURFACES. WHERE BARE DUCTWORK IS EXPOSED APPLY NEAT UNIFORM LINES OF SEALANT. RANDOMLY BRUSHED, SLOPPY LOOKING SEALANT APPLICATIONS WILL BE REJECTED AND MUST BE REPAIRED OR REPLACED WITH A NEAT APPLICATION OF SEALANT.

46.14. CLEAN EXTERIOR EXPOSED (UNINSULATED) DUCTS AND COAT WITH A HEAVY FULL COVERAGE OF BAKOR #410–02 BLACK METAL PAINT.

46.15. WHERE DISSIMILAR METAL DUCTS ARE TO BE CONNECTED, ISOLATE DUCTS BY MEANS OF FLEXIBLE DUCT CONNECTION MATERIAL.

47. INSTALLATION OF FLEXIBLE DUCTWORK

47.1. PROVIDE MAXIMUM 3 M (10') LONG LENGTHS OF FLEXIBLE DUCTWORK FOR CONNECTIONS BETWEEN GALVANIZED STEEL DUCT MAINS AND BRANCHES, AND NECKS OF CEILING GRILLES AND DIFFUSERS. DO NOT INSTALL FLEXIBLE DUCTWORK THROUGH WALLS, EVEN IF SHOWN ON DRAWINGS.

47.2. AT RECTANGULAR GALVANIZED STEEL DUCT, ACCURATELY CUT HOLES AND PROVIDE FLANGED OR "SPIN–IN" ROUND FLEXIBLE DUCT CONNECTION COLLARS. SEAL JOINTS WITH DUCT SEALER.

47.3. INSTALL FLEXIBLE DUCTS AS STRAIGHT AS POSSIBLE AND SUPPORT IN ACCORDANCE WITH REQUIREMENTS OF ANSI/SMACNA HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE, AND SECURE AT EACH END WITH NYLON OR STAINLESS STEEL GEAR TYPE CLAMPS, AND SEAL JOINTS. PROVIDE LONG RADIUS DUCT BENDS WHERE THEY ARE REQUIRED.

47.4. DO NOT PENETRATE FIRE BARRIERS WITH FLEXIBLE DUCT.

48. DUCT SYSTEM PROTECTION, CLEANING AND START–UP

48.1. TEMPORARILY COVER ALL OPEN ENDS OF DUCTS DURING CONSTRUCTION.

48.2. REMOVE ALL DIRT AND FOREIGN MATTER FROM ENTIRE DUCT SYSTEMS AND CLEAN DUCT SYSTEM TERMINALS AND INTERIOR OF AIR HANDLING UNITS PRIOR TO OPERATING FANS.

48.3. PRIOR TO STARTING ANY SUPPLY AIR HANDLING SYSTEM PROVIDE 50 MM (2") THICK GLASS FIBRE CONSTRUCTION FILTERS AT FAN EQUIPMENT IN PLACE OF PERMANENT FILTERS.

48.4. PROVIDE CHEESECLOTH OVER DUCT SYSTEM INLETS AND OUTLETS AND RUN SYSTEM FOR 24 HOURS, AFTER WHICH REMOVE CHEESECLOTH AND CONSTRUCTION FILTERS, AND INSTALL NEW PERMANENT FILTERS.

48.5. INCLUDE ALL LABOUR FOR A COMPLETE SITE WALK–THROUGH WITH TESTING AND BALANCING PERSONNEL FOLLOWING ROUTE OF ALL DUCT SYSTEMS TO BE TESTED, ADJUSTED AND BALANCED FOR THE PURPOSE OF CONFIRMING PROPER POSITION AND ATTITUDE OF DAMPERS, LOCATION OF PITOT TUBE OPENINGS, AND ANY OTHER WORK AFFECTING TESTING AND BALANCING PROCEDURES. PERFORM CORRECTIVE WORK REQUIRED AS A RESULT OF THIS WALK–THROUGH.

49. INSTALLATION OF GRILLES AND DIFFUSERS:

49.1. PROVIDE GRILLES AND DIFFUSERS WHERE SHOWN ON THE DRAWINGS. WHEREVER POSSIBLE, GRILLES AND DIFFUSERS ARE TO BE THE PRODUCT OF ONE MANUFACTURER.

49.2. UNLESS OTHERWISE SPECIFIED CONNECT GRILLES AND DIFFUSERS IN ACCORDANCE WITH REQUIREMENTS OF SMACNA HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE.

49.3. EXACTLY LOCATE GRILLES AND DIFFUSERS TO CONFORM TO THE FINAL ARCHITECTURAL REFLECTED CEILING PLANS AND DETAILED WALL ELEVATIONS, AND TO CONFORM TO THE FINAL LIGHTING ARRANGEMENT, CEILING LAYOUT, ORNAMENTAL AND OTHER WALL TREATMENT.

49.4. EQUIP SUPPLY DIFFUSERS HAVING A BASIC FOUR–WAY OR ALL ROUND AIR PATTERN FOR OPERATION IN ONE, TWO, OR THREE WAY PATTERN WHERE INDICATED ON THE DRAWINGS.

49.5. GRILLES AND DIFFUSERS ARE TO BE TESTED AND PERFORMANCE CERTIFIED TO THE AIR–CONDITIONING AND REFRIGERATION INSTITUTE STANDARD ARI 650, STANDARD FOR AIR OUTLETS AND INLETS.

49.6. ACCEPTABLE MANUFACTURERS ARE:

49.6.1. PRICE INDUSTRIES INC.;

49.6.2. METALAIRE;

49.6.3. KRUEGER DIVISION OF AIR SYSTEM COMPONENTS INC.;

49.6.4. TITUS;

49.6.5. NAILOR INDUSTRIES INC.;

49.6.6. TUTTLE & BAILEY.

INSULATION

50. PIPE INSULATION MATERIALS

50.1. PREMOULDED MINERAL FIBRE: RIGID, SECTIONAL, SLEEVE TYPE INSULATION TO ASTM STANDARD C 547–00, WITH A FACTORY APPLIED VAPOUR BARRIER JACKET. ACCEPTABLE PRODUCTS ARE:

50.1.1. JOHNS MANVILLE INC. "MICRO–LOK AP–T PLUS";

50.1.2. KNAUF FIBER GLASS "PIPE INSULATION" WITH "ASJ–SSL" JACKET;

50.1.3. MANSON INSULATION INC. "ALLEY K AP1";

50.1.4. OWENS CORNING FIBERGLAS PIPE INSULATION.

27. PIPE INSULATION REQUIREMENTS – MINERAL FIBRE

27.1. INSULATE THE FOLLOWING PIPE INSIDE THE BUILDING AND ABOVE GROUND WITH MINERAL FIBRE INSULATION OF THE THICKNESS INDICATED:

27.1.1. DOMESTIC COLD WATER PIPING TO AND INCLUDING 100 MM (4") DIA. –25 MM (1") THICK;

27.1.2. DOMESTIC HOT WATER PIPING, TO AND INCLUDING 40 MM (1½") DIA. –25 MM (1") THICK;

28. DUCTWORK SYSTEM INSULATION MATERIALS

28.1. RIGID MINERAL FIBRE BOARD: PREFORMED BOARD TYPE INSULATION TO ASTM C612–00A, 48 KG/M3 (3.0 LB./FT.³) DENSITY, WITH A FACTORY APPLIED REINFORCED ALUMINUM FOIL AND KRAFT PAPER FACING. ACCEPTABLE PRODUCTS ARE:

28.1.1. KNAUF FIBER GLASS INSULATION BOARD WITH FSK FACING;

28.1.2. MANSON INSULATION INC. "AK BOARD FSK";

28.1.3. JOHNS MANVILLE INC. TYPE 814 "SPIN–GLAS";

28.1.4. OWENS CORNING 703.

28.2. SEMI–RIGID MINERAL FIBRE BOARD: ROLL FORM INSULATION TO ASTM STANDARD C1393 00A, CONSISTING OF CUT STRIPS OF RIGID MINERAL BOARD INSULATION GLUED TO AN ALUMINUM FOIL AND KRAFT PAPER FACING. ACCEPTABLE PRODUCTS ARE:

28.2.1. MULTI–GLASS INSULATION LTD. "MULTI–FLEX MKF";

28.2.2. GLASS–CELL FABRICATORS LTD. "R–FLEX";

28.2.3. OWENS CORNING PIPE AND TANK INSULATION;

28.2.4. JOHNS MANVILLE INC. PIPE AND TANK INSULATION.

28.3. BLANKET MINERAL FIBRE: BLANKET TYPE ROLL FORM INSULATION TO ASTM STANDARD C553–00, 24 KG/M3 (1½ LB./FT.³) DENSITY, 40 MM (1½") THICK, WITH A FACTORY APPLIED VAPOUR BARRIER FACING. ACCEPTABLE PRODUCTS ARE:

28.3.1. JOHNS MANVILLE INC. MICROLITE FSK DUCT WRAP TYPE 150;

28.3.2. KNAUF FIBER GLASS BLANKET INSULATION FSK DUCT WRAP TYPE III;

28.3.3. MANSON INSULATION INC. ALLEY WRAP FSK DUCT WRAP TYPE III;

28.3.4. CERTAINTEED CORPORATION SOFTTOUCH FSK DUCT WRAP TYPE 150.

28.4. FLEXIBLE FOAM ELASTOMERIC SHEET: SHEET FORM, CFC FREE, CLOSED CELL, SELF–ADHERING ELASTOMERIC NITRILE RUBBER INSULATION WITH A WATER VAPOUR PERMEABILITY RATING OF 0.08 IN ACCORDANCE WITH ASTM E96 PROCEDURE A. ACCEPTABLE PRODUCTS ARE:

28.4.1. ARMACELL "AP/ARMAFLEX SA";

28.4.2. IK INSULATION GROUP "K–FLEX DUCT WRAP", S2S.

29. DUCTWORK INSULATION REQUIREMENTS – MINERAL FIBRE

29.1. INSULATE THE FOLLOWING DUCTWORK SYSTEMS INSIDE THE BUILDING AND ABOVE GROUND WITH MINERAL FIBRE INSULATION OF THE THICKNESS INDICATED:

29.1.1. ALL OUTSIDE AIR INTAKE DUCTWORK, CASINGS AND PLENUMS FROM FRESH AIR INTAKES TO AND INCLUDING MIXING PLENUMS OR SECTIONS, OR, IF MIXING PLENUMS OR SECTIONS ARE NOT PROVIDED, TO THE FIRST HEATING COIL, OR IF BOTH MIXING PLENUMS OR SECTIONS AND HEATING COIL SECTIONS ARE NOT PROVIDED, AND THE FRESH AIR IS NOT TEMPERED, THEN THE FRESH AIR DUCTWORK SYSTEM COMPLETE – MINIMUM 40 MM (1½") THICK AS REQUIRED;

29.1.2. MIXED SUPPLY AIR OR PREHEATED SUPPLY AIR CASINGS, PLENUMS AND SECTIONS TO AND INCLUDING THE FAN SECTION WHERE NOT FACTORY INSULATED – MINIMUM 25 MM (1") THICK RIGID BOARD OR MINIMUM 40 MM (1½") THICK FLEXIBLE BLANKET AS REQUIRED;

29.1.3. SUPPLY AIR DUCTWORK OUTWARD FROM FANS, EXCEPT FOR SUPPLY DUCTWORK EXPOSED IN THE AREA IT SERVES – MINIMUM 25 MM (1") THICK RI

31.3. SITE INSPECTION AND START-UP REPORT: SUBMIT A SITE INSPECTION AND START-UP REPORT FROM THE MANUFACTURER'S REPRESENTATIVE AS SPECIFIED IN PART 3 OF THIS SECTION.

31.4. SPARE AIR FILTERS: SUBMIT SPARE AIR FILTERS AS SPECIFIED IN PART 2 OF THIS SECTION.

31.5. WALL OPENING COORDINATION: SUPPLY REVIEWED COPIES OF CURB ASSEMBLY SHOP DRAWINGS OR PRODUCT DATA SHEETS TO THE TRADE WHO WILL CUT THE WALL OPENINGS FOR DUCTWORK, AND ENSURE THAT THE OPENINGS ARE PROPERLY SIZED AND LOCATED.

31.6. EXTENDED WARRANTIES: SUBMIT SIGNED COPIES OF THE MANUFACTURER'S EXTENDED WARRANTIES AS FOLLOWS:

31.6.1. STAINLESS STEEL GAS FIRED UNIT HEAT EXCHANGER: TEN YEARS;
31.6.2. REFRIGERANT COMPRESSOR(S): FIVE YEARS;
31.6.3. INTEGRATED MODULAR CONTROL: THREE YEARS.

32. QUALITY ASSURANCE

32.1. HEATING AND AIR CONDITIONING EQUIPMENT IS TO BE RATED (CAPACITY, PERFORMANCE, EFFICIENCY AND SOUND) AND CERTIFIED IN ACCORDANCE WITH REQUIREMENTS OF THE FOLLOWING AIR-CONDITIONING AND REFRIGERATION INSTITUTE STANDARDS:

32.1.1. ARI 210/240, PERFORMANCE RATING OF UNITARY AIR-CONDITIONING AND AIR-SOURCE HEAT PUMP EQUIPMENT;
32.1.2. ARI 270, SOUND RATING OF OUTDOOR UNITARY EQUIPMENT;
32.1.3. ARI 340/360, COMMERCIAL AND INDUSTRIAL UNITARY AIR-CONDITIONING AND HEAT PUMP EQUIPMENT.

32.2. HEATING AND AIR CONDITIONING EQUIPMENT IS ALSO TO BE IN ACCORDANCE WITH REQUIREMENT OF THE FOLLOWING CODES, STANDARDS, AND REGULATIONS:

32.2.1. CSA B52, MECHANICAL REFRIGERATION CODE;
32.2.2. CAN/CSA-C22.2 NO. 236/UL 1995, HEATING AND COOLING UNITS;
32.2.3. ANSI/ASHRAE 90.1, ENERGY STANDARD FOR BUILDINGS EXCEPT LOW RISE RESIDENTIAL BUILDINGS;
32.2.4. CSA OR ETL CERTIFICATION AND LABELLING FOR ALL ELECTRICAL COMPONENTS;
32.2.5. CAN/CSA B149, NATURAL GAS AND PROPANE CODE;
32.2.6. GOVERNING LOCAL CODES AND REGULATIONS.

32.3. GAS FIRED HEATING AND AIR CONDITIONING UNITS ARE TO BE INSTALLED BY LICENSED JOURNEYMAN GAS FITTERS.

32.4. ACCEPTABLE MANUFACTURERS ARE:
32.4.1. LENNOX INDUSTRIES INC.;
32.4.2. CARRIER ENTERPRISE CANADA;
32.4.3. TRANE CANADA INC.;
32.4.4. JOHNSON CONTROLS YORK;
32.4.5. DAIKIN INDUSTRIES LTD.;
32.4.6. AAON;
32.4.7. GREENHECK FAN CORP.;
32.4.8. PRICE INDUSTRIES LTD.

33. AIR HANDLING UNITS – PACKAGED OUTDOOR

33.1. PACKAGE TYPE, FACTORY TESTED, OUTDOOR, WEATHERPROOF HEATING AND AIR CONDITIONING UNITS AS PER THE DRAWING SCHEDULE.

33.2. CABINET: CONSTRUCTED OF MINIMUM #18 GAUGE GALVANIZED STEEL PANELS ERECTED ON FULL PERIMETER MINIMUM #14 GAUGE GALVANIZED STEEL BASE RAILS WITH LIFTING LUGS, FINISHED WITH TWO COATS OF BAKED EXTERIOR ENAMEL PAINT ON PRIMER, ARRANGED AND CONSTRUCTED FOR AIRFLOW CONFIGURATIONS AS SHOWN, AND COMPLETE WITH COLLARS FOR ELECTRICAL POWER AND DUCT CONNECTION OPENINGS, AND THE FOLLOWING:

33.2.1. A FULLY INSULATED BASE, AND INSULATION FOR ALL PANELS ADJACENT TO CONDITIONED AIR, WITH 50 MM (2") THICK NEOPRENE FACED, 32 KG/M³ (2 LB/FT³) DENSITY INSULATION MEETING FLAME SPREAD AND SMOKE DEVELOPED RATING REQUIREMENTS OF CAN/ULC S102 AND SECURED IN PLACE SUCH THAT INSULATION WILL NOT SAG AND FIBRES WILL NOT ERODE OR ENTER THE AIRSTREAM;
33.2.2. HINGED ACCESS PANELS, EACH AIR AND WATER SEALED AND EQUIPPED WITH ¼ TURN LATCHING HANDLES, AND PROVIDED FOR COMPRESSOR/CONTROLS/HEATING AREAS, BLOWER ACCESS, AND AIR FILTER AND ECONOMIZER ACCESS.

33.3. COMPRESSOR/CONDENSER & REFRIGERATION: VIBRATION ISOLATED SCROLL TYPE HERMETICALLY SEALED COMPRESSOR(S) WITH DIRECT DRIVE VERTICAL DISCHARGE PROPELLER TYPE CONDENSER FAN(S) AND COPPER TUBE/ALUMINIUM FIN FACTORY LEAK AND PRESSURE TESTED CONDENSER COIL(S), AND EQUIPPED WITH THE FOLLOWING:

33.3.1. PVC COATED CONDENSER FAN GUARD AND CONDENSER COIL GUARD;

33.3.2. PERMANENTLY LUBRICATED TOTALLY ENCLOSED, RESILIENTLY MOUNTED, OVERLOAD PROTECTED CONDENSER FAN MOTOR(S) CONFORMING TO REQUIREMENTS OF THE MECHANICAL WORK SECTION ENTITLED BASIC MECHANICAL MATERIALS AND METHODS, TOTALLY ENCLOSED FROM THE WEATHER;

33.3.3. A REFRIGERATION SYSTEM CAPABLE OF OPERATING DOWN TO -17°C(0°F) WITHOUT INSTALLATION OF ADDITIONAL CONTROLS, COMPLETE WITH SELF-SEALING DISCHARGE, SUCTION AND LIQUID LINE SERVICE GAUGE PORTS, FREEZE-STATS, EXPANSION VALVES, COPPER REFRIGERANT TUBING AND INSULATION WHERE REQUIRED, LIQUID LINE FILTER DRIER, A FULL CHARGE OF R410A REFRIGERANT, AUTOMATIC RESET HIGH AND LOW PRESSURE COMPRESSOR CIRCUIT CONTROLS, AND FAN CONTROL FOR -34°C (-30°F) LOW AMBIENT OPERATION;

33.3.4. COPPER TUBE/ALUMINIUM FIN FACTORY TESTED EVAPORATOR COIL WITH THERMAL EXPANSION VALVE WITH ADJUSTABLE SUPERHEAT AND EXTERNAL EQUALIZER, AND NON-CORROSIVE CONDENSATE DRAIN PAIN REMOVABLE FOR CLEANING, DESIGNED TO PREVENT STANDING WATER AND EQUIPPED WITH A DRAIN CONNECTION WITH DEEP SEAL TRAP.

33.4. COOLING CONTROLS: COOLING CONTROLS ARE TO INCLUDE THE FOLLOWING:

33.4.1. SMOKE DETECTORS IN BOTH SUPPLY AND RETURN AIR STREAMS;

33.4.2. MOTORIZED NORMALLY CLOSED FRESH AIR AND EXHAUST AIR DAMPERS AND NORMALLY OPEN RETURN AIR DAMPER (EQUAL TO T. A. MORRISON TAMCO SERIES 1000 FOR RETURN AIR AND SERIES 9000 FOR FRESH AIR AND EXHAUST AIR), WITH 24 VOLT SPRING RETURN BELIMO OR EQUAL OPERATORS AND A CONTROL PACKAGE TO AUTOMATICALLY VARY THE OUTSIDE AIR QUANTITY;

33.4.3. ADJUSTABLE MIXED AIR CONTROLS TO MAINTAIN 13°C (55°F OR AS INDICATED) MIXED AIR TEMPERATURE;

33.4.4. UP TO FOUR STAGES OF COOLING CONTROL;

33.4.5. CONTROLS FOR BLOWER ON DELAY OF UP TO SIXTY SECONDS AFTER A COOLING DEMAND HAS BEEN RECEIVED, WITH A DEFAULT VALUE OF ZERO, AND CONTROLS TO ALLOW BLOWER OFF DELAY OF UP TO TWO HUNDRED AND FORTY SECONDS AFTER COOLING DEMAND HAS ENDED, WITH A DEFAULT VALUE OF ZERO;

33.4.6. MINIMUM COMPRESSOR ON AND OFF TIME OF THREE HUNDRED SECONDS, BOTH ADJUSTABLE BETWEEN SIXTY AND FIVE HUNDRED AND TEN SECONDS;
33.4.7. DEFAULT MAXIMUM HIGH PRESSURE SWITCH TRIP OCCURRENCE DURING COOLING OR DEHUMIDIFICATION CYCLE OF THREE (ADJUSTABLE BETWEEN ONE AND EIGHT OCCURRENCES), WITH COMPRESSOR LOCK-OUT IF MAXIMUM OCCURRENCE LIMIT IS REACHED, AND DIGITAL OUTPUT FOR SERVICE ACTIVATED;
33.4.8. LOW PRESSURE TRIP READ DELAY OF FIVE MINUTES (ADJUSTABLE BETWEEN ZERO AND THIRTY-FOUR MINUTES) IF COMPRESSOR OFF TIME HAS BEEN LESS THAN FOUR HOURS (ADJUSTABLE BETWEEN ONE AND SIX HOURS) AND THE OUTDOOR TEMPERATURE IS LESS THAN 21°C (70°F), ADJUSTABLE BETWEEN -12°C AND 38°C;
33.4.9. LOW PRESSURE TRIP READ DELAY OF FIFTEEN MINUTES (ADJUSTABLE BETWEEN ZERO AND THIRTY-FOUR MINUTES) IF COMPRESSOR OFF TIME HAS BEEN LESS THAN FOUR HOURS (ADJUSTABLE BETWEEN ONE AND SIX HOURS) AND THE OUTDOOR TEMPERATURE IS LESS THAN 21°C (70°F), ADJUSTABLE BETWEEN -12°C AND 38°C;
33.4.10. LOW PRESSURE TRIP READ DELAY OF TWO MINUTES (ADJUSTABLE BETWEEN ZERO AND THIRTY-FOUR MINUTES) IF THE COMPRESSOR OFF TIME HAS BEEN LESS THAN FOUR HOURS AND THE OUTDOOR AIR TEMPERATURE IS 21°C (70°F) OR GREATER;
33.4.11. LOW PRESSURE TRIP READ DELAY OF EIGHT MINUTES (ADJUSTABLE BETWEEN ZERO AND THIRTY-FOUR MINUTES) IF THE COMPRESSOR OFF TIME HAS BEEN FOUR HOURS AND THE OUTDOOR AIR TEMPERATURE IS 21°C (70°F) OR GREATER;
33.4.12. EACH PRESSURE SWITCH TRIP OCCURRENCE (EITHER HIGH OR LOW) TO RECORD AN ERROR IN NON-VOLATILE MEMORY AND IDENTIFY THE COMPRESSOR CIRCUIT;

33.4.13. LOW OUTDOOR AIR TEMPERATURE COMPRESSOR LOCKOUT SET-POINT OF -18°C (0°F) FOR EACH COMPRESSOR CIRCUIT, INDIVIDUALLY ADJUSTABLE FROM 27°C (80°F) TO -34°C (-30°F);

33.4.14. MAXIMUM ALLOWABLE EVAPORATOR FREEZE-STAT TRIP OCCURRENCE OF THREE (ADJUSTABLE BETWEEN ONE AND FOUR OCCURRENCES) DURING COOLING DEMAND, WITH CIRCUITRY TO SHUT-OFF THE COMPRESSOR EACH TIME A FREEZE-STAT TRIP OCCURS AND RECORD AN ERROR IN NON-VOLATILE MEMORY, AND IF THE MAXIMUM LIMIT IS REACHED, THE COMPRESSOR IS TO BE LOCKED-OUT AND A DIGITAL OUTPUT FOR SERVICE IS TO BE DISPLAYED;

33.4.15. CONDENSER FAN CONTROL INCLUDING:

33.4.15.1. SIX SECOND (ADJUSTABLE BETWEEN ZERO AND SIXTEEN SECONDS) BETWEEN CONDENSER FAN SHUT-OFF AND RESTART TO PREVENT REVERSE ROTATION OF THE FANS(S);
33.4.15.2. COOLING STAGE LOW OUTDOOR TEMPERATURE SET-POINT CONTROL (4 TO 13°C (40 TO 55°F) DEPENDING ON NUMBER OF FANS AND ADJUSTABLE BETWEEN 16°C AND -12°C (60°F AND 10°F) TO REDUCE AIRFLOW THROUGH THE CONDENSER BY TURNING OFF SOME OR ALL FANS, DEPENDING ON THE NUMBER OF CONDENSER FANS.

33.5. FILTERS: ROLL TYPE GLASS FIBRE MESH CONSTRUCTION FILTER MEDIA FACTORY INSTALLED WHEN THE UNIT IS SHIPPED, AND DISPOSABLE, 50 MM (2") THICK, PLEATED, UL CLASS 1 MERV 7 RATED, METAL FRAMED FILTERS WITH AN INITIAL LOADING OF FILTERS, AND A SPARE SET OF FILTERS FOR EACH UNIT, SUPPLIED LOOSE IN SEALED CONTAINERS.

33.6. SUPPLY AIR BLOWER: CENTRIFUGAL, STATICALLY AND DYNAMICALLY BALANCED, REMOVABLE (SLIDE-OUT) BLOWER ASSEMBLY COMPLETE WITH:

33.6.1. MOTOR, DRIVE ASSEMBLY AND GUARD CONFORMING TO REQUIREMENTS SPECIFIED IN THE MECHANICAL WORK SECTION ENTITLED BASIC MECHANICAL MATERIALS AND METHODS;

33.7. MODULAR CONTROLLER: INTEGRAL SOLID-STATE CONTROL BOARD TO OPERATE THE UNIT, COMPATIBLE IN ALL RESPECTS WITH THE BUILDING AUTOMATION SYSTEM, AND WITH BUILT-IN FUNCTIONS AS FOLLOWS:

33.7.1. BLOWER ON/OFF DELAY;
33.7.2. CONTROL PARAMETER DEFAULTS;
33.7.3. SERVICE RELAY OUTPUT;
33.7.4. DIRTY FILTER SWITCH INPUT;
33.7.5. DEHUMIDISTAT INPUT;
33.7.6. ECONOMIZER CONTROL;
33.7.7. GAS VALVE DELAY BETWEEN STAGES;
33.7.8. UNIT DIAGNOSTICS;
33.7.9. DIAGNOSTICS CODE STORAGE;
33.7.10. INDOOR AIR QUALITY INPUT;
33.7.11. LOW AMBIENT CONTROLS;
33.7.12. MINIMUM RUN TIME;
33.7.13. NIGHT SETBACK MODE;
33.7.14. SMOKE ALARM MODE;
33.7.15. LOW PRESSURE CONTROL;
33.7.16. THERMOSTAT BOUNCE RELAY;
33.7.17. 3-DIGIT DISPLAY AND DEGREES F OR C DISPLAY;
33.7.18. HEAT/COOL THERMOSTAT COMPATIBLE WITH WARM-UP MODE.

33.8. ROOM THERMOSTAT: SURFACE WALL MOUNTING (ON A RECESSED BOX) ADJUSTABLE 24 VOLT THERMOSTAT SUPPLIED LOOSE WITH THE UNIT AND EQUIPPED WITH A FAN AUTO-ON SWITCH, OFF-HEAT-COOL-AUTO SWITCH, NIGHT SET-BACK CONTROLS, AND DIGITAL THERMOMETER AND SET-POINT DISPLAY.

33.9. ROOF MOUNTING CURB: MINIMUM 450 MM (18") HIGH PREFABRICATED AND INSULATED CURB CONFORMING TO REQUIREMENTS OF THE NATIONAL ROOFING CONTRACTORS ASSOCIATION.

33.10. SEISMIC RESTRAINT HARDWARE: FACTORY SECURED SEISMIC RESTRAINT CONNECTION HARDWARE.

33.11. INSTALLATION OF AIR HANDLING UNITS - PACKAGED OUTDOOR

33.11.1. PROVIDE OUTDOOR HEATING AND AIR CONDITIONING UNITS WHERE SHOWN.
33.11.2. PROVIDE ALL REQUIRED RIGGING AND HOISTING/MOVING EQUIPMENT REQUIRED TO MOVE EACH UNIT TO THE REQUIRED LOCATIONS. DO ALL RIGGING/HOISTING/MOVING IN ACCORDANCE WITH THE UNIT MANUFACTURER'S DIRECTIONS AND DETAILS.
33.11.3. SECURE BASE MOUNTING UNITS IN PLACE, LEVEL, AND PLUMB, ON A FABRICATED STEEL BASE OR CONCRETE PAD AS INDICATED.
33.11.4. BRACE AND SECURE EACH UNIT IN ACCORDANCE WITH REQUIREMENTS SPECIFIED IN THE MECHANICAL WORK SECTION ENTITLED SEISMIC CONTROL AND RESTRAINT.
33.11.5. INSTALL ALL COMPONENTS SHIPPED LOOSE WITH THE UNITS. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. CALIBRATE ALL CONTROL COMPONENTS REQUIRING FIELD CALIBRATION.
33.11.6. EXTEND CONDENSATE TRAPPED DRAINS USING SCHEDULE 40 GALVANIZED STEEL PIPING TO THE ROOF.
33.11.7. PROVIDE THERMOSTATS AND WALL MOUNT ON A RECESSED BOX WHERE SHOWN. CONFIRM EXACT LOCATIONS PRIOR TO ROUGHING-IN. CONNECT COMPLETE WITH 24 VOLT CONTROL WIRING IN CONDUIT TO THE STANDARDS OF THE ELECTRICAL WORK AND THE MANUFACTURER'S CERTIFIED WIRING DIAGRAM. SET-UP AND PROGRAM THERMOSTATS IN ACCORDANCE WITH THE OWNER'S REQUIREMENTS.
33.11.8. CAREFULLY COORDINATE THE INSTALLATION OF EACH UNIT WITH ALL OTHER TRADES MAKING CONNECTIONS TO THE UNIT, IN PARTICULAR, POWER, INTERLOCK CONNECTIONS, AND CONTROL CONNECTIONS.
33.11.9. EQUIPMENT AND SYSTEM MANUFACTURER'S CERTIFICATION: REFER TO THE ARTICLE ENTITLED EQUIPMENT AND SYSTEM MANUFACTURER'S CERTIFICATION IN THE MECHANICAL WORK SECTION ENTITLED MECHANICAL WORK GENERAL INSTRUCTIONS.
33.11.10. START-UP: REFER TO THE ARTICLE ENTITLED EQUIPMENT AND SYSTEM START-UP IN THE MECHANICAL WORK SECTION ENTITLED MECHANICAL WORK GENERAL INSTRUCTIONS.
33.11.11. DEMONSTRATION AND TRAINING: REFER TO THE ARTICLE ENTITLED EQUIPMENT AND SYSTEM O&M DEMONSTRATION & TRAINING IN THE MECHANICAL WORK SECTION ENTITLED MECHANICAL WORK GENERAL INSTRUCTIONS. INCLUDE FOR A ONE HALF DAY ON-SITE OPERATION DEMONSTRATION AND TRAINING SESSION. THE TRAINING IS TO BE A FULL REVIEW OF ALL COMPONENTS INCLUDING BUT NOT LIMITED TO A FULL OPERATION AND MAINTENANCE DEMONSTRATION, WITH ABNORMAL EVENTS.

TESTING, ADJUSTING, AND BALANCING

34. APPLICATION
34.1. THIS SECTION SPECIFIES MECHANICAL SYSTEM TESTING, ADJUSTING, AND BALANCING REQUIREMENTS THAT ARE COMMON TO MECHANICAL WORK SECTIONS OF THE SPECIFICATION AND IT IS A SUPPLEMENT TO EACH SECTION AND IS TO BE READ ACCORDINGLY.

35. SUBMITTALS
35.1. NAME AND QUALIFICATIONS OF TESTING AND BALANCING AGENCY: WITHIN THIRTY DAYS OF WORK COMMENCING AT THE SITE, SUBMIT THE NAME AND QUALIFICATIONS OF THE PROPOSED TESTING AND BALANCING AGENCY IN ACCORDANCE WITH REQUIREMENTS OF THE ARTICLE ENTITLED QUALITY ASSURANCE BELOW.
35.2. SAMPLE TEST FORMS: SUBMIT SAMPLE TEST FORMS, IF OTHER THAN THOSE STANDARD FORMS PREPARED BY THE ASSOCIATED AIR BALANCE COUNCIL (AABC) OR NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB) ARE PROPOSED FOR USE.
35.3. DRAWING EVALUATION REPORT: SUBMIT A REPORT BY THE AGENCY TO INDICATE THE AGENCY'S EVALUATION OF THE MECHANICAL DRAWINGS WITH RESPECT TO SERVICE ROUTING AND LOCATION OR LACK OF BALANCING DEVICES. INCLUDE THE SET OF DRAWINGS USED AND MARKED-UP BY THE AGENCY TO PREPARE THE REPORT.
35.4. SITE VISIT REPORTS: SUBMIT A REPORT BY THE AGENCY AFTER EACH SITE VISIT MADE BY THE AGENCY DURING THE CONSTRUCTION PHASE OF THIS PROJECT.
35.5. DRAFT REPORT: SUBMIT A DRAFT REPORT, AS SPECIFIED IN PART 3 OF THIS SECTION.
35.6. FINAL REPORT: SUBMIT A FINAL REPORT, AS SPECIFIED IN PART 3 OF THIS SECTION.
35.7. WARRANTY: SUBMIT A TESTING AND BALANCING WARRANTY AS SPECIFIED IN PART 3 OF THIS SECTION.
35.8. POST CONSTRUCTION SITE VISIT REPORTS: SUBMIT REPORTS LISTING OBSERVATIONS AND RESULTS OF POST CONSTRUCTION SITE VISITS AS SPECIFIED IN PART 3 OF THIS SECTION.

36. DEFINITIONS
36.1. THE FOLLOWING ARE DEFINITIONS OF WORDS USED IN THIS SECTION:
36.1.1. "TAB" – MEANS TESTING, ADJUSTING AND BALANCING TO DETERMINE AND CONFIRM QUANTITATIVE PERFORMANCE OF EQUIPMENT AND SYSTEMS AND TO REGULATE THE SPECIFIED FLUID FLOW RATE AND AIR PATTERNS AT THE TERMINAL EQUIPMENT, E.G., REDUCE FAN SPEED, THROTTLING, ETC.;
36.1.2. "HYDRONIC SYSTEMS" – INCLUDES HEATING WATER, CHILLED WATER, GLYCOL-WATER SOLUTION, CONDENSER WATER, AND ANY SIMILAR SYSTEM;
36.1.3. "AIR SYSTEMS" – INCLUDES ALL OUTSIDE AIR, SUPPLY AIR, RETURN AIR, EXHAUST AIR, AND RELIEF AIR SYSTEMS;
36.1.4. "FLOW RATE TOLERANCE" – MEANS THE ALLOWABLE PERCENTAGE VARIATION, MINUS TO PLUS, OF ACTUAL FLOW RATE VALUES IN THE CONTRACT DOCUMENTS;
36.1.5. "REPORT FORMS" – MEANS TEST DATA SHEETS ARRANGED FOR COLLECTING TEST DATA IN LOGICAL ORDER FOR SUBMISSION AND REVIEW, AND THESE FORMS, WHEN REVIEWED AND ACCEPTED, SHOULD ALSO FORM THE PERMANENT RECORD TO BE USED AS THE BASIS FOR REQUIRED FUTURE TESTING, ADJUSTING AND BALANCING;
36.1.6. "TERMINAL" – MEANS THE POINT WHERE THE CONTROLLED FLUID ENTERS OR LEAVES THE DISTRIBUTION SYSTEM. AND THESE ARE SUPPLY INLETS ON WATER TERMINALS, SUPPLY OUTLETS ON AIR TERMINALS, RETURN OUTLETS ON WATER TERMINALS, AND EXHAUST OR RETURN INLETS ON AIR TERMINALS SUCH AS REGISTERS, GRILLES, DIFFUSERS, LOUVERS, AND HOODS;
36.1.7. "MAIN" – MEANS THE DUCT OR PIPE CONTAINING THE SYSTEM'S MAJOR OR ENTIRE FLUID FLOW;
36.1.8. "SUBMAIN" – MEANS THE DUCT OR PIPE CONTAINING PART OF THE SYSTEMS' CAPACITY AND SERVING TWO OR MORE BRANCH MAINS;
36.1.9. "BRANCH MAIN" – MEANS DUCT OR PIPE SERVICING TWO OR MORE TERMINALS;
36.1.10. "BRANCH" – MEANS DUCT OR PIPE SERVING A SINGLE TERMINAL.

37. QUALITY ASSURANCE

37.1. TESTING AND BALANCING AGENCY: EMPLOY THE SERVICES OF AN INDEPENDENT TESTING, ADJUSTING, AND BALANCING AGENCY MEETING THE QUALIFICATIONS SPECIFIED BELOW, TO BE THE SINGLE SOURCE OF RESPONSIBILITY TO TEST, ADJUST, AND BALANCE THE BUILDING MECHANICAL SYSTEMS TO PRODUCE THE DESIGN OBJECTIVES. THE TESTING, ADJUSTING AND BALANCING AGENCY IS TO HAVE SUCCESSFULLY COMPLETED TESTING, ADJUSTING AND BALANCING OF MECHANICAL SYSTEMS FOR A MINIMUM OF FIVE PROJECTS SIMILAR TO THIS PROJECT WITHIN THE PAST THREE YEARS, AND IS TO BE CERTIFIED AS AN INDEPENDENT AGENCY IN ALL REQUIRED CATEGORIES BY ONE OF THE FOLLOWING:
37.1.1. AABC – ASSOCIATED AIR BALANCE COUNCIL;
37.1.2. NEBB – NATIONAL ENVIRONMENTAL BALANCING BUREAU;

37.2. STANDARDS: TESTING, ADJUSTING AND BALANCING OF THE COMPLETE MECHANICAL SYSTEMS IS TO BE PERFORMED OVER THE ENTIRE OPERATING RANGE OF EACH SYSTEM IN ACCORDANCE WITH ONE OF THE FOLLOWING PUBLICATIONS:
37.2.1. NATIONAL STANDARDS FOR A TOTAL SYSTEM BALANCE PUBLISHED BY THE ASSOCIATED AIR BALANCE COUNCIL;
37.2.2. PROCEDURAL STANDARDS FOR TESTING, ADJUSTING AND BALANCING OF ENVIRONMENTAL SYSTEMS PUBLISHED BY THE NATIONAL ENVIRONMENTAL BALANCING BUREAU;
37.2.3. CHAPTER 37, TESTING, ADJUSTING, AND BALANCING OF ASHRAE HANDBOOK HVAC APPLICATIONS.

38. ACCEPTABLE LIST OF TAB FIRMS:
38.1. AIR & WATER PRECISION BALANCING;
38.2. DESIGNTEST & BALANCING CO LTD.;
38.3. FLOWSET BALANCING LTD.;
38.4. DYMANIC FLOW BALANCING.

39. SCOPE OF WORK
39.1. PERFORM TOTAL MECHANICAL SYSTEMS TESTING, ADJUSTING, AND BALANCING. REQUIREMENTS INCLUDE MEASUREMENT AND ESTABLISHMENT OF THE FLUID QUANTITIES OF THE MECHANICAL SYSTEMS AS REQUIRED TO MEET DESIGN SPECIFICATIONS AND COMFORT CONDITIONS, AND RECORDING AND REPORTING THE RESULTS.
39.2. MECHANICAL SYSTEMS TO BE TESTED, ADJUSTED AND BALANCED INCLUDE:
39.2.1. DOMESTIC WATER SYSTEMS: TAB OF DOMESTIC WATER SYSTEMS (ALL PIPING EXTENDED FROM THE MUNICIPAL MAIN) IS TO INCLUDE:
39.2.1.1. DOMESTIC HOT WATER RECIRCULATION PIPING;
39.2.1.2. TEMPERED WATER PIPING FLOWS.
39.2.2. HEATING SYSTEMS: TAB OF HEATING SYSTEMS IS TO INCLUDE ALL PIPING AND EQUIPMENT FLUID TEMPERATURES, PRESSURE, FLOWS AND CONTROL, AND IF TAB IS NOT DONE DURING THE HEATING SEASON, A FOLLOW-UP SITE VISIT DURING THE HEATING SEASON WILL BE REQUIRED TO CONFIRM PROPER FLOWS AND TEMPERATURES, AND ANY REQUIRED SYSTEM "FINE TUNING".
39.2.3. COOLING SYSTEMS: TAB OF COOLING SYSTEMS IS ALSO TO INCLUDE ALL PIPING AND EQUIPMENT FLUID TEMPERATURES, FLOWS AND CONTROL, AND IF TAB IS NOT DONE DURING THE COOLING SEASON, A FOLLOW-UP SITE VISIT DURING THE COOLING SEASON WILL BE REQUIRED TO CONFIRM PROPER FLOWS AND TEMPERATURES, AND ANY REQUIRED SYSTEM "FINE TUNING":
39.2.4. AIR HANDLING SYSTEMS: TAB OF AIR HANDLING SYSTEMS IS TO INCLUDE ALL EQUIPMENT AND DUCTWORK AIR TEMPERATURES, CAPACITIES AND FLOWS.
39.2.5. EXISTING SYSTEMS: ALL OF THE EXISTING SYSTEMS REVISED AS PART OF THE MECHANICAL WORK, ARE TO BE TESTED, ADJUSTED AND BALANCED AS FOR NEW SYSTEMS.

40. TESTING, ADJUSTING AND BALANCING
40.1. GENERAL REQUIREMENTS: CONFORM TO THE FOLLOWING REQUIREMENTS:
40.1.1. AS SOON AS POSSIBLE AFTER AWARD OF CONTRACT, THE AGENCY IS TO CAREFULLY EXAMINE A WHITE PRINT SET OF MECHANICAL DRAWINGS WITH RESPECT TO ROUTING OF SERVICES AND LOCATION OF BALANCING DEVICES, AND IS TO ISSUE A REPORT LISTING THE RESULTS OF THE EVALUATION;
40.1.2. THE SET OF DRAWINGS EXAMINED BY THE AGENCY IS TO BE RETURNED WITH THE EVALUATION REPORT, WITH RED LINE MARK-UPS TO INDICATE LOCATIONS FOR DUCT SYSTEM TEST PLUGS, AND REQUIRED REVISION WORK SUCH AS RELOCATION OF BALANCING DEVICES AND LOCATIONS FOR ADDITIONAL DEVICES;
40.1.3. AFTER REVIEW OF THE MECHANICAL WORK DRAWINGS AND SPECIFICATION, THE AGENCY IS TO VISIT THE SITE AT FREQUENT, REGULAR INTERVALS DURING CONSTRUCTION OF THE MECHANICAL SYSTEMS, TO OBSERVE ROUTING OF SERVICES, LOCATIONS OF TESTING AND BALANCING DEVICES, WORKMANSHIP, AND ANYTHING ELSE THAT WILL AFFECT TESTING, ADJUSTING AND BALANCING;
40.1.4. AFTER EACH SITE VISIT, THE AGENCY IS TO REPORT RESULTS OF THE SITE VISIT INDICATING THE DATE AND TIME OF THE VISIT, AND DETAILED RECOMMENDATIONS FOR ANY CORRECTIVE WORK REQUIRED TO ENSURE PROPER ADJUSTING AND BALANCING;
40.1.5. TESTING, ADJUSTING AND BALANCING IS NOT TO BEGIN UNTIL:
40.1.5.1. BUILDING CONSTRUCTION WORK IS SUBSTANTIALLY COMPLETE AND DOORS HAVE BEEN INSTALLED;
40.1.5.2. MECHANICAL SYSTEMS ARE COMPLETE IN ALL RESPECTS, AND HAVE BEEN CHECKED, STARTED, ADJUSTED, AND THEN SUCCESSFULLY PERFORMANCE TESTED.
40.1.6. ALL MECHANICAL SYSTEMS TO BE TESTED, ADJUSTED AND BALANCED ARE TO BE MAINTAINED IN FULL, NORMAL OPERATION DURING EACH DAY OF TESTING, ADJUSTING AND BALANCING;
40.1.7. OBTAIN COPIES OF REVIEWED SHOP DRAWINGS OF ALL APPLICABLE MECHANICAL PLANT EQUIPMENT AND TERMINALS, AND TEMPERATURE CONTROL DIAGRAMS AND SEQUENCES;
40.1.8. THE AGENCY IS TO WALK EACH SYSTEM FROM THE SYSTEM "HEAD END" EQUIPMENT TO TERMINAL UNITS TO DETERMINE VARIATIONS OF INSTALLATION FROM DESIGN, AND THE SYSTEM INSTALLATION TRADES WILL ACCOMPANY THE AGENCY;
40.1.9. THE AGENCY IS TO CHECK ALL VALVES AND DAMPERS FOR CORRECT AND LOCKED POSITION, AND TEMPERATURE CONTROL SYSTEMS FOR COMPLETENESS OF INSTALLATION BEFORE STARTING EQUIPMENT;
40.1.10. WHEREVER POSSIBLE, THE AGENCY IS TO LOCK ALL BALANCING DEVICES IN PLACE AT THE PROPER SETTING, AND PERMANENTLY MARK SETTINGS ON ALL DEVICES;
40.1.11. FOR BELT-DRIVEN EQUIPMENT, THE AGENCY IS TO REPORT TO THE COMMISSIONING AGENT WHO IN TURN IS TO INFORM THE CONTRACTOR AND CONSULTANT OF ANY SITUATION WHERE SHEAVES HAVE TO BE REPLACED TO SUIT TESTING AND BALANCING, AND REPLACEMENTS ARE TO BE DONE BY THE CONTRACTOR AT NO COST;
40.1.12. THE AGENCY IS TO LEAK TEST ALL DUCTWORK AS SPECIFIED IN SECTION 23 31 05 IN ACCORDANCE WITH REQUIREMENTS OF SMACNA HVAC AIR DUCT LEAK TEST MANUAL; COORDINATE WORK WITH THE WORK OF SECTION 23 31 05, PROVIDE DETAILED SKETCH(ES) TO SHEET METAL CONTRACTOR AND CONSULTANT IDENTIFYING DUCTWORK NOT IN ACCORDANCE WITH ACCEPTABLE LEAKAGE VALUES SPECIFIED IN SECTION 23 31 05 AND 23 31 06, AND RETEST CORRECTED DUCTWORK;
40.1.13. NOISE: THE AGENCY IS TO BALANCE ALL SYSTEMS WITH DUE REGARD TO OBJECTIONABLE NOISE WHICH IS TO BE A FACTOR WHEN ADJUSTING FAN SPEEDS AND PERFORMING TERMINAL WORK SUCH AS ADJUSTING AIR QUANTITIES, AND SHOULD OBJECTIONABLE NOISE OCCUR AT THE DESIGN CONDITIONS, THE AGENCY IS TO IMMEDIATELY REPORT THE PROBLEM AND SUBMIT DATA, INCLUDING SOUND READINGS, TO PERMIT AN ACCURATE ASSESSMENT OF THE NOISE PROBLEM TO BE MADE;
40.1.14. STRATIFICATION: THE AGENCY IS TO CHECK ALL SUPPLY AIR HANDLING SYSTEM MIXING PLENUMS FOR STRATIFICATION, AND WHERE THE VARIATION OF MIXED AIR TEMPERATURE ACROSS COILS IS FOUND TO BE IN EXCESS OF PLUS OR MINUS 5 PERCENT OF DESIGN REQUIREMENTS, THE AGENCY IS TO REPORT THE PROBLEM AND ISSUE A DETAIL SKETCH OF PLENUM BAFFLE(S) REQUIRED TO ELIMINATE THE STRATIFICATION;
40.1.15. TOLERANCES: THE AGENCY IS TO PERFORM TESTING, ADJUSTING AND BALANCING TO WITHIN PLUS OR MINUS 5% OF DESIGN VALUES, AND MAKE AND RECORD MEASUREMENTS USING INSTRUMENTS WITH MINIMUM ACCURACY WHICH ARE WITHIN PLUS OR MINUS 2% OF REQUIRED VALUES;
40.1.16. FILTERS FOR ALL AIR HANDLING SYSTEMS EQUIPPED WITH AIR FILTERS, TEST AND BALANCE THE SYSTEMS WITH SIMULATED 50% LOADED (DIRTY) FILTERS BY PROVIDING A FALSE PRESSURE DROP;
40.1.17. SEASONAL REQUIREMENTS: TEST, ADJUST AND BALANCE AIR CONDITIONING SYSTEMS DURING THE SUMMER SEASON AND HEATING SYSTEMS DURING WINTER SEASON, INCLUDING AT LEAST A PERIOD OF OPERATION AT OUTSIDE CONDITIONS WITHIN 2.8°C (5°F) WET BULB TEMPERATURE OF MAXIMUM SUMMER DESIGN CONDITION, AND WITHIN 5.5°C (10°C) DRY BULB TEMPERATURE OF MINIMUM WINTER DESIGN CONDITION, AND TAKE FINAL TEMPERATURE READINGS DURING SEASONAL OPERATION.

40.2. PREPARATION OF REPORTS: PREPARE REPORTS AS INDICATED BELOW.
40.2.1. DRAFT REPORTS: UPON COMPLETION OF TESTING, ADJUSTING, AND BALANCING PROCEDURES, PREPARE DRAFT REPORTS ON AABC OR NEBB FORMS. DRAFT REPORTS MAY BE HAND WRITTEN, BUT MUST BE COMPLETE, FACTUAL

ROOFTOP UNIT SCHEDULE

TAG	LOCATION	WEIGHT (LBS)	COOLING			HEATING			SUPPLY AIR FAN				ELECTRICAL			BASIS OF DESIGN	REMARKS
			TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	POWER INPUT W/O BLOWER (kW)	FUEL SOURCE	INPUT CAPACITY (MBH)	OUTPUT CAPACITY (MBH)	SUPPLY AIR (CFM)	ESP (IN WG)	POWER INPUT (kW)	MOTOR HP	POWER SUPPLY (V/PH/HZ)	MCA	MOCP		
RTU-1	ROOFTOP AT NORTH SIDE OF BUILDING	1245	95.4	65.4	5.58	NATURAL GAS	180	146	3,300	0.75	2.01	3	575/3/60	18.8	20	YORK SINGLE PACKAGE R-454B AIR CONDITIONER MODEL # KJ090N18R5BBAAE2A1	C/W 2-STAGE NATURAL GAS HEAT, ECONOMIZER W/BAROMETRIC RELIEF AND HOODS, DUAL ENTHALPY KIT (FIELD INSTALLED)
RTU-2	ROOFTOP AT SOUTH SIDE OF BUILDING	1245	101.1	68.5	6.28	NATURAL GAS	180	146	3,300	0.75	1.83	3	575/3/60	17.3	25	YORK SINGLE PACKAGE R-454B AIR CONDITIONER MODEL # KJ102S18R5BBAAE2A1	C/W 2-STAGE NATURAL GAS HEAT, ECONOMIZER W/BAROMETRIC RELIEF AND HOODS, DUAL ENTHALPY KIT (FIELD INSTALLED)

ELECTRIC DOMESTIC HOT WATER HEATER SCHEDULE

TAG	LOCATION	STORAGE CAPACITY (GAL.)	RECOVERY RATE @ 100°F (GAL/H)	SHIPPING WEIGHT (LBS.)	INPUT (kW)	ELECTRICAL (V/Ph/Hz)	BASIS OF DESIGN	REMARKS
DHWT-1	JANITOR ROOM	20	21	–	5	208/3/60	A.O. SMITH DEL-20S-5	

ELECTRIC BASEBOARD HEATER SCHEDULE

TAG	kW / BTU	VOLTS/PH/HZ	LENGTH (IN)	BASIS OF DESIGN	REMARKS
B-1	0.5 / 1706	120/1/60	22	STELPRO – CODE#SPR0501W	C/W INTEGRAL THERMOSTAT
B-2	0.75 / 2560	208/1/60	36	STELPRO – CODE#SPR1002W	C/W INTEGRAL THERMOSTAT
B-3	1 / 2560	208/1/60	36	STELPRO – CODE#SPR1002W	C/W INTEGRAL THERMOSTAT
B-4	1.5 / 2560	208/1/60	50	STELPRO – CODE#SPR1508W	C/W INTEGRAL THERMOSTAT

PLUMBING FIXTURE SCHEDULE

TAG	TYPE	DESCRIPTION	CONNECTION SIZE (IN)			REMARKS
			C.W.	H.W.	DRAIN	
WC-1	WASHROOM TOILET	AMERICAN STANDARD CADET RIGHT HEIGHT ELONGATED PRESSURE-ASSISTED TOILET 1.6 GPF	1/2	–	3	BARRIER FREE
L-1	WASHROOM SINK	0955901EC.020 0062000.020 WALL-HUNG LAVATORY, VITREOUS CHINA, EVERCLEAN ANTIMICROBIAL SURFACE, WHITE FINISH, SINGLE HOLE CENTERSET, LESS OVERFLOW, FAUCET LEDGE WITH RECESSED SELF-DRAINING DECK	1/2	1/2	1 1/2	BARRIER FREE
L-2	WASHROOM SINK	WALL-HUNG LAVATORY, VITREOUS CHINA, EVERCLEAN ANTIMICROBIAL SURFACE, WHITE FINISH, SINGLE HOLE CENTERSET, LESS OVERFLOW, FAUCET LEDGE WITH RECESSED SELF-DRAINING DECK	1/2	1/2	1 1/2	
S-1	KITCHEN SINK	COUNTER MOUNTED, DOUBLE COMPARTMENT SINK, CONSTRUCTED FROM 18 GAUGE TYPE 304 STAINLESS STEEL, WITH OVERALL DIMENSION 794 MM (31-1/4") LONG, 460 MM (18-1/8") WIDE, 203 MM (8") HIGH. C/W CHICAGO FAUCETS 434-ABCP FAUCET, MCGUIRE LFBV2165 SUPPLY, MCGUIRE 8912CB P-TRAP	1/2	1/2	1 1/2	
JS-1	JANITOR SINK	MOLDED HIGH DENSITY COMPOSITE BASIN, PVC DRAIN BODY, STAINLESS STEEL STRAINER AND 2" GASKETED OUTLET CONNECTION, C/W AMERICAN STANDARD SINK FAUCET MODEL #GUS29RT22	1/2	1/2	2	

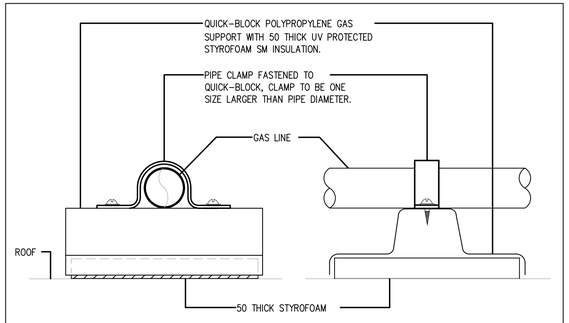
GRILLE AND DIFFUSER SCHEDULE

TAG	TYPE	FACE SIZE (IN X IN)	NECK SIZE (IN)	BASIS OF DESIGN	REMARKS
D-1	SUPPLY DIFFUSER	24" X 24"	SHOWN IN PLANS	EH PRICE SCD	
D-2	SUPPLY DIFFUSER	12" X 12"	6"	EH PRICE SCD	
D-3	SUPPLY DIFFUSER	–	SHOWN IN PLANS	EH PRICE RCD	
G-1	EGG CRATE RETURN GRILLE	24" X 4"	–	EH PRICE 80	
G-2	EGG CRATE RETURN GRILLE	24" X 24"	–	EH PRICE 80	

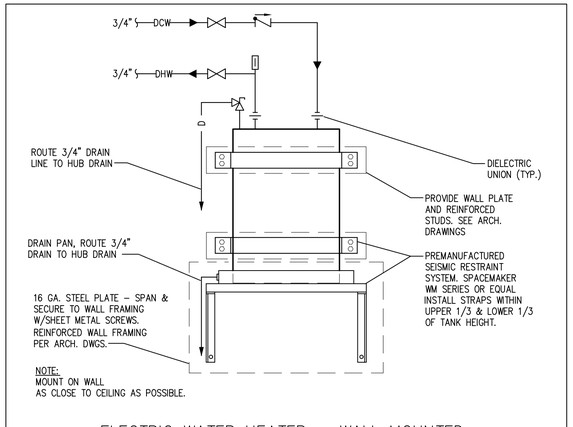
ALL GRILLES AND REGISTERS TO BE COLOUR B12 (WHITE)

FAN SCHEDULE

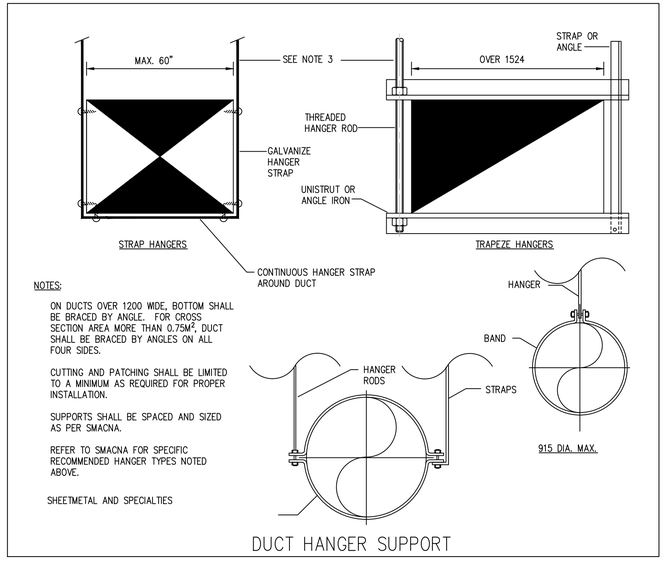
TAG	LOCATION	TYPE	AIR FLOW (CFM)	SP (IN WG)	BASIS OF DESIGN	REMARKS
EF-1	BF WASHROOM 216	INLINE EXHAUST FAN	70	0.25	GREENHECK SP-A70	INTERLOCK WITH WASHROOM LIGHT. COORDINATE WITH ELECTRICAL
EF-2	JANITOR 217	INLINE EXHAUST FAN	70	0.25	GREENHECK SP-A70	INTERLOCK WITH LIGHT. COORDINATE WITH ELECTRICAL
EF-3	WASHROOM 218	INLINE EXHAUST FAN	70	0.25	GREENHECK SP-A70	INTERLOCK WITH WASHROOM LIGHT. COORDINATE WITH ELECTRICAL
EF-4	WASHROOM 219	INLINE EXHAUST FAN	70	0.25	GREENHECK SP-A70	INTERLOCK WITH WASHROOM LIGHT. COORDINATE WITH ELECTRICAL
EF-5	WASHROOM 220	INLINE EXHAUST FAN	70	0.25	GREENHECK SP-A70	INTERLOCK WITH WASHROOM LIGHT. COORDINATE WITH ELECTRICAL
EF-6	WASHROOM 221	INLINE EXHAUST FAN	70	0.25	GREENHECK SP-A70	INTERLOCK WITH WASHROOM LIGHT. COORDINATE WITH ELECTRICAL
TF-1	IT ROOM 213	INLINE CABINET FAN	200	0.5	GREENHECK CSP-A250-QD	INTERLOCK WITH THERMOSTAT
TF-2	ELECTRICAL ROOM 201	INLINE CABINET FAN	200	0.5	GREENHECK CSP-A250-QD	INTERLOCK WITH THERMOSTAT



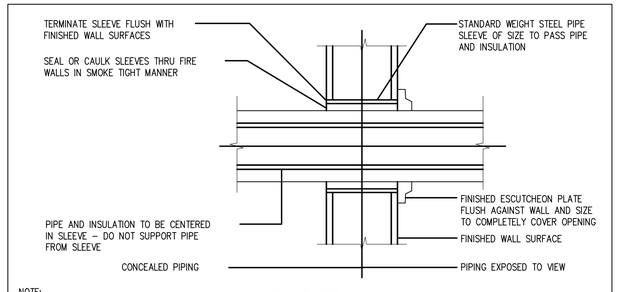
GAS MOUNTED DETAIL



ELECTRIC WATER HEATER – WALL MOUNTED



DUCT HANGER SUPPORT



PIPE SLEEVE THROUGH WALL DETAIL

CLIENT

MUNICIPALITY OF CASSELMAN

PROJECT NORTH

ISSUE	DESCRIPTION	DATE
4	ISSUED FOR TENDER	2025-03-24
3	ISSUED FOR PERMIT	2025-03-18
2	ISSUED FOR 99% COORDINATION	2025-02-24
1	ISSUED FOR 66% COORDINATION	2023-05-12

IT IS THE RESPONSIBILITY OF THE APPROPRIATE CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON SITE AND PROMPTLY REPORT ALL ERRORS AND/OR OMISSIONS TO THE CONSULTANT BEFORE WORK COMMENCES.

ALL WORK IS TO FOLLOW THE OBC 2012 AND ANY OTHER APPLICABLE CODES AND REGULATIONS.

DO NOT SCALE DRAWINGS.

PROFESSIONAL STAMP

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PROJECT

1 INDUSTRIEL STREET
OFFICE FIT-UP

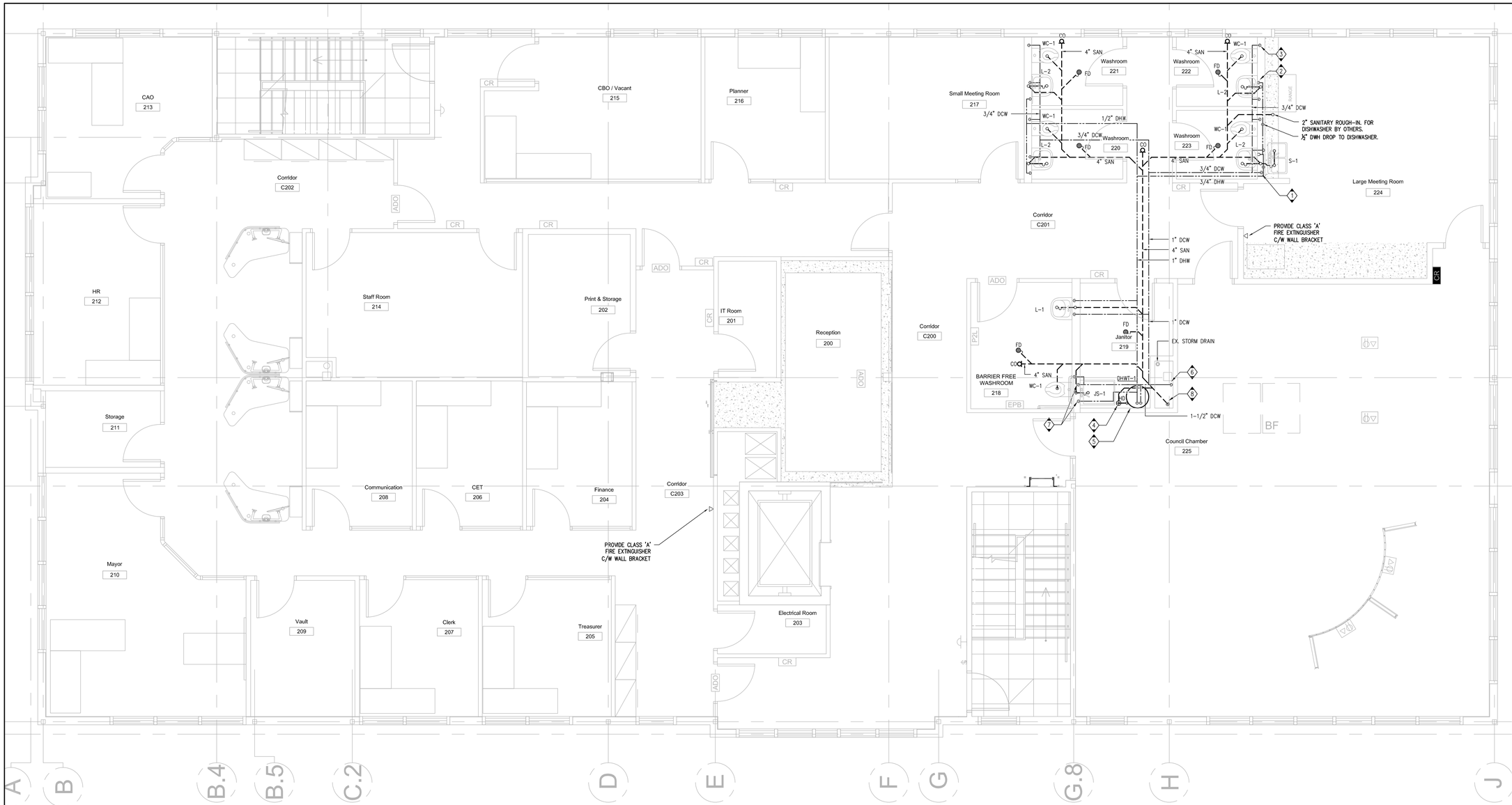
DRAWING

MECHANICAL
SCHEDULES AND DETAILS

PROJECT No: MRK-23002008-A0	REVISION:
DRAWN: M. OMAR	DATE: JUNE 2023
APPROVED: B. BROWN	SCALE: AS SHOWN

DRAWING No:

M-5



MECHANICAL – SECOND FLOOR – PLUMBING & FIRE PROTECTION PLAN

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

GENERAL NOTES

1. ALL CUTTING AND PATCHING OF FLOORS AND WALLS BY THIS CONTRACTOR.
2. SUPPLY AND INSTALL PIPE SLEEVES FOR PIPES PASSING THROUGH EXISTING WALLS OR FLOORS.
3. COORDINATE PIPE RUNS WITH SHEETMETAL AND ELECTRICAL DIVISIONS.
4. ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED.
5. ENSURE MATERIALS AND INSTALLATION ARE COMPLIANT WITH ONTARIO BUILDING CODE REQUIREMENTS.
6. REFER TO DETAILS AND SPECIFICATIONS FOR EQUIPMENT & DUCTWORK INSTALLATION REQUIREMENTS.

KEYNOTES

1. 1/2"ø DCW & DHW DOWN WITHIN WALL TO SERVE TYPE "L-1" SINKS AND KITCHEN SINKS WHERE APPLICABLE. PROVIDE 12ø DCW & DHW CONNECTION PER FAUCET AS PER PLUMBING FIXTURE SCHEDULE.
2. 1/2"ø DCW & DHW DOWN WITHIN WALL TO SERVE LAVATORIES "L-1" & "L-2". TYP. FOR 5.
3. 3/4"ø DCW DOWN WITHIN WALL TO SERVE WATER CLOSET "WC-1". TYP. FOR 5.
4. RUN DRAINAGE AND RELIEF PIPING DOWN TO HUB DRAIN
5. 3/4"ø DCW & DHW DOWN TO SERVE NEW DOMESTIC HOT WATER TANK "DHWT-1". REFER TO DETAIL ON M-05
6. PROVIDE 2"ø DCW UP FROM GROUND FLOOR TO SECOND FLOOR. CONNECT ON THE BUILDING SIDE OF THE WATER METER AND BACKFLOW PREVENTER IN THE GROUND FLOOR MECHANICAL ROOM
7. 1"ø DCW & DHW DOWN WITHIN WALL TO SERVE TYPE "JS-1" SINK.
8. EX. 4"ø SANITARY DOWN.

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PROJECT NORTH

4	ISSUED FOR TENDER	2025-03-24
3	ISSUED FOR PERMIT	2025-03-18
2	ISSUED FOR 99% COORDINATION	2025-02-24
1	ISSUED FOR 66% COORDINATION	2023-05-12
ISSUE	DESCRIPTION	DATE

IT IS THE RESPONSIBILITY OF THE APPROPRIATE CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON SITE AND PROMPTLY REPORT ALL ERRORS AND/OR OMISSIONS TO THE CONSULTANT BEFORE WORK COMMENCES.

ALL WORK IS TO FOLLOW THE OBC 2012 AND ANY OTHER APPLICABLE CODES AND REGULATIONS.

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PROJECT

1 INDUSTRIEL STREET
OFFICE FIT-UP

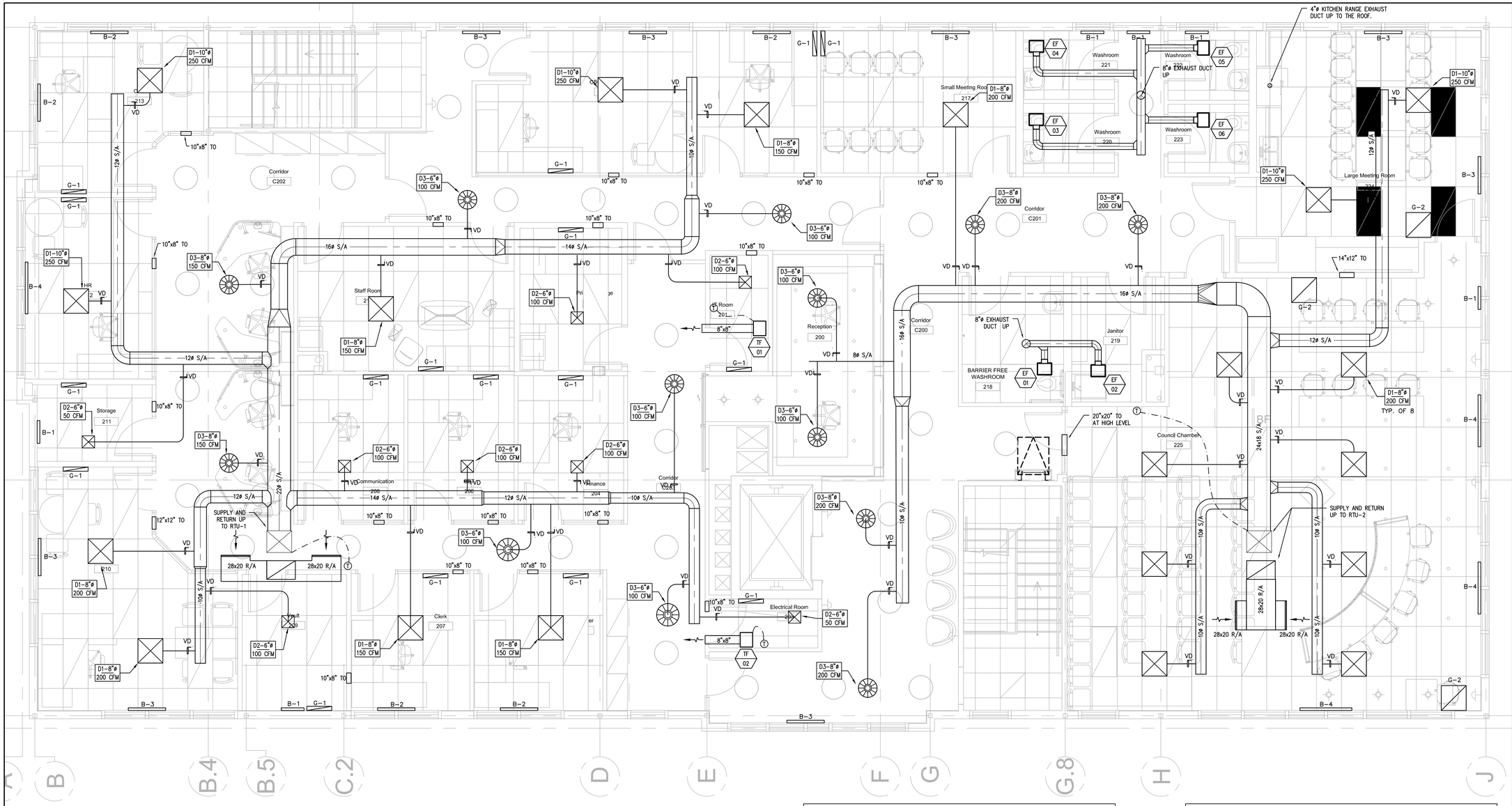
DRAWING

MECHANICAL
SECOND FLOOR
PLUMBING AND FIRE
PROTECTION PLAN

PROJECT No: MRK-23002008-A0	REVISION:
DRAWN: M. OMAR	DATE: JUNE 2023
APPROVED: B. BROWN	SCALE: AS SHOWN

DRAWING No:

M-6



MECHANICAL – SECOND FLOOR – HVAC PLAN

SCALE: 1/4" : 1'-0"

GENERAL NOTES

1. DUCTWORK LOCATIONS TO BE FULLY CO-ORDINATED WITH GENERAL, PLUMBING, SPRINKLER AND ELECTRICAL CONTRACTORS PRIOR TO FABRICATION OR INSTALLATION.
2. ALL CUTTING AND PATCHING OF FLOORS AND WALLS BY GENERAL CONTRACTOR.
3. DUCT RUN OUTS TO MATCH GRILLE/DIFFUSER NECK SIZE.
4. CO-ORDINATE DUCT RUNS WITH ELECTRICAL CABLE TRAY AND STRUCTURE.
5. PROVIDE BALANCING DAMPERS FOR ALL GRILLE/DIFFUSER DUCT RUNS.
6. DUCT ELBOWS TO BE FULL RADIUS OR WITH TURNING VANES. REFER TO SPECIFICATIONS.
7. ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED.
8. ENSURE MATERIALS AND INSTALLATION ARE COMPLIANT WITH ONTARIO BUILDING CODE REQUIREMENTS.
9. REFER TO DETAILS AND SPECIFICATIONS FOR EQUIPMENT & DUCTWORK INSTALLATION REQUIREMENTS.

DRAWING NOTES

1. ALL TRANSFER OPENINGS (TO) TO BE AT HIGH LEVEL
2. SUPPLY AND RETURN DUCTWORK TO BE ACOUSTICALLY LINED WITHIN 10 FEET OF ROOFTOP UNIT
4. SUPPLY DUCTWORK MAINS TO BE THERMALLY INSULATED

CLIENT

MUNICIPALITY OF CASSELMAN

PROJECT NORTH

ISSUE	DESCRIPTION	DATE
4	ISSUED FOR TENDER	2025-03-24
3	ISSUED FOR PERMIT	2025-03-18
2	ISSUED FOR 99% COORDINATION	2025-02-24
1	ISSUED FOR 66% COORDINATION	2023-05-12

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PROJECT

1 INDUSTRIEL STREET
OFFICE FIT-UP

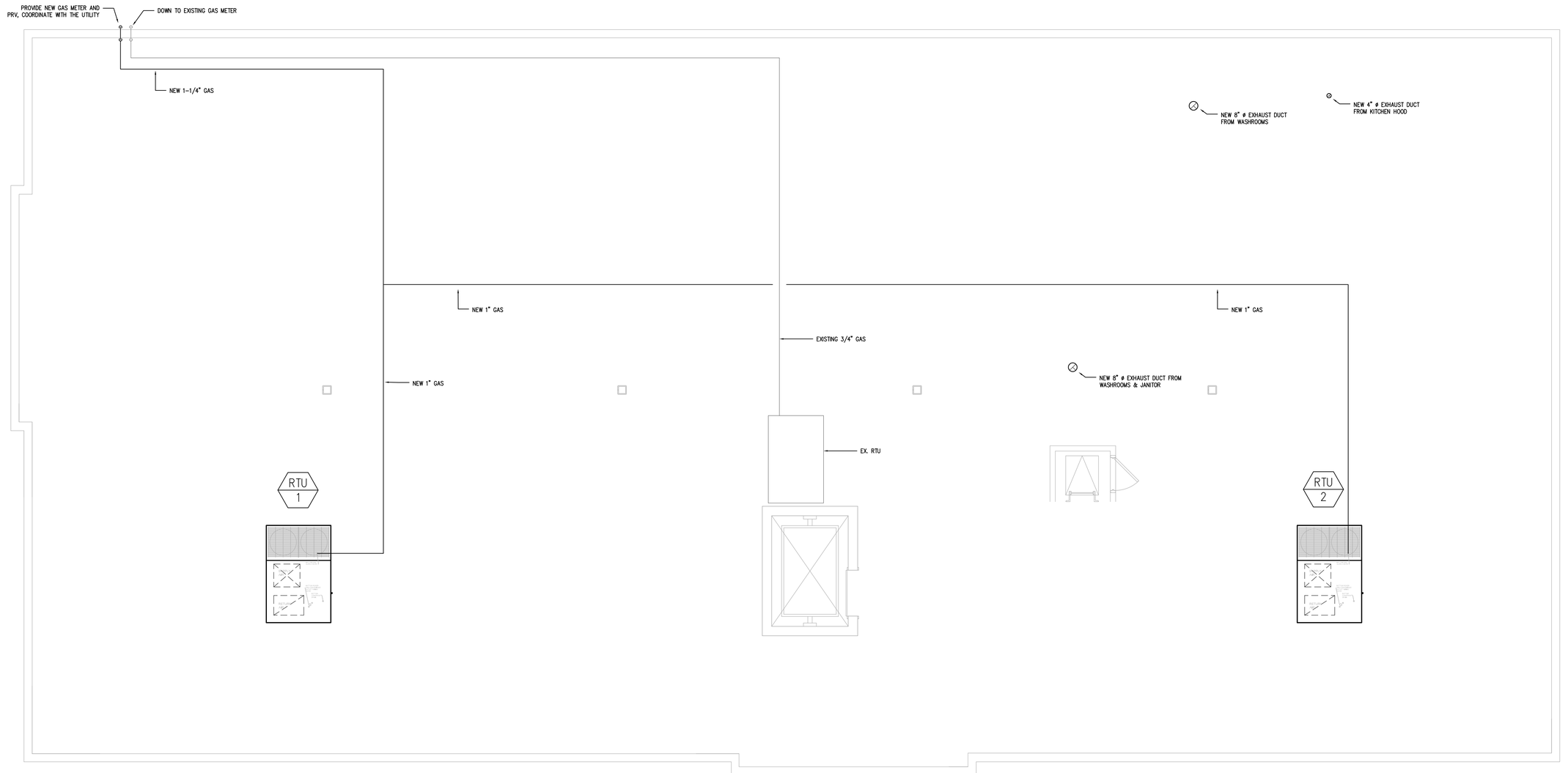
DRAWING

MECHANICAL
SECOND FLOOR
HVAC PLAN

PROJECT No: MRK-23002008-A0	REVISION:
DRAWN: M. OMAR	DATE: JUNE 2023
APPROVED: B. BROWN	SCALE: AS SHOWN

DRAWING No:

M-7



MECHANICAL PLAN – ROOF

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

CLIENT

MUNICIPALITY OF CASSELMAN

PROJECT NORTH

ISSUE	DESCRIPTION	DATE
4	ISSUED FOR TENDER	2025-03-24
3	ISSUED FOR PERMIT	2025-03-18
2	ISSUED FOR 99% COORDINATION	2025-02-24
1	ISSUED FOR 66% COORDINATION	2023-05-12

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PROJECT

1 INDUSTRIEL STREET
OFFICE FIT-UP

DRAWING

MECHANICAL
ROOF PLAN

PROJECT No: MRK-23002008-A0	REVISION:
DRAWN: M. OMAR	DATE: JUNE 2023
APPROVED: B. BROWN	SCALE: AS SHOWN

DRAWING No:

M-8

POWER SINGLE LINE DIAGRAM SYMBOLS

###/#	CKT BREAKER, '###' INDICATES TRIP SETTING, '#' INDICATES NUMBER OF POLES
###/#	FUSED SWITCH, '###' INDICATES TRIP SETTING, '#' INDICATES NUMBER OF POLES
	ENCLOSED CIRCUIT BREAKER
	ENCLOSED NON-FUSED SWITCH
	ENCLOSED FUSED SWITCH
K	KIRK KEY INTERLOCK
SS	SOLID STATE, ELECTRONIC ADJUSTABLE TRIP
GFP	GROUND FAULT PROTECTION
SPD	SURGE PROTECTIVE DEVICE
DMM	DIGITAL MULTIMETER
M	UTILITY METER
	TRANSFORMER
PANEL NAME	PANELBOARD
	GROUND
	POTENTIAL TRANSFORMER
	CURRENT TRANSFORMER

POWER DISTRIBUTION AND SMALL POWER

	DUPLEX RECEPTACLE, WALL MOUNTED		DOUBLE DUPLEX RECEPTACLE, WALL MOUNTED
	DUPLEX RECEPTACLE, ABOVE BACKSPLASH OF CABINET, COUNTERTOP OR SINK		DOUBLE DUPLEX RECEPTACLE, ABOVE BACKSPLASH OF CABINET, COUNTERTOP OR SINK
	DUPLEX RECEPTACLE, FLUSH MTD IN CEILING		DOUBLE DUPLEX RECEPTACLE, FLUSH MOUNTED IN CEILING
	HALF SWITCHED DUPLEX RECEPTACLE, WALL MOUNTED		SIMPLEX RECEPTACLE, WALL MOUNTED
TYPE	SPECIAL PURPOSE RECEPTACLE, WALL MOUNTED. NEMA CONFIGURATION AS NOTED ON PLANS	TYPE	SPECIAL PURPOSE RECEPTACLE, CEILING MOUNTED NEMA CONFIGURATION AS NOTED ON PLANS
	SHADING REPRESENTS RECEPTACLE ON LIFE SAFETY BRANCH		SHADING REPRESENTS RECEPTACLE ON UPS BRANCH
	SHADING REPRESENTS RECEPTACLE ON NON-LIFE SAFETY BRANCH		SHADING REPRESENTS RECEPTACLE WITH ISOLATED GROUND
	DISCONNECT SWITCH, REFER TO EQUIPMENT CONNECTION SCHEDULE FOR DISCONNECT TYPE, UON	X	MOTOR, SUBSCRIPT 'X' DENOTES MOTOR DESIGNATION, REFER TO EQUIPMENT CONNECTION SCHEDULE
X	DIRECT CONNECTION, WALL MOUNTED. SUBSCRIPT 'X' INDICATES UNIQUE IDENTIFIER, REFER TO EQUIPMENT CONNECTION SCHEDULE.	X	DIRECT CONNECTION, CEILING MOUNTED. SUBSCRIPT 'X' INDICATES UNIQUE IDENTIFIER, REFER TO EQUIPMENT CONNECTION SCHEDULE.
	GROUND BUS BAR		COMBINATION MOTOR STARTER DISCONNECT
HF	FURNITURE OUTLET, WALL MOUNTED		MOTOR STARTER
	PANELBOARD		VARIABLE FREQUENCY DRIVE
	TRANSFORMER		
X	FLOOR BOX, DUPLEX RECEPTACLE	FB	POWER, EXTRA LOW VOLTAGE FLOOR POKE-THROUGH [2x120V, 20A DUPLEX RECEPTACLES] [1-DATA OUTLET FOR COMMUNICATION] [1-OPENING FOR AV SYSTEM]
X	FLOOR BOX, DOUBLE DUPLEX RECPT		

X — RECEPTACLE TYPE
12 — NUMBER INDICATES BRANCH CIRCUIT NUMBER

CIRCUITING

BLDG-E1MDPHA.10
- 10 — CIRCUIT NUMBER
- MDPHA — PANEL DESIGNATION

3#12,#12G,21mmC
- 21mm — CONDUIT SIZE
- #12G — GROUND CONDUCTOR QUANTITY AND SIZE
- 3#12 — CIRCUIT CONDUCTOR QUANTITY AND SIZE

TAGS AND CALL OUT SYMBOLS

A / E3.1	DETAIL CALLOUT A — DETAIL DESIGNATION E3.1 — SHEET NUMBER	#	REVISION CALLOUT
		1	KEYNOTE CALLOUT

LIGHTING, LIGHITNG SWITCHING & CONTROLS

AF10 / 7ab
- AF10 — UPPER CASE LETTERS INDICATE LIGHTING FIXTURE TYPE
- 7ab — NUMBER INDICATES CIRCUIT NUMBER, LOWER CASE LETTER INDICATES SWITCHLEG

	LIGHTING FIXTURE ON NORMAL BRANCH POWER - CEILING MOUNTED		LIGHTING FIXTURE ON EMERGENCY BRANCH POWER OR EMERGENCY BALLAST - CEILING MOUNTED
	LIGHTING FIXTURE ON NORMAL BRANCH POWER - WALL MOUNTED		LIGHTING FIXTURE ON EMERGENCY BRANCH POWER OR EMERGENCY BALLAST - WALL MOUNTED
	STRIP LIGHTING FIXTURE ON NORMAL BRANCH POWER		STRIP LIGHTING FIXTURE ON EMERGENCY BRANCH POWER OR EMERGENCY BALLAST
	PENDANT LINEAR FIXTURE ON NORMAL BRANCH POWER		PENDANT LINEAR FIXTURE ON EMERGENCY BRANCH POWER OR EMERGENCY BALLAST
	DOWNLIGHT LIGHTING FIXTURE ON NORMAL BRANCH POWER - RECESSED MOUNTED		DOWNLIGHT LIGHTING FIXTURE ON EMERGENCY BRANCH POWER OR EMERGENCY BALLAST - RECESSED MOUNTED
	WALL WASH LIGHTING FIXTURE ON NORMAL BRANCH POWER - ARROW INDICATES DIRECTION OF BEAM		WALL WASH LIGHTING FIXTURE ON EMERGENCY BRANCH POWER OR EMERGENCY BALLAST - ARROW INDICATES DIRECTION OF BEAM
	WALL SCONCE LIGHTING FIXTURE ON NORMAL BRANCH POWER - WALL MOUNTED		WALL SCONCE LIGHTING FIXTURE ON EMERGENCY BRANCH POWER OR EMERGENCY BALLAST - WALL MOUNTED
	BOLLARD LIGHT FIXTURE ON NORMAL BRANCH POWER		BOLLARD ON EMERGENCY BRANCH POWER OR EMERGENCY BALLAST
	EXIT SIGN - SINGLE FACE - CEILING MOUNTED		EXIT SIGN - DUAL FACE - CEILING MOUNTED
	EXIT SIGN - SINGLE FACE - WALL MOUNTED		EXIT SIGN - DUAL FACE - WALL MOUNTED
LL	LOW LEVEL EXIT SIGN - SINGLE FACE - WALL OR DOOR MOUNTED		SINGLE REMOTE EMERGENCY LIGHT - WALL MOUNTED
	DUAL HEAD EMERGENCY LIGHT WITH INTEGRAL BATTERY PACK - WALL MOUNTED		DUAL REMOTE EMERGENCY LIGHT - WALL MOUNTED

$ X ab	SPST SWITCH, WALL MOUNTED.		'ab' INDICATES INDIVIDUAL GANGED SWITCHES AND ASSOCIATED SWITCH LEGS CONTROLLED, SUBSCRIPT 'X' INDICATES:
OS	OCCUPANCY SENSOR, CEILING MOUNTED		
WS	OCCUPANCY SENSOR, WALL MOUNTED		2 - DOUBLE POLE 3 - THREE WAY 4 - FOUR WAY D - WALL BOX DIMMER
VS	VACANCY SENSOR, CEILING MOUNTED		K - KEY OPERATED LV - LOW VOLTAGE P - PILOT LIGHT T - WALL BOX TIMER WP - WEATHER PROOF
VWS	VACANCY SENSOR, WALL MOUNTED		
DIM X	DIMMING CONTROL STATION, SUBSCRIPT 'X' INDICATES TYPE OR UNIQUE IDENTIFIER		
LCP	LIGHTING CONTROL PANEL		
	SHUNT TRIP PUSH BUTTON		
TC X	TIME CLOCK, SUBSCRIPT 'X' INDICATES UNIQUE IDENTIFIER		
DS X	DAYLIGHT SENSOR, CEILING MOUNTED		
PC X	PHOTOCELL		

AUDIOVISUAL SYSTEM DEVICES

DEVICE LEGEND

DEVICE TAG — AAA M/Y
- M — MOUNTING TAG
- Y — SECONDARY ATTRIBUTE

ALL AV SYSTEM DEVICES ARE WALL MOUNTED UNLESS OTHERWISE INDICATED BY MOUNTING TAG

AVx	AV CONNECTIVITY PLATE	"x" DENOTES TYPE. REFER TO AV SYSTEMS DETAILS	
FBx	FLOOR BOX	"x" DENOTES TYPE. REFER TO AV SYSTEMS DETAILS	
PTx	POKE THROUGH	"x" DENOTES TYPE. REFER TO AV SYSTEMS DETAILS	
TBx	TABLE BOX	"x" DENOTES TYPE. REFER TO AV SYSTEMS DETAILS	
D	DISPLAY	RSP	ROOM SCHEDULING PANEL
TV	TELEVISION OUTLET	RSS	ROOM SCHEDULING SIGN
PRS	PROJECTOR SCREEN	BP	BUTTON PANEL
PRJ	PROJECTOR	S	AV SYSTEM SPEAKER
CAM	AV SYSTEM CAMERA	SUB	SUBWOOFER SPEAKER
IRR	INFRARED RADIATOR	LCR	LOCAL CREDENZA RACK
ANT	ANTENNA	AVR	AV RACK
ROS	AV SYSTEM ROOM OCCUPANCY SENSOR	SI	SHADE/DRAPE INTERFACE TO AV SYSTEM
PS	AV SYSTEM PARTITION SENSOR	MIC	MICROPHONE
LS	PHOTOMETRIC SENSOR	TS	TOUCH SCREEN
BN	BACnet INTERFACE TO AV SYSTEM	LI	LIGHTING INTERFACE TO AV SYSTEM

TELECOMMUNICATIONS SYSTEM

	WALL MOUNT VOICE OUTLET		FLOOR MOUNT VOICE OUTLET
	WALL MOUNT DATA OUTLET		FLOOR MOUNT DATA OUTLET
	WALL MOUNT DATA/VOICE OUTLET		FLOOR MOUNT DATA/VOICE OUTLET
WAP	CEILING MOUNT DATA FOR WIRELESS ACCESS POINT	AVD	CEILING MOUNTED DATA FOR AV

DEVICE LEGEND
- X — NUMBER OF DATA JACKS
- X/Y — NUMBER OF DATA/VOICE JACKS
- Y — NUMBER OF VOICE JACKS

NO SUBSCRIPT = (1) DATA/VOICE

MOUNTING:
OUTLET MOUNTING HEIGHTS TO BE COORDINATED WITH INTERIOR DESIGNER DURING DD PHASE

SECURITY SYSTEM

DEVICE LEGEND

DEVICE TAG — AAA M/Y
- M — MOUNTING TAG
- Y — SECONDARY ATTRIBUTE

ALL SECURITY SYSTEM DEVICES ARE WALL MOUNTED UNLESS OTHERWISE INDICATED BY MOUNTING TAG

ACP	ACCESS CONTROL PANEL	ADO	AUTO DOOR OPERATOR
ALM	ALARM DEVICE	CR	CARD READER
DC	DOOR CONTACT	DCR	DOOR CONTROLLER
DU	DURESS STATION	EL	ELECTRIFIED LOCKSET
EP	ELECTRIFIED PANIC HARDWARE	ES	ELECTRIC STRIKE
IC	INTERCOM	GB	GLASS BREAK DETECTOR
KP	KEYPAD	ID	INTRUSION DETECTION DEVICE
ML	MAGNETIC LOCK	KEY	KEY SWITCH
PB	PUSH BUTTON	MS	MOTION SENSOR
PO	PUSH TO OPEN PLATE	PNL	PANEL / CONTROLLER
LFE	LOW FREQUENCY EXCITER	PX	POWER TRANSFER
	INFRARED READER	REX	REQUEST TO EXIT DEVICE
RDU	REMOTE DISPLAY UNIT	SEN	ALARM SENSOR
LAR	LOCAL AREA RECEIVER	SPS	SECURITY SYSTEM POWER SUPPLY
	DIRECTIONAL PASSIVE TAG DETECTOR	WKS	SECURITY WORKSTATION
IRC	INFRARED CURTAIN		CCTV CAMERA, WALL-MOUNTED
RFR	RF READER		CCTV CAMERA, CEILING-MOUNTED
RFM	RF READER MASTER	RFER	RF ETHERNET READER
RFLR	RF LONG RANGE READER	DL	LED DOME LIGHT WITH SOUNDER
ARL	ASSISTANCE REQUEST LED ANNUNCIATOR WITH SOUNDER	PL	PUSH TO LOCK

MISCELLANEOUS DEVICES

JB	JUNCTION BOX, WALL MOUNTED	C X	CONTACTOR, SUBSCRIPT 'X' INDICATES UNIQUE IDENTIFIER
JB	JUNCTION BOX, CEILING MOUNTED	R	CONTROL RELAY & REQUIRED INPUT/OUTPUT MODULE

DEMOLITION

< R >	EXISTING TO BE REMOVED		DEMOLITION CONDUIT
< RL >	EXISTING TO BE RELOCATED		DEMOLITION EQUIPMENT
< EX >	EXISTING TO REMAIN		EXISTING TO REMAIN CONDUIT
< NL >	EXISTING - NEW LOCATION		EXISTING TO REMAIN EQUIPMENT

ABBREVIATIONS

A	ANALOG	MCB	MAIN CIRCUIT BREAKER
AFCI	ARC FAULT CIRCUIT INTERRUPTOR	MCC	MOTOR CONTROL CENTER
AFF	ABOVE FINISHED FLOOR	MD	MOTORIZED DAMPER
ATS	AUTOMATIC TRANSFER SWITCH	MH	MOUNTING HEIGHT
CK	CLOCK HANGER	NC	NORMALLY CLOSED
CL	CEILING MOUNTED	NO	NORMALLY OPEN
EMT	ELECTRICAL METALLIC TUBING	OC	OVER THE COUNTER
EP	EXPLOSION PROOF	PTZ	PAN, TILT, ZOOM
F	FURNITURE OR MILLWORK MOUNTED	ST	SHUNT TRIP
FL	FLOOR MOUNTED	TP	TAMPER PROOF
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	TV	OUTLET AT TV HEIGHT. COORDINATE ON SITE.
GFI	GROUND FAULT INTERRUPTER	WP	WEATHER PROOF
USB	USB TYPE OF RECEPTACLE		

DRAWING LIST

E-01	ELECTRICAL LEGEND, GENERAL NOTES, AND DRAWING LIST
E-02	SECOND FLOOR ELECTRICAL DEMOLITION PLAN
E-03	GROUND FLOOR ELECTRICAL PLAN - NEW WORK
E-04	SECOND FLOOR POWER & SYSTEM LAYOUT - NEW WORK
E-05	ELECTRICAL ROOF LAYOUT- NEW WORK
E-06	LIGHITNG SECOND FLOOR LAYOUT- NEW WORK
E-07	ELECTRICAL SCHEDULE AND DIAGRAM
E-08	ELECTRICAL DETAILS
E-09	ELECTRICAL SPECIFICATIONS 1 OF 4
E-10	ELECTRICAL SPECIFICATIONS 2 OF 4
E-11	ELECTRICAL SPECIFICATIONS 3 OF 4
E-12	ELECTRICAL SPECIFICATIONS 4 OF 4

GENERAL NOTES

1. ALL DRAWINGS ARE DIAGRAMMATIC ONLY. THE ARRANGEMENTS OF EQUIPMENT SHOWN ARE APPROXIMATIONS ONLY AND MAY BE ALTERED BY THE ENGINEERS TO MEET THE REQUIREMENTS OF THE PROJECT. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE CONSULTANT'S, AND MECHANICAL DRAWINGS FOR LOCATION OF ALL DEVICES. ALL EXISTING ELECTRICAL SYSTEMS, INCLUDING BUT NOT LIMITED TO EQUIPMENT DEVICES AND CONNECTIONS, SHALL REMAIN UNLESS SPECIFICALLY NOTED TO BE REMOVED. DURING CONSTRUCTION IF REQUIRED/IMPACTED BY OTHER WORKS, CONTRACTOR TO TEMPORARILY REMOVE/RELOCATE ELECTRICAL SYSTEMS AND/OR PROVIDE TEMPORARY CONNECTIONS ON SITE TO ALLOW CONSTRUCTION OF OTHERS WORKS. EXISTING ELECTRICAL SYSTEM ARE TO REMAIN FUNCTIONAL DURING THE CONSTRUCTION.
2. MAINTAIN EXISTING FIRE ALARM, EXIT SIGNS AND EMERGENCY LIGHTS IN FULL OPERATION DURING THE ENTIRE CONSTRUCTION STAGE. WHERE DISRUPTION TO LIFE SAFETY SYSTEM ARE REQUIRED, PROVIDE CONTINUOUS MONITORING DURING SHUT DOWN PERIOD AND ENSURE THAT ALL SYSTEMS ARE REACTIVATED PRIOR TO LEAVING THE SITE AT THE END OF EACH WORKING DAY.
3. ALL OPENINGS, IF APPLICABLE, SHALL BE SEALED WITH APPROVED FIRE STOP MATERIAL. ANY FIREPROOFING MATERIAL REMOVED WILL BE REPLACED WITH A SUITABLE AND APPROVED FIREPROOFING MATERIAL AND SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS TO APPLICABLE BUILDING AND FIRE CODES.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REFINISHING OF DAMAGED BUILDING AREAS AND FINISHES AFFECTED BY THE WORK AS OUTLINED UNDER SCOPE OF WORK OF THIS PROJECT. SHOULD ANY EXISTING SYSTEM BE DAMAGED, MAKE FULL REPAIR/REPLACES WITHOUT EXTRA COST, AND TO THE SATISFACTION OF CONSULTANT.
5. CONTRACTOR TO PROVIDE WRITTEN NOTICE TO OWNER FOR ANY SHUTDOWN REQUIRED.
6. CONTRACTOR IS RESPONSIBLE FOR STORAGE AND PROTECTION OF ALL EXISTING ITEMS WHICH WILL BE RELOCATED/REUSED IN THIS PROJECT.
7. EXPOSED ELECTRICAL CORDS OUTSIDE THE LEASED PREMISES SHALL NOT BE PERMITTED.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL THE WORK WITH ALL OTHER TRADES, CONSULTANTS, AND THE OWNER. ALL WORK SHALL BE SCHEDULED AND CARRIED OUT BY THE CONTRACTOR IN A MANNER TO ENSURE CONTINUED AND NON-INTERRUPTED OPERATION OF EXISTING FACILITY.
9. CONTRACTOR SHALL IDENTIFY AND LABEL CLEARLY ALL CIRCUITS, WIRING, SERVICES, JUNCTION BOXES, PULLBOXES, DEVICES AND EQUIPMENT INSTALLED AND CONNECTED UNDER THE SCOPE OF WORK OF THIS PROJECT. IDENTIFICATION SHALL BE AS PER OWNER'S REQUIREMENTS AND ALL MARKINGS SHALL BE OF NON-ERASEABLE LAMACOID TYPE. COORDINATE ALL LABELING WITH THE OWNER AND CONSULTANT.
10. CONTRACTOR TO PAY FOR AND OBTAIN ALL REQUIRED PERMITS, FEES, LICENSES, CERTIFICATES OF INSPECTION ETC IF REQUIRED.
11. CONTRACTOR TO REPORT BACK TO THE ENGINEER AND OWNER ON ANY ELECTRICAL SYSTEM FAILURES THAT OCCUR DURING THE CONSTRUCTION PHASE.
12. PHASING AND SCHEDULING OF THE WORK IS REQUIRED IN ORDER TO MAINTAIN EXISTING BUILDING OPERATIONS. INCLUDE COSTS FOR "OFF-HOURS" WORK.
13. FOR ALL LUMINAIRES THAT EXCEED 150V SHOWN, SUPPLY AND INSTALL NEW LUMINAIRES DISCONNECT THAT COMPLY WITH RECOMMENDATION SPECIFIED IN CANADIAN ELECTRICAL CODE, RULE 30-308(4). ALL NEW RELOCATED FIXTURES (THAT EXCEED 150V) SHALL BE MARKED IN A CONSPICUOUS LEGIBLE AND PERMANENT MANNER ADJACENT TO THE CONNECTING MEANS, IDENTIFYING THE SPECIFIC PURPOSES.
14. NEW AND EXISTING ELECTRICAL WIRING AND CABLES EXPOSED WITHIN THE CEILING SPACES SHALL CONFORM TO THE PLENUM REQUIREMENTS OF ONTARIO BUILDING CODE SENTENCE 3.6.4.3. (1).

CLIENT

MUNICIPALITY OF CASSELMAN

PROJECT NORTH

5	ISSUED FOR TENDER	2025-03-24
4	ISSUED FOR PERMIT	2025-03-18
3	ISSUED FOR REVISED 99% REVIEW	2025-02-19
2	ISSUED FOR 99% COORDINATION	2023-06-13
1	ISSUED FOR 66% COORDINATION	2023-05-12
ISSUE	DESCRIPTION	DATE

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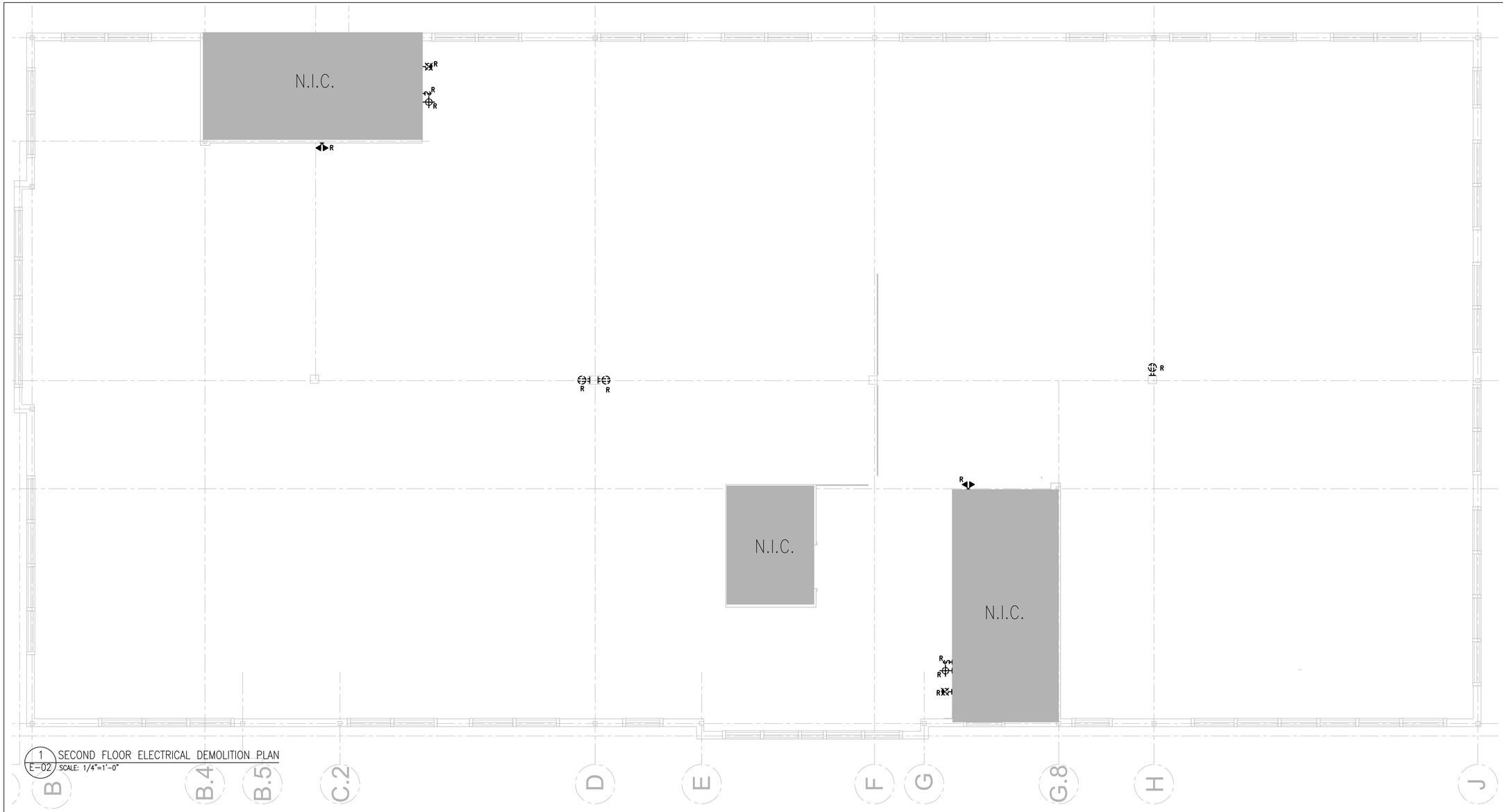
PROJECT

1 INDUSTRIEL STREET
OFFICE FIT-UP

DRAWING

ELECTRICAL LEGEND, GENERAL NOTES, AND DRAWING LIST

PROJECT No: MRK-23002008-A0	REVISION:
DRAWN: KL	DATE: MAY 2023
APPROVED: DL	SCALE: AS SHOWN
DRAWING No: E-01	



1 SECOND FLOOR ELECTRICAL DEMOLITION PLAN
E-02 SCALE: 1/4"=1'-0"

DEMO POWER:

1. THIS DEMOLITION DRAWING IS DIAGRAMMATIC AND MAY NOT REPRESENT ALL OF THE DEVICES TO BE REMOVED. IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO ENSURE THE COMPLETE REMOVAL/RELOCATION OF POWER AND SYSTEMS IS COMPLETE IN THE AREAS OF SCOPE OF WORK. ALL ELECTRICAL ITEMS IN THIS AREA/ROOM NOT SHOWN WITHIN SCOPE OF WORK AREA ARE TO REMAIN.
2. DEMOLISH EXISTING LIGHT FIXTURES NOTED ON THE DRAWING IN THE DEMOLITION AREA C/W CONTROLS CONDUIT, WIRING, JUNCTION BOXES, ETC. BACK TO SOURCE. WHERE CIRCUIT AND/OR CONTROLS ARE BEING UTILIZED BY OTHER ELEMENTS, THE CIRCUIT IS TO BE REMOVED BACK TO NEAREST JUNCTION BOX.
3. DURING CONSTRUCTION ENSURE ALL LUMINAIRES IN AND/OR OUT OF SCOPE OF WORK ARE FREE OF DUST AND DEBRIS. CONTRACTOR TO CLEAN LENSES AFFECTED BY CONSTRUCTION DUST AND/OR DEBRIS.
4. ALL EXISTING FIXTURES TO BE REMOVED ARE TO BE DISPOSED OF AND IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
5. ALL EXISTING POWER SUCH THAT SURROUNDING AREAS REMAIN OPERATIONAL AND ARE NOT AFFECTED AS A RESULT OF BUILDING DEMOLITION.
6. ALL EXISTING DEVICES TO REMAIN ARE TO BE PROTECTED FROM DUST DEBRIS DURING CONSTRUCTION.
7. WHERE EXISTING CIRCUITS ON PANELS ARE NOT AFFECTED, THOSE CIRCUITS WILL BE INCLUDED IN THE NEW PANEL DIRECTORIES WHERE PANELS HAVE BEEN AFFECTED BY THIS PROJECT.
8. EXISTING BASE BUILDING ACCESS CONTROL SYSTEM TO REMAIN OPERATIONAL DURING THE WORK. COORDINATE ALL SHUTDOWNS AS REQUIRED WITH OWNER.
9. ANY EXISTING CONDUITS NOT BEING REUSED DURING THE NEW CONSTRUCTION TO BE REMOVED.

CLIENT

MUNICIPALITY OF CASSELMAN

PROJECT NORTH

5	ISSUED FOR TENDER	2025-03-24
4	ISSUED FOR PERMIT	2025-03-18
3	ISSUED FOR REVISED 99% REVIEW	2025-02-19
2	ISSUED FOR 99% COORDINATION	2023-06-13
1	ISSUED FOR 66% COORDINATION	2023-05-12
ISSUE	DESCRIPTION	DATE

IT IS THE RESPONSIBILITY OF THE APPROPRIATE CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON SITE AND PROMPTLY REPORT ALL ERRORS AND/OR OMISSIONS TO THE CONSULTANT BEFORE WORK COMMENCES.

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PROJECT

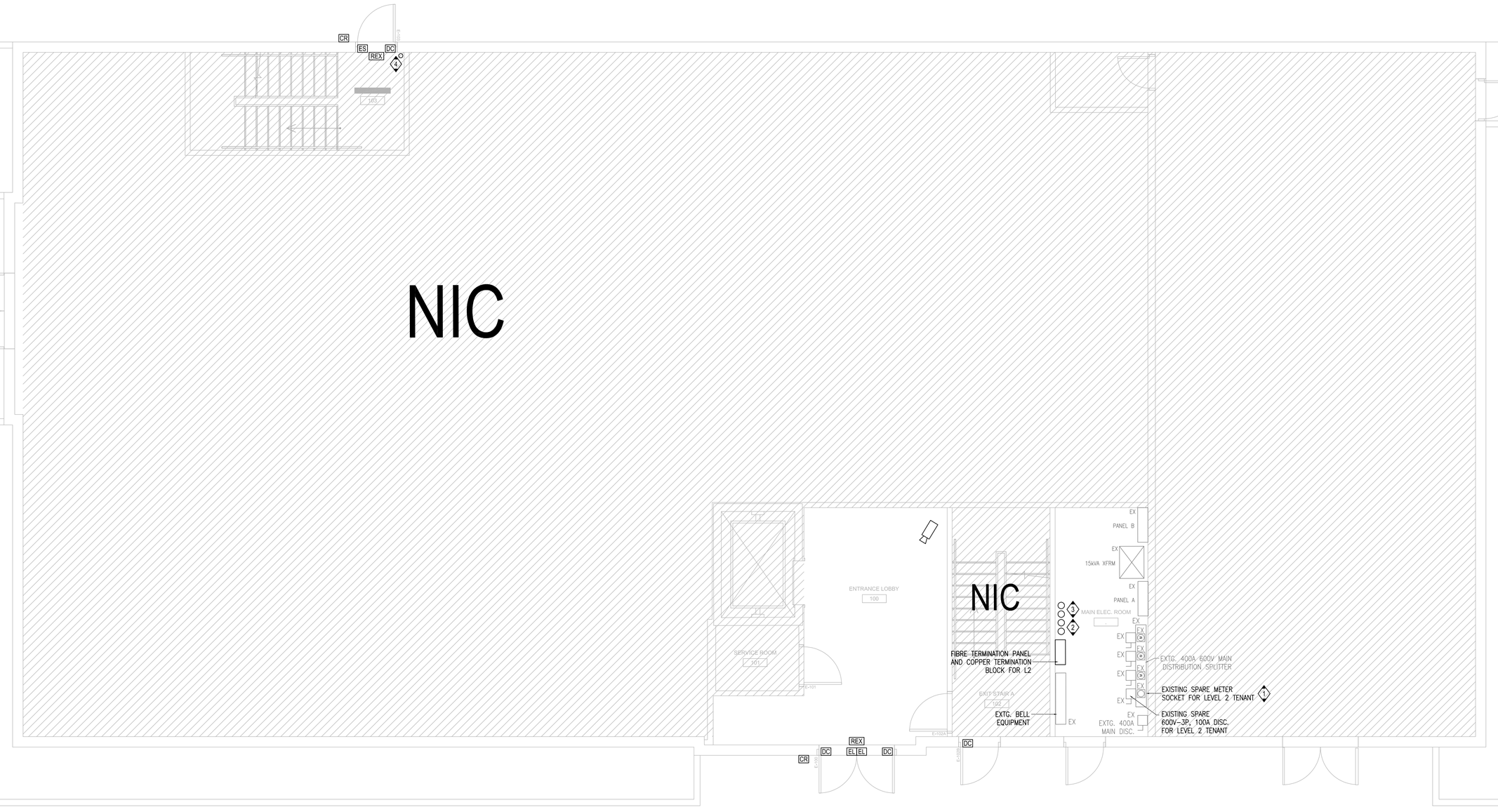
1 INDUSTRIEL STREET
OFFICE FIT-UP

DRAWING

SECOND FLOOR
ELECTRICAL
DEMOLITION PLAN

PROJECT No: MRK-23002008-A0	REVISION:
DRAWN: KL	DATE: MAY 2023
APPROVED: DL	SCALE: AS SHOWN

DRAWING No: E-02



1 / E-03 POWER & SYSTEMS FIRST FLOOR LAYOUT– NEW WORK
SCALE: 3/16"=1'-0"

KEY NOTES:

1. EXISTING SPARE METER SOCKET FOR SECOND FLOOR.
2. VERTICAL TWO (2) 1-1/2" CONDUIT FOR INCOMING SERVICES TO L2 IT ROOM.
3. VERTICAL TWO (2) 1-1/2" CONDUIT FOR SECURITY DEVICES AT L1 EXTERIOR DOORS.
   ONE (1) FOR DATA CABLE FOR SECURITY CAMERA
   ONE (1) FOR ACCESS CONTROL
4. VERTICAL ONE (1) 1-1/2" CONDUIT FOR SECURITY DEVICES AT L1 EXTERIOR BACK DOOR.

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PROJECT NORTH

ISSUE	DESCRIPTION	DATE
5	ISSUED FOR TENDER	2025-03-24
4	ISSUED FOR PERMIT	2025-03-18
3	ISSUED FOR REVISED 99% REVIEW	2025-02-19
2	ISSUED FOR 99% COORDINATION	2023-06-13
1	ISSUED FOR 66% COORDINATION	2023-05-12

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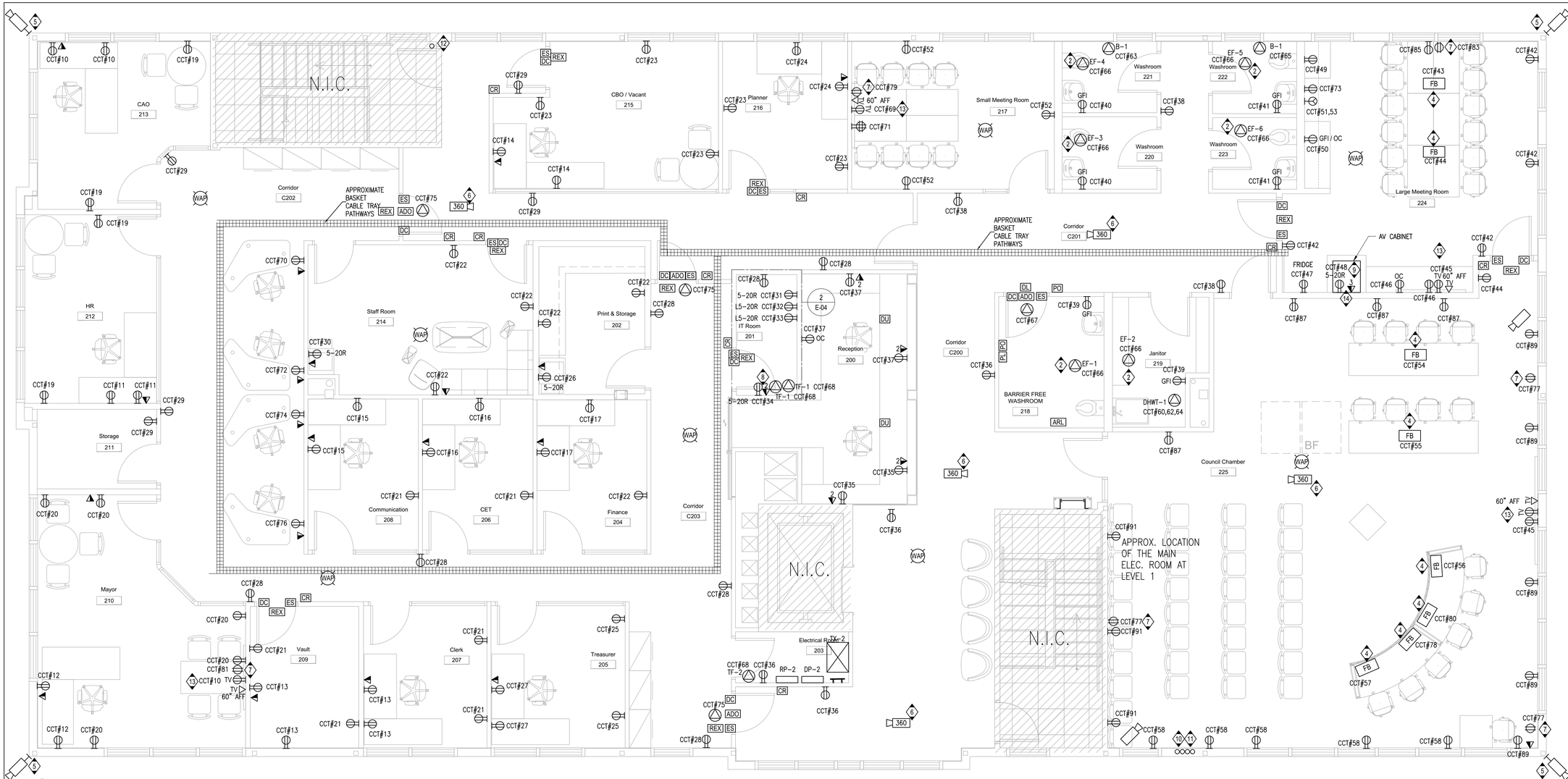
PROJECT

1 INDUSTRIEL STREET
OFFICE FIT-UP

DRAWING

GROUND FLOOR
ELECTRICAL LAYOUT
- NEW WORK

PROJECT No: MRK-23002008-A0	REVISION:
DRAWN: KL	DATE: MAY 2023
APPROVED: DL	SCALE: AS SHOWN
DRAWING No: E-03	



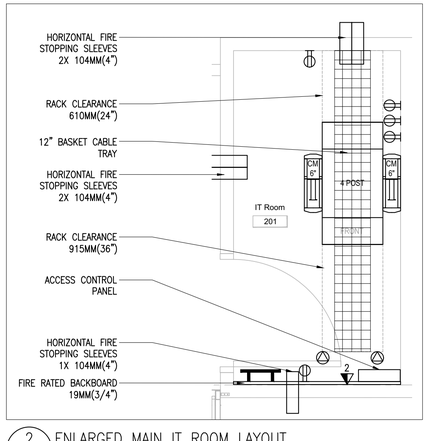
1 POWER & SYSTEMS SECOND FLOOR LAYOUT– NEW WORK
E–04 SCALE: 1/4"=1'–0"

GENERAL NOTES:

1. ELECTRICAL WORK OF THE MAIN FEEDER INSTALLATION AND WORK IN COMMON/PUBLIC AREA WHICH REQUIRE ANY DISCONNECTION, ETC. MAY HAVE TO BE DONE AFTER HOURS ON WEEKEND AND/OR AT OTHER TIMES SUITABLE FOR BUILDING OWNER AND TENANTS WITHIN THE BUILDING. INCLUDE IN PRICE SUBMITTAL PREMIUM TIME AND ALL ASSOCIATED COSTS TO PERFORM THE WORK.
2. PLACEMENT OF ALL DEVICES SHALL BE ALIGNED AND STRATEGICALLY PLACED. VERIFY WITH ARCHITECT FOR EXACT MOUNTING LOCATIONS OF ALL ELECTRICAL DEVICES.
3. PROVIDE A SEPARATE NEUTRAL INSULATED CONDUCTOR FOR EACH NEW CIRCUIT.
4. 120V 20A DUPLEX RECEPTACLE (NEMA 5–20R ALTERNATE – "T–SLOT") RECEPTACLE SHALL BE FED FROM A 20A–1P BREAKER. #10 AWG. WIRE SHALL BE USED.
5. ALL EXTRA LOW VOLTAGE WALL OUTLETS LOCATED WITHIN DRYWALL CEILING AREAS SHALL BE INSTALLED C/W CONDUIT ROUTED BACK TO ACCESSIBLE CEILING SPACE AREA. CEILING MOUNTED EXTRA LOW VOLTAGE OUTLETS DESIGNATED FOR SECURITY CAMERAS AND WIRELESS ACCESS POINTS LOCATED WITHIN DRYWALL CEILING AREAS, ARE TO BE INSTALLED C/W CONDUIT ROUTED BACK TO ACCESSIBLE CEILING SPACE AREA.
6. COORDINATE EXACT COMMUNICATION J–HOOK PATHWAY ON SITE TO AVOID INTERFERENCES WITH LIGHTING FIXTURE, MECHANICAL DUCTING, AND STRUCTURAL BEAMS.
7. IN EXPOSED CEILING AREAS, ALL CONDUITS SHALL RUN PARALLEL AND PERPENDICULAR TO BUILDING LINES; ALL COMMUNICATION CABLING TO BE CONCEALED IN METAL CONDUIT READY TO ACCEPT PAINT FINISH.
8. INDICATED CIRCUITS ON THIS SHEET TO BE CIRCUITED BACK TO PANEL 'RP–2' UNLESS NOTED OTHERWISE.
9. WAP LOCATED ARE APPROXIMATE, FINAL COUNT AND LOCATIONS TO BE DETERMINED BY WI–FI PREDICTIVE HEAT MAP.

KEY NOTES:

1. EXISTING SPARE METER SOCKET FOR SECOND FLOOR.
2. WASHROOM AND JANITOR ROOM EXHAUST FAN SHALL BE TIED INTO THE LIGHTING SWITCH WITHIN THE ROOM.
3. RECEPTACLE FOR KITCHEN HOOD AT HIGH LEVEL. COORDINATION HEIGHT AND CONNECTION ON SITE.
4. INCLUDE FOR CORE DRILLS AND X–RAY, ALL ASSOCIATED JUNCTION BOX(ES) AND CONDUITS FROM FLOOR MONUMENT/FEED LOCATION IN CEILING SPACE OF FLOOR BELOW BACK TO RESPECTIVE ELECTRICAL ROOM (FOR POWER) AND IT ROOM (FOR COMMUNICATIONS CABLES). COORDINATE WITH OWNER'S AV VENDER FOR ADDITIONAL CONDUIT REQUIREMENTS FOR A/V SYSTEM AS IDENTIFIED AT FLOOR MONUMENT LOCATION. INCLUDE FOR PREMIUM TIME IN TENDER SUBMITTAL TO CARRY–OUT THIS SCOPE OF WORK. WORK SHALL BE DONE AFTER HOURS, ON WEEKENDS AND/OR AT OTHER TIME THAT SUITABLE TO THE TENANT ON FLOOR BELOW. COORDINATE AND SCHEDULE WITH BUILDING OWNER AND OBTAIN APPROVAL PRIOR TO PROCEEDING WITH THIS SCOPE OF WORK. BUILDING OWNER SHALL BE GIVEN AT LEAST 72 HOURS NOTICE PRIOR TO X–RAYING. COORDINATE EXACT FLOOR MONUMENT LOCATION/DIMENSIONS WITH FURNITURE SUPPLIER PRIOR TO DRILLING. COORDINATE THE EXACT LOCATIONS OF THE FLOOR MOMUMENT WITH THE OWNER ON SITE.
5. EXTERIOR CORNER MOUNTED 4–SENSOR CCTV CAMERA, MOUNTED AT 15'–20' AFF ROOM EXTERIOR GROUND LEVEL; CAT6A CABLE FED FROM LEVEL 2 IT ROOM.
6. 360 DEGREE FISH–EYE CCTV CAMERAS MOUNTED BELOW DROP CEILING.
7. CEILING MOUNTED DUPLEX RECEPTACLE FOR AV SPEAKERS.
8. DATA TO BE TERMINATED INSIDE SECURITY ACCESS CONTROL PANEL.
9. DATA TO BE TERMINATED INSIDE AV CABINET LOCATION.
10. TWO (2) 1–1/2" VERTICAL CONDUIT FOR INCOMING SERVICES TO L2 IT ROOM.
11. TWO (2) 1–1/2" VERTICAL CONDUIT FOR SECURITY DEVICES AT L1 EXTERIOR DOORS.
    ONE (1) FOR DATA CABLE FOR SECURITY CAMERA
    ONE (1) FOR ACCESS CONTROL
12. ONE (1) 1–1/2" VERTICAL CONDUIT FOR SECURITY DEVICES AT L1 EXTERIOR BACK DOOR.
13. WALL MOUNTED RECEPTACLE BEHIND THE TV. COORDINATE THE EXACT LOCATION ON SITE.
14. 10" X 10" BACKBOX AND THREE (3) 1–1/2" CONDUITS C/W PULL STRING LOCATED BEHIND AV CABINET TO CEILING SPACE.



2 ENLARGED MAIN IT ROOM LAYOUT
E–04 N.T.S.

CLIENT

MUNICIPALITY OF CASSELMAN

PROJECT NORTH

5	ISSUED FOR TENDER	2025-03-24
4	ISSUED FOR PERMIT	2025-03-18
3	ISSUED FOR REVISED 99% REVIEW	2025-02-19
2	ISSUED FOR 99% COORDINATION	2023-06-13
1	ISSUED FOR 66% COORDINATION	2023-05-12
ISSUE	DESCRIPTION	DATE

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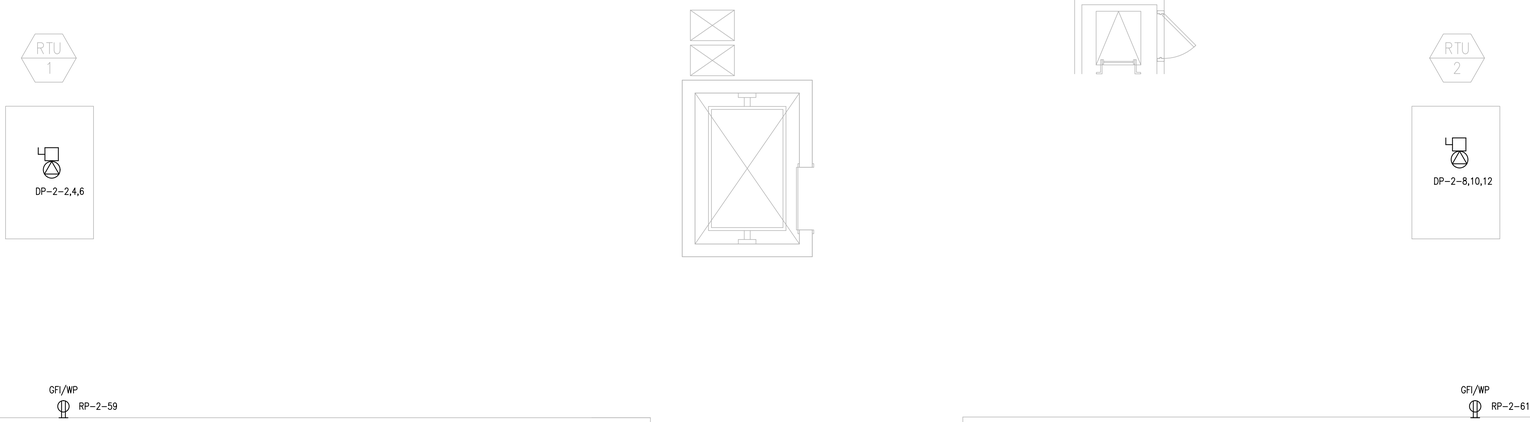
PROJECT

1 INDUSTRIEL STREET
OFFICE FIT-UP

DRAWING

SECOND FLOOR POWER & SYSTEMS LAYOUT - NEW WORK

PROJECT No: MRK-23002008-A0	REVISION:
DRAWN: KL	DATE: MAY 2023
APPROVED: DL	SCALE: AS SHOWN
DRAWING No: E-04	



1 E-04 ELECTRICAL ROOF LAYOUT– NEW WORK
SCALE: 1/4"=1'-0"

GENERAL NOTES:

1. ELECTRICAL WORK OF THE MAIN FEEDER INSTALLATION AND WORK IN COMMON/PUBLIC AREA WHICH REQUIRE ANY DISCONNECTION, ETC. MAY HAVE TO BE DONE AFTER HOURS ON WEEKEND AND/OR AT OTHER TIMES SUITABLE FOR BUILDING OWNER AND TENANTS WITHIN THE BUILDING. INCLUDE IN PRICE SUBMITTAL PREMIUM TIME AND ALL ASSOCIATED COSTS TO PERFORM THE WORK.
2. PROVIDE A SEPARATE NEUTRAL INSULATED CONDUCTOR FOR EACH NEW CIRCUIT.

CLIENT

MUNICIPALITY OF CASSELMAN

PROJECT NORTH

ISSUE	DESCRIPTION	DATE
5	ISSUED FOR TENDER	2025-03-24
4	ISSUED FOR PERMIT	2025-03-18
3	ISSUED FOR REVISED 99% REVIEW	2025-02-19
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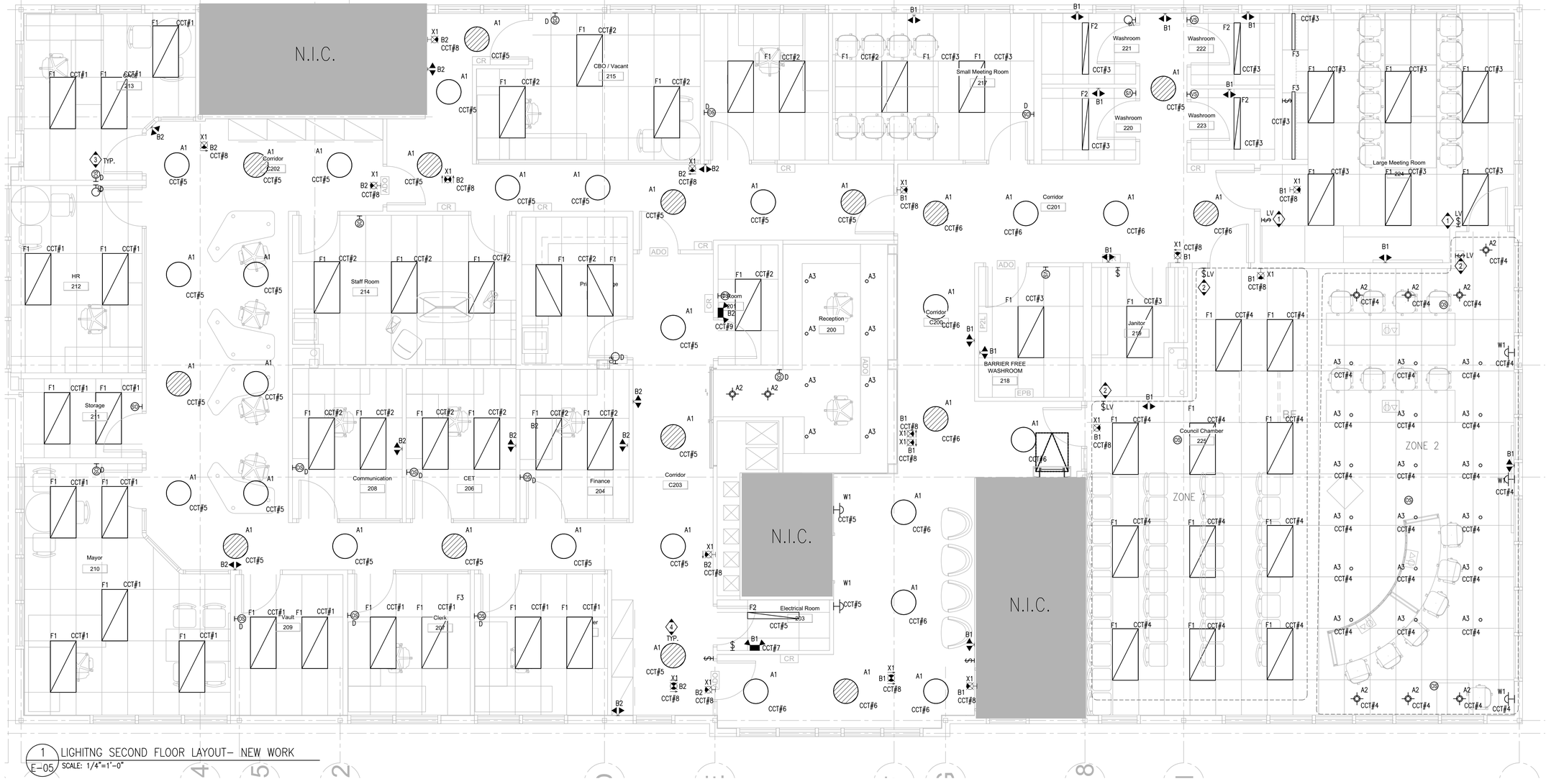
PROJECT

1 INDUSTRIEL STREET
OFFICE FIT-UP

DRAWING

ELECTRICAL ROOF LAYOUT
- NEW WORK

PROJECT No: MRK-23002008-A0	REVISION:
DRAWN: KL	DATE: MAY 2023
APPROVED: DL	SCALE: AS SHOWN
DRAWING No: E-05	



1 LIGHITNG SECOND FLOOR LAYOUT- NEW WORK
E-05 SCALE: 1/4"=1'-0"

GENERAL NOTES:

1. ELECTRICAL CONTRACTOR TO COORDINATE EXACT LOCATIONS OF LIGHT FIXTURE WITH ARCHITECT AND CLIENT PRIOR TO INSTALLATION.
2. RUN 2#10-1/2" C. FROM REMOTE EMERGENCY HEAD(S) OR DC BACK-UP FROM NEW EXIT SIGN TO EMERGENCY BATTERY UNIT. TOTAL LOAD SHOULD NOT EXCEED 36W ON EACH RUN. IF RUN EXCEED 94' #8 WIRE SHALL BE USED.
3. NEW EXIT SIGNS TO BE CONNECTED TO NEW EMERGENCY DC BATTERY BACK-UP UNIT AND DEDICATED 120V NON-RELAY/NON-SWITCHING CIRCUIT.
4. PLACEMENT OF ALL FIXTURES SHALL BE ALIGNED AND STRATEGICALLY PLACED. VERIFY WITH ARCHITECT FOR EXACT MOUNTING LOCATIONS.
5. PROVIDE A SEPARATE NEUTRAL INSULATED CONDUCTOR FOR EACH NEW CIRCUIT.
6. CIRCUIT NUMBERS SHOWN ARE DIAGRAMMATIC ONLY. CONNECT TO CIRCUITS MADE AVAILABLE BY THESE RENOVATIONS.
7. IN EXPOSED CEILING AREAS, ALL CONDUITS SHALL RUN PARALLEL AND PERPENDICULAR TO BUILDING LINES; ALL COMMUNICATION CABLING TO BE CONCEALED IN METAL CONDUIT READY TO ACCEPT PAINT FINISH.
8. INDICATED CIRCUITS ON THIS SHEET TO BE CIRCUITED BACK TO PANEL 'RP-2' UNLESS NOTED OTHERWISE.

GENERAL NOTES:

1. CURRENT LIGHTING NXSW SERIES OR EQUIVALENT WALL MOUNTED EXTRA LOW VOLTAGE DIMMER SWITCH. ELECTRICAL CONTRACTOR SHALL PROVIDE THE ASSOCIATED CONTROL MODULE, ACCESSORIES AND COORDINATE WITH THE MANUFACTURER TO ENSURE THE SWITCH IS COMPATIBLE WITH THE LIGHT FIXTURES.
2. CURRENT LIGHTING NXSW SERIES OR EQUIVALENT WALL MOUNTED EXTRA LOW VOLTAGE DIMMER SWITCH COMPLETE WITH SCENE SELECTION. ELECTRICAL CONTRACTOR SHALL PROVIDE THE ASSOCIATED CONTROL MODULE, ACCESSORIES AND COORDINATE WITH THE MANUFACTURER TO ENSURE THE SWITCH IS COMPATIBLE WITH THE LIGHT FIXTURES.
3. LINE VOLTAGE WALL MOUNTED DUAL TECHNOLOGY DIMMING SENSOR SWITCH.
4. NIGHT LIGHT SHALL NOT BE CONTROLLER BY CORRIDOR SWITCH AND TO BE REMAIN ON ALL THE TIME.

CLIENT

MUNICIPALITY OF CASSELMAN

PROJECT NORTH

ISSUE	DESCRIPTION	DATE
5	ISSUED FOR TENDER	2025-03-24
4	ISSUED FOR PERMIT	2025-03-18
3	ISSUED FOR REVISED 99% REVIEW	2025-02-19
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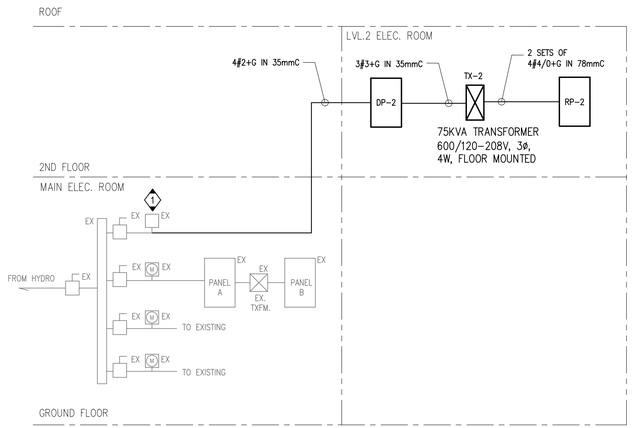
PROJECT

1 INDUSTRIEL STREET
OFFICE FIT-UP

DRAWING

LIGHTING
SECOND FLOOR LAYOUT
- NEW WORK

PROJECT No: MRK-23002008-A0	REVISION:
DRAWN: KL	DATE: MAY 2023
APPROVED: DL	SCALE: AS SHOWN
DRAWING No: E-06	



GENERAL NOTES:

1. PROVIDE LAMICOID NAMEPLATE FOR NEW PANELS AND TRANSFORMER. PROVIDE CLEAR AND LEGIBLE WRITTEN DIRECTORY FOR EACH PANEL
2. ELECTRICAL WORK OF THE MAIN FEEDER INSTALLATION AND WORK IN COMMON/PUBLIC AREA WHICH REQUIRE ANY DISCONNECTION, ETC. MAY HAVE TO BE DONE AFTER HOURS ON WEEKEND AND/OR AT OTHER TIMES SUITABLE FOR BUILDING OWNER AND TENANTS WITHIN THE BUILDING. INCLUDE IN PRICE SUBMITTAL PREMIUM TIME AND ALL ASSOCIATED COSTS TO PERFORM THE WORK.

KEY NOTES:

(1) EXISTING SPARE METER SOCKET FOR SECOND FLOOR. METER SHALL BE COORDINATED AND PROVIDED BY HYDRO OTTAWA.

1 / E-07 ELECTRICAL DISTRIBUTION RISER DIAGRAM
N.T.S.

PANEL DESIGNATION: DP-2 — PROJECT NAME: MUNICIPALITY OF CASSELMAN OFFICE FIT-UP

MAIN BUS: 100A | MAIN BREAKER: 100A | VOLTAGE: 347/600V, 3ø, 4W, 25kA | SURFACE MOUNTED. NEW PANEL

LOAD DESCRIPTION	BRKR SIZE	CCT. No.	PHASE A	PHASE B	PHASE C	CCT. No.	BRKR SIZE	LOAD DESCRIPTION
TRANSFORMER TX-2	90A / 3P	1	●			2	20A / 3P	RTU-1
		3		●		4		
		5			●	6		
		7	●			8	25A / 3P	RTU-2
		9		●		10		
		11			●	12		
		13	●			14		
		15		●		16		
		17			●	18		
		19	●			20		
		21		●		22		
		23			●	24		
		25	●			26		
		27		●		28		
		29			●	30		
		31	●			32		
		33		●		34		
		35			●	36		
		37	●			38		
		39		●		40		
		41			●	42		

PANEL DESIGNATION: RP-2 — PROJECT NAME: MUNICIPALITY OF CASSELMAN OFFICE FIT-UP

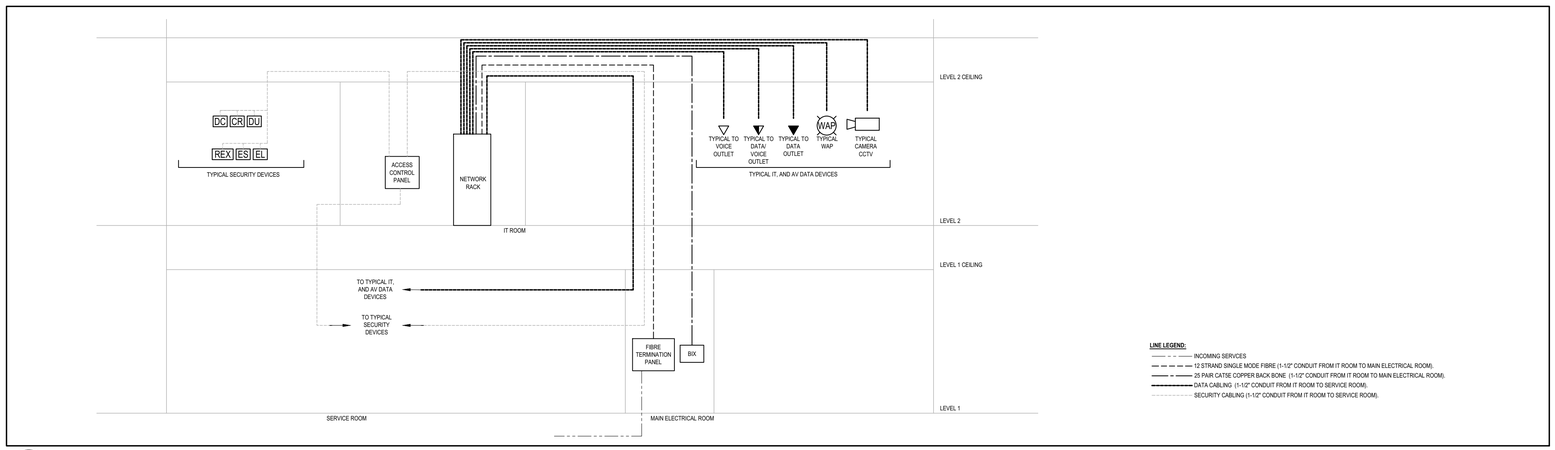
MAIN BUS: 400A | MAIN BREAKER: 250A | VOLTAGE: 120/208V, 3ø, 4W, 10kA | SURFACE MOUNTED. NEW PANEL

LOAD DESCRIPTION	BRKR SIZE	CCT. No.	PHASE A	PHASE B	PHASE C	CCT. No.	BRKR SIZE	LOAD DESCRIPTION
OFFICE LIGHTS	20A	1	●			2	20A	OFFICE LIGHTS
OFFICE LIGHTS	20A	3		●		4	20A	OFFICE LIGHTS
CORRIDOR LIGHTS	20A	5			●	6	20A	CORRIDOR LIGHTS
BATTERY UNIT	20A	7	●			8	20A	EXIT SIGNS
BATTERY UNIT	20A	9		●		10	15A	OFFICE RECEPTACLE
OFFICE RECEPTACLE	15A	11			●	12	15A	OFFICE RECEPTACLE
OFFICE RECEPTACLE	15A	13	●			14	15A	OFFICE RECEPTACLE
OFFICE RECEPTACLE	15A	15		●		16	15A	OFFICE RECEPTACLE
OFFICE RECEPTACLE	15A	17			●	18	15A	OFFICE RECEPTACLE
OFFICE RECEPTACLE	15A	19	●			20	15A	OFFICE RECEPTACLE
OFFICE RECEPTACLE	15A	21		●		22	15A	OFFICE RECEPTACLE
OFFICE RECEPTACLE	15A	23			●	24	15A	PRINTER ROOM REC.
TREASURE ROOM REC.	15A	25	●			26	20A	PRINTER REC.
TREASURE ROOM REC.	15A	27		●		28	15A	CORRIDOR REC.
CORRIDOR REC.	15A	29			●	30	20A	PRINTER REC.
IT ROOM REC.	20A	31	●			32	20A	IT ROOM REC.
IT ROOM REC.	20A	33		●		34	20A	IT ROOM REC.
RECEPTION REC.	15A	35			●	36	15A	CORRIDOR REC.
RECEPTION REC.	15A	37	●			38	15A	CORRIDOR REC.
WASHROOM REC.	15A	39		●		40	15A	WASHROOM REC.
WASHROOM REC.	15A	41			●	42	15A	LARGE MEETING ROOM REC.
LARGE MEETING ROOM REC.	20A	43	●			44	20A	LARGE MEETING ROOM REC.
LARGE MEETING ROOM TV REC.	15A	45		●		46	15A	LARGE MEETING ROOM REC.
LARGE MEETING ROOM FRIDGE REC.	15A	47			●	48	20A	LARGE MEETING ROOM AV CABINET.
LARGE MEETING ROOM REC.	15A	49	●			50	15A	LARGE MEETING ROOM COUNTER REC.
LARGE MEETING RANGE REC.	40A / 2P	51		●		52	15A	SMALL MEETING ROOM REC.
		53			●	54	15A	COUNCIL CHAMBER REC.
COUNCIL CHAMBER REC.	20A	55	●			56	20A	COUNCIL CHAMBER REC.
COUNCIL CHAMBER REC.	20A	57		●		58	15A	COUNCIL CHAMBER REC.
ROOF REC.	20A	59			●	60	20A / 3P	DHWT-1
ROOF REC.	20A	61	●			62		
BASEBOARD HEATER	15A	63		●		64		
BASEBOARD HEATER	15A	65			●	66	15A	EXHAUST FAN
UNIV. WASHROOM DOOR CONTROLLER	15A	67	●			68	15A	TRANSFER FAN
SMALL MEETING ROOM TV REC.	15A	69		●		70	15A	WORK STATION REC.
SMALL MEETING ROOM REC.	20A	71			●	72	15A	WORK STATION REC.
KITCHEN HOOD REC.	15A	73	●			74	15A	WORK STATION REC.
ADO	15A	75		●		76	15A	WORK STATION REC.
TV REC.	15A	77			●	78	20A	COUNCIL CHAMBER REC.
SMALL MEETING ROOM REC.	15A	79	●			80	20A	COUNCIL CHAMBER REC.
MAYOR 210 RECEPTACLE	15A	81		●		82	20A	SPARE
LARGE MEETING ROOM REC.	15A	83			●	84	20A	SPARE
LARGE MEETING ROOM REC.	15A	85	●			86	20A	SPARE
COUNCIL CHAMBER REC.	15A	87		●		88	20A	SPARE
COUNCIL CHAMBER REC.	15A	89			●	90	20A	SPARE
COUNCIL CHAMBER REC.	15A	91	●			92	20A	SPARE
SPACE	15A	93		●		94	20A	SPARE
SPACE	15A	95			●	96	20A	SPARE
SPACE	15A	97	●			99	20A	SPARE
SPACE	15A	99		●		90	20A	SPARE
SPACE	15A	101			●	102	20A	SPARE
SPACE	15A	103	●			104	20A	SPARE
SPACE	15A	105		●		106	20A	SPARE
SPACE	15A	107			●	1010	20A	SPARE

LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	PART NO.	MANUFACTURER	NOTES
F1	2X4 LED TROFFER	CPX 2X4 4000LM 35K M2 MW	LITHONIA	
F2	4'X4'LED TROFFER	LSIX 4FT 3000LM 80CRI 35K FFR SWL MIN10 ZT MVOLT MW	LITHONIA	
F3	LED TAPE	6020-FL-COB-3.1W24V-35K (LED tape) + 6100- AP-SM-1708 (aluminum extrusion + frosted lens) + 5030-PSU-60W24V-TRI-DIM-JB-CL2 (dimmable power supply)	PRISM	
A1	17'CEILING PENDANT	4275-17-LED.REG-35K-90-120V-DV-C60-RC1-BLKE-BLK-BLKE-WH	EUREKA	
A2	4" DOWNLIGHT	JPDZ4 DC ALO10 SWW5WD 90CRI JPDZRMJBX MVOLT ZT10 WWH	JUNO	
A3	3" PENDANT	4048-10-LED-35-80-120V-DV-ME-FRO-C60-RC2-WHE-WHE-WHE	EUREKA	
L1	ACOUSTIC SUSPENDED LINEAR PENDANT	LX-BL-M-H1-S-LG-35-UNV-RD-LG	MVP	
L2	ACOUSTIC SUSPENDED LINEAR PENDANT	LX-BL-M-H2-S-LB-35-UNV-RD-LB	MVP	
L3	ACOUSTIC SUSPENDED LINEAR PENDANT	LX-BL-M-H0-S-LG-35-UNV-RD-LG	MVP	
W1	WALL SCONCE	1125-BL-H6-40K	MVP	
X1	STEEL PICTOGRAM EXIT SIGN UNIVERSAL FACE	LS3WU STEEL PICTOGRAM EXIT SIGN UNIV	LUMACELL	
	12V STEEL EMERG. BATTERY UNIT C/W 4W MR16-LED	RG12S1442LD7	LUMACELL	
	PLASTIC EMERG. REMOTE HEAD DBL 12V4W-LED WS	MQM2LD7	LUMACELL	

NOTES:
1. ALL FINISHES, FLANGE AND PLASTER COLOURS TO BE CONFIRMED WITH ARCHITECT/INTERIOR DESIGNER PRIOR TO ORDERING LUMINAIRES.
2. CONTRACTOR TO PROVIDE SUITABLE MOUNTING ACCESSORIES AND HARDWARE ACCORDINGLY TO CEILING FINISHES.
3. PROVIDE SUITABLE STEP DOWN TRANSFORMER FOR ANY LOW VOLTAGE LIGHTING AS REQUIRED.



2 / E-07 IT AND SECURITY DISTRIBUTION RISER DIAGRAM
N.T.S.

CLIENT

MUNICIPALITY OF CASSELMAN

PROJECT NORTH

5	ISSUED FOR TENDER	2025-03-24
4	ISSUED FOR PERMIT	2025-03-18
3	ISSUED FOR REVISED 99% REVIEW	2025-02-19
2	ISSUED FOR 99% COORDINATION	2023-06-13
1	ISSUED FOR 66% COORDINATION	2023-05-12
ISSUE	DESCRIPTION	DATE

IT IS THE RESPONSIBILITY OF THE APPROPRIATE CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON SITE AND PROMPTLY REPORT ALL ERRORS AND/OR OMISSIONS TO THE CONSULTANT BEFORE WORK COMMENCES.

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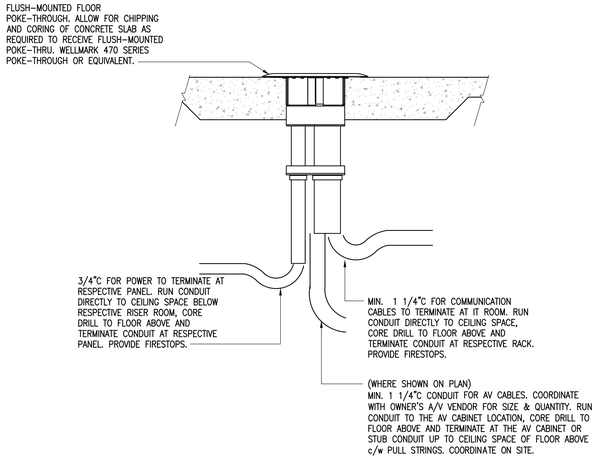
PROJECT

1 INDUSTRIEL STREET
OFFICE FIT-UP

DRAWING

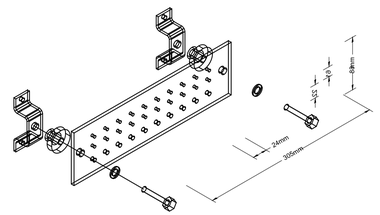
ELECTRICAL SCHEDULE
AND DIAGRAM

PROJECT No: MRK-23002008-A0	REVISION:
DRAWN: KL	DATE: MAY 2023
APPROVED: DL	SCALE: AS SHOWN
DRAWING No: E-07	



4 E-07 DETAIL OF FLOOR POKE-THROUGH

SYMBOL:

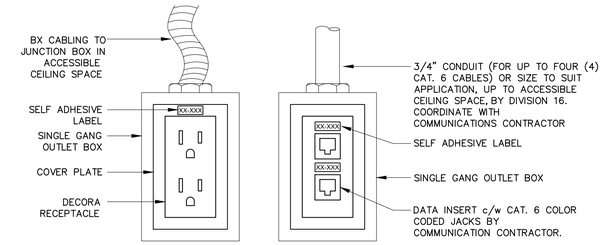


NOTES:

1. BUS TO BE MOUNTED AT LOWER CORNER OF PLYWOOD BACKBOARD.
2. EQUIPMENT RACKS, CABINETS AND CABLE TRAY ARE TO BE TERMINATED ON THE BUS BAR. GROUND EACH EQUIPMENT USING 'STAR' CONFIGURATION, DAISY CHAIN NOT ACCEPTABLE.
3. ONE #6 AWG INSULATED GREEN GROUND WIRE IS TO BE PROVIDED IN 1"C FROM THE GROUND BUS BACK TO THE BUILDING GROUND RISER.

1 E-07 DETAIL OF WALL MOUNTED GROUND BUS BAR:

N.T.S.

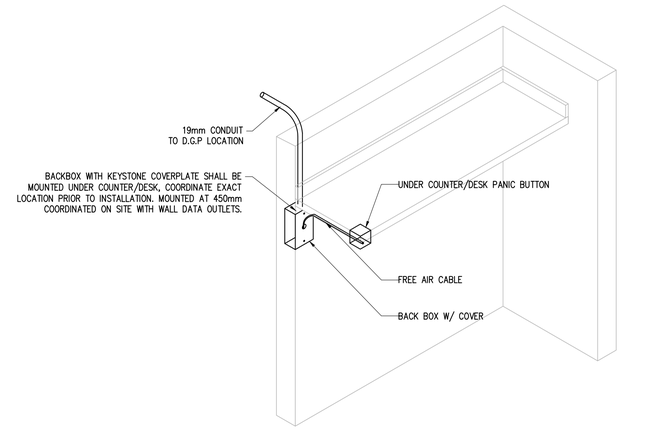


NOTES:

1. REFER TO SPECIFICATIONS FOR MAXIMUM LENGTH OF WIRE IN FLEXIBLE CONDUIT (BX CABLING) ALLOWED.
2. CO-ORDINATE WITH DESIGNER FOR EXACT VOICE/DATA CONFIGURATION OUTLETS.
3. CO-ORDINATE WITH DESIGNER FOR EXACT COLOUR FINISH OF RECEPTACLES AND VOICE/DATA OUTLETS. NEW RECEPTACLES SHALL MATCH WITH EXISTING.
4. ALL ITEMS SHOWN BY ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED.
5. IDENTIFICATION FOR RECEPTACLES BY ELECTRICAL CONTRACTOR, IDENTIFICATION FOR COMMUNICATIONS OUTLETS BY COMMUNICATIONS CONTRACTOR.
6. REFER TO COMMUNICATION DRAWINGS AND SPECIFICATIONS FOR VOICE AND DATA CABLES AND QUANTITIES

2 E-07 TYPICAL WALL MOUNTED POWER/DATA OUTLET DETAIL

N.T.S.



NOTES:

1. OUTLET CONFIGURATION AND QUANTITY MAY VARY. REFER TO SYSTEMS AND ARCHITECTURAL FLOOR PLANS FOR EXACT CONFIGURATION AND QUANTITY OF OUTLETS.
2. REFER TO ARCHITECTURAL DRAWINGS FOR BACKBOX MOUNTING LOCATION.
3. SEE SPECIFICATIONS FOR CABLE AND DEVICE TYPES.
4. CONTRACTOR SHALL PROVIDE 10FT OF SERVICE LOOP AT THE DEVICE LOCATION FOR DURESS TYPE – 03.

5 E-07 DURESS UNDER COUNTER/DESK PUSH STATION:

N.T.S.

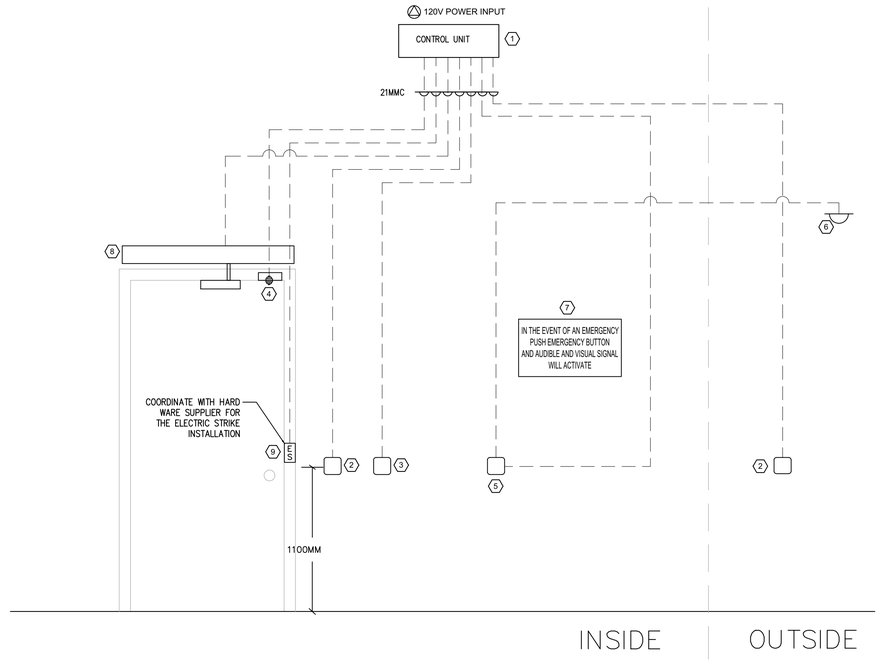
DESCRIPTION

EQUIPMENT PACKAGE:

1. MULTI-FUNCTION RELAY
2. VERTICAL SURFACE MOUNTED PUSH TO OPEN
3. PUSH TO LOCK PLATE WITH ENCLOSURE AND SIGN
4. DOOR CONTACT
5. 'PRESS FOR EMERGENCY ASSISTANCE' AND 'ASSISTANCE REQUESTED' LED ANNUNCIATOR WITH SOUNDER
6. 'ASSISTANCE REQUIRED' DOME LIGHT WITH SOUNDER MOUNTED ABOVE THE DOOR OUTSIDE OF THE WASHROOM
7. EMERGENCY ASSISTANCE SIGN
8. DOOR OPERATOR
9. ELECTRIC STRIKE

NOTES:

1. DOOR HARDWARE AND DOOR MOTORS SHALL BE SUPPLIED AND INSTALLED BY DOOR HARDWARE, CONDUIT AND WIRING TO THE MOTORS SHALL BE BY THE ELECTRICAL CONTRACTOR.
2. ALL ROUGH-INS AND CONDUIT BY THE ELECTRICAL CONTRACTOR. COORDINATE WITH THE ROUGH-IN LOCATION FOR THE DOOR PUSH BARS AND DOOR LOCK BUTTONS WITH INTERIOR DESIGNER/ARCHITECT.
3. ALL DOOR CONTROL DEVICES INCLUDING DOOR PUSH BARS, LOCK BUTTONS AND EMERGENCY CALL ASSISTANCE DEVICES SHALL BE SUPPLIED AND INSTALLED DOOR HARDWARE.
4. FINAL CONNECTIONS TO THE DOOR CONTROL DEVICES SHALL BE COMMISSIONED BY THE AUTHORIZED MANUFACTURER TECHNICIAN. ALL COSTS SHALL BE INCLUDED IN THIS CONTRACT.
5. LOW VOLTAGE CABLES C/W CONDUIT SHALL BE SUPPLIED AND INSTALLED BY DOOR HARDWARE. CONDUIT WITH PULL STRING SHALL BE BY THE ELECTRICAL CONTRACTOR.
6. COORDINATE WITH ARCHITECT AND DOOR HARDWARE CONTRACTOR FOR THE EXACT REQUIREMENTS.
7. ALL CONDUIT AND BACK BOXES WITH PULL CORDS AND WIRES ARE TO BE PROVIDED BY THE ELECTRICAL CONTRACTOR. ELECTRICIAN IS TO CONFIRM ALL WIRE LOCATIONS WITH THE AUTO DOOR OPERATOR SUPPLIER PRIOR TO PULLING WIRES.



3 E-07 BARRIER FREE WASHROOM EMERGENCY CALL ASSISTANCE AND DOOR CONTROL DETAIL

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PROJECT NORTH

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PROJECT

1 INDUSTRIEL STREET
OFFICE FIT-UP

DRAWING

ELECTRICAL DETAILS

PROJECT No: MRK-23002008-A0	REVISION:
DRAWN: KL	DATE: MAY 2023
APPROVED: DL	SCALE: AS SHOWN
DRAWING No: E-08	

1. SCOPE OF WORK

1.1 SUPPLY LABOUR, TOOLS, SERVICES AND EQUIPMENT, AND PROVIDE MATERIALS REQUIRED TO COMPLETE WORK IN ACCORDANCE WITH THIS SPECIFICATION AND DRAWINGS. COMPLY WITH LAWS, REGULATIONS AND CODES OF AUTHORITIES HAVING JURISDICTION. CONFORM TO REQUIREMENTS OF BIDDING DOCUMENTS AND DIVISION 1. PERFORM WORK IN ACCORDANCE WITH LOCAL APPLICABLE GOVERNING CODES AND AUTHORITIES INCLUDING THE ONTARIO BUILDING CODE AND ONTARIO ELECTRICAL SAFETY CODE (OESC).

2. EXAMINATION OF SITE AND DOCUMENTS

2.1 PRIOR TO SUBMITTING BID, CAREFULLY EXAMINE CONDITIONS AT SITE WHICH WILL OR MAY AFFECT WORK, DRAWINGS, AND SPECIFICATIONS, AND BECOME FAMILIAR WITH BUILDING CONSTRUCTION, FINISHES AND OTHER WORK ASSOCIATED WITH WORK IN ORDER THAT BID INCLUDES FOR EVERYTHING NECESSARY FOR COMPLETION OF WORK.

3. PERMITS, CERTIFICATES AND FEES

3.1 PAY FOR AND OBTAIN PERMITS TO COMPLETE WORK. WHEN WORK IS COMPLETE, SUPPLY AND TURN OVER INSPECTION CERTIFICATES FROM GOVERNING AUTHORITIES TO CONSULTANT. PAY FEES AND CHARGES LEVIED BY MUNICIPALITY AND OTHER GOVERNING AUTHORITIES FOR PERMITS, INSPECTIONS AND CERTIFICATES. KEEP COPY OF SUCH PERMITS AND CERTIFICATES, ETC., ON JOB SITE.

4. CO-ORDINATION AND CO-OPERATION

4.1 COORDINATE ALL WORK WITH OTHER TRADES TO ENSURE A PROPER AND COMPLETE INSTALLATION. NOTIFY ALL TRADES CONCERNED OF REQUIREMENT FOR OPENINGS, SLEEVES, INSERTS AND OTHER HARDWARE NECESSARY IN THEIR WORK FOR INSTALLATION OF YOUR WORK, AND, WHERE YOUR WORK IS TO BE INTEGRATED WITH WORK OF OTHER TRADES OR IS TO BE INSTALLED IN CLOSE PROXIMITY WITH WORK OF OTHER TRADES, CAREFULLY COORDINATE WORK PRIOR TO AND DURING INSTALLATION.

4.2 EXACT LOCATIONS AND ROUTING OF SERVICES MUST BE PROPERLY PLANNED, COORDINATED AND ESTABLISHED WITH ALL AFFECTED TRADES PRIOR TO INSTALLATION SUCH THAT THEY WILL CLEAR EACH OTHER AS WELL AS ANY OBSTRUCTIONS. GENERALLY, PIPING REQUIRING UNIFORM PITCH SHALL BE GIVEN RIGHT OF WAY, WITH OTHER SERVICES LOCATED AND ARRANGED TO SUIT.

5. NOISE CONTROL

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

6. CLEANING UP

6.1 DURING CONSTRUCTION, KEEP SITE REASONABLY CLEAR OF RUBBISH AND WASTE MATERIAL RESULTING FROM WORK ON DAILY BASIS. AFTER COMPLETION OF WORK, REMOVE RUBBISH AND DEBRIS, ARRANGE AND PAY FOR REPAIR OF DAMAGES CAUSED AND LEAVE PREMISES AND WORK IN GOOD ORDER.

7. PROTECTION OF EQUIPMENT AND MATERIAL

7.1 PROPERLY PROTECT AND STORE ALL EQUIPMENT AND MATERIALS ON SITE FROM DAMAGE. CONTRACTOR SHALL BE RESPONSIBLE FOR SAFE STORAGE OF ALL EQUIPMENT AND GOODS TO BE RELOCATED AND SHALL REPAIR OR REPLACE DAMAGED EQUIPMENT AND GOODS AT DISCRETION OF OWNER.

8. INSPECTION OF WORK

8.1 CONSULTANT SHALL AT ALL TIMES HAVE ACCESS TO WORK AND SHALL BE NOTIFIED AT AGREED UPON TIMES OF STAGES OF WORK.

8.2 WHERE STANDARDS OF WORK ARE SPECIFIED OR IMPLIED AND WORK DOES NOT COMPLY WITH PERFORMANCE SPECIFIED OR IMPLIED, SUCH DEFICIENCY SHALL BE CORRECTED AS DIRECTED BY CONSULTANT. ANY SUBSEQUENT TESTING TO VERIFY PERFORMANCE SHALL BE DONE AT CONTRACTOR'S EXPENSE. ANY CHARGES FOR OWNER'S STAFF, CONSULTANT OR OTHER PERSONNEL RELATED TO SUCH RETESTING SHALL ALSO BE AT EXPENSE OF CONTRACTOR.

9. PRODUCTS

9.1 PRODUCTS LISTED AND/OR SPECIFIED ON CONTRACT DOCUMENTS ARE SELECTED TO ESTABLISH DESIGN STANDARDS. IN MOST CASES, ACCEPTABLE MANUFACTURERS ARE LISTED. BASE YOUR BID PRICE ON BASE SPECIFIED PRODUCTS OR PRODUCTS SUPPLIED FROM ACCEPTABLE MANUFACTURERS. ENSURE PRODUCTS SUPPLIED FROM MANUFACTURERS OTHER THAN BASE SPECIFIED MANUFACTURERS ARE EQUIVALENT TO SPECIFIED PRODUCTS. CHANGES TO MANUFACTURERS OF PRODUCTS MAY BE PROPOSED TO CONSULTANT FOR ACCEPTANCE PRIOR TO CLOSING OF BIDS, LISTING IN EACH CASE CORRESPONDING CREDIT. CONSULTANT HAS SOLE DISCRETION IN ACCEPTING ANY PROPOSED SUBSTITUTION. INCLUDE IN BID PRICE ANY ADDITIONAL COSTS FOR CHANGES TO ASSOCIATED OR ADJACENT WORK RESULTING FROM PROVISION OF PRODUCTS SUPPLIED BY MANUFACTURER OTHER THAN BASE SPECIFIED MANUFACTURER. ANY PROPOSED CHANGES INITIATED BY CONTRACTOR AFTER AWARD OF CONTRACT MAY BE CONSIDERED BY THE CONSULTANT AT CONSULTANT'S DISCRETION, WITH COSTS FOR SUCH CHANGES IF APPROVED BY CONSULTANT, AND COSTS OF SUCH REVIEW BY THE CONSULTANT TO BE PAID FOR BY THE CONTRACTOR.

10. WARRANTY

10.1 WARRANT WORK TO BE IN STRICT ACCORDANCE WITH CONTRACT DOCUMENTS AND FREE FROM DEFECTS FOR 1 YEAR PERIOD FROM DATE OF WRITTEN ACCEPTANCE BY CONSULTANT. REPAIR AND/OR REPLACE ANY SUCH DEFECTS WHICH APPEAR IN WORK WITHIN WARRANTY PERIOD, ORDINARY WEAR AND TEAR AND WILFUL DAMAGE BY, OR CARELESSNESS OF OWNER'S STAFF OR AGENTS EXCEPTED, WITHOUT ADDITIONAL EXPENSE TO OWNER. WHERE SUCH DEFECTS OCCUR, BE RESPONSIBLE FOR COSTS INCURRED IN MAKING DEFECTIVE WORK GOOD, INCLUDES REPAIR OR REPLACEMENT OF BUILDING FINISHES, OTHER MATERIALS, OR DAMAGE TO OTHER EQUIPMENT CAUSED BY SUCH DEFECTS, OR BY SUBSEQUENT REPLACEMENT OR REPAIRS.

11. INTERRUPTIONS TO AND SHUT-DOWNS OF EXISTING SERVICES AND SYSTEMS

11.1 COORDINATE AND PERFORM SHUT-DOWNS AND INTERRUPTIONS TO EXISTING SYSTEMS AND SERVICES AT TIMES ACCEPTABLE TO OWNER. OBTAIN WRITTEN APPROVAL MINIMUM FIVE (5) DAYS IN ADVANCE OF SHUT-DOWN OR INTERRUPTION. INCLUDE FOR COSTS OF PREMIUM TIME TO PERFORM WORK DURING NIGHTS, WEEKENDS OR OTHER TIME OUTSIDE OF NORMAL WORKING HOURS, AS NECESSARY TO MAINTAIN SERVICES IN OPERATION OR WITH MINIMUM INTERRUPTIONS AND TO COMPLY WITH OWNER'S REQUIREMENTS. NOTE: WORK ASSOCIATED WITH SHUT-DOWNS AND INTERRUPTIONS WILL BE CARRIED OUT AS CONTINUOUS OPERATIONS TO MINIMIZE SHUT-DOWN TIME AND TO REINSTATE SYSTEMS AS SOON AS POSSIBLE, AND, PRIOR TO SHUT-DOWN, ENSURE MATERIALS AND LABOUR REQUIRED TO COMPLETE WORK FOR WHICH SHUT-DOWN IS REQUIRED ARE AVAILABLE AT SITE.

12. CUTTING, PATCHING AND CORE DRILLING

12.1 DO CUTTING, PATCHING AND CORE DRILLING OF EXISTING BUILDING REQUIRED FOR INSTALLATION OF WORK AFTER HOURS AND MUST BE CONFIRMED BY LANDLORD. PERFORM CUTTING IN NEAT AND TRUE FASHION, WITH PROPER TOOLS AND EQUIPMENT TO OWNER'S APPROVAL. PATCHING WILL EXACTLY MATCH EXISTING FINISHES AND BE PERFORMED BY TRADESMEN SKILLED IN PARTICULAR TRADE OR APPLICATION WORKED ON TO OWNER'S APPROVAL.

12.2 IN FIRE RATED CONSTRUCTION, PACK AND SEAL VOID BETWEEN OPENING AND CONDUIT FOR LENGTH OF OPENING WITH ASBESTOS-FREE ELASTOMERIC AND INTUMESCENT ULC LISTED AND LABELLED MATERIALS. INSTALL FIRESTOP AND SMOKE SEAL MATERIALS IN ACCORDANCE TO ULC CERTIFICATION AND MANUFACTURER'S REQUIREMENTS TO PROVIDE FIRESTOP RATINGS OF OPENINGS IN ACCORDANCE WITH GOVERNING BUILDING CODE REQUIREMENTS. SUBMIT WITH SHOP DRAWINGS, SPECIFIC ULC DESIGNATED NUMBER FOR EACH APPLICATION.

12.3 DO NOT CUT OR DRILL EXISTING WORK WITHOUT PRIOR OWNER'S APPROVAL. IN CONSULTATION WITH OWNER AND BY USE OF X-RAY (WITH OWNER'S APPROVAL), OR RADAR SCANNING, DETERMINE PRESENCE OF EXISTING SERVICES AND REINFORCING RODS CONCEALED BEHIND SURFACE TO BE CUT. ENSURE THAT AREAS OF BOTH SIDES OF THE SURFACE BEING CUT ARE PROTECTED FROM DEBRIS. NOTE: YOU WILL BE HELD RESPONSIBLE FOR DAMAGE DONE TO EXISTING BUILDING AND SERVICES CAUSED BY CUTTING OR DRILLING. IF X-RAYING IS NOT PERMITTED, USE NON-DESTRUCTIVE RADAR SCANNING OR CAREFULLY HAND CHIESEL TO EXPOSE RE-BAR AND BURIED SERVICES AND CHIESEL OUT REQUIRED OPENINGS.

12.4 X-RAY THE FLOOR SHALL ONLY BE PERMITTED AFTER HOURS (10:00PM), AND A MINIMUM 72 HOURS' WRITTEN NOTICE SHALL BE PROVIDED TO THE LANDLORD FOR APPROVAL.

13. DISCONNECTION, REMOVAL AND RELOCATION WORK

13.1 WHERE INDICATED ON DRAWINGS, AND DETERMINED BY SITE VISIT, DISCONNECT AND REMOVE ITEMS OF EXISTING OBSOLETE ELECTRICAL WORK AND RELOCATE DEVICES. WHERE FIXTURES, SWITCHES, RECEPTACLES AND OTHER DEVICES AND/OR EQUIPMENT IS REMOVED, DISCONNECT AT POINT OF ELECTRICAL SUPPLY, REMOVE OBSOLETE WIRING, AND MAKE SYSTEM SAFE. WHERE EXISTING OBSOLETE CONDUIT AND SIMILAR RACEWAY MATERIAL CANNOT BE REMOVED, CUT BACK AND CAP OBSOLETE CONDUITS OR RACEWAYS. REVISE PANELBOARD DIRECTORIES ACCORDINGLY, IF AFFECTED BY WORK.

13.2 UNLESS OTHERWISE NOTED, OBSOLETE MATERIALS WHICH ARE DISCONNECTED AND ARE NOT TO BE RELOCATED OR REUSED WILL BECOME YOUR PROPERTY. REMOVE FROM SITE AND DISPOSE. OBTAIN FROM OWNER, LIST OF EXISTING ITEMS TO BE CAREFULLY REMOVED AND TURNED OVER TO OWNER. SAID ITEMS WILL REMAIN PROPERTY OF OWNER.

13.3 PROVIDE JUNCTION BOXES, OUTLET BOXES, WIRING, PLATES, ETC., AS NECESSARY FOR COMPLETE RELOCATION OF DEVICES. CLEAN AND RELAMP RELOCATED LUMINAIRES. REPLACE FAULTY BALLASTS. WHEN RELOCATION WORK IS COMPLETE, CONFIRM RELOCATED DEVICES ARE IN PROPER WORKING ORDER. ALL RELOCATED OR TEMPORARY REMOVED DEVICES SHALL BE CLEANED AND VERFIED TO BE IN GOOD WORKING CONDITION PRIOR TO BEING REINSTALLED.

13.4 WHERE EXISTING SERVICES PASS THROUGH OR ARE IN AN AREA TO SERVE ITEMS WHICH ARE TO REMAIN, MAINTAIN SERVICES. INCLUDE FOR REROUTING EXISTING SERVICES CONCEALED BEHIND FINISHES AND WHICH BECOME EXPOSED DURING RENOVATION WORK, SO AS TO BE CONCEALED BEHIND FINISHES.

13.5 IN AREAS WHICH ARE NOT BEING ARCHITECTURALLY RENOVATED AND WHICH ELECTRICAL CONTRACTOR MUST RUN SERVICES THROUGH, BE RESPONSIBLE FOR REMOVAL AND REINSTALLATION OF ARCHITECTURAL CEILING TILES, MECHANICAL EQUIPMENT, SPRINKLERS, ETC., AS REQUIRED FOR INSTALLATION OF YOUR WORK. IF THE REQUIRED ELECTRICAL WORK IS REQUIRED TO ACCOMMODATE WORK OF OTHER TRADES, AND IF REMOVAL OF EXISTING CEILING TILES IS NOT THE RESPONSIBILITY OF OTHERS, BE RESPONSIBLE FOR ALL WORK TO GAIN ACCESS TO THOSE DEVICES THAT NEED TO BE WORKED ON. SECURELY SUPPORT ANY DEVICE/LUMINAIRE LEFT "DANGLING" DUE TO REMOVAL OF SUPPORTING MEANS. RE-INSTALL DEVICES AFTER INSPECTION OF WORK IS APPROVED BY CONSULTANT. PRIOR TO REMOVAL OF CEILING TILES OR OTHER DEVICES, INSPECT FOR DAMAGES/WORKING ORDER AND REPORT ANY DEFICIENCIES TO OWNER PRIOR TO START OF WORK. PATCH AND MAKE GOOD (INCLUDING PAINTING) SURFACES TO MATCH EXISTING.

13.6 ANY FIRE ALARM OR COMMUNICATION SYSTEM DEVICE THAT HAS BEEN WORKED ON OR RELOCATED, SHALL BE TESTED AND VERIFIED BY MANUFACTURER'S AUTHORIZED TECHNICIAN AFTER COMPLETION OF WORK. INCLUDE FOR ALL COSTS.

14. HAZARDOUS MATERIALS

14.1 IF AT ANY TIME DURING COURSE OF WORK ASBESTOS MATERIALS ARE ENCOUNTERED OR SUSPECTED, CEASE WORK IN AREA IN QUESTION AND IMMEDIATELY REPORT, IN ACCORDANCE WITH ONTARIO REGULATION 169/97 (SECTION 41) TO CONSULTANT. DO NOT RESUME WORK IN AFFECTED AREA WITHOUT APPROVAL FROM CONSULTANT.

15. RECORD DRAWINGS (AS-BUILTS)

15.1 DRAWINGS FOR THIS PROJECT HAVE BEEN PREPARED ON A CAD SYSTEM. THE SOFTWARE USED IS AUTOCAD RELEASE 2010. COPIES OF DRAWINGS ON DISKS FOR USE IN PREPARING AS-BUILTS, MAY BE PURCHASED FROM CONSULTANT AT A COST OF $25 CDN. PLUS GST PER DRAWING.

15.2 WHEN WORK BEGINS AT SITE, CLEARLY AND ACCURATELY MARK ON A BOUND SET OF WHITE PRINTS OF CONTRACT DRAWINGS, ON A DAILY BASIS, ALL CHANGES AND DEVIATIONS FROM ROUTING OF AND LOCATIONS OF EQUIPMENT SHOWN ON CONTRACT DRAWINGS, CHANGES AND DEVIATIONS INCLUDING THOSE MADE BY ADDENDA, CHANGE ORDERS, AND SITE INSTRUCTIONS, AND CHANGES AND DEVIATIONS INDICATED ON SUPPLEMENTAL DRAWINGS ISSUED WITH ADDENDA, CHANGE ORDERS, AND SITE INSTRUCTIONS. MAINTAIN "AS-BUILT" WHITE PRINTS AT SITE FOR PERIODIC INSPECTION BY CONSULTANT THROUGHOUT DURATION OF WORK. PAY PARTICULAR ATTENTION TO ACCURATELY DIMENSIONING LOCATION OF ALL CONCEALED SERVICES TERMINATED FOR FUTURE EXTENSION, ALL BURIED WORK AND SERVICES, AND WORK CONCEALED WITHIN BUILDING IN INACCESSIBLE LOCATIONS.

15.3 WHEN WORK ENDS AT SITE, UPDATE A COMPUTER FILE COPY OF CONTRACT DOCUMENT DRAWING SET SO THAT IT REFLECTS ALL DEVIATIONS FROM ORIGINAL CONTRACT DOCUMENT DRAWINGS, THUS FORMING A TRUE "AS-BUILT" DRAWING DISK SET. PROVIDE A SET OF REPRODUCIBLE MYLAR PRINTS OF CONTRACT DRAWINGS PRODUCED FROM TRUE "AS-BUILT" DRAWING SET. SUBMIT "AS-BUILT" DRAWING COMPACT DISKS WITH WHITE PRINTS AND CAD PRODUCED "AS-BUILT" MYLAR PRINTS TO CONSULTANT. ALL SUBMITTED DRAWINGS SHALL BE OF THE SAME QUALITY AS ORIGINAL CONTRACT DOCUMENT DRAWINGS.

15.4 UPDATE OWNER'S DISTRIBUTION RISER DIAGRAMS POSTED IN ELECTRICAL ROOMS.

16. SHOP DRAWINGS AND OPERATING/MAINTENANCE INSTRUCTION MANUALS

16.1 SUBMIT SHOP DRAWINGS AND OPERATING/MAINTENANCE INSTRUCTION MANUALS FOR FOLLOWING:

16.1.1 SPECIAL RECEPTACLES AND SWITCHES;

16.1.2 LUMINAIRES;

16.1.3 EXIT SIGN;

16.2 PROPERLY IDENTIFY SHOP DRAWINGS FOR REVIEW AND SHOW IN DETAIL EQUIPMENT AND MATERIALS. ENDORSE EACH DRAWING, INCLUDE COMPANY NAME AND SUBMITTAL DATE. PROVIDE MANUALS AS INDEXED, IDENTIFIED HARD COVER 3-RING BINDERS COMPLETE WITH:

16.2.1TITLE SHEET AND LIST OF CONTENTS;

16.2.2 A COPY OF EACH "REVIEWED" SHOP DRAWING;

16.2.3 EXPLANATIONS OF OPERATING PRINCIPLES AND SEQUENCES;

16.2.4 PART LISTS WITH NUMBERS;

16.2.5 RECOMMEND MAINTENANCE PRACTICES AND PRECAUTIONS;

16.2.6 COPIES OF INSPECTION CERTIFICATES ISSUED BY GOVERNING

16.2.7 WIRING AND CONNECTION DIAGRAMS;

16.2.8 COPIES OF ADDITIONAL AND REVISED PANELBOARD DIRECTORIES.

16.3 PROVIDE 2 SETS OF MANUALS. CONFIRM EXACT QUANTITY AND METHOD OF AUTHORITIES;

17. GENERAL CONDUIT AND CONDUCTOR INSTALLATION REQUIREMENTS

17.1 INSTALL CONDUIT AND CONDUCTORS CONCEALED TO DEGREE MADE POSSIBLE BY FINISHES AND PROVIDE INSTALLATIONS IN ACCORDANCE WITH CEC AND LOCAL GOVERNING AUTHORITIES. PLAN AND COORDINATE LOCATIONS AND ROUTING OF SERVICES, WITH TRADES PRIOR TO INSTALLATION. IN AREAS WHERE A MULTIPLICITY OF SERVICES OCCURS, PREPARE DETAIL DRAWINGS AND SUBMIT TO CONSULTANT FOR REVIEW PRIOR TO START OF AFFECTED WORK.

17.2 WHERE CONDUIT AND/OR CONDUCTORS ARE EXPOSED, ARRANGE SAME TO AVOID INTERFERENCE WITH OTHER WORK AND PARALLEL TO BUILDING LINES.WHERE HORIZONTAL CONDUITS AND/OR CONDUCTORS ARE EXPOSED, INSTALL AS HIGH AS POSSIBLE. DO NOT INSTALL CONDUIT AND/OR CONDUCTORS WITHIN 6" (150 mm) OF "HOT" PIPES OR EQUIPMENT UNLESS CONDUIT AND/OR CONDUCTORS ARE ASSOCIATED WITH EQUIPMENT. INDEPENDENTLY RUN CONDUIT AND CONDUCTORS MUST BE SUPPORTED FROM THE CEILING/WALL STRUCTURE, NOT FROM CEILING HANGERS, DUCTWORK, PIPING, CABLE TRAYS, ETC.

17.3 IDENTIFY CONDUIT RUNS. (I.E.: TAG BOTH ENDS OF CONDUIT RUNS).

17.4 AT NO EXTRA COST, ALLOW FOR FINAL RELOCATIONS OF DEVICES UP TO 10' (3M) TO SUIT FINAL COORDINATED DEVICE LOCATIONS, PRIOR TO INSTALLATION OF WALL COVERINGS.

17.5 GENERALLY, CONDUCTORS AND CONDUIT ARE SIZED ON DRAWINGS, BUT IN ABSENCE OF DIRECTION IN TYPE AND SIZING, TYPE AND SIZE REQUIRED QUANTITY IN ACCORDANCE WITH THE INTENDED APPLICATION, TO APPLICABLE OESC REQUIREMENTS. SIZES WHERE SHOWN, ARE MINIMUM SIZES AND SHALL NOT BE REDUCED UNLESS APPROVED BY CONSULTANT.

17.6 WHERE RECEPTACLE TYPE DEVICES ARE LOCATED IN EXISTING FLOORS AND/OR WHERE FEEDS ARE REQUIRED TO FURNITURE SYSTEMS IN OPEN SPACES, AND WHERE CHASING OF FLOOR SLAB TO RUN CONDUIT IS NOT ACCEPTABLE TO CONSULTANT, PROVIDE "POKE-THRU" ASSEMBLY INSTALLED THROUGH FLOOR AND FEED FROM CONDUIT RUNS PROVIDED IN CEILING SPACE OF FLOOR BELOW.

17.7 CONDUCTORS IN PLENUM SPACES AND IN RAISED FLOOR AREAS SHALL COMPLY WITH OBC AND OESC REQUIREMENTS WITH REGARDS TO FLAME AND SMOKE TEST.

18. CONDUIT

18.1 PROVIDE CONDUIT FOR CONDUCTORS. INTERIOR CONDUIT TO BE EMT (THINWALL) GALVANIZED, ELECTRICAL METALLIC TUBING TO CSA C22.2 NO. 83, COMPLETE WITH FACTORY MADE BENDS WHERE SITE BENDING IS NOT POSSIBLE, AND JOINTS AND TERMINATIONS MADE WITH SET SCREW TYPE CONNECTORS; FOR SHORT BRANCH CIRCUIT CONNECTORS TO MOTORIZED EQUIPMENT AND TRANSFORMERS (MINIMUM LENGTH 18" [450 mm], MAXIMUM LENGTH 24" [600 mm] WITH 180 DEGREE LOOP WHERE POSSIBLE) – GALVANIZED STEEL FLEXIBLE FLUID-TIGHT METALLIC CONDUIT TO CSA C22.2 NO. 56, COMPLETE WITH IDEAL "STEEL TOUGH" LIQUID TIGHT FLEXIBLE CONDUIT CONNECTORS AT TERMINATIONS. FOR EXTERIOR EXPOSED CONDUIT, AND FOR INTERIOR CONDUIT GREATER THAN 2" (50 mm) DIAMETER AND FOR SURFACE MOUNTED CONDUIT AT HEIGH LESS THAN 4' (1200 mm), PROVIDE RIGID GALVANIZED STEEL TO CSA C22.2 NO. 45 COMPLETE WITH FITTINGS, CONNECTORS AND RIGID COUPLINGS.

18.2 SUPPORT AND SECURE CONDUIT AT SPACING IN ACCORDANCE WITH CODE REQUIREMENTS BY MEANS OF GALVANIZED PIPE STRAPS, CONDUIT CLIPS, RING BOLT TYPE HANGERS, OR BY OTHER PROPER MANUFACTURED DEVICES. PROVIDE CONDUIT FITTINGS CONSTRUCTED OF SAME MATERIALS AS CONDUIT AND SUITABLE FOR APPLICATION. SQUARE AND PROPERLY REAM ENDS OF SITE CUT CONDUIT. GENERALLY, CONDUIT IS SIZED ON DRAWINGS. SIZE CONDUIT NOT SIZED ON DRAWINGS IN ACCORDANCE WITH CODE. BEND CONDUIT AT FULL CONDUIT DIAMETER WITH NO KINKING AND NO FLAKING OR CRACKING OF FINISHES.

19. CONDUCTORS

19.1 PROVIDE CONDUCTORS. REFER TO DRAWINGS FOR SIZING OF CONDUCTORS. GENERALLY, BRANCH CIRCUIT CONDUCTOR SIZES ARE INDICATED ON CONSULTANT'S DRAWINGS. SUCH SIZES ARE MINIMUM REQUIREMENTS AND MUST BE INCREASED, TO SUIT LENGTH OF RUN AND VOLTAGE DROP IN ACCORDANCE WITH SCHEDULE OBTAINED FROM CONSULTANT. CONDUCTORS NOT SIZED ON DRAWINGS SHALL BE SIZED IN ACCORDANCE WITH CODE. PROVIDE CABLE SUPPORT SYSTEM ACCESSORIES WHICH ARE NOT SPECIFIED HEREIN OR SHOWN ON DRAWINGS BUT ARE REQUIRED FOR PROPER INSTALLATION.

19.2 INTERIOR CONDUCTORS TO BE "RW90" SINGLE CONDUCTOR TO CSA C22.2 NO. 75, COLOUR CODED, 167 DEGREES F. (75 DEGREES C.) RATED, PVC INSULATED AND NYLON COVERED.

19.3 CONDUCTORS IN ACCESSIBLE SUSPENDED CEILING SPACES, IN STUD WALL CONSTRUCTION TO SUSPENDED CEILING SPACES (MAXIMUM 5' RUN PERMITTED) MAY BE "BX" TYPE, AC-90 FLEXIBLE ARMOURED CABLE WITH "RW-90" CONDUCTORS AND BARE COPPER GROUND CONDUCTOR TO CSA C22.2 NO. 51 (BULLETIN NO. 994). PROVIDE PROPER SQUEEZE TYPE CONNECTORS AND PLASTIC ANTI-SHORT BUSHINGS AT TERMINATIONS. SUPPORT "BX" IN CEILING SPACES AND IN STUD WALL CONSTRUCTIONWITH STEEL 2 HOLE CABLE STRAPS TO "CODE" REQUIREMENTS.

19.4 CONDUCTORS UP TO AND INCLUDING NO. 10 AWG SHALL BE SOLID. CONDUCTORS IN SIZES LARGER THAN NO. 10 AWG SHALL BE STRANDED. PROVIDE CONDUCTORS CONSTRUCTED OF 98% CONDUCTIVE COPPER AND APPROVED FOR 600V. DO NOT USE CONDUCTORS SMALLER THAN NO. 12 AWG UNLESS OTHERWISE NOTED.

19.5 19.5 PROVIDE IDI ELECTRIC "IDEAL" NO. 451, NO. 452 AND NO. 453 "WING-NUT" CSA CERTIFIED 600V RATED PRESSURE TYPE CONNECTORS.

19.6 19.6 COLOUR CODE CONDUCTORS IN ACCORDANCE WITH CODE, THROUGHOUT TO IDENTIFY PHASES, NEUTRALS AND GROUND BY MEANS OF SELF-LAMINATING COLOURED TAPE, COLOURED CONDUCTOR INSULATION, OR PROPERLY SECURED COLOURED PLASTIC DISCS.

19.7 WHEN PULLING WIRES INTO CONDUIT, USE IDI ELECTRIC "IDEAL YELLOW 77" LUBRICANT. ENSURE WIRES ARE KEPT STRAIGHT AND ARE NOT TWISTED OR ABRAISED.

19.8 WRING FOR EMERGENCY LIGHTING SHALL BE FIRE RATED.

20. OUTLET BOXES, PULLBOXES AND JUNCTION BOXES

20.1 PROVIDE CSA APPROVED STAMPED GALVANIZED STEEL OUTLET BOX FOR EACH LUMINAIRE, FIRE ALARM DEVICE, ETC. REFER TO DRAWINGS FOR LOCATIONS OF OUTLETS. CONFIRM EXACT LOCATIONS PRIOR TO ROUGHING-IN. BOXES FOR RIGID STEEL CONDUITS SHALL BE CAST FS/FD TYPES.

20.2 PROVIDE PULLBOXES AND JUNCTION BOXES WHEREVER NECESSARY TO FACILITATE CONDUCTOR/CONDUIT INSTALLATIONS. GENERALLY, PROVIDE CONDUIT RUNS EXCEEDING 100' (30 m) IN LENGTH, OR WITH MORE THAN 3, 90 DEGREE BENDS WITH PULLBOX INSTALLED AT CONVENIENT AND SUITABLE INTERMEDIATE ACCESSIBLE LOCATION. PROVIDE JUNCTION BOXES AND PULLBOXES SIZED IN ACCORDANCE WITH CODE TO SUIT NUMBER AND SIZE OF CONDUITS AND CONDUCTORS. BOXES TO BE GALVANIZED OR PRIME COATED PLATE STEEL COMPLETE WITH SCREW-ON OR HINGED COVERS AND KNOCKOUTS. BOXES MUST BE ACCESSIBLE AFTER WORK IS COMPLETE.

20.3 SIZE, ARRANGEMENT AND TYPE OF BOXES MUST BE SUITABLE FOR APPLICATION. PROVIDE BLANK COVERPLATES ON EXISTING OBSOLETE BOXES WHICH ARE TO REMAIN. CLEARLY IDENTIFY MAIN PULL OR JUNCTION BOXES BY SPRAY PAINTING COVERS IN ACCORDANCE TO BASE BUILDING STANDARDS AND SHALL BE CONFIRMED ON SITE.

20.4 WHERE REQUIRED, SUPPLY ACCESS DOORS OF MINIMUM NO. 12 GAUGE. PRIME COATED STEEL COMPLETE WITH HINGES AND FRAMES TO GIVE ACCESS TO BOXES AND CONDUCTOR JOINTS AND OTHER SIMILAR ELECTRICAL WORK WHICH MAY NEED MAINTENANCE OR REPAIR, BUT WHICH IS CONCEALED IN INACCESSIBLE CONSTRUCTION. CONFIRM FINISHES WITH OWNER.

21. RECEPTACLES, SWITCHES AND FACEPLATES

21.1 FOR GENERAL AREAS: PROVIDE HUBBELL CANADA HBL1221 CSA APPROVED, HEAVY DUTY, SPECIFICATION GRADE, AC QUIET ACTION TOGGLE TYPE, 20A, 120-277V SWITCHES AND HBL5262, HEAVY DUTY, SPECIFICATION GRADE PREMIUM QUALITY DUPLEX NYLON CONSTRUCTION U-GROUND, 15A-125V, 3W RECEPTACLES. DEVICES SHALL BE BACK AND SIDE WIRED. PROVIDE IMPACT RESISTANT THERMOPLASTIC FACEPLATES WITH MATCHING SCREWS. CONFIRM TYPE AND FINISH OF DEVICES WITH OWNER PRIOR TO ORDERING.

21.2 FOR PUBLIC SPACES OR OTHER AREAS WHERE DESIGNER DEVICES ARE REQUIRED: PROVIDE HUBBELL CANADA CSA APPROVED, "STYLE LINE" SPECIFICATION GRADE, ROCKER TYPE, 20A, 120-277V DECORATIVE TYPE SWITCHES AND "STYLE LINE" SPECIFICATION GRADE DUPLEX NYLON CONSTRUCTION U-GROUND, 15A-125V, 3W DECORATIVE RECEPTACLES. DEVICES SHALL BE BACK AND SIDE WIRED. PROVIDE IMPACT RESISTANT THERMOPLASTIC FACEPLATES WITH MATCHING SCREWS. CONFIRM TYPE AND FINISH OF DEVICES WITH OWNER PRIOR TO ORDERING. POLE, 3W, ORANGE COLOURED, SPECIFICATION GRADE ISOLATED GROUND DUPLEX

21.3 WHERE SHOWN, PROVIDE HUBBELL NO. IG.5262, 15A-125V, ULC LISTED, 2 RECEPTACLE COMPLETE WITH STAINLESS STEEL FACEPLATE AND MATCHING SCREWS.

21.4 WHERE SHOWN, PROVIDE HUBBELL NO. GF.5252, 15A-125V, ULC LISTED, CLASS A, GROUP ONE, 2-POLE, 3W, IVORY COLOURED, SPECIFICATION GRADE, GROUND FAULT INTERRUPTER DUPLEX RECEPTACLE, COMPLETE WITH STAINLESS STEEL FACEPLATES AND MATCHING SCREWS.

21.5 IDENTIFY CIRCUIT NUMBERS ON RECEPTACLE DESIGNATED LABELLING SPACES. PROVIDE PERMANENTLY LABELLED, SELF ADHESIVE, IDENTIFICATION TAPE ON OUTSIDE OF EACH DEVICE OUTLET, IDENTIFYING LOCATION FROM WHERE EACH DEVICE IS FED.

22. FASTENING AND SECURING HARDWARE

22.1 PROVIDE PROPER FASTENERS AND SIMILAR HARDWARE REQUIRED FOR CONDUIT, CONDUCTORS, AND FOR EQUIPMENT HANGER AND/OR SUPPORT MATERIAL UNLESS OTHERWISE NOTED. EXPLOSIVE POWDER ACTUATED FASTENERS WILL NOT BE PERMITTED UNLESS SPECIFIC WRITTEN APPROVAL FOR THEIR USE AND TYPE HAS BEEN OBTAINED FROM CONSULTANT. UNDER NO CIRCUMSTANCES USE CEILING SUSPENSION HANGERS OR GRIDS FOR SUSPENSION OF CONDUIT AND CONDUCTORS.

23. IDENTIFICATION NAMEPLATES

23.1 FOR EACH PIECE OF ELECTRICAL DISTRIBUTION EQUIPMENT FROM ELECTRICALSOURCE OF SUPPLY UP TO AND INCLUDING PANELBOARDS, PROVIDE ENGRAVED LAMACOID IDENTIFICATION NAMEPLATES SECURED TO APPARATUS WITH STAINLESS STEEL SCREWS, WORDING TO INDICATE SOURCE OF ELECTRICAL SUPPLY AND SIZED TO SUIT EQUIPMENT FOR WHICH IT IS PROVIDED. CONFIRM EXACT NAMEPLATE WORDING, DESIGNATIONS, AND SIZES WITH OWNER PRIOR TO MANUFACTURE. LEMACOID NAMEPLATES TO MATCH BASE BUILDING STANDARDS FOR SIZE.

24. DISTRIBUTION TRANSFORMERS

24.1 HAMMOND POWER SOLUTIONS, DRY TYPE TRANSFORMERS AS PER DRAWING SCHEDULE, CSA APPROVED AND/OR ULC LISTED AND LABELLED, CONSTRUCTED AND FACTORY TESTED IN ACCORDANCE WITH LATEST REQUIREMENTS OF FOLLOWING:

24.1.1 CSA STANDARD C9;

24.1.2 CAN/CSA C22.2 NO. 47;

24.1.3 CAN/CSA-C802.2

24.1.4 UL 1561;

24.1.5 NEMA TP1;

24.1.6 LOCAL GOVERNING AUTHORITY CODES AND STANDARDS.

24..2 Dry type transformers to be complete with:

24.2.1 MINIMUM NEMA 3R ENCLOSURE WITH A RIGID END FRAME, REMOVABLE PLATES, A TERMINAL COMPARTMENT; VENTILATION LOUVRES DESIGNED TO PREVENT PENETRATION OF WATER SPRAY FROM ACTIVATED SPRINKLERS ONTO LIVE PARTS, AND GASKETTED DOORS AND COMPONENT OPENINGS;

24.2.2 CLASS "H", 220°C CLASS, SILICONE TYPE COIL INSULATION, SUCH THAT WINDING TEMPERATURE RISE TO NOT EXCEED 150C'(270F') AND ENCLOSURE TEMPERATURE RISE NOT EXCEED 65C'(117F') UNDER FULL LOAD IN A 40°C (104F') AMBIENT TEMPERATURE;

24.2.3 TOP MOUNTED FACTORY PAINTED DRIP SHIELD;

24.2

DIV 27 COMMUNICATIONS SPECIFICATIONS

1. GENERAL REQUIREMENTS:

1.1. THIS DOCUMENT SPECIFIES THE USE OF AN END TO END STRUCTURED CABLING SOLUTION AS MANUFACTURED, WARRANTED, AND CERTIFIED BY A SINGLE MANUFACTURER. THE ACCEPTABLE MANUFACTURERS ARE AS FOLLOWS: BELDEN, COMMSCOPE, PANDUIT, OR HUBBELL. NO SUBSTITUTION IS ALLOWED. WORK DONE UNDER THIS SECTION SHALL INCLUDE FURNISHING OF LABOUR, MATERIALS, AND EQUIPMENT REQUIRED FOR INSTALLATION, TESTING, AND PUTTING INTO PROPER OPERATION A COMPLETE COMMUNICATIONS SYSTEMS AS SHOWN, AS SPECIFIED AND AS OTHERWISE REQUIRED.

1.2. WHILE EVERY ATTEMPT HAS BEEN MADE TO ENSURE ALL INFORMATION IS CORRECT AT THE TIME OF PUBLICATIONS, THE PRODUCTS SPECIFIED ARE AVAILABLE, AND THAT THE PART NUMBER IDENTIFIED ARE CORRECT, IT IS THE RESPONSIBILITY OF THE COMMUNICATIONS CONTRACTOR TO VERIFY ALL PART NUMBER AND TO REPORT AND ERRORS AND/OR OMISSIONS IN THE DRAWINGS AND SPECIFICATIONS WITH THEIR BID SUBMISSIONS.

1.3. THE COMMUNICATIONS CONTRACTOR SHALL SUPPLY AND INSTALL A COMPLETE STRUCTURED CABLING SOLUTION BASED ON A PHYSICAL STAR WIRING TOPOLOGY THAT IS DESIGNED IN ACCORDANCE WITH, AND SUPPORTED BY A MANUFACTURER BACKED CERTIFICATION AND WARRANTY AS SPECIFIED HEREIN.

1.4. THE COMMUNICATIONS CONTRACTOR IS REQUIRED TO BE ON SITE DURING EACH PHASE/MOVE. THEY SHOULD PROVIDE FOR EIGHT (8) HOURS SUPPORT ON EACH OF THE PHASES/MOVES ON WEEKENDS. THE COMMUNICATIONS CONTRACTOR SHALL INCLUDE IN THEIR BID ALL NECESSARY ALLOWANCES FOR OVERTIME WORK AFTER REGULAR HOURS AND/OR WEEKENDS AS DICTATED BY THE PROJECT SCHEDULE.

1.5. THE COMMUNICATIONS CONTRACTOR SHALL BE RESPONSIBLE FOR THE ASSEMBLY OF THE COMMUNICATIONS SYSTEM AND PROTECTION OF THE MATERIAL AND EQUIPMENT AND RELATED ITEMS UNTIL PROJECT CUT OVER. ANY DAMAGE TO MATERIALS AND EQUIPMENT SHALL BE THE LIABILITY OF THE COMMUNICATIONS CONTRACTOR. ALL DAMAGE SHALL BE REPAIRED OR AT THE CLIENT'S REQUEST, THE EQUIPMENT SHALL BE REPLACED AT NO EXTRA CHARGE TO THE CLIENT.

1.6. PROVIDE EQUIPMENT, MATERIALS, AND LABOUR NOT SPECIFICALLY MENTIONED OR SHOWN WHICH MAY BE NECESSARY TO PERFECT ALL PARTS OF THIS INSTALLATION AND IN COMPLIANCE WITH REQUIREMENTS STATED OR REASONABLY INFERRED BY THE CONTRACT DOCUMENTS.

1.7. PRIOR TO SUBMITTING THEIR TENDER RESPONSE, THE COMMUNICATIONS CONTRACTOR SHALL PERFORM A SITE SURVEY TO FAMILIARIZE THEMSELVES WITH THE SITE AND ALL CONDITIONS OF THE SITE AFFECTED BY THE PROPOSED WORK. NO CLAIMS FOR EXTRA PAYMENT WILL BE CONSIDERED BECAUSE OF FAILURE TO DO SO.

2. SCOPE OF WORK

2.1. THIS PROJECT CONSISTS OF THE SUPPLY AND INSTALLATION OF AN END TO END STRUCTURED CABLING SOLUTION TO SUPPORT DATA AND VOICE APPLICATIONS, CATV CABLING SYSTEM APPLICATIONS, INTRA-BUILDING BACKBONE CABLING CONSISTING OF MULTIPAIR COPPER CABLING AND INTRA-BUILDING BACKBONE CABLING CONSISTING OF FIBER OPTIC CABLING. THIS SOLUTION SHALL BE INSTALLED, TESTED AND WARRANTED TO A UTP STANDARD CONSISTENT WITH THE GRADE OF CABLE BEING PROVIDED AS DETAILED IN ANSI/TIA-568-C.0, 568-C.1, 568-C.2, AND 568-C.3.

2.2. THE COMMUNICATIONS CONTRACTOR IS RESPONSIBLE TO KEEP THE WORKPLACE CLEAN, SAFE, AND FREE FROM ALL DEBRIS. ALL DEBRIS MUST BE REMOVED ON A DAILY BASIS.

2.3. THE COMMUNICATIONS CONTRACTOR IS RESPONSIBLE FOR THE STORAGE, HANDLING, DELIVERY AND INSTALLATION OF ALL MATERIALS USED IN THE PERFORMANCE OF THE WORK.

2.4. ALL CABLE PAIRS MUST BE TERMINATED AT EACH END USING EIA/TIA T568A, UNLESS OTHERWISE SPECIFIED.

2.5. THE CABLE LENGTH TO THE FARTHEST WORK AREA FROM THE I.T. CLOSET WILL BE LIMITED TO 90 METERS (295 FEET). COMMUNICATIONS CONTRACTOR TO PROVIDE A 10 FOOT SERVICE LOOP ON ALL CABLES AT EACH END UNLESS OTHERWISE NOTED. IT IS THE RESPONSIBILITY OF THE COMMUNICATIONS CONTRACTOR TO NOTIFY THE COMMUNICATION ENGINEER'S REPRESENTATIVE IMMEDIATELY UPON DISCOVERY OF ANY CABLE RUN EXCEEDING 90m (295 FEET).

3. BREAKOUT PRICING:

3.1. COMMUNICATIONS CONTRACTOR TO PROVIDE A UNIT PRICE TO SUPPLY AND INSTALL ONE (1) CABLE C/W PERIPHERALS FOR COMPLETE CONNECTIVITY, TERMINATED, TESTED AND LABELED. COMMUNICATIONS CONTRACTOR TO ASSUME THAT CABLE LENGTHS WILL BE APPROXIMATELY 250 FEET AND THAT WORK WILL BE DONE DURING REGULAR HOURS.

3.1.1. ADD_____ DELETE_____

3.2. COMMUNICATIONS CONTRACTOR TO PROVIDE A UNIT PRICE TO SUPPLY AND INSTALL ONE (1) RG-6 COAXIAL CMP CABLE C/W PERIPHERALS FOR COMPLETE CONNECTIVITY, TERMINATED, TESTED AND LABELED. COMMUNICATIONS CONTRACTOR TO ASSUME THAT CABLE LENGTHS WILL BE APPROXIMATELY 250 FEET AND THAT WORK WILL BE DONE DURING REGULAR HOURS.

3.2.1. ADD_____ DELETE_____

3.3. COMMUNICATIONS CONTRACTOR TO PROVIDE A UNIT PRICE TO SUPPLY AND INSTALL ONE (1) CABLE C/W PERIPHERALS FOR COMPLETE CONNECTIVITY, TERMINATED, TESTED AND LABELED. COMMUNICATIONS CONTRACTOR TO ASSUME THAT CABLE LENGTHS WILL BE APPROXIMATELY 250 FEET AND THAT WORK WILL BE DONE DURING AFTER HOURS.

3.3.1. ADD_____ DELETE_____

3.4. COMMUNICATIONS CONTRACTOR TO PROVIDE A UNIT PRICE TO SUPPLY AND INSTALL ONE (1) RG-6 COAXIAL CMP CABLE C/W PERIPHERALS FOR COMPLETE CONNECTIVITY, TERMINATED, TESTED AND LABELED. COMMUNICATIONS CONTRACTOR TO ASSUME THAT CABLE LENGTHS WILL BE APPROXIMATELY 250 FEET AND THAT WORK WILL BE DONE DURING AFTER HOURS.

3.4.1. ADD_____ DELETE_____

3.5. COMMUNICATIONS CONTRACTOR SHALL PROVIDE A SEPARATE PRICE TO SUPPLY AND INSTALL ONE HUNDRED (100) ADDITIONAL CABLES. COMMUNICATIONS CONTRACTOR TO ASSUME THAT CABLE LENGTHS WILL BE APPROXIMATELY 250 FEET. LOCATIONS TO BE DETERMINED ON SITE WITH CLIENT.

3.6. COMMUNICATIONS CONTRACTOR SHALL PROVIDE AN ALTERNATE PRICE TO SUPPLY AND INSTALL A CATEGORY 6 CABLING SOLUTION.

4. HORIZONTAL TRANSMISSION MEDIA:

4.1. THE COMMUNICATIONS CONTRACTOR SHALL SUPPLY HORIZONTAL CABLING AS REQUIRED BY THE CONTRACT DOCUMENTS. THE COMMUNICATIONS CONTRACTOR SHALL USE PATHWAYS (BY DIVISION 16) TO DISTRIBUTE THE CABLES THROUGHOUT THE FACILITY. WHERE THE CABLES LEAVE THE PATHWAYS AND EXTEND TO THE TERMINATION POINT THEY SHALL USE J-HOOKS AS SPECIFIED.

4.2. COMMUNICATIONS CONTRACTOR TO PROVIDE A 12 FOOT SERVICE LOOP AT EACH END ON ALL CABLES, UNLESS OTHERWISE NOTED.

4.3. ALL COMPONENTS OF THE HORIZONTAL CHANNEL SHALL MEET THE MINIMUM PERFORMANCE CHARACTERISTICS OF:

4.3.1. CATEGORY 6A+ – 750MHZ AND A DATA RATE OF 10GB/S

4.3.2. CATEGORY 6A+ – 625MHZ AND A DATA RATE OF 10GB/S

4.3.3. CATEGORY 6A – 500MHZ AND A DATA RATE OF 10GB/S

4.3.4. CATEGORY 6+ – 400MHZ AND A DATA RATE OF 2.4GB/S

4.3.5. CATEGORY 6 – 250MHZ AND A DATA RATE OF 2.4GB/S

4.4. DATA CABLES: UTP, 24 AWG SOLID CONDUCTOR, CMP CABLE. CABLE COLOUR TO BE WHITE.

4.5. WIRELESS ACCESS POINT (W.A.P.) DATA: UTP, 24 AWG SOLID CONDUCTOR, CMP CABLE. CABLE COLOUR TO BE BLUE. COMMUNICATIONS CONTRACTOR TO PROVIDE A MINIMUM OF 20 FEET SLACK AT THE OUTLET LOCATION FOR CLIENT TO HAVE THE FLEXIBILITY TO RELOCATE THE OUTLET.

4.6. VOICE CABLES: UTP, 24 AWG SOLID CONDUCTOR, CMP CABLE. CABLE COLOUR TO BE WHITE.

4.7. AUDIO VISUAL (AV) CABLES: UTP, 24 AWG SOLID CONDUCTOR, CMP CABLE. CABLE COLOUR TO BE WHITE.

4.8. SECURITY CABLES: UTP, 24 AWG SOLID CONDUCTOR, CMP CABLE. CABLE COLOUR TO BE WHITE.

4.9. INTER-CABINET CABLES: UTP, 24 AWG SOLID CONDUCTOR, CMP CABLE. CABLE COLOUR TO BE WHITE.

4.10. CATV CABLE: RG-6 COAXIAL CABLE, CMP CABLE.

5. VERTICAL/BACKBONE AND INTERCONNECTIVITY TRANSMISSION MEDIA:

5.1. THE COMMUNICATIONS CONTRACTOR SHALL SUPPLY BACKBONE CABLING AS REQUIRED BY THE CONTRACT DOCUMENTS. THE COMMUNICATIONS CONTRACTOR SHALL USE PATHWAYS (BY DIVISION 16) TO DISTRIBUTE THE CABLES THROUGHOUT THE FACILITY. WHERE THE CABLES LEAVE THE PATHWAYS AND EXTEND TO THE TERMINATION POINT THEY SHALL USE J-HOOKS AS SPECIFIED.

5.2. THE COMMUNICATIONS CONTRACTOR SHALL VERIFY ALL BACKBONE CABLE RUN LENGTHS ON SITE PRIOR TO ORDERING.

5.3. OPTICAL FIBRE BACKBONE CABLE:

5.3.1. ALL FIBRE OPTIC CABLES SHALL MEET OR EXCEED THE LATEST REQUIREMENTS OF EIA/TIA-568 C-3. THE CABLES SHALL HAVE SEQUENTIAL LENGTH MARKINGS PRINTED ON THE CABLE JACKET. THE CABLES SHALL HAVE A CRUSH RESISTANCE OF 2000 N/CM AS PER EIA-455-41. THE CABLES SHALL HAVE AN IMPACT RESISTANCE OF 1000 IMPACTS WITH 1.6 N-M AS PER EIA-455-25. THE CABLES SHALL HAVE A MINIMUM FLEXURE RATING OF 2000 CYCLES AS PER EIA-455-104.

5.3.2. ALL COMPONENTS OF THE MULTIMODE FIBER OPTIC BACKBONE CHANNEL SHALL MEET THE MINIMUM PERFORMANCE CHARACTERISTICS OF:

5.3.3.1. OM5 – 50/125UM LASER OPTIMIZED WITH MINIMUM BANDWIDTH OF 2000MHZ/KM AT 850NM & 500MHZ/KM AT 1300NM UP TO 550 METERS.

5.3.3.2. OM3 – 50/125UM LASER OPTIMIZED WITH MINIMUM BANDWIDTH OF 2000MHZ/KM AT 850NM & 500MHZ/KM AT 1300NM UP TO 300 METERS.

5.3.2. ALL COMPONENTS OF THE SINGLEMODE FIBER OPTIC BACKBONE CHANNEL SHALL MEET THE MINIMUM PERFORMANCE CHARACTERISTICS OF:

5.3.2.1. OS1 – 8/125UM TO 9/125UM WITH MINIMUM BANDWIDTH STIPULATED BY THE CABLE MANUFACTURER AT 1310NM & 1550NM. CABLE/PATCH CORD COMPONENT SHALL BE ZERO WATER PEAK DESIGN ALLOWING USE OF ENTIRE SPECTRUM FROM 1260NM TO 1620NM.

5.4. MULTIPAIR COPPER BACKBONE CABLE:

5.4.1. THE MULTIPAIR CABLE SHALL MEET THE ICEA S-910-661-1997 AND BE COMPLIANT WITH BELLCORE AND REA SPECIFICATIONS. THE MULTIPAIR CABLE SHALL MEET OR EXCEED THE LATEST REQUIREMENTS OF EIA/TIA-568B. THE CABLE SHALL HAVE 24 AWG SOLID COPPER CONDUCTORS AND POLYOLEFIN INSULATION. THE CABLE CORE SHALL CONSIST OF 25 PAIR SUB-UNITS. THE CABLE SHALL HAVE SEQUENTIAL LENGTH MARKINGS PRINTED ON THE CABLE JACKET. THE CABLE SHALL HAVE ONE JACKET EQUIPPED WITH A JACKET SPLITTING CORD.

5.4.2. ALL COMPONENTS OF THE MULTIPAIR COPPER BACKBONE CHANNEL SHALL MEET THE MINIMUM PERFORMANCE CHARACTERISTICS OF:

5.4.2.1. CATEGORY 5E – 100MHZ AND A DATA RATE OF 1.0GB/S

5.4. CATV COAXIAL BACKBONE CABLE: COAXIAL BACKBONE CABLE FROM I.T. CLOSET TO SERVICE PROVIDER DEMARCATION TO BE ARRANGED BY THE OWNER'S I.T. REPRESENTATIVE WITH THE SERVICE PROVIDER.

6. MODULAR JACKS:

6.1. MODULAR JACKS MUST BE MATCHED APPROPRIATELY WITH THE CABLES TO ENSURE THAT END TO END VENDOR WARRANTIES WILL BE APPLICABLE.

6.2. MODULAR JACKS TO BE T568A 8P8C MDVO STYLE (OR EQUIVALENT) MODULAR JACK FOR WALL MOUNTED OUTLETS AND T568A 8P8C KEYSTONE (OR EQUIVALENT) STYLE FOR FLOOR AND MEETING ROOM TABLE OUTLETS. THE GRADE AND MANUFACTURER SHALL BE CONSISTENT WITH THE CABLING BEING WARRANTED.

6.3. ALL HORIZONTAL CABLING SHALL BE TERMINATED AT EACH END WITH THE MODULAR JACK COLOURS AS FOLLOWS:

CABLE DESIGNATION	COLOUR
DATA	WHITE
WIRELESS ACCESS POINTS	WHITE
VOICE	WHITE
AUDIO/VISUAL	WHITE
SECURITY	WHITE
INTER-CABINET CONNECTIVITY	WHITE

6.4. BLANK INSERT TO BE PROVIDED WHERE PORTS DO NOT CONTAIN JACKS. COLOUR SHALL MATCH FACEPLATE.

7. COMMUNICATION OUTLETS AND ACCESSORIES:

7.1. WALL OUTLETS TO BE:

7.1.1. 3-PORT AND 1-PORT DECORA + MODULES. COLOUR TO MATCH DIVISION 16 (ELECTRICAL) UNLESS OTHERWISE NOTED. COLOUR TO BE VERIFIED BY INTERIOR DESIGNER PRIOR TO PURCHASE AND INSTALLATION.

7.1.2. SOME LOCATIONS ON THE FLOOR PLAN MAY INDICATE A WALL MOUNT TELEPHONE. PROVIDE A WALL MOUNT FACEPLATE SUITABLE FOR WALL MOUNTING A TELEPHONE SET IN THESE LOCATIONS.

7.2. FLOOR AND MEETING ROOM TABLE OUTLETS TO BE:

7.2.1. 3-PORT KEYSTONE DECORA + KEYSTONE MODULES. COLOUR TO MATCH DIVISION 16 (ELECTRICAL) UNLESS OTHERWISE NOTED. COLOUR TO BE VERIFIED BY INTERIOR DESIGNER PRIOR TO PURCHASE AND INSTALLATION.

7.3. SYSTEM FURNITURE OUTLETS TO BE:

7.3.1. 3-PORT MODULAR FURNITURE ADAPTER (IF SYSTEM FURNITURE HAS A STANDARD OPENING FOR COMMUNICATIONS CABLING) OR 1-PORT SIDE ENTRY BOX (IF SYSTEM FURNITURE HAS NO OPENING FOR COMMUNICATIONS CABLING) OR TEKNION FURNITURE ADAPTER (IF THE SYSTEM FURNITURE IS TEKNION). COMMUNICATIONS CONTRACTOR TO CONFIRM SYSTEM FURNITURE TYPE ON SITE WITH THE OWNER BEFORE ORDERING FURNITURE ADAPTER.

7.4. CEILING MOUNTED OUTLETS TO BE:

7.4.1. 1-PORT OR 2-PORT SURFACE MOUNT BOXES, AS INDICATED ON DRAWINGS. COLOUR TO BE WHITE.

7.5. CATV OUTLET: F-CONNECTOR FOR COAXIAL CABLE.

8. TERMINATION HARDWARE:

8.1. HORIZONTAL CABLES: ALL HORIZONTAL CABLES SHALL BE TERMINATED ONTO RACK MOUNTABLE UNLOADED MODULAR PATCH PANELS IN THE NEAREST TELECOM ROOM.

8.2. OPTICAL FIBRE BACKBONE CABLE: FIBER BACKBONE CABLES SHALL BE TERMINATED ONTO THE OPTICAL FIBRE PATCH PANEL WHICH SHALL BE COMPATIBLE WITH STANDARD 19"RACKS, MUST BE SERVICEABLE FROM THE FRONT BY ALLOWING THE FIBRE PATCH PANEL TO SLIDE OR PIVOT AWAY FROM THE RACK AND SHALL BE MOUNTED AS INDICATED ON DETAIL DRAWINGS.

8.3. COPPER BACKBONE CABLES: COPPER BACKBONE CABLE SHALL BE TERMINATED ONTO AN IDC BLOCK ON PLYWOOD BACKBOARD IN THE LAN ROOM AND AT THE SERVICE PROVIDER DEMARCATION.

8.4. COPPER TIE CABLES: COPPER TIE CABLES SHALL BE TERMINATED ONTO AN IDC BLOCK ON PLYWOOD BACKBOARD AND RACK MOUNTABLE UNLOADED MODULAR PATCH PANEL (1 PAIR PER PORT) ON NETWORK RACK IN THE LAN ROOM.

8.5. INTER-CABINET CONNECTIVITY CABLES: ALL INTER-CABINET DATA CABLES SHALL BE TERMINATED BETWEEN RACK MOUNTABLE UNLOADED MODULAR PATCH PANELS IN NETWORK CABINETS.

9. CONNECTIVITY ITEMS:

9.1. UTP COPPER PATCH CORDS: ALL PATCH CORDS SHALL BE CONNECTED IN THE TELECOM ROOM TO THE CLIENT SUPPLIED ACTIVE EQUIPMENT USING 8 POSITION 4-PAIR PATCH CORDS, WITH A SMALL OUTSIDE DIAMETER. THE PATCH CORDS SHALL BE CMR RATED, FT4, AND STAMPED ACCORDINGLY, AND SHALL BE CONSISTENT WITH THE GRADE AND MANUFACTURER OF THE CABLE BEING WARRANTED. PATCH CORDS TO HAVE STRANDED COPPER CONDUCTORS (WHERE SYSTEM DICTATES) AND DESIGNED TO PROVIDE A MATED-CONNECTION PERFORMANCE THAT EXCEEDS THE REQUIREMENTS PER ANSI/TIA/EIA-568-B. PATCH CORDS TO BE FACTORY ASSEMBLED AND NOT SITE PREPARED, COMPLETE WITH SNAGLESS BOOT. THE PATCH CORDS SHALL BE:

9.1.1. AT THE LAN ROOM – QUANTITIES AS PER TOTAL NO. OF CABLES INSTALLED. PATCH CORDS LENGTHS ARE TO BE COORDINATED WITH THE IT REPRESENTATIVE. PATCH CORDS COLOUR TO BE:

COLOUR	CABLE DESIGNATION LENGTH	TERMINATION
WHITE	DATA 10 FEET	RJ45/RJ45
WHITE	WIRELESS ACCESS POINTS 10 FEET	RJ45/RJ45
WHITE	VOICE 10 FEET	RJ45/RJ45
WHITE	AUDIO/VISUAL 10 FEET	RJ45/RJ45
WHITE	SECURITY 10 FEET	RJ45/RJ45
WHITE	INTER-CABINET CONNECTIVITY 10 FEET	RJ45/RJ45

9.1.2. AT THE WORKSTATION – QUANTITIES AS PER TOTAL NO. OF CABLES INSTALLED. PATCH CORD LENGTHS ARE DEPENDENT ON THE TYPICAL LOCATIONS OF THE FURNITURE ADAPTER ON SYSTEMS FURNITURE. COORDINATE PATCH CORD LENGTH WITH THE IT REPRESENTATIVE PRIOR TO ORDERING. PATCH CORD COLOUR TO BE:

COLOUR	CABLE DESIGNATION LENGTH	TERMINATION
WHITE	DATA 15 FEET	RJ45/RJ45
WHITE	WIRELESS ACCESS POINTS 15 FEET	RJ45/RJ45
WHITE	VOICE 15 FEET	RJ45/RJ45
WHITE	AUDIO/VISUAL 15 FEET	RJ45/RJ45
WHITE	SECURITY 15 FEET	RJ45/RJ45
WHITE	INTER-CABINET CONNECTIVITY 15 FEET	RJ45/RJ45

9.2. OPTICAL FIBER PATCH CORDS: ALL OPTICAL FIBER BACKBONE CABLE STRANDS SHALL BE CONNECTED TO THE CLIENT SUPPLIED ACTIVE EQUIPMENT USING FIBER PATCH CORDS. THE FIBER PATCH CORDS SHALL BE CMR RATED, FT4, AND STAMPED ACCORDINGLY. FIBER PATCH CORDS SHALL BE CONSISTENT WITH THE GRADE AND MANUFACTURER OF THE FIBER CABLES THAT IS BEING WARRANTED.

9.2.1. DUPLEX FIBRE PATCH CORDS QUANTITIES AND LENGTHS ARE AS FOLLOWS:

END 2	INSTALL AT:	TYPE	LENGTH	END 1
SC	TR #1	SM	7 FEET	SC
SC	TR #	MM 62.5/125 UM	7 FEET	SC
SC	TR #1	MM 50/125 UM 1GB	7 FEET	SC
SC	TR #1	MM 50/125 UM 10GB	7 FEET	SC

9.3. HORIZONTAL WIRE MANAGEMENT: EACH PATCH PANEL IS TO COME COMPLETE WITH ONE (1) 2U HORIZONTAL MANAGER WHEN NO RACK ELEVATION IS PROVIDED, OTHERWISE QUANTITIES ON RACK ELEVATION DRAWING SHALL SUPERCEDE THIS REQUIREMENT.

10. GROUNDING

10.1. A PROPERLY SIZED COPPER GROUNDING BUSBAR AND ASSOCIATED HARDWARE SHALL BE INSTALLED IN THE I.T. ROOM BY DIVISION 16 (ELECTRICAL). THE BUSBAR SHALL BE PERMANENTLY CONNECTED TO THE BUILDING GROUND SYSTEM BY DIVISION 16 (ELECTRICAL).

10.2. PROVIDE GROUNDING AND BONDING IN ACCORDANCE WITH GOOD INDUSTRY PRACTICES, LOCAL CODES AND STANDARDS.

10.3. ALL COMPONENTS OF THE GROUNDING AND BONDING INFRASTRUCTURE SHALL BE BY PANDUIT CANADA.

10.4. GROUNDING AND BONDING INFRASTRUCTURE INSTALLED BY THE COMMUNICATIONS CONTRACTOR SHALL NOT INTERFERE WITH THE EXISTING GROUNDING PRACTICES WITHIN THE CUSTOMER PREMISES.

10.5. A GREEN JACKETED #6 AWG STRANDED COPPER CONDUCTOR SHALL BE USED TO GROUND THE TELECOMMUNICATIONS GROUNDING SYSTEM TO ALL TELECOMMUNICATIONS RACKS, CABINETS, METALLIC PATHWAYS (INCLUDING CABLE TRAYS, CONDUITS, ETC.) AND METALLIC SHEATH OF ALL BACKBONE CABLES (USE APPROPRIATE MANUFACTURER'S BOND CLAMP).

10.6. THE COMMUNICATIONS CONTRACTOR SHALL PROVIDE ONE (1) RACK GROUNDING STRIP C/W # 6 AWG GREEN GROUNDING WIRE CONNECTION BACK TO GROUNDING BUSBAR FOR EACH COMMUNICATIONS RACKS, CABINETS, AND CABLE TRAYS AS DEPICTED ON I.T. CLOSET DETAILED LAYOUT. DO NOT DAISY CHAIN.

10.7. THE COMMUNICATIONS CONTRACTOR SHALL PROVIDE ONE (1) RACK JUMPER KIT FOR EACH PIECE OF NETWORK EQUIPMENT.

10.8. THE COMMUNICATIONS CONTRACTOR SHALL UTILIZE THREAD FORMING SCREWS, BONDING SCREWS, AND ANY OTHER HARDWARE NECESSARY TO COMPLETE THE GROUND SYSTEM.

11. FIRE STOPPING:

11.1. ALL OPENINGS ARE TO BE "FIRE STOPPED" AS REQUIRED PER THE BUILDING AND ELECTRICAL CODES. INSTALL NON-PERMANENT CSA APPROVED INTUMESCENT FIRE STOPPING TO CAP ALL EMPTY SLEEVES AND AROUND CABLES THAT ARE PASSING THROUGH SLEEVES/CORE HOLES LOCATED IN I.T. CLOSET AND TEL. RISER ROOM. ALL FIRE STOPPING MUST MEET OR EXCEED APPLICABLE FEDERAL, PROVINCIAL AND LOCAL BUILDING CODES.

11.2. THE COMMUNICATIONS CONTRACTOR SHALL MAKE GOOD ALL FIRE STOPPING AND WATER PROOFING WHERE FIRE STOPPING AND/OR WATER PROOFING HAS BEEN DISTURBED DURING CABLE REMOVAL, OR WHERE FIRE STOPPING AND/OR WATER PROOFING WAS NON-EXISTENT.

11.3. THE COMMUNICATIONS CONTRACTOR SHALL SUBMIT SHOP DRAWINGS, PRODUCT DATA AND DOCUMENTATION FOR FIRE STOPPING AND/OR WATER PROOFING DEVICES PROPOSED FOR USE. INCLUDE ANY FIRE RETARDANT PAINTS TO BE USED.

12. TELECOMMUNICATIONS RACKS, CABLE MANAGERS, POWER BARS AND PLYWOOD BACKBOARD:

12.1. COMMUNICATIONS CONTRACTOR TO SUPPLY AND INSTALL THE BELOW EQUIPMENT AS SPECIFIED IN THE COMMUNICATIONS DRAWINGS. COMMUNICATIONS CONTRACTOR TO REUSE EXISTING EQUIPMENT AS INDICATED ON THE COMMUNICATIONS DRAWINGS.

12.2. UTILIZE PROPER FASTENERS FOR THE VERTICAL CABLE MANAGERS, POWER BARS AND ALL ACCESSORIES AS PER THE MANUFACTURER'S RECOMMENDATIONS.

12.3. FLOOR MOUNT 2-POST RACK:

12.3.1.FLOOR MOUNTED, 482mm (19") TWO-POST FRAME WITH WELDED FRAME CONSTRUCTED OF MINIMUM 11 GA. (0.120") STEEL.

12.3.2. FRAME SHALL HAVE A 45 STANDARD EIA VERTICAL RACK POSITIONS WITH PERMANENTLY MARKED U-SPACING IDENTIFICATION. MOUNTING HOLES AS PER EIA-310-C.

12.3.3. 2-POST RACK SHALL BE COMPLETE WITH A MINIMUM OF ONE (1) DUAL BOLT GROUND LUG MOUNTING POSITION. FRAME SHALL BE PROPERLY LEVELED ONCE IN FINAL POSITION ON TOP OF THE FINISHED FLOOR IN I.T. ROOM.

12.3.4. PROVIDE TWO (2) VERTICAL POWER DISTRIBUTION UNITS (PDU's) PER RACK. PDU's TO BE INSTALLED AT THE REAR OF THE RACK.

12.4. FLOOR MOUNT 4-POST RACK:

12.4.1.FLOOR MOUNTED, 482 MM (19') FOUR-POST FRAME WITH WELDED FRAME CONSTRUCTED OF MINIMUM 11 GA (0.120') STEEL.

12.4.2. FRAME SHALL HAVE A MINIMUM OF 45 STANDARD EIA VERTICAL RACK POSITIONS WITH PERMANENTLY MARKED U-SPACING IDENTIFICATION.

12.4.3. MOUNTING HOLES AS PER EIA-310-C, SIZE 10-32 TAPPED FRONT AND BACK RAILS.

12.4.4. FRAME SHALL BE COMPLETE WITH A MINIMUM OF ONE (1) DUAL BOLT GROUND LUG MOUNTING POSITION.

12.4.5. FRAME SHALL HAVE FOUR (4) LEVELING FEET & SHALL BE PROPERLY LEVELED ONCE IN FINAL POSITION ON TOP OF THE FINISHED FLOOR IN ALL TELECOMMUNICATIONS SPACES.

12.5. FLOOR MOUNT ENCLOSED CABINET:

12.5.1.FLOOR MOUNTED, 482 MM (19') FOUR-POST FRAME WITH WELDED FRAME CONSTRUCTED OF MINIMUM 11 GA (0.120') STEEL.

12.5.2. FRAME SHALL HAVE A MINIMUM OF 44 STANDARD EIA VERTICAL RACK POSITIONS WITH PERMANENTLY MARKED U-SPACING IDENTIFICATION.

12.5.3. MOUNTING HOLES AS PER EIA-310-C, SIZE 10-32 TAPPED FRONT AND BACK RAILS.

12.5.4. FRAME SHALL HAVE REMOVABLE POSITIONS FOR CABLE ENTRY & COOLING FANS AT TOP AS WELL AS ADEQUATE OPENING IN BASE OF FRAME FOR AIR DISTRIBUTION & CABLE ENTRY.

12.5.5. CABINETS SHALL BE COMPLETE WITH A MINIMUM OF ONE (1) DUAL BOLT GROUND LUG MOUNTING POSITION.

12.5.6. FRAME SHALL HAVE FOUR (4) LEVELING FEET & SHALL BE PROPERLY LEVELED ONCE IN FINAL POSITION ON TOP OF THE FINISHED FLOOR IN ALL TELECOMMUNICATIONS SPACES.

12.5.7. CABINETS SHALL BE GANGED TOGETHER WITH PROPER GANGING KIT WHEREVER TWO OR MORE CABINETS ARE POSITIONED IN A SIDE-BY-SIDE CONFIGURATION.

12.6. VERTICAL CABLE MANAGERS:

12.6.1.CONSTRUCTED OF MINIMUM 16 GA (0.060") STEEL WITH STIFFENERS RIVETED/WELDED INSIDE FOR ADDITIONAL STRENGTH.

12.6.2. PROVIDE SIZE OF 6" (152mm) / 10" (254mm) / 12" (305mm) WIDE VERTICAL CABLE MANAGER. REFER TO LAN ROOM LAYOUT QUANTITY.

12.6.3. MANAGEMENT PANELS SHALL HAVE A HINGED DOOR WITH NONMAGNETIC CLOSING MECHANISM. A FULLY SHIELDED MAGNETIC CLOSING MECHANISM SHALL ALSO BE ACCEPTED.

12.6.4. OPENINGS FOR CABLE ROUTING SHALL HAVE GROMMETS TO ENSURE SMOOTH TRANSITION OF THE CABLES.

12.6.5. MANAGEMENT PANELS SHALL HAVE LANCETS ALONG THE BACK OF THE CABLE MANAGER TO ALLOW FOR THE FASTENING OF THE CABLE(S) TO THE OUTSIDE OF THE MANAGER ITSELF.

12.7. HORIZONTAL CABLE MANAGERS:

12.7.1.WELDED CONSTRUCTION, FABRICATED OF A MINIMUM OF 16 GA (0.060") STEEL AND SHALL BE A MINIMUM OF 2U AND 76mm (3")D.

12.7.2. PANEL SHALL HAVE HINGED COVER WITH NONMAGNETIC CLOSING MECHANISM. A FULLY SHIELDED MAGNETIC CLOSING MECHANISM SHALL ALSO BE ACCEPTED.

12.7.3. OPENINGS FOR CABLE ROUTING SHALL HAVE GROMMETS TO ENSURE SMOOTH TRANSITION OF THE CABLES.

12.7.4. INSTALL ONE HORIZONTAL CABLE MANAGER PER ONE PATCH PANEL AND EVERY NETWORK SWITCH WHEN NO RACK ELEVATION IS PROVIDED, OTHERWISE QUANTITIES ON RACK ELEVATION DRAWING SHALL SUPERCEDE THIS REQUIREMENT.

12.8. VERTICAL POWER DISTRIBUTION UNIT (PDU):

12.8.1.FABRICATED FROM 18 GA (0.048") STEEL AND MOUNTABLE INTO 19" EIA CABINET FRAMES OR NETWORK RACKS.

12.8.2. EACH POWER BAR SHALL HAVE 16 NEMA 5-20, 12 IEC C13, AND 2 IEC C19 OUTPUT RECEPTACLES AND COME WITH A MINIMUM OF 3 METERS (10 FEET) CORD AND NEMA L14-30P INPUT PLUG.

12.8.3. SHIELDED CORD FEATURES A 300V CAPACITY, 100% COVERAGE ALUMINUM FOIL-POLYESTER TAPE SHIELD, 7 X 28 AWG TINNED COPPER DRAIN WIRE (20 AWG), AND A DURABLE PVC OUTER COATING.

12.8.4. FEATURES BREAKER PROTECTION WITH RESET BUTTON, THREE-STAGE SURGE PROTECTION, FUSED AND NON-SWITCHED WITH ILLUMINATED POWER SWITCH SHOWING POWER "ON".

12.8.5. THE POWER BAR(S) SHALL BE UL/ULC LISTED.

12.8.6. INSTALL ONE (1) VERTICAL POWER DISTRIBUTION UNIT PER ONE NETWORK RACK/CABINET WHEN NO RACK ELEVATION IS PROVIDED, OTHERWISE QUANTITIES ON RACK ELEVATION DRAWING SHALL SUPERCEDE THIS REQUIREMENT.

12.8.7. VERTICAL PDUs ARE TO BE MOUNTED ON THE REAR SIDES OF THE RACK WITH THE CORD END LOCATED AT THE BOTTOM OF THE RACK TO CONNECT TO CLIENT SUPPLIED UPS.

12.9. HORIZONTAL POWER DISTRIBUTION UNIT (PDU):

12.9.1.FABRICATED FROM 18 GA (0.048") STEEL AND MOUNTABLE INTO 19" EIA CABINET FRAMES OR NETWORK RACKS.

12.9.2. EACH POWER BAR SHALL HAVE A MINIMUM 8 NEMA 5-20 OUTPUT RECEPTACLES AND COME WITH A MINIMUM OF 3 METERS (10 FEET) CORD AND NEMA L5-30P INPUT PLUG.

12.9.3. SHIELDED CORD FEATURES A 100V CAPACITY, 100% COVERAGE ALUMINUM FOIL-POLYESTER TAPE SHIELD, 7 X 28 AWG TINNED COPPER DRAIN WIRE (20 AWG), AND A DURABLE PVC OUTER COATING.

12.9.4. FEATURES BREAKER PROTECTION WITH RESET BUTTON, THREE-STAGE SURGE PROTECTION.

12.9.5. THE POWER BAR(S) SHALL BE UL/ULC LISTED.

12.9.6. INSTALL ONE (1) HORIZONTAL POWER DIS

DIV 27 COMMUNICATIONS SPECIFICATIONS CONTINUATION

1. LABELLING:

1.1. LABELING: ALL LABELING SHALL BE PANDUIT PAN-CODE IDENTIFICATION PRODUCTS FOR NETWORK SYSTEMS UNLESS OTHERWISE INDICATED. LABELING SHALL:

1.1.1. INCLUDE VINYL, MACHINE PRINTED WRAP-AROUND LABELS WITHIN 4 INCHES OF THE ENDS OF EVERY CABLE,

1.1.2. INCLUDE VINYL OR PVC MACHINE PRINTED LABELS AT ALL PATCH PANELS, IDC TERMINATION BLOCKS, WIRING BLOCKS, FACEPLATES, AND EACH END OF THE TELECOMMUNICATIONS CONDUIT.

1.1.3. CONVENTION SHALL FOLLOW ANSI/TIA-606-B "ADMINISTRATION STANDARD FOR TELECOMMUNICATIONS" AND AS PER CLIENT'S PREFERRED LABELING SCHEME. COMMUNICATIONS CONTRACTOR TO COORDINATE ON SITE WITH THE OWNER'S I.T. REPRESENTATIVE FOR ANY PREFERRED LABELING SCHEME.

1.1.4. HAND-WRITTEN LABELS ARE NOT PERMITTED.

1.2. PROVIDE 25% ADDITIONAL LABELS TO BE LEFT IN EACH TELECOMMUNICATIONS ROOM ON SITE FOR FUTURE GROWTH.

14. CLOSE-OUT DOCUMENTATION:

14.1. CABLE TESTING:

14.1.1. 100% OF CABLES INSTALLED SHALL BE TESTED AND MUST PASS THE REQUIREMENTS OF THE STANDARDS AS DEFINED WITHIN THIS DOCUMENT. THE COMMUNICATIONS CONTRACTOR SHALL ALSO CERTIFY 100% OF THE INSTALLED CABLES. ANY FAILING CABLES MUST BE DIAGNOSED, AND HAVE CORRECTIVE ACTION TAKEN. THE CORRECTIVE ACTION SHALL BE FOLLOWED WITH A NEW TEST TO PROVE THAT THE CORRECTED LINK MEETS THE PERFORMANCE REQUIREMENTS. THE FINAL AND PASSING TEST RESULT OF THE TESTS FOR ALL LINKS SHALL BE PROVIDED IN THE TEST RESULT DOCUMENTATION.

14.1.2. THE COMMUNICATIONS CONTRACTOR IS REQUIRED TO SUBMIT A CABLE TEST REPORT BASED ON THE CABLE SCHEDULE TO THE COMMUNICATIONS ENGINEER'S REPRESENTATIVE FOR APPROVAL. THE REPORT SHOULD INDICATE FOR EACH INDIVIDUAL CABLE, THE TIME AND DATE OF THE SUCCESSFUL TEST AND THE SIGNATURE OF THE TECHNICIAN WHO PERFORMED THE TEST, LOCATION, CABLE TYPE, CABLE NUMBER AS PER THE CABLE SCHEDULE, AND TESTER MAKE AND MODEL.

14.1.3. THE COMMUNICATIONS CONTRACTOR TO USE A LEVEL III TESTER THAT IS CAPABLE OF TESTING THE SPECIFIED CABLE TO THE PERFORMANCE LEVEL(S) INDICATED IN THIS DOCUMENT. THE TESTER SHOULD HAVE THE LATEST VERSION OF FIRMWARE AND SOFTWARE TO TEST THE UTP CABLING SYSTEM.

14.2. AS-BUILT DRAWINGS::

14.2.1. THE COMMUNICATIONS CONTRACTOR SHALL BE SUPPLIED WITH, UPON WRITTEN REQUEST, A SOFT COPY OF DRAWINGS BY THE COMMUNICATION ENGINEER'S REPRESENTATIVE FOR THE PURPOSE OF CREATING AS-BUILT DRAWINGS. THE COMMUNICATIONS CONTRACTOR SHALL PREPARE AS-BUILT DRAWINGS IDENTIFYING 100% OF THE INSTALLED CABLES (DATA (AND WIRELESS ACCESS POINT), VOICE AND COAXIAL OUTLETS AND PATCH PANEL/IDC CONNECTIONS). THE AS-BUILTS SHALL INCLUDE ALL ADDITIONAL CABLES INSTALLED DURING THE PROJECT.

14.2.2. IF THE COMMUNICATIONS CONTRACTOR CANNOT COMPLY WITH THIS REQUIREMENT, WILL TRANSFER ALL HAND-DRAWN AS-BUILTS TO AUTOCAD. THE COST FOR THIS SERVICE SHALL BE BASED ON PER DIEM RATES AT THE TIME OF COMPLETION. THE COMMUNICATIONS CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THIS WORK.

14.3. CERTIFICATIONS AND WARRANTY:

14.3.1. THE COMMUNICATIONS CONTRACTOR IS REQUIRED TO PROVIDE A MINIMUM OF A 3-YEAR UNCONDITIONAL PARTS AND LABOUR WARRANTY FOR ALL EQUIPMENT AND LABOUR PROVISIONED UNDER THIS CONTRACT FROM THE DATE OF SUBSTANTIAL COMPLETION, FOR EACH COMMUNICATIONS CABLING SYSTEM.

14.3.2. COMMUNICATIONS CONTRACTOR SHALL BE CURRENTLY AUTHORIZED AND CERTIFIED BY THE END TO END STRUCTURED CABLING SYSTEM SOLUTION MANUFACTURER TO INSTALL AND WARRANTY THE SOLUTION. THE COMMUNICATIONS CONTRACTOR'S TECHNICIANS DESIGNATED TO THE PROJECT MUST BE FULLY TRAINED BY THE MANUFACTURER TO INSTALL THE RESPECTIVE SYSTEM. THE COMMUNICATIONS CONTRACTOR SHALL BE CAPABLE OF ISSUING WARRANTY ON MATERIALS AND WORKMANSHIP. THEY MUST ALSO ISSUE A MANUFACTURER'S WARRANTY IN NAME OF THE CLIENT. THE WARRANTY SHALL SPAN A DURATION OF 25 YEARS AND COVER ALL PRODUCTS WITHIN THE SYSTEM INCLUDING, BUT NOT LIMITED TO JACKS, CABLES, PATCH CORDS, AND CROSS CONNECTS. IN THE EVENT THAT THE CERTIFIED SYSTEM CEASES TO OPERATE, THE COMMUNICATIONS CONTRACTOR SHALL COMMIT TO PROMPTLY IMPLEMENT CORRECTIVE ACTION. RESPONSE TIME FOR WARRANTY ITEMS SHALL BE 24 HOURS.

14.4. THE PROJECT SHALL NOT BE CONSIDERED COMPLETE AND A HOLDBACK WILL BE RETAINED UNTIL THE CLIENT RECEIVES THE COMMUNICATION ENGINEER'S REPRESENTATIVE APPROVED CLOSE-OUT DOCUMENTATION PACKAGE. THE VALUE FOR THE CLOSE-OUT DOCUMENTATION PACKAGE FOR PAYMENT PURPOSES, SHALL BE SET AT 10% OF THE BASE CONTRACT OR $10,000; WHICHEVER IS GREATER. THIS AMOUNT WILL BE WITHHELD FROM THE COMMUNICATIONS CONTRACTOR UNTIL TESTING AND CORRECTION OF DEFICIENCIES IS 100% COMPLETE.

14.5. THE COMMUNICATIONS CONTRACTOR SHALL PROVIDE THE CLIENT WITH A LAMINATED, FULL SIZE, AS-BUILT DRAWING FOR EACH FLOOR MOUNTED IN THAT FLOOR'S RESPECTIVE LAN ROOM. WHERE THERE ARE MULTIPLE LAN ROOMS PER FLOOR, PROVIDE ONE LAMINATED, FULL SIZE, AS-BUILT DRAWING IN EACH ROOM ON THAT FLOOR.

15. MISCELLANEOUS ITEMS:

15.1. COMMUNICATIONS COMPONENTS INCLUDING, BUT NOT LIMITED TO OUTLETS, DEVICES, RACKS, CABINETS, BRACKETS AND BACKBOARDS MAY BE RELOCATED PRIOR TO INSTALLATION, FROM THE LOCATIONS SHOWN ON THE CONTRACT DOCUMENTS, TO A MAXIMUM DISTANCE OF 3.05m (10 FEET) WITHOUT ADJUSTMENT TO THE CONTRACT PRICE.

15.2. CABLES WILL BE SUPPORTED SUCH THAT A MINIMUM OF 3 INCHES OF CLEAR VERTICAL SPACE WILL BE MAINTAINED DIRECTLY ABOVE THE CEILING TILES. THIS CLEAR SPACE WILL BE FREE OF CABLES, RACEWAYS AND CABLES AND RACEWAYS SUPPORTS.

15.3. SPIRAL WRAP: CABLES RUNNING FROM SYSTEM FURNITURE FEED POINTS TO THE SYSTEM FURNITURE SHALL BE NEATLY WRAPPED. SIZE THE SPIRAL WRAPPED ACCORDING TO QUANTITY OF CABLES, NO CABLES SHALL BE EXPOSED. COORDINATE LOCATIONS ON ARCHITECTURAL DRAWINGS

15.4. CABLE BUNDLES AND TIES: CABLES SHALL BE ARRANGED IN BUNDLES OF NO MORE THAN 24 CABLES PER BUNDLE. CABLES SHALL BE SECURED IN BUNDLES WITH VELCRO TIE-WRAPS. UNDER NO CIRCUMSTANCES ARE PLASTIC TIE-WRAPS TO BE USED. IF PLASTIC TIE-WRAPS ARE USED, THE COMMUNICATIONS CONTRACTOR SHALL BE REQUIRED TO REMOVE AND REPLACE ALL AFFECTED CABLES AT THEIR OWN EXPENSE.

15.5. DIMENSIONS SHOWN ON DRAWINGS ARE APPROXIMATE. VERIFY DIMENSIONS BY REFERENCE TO SHOP DRAWINGS AND FIELD MEASUREMENTS.

15.6. QUANTITIES OR LENGTHS INDICATED IN ANY OF THE CONTRACT DOCUMENTS ARE APPROXIMATE ONLY AND SHALL NOT BE HELD TO GAUGE OR LIMIT THE WORK.

15.7. COMMUNICATIONS CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE FURNITURE AND CARPET INSTALLERS FOR FURNITURE COMMUNICATIONS OUTLETS CABLING CONNECTION.

END OF DIV 27 SPECIFICATIONS

DIV 28 SECURITY SPECIFICATIONS

16. GENERAL

17. THIS SPECIFICATION SHALL BE READ IN CONJUNCTION WITH PROJECT RELATED ARCHITECTURAL, ELECTRICAL AND MECHANICAL DRAWINGS INCLUDING DOOR HARDWARE SCHEDULES AND SPECIFICATIONS.

18. CONFORM TO THE REQUIREMENTS OF DIVISIONS 0 AND 1, WHICH APPLY TO AND FORM PART OF ALL SECTIONS OF THE WORK.

19. WHERE THERE IS A CONFLICT IN THE REQUIREMENTS OUTLINED IN THIS ELECTRONIC SAFETY AND SECURITY SPECIFICATIONS DOCUMENT, DIVISIONS 0 AND 1, ARCHITECTURAL, ELECTRICAL AND MECHANICAL DRAWINGS INCLUDING DOOR HARDWARE SCHEDULES AND SPECIFICATIONS THE MORE STRINGENT AND OR MORE ONEROUS REQUIREMENT SHALL APPLY.

20. READ AND COMPLY WITH ALL SECTIONS OF THIS DOCUMENT.

21. REFER TO OTHER DIVISIONS AND SECTIONS TO ENSURE A COMPLETE AND OPERATIONAL SYSTEM.

22. PROVIDE ELECTRONIC SAFETY AND SECURITY COMPONENTS AND ACCESSORIES WHICH MAY NOT BE SPECIFICALLY SHOWN ON THE DRAWINGS OR STIPULATED IN THE SPECIFICATIONS, BUT ARE REQUIRED TO ENSURE COMPLETE, TURNKEY AND OPERATIONAL SYSTEMS.

23. PROVIDE ALL LABOUR, MATERIALS, TOOLS, AND EQUIPMENT REQUIRED FOR THE COMPLETE INSTALLATION, COMMISSIONING AND START-UP OF ELECTRONIC SAFETY AND SECURITY SYSTEMS CALLED FOR IN ALL SECTIONS OF THE CONTRACT DOCUMENTS.

24. PROVIDE ALL NECESSARY WIRING, CABLING, LABOUR, TOOLS, EQUIPMENT, AND ANCILLARY MATERIALS REQUIRED TO FURNISH AND INSTALL COMPLETE AND OPERATIONAL ELECTRONIC SAFETY AND SECURITY SYSTEMS.

25. SCOPE

26. THE ELECTRONIC SAFETY AND SECURITY SYSTEMS SHALL INCLUDE ALL COMPUTER HARDWARE AND SOFTWARE, CONTROL PANELS, INTERFACES, CARD READERS/KEYPADS, ACCESS CARDS, VIDEO RECORDERS, CAMERAS, ALARM SENSING DEVICES, COMMUNICATION DEVICES, ELECTRIC DOOR LOCKING HARDWARE, POWER SUPPLIES, CABLE/WIRE, CONDUIT, RACEWAYS, ENCLOSURES, MOUNTING HARDWARE, AND ALL OTHER EQUIPMENT AS INDICATED ON CONTRACT DRAWINGS AND AS SPECIFIED HEREIN. EXCEPT WHERE NOTED TO REUSE EXITING, ALL MATERIALS SHALL BE NEW, COMMERCIAL GRADE AND OF GOOD QUALITY.

27. ALL ELECTRONIC SAFETY AND SECURITY SYSTEMS SHALL BE TURNKEY COMPLETE AND FULLY OPERATIONAL. ALL ELECTRONIC SAFETY AND SECURITY SYSTEMS SHALL BE INTEGRATED AS PER THE CONTRACT DRAWINGS AND SPECIFICATIONS.

28. ALL CABLES SHALL BE INSTALLED VIA CONDUITS.

29. PROVIDE ALL CONDUIT UNLESS OTHERWISE NOTED.

30. SUPPLY AND INSTALL ALL CABLE SUPPORTS FOR ALL CABLING. ALL CABLE SUPPORTS SHALL BE INSTALLED FOLLOWING BUILDING LINES, AND IN ACCORDANCE WITH THE BUILDING'S REQUIREMENTS / GUIDELINES.

31. CO-ORDINATE ON SITE FOR INTERFERENCES AND WITH OTHER DISCIPLINES / TRADES. SUPPLY AND INSTALLATION OF ALL ACTIVE AND PASSIVE HARDWARE AND CABLES AS SPECIFIED WITHIN THIS DOCUMENT TO SUPPORT THE ELECTRONIC SAFETY AND SECURITY SYSTEMS.

32. WHERE ACTIVE AND PASSIVE HARDWARE AND CABLING IS NOT SPECIFIED BUT ARE REQUIRED TO MAKE THE ELECTRONIC SAFETY AND SECURITY SYSTEMS TURNKEY AND TO MEET THE INTENT, SUPPLY AND INSTALL SUCH ACTIVE AND PASSIVE HARDWARE AND CABLING AT NO EXTRA COST.

33. SUPPLY AND INSTALL ALL EQUIPMENT CABINETS, COMPLETE WITH ALL ACCESSORIES.

34. SUPPLY AND INSTALL ALL FIRE STOP MATERIALS / MECHANISMS FOR ALL PENETRATIONS.

35. WHILE EVERY ATTEMPT HAS BEEN MADE TO ENSURE ALL INFORMATION IS CORRECT AT THE TIME OF PUBLICATION, THE PRODUCTS SPECIFIED ARE AVAILABLE AND THAT THE PART NUMBERS IDENTIFIED ARE CORRECT, IT IS THE RESPONSIBILITY OF THE ELECTRONIC SAFETY AND SECURITY CONTRACTOR TO VERIFY ALL PART NUMBERS AND TO REPORT ANY ERRORS AND OR OMISSIONS IN THIS SPECIFICATION WITH THEIR BID SUBMISSIONS.

36. DIMENSIONS SHOWN ON CONTRACT DRAWINGS ARE APPROXIMATE. VERIFY DIMENSIONS BY REFERENCE TO SHOP DRAWINGS AND FIELD MEASUREMENTS.

37. QUANTITIES OR LENGTHS INDICATED IN ANY OF THE CONTRACT DOCUMENTS ARE APPROXIMATE ONLY AND SHALL NOT BE HELD TO GAUGE OR LIMIT THE WORK.

38. INCLUDE IN BID ALL LABOUR, MATERIALS, PLANT, TRANSPORTATION, STORAGE COSTS, TRAINING, EQUIPMENT, INSURANCE, TEMPORARY PROTECTION, PERMITS, REVIEWS, BONDING, TAXES AND ALL NECESSARY AND RELATED ITEMS REQUIRED TO PROVIDE A COMPLETE AND OPERATIONAL ELECTRONIC SAFETY AND SECURITY SYSTEMS.

39. INTENT

40. MENTION IN THE SPECIFICATIONS OR INDICATION ON THE DRAWINGS OF EQUIPMENT, MATERIALS, OPERATION AND METHODS, REQUIRES PROVISION OF THE QUALITY NOTED, THE QUANTITY REQUIRED, AND THE SYSTEMS COMPLETE IN EVERY RESPECT.

41. THE SPECIFICATIONS ARE AN INTEGRAL PART OF THE ACCOMPANYING DRAWINGS. ANY ITEM OR SUBJECT OMITTED FROM ONE OR THE OTHER, BUT WHICH IS EITHER MENTIONED OR REASONABLY IMPLIED, SHALL BE CONSIDERED AS PROPERLY AND SUFFICIENTLY SPECIFIED.

42. BE COMPLETELY RESPONSIBLE FOR THE ACCEPTABLE CONDITION AND OPERATION OF ALL SYSTEMS, EQUIPMENT AND COMPONENTS FORMING PART OF THE INSTALLATION OR DIRECTLY ASSOCIATED WITH IT. PROMPTLY REPLACE DEFECTIVE MATERIAL, EQUIPMENT AND REPAIR RELATED DAMAGES. THE REPLACEMENT OF EQUIPMENT AND REPAIR TO DAMAGES SHALL BE COORDINATED WITH OTHER TRADES COMPLETED IN A TIMELY FASHION SO AS NOT TO AFFECT THE COMPLETE CONSTRUCTION OF THE ELECTRONIC SAFETY AND SECURITY SYSTEMS AND OR WORK BY OTHERS.

43. LABOUR

44. COMPLY WITH ALL PROJECT JOB-SITE REQUIREMENTS FOR THE DURATION OF THE PROJECT.

45. DO NOT ASSIGN OR SUB-CONTRACT ANY WORK WITHOUT THE PRIOR WRITTEN CONSENT OF THE PROJECT MANAGER. A LIST OF SUB-CONTRACTORS SHALL BE SUBMITTED WITH THE TENDER RESPONSE.

46. FOR ALL WORK RELATED TO THIS PROJECT, THE ELECTRONIC SAFETY AND SECURITY CONTRACTOR SHALL USE ONLY TRADESMEN WHO ARE FULLY TRAINED, QUALIFIED AND EXPERIENCED ON THE INSTALLATION AND COMMISSIONING OF THE ELECTRONIC SAFETY AND SECURITY SYSTEMS.

47. PROJECT MANAGEMENT

48. PROVIDE COMPLETE PROJECT MANAGEMENT FOR THIS PROJECT.

49. DEVELOP A DETAILED GANTT CHART PROJECT PLAN AND SUBMIT TO OWNER AND ELECTRONIC SAFETY AND SECURITY ENGINEER'S REPRESENTATIVE FOR REVIEW AND APPROVAL PRIOR TO START OF PROJECT.

50. ATTEND AND CHAIR BIWEEKLY CONSTRUCTION MEETINGS FOR THE DURATION OF THE PROJECT. CONSTRUCTION MEETINGS SHALL BE ON SITE OR VIA CONFERENCE CALL AT THE OWNER'S AND OR ELECTRONIC SAFETY AND SECURITY ENGINEER'S REPRESENTATIVE'S DISCRETION.

51. GENERATE AND SUBMIT DETAILED BIWEEKLY CONSTRUCTION PROGRESS REPORTS TO OWNER AND ELECTRONIC SAFETY AND SECURITY ENGINEER'S REPRESENTATIVE. EACH PROGRESS REPORT SHALL INCLUDE ITEMIZED DETAILED DESCRIPTION AND EXTENT OF TASKS COMPLETED, ITEMIZED DETAILED DESCRIPTION AND QUANTIFICATION OF MATERIALS INSTALLED AND LABELED PHOTOS THAT CLEARLY SHOW THE EXTENT OF CONSTRUCTION PROGRESS.

52. DRAWINGS, CHANGES AND INSTALLATION

53. THE DRAWINGS ARE INTENDED TO SHOW THE GENERAL CHARACTER AND SCOPE OF THE WORK AND NOT THE EXACT DETAILS OF THE INSTALLATION. THE INSTALLATION SHALL BE COMPLETE WITH ALL ACCESSORIES REQUIRED FOR A COMPLETE AND OPERATIVE INSTALLATION.

54. THE LOCATION, ARRANGEMENT AND CONNECTION OF EQUIPMENT AND MATERIAL AS SHOWN ON THE DRAWINGS REPRESENT A CLOSE APPROXIMATION TO THE INTENT AND REQUIREMENTS OF THE CONTRACT. THE RIGHT IS RESERVED BY THE ELECTRONIC SAFETY AND SECURITY ENGINEER'S REPRESENTATIVE TO MAKE REASONABLE CHANGES REQUIRED TO ACCOMMODATE CONDITIONS ARISING DURING THE PROGRESS OF THE WORK, AT NO EXTRA COST.

55. CERTAIN DETAILS INDICATED ON THE DRAWINGS ARE GENERAL IN NATURE AND SPECIFIC LABELED DETAIL REFERENCES TO EACH AND EVERY OCCURRENCE OF USE ARE NOT INDICATED, HOWEVER, SUCH DETAILS SHALL BE APPLICABLE TO EVERY OCCURRENCE ON THE DRAWINGS.

56. THE LOCATION AND SIZE OF EXISTING SERVICES SHOWN ON THE DRAWINGS ARE BASED ON THE BEST AVAILABLE INFORMATION. THE ELECTRONIC SAFETY AND SECURITY CONTRACTOR SHALL VERIFY THE ACTUAL LOCATION OF EXISTING SERVICES IN THE FIELD BEFORE WORK IS COMMENCED.

57. CHANGES AND MODIFICATIONS NECESSARY TO ENSURE CO-ORDINATION AND TO AVOID INTERFERENCE AND CONFLICTS WITH OTHER TRADES, OR TO ACCOMMODATE EXISTING CONDITIONS, SHALL BE MADE AT NO EXTRA COST TO THE CLIENT.

58. LEAVE AREAS CLEAR WHERE SPACE IS INDICATED AS RESERVED FOR FUTURE EQUIPMENT, AND EQUIPMENT FOR OTHER TRADES.

59. ADEQUATE SPACE AND PROVISIONS SHALL BE LEFT FOR REMOVAL OF COMPONENTS AND SERVICING OF EQUIPMENT, WITH MINIMUM INCONVENIENCE TO THE OPERATION OF SYSTEMS.

60. WHERE EQUIPMENT IS SHOWN TO BE 'ROUGHED IN ONLY' OBTAIN ACCURATE INFORMATION FROM THE ELECTRONIC SAFETY AND SECURITY ENGINEER'S REPRESENTATIVE BEFORE PROCEEDING WITH THE WORK.

61. LOCATION OF OUTLETS, LUMINARIES, DIFFUSERS, GRILLES, REGISTERS, THERMOSTATS, SPRINKLERS AND ALL OTHER EQUIPMENT SHOWN ON DRAWINGS (IF SHOWN) IS DIAGRAMMATIC.

62. THE ELECTRONIC SAFETY AND SECURITY CONTRACTOR, AT HIS EXPENSE, SHALL REMEDY ANY WORK NOT INSTALLED IN CORRECT LOCATION (AT THE SOLE DISCRETION OF THE ELECTRONIC SAFETY AND SECURITY ENGINEER'S REPRESENTATIVE). THE ELECTRONIC SAFETY AND SECURITY CONTRACTOR IS RESPONSIBLE TO MARK-OUT HIS WORK AND FULLY CO-ORDINATE WITH ALL OTHER TRADES. REVIEW WITH ELECTRONIC SAFETY AND SECURITY ENGINEER'S REPRESENTATIVE PRIOR TO ROUGH IN. PREPARE DIMENSIONED LAYOUTS OF EACH ROOM PRIOR TO ROUGH IN FOR REVIEW BY ELECTRONIC SAFETY AND SECURITY ENGINEER'S REPRESENTATIVE. DO NOT PROCEED WITH ANY WORK UNTIL THE ELECTRONIC SAFETY AND SECURITY ENGINEER'S REPRESENTATIVE HAS REVIEWED AND APPROVED THE LAYOUT DRAWINGS.

63. APPROVED EQUAL

64. WHEREVER THE TERM 'OR APPROVED EQUAL' IS USED HEREIN, IT IS TO BE UNDERSTOOD THAT REFERENCE TO THE SPECIFIED TRADE NAME, BRAND NAME, MANUFACTURER'S NAME, MODEL NUMBER AND OR CATALOGUE NUMBER HAS BEEN MADE SOLELY FOR THE PURPOSE OF INDICATING THE MINIMUM STANDARD OF QUALITY REQUIRED IN MATERIAL, WORKMANSHIP AND SERVICE. ANY PROPOSED ALTERNATE SHALL BE SUBMITTED FOR REVIEW AND ACCEPTANCE PRIOR TO PROCUREMENT AND INSTALLATION. THE REVIEW AND ACCEPTANCE SHALL BE AT THE SOLE DISCRETION OF THE OWNER AND THEIR ENGINEER'S REPRESENTATIVES.

65. PROPOSED SUBSTITUTIONS IN ORDER TO BE ASSESSED MUST INCLUDE THE FOLLOWING:

66. DESCRIPTION OF PROPOSED SUBSTITUTION.

67. RESPECTIVE COST OF ITEMS ORIGINALLY SPECIFIED AND THE PROPOSED SOLUTION.

68. COMPLIANCE WITH THE APPLICABLE BUILDING CODES, STANDARDS AND THE REQUIREMENTS OF JURISDICTIONAL AUTHORITIES.

69. AFFECT CONCERNING COMPATIBILITY WITH AND INTERFACE WITH ADJACENT BUILDING MATERIALS AND COMPONENTS.

70. COMPLIANCE WITH THE INTENT OF THE CONTRACT DOCUMENTS.

71. REASONS FOR THE REQUEST.

72. THE ELECTRONIC SAFETY AND SECURITY ENGINEER'S REPRESENTATIVE'S DECISION REGARDING THE ACCEPTANCE OR REJECTION OF THE PROPOSED SUBSTITUTION SHALL BE FINAL. SUBSTITUTIONS MAY BE ACCEPTED IF THE DELIVERY OF THE COMPONENT OR ITEM IS SUCH THAT IT WILL NOT JEOPARDIZE THE CONSTRUCTION SCHEDULE. OTHERWISE SUBSTITUTION WILL NOT BE ALLOWED.

73. MATERIALS AND EQUIPMENT SUPPLIED BY THIS DIVISION SHALL BE NEW AND FREE FROM DEFECTS.

74. ALL EQUIPMENT AND MATERIAL FOR WHICH THERE IS A LISTING SERVICE SHALL BEAR A UL/ULC AND OR CSA LABEL.

75. EQUIPMENT SHALL MEET ALL APPLICABLE FCC/CRTC REGULATIONS.

76. MATERIALS SHALL HAVE A FLAME SPREAD RATING OF 25 OR LESS AND A SMOKE DEVELOPED RATING OF 50 OR LESS, IN ACCORDANCE WITH NFPA 255.

77. CO-OPERATION WITH OTHER DIVISION

78. ELECTRONIC SAFETY AND SECURITY CABLING SHALL NOT TOUCH OR BE SUPPORTED FROM PIPING, DUCTWORK, CONDUITS, CEILING SUPPORTS OR ANY OTHER STRUCTURE / EQUIPMENT. ELECTRONIC SAFETY AND SECURITY CABLING SHALL BE SUPPORTED BY LADDER TRAY (WHERE PROVIDED) OR SHALL BE INSTALLED WITHIN CONDUIT (WHERE PROVIDED).

79. SUPPLY ALL ITEMS TO BE BUILT IN AMPLE TIME FOR RAPID PROGRESS OF THE WORK. SCHEDULE AND PROCEED WITH WORK AS REQUIRED TO SATISFY THE CONSTRUCTION SCHEDULE.

80. ALL CHANGES AND CONNECTIONS TO EXISTING SERVICES SHALL BE MADE ONLY IN A MANNER AND AT A TIME APPROVED BY THE SAFETY AND SECURITY ENGINEER'S REPRESENTATIVE AND OR THE CLIENT SO AS TO AVOID ANY INTERRUPTION OF SUCH SERVICES DURING NORMAL WORKING HOURS. IF NECESSARY, CHANGES AND CONNECTIONS TO EXISTING SERVICES SHALL BE MADE OUTSIDE OF NORMAL WORKING HOURS, AT NO EXTRA COST TO THE CONTRACT.

81. WHERE CONNECTIONS ARE MADE TO EXISTING SERVICES, EXISTING FIRE STOPPING SHALL BE MADE GOOD UNDER THIS DIVISION.

82. PARTICULAR CARE SHALL BE TAKEN WITH IMPERIAL VERSUS METRIC CONVERSIONS. THIS APPLIES TO ALL SERVICES INCLUDING, BUT NOT LIMITED TO, EQUIPMENT, MATERIAL AND SITE SERVICES IN BOTH NEW AND EXISTING INSTALLATIONS.

83. SCHEDULE, ACCESS, PROTECTION AND CLEAN-UP

84. THE CONSTRUCTION SCHEDULE PLACES RESTRICTIONS ON THE DURATION OF CONSTRUCTION WITHIN AREAS AND THE DURATION OF SHUT-DOWN OF EQUIPMENT. REFER TO THE GENERAL CONDITIONS FOR ALL REQUIREMENTS.

85. REFER TO THE GENERAL CONDITIONS AND CONFORM TO ALL REQUIREMENTS.

86. REFER TO THE SECURITY AND PROTECTION REQUIREMENTS IN THE GENERAL CONDITIONS AND CONFORM TO ALL REQUIREMENTS. THERE SHALL BE NO SMOKING, AND THE SITE SHALL BE KEPT CLEAN AT ALL TIMES.

87. CUTTING, PATCHING AND REPAIRING

88. IT IS THE RESPONSIBILITY OF THE ELECTRONIC SAFETY AND SECURITY CONTRACTOR TO PERFORM ALL CUTTING, PATCHING AND REPAIR RELATED TO THE ELECTRONIC SAFETY AND SECURITY SYSTEMS WORK INCLUDING ANY PENETRATIONS THROUGH WALLS OR FLOORS.

89. WHERE CUTTING, PATCHING AND REPAIR IS THE RESPONSIBILITY OF OTHER TRADES THE ELECTRONIC SAFETY AND SECURITY CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COST ASSOCIATED WITH CUTTING AND PATCHING RELATED TO THE ELECTRONIC SAFETY AND SECURITY SYSTEMS WORK INCLUDING ANY PENETRATIONS THROUGH WALLS OR FLOORS.

90. THE ELECTRONIC SAFETY AND SECURITY CONTRACTOR SHALL PAINT ALL VISIBLE ELECTRONIC SAFETY AND SECURITY SYSTEMS CONDUIT TO MATCH EXISTING.

91. THE ELECTRONIC SAFETY AND SECURITY CONTRACTOR SHALL COORDINATE THE COLOUR AND LOCATION OF ALL CONDUITS, SECURITY DEVICES AND THEIR HOUSING WITH ARCHITECT AND ARCHITECTURAL DRAWINGS ON SITE PRIOR TO INSTALLATION.

92. THIS DIVISION SHALL PROVIDE ITS OWN HOISTING FACILITIES.

93. HOISTING FACILITIES PROVIDED BY THE GENERAL CONTRACTOR MAY BE AVAILABLE FOR SUBCONTRACTORS' USE AT NO COST (VERIFY WITH GENERAL CONTRACTOR PRIOR TO BID, OR ASSUME THAT NO HOISTING FACILITIES ARE PROVIDED). IF HOIST FACILITIES ARE INADEQUATE THEN ELECTRONIC SAFETY AND SECURITY CONTRACTOR SHALL PROVIDE AS REQUIRED. ELECTRONIC SAFETY AND SECURITY CONTRACTOR SHALL INFORM GENERAL CONTRACTOR(S) OF REQUIREMENTS BEFORE TENDER CLOSING DATE.

94. ALL EQUIPMENT, MATERIAL AND INSTALLATION SHALL CONFORM TO THE LATEST VERSION OF THE APPLICABLE CODES, STANDARDS AND REGULATIONS OF AUTHORITIES HAVING JURISDICTION. IN THE CASE OF CONFLICT OR DISCREPANCY THE MORE STRINGENT CODE, STANDARD OR REGULATION SHALL APPLY.

95. PROVIDE SECURITY TAMPERPROOF FASTENERS FOR ALL VISIBLE EXPOSED DEVICES, EQUIPMENT AND COMPONENTS IN ALL AREAS. COORDINATE FASTENER TYPE WITH THE OWNER.

96. FIRE STOP

97. PROVIDE FIRE STOP AROUND ALL CABLES AND ALL CONDUITS IN ALL FIRE RATED SEPARATIONS AND FIREWALLS TO FORM TIGHT BARRIERS TO RETARD THE PASSAGE OF FLAME AND SMOKE.

98. FIRE STOP MATERIALS AND SMOKE SEAL MATERIALS SHALL HAVE A FLAME SPREAD RATING OF 25 OR LESS, NATIONAL FIRE PROTECTION ASSOCIATION (NFPA CLASS "A").

99. ALL FIRE STOP SYSTEMS SHALL BE TESTED TO THE LATEST APPLICABLE STANDARDS.

100. OBTAIN AND PAY FOR ALL PERMITS AND REVIEW REQUIRED FOR WORK PERFORMED INCLUDING BUT NOT LIMITED TO REVIEW AND APPROVAL BY CSA AND OR LOCAL AUTHORITIES HAVING JURISDICTION. SUBMIT REQUIRED DOCUMENTS AND SHOP DRAWINGS TO AUTHORITIES HAVING JURISDICTION IN ORDER TO OBTAIN APPROVAL FOR THE WORK. PREPARE ANY ADDITIONAL INFORMATION, DETAILS AND DRAWINGS THAT THESE AUTHORITIES MAY REQUIRE.

101. SUBMIT DETAILED BIWEEKLY CONSTRUCTION PROGRESS REPORTS TO OWNER AND ELECTRONIC SAFETY AND SECURITY ENGINEER'S REPRESENTATIVE. EACH PROGRESS REPORT SHALL INCLUDE ITEMIZED DETAILED DESCRIPTION AND EXTENT OF TASKS COMPLETED, ITEMIZED DETAILED DESCRIPTION AND QUANTIFICATION OF MATERIALS INSTALLED AND LABELED PHOTOS THAT CLEARLY SHOW THE EXTENT OF CONSTRUCTION PROGRESS.

102. KEEP THE SITE AND SURROUNDING AREA CLEAN, SAFE AND FREE FROM DEBRIS AT ALL TIMES.

103. ALLOW FOR THE REMOVAL AND RE-INSTALLATION OF ALL FLOOR/CEILING TILES IN AREAS AFFECTED BY THE INSTALLATION. THIS SHALL BE DONE ON A DAILY BASIS FOR ALL AREAS THAT ARE OCCUPIED DURING THE CONSTRUCTION PERIOD. OTHERWISE REMOVE AND RE-INSTALL THE TILES AFTER INSTALLATION IS COMPLETE.

104. REPLACE ALL SOILED AND OR DAMAGED CEILING TILES DURING THE INSTALLATION OF ANY WORK DESCRIBED IN THIS DOCUMENT. DAMAGES INCLUDE CHIPPING, BREAKING OR FINGERPRINTS.

105. RECTIFY ALL DAMAGES CAUSED DURING INSTALLATION. RECTIFICATION SHALL INCLUDE COMPLETE REPLACEMENT OF DAMAGED MATERIAL.

106. PROVIDE COMPLETE AND ADEQUATE TRAINING TO THE OWNER ON ALL ELECTRONIC SAFETY AND SECURITY SYSTEMS. TRAINING SHALL INCLUDE BUT NOT LIMITED TO THE OPERATIONS PERSONNEL ON THE OPERATION AND MAINTENANCE OF ALL ELECTRONIC SAFETY AND SECURITY SYSTEMS. ALL TRAINING SESSIONS ON MINIMUM 4 FLASH DRIVES FOR LATER USE BY OWNER.

107. RECORD DRAWINGS

108. PROVIDE DETAILED RECORD DRAWINGS OF ALL INSTALLED SYSTEMS. RECORD DRAWINGS SHALL INCLUDE BUT NOT LIMITED TO, DETAILED RISER SCHEMATIC DRAWINGS SHOWING CONNECTIVITY OF ALL SYSTEMS, DETAILED FLOOR PLAN DRAWINGS SHOWING ALL INSTALLED DEVICES, DEVICES SCHEDULES, PROGRAMING SCHEDULES, ETC. RECORD DRAWINGS SHALL BE PROVIDED IN AUTOCAD FORMAT ON FLASH DRIVE.

109. SHOP DRAWINGS

110. PROVIDE SHOP DRAWINGS FOR ALL MATERIALS FOR REVIEW AND APPROVAL PRIOR TO PROCUREMENT OF MATERIALS.

111. SHOP DRAWINGS SHALL INCLUDE BUT NOT LIMITED TO:

112. CATALOGUE DATA SHEETS FOR EACH PRODUCT THAT WILL BE PROVIDED BY THE CONTRACTOR

113. DETAILED SCHEMATIC RISER DRAWINGS CLEARLY INDICATING THE PHYSICAL AND LOGICAL CONNECTIVITY OF EACH SYSTEM AND HOW EACH PRODUCT WILL BE IMPLEMENTED IN THE PHYSICAL AND LOGICAL CONNECTIVITY OF EACH SYSTEM.

114. AN ITEMIZED SHOP DRAWING INDEX WITH A SUMMERY LIST OF

DIV 28 SECURITY SPECIFICATIONS CONTINUATION

153. ACCESS CONTROL SYSTEM

154. THE ACCESS CONTROL SYSTEM SHALL BE AS DESCRIBED IN THIS SPECIFICATION AND ILLUSTRATED ON THE DRAWINGS.

155. THE ACCESS CONTROL SYSTEM SHALL BE AN EXTENSION OF AND SHALL BE INTEGRATED WITH THE EXISTING ACCESS CONTROL SYSTEM.

156. THE SYSTEM SHALL HAVE OF THE FOLLOWING FUNCTIONS:

157. REGULATE AND MONITOR ACCESS AT SYSTEM CONTROLLED DOORS.

158. MONITOR CONNECTED DETECTORS (SUPERVISED AND AUXILIARY INPUTS) WITH THE ABILITY TO MANUALLY OR AUTOMATICALLY ARM AND DISARM THEM.

159. CONTROL EVENT INITIATED DEVICES CONNECTED TO SYSTEM OUTPUTS, SUCH AS ALARMS OR VIDEO RECORDERS, WITH THE ABILITY TO AUTOMATICALLY OR MANUALLY ARM OR DISARM THEM.

160. REPORT AN ALARM CONDITION.

161. ESTABLISH A HIERARCHY OF ALARM TYPES TO PRIORITIZE HANDLING ALARM CONDITIONS.

162. MAINTAIN A COMPREHENSIVE DATABASE RECORDING ALL SITE ACTIVITY.

163. PROVIDE ALL ACCESS CONTROL SYSTEM CONTROL PANELS AND ASSOCIATED EQUIPMENT, POWER SUPPLY, CABLING, CONNECTORS, ENCLOSURES, AND ALL OTHER HARDWARE AND SOFTWARE TO PROVIDE A FULLY OPERATIONAL SYSTEM.

164. THE ACCESS CONTROL SYSTEM SHALL BE CCURE 9000 ENTERPRISE, HARTMANN CONTROL, KANTCH ENTRAPASS CORPORATE, KEYSCAN AURORA MODIFY AND OR LIST APPROVED ACCESS SYSTEM SOFTWARE

165. ALL COMPONENTS SHALL BE GOOD QUALITY COMMERCIAL GRADE.

166. CONTROLLER: LIST APPROVED DOOR AND INPUT/OUTPUT CONTROLLERS. COMPLETE WITH POWER SUPPLY.

167. CREDENTIAL READER: HID RP40, RP10 (FOR MULLION) AND RPK40.

168. CREDENTIALS: PROVIDE 100 HID iCLASS® FOBS OR APPROVED EQUIVALENT FOR OWNERS USE.

169. MOTION REQUEST TO EXIT DEVICE: KANTECH T.REX-XL2-NL.

170. DOOR CONTACTS: FLUSH MOUNTED FOR STEEL AND WOOD DOORS SENTROL 1078.

171. PROVIDE CONTROLLER ENCLOSURES FOR ALL CONTROLLERS. ALL CONTROLLER ENCLOSURES SHALL BE A SINGLE KEY LOCKING METAL BOX. EQUIPPED WITH DOOR TAMPER SWITCH.

172. POWER SUPPLY: PROVIDE ALL POWER SUPPLIES AS REQUIRED TO FACILITATE COMPLETE TURNKEY SYSTEMS. POWER SUPPLIES SHALL INCLUDE UNINTERRUPTIBLE POWER SUPPLY BATTERY BACKUP TO SUSTAIN OPERATIONS OF ALL SYSTEMS AND RELATED DEVICES FOR MINIMUM 20 MINUTES AFTER POWER FAIL.

173. VIDEO SURVEILLANCE SYSTEM

174. THE NETWORK VIDEO MANAGEMENT SYSTEMS (NVMS) SYSTEM, CAMERAS AND ACCESSORIES SHALL PROVIDE REAL TIME SURVEILLANCE, RECORDING OF REAL TIME EVENTS AND HISTORICAL VIDEO DATA FOR VIDEO EVIDENCE OF A SECURITY EVENT; AND PROVIDE A DETERRENT THROUGHOUT THE FACILITY AND THE SITE AT DESIGNATED LOCATIONS AS REQUIRED IN THE CONTRACT DOCUMENT.

175. PROVIDE ALL SECURITY VIDEO CAMERAS, PAN/TILT/ZOOM (PTZ) CAMERAS, MOUNTS, HOUSINGS, POWER SUPPLY SYSTEMS, NETWORK CABLES, CONNECTORS, EQUIPMENT RACKS, MONITORS AND CONSOLES, COMPUTER CONTROLLED NETWORK SWITCHERS, WORKSTATIONS, NETWORK VIDEO RECORDERS, ENCODERS, DECODERS, DISPLAYS, AND ALL OTHER HARDWARE AND SOFTWARE TO PROVIDE A FULLY OPERATIONAL NVMS SYSTEM.

176. THE VIDEO SURVEILLANCE SYSTEM SERVER AND NETWORK VIDEO RECORDERS SHALL BE SIZED, EQUIPPED TO RECORD ALL VIDEO STREAMS FROM ALL VIDEO SURVEILLANCE CAMERAS AT MINIMUM 15 FRAMES PER SECOND AT 1080P RESOLUTION FOR 30 DAYS.

177. NETWORK VIDEO RECORDER: TRENDNET TV-NVR104 COMPLETE WITH 8 TERABYTE HARD DRIVE OR APPROVED EQUAL.

178. PROVIDE 1 VIDEO SURVEILLANCE SYSTEM CLIENT SOFTWARE AND LICENCE. COORDINATE WITH THE OWNER'S IT REPRESENTATIVE AND INSTALL THE CLIENT SOFTWARE AND LICENCE ON AN OWNER PROVIDED COMPUTER THAT IS CONNECTED TO THE CORPORATE DATA NETWORK. CONFIGURE THE CLIENT SOFTWARE TO VIEW VIDEO STREAMS FROM ALL VIDEO SURVEILLANCE SYSTEM CAMERAS AND VIEW RECORDED VIDEO STREAMS FROM THE NETWORK VIDEO RECORDER.

153. THAT IS CONNECTED TO THE CORPORATE DATA NETWORK. CONFIGURE THE CLIENT SOFTWARE TO VIEW VIDEO STREAMS FROM ALL VIDEO SURVEILLANCE SYSTEM CAMERAS AND VIEW RECORDED VIDEO STREAMS FROM THE NETWORK VIDEO RECORDER.

154. VSS CAMERA TYPE F1 – INDOOR FIXED CAMERA: AXIS 3MP DOME CAMERA OR APPROVED EQUAL.

155. 155. VSS CAMERA TYPE F2 – OUTDOOR FIXED CAMERA: AXIS 5MP DOME CAMERA OR APPROVED EQUAL.

5. SECURITY SYSTEMS INTEGRATION

   a. THE ACCESS CONTROL AND INTERCOM SYSTEM SHALL BE INTEGRATED TO PROVIDE INTEGRATED FUNCTIONS AS DESCRIBED IN THIS SPECIFICATIONS DOCUMENT AND ON CONTRACT DRAWINGS.

   b. ALL MASTER INTERCOM STATIONS SHALL BE INTEGRATED WITH ACCESS CONTROL SYSTEM TO FACILITATE ABILITY TO RELEASE MAIN DOOR VESTIBULE DOOR BY PRESSING INTEGRATED DOOR RELEASE BUTTON ON EACH MASTER INTERCOM.

   c. ALL HARDWARE, CLIENT AND OR SEVER SOFTWARE; SOFTWARE LICENSES SHALL BE PROVIDED AND INSTALLED AND CONFIGURED ON ALL DEVICES TO PROVIDE INTEGRATED FUNCTIONS.

   d. DATA SWITCH: 24-PORT, POE, 10/100/1000BASE-T GIGABIT, STACKABLE MANAGED SWITCH WITH 10GB SFP+ UPLINKS, POE POWER BUDGET TO POWER ALL CONNECTED DEVICES.

   e. CENTRAL MONITORING STATION: DELL OPTIPLEX 5060 SFF PC – 8TH GEN INTEL CORE I7-8700 3.2GHZ, 8GB DDR4, 500GB HDD, UHD GRAPHICS 630, DVDRW, 1X USB-C, GIGE, WIN 10 PRO 64-BIT – MOD9T, COMPLETE WITH DUAL 21" LED MONITORS, KEYBOARD AND MOUSE.

   f. KEYBOARD VIDEO MOUSE (KVM) SWITCH: TRIPLITE NETDIRECTOR 8-PORT 1U RACK-MOUNT CONSOLE HDMI KVM SWITCH WITH 17 IN. LCD AND IP REMOTE ACCESS, DUAL RAIL

6. EXECUTION:

1. ALL EQUIPMENT SHALL BE INSTALLED AND CONFIGURED IN ACCORDANCE WITH DEVICE AND SYSTEM MANUFACTURER'S INSTALLATION INSTRUCTIONS AND RECOMMENDATIONS, AS PER THE OWNERS' REQUIREMENTS AND AS PER CONTRACT DRAWINGS AND SPECIFICATIONS.
2. COORDINATE THE EXACT MOUNT LOCATION OF ALL EQUIPMENT WITH THE ELECTRICAL CONTRACTOR TO ENSURE THAT ALL CONDUITS AND BACK BOXES ARE INSTALLED IN THE OPTIMAL LOCATIONS.
3. COORDINATE EXACT MOUNTING LOCATIONS OF ALL EQUIPMENT ON SITE WITH SECURITY ENGINEER'S REPRESENTATIVE AND OWNER.
4. SUPPLY AND INSTALL ALL EQUIPMENT WHERE INDICATED ON CONTRACT DRAWINGS AND DOCUMENTS AND AS REQUIRED FOR COMPLETE AND OPERATIONAL SYSTEMS.
5. ALL EQUIPMENT SHALL BE INTER-COMPATIBLE.
6. BUNDLE AND TIE WIRE AND CABLE WITH CABLE TIES.
7. SEPARATE HIGH VOLTAGE (120 VAC AND ABOVE) CABLES FROM LOW VOLTAGE CABLES WITHIN ENCLOSURES.
8. RUN WIRE AND CABLE CONTINUOUS FROM DEVICE LOCATION TO THE FINAL POINT OF TERMINATION. NO MID-RUN CABLE SPLICES WILL BE ALLOWED.
9. NEATLY ROUTE CABLES PARALLEL OR PERPENDICULAR TO BUILDING LINES.
10. PROVIDE J HOOKS AND OTHER CABLE SUPPORT SYSTEMS (SPACED AT REGULAR INTERVALS) WITHIN ACCESSIBLE CEILING SPACES. FASTEN CABLES TO THE CABLE SUPPORT SYSTEMS AND PROVIDE STRAIN RELIEF TO PROTECT CABLES AND ENSURE COMPLIANCE WITH REQUIRED CABLE BENDS.
11. SUBMIT SHOP DRAWINGS OF ALL EQUIPMENT TO THE SECURITY ENGINEER'S REPRESENTATIVE FOR APPROVAL PRIOR TO PROCUREMENT AND INSTALLATION.
12. SUPPLY AND INSTALL POWER SUPPLIES AS REQUIRED FOR FULLY FUNCTIONAL SYSTEMS. POWER SUPPLIES SHALL INCLUDE BUT NOT LIMITED TO ALL CONTROLLER POWER SUPPLIES, ALL PERIPHERAL DEVICE POWER SUPPLIES. ALL POWER SUPPLIES SHALL BE INSTALLED TO MANUFACTURES RECOMMENDATIONS AND AS REQUIRED TO FURNISH FULLY FUNCTIONAL SYSTEMS.
13. THE SYSTEMS SHALL HAVE A MINIMUM OF CONTROL PRIMARY POWER AND BACKUP BATTERY. THE BATTERY SHALL BE ABLE TO SUPPORT THE SYSTEM AND DEVICES FOR 24 HOURS CONTINUOUS OPERATION. THE BATTERY INPUT, AUXILIARY, AND ALARM OUTPUTS SHALL BE PROTECTED USING PTC CIRCUIT BREAKERS. ALL OUTPUTS SHALL BE POWER LIMITED.
14. ALLOW FOR NEEDS ASSESSMENT SESSIONS WITH THE OWNER AND DETERMINE THE EXACT OWNER REQUIRED MODES OF OPERATION OF EACH DEVICE AND SYSTEM. CONFIGURE EACH CONFIGURE DEVICE AND SYSTEM TO SUIT THE OWNERS' REQUIREMENTS.
15. ALL EQUIPMENT SHALL BE INSTALLED WITH SUFFICIENT CLEARANCE TO MEET ALL APPLICABLE CODES AND FACILITATE OBSERVATION AND TESTING. ALL EQUIPMENT SHALL BE SECURELY FASTENED WITH APPROPRIATE FITTINGS TO ENSURE POSITIVE GROUNDING AND BE FREE OF GROUND LOOPS.
16. PROVIDE AND INSTALL ALL SOFTWARE AND SOFTWARE LICENSES, HOUSINGS, MOUNTING BRACKETS AND ACCESSORIES FOR COMPLETE OPERATION OF ALL SYSTEMS.
17. COORDINATE THE EXACT MOUNT LOCATION OF DEVICES WITH THE ELECTRICAL CONTRACTOR TO ENSURE THAT ALL CONDUITS AND BACK BOXES ARE INSTALLED IN THE OPTIMAL LOCATIONS.
18. WARRANTY
    a. PROVIDE WARRANTY FOR THE COMPLETED WORK TO BE FREE OF DEFECTS IN WORKMANSHIP AND MATERIALS FOR A PERIOD OF TWO YEARS FROM THE DATE OF SYSTEM ACCEPTANCE.
    b. IF THE WORKMANSHIP OR MATERIALS IS FOUND TO BE DEFECTIVE OR NOT IN ACCORDANCE WITH THE CONTRACT DOCUMENTS DURING THE WARRANTY PERIOD, THE CONTRACTOR SHALL CORRECT IT PROMPTLY WITH FACTORY CERTIFIED TECHNICIANS AT NO COST TO THE OWNER. ALL LABOUR AND MATERIALS SHALL BE PROVIDED BY THE CONTRACTOR.

CLIENT

MUNICIPALITY OF CASSELMAN

PROJECT NORTH

5	ISSUED FOR TENDER	2025-03-24
4	ISSUED FOR PERMIT	2025-03-18
3	ISSUED FOR REVISED 99% REVIEW	2025-02-19
2	ISSUED FOR 99% COORDINATION	2023-06-13
1	ISSUED FOR 66% COORDINATION	2023-05-12
ISSUE	DESCRIPTION	DATE

IT IS THE RESPONSIBILITY OF THE APPROPRIATE CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON SITE AND PROMPTLY REPORT ALL ERRORS AND/OR OMISSIONS TO THE CONSULTANT BEFORE WORK COMMENCES.

ALL WORK IS TO FOLLOW THE OBC 2012 AND ANY OTHER APPLICABLE CODES AND REGULATIONS.

DO NOT SCALE DRAWINGS.

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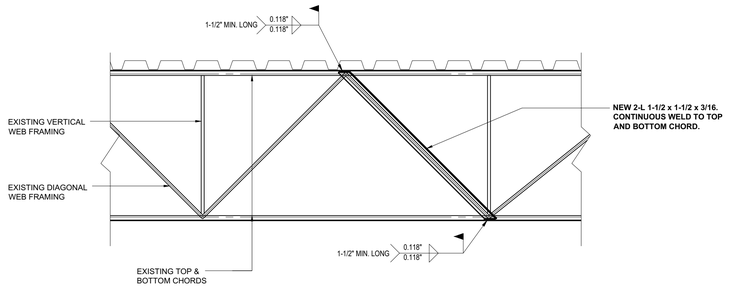
PROJECT

1 INDUSTRIEL STREET
OFFICE FIT-UP

DRAWING

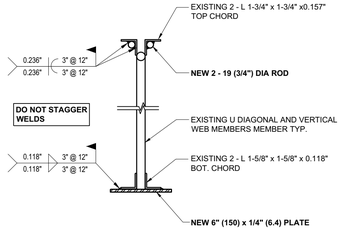
ELECTRICAL
SPECIFICATIONS 4 OF 4

PROJECT No: MRK-23002008-A0	REVISION:
DRAWN: KL	DATE: MAY 2023
APPROVED: DL	SCALE: AS SHOWN
DRAWING No: E-12	

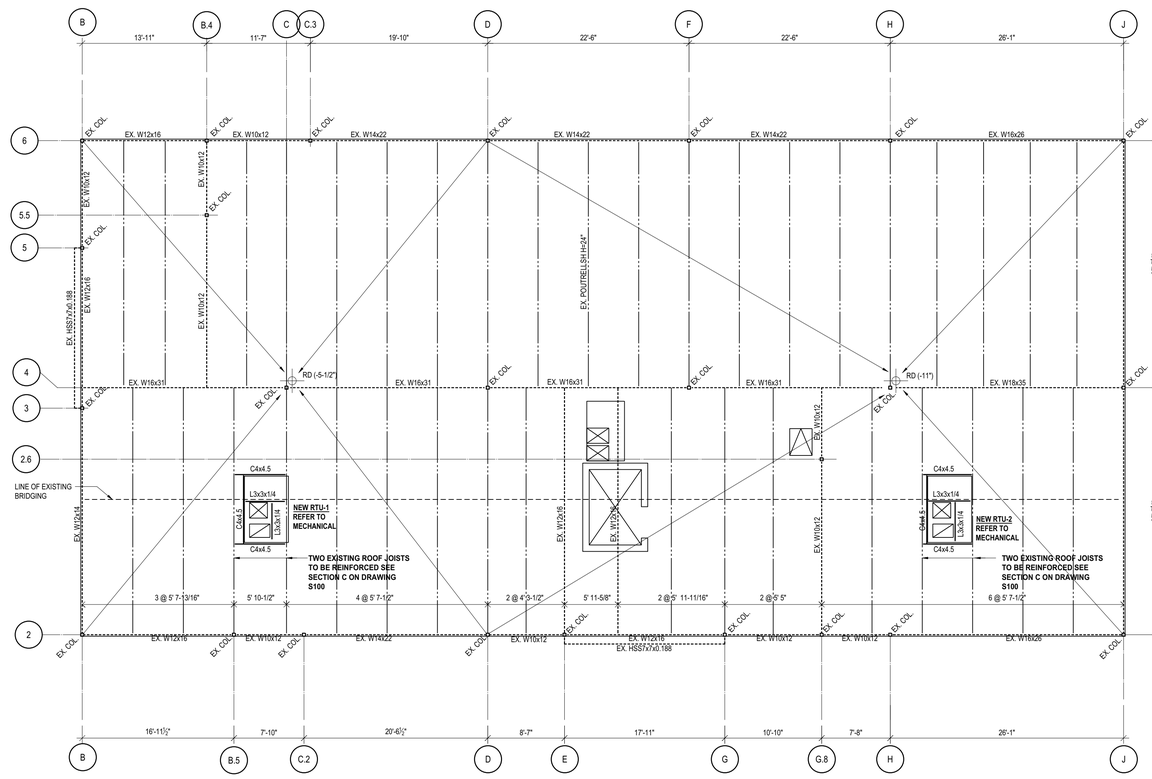


JOIST REINFORCEMENT DETAIL FOR WEB DIAGONAL

A / S-1 DETAIL
1" = 1'-0"



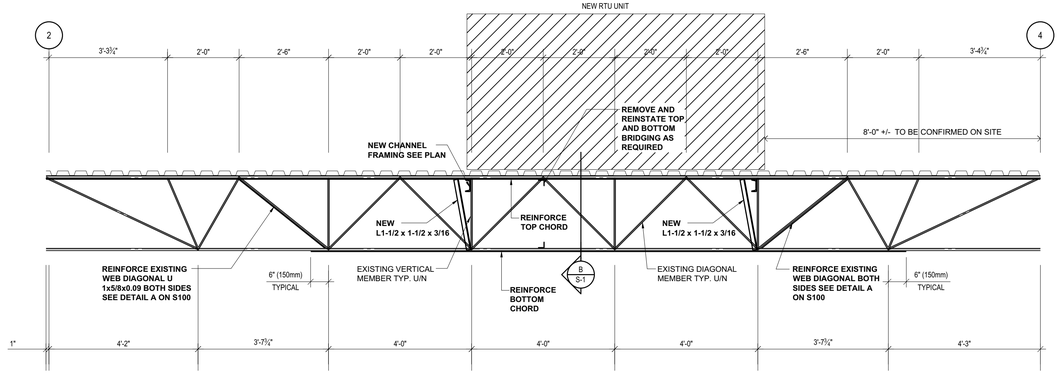
B / S-1 SECTION
1" = 1'-0"



REINFORCEMENT OF JOISTS BASED ON RTU WEIGHING 1381 LB AND 51" IN HEIGHT, 89" IN LENGTH AND 59" IN WIDTH

NEW ROOFTOP UNITS RTU-1 TO RTU-2 TO BE SUPPLIED C/W MANUFACTURERS STANDARD 350 HIGH METAL CURB. REFER TO MECHANICAL DRAWINGS. ROOFING CONTRACTOR TO PROVIDE NEW ROOF OPENING AND BLOCKING FOR LEVELING AND CURB SUPPORT, NEW FLASHING AND SEALING TO CRCA AND MEMBRANE MANUFACTURER'S STANDARDS, REFER TO ARCHITECTURAL DRAWING

ROOF FRAMING PLAN FOR RTU INSTALLATION
SCALE: 1/4" = 1'-0"



CONTRACTOR TO VERIFY JOIST CONFIGURATION PRIOR TO PROCEEDING WITH SHOP DRAWINGS.

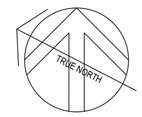
SHORE JOIST TO BE REINFORCED TO RELIEVE LOAD. ENSURE NO SNOW IS ON THE ROOF (ROOF BAY) WHILE REINFORCING JOIST.

C / S-1
1/2"=1'-0"

CLIENT

MUNICIPALITY OF CASSELMAN

PROJECT NORTH



ISSUE	DESCRIPTION	DATE
4	ISSUED FOR TENDER	2025-03-24
3	ISSUED FOR BUILDING PERMIT	2025-03-17
2	ISSUED FOR REVISED 99% COORDINATION	2025-02-25
1	ISSUED FOR 99% REVIEW	2023-06-13

IT IS THE RESPONSIBILITY OF THE APPROPRIATE CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON SITE AND PROMPTLY REPORT ALL ERRORS AND/OR OMISSIONS TO THE CONSULTANT BEFORE WORK COMMENCES.

ALL WORK IS TO FOLLOW THE OBC 2025 AND ANY OTHER APPLICABLE CODES AND REGULATIONS.

DO NOT SCALE DRAWINGS.

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PROJECT

1 INDUSTRIEL STREET
OFFICE FIT-UP

DRAWING

ROOF FRAMING PLAN
SECTION AND DETAILS

PROJECT No: MRK-23002008-A0	REVISION: 4
DRAWN: CJ	DATE: MAY 2023
APPROVED: KAB	SCALE: AS SHOWN

DRAWING No:

S-1

GENERAL NOTES

1. CHECK ALL DIMENSIONS ON STRUCTURAL DRAWINGS WITH OTHER DRAWINGS AND EXISTING SITE CONDITIONS. REPORT ANY INCONSISTENCIES BEFORE PROCEEDING WITH THE WORK. DO NOT SCALE THESE DRAWINGS.
2. ALL WORK SHALL COMPLY WITH CURRENT PROVISIONS OF THE ONTARIO BUILDING CODE, THE WORKPLACE SAFETY AND INSURANCE BOARD AND BEST TRADE PRACTICES. WORK SHALL COMPLY WITH ALL LOCAL AND PROVINCIAL REGULATIONS AND WITH APPLICABLE C.S.A. STANDARDS. IN ALL CASES, THE LATEST EDITIONS OF CODES AND STANDARDS SHALL APPLY.
3. STRUCTURAL DESIGN COMPLIES WITH THE MINIMUM STANDARDS OF PART 4 OF THE ONTARIO BUILDING CODE 2025.
4. BEFORE SUBMITTING TENDERS CONTRACTORS SHALL CAREFULLY EXAMINE EXISTING CONDITIONS TO ESTABLISH THE EXTENT OF THE WORK.
5. CONFIRM OWSJ MEMBER SIZES TO ENGINEER AT LOCATIONS TO BE REINFORCED PRIOR TO PROCEEDING WITH WORK.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY BRACING, AND SHORING NECESSARY TO UNDERTAKE THE WORK.
7. WHERE MECHANICAL EQUIPMENT IS SUPPORTED ON CURBS DIRECTLY ON ROOF DECK PROVIDE WEDGES IN FLUTES OF DECK UNDER SLEEPER AT STRUCTURAL SUPPORT (BEAMS, JOISTS).
8. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING EXCESS MATERIALS AND CLEANING UP ON COMPLETION OF THE WORK.

MATERIALS SPECIFICATIONS

1. ROLLED STRUCTURAL STEEL SHAPES - GENERAL REQUIREMENTS TO CSA-S16:19, ROLLED SHAPES TO CSA- G40.21-13(R2023), 350W MINIMUM. ANGLES AND PLATES, 300W MINIMUM.
2. WELDING - TO CSA-W59-13, E49XXCH OR LH BASIC ELECTRODES CONFORMING TO CSA-W48:23.
3. PRIME PAINT TO STRUCTURAL STEEL - TO CAN/CGSB-1.40, ONE SHOP COAT, ONE TOUCH UP FIELD COAT.

SUBMITTALS

1. SUBMIT STRUCTURAL SHOP DRAWINGS TO CONSUULTANT.

FIELD QUALITY CONTROL

1. INSPECTION AND TESTING COMPANY SHALL PERFORM INSPECTION OF WELDED JOINTS, GENERAL INSEPCTION OF FIELD CUTTING AND ALTERATIONS AND GENERAL INSPECTION OF COATING TOUCH-UP.

DESIGN LOADS AS INDICATED ON STRUCTURAL DRAWING S4 REV. 1 PREPARED BY SOLIDER AND DATED 2012-04-27

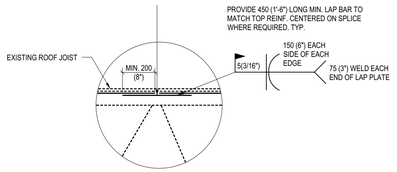
ROOF

TOTAL DEAD LOAD 23 psf (1.1 kN/m^2)

LIVE (SNOW)
S = Ss (Cb Cw Cs Ca) + Sr = 48.5 psf (2.32 kN/m^2)

NEW MECHANICAL RTUS SEE PLAN

JOIST REINFORCEMENT 4 - CHORD SPLICE — RN-024



TOP CHORD SPLICE DETAIL

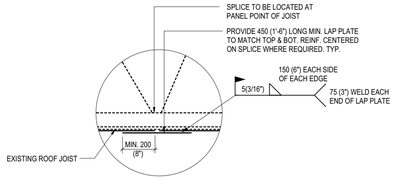
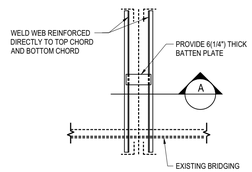
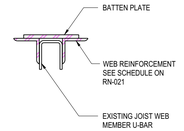


PLATE LAP

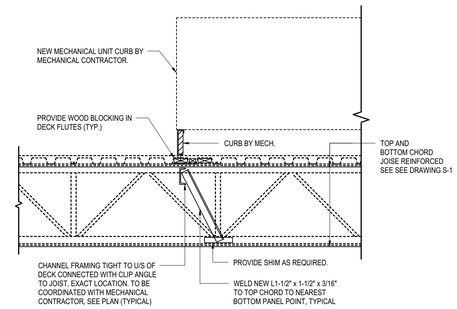
BOTTOM CHORD SPLICE DETAIL

JOIST REINFORCEMENT 2 — RN-022





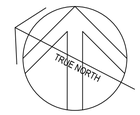
A-A BATTEN PLATE DETAIL



CLIENT

MUNICIPALITY OF CASSELMAN

PROJECT NORTH



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PROJECT

1 INDUSTRIEL STREET
OFFICE FIT-UP

DRAWING

GENERAL NOTES
TYPICAL DETAILS

PROJECT No: MRK-23002008-A0	REVISION: 4
DRAWN: CJ	DATE: MAY 2023
APPROVED: KAB	SCALE: AS SHOWN

DRAWING No:

S-2

Addendum # 1

Bid Opportunity: ADM-006-2025 - Municipality of Casselman New Townhall Office Fit-Up
Closing Date: Friday, April 18, 2025 3:00 PM

Question 1:

Is there a mandatory site visit for the townhall renovations. The OCA website says there is but I cant find details on the Bids and Tenders website

Answer 1:

There is a mandatory site visit for the townhall renovations that will occur **April 2nd, 2025 at 10:00 a.m..** The meeting will be at 1 Industrial, Casselman, ON. The main entrance for the office space is located beside the RAdio Station 92.1 at the corner of Racine St and Industrial Rd (Beside the Microtel).

PYE & RICHARDS - TEMPRANO & YOUNG ARCHITECTS INC.

office@prty.ca
613. 724. 7700
824 Meath St., Suite 200, Ottawa, ON, K1Z 6E8

Municipality of Casselman Office Fit-Up
1 Industriel Street, Casselman, ON

ADDENDUM No. 1 to Drawings and Specifications
Job No. 22045
14/04/2025

The following additions, deletions, and revisions form part of the Contract Documents.

GENERAL

Please note that a separate contract for building envelope repairs is currently underway, with a scheduled completion by the end of November 2025. The scope of this work includes:

- Mobilization, site access, and site protection (both exterior and interior).
- Exterior wall repairs, including removal and replacement of cladding to allow for the installation of new weather-resistant barriers.
- Interior wall repairs, including repair of gypsum and steel framing, and installation of a new vapor barrier.
- Window and door repairs, including installation of new sealants and waterproofing membranes.
- Demolition of the entrance canopies at the two main entrances (FCC and the future Townhall).

Due to the nature of the work, which must be performed by elevation, the contractor responsible for the building envelope repairs can't complete all second-floor work before commencing work on the main floor.

As this project was submitted for permit under the OBC 2012 (with 2020 updates), construction needs to commence by September 2025. Therefore, both contracts will need to be working on the site simultaneously, and a method of delineation of space will need to be coordinated.

Bidders are therefore asked to indicate in their submission:

- What portion of their scope of work could reasonably begin before the completion of the building envelope project, i.e.
  Rooftop Unit Installation
  Floor coring c/w hoarding of work area
  Hoarding off 5’ of exterior wall to allow work within the suite to occur
  Etc,

- How coordination with the ongoing exterior repair work could be managed to avoid conflicts.

Bidders to provide recommended solution as a part of their bid.

ARCHITECTURAL

DRAWINGS

A-104 PARTITION ASSEMBLIES

All new partitions extending from the subfloor to the underside of structure shall meet the following construction requirements: The top track must not be fastened directly to the steel deck but instead must be secured to the structural joists. The gypsum board shall terminate flush against the steel deck. Contractor to use carrying channels, Unistrut, etc as required for installation.
Heavy-Duty Steel Studs for P1 and P5 are to be 18 gauge.

A-108 FLOOR FINISHES PLAN

Revise Keynote 2 to say "Install sv-1 (2.0mm) with a thin application of patching compound (material per manufacturer's recommendation) to build up the subfloor at the transition point to lvt-1 (2.5mm). Ensure the adhesive is applied evenly and carefully to avoid future movement or surface irregularities. The final result must provide a smooth, seamless transition with no visible height difference between flooring materials."
Delete Keynote 1 within the Council Chamber 225 and replace it with revised Keynote 2.
Delete wayfinding strip of SV-1 and all the Keynote 2's in the west side of the floorplate.
Revise Floor Finishes Plan Legend to indicate the following:

- Luxury Vinyl Tile (LVT-1) is revised to Sheet Vinyl (SV-1). See spec below:

- Luxury Vinyl Tile (LVT-2) is revised to Luxury Vinyl Tile (LVT-1). See spec below:

Refer to the attached sheet A-108.

A-304 CUSTOM MILLWORK PLANS, ELEVATIONS & DETAILS

Add sheet A-304. See attached.

ELECTRICAL

Refer to attached addendum from EXP for further details on the following:

DRAWING E-09 – ELECTRICAL SPECIFICATIONS 1 OF 4

Revise Article 26.1 for grounding and bonding requirement as shown.

DRAWING E-12 – ELECTRICAL SPECIFICATIONS 4 OF 4

Remove item #155 for access control integration requirement under security system.

MECHANICAL

Refer to attached addendum from EXP for further details on the following:

DRAWING M-1 – MECHANICAL NOTES AND LEGENDS

Drawings list has been updated.

DRAWING M-6 – MECHANICAL GROUND FLOOR PLUMBING PLAN

New sheet for ground floor plumbing plan has been added.

QUESTIONS AND ANSWERS

Q1: Bids and tenders require us to submit Appendix 1 and 2, which includes the bid form. Where is appendix 1 and 2?

- A: Appendices 1 and 2 have now been added to the bids & tenders' platform, as originally intended in the RFQ documents We invite you to download the updated version of the documents to access the missing appendices.

Q2: I understand that the owner is adamant about not moving the closing date even though next to every contractor will be closed and simply suggesting that we submit our price a day early. Unfortunately, this is not how a construction tender process works, and this will result subcontractors not providing pricing due to risk of shopping their price with a day left before tender closing. If an extension is not an option please move this tender closing to 1 or 2pm on the Thursday before Good Friday.

- A: The closing date has been adjusted to Tuesday April 22nd, 2025, at 3:00pm.

Q3: Is the client open to alternatives for the demountable wall systems? Eg PC350?

- A: As outlined in the finishes schedule, the specified manufacturer for the Glazed Demountable Partition System is Teknion, or an approved equivalent. Equivalent products may be used, provided they meet all requirements detailed in the tender package and are deemed acceptable. If these conditions are satisfied, their use is permissible.

Q4: What is the anticipated schedule for the work to be completed?

- A: There is no specified end date, however, the client has expressed their desire in having the project completed as quickly and as efficiently as possible.

Q5: Can you please review the closing date of April 18, 2025? That is the Good Friday Holiday.

- A: The closing date has been adjusted to Tuesday April 22nd, 2025, at 3:00pm.

Q6: Are we able to use local TAB contractors on this project? All the named contractors are in the GTA.

- A: Yes. Kanata Air Balancing Ltd is an approved TAB firm which is 45 min away from the project location.

Q7: Can we receive CAD designs for A-109?

- A: A CAD layout can be provided to the winning proponent.

Q8: We've reviewed the tender for the Municipality of Casselman New Townhall Office project and would like to submit DIRTT as an alternate for the interior office fronts scope.

Please find attached the DIRTT specification sheets for the following systems for your review and consideration:

• DIRTT Evil Twin Walls (Double Pane Acoustic Walls) - https://www.dirtt.com/products/double-pane-glass-walls/
• DIRTT Solid Core Wood Doors -

These solutions meet the performance requirements outlined in the tender under 10 22 19.54 DEMOUNTABLE PARTITIONS - POST AND PANEL, including STC ratings and laminated tempered glass.

Please let me know if the Architect is willing to get alternate bids as per the attached documents.

- A: The DIRTT Evil Twin Walls (Double Pange Acoustic Walls) is considered an equivalent product, so long as the system is procured as per the following to achieve an STC 46:
  - Insulated aluminum frames around the perimeter
  - Laminate Glass with a 0.30" acoustical PVB. 2 Options:
    6mm laminated one side and 10mm laminated on the other side
    10mm laminated on both sides
  - Bow tie connection between butt-jointed glass
  - Solid core wood swing doors with a drop seal
  - Doors to be standard height c/w glazed clerestory above

Q9: Please note where we are expected to submit our total price as Appendix 1 and 2 as well as the breakdown on Bids and Tenders does not have a place to put it.

- A: The Pricing Breakdown is to be submitted directly within the Bids & Tenders platform under the Schedule of Prices tab. To assist bidders in preparing their submission, a separate document containing the Schedule of Price tables has been created and is now attached to the tender documents for reference purposes only. This document is intended to support bidders in organizing their pricing prior to entering it into the platform.

Q10: On behalf of Advanced Business Interiors, we respectfully submit Haworth Enclose Frameless Glass® as an alternate to the specified Teknion Altos system under Section 10 22 00 – Demountable Partitions and Section 08 80 00 – Glazing. Enclose meets or exceeds all critical performance, construction, and compliance criteria outlined in the contract documents, including glazing standards, sound transmission, fire performance, and installation integrity.

All glazing supplied and installed by ABI is furnished by local suppliers in Montréal and includes 10mm & 12mm clear tempered glass units compliant with CAN/CGSB-12.1-M90, and is installed using neoprene gaskets, spacers, and compatible sealants, ensuring long-term clarity, structural integrity, and conformance with Section 08 80 00 – Glazing.

Product Comparison Summary

Specification Requirement Teknion Altos Haworth Enclose® (Proposed Alternate)
Non-progressive, relocatable, four-way post system Yes ✓ Yes
Accommodates floor-to-ceiling variations (≥25 mm) Yes ✓ Yes
STC 45 minimum (ASTM E90) STC ≥ 45 ✓ STC 45–52 tested to ASTM E90/E413
Fire Performance: Class A/C surfaces (ASTM E84) Yes ✓ Class A (Glass/Steel), Class C (Laminate)
Structural: ANSI/BIFMA X5.6 Yes ✓ Load rated, tested
Double-glazed, 6mm clear tempered glass units Yes ✓ Double-pane, 6mm tempered

as standard
Glass Standard: CAN/CGSB-12.1-M90 Type 2, Class B Required ✓ Matches – tempered safety glass
Neoprene setting blocks, spacers, gaskets Required ✓ Included in Enclose glazing system
Rattle-free, cushioned, sealed installation Required ✓ Pressure-fit neoprene gaskets ensure rattle-free seal
Ten-year warranty on sealed glass units Required ✓ Available from approved glazing fabricators
Flush or recessed 100 mm base trim Yes ✓ Standard trim available
Extruded aluminum frame, post, glazing beads Yes ✓ All profiles in extruded aluminum
Edge-matched corners, battens, leveling hardware Yes ✓ Fully supported
Product equivalency to Teknion Altos Basis of design ✓ Yes

Supporting Documentation Attached:
• 2023 Enclose Designed to Code Compliance Statement – IBC, NFPA 101, NBCC
• 2024 ASTM E84 Fire Performance Statement – Class A/C Surfaces
• 2021 ANSI/BIFMA X5.6 Mechanical Strength Test – Structural Load
• 2024 Enclose and EFG STC – Sound Transmission Class Compliance Statement

Further product details, documentation, and photography can be found on Haworth's website:
Enclose Architectural System | Office Walls | Haworth

Should additional documentation or information be required to assist with this review, we are happy to coordinate as needed.

Thank you for your consideration.

*PDF documentation can be provided if required but can not be submitted through bids & tenders.

- A: The Haworth Enclose Frameless System is considered an equivalent product, so long as the system is procured as per the following to achieve an STC 47:
  - Double glazed configuration comprised of 10mm tempered & 12mm tempered glass panes
  - 4" Vertical Mullions
  - Solid core wood swing doors with a drop seal
  - Doors to be standard height c/w glazed clerestory above

Q11: P1 and P5 walls call for Heavy Duty Studs. What gauge is required? No specs on drawings A001 for Section #5 steel studs?

- A: The Heavy-Duty Steel studs for P1 and P5 are to be 18 gauge.

Q12: P3 and P7 walls call for studs at 16" c/c/ but do not specify stud size…. 3 5/8" or 6" etc. Says to suit size of new Demountable Partitions (Teknion). What steel stud size is required and what insultation size is required too?

- A: The stud and insulation size must be coordinated with the size of the demountable partition system being supplied, to ensure that P3 and P7 are flush with the demountable system. Coordinate with the demountable partition supplier.

Q13: Assume structure height is in fact 12'-2"

- A: The structure height has been reverified and is as follows:
  - To U/S Joist: 11'-5" (3486mm)
  - To U/S Deck: 13'-6 ½" (4130mm)
  - To U/S Beam: 11'-9 ½" (3594mm)
  - To U/S Ductwork: 11'-0" (3350mm)

Q14: Are we to include carrying channel, for all walls over 12'? (P1, P2, P5, P7?)

- A: See Architectural changes above to sheet A-104.

Q15: Drawing note 6 on M-6 calls for a 2inch diameter water line connected downstream of the backflow preventer in the mechanical room on the ground floor. Would it be possible to obtain a ground floor drawing indicating the mechanical room location

- A: Refer to the attached mechanical addendum ADD#M1 for details.

Q16: What are the bid bond and insurance requirements for this project?

- A: Contractor is to submit as a Tender Security, a surety bond, certified, cheque, or bank draft written in favour of the Municipality of Casselman in the amount of which in not less than 10% of our tender to be held in escrow and dealt with as described in Article 1.7 of the instruction to Bidders.

  Contractor is to submit a letter from a surety company, satisfactory to the owner, that the bidder will be covered by a 50% performance bond and a 50% labour and material bond as required under the General Conditions, if successful in being awarded this contract.

Q17: What are the start and completion dates for this project?

- A: Refer to General Information on page 1 with regards to the start date. There is no specified end date, however, the client has expressed their desire in having the project completed as quickly and as efficiently as possible.

Q18: Drawing A-103 shows a blow up to refer to A-304 for the Custom Council Table, this drawing does not exist, please advise.

- A: Refer to the attached page A-304 for details.

Q19: Are there bonding requirements:

- A: Yes, refer to the attached ADD#E1 and electrical specifications on E-09 and E-10 for grounding and bonding requirements.

Q20: Do we need to install/repair vapour barriers for the existing exterior perimeter walls?

- A: Only as required for items within this project scope that cause damage the exterior wall (i.e. exterior cameras).

Q21: For the electrical work of exterior cameras, do we have to cut the holes through the exterior walls?

- A: Yes, an exterior penetration on the exterior walls will be required to install the CAT6A communication cable for each Camera. Permanent link termination shall be made on the interior side of the walls, and a patch cord is then fed through to the exterior to connect the cameras. Cameras and associated corner mounting hardware shall be supported and reinforced on the wall as required as per manufacturer specifications and installation guidelines.

Q22: Can IMT walls be submitted as an alternative to Teknion?

- A: Specific Product and Technical information would need to be provided to approve the use of IMT walls as an alternative.

Q23: Could an ABB distribution be used on this quote?

- A: Yes, ABB is considered an equivalent approved manufacturer for the power distribution system.

Q24: LVT-1 – Product in rolls or in tiles. Item says tile, description says roll, pattern says brick?

- A: See changes to sheet A-108 as outlined above.

Q25: LVT-2 – Im assuming its LVT not carpet tiles – Item says carpet tile, description says Polyflor is luxury tiles?

- A: See changes to sheet A-108 as outlined above.

Q26: There are inserts near the walls; one product is 2mm and the other is 2.5mm

- A: See changes to sheet A-108 as outlined above.

Q27: It states in the drawings that the WAP locations are approximate, counts and locations to be determined by Wi-Fi predictive design. Who is responsible for the predictive design, who supplies and installed the WAPs?

- A: The active network equipment to be procured by the client as well as the Wi-Fi predictive design to verify and confirm locations. Installation typically is installed by the communication contractor and supplied and provided by the client.

Q28: What is the requirement for the TV locations (Coax, CAT6 or both?) Who is responsible?

- A: CAT6A Communication Cable would be allocated for each of the displays.

Q29: Who is responsible for the sleeves and the basket tray supply / installation?

- A: Communication Contractor would be responsible for all the communication cable tray and sleeves requirements. Conduit pathways are typically installed by the Electrical Contractor and coordinated with the Communication Contractor.

Q30: The plan detail of the TR on the second floor indicates 2 x 6" Dual Sided Vertical Cable Managers on what we assume is a 4-post racking solution

- A: Vertical Cable Managers specifications are included in specifications. There is no preference on dual sided or single sided vertical cable managers as long as we have them located on the front side of the rack for cable patching.

Q31: Under the breakout pricing request in the specification, it states that the cabling contractor is to provide an alternate price to supply and install a Category 6 solution, however the solution is Cat 6. Does the consultant require a price for CAT6a and Cat6? Is this what is meant here?

- A: Procure pricing for CAT6a solution for all comms cabling since this is a new cabling installation and we recommend following the industry standard to future proof the cabling solution.

Q32: States in the specification that the cabling contractor is responsible for the demolition of existing cabling, however, the demolition plans do not indicate any existing cabling to begin with.

- A: There shouldn't be any existing cabling on the L2 floor hence why there isn't any identified on the demo package however if any is found onsite, then we would acknowledge it and have the cabling contractor remove the cables. As part of the tender, there is currently no demo scope of work for cabling.

Q33: States in the specification that the cabling contractor is responsible for the demolition of existing cabling, however, the demolition plans do not indicate any existing cabling to begin with.

- A: See above.

Q34: The spec states that the access control system shall be an extension of and shall be integrated with the existing. What is the existing system? Several manufacturers have been named. To me this is an entirely new system installation.

- A: There is no existing access control system that needs to be integrated with on this project. Item will be removed from specs.

Q35: The cameras are stated to be Axis or approved equivalent. What is the process for product approval of equivalent equipment? Is Avigilon an accepted camera and network video recorder

- A: Yes, Avigilon would be an accepted camera and NVR manufacturer, as long as its equivalent performance specifications.

Q36: For access control, is there a server & workstation required?

- A: Yes, there will be a security server & workstation required for this project. The server will be located at the Main IT Rack and powered by the UPS and Generator and connected via the converged network. The security workstation will allow for system programming and monitoring. The final location of the workstation to be determined by the client.

Q37: As per the specs note 5 plan E-08, it mentioned door hardware contractor to supply low voltage cabling. Should this be the responsibility of the security contractor?

- A: Note 5 plan E-08 is for the barrier free washroom where it's a local locking sequence and local emergency call assistance and there is no provision for access control security equipment. This is a coordination effort between the Electrical contractor and door hardware contractor

Q38: Is Olympia Tile and Stone's Deluxe Series in the colour white an acceptable alternative for Wall Tile T-2? Is Olympia Tile and Stone's Would Series in Caramel (Beige) Matte an acceptable alternative for Floor Tile T-3?

- A: The proposed Olympia Tile for Wall and Floor are acceptable alternatives.

Q39: In lieu of the Ebbs and Flows kit I would recommend using the Billow Baffles by Akustus Designs as it is a Canadian Product. I have specified Ebbs and Flows in the past through Armstrong and had issues with long lead times.

- A: Yes the Billow Baffles by Akustus Designs is an approved equivalent, so long as a customized size of 96" x 96" is specified.

Q40: The specification asks for the GSH 209 floor stop. Please confirm that the standard Teknion floor stop (N15-1010) is acceptable.

- A: Yes. The standard Teknion floor stop is acceptable.

Q41: The specifications request the Pemko Sound Seals, Model No. S773 however, Teknion doors come with an integrated sound seal in the frame at the jamb and head and sides. Adding another sound seal would be redundant and not feasible. Please confirm acceptance of the Teknion standard sound seals.

- A: Yes, as indicated in Hardware Package HP1 the sound seal is to be supplied by the demountable partition supplier. As such, the Pemko Sound Seals Model would not be specified for doors located within a demountable partition.

Q42: The Dorma Door Closer used with Teknion Altos doors are typically installed within the frame, however, the specification asks for surface mounted door closer. Please confirm that the Teknion standard closer is acceptable.

- So long as the Teknion standard door closer meets the maximum force of 4.9 pounds / 22 newtons to meet OBC & CSA B651-12 requirements, it is acceptable.

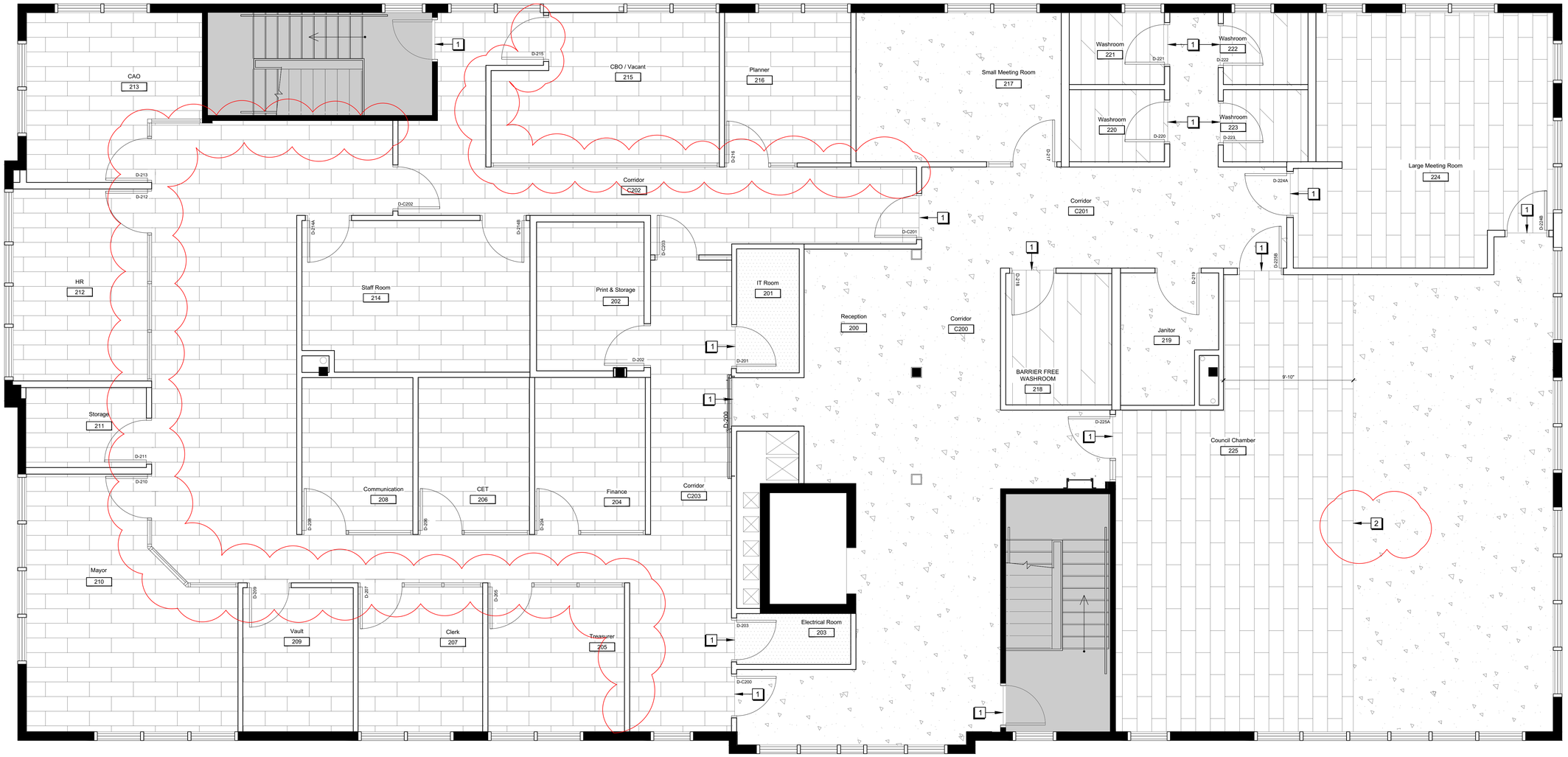
Q43: The specification calls for 4 pairs of hinges for full height doors. Please note that for Teknion Altos segmented solid hinged doors of up to 92", the doors come with 3 pairs of FBB179 hinges. Please confirm that this is acceptable.

- A: There are no full-height doors specified within the demountable partition system.

Q44: Please confirm final keying is by others

- A: Contractor is responsible for keying.

END OF ADDENDA No. 1



1 A-108 LEVEL 2
FLOOR FINISHES PLAN
SCALE = 1/4" = 1'-0"

AREA NOT IN CONTRACT

FLOOR FINISHES PLAN LEGEND

EXISTING FINISHES TO REMAIN UNLESS NOTED OTHERWISE

SHEET VINYL (SV-1):
PATTERN: CONCRETE
REFER TO FINISHES SCHEDULE FOR COLOUR AND SPECIFICATIONS

LUXURY VINYL TILE (LVT-1):
PATTERN: WOOD
REFER TO FINISHES SCHEDULE FOR COLOUR AND SPECIFICATIONS

PORCELAIN TILE (T-3):
PATTERN: WOOD
REFER TO FINISHES SCHEDULE FOR COLOUR AND SPECIFICATIONS

STATIC DISSIPATIVE TILE (SDT-1):
PATTERN: WHITE/GREY
REFER TO FINISHES SCHEDULE FOR COLOUR AND SPECIFICATIONS

FLOOR FINISHES PLAN KEYNOTES

1. PROVIDE TRANSITION STRIP BETWEEN FLOORING CHANGES TO SUIT FLOORING TYPE.
2. INSTALL SV-1 (2.0MM) WITH A THIN APPLICATION OF PATCHING COMPOUND (MATERIAL PER MANUFACTURER'S RECOMMENDATION) TO BUILD UP THE SUBFLOOR AT THE TRANSITION POINT TO LVT-1 (2.5MM). ENSURE THE ADHESIVE IS APPLIED EVENLY AND CAREFULLY TO AVOID FUTURE MOVEMENT OR SURFACE IRREGULARITIES. THE FINAL RESULT MUST PROVIDE A SMOOTH, SEAMLESS TRANSITION WITH NO VISIBLE HEIGHT DIFFERENCE BETWEEN FLOORING MATERIALS.

FINISHES GENERAL NOTES

1. ALL MATERIALS ARE TO BE ORDERED WHEN THE CONSTRUCTION CONTRACT IS AWARDED AND UPON APPROVAL OF SHOP DRAWINGS & SAMPLES. AT THIS TIME THE CONTRACTOR IS TO CONFIRM THAT ALL DELIVERIES WILL MEET CONSTRUCTION SCHEDULE. SUBSTITUTIONS WILL NOT BE ACCEPTED DUE TO LATE ORDERING. IN THE EVENT THAT MATERIALS ARE NOT AVAILABLE IN TIME TO MEET SCHEDULED COMPLETION DATES, THE CONTRACTOR SHALL PROVIDE PROOF OF DATE OF ORDER OF MATERIALS PRIOR TO REQUESTING SUBSTITUTIONS.
2. THE CONTRACTOR SHALL PROVIDE CONTROL SAMPLES FOR APPROVAL BY DESIGNERS OF ALL FINISHES SPECIFIED. SAMPLES TO BE TAGGED ACCORDING TO THE LEGEND ALL SAMPLES SHALL BE APPROVED BY THE CONSULTANT PRIOR TO ORDERING.
3. CEASE OPERATION AND NOTIFY THE PROJECT MANAGER IMMEDIATELY IF ANY ASBESTOS IS DISCOVERED OR SUSPECTED ON-SITE.
4. ALL FINISHES TO BE INSTALLED STRICTLY AS PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
5. CONTRACTOR TO SUBMIT MANUFACTURER'S MAINTENANCE INSTRUCTIONS FOR ALL FINISHES IN OPERATIONS AND MAINTENANCE MANUAL.
6. SHOULD ANY DISCREPANCY OR UNCERTAINTY ARISE, CONTACT DESIGNER BEFORE PROCEEDING WITH APPLICATION OF FINISH.

FLOOR FINISHES NOTES

1. CONTRACTOR TO PREPARE SLAB TO RECEIVE FLOORING IN ACCORDANCE WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS.
2. NEW FLOORING & RUBBER BASE IS TO BE SUPPLIED AND INSTALLED BY THE CONTRACTOR.
3. CONTRACTOR TO CHALK ALL FLOORING INSERT/ ACCENT LOCATIONS AND PATTERNS ON SUB-FLOOR AND OBTAIN APPROVAL FROM DESIGNER (PR-TY) BEFORE COMMENCING WORK.
4. CONTRACTOR TO PROVIDE WALK-OFF MATS. TAPE ALL PROTECTION PLASTIC INTO PLACE AND MAINTAIN IN GOOD CONDITION. POLYETHYLENE IS TO BE REMOVED AT COMPLETION OF WORK BY CONTRACTOR.
5. CONTRACTOR TO PROTECT FLOOR USING 6 mil POLY. POLY JOINTS ARE TO BE TAPED. ADHESIVE FROM TAPE IS NOT TO COME IN CONTACT WITH FLOORING. MAINTAIN PROTECTION FOR THE DURATION OF CONSTRUCTION ACTIVITIES.
6. UPON CONSTRUCTION COMPLETION, FLOORING WITHIN CONTRACT AREA IS TO BE THOROUGHLY CLEANED OF CONSTRUCTION DEBRIS.
7. CONTRACTOR TO PATCH AND REPAIR FLOOR FINISHES AS REQUIRED DUE TO CONSTRUCTION ACTIVITIES.
8. COORDINATE INSTALLATION OF FLOORING ON MOBILE SHELVING PLATFORM.
9. CONTRACTOR SHALL PROVIDE SUITABLE TRANSITION STRIPS AT ALL FLOORING CHANGES. CONTRACTOR IS TO PROVIDE A SAMPLE FOR APPROVAL BY DESIGNER BEFORE PROCEEDING WITH INSTALLATION.
10. WHERE FLOORING CHANGES OCCUR AT DOORWAYS, THE INTERFACE OF THE FLOORING SHALL OCCUR SO THAT IT IS CONCEALED BENEATH THE DOOR WHEN IT IS IN A CLOSED POSITION.
11. VINYL COMPOSITION TILE FLOORING
    - 11.1. ALL FLOOR TILES TO BE FROM THE SAME BATCH NUMBER.
    - 11.2. FLOOR TILE, AND ALL NECESSARY COMPONENTS, ARE TO BE INSTALLED AS PER MANUFACTURER'S INSTRUCTIONS.
    - 11.3. CONTINUE FLOORING OVER AREAS WHICH WILL BE UNDER BUILT-IN FURNITURE AND /OR MILLWORKS.
    - 11.4. SCRIBE AND CUT BORDER TILES TO SUIT SITE CONDITIONS.
    - 11.5. COMPLETE INITIAL CLEANING AS PER MANUFACTURER'S INSTRUCTIONS.
    - 11.6. INCLUDE MANUFACTURER'S CLEANING AND MAINTENANCE INSTRUCTIONS IN OPERATIONS AND MAINTENANCE MANUAL.
12. CONTRACTOR TO PROVIDE AN OVERAGE OF ALL FLOOR FINISHES IN THE AMOUNT OF 5% FOR MAINTENANCE PURPOSES. PROVIDE IN UNOPENED CARDBOARD BOXES.

REV.	DESCRIPTION	DATE
05	ISSUED FOR TENDER ADDENDA 1	14/APR/2025
04	ISSUED FOR TENDER	24/MAR/2025
03	ISSUED FOR PERMIT	18/MAR/2025
02	ISSUED FOR 99% REVIEW	24/FEB/2025
01	ISSUED FOR 66% REVIEW	12/MAY/2023

SEAL

PROJECT NORTH

Not for construction unless SEALED and SIGNED

PYE & RICHARDS - TEMPRANO & YOUNG ARCHITECTS INC.
824 Meath St. Suite 200 613. 724. 7700
Ottawa, ON K1Z 6E8 info@prty.ca

PROJECT

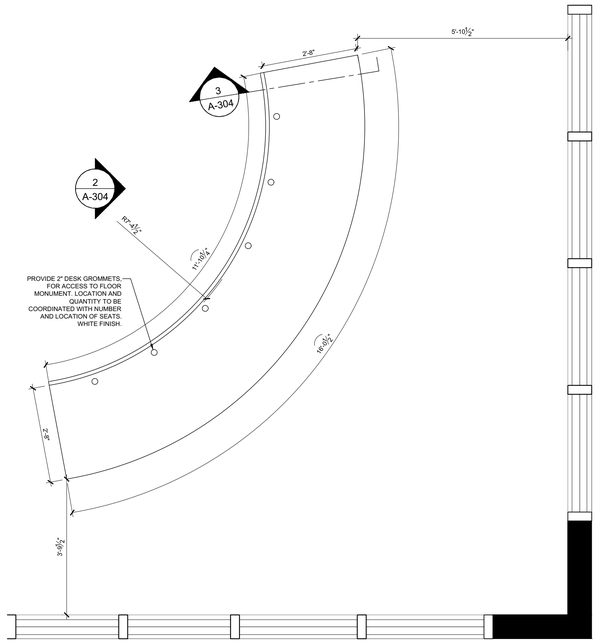
MUNICIPALITY OF CASSELMAN
OFFICE FIT-UP

1 INDUSTRIEL STREET CASSELMAN, ON

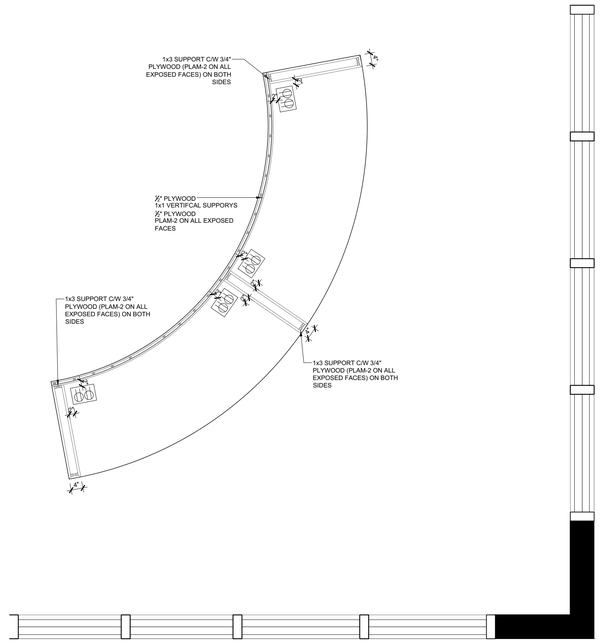
DRAWING

LEVEL 2
FLOOR FINISHES PLAN

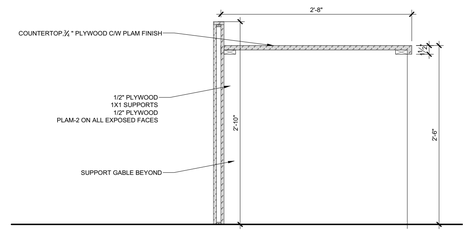
PROJECT NO.	22045	DRAWING NO.	A-108
SCALE -	1/8" = 1'-0"		
DRAWN -	MH		
CHECKED -	KB		
PLOT DATE -	14/04/2025	PLOTTED BY:	MHENEY



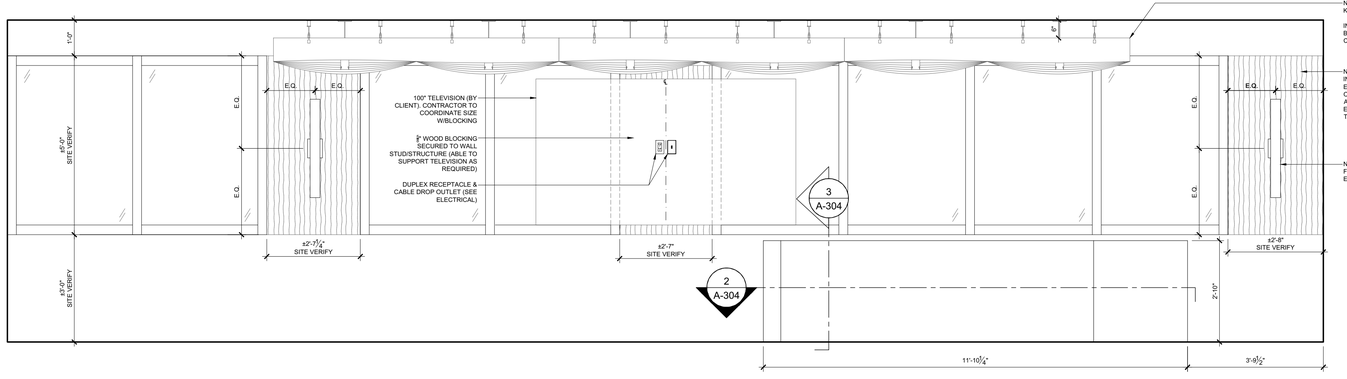
1 COUNCIL CHAMBER 225 ENLARGED FLOOR PLAN
1 / A-304 — SCALE = 1/2" = 1'-0"



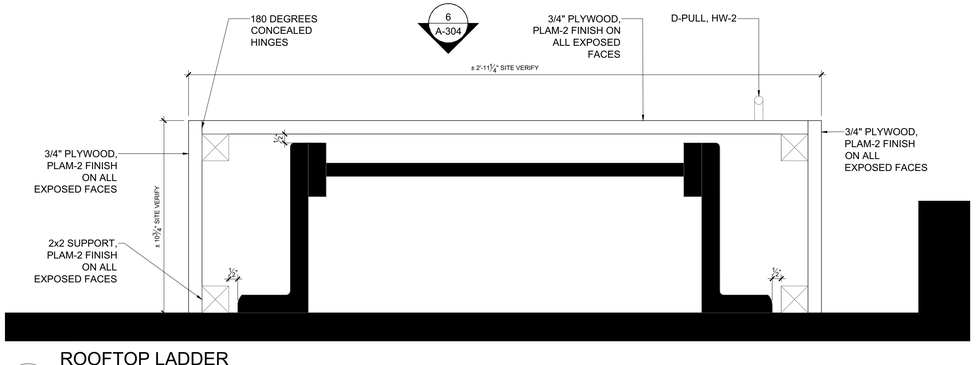
2 COUNCIL CHAMBER 225 COUNCIL DESK SECTION A
2 / A-304 — SCALE = 1/2" = 1'-0"



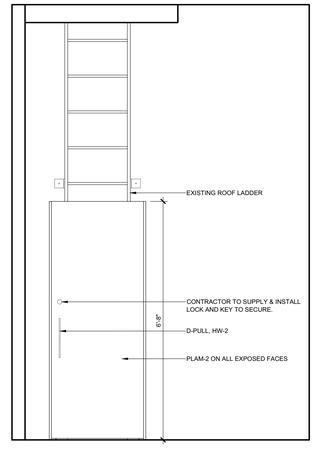
3 COUNCIL CHAMBER 225 COUNCIL DESK SECTION B
3 / A-304 — SCALE = 1" = 1'-0"



4 COUNCIL CHAMBER 225 ELEVATION
4 / A-304 — SCALE = 1/2" = 1'-0"



5 ROOFTOP LADDER ENLARGED PLAN
5 / A-304 — SCALE = 3" = 1'-0"



6 ROOFTOP LADDER ELEVATION
6 / A-304 — SCALE = 1/2" = 1'-0"

REV.	DESCRIPTION	DATE
05	ISSUED FOR ADDENDUM 01	14/APR/2025
04	ISSUED FOR TENDER	24/MAR/2025
03	ISSUED FOR PERMIT	18/MAR/2025
02	ISSUED FOR 99% REVIEW	24/FEB/2025
01	ISSUED FOR 66% REVIEW	12/MAY/2023

SEAL

PROJECT NORTH

Not for construction unless SEALED and SIGNED

PYE & RICHARDS - TEMPRANO & YOUNG ARCHITECTS INC.
824 Meath St. Suite 200 — 613. 724. 7700
Ottawa, ON K1Z 6E8 — info@prty.ca

PROJECT

MUNICIPALITY OF CASSELMAN
OFFICE FIT-UP

1 INDUSTRIEL STREET — CASSELMAN, ON

DRAWING

CUSTOM MILLWORK PLANS, ELEVATIONS & DETAILS

PROJECT NO.	22045	DRAWING NO.	A-304
SCALE -	1/8" = 1'-0"		
DRAWN -	MH		
CHECKED -	KB		
PLOT DATE -	14/04/2025	PLOTTED BY:	MHENEY

EXP Services Inc.

100-2650 Queensview Drive,
Ottawa, ON
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Telephone: (613) 688-1899
Facsimile: (613) 225-7337
E-mail: ottawa@exp.com,
Web Site: www.exp.com

Electrical
Addendum No. E1

Reference: Tender Addendum E1 Issue Date: April 14, 2025

Project: 1 Industriel Street Office Fit-up, Casselman, ON.

This addendum shall form an integral part of the Bid Documents for the above project and shall be read in conjunction therewith. This addendum shall, however, take precedence over all requirements of the previously issued Drawings and Specifications with which it may prove to be at variance, unless otherwise clarified by the Consultant.

This addendum must be signed by the Bidder in the appropriate space and must be attached to the back of the Bid Form for submission at the time of bidding. Bids not including this addendum signed as requested may be rejected as informal.

Revisions / Clarifications

The following changes and clarifications shall be considered when submitting your bid.

1. ELECTRICAL DRAWINGS

1.1. DRAWING E-09 – ELECTRICAL SPECIFICATIONS 1 OF 4

1.1.1. Revise Article 26.1 for grounding and bonding requirements as shown.

1.2. DRAWING E-12 – ELECTRICAL SPECIFICATIONS 4 OF 4

1.2.1. Remove item #155 for access control integration requirement under security system.

---------- END OF ELECTRICAL ADDENDUM No. E1 ----------

1. SCOPE OF WORK

1.1 SUPPLY LABOUR, TOOLS, SERVICES AND EQUIPMENT, AND PROVIDE MATERIALS REQUIRED TO COMPLETE WORK IN ACCORDANCE WITH THIS SPECIFICATION AND DRAWINGS. COMPLY WITH LAWS, REGULATIONS AND CODES OF AUTHORITIES HAVING JURISDICTION. CONFORM TO REQUIREMENTS OF BIDDING DOCUMENTS AND DIVISION 1. PERFORM WORK IN ACCORDANCE WITH LOCAL APPLICABLE GOVERNING CODES AND AUTHORITIES INCLUDING THE ONTARIO BUILDING CODE AND ONTARIO ELECTRICAL SAFETY CODE (OESC).

2. EXAMINATION OF SITE AND DOCUMENTS

2.1 PRIOR TO SUBMITTING BID, CAREFULLY EXAMINE CONDITIONS AT SITE WHICH WILL OR MAY AFFECT WORK, DRAWINGS, AND SPECIFICATIONS, AND BECOME FAMILIAR WITH BUILDING CONSTRUCTION, FINISHES AND OTHER WORK ASSOCIATED WITH WORK IN ORDER THAT BID INCLUDES FOR EVERYTHING NECESSARY FOR COMPLETION OF WORK.

3. PERMITS, CERTIFICATES AND FEES

3.1 PAY FOR AND OBTAIN PERMITS TO COMPLETE WORK. WHEN WORK IS COMPLETE, SUPPLY AND TURN OVER INSPECTION CERTIFICATES FROM GOVERNING AUTHORITIES TO CONSULTANT. PAY FEES AND CHARGES LEVIED BY MUNICIPALITY AND OTHER GOVERNING AUTHORITIES FOR PERMITS, INSPECTIONS AND CERTIFICATES. KEEP COPY OF SUCH PERMITS AND CERTIFICATES, ETC., ON JOB SITE.

4. CO-ORDINATION AND CO-OPERATION

4.1 COORDINATE ALL WORK WITH OTHER TRADES TO ENSURE A PROPER AND COMPLETE INSTALLATION. NOTIFY ALL TRADES CONCERNED OF REQUIREMENT FOR OPENINGS, SLEEVES, INSERTS AND OTHER HARDWARE NECESSARY IN THEIR WORK FOR INSTALLATION OF YOUR WORK, AND, WHERE YOUR WORK IS TO BE INTEGRATED WITH WORK OF OTHER TRADES OR IS TO BE INSTALLED IN CLOSE PROXIMITY WITH WORK OF OTHER TRADES, CAREFULLY COORDINATE WORK PRIOR TO AND DURING INSTALLATION.

4.2 EXACT LOCATIONS AND ROUTING OF SERVICES MUST BE PROPERLY PLANNED, COORDINATED AND ESTABLISHED WITH ALL AFFECTED TRADES PRIOR TO INSTALLATION SUCH THAT THEY WILL CLEAR EACH OTHER AS WELL AS ANY OBSTRUCTIONS. GENERALLY, PIPING REQUIRING UNIFORM PITCH SHALL BE GIVEN RIGHT OF WAY, WITH OTHER SERVICES LOCATED AND ARRANGED TO SUIT.

5. NOISE CONTROL

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

6. CLEANING UP

6.1 DURING CONSTRUCTION, KEEP SITE REASONABLY CLEAR OF RUBBISH AND WASTE MATERIAL RESULTING FROM WORK ON DAILY BASIS. AFTER COMPLETION OF WORK, REMOVE RUBBISH AND DEBRIS, ARRANGE AND PAY FOR REPAIR OF DAMAGES CAUSED AND LEAVE PREMISES AND WORK IN GOOD ORDER.

7. PROTECTION OF EQUIPMENT AND MATERIAL

7.1 PROPERLY PROTECT AND STORE ALL EQUIPMENT AND MATERIALS ON SITE FROM DAMAGE. CONTRACTOR SHALL BE RESPONSIBLE FOR SAFE STORAGE OF ALL EQUIPMENT AND GOODS TO BE RELOCATED AND SHALL REPAIR OR REPLACE DAMAGED EQUIPMENT AND GOODS AT DISCRETION OF OWNER.

8. INSPECTION OF WORK

8.1 CONSULTANT SHALL AT ALL TIMES HAVE ACCESS TO WORK AND SHALL BE NOTIFIED AT AGREED UPON TIMES OF STAGES OF WORK.

8.2 WHERE STANDARDS OF WORK ARE SPECIFIED OR IMPLIED AND WORK DOES NOT COMPLY WITH PERFORMANCE SPECIFIED OR IMPLIED, SUCH DEFICIENCY SHALL BE CORRECTED AS DIRECTED BY CONSULTANT. ANY SUBSEQUENT TESTING TO VERIFY PERFORMANCE SHALL BE DONE AT CONTRACTOR'S EXPENSE. ANY CHARGES FOR OWNER'S STAFF, CONSULTANT OR OTHER PERSONNEL RELATED TO SUCH RETESTING SHALL ALSO BE AT EXPENSE OF CONTRACTOR.

9. PRODUCTS

9.1 PRODUCTS LISTED AND/OR SPECIFIED ON CONTRACT DOCUMENTS ARE SELECTED TO ESTABLISH DESIGN STANDARDS. IN MOST CASES, ACCEPTABLE MANUFACTURERS ARE LISTED. BASE YOUR BID PRICE ON BASE SPECIFIED PRODUCTS OR PRODUCTS SUPPLIED FROM ACCEPTABLE MANUFACTURERS. ENSURE PRODUCTS SUPPLIED FROM MANUFACTURERS OTHER THAN BASE SPECIFIED MANUFACTURERS ARE EQUIVALENT TO SPECIFIED PRODUCTS. CHANGES TO MANUFACTURERS OF PRODUCTS MAY BE PROPOSED TO CONSULTANT FOR ACCEPTANCE PRIOR TO CLOSING OF BIDS, LISTING IN EACH CASE CORRESPONDING CREDIT. CONSULTANT HAS SOLE DISCRETION IN ACCEPTING ANY PROPOSED SUBSTITUTION. INCLUDE IN BID PRICE ANY ADDITIONAL COSTS FOR CHANGES TO ASSOCIATED OR ADJACENT WORK RESULTING FROM PROVISION OF PRODUCTS SUPPLIED BY MANUFACTURER OTHER THAN BASE SPECIFIED MANUFACTURER. ANY PROPOSED CHANGES INITIATED BY CONTRACTOR AFTER AWARD OF CONTRACT MAY BE CONSIDERED BY THE CONSULTANT AT CONSULTANT'S DISCRETION, WITH COSTS FOR SUCH CHANGES IF APPROVED BY CONSULTANT, AND COSTS OF SUCH REVIEW BY THE CONSULTANT TO BE PAID FOR BY THE CONTRACTOR.

10. WARRANTY

10.1 WARRANT WORK TO BE IN STRICT ACCORDANCE WITH CONTRACT DOCUMENTS AND FREE FROM DEFECTS FOR 1 YEAR PERIOD FROM DATE OF WRITTEN ACCEPTANCE BY CONSULTANT. REPAIR AND/OR REPLACE ANY SUCH DEFECTS WHICH APPEAR IN WORK WITHIN WARRANTY PERIOD, ORDINARY WEAR AND TEAR AND WILFUL DAMAGE BY, OR CARELESSNESS OF OWNER'S STAFF OR AGENTS EXCEPTED, WITHOUT ADDITIONAL EXPENSE TO OWNER. WHERE SUCH DEFECTS OCCUR, BE RESPONSIBLE FOR COSTS INCURRED IN MAKING DEFECTIVE WORK GOOD, INCLUDES REPAIR OR REPLACEMENT OF BUILDING FINISHES, OTHER MATERIALS, OR DAMAGE TO OTHER EQUIPMENT CAUSED BY SUCH DEFECTS, OR BY SUBSEQUENT REPLACEMENT OR REPAIRS.

11. INTERRUPTIONS TO AND SHUT-DOWNS OF EXISTING SERVICES AND SYSTEMS

11.1 COORDINATE AND PERFORM SHUT-DOWNS AND INTERRUPTIONS TO EXISTING SYSTEMS AND SERVICES AT TIMES ACCEPTABLE TO OWNER. OBTAIN WRITTEN APPROVAL MINIMUM FIVE (5) DAYS IN ADVANCE OF SHUT-DOWN OR INTERRUPTION. INCLUDE FOR COSTS OF PREMIUM TIME TO PERFORM WORK DURING NIGHTS, WEEKENDS OR OTHER TIME OUTSIDE OF NORMAL WORKING HOURS, AS NECESSARY TO MAINTAIN SERVICES IN OPERATION OR WITH MINIMUM INTERRUPTIONS AND TO COMPLY WITH OWNER'S REQUIREMENTS. NOTE: WORK ASSOCIATED WITH SHUT-DOWNS AND INTERRUPTIONS WILL BE CARRIED OUT AS CONTINUOUS OPERATIONS TO MINIMIZE SHUT-DOWN TIME AND TO REINSTATE SYSTEMS AS SOON AS POSSIBLE, AND, PRIOR TO SHUT-DOWN, ENSURE MATERIALS AND LABOUR REQUIRED TO COMPLETE WORK FOR WHICH SHUT-DOWN IS REQUIRED ARE AVAILABLE AT SITE.

12. CUTTING, PATCHING AND CORE DRILLING

12.1 DO CUTTING, PATCHING AND CORE DRILLING OF EXISTING BUILDING REQUIRED FOR INSTALLATION OF WORK AFTER HOURS AND MUST BE CONFIRMED BY LANDLORD. PERFORM CUTTING IN NEAT AND TRUE FASHION, WITH PROPER TOOLS AND EQUIPMENT TO OWNER'S APPROVAL. PATCHING WILL EXACTLY MATCH EXISTING FINISHES AND BE PERFORMED BY TRADESMEN SKILLED IN PARTICULAR TRADE OR APPLICATION WORKED ON TO OWNER'S APPROVAL.

12.2 IN FIRE RATED CONSTRUCTION, PACK AND SEAL VOID BETWEEN OPENING AND CONDUIT FOR LENGTH OF OPENING WITH ASBESTOS-FREE ELASTOMERIC AND INTUMESCENT ULC LISTED AND LABELLED MATERIALS. INSTALL FIRESTOP AND SMOKE SEAL MATERIALS IN ACCORDANCE TO ULC CERTIFICATION AND MANUFACTURER'S REQUIREMENTS TO PROVIDE FIRESTOP RATINGS OF OPENINGS IN ACCORDANCE WITH GOVERNING BUILDING CODE REQUIREMENTS. SUBMIT WITH SHOP DRAWINGS, SPECIFIC ULC DESIGNATED NUMBER FOR EACH APPLICATION.

12.3 DO NOT CUT OR DRILL EXISTING WORK WITHOUT PRIOR OWNER'S APPROVAL. IN CONSULTATION WITH OWNER AND BY USE OF X-RAY (WITH OWNER'S APPROVAL), OR RADAR SCANNING, DETERMINE PRESENCE OF EXISTING SERVICES AND REINFORCING RODS CONCEALED BEHIND SURFACE TO BE CUT. ENSURE THAT AREAS OF BOTH SIDES OF THE SURFACE BEING CUT ARE PROTECTED FROM DEBRIS. NOTE: YOU WILL BE HELD RESPONSIBLE FOR DAMAGE DONE TO EXISTING BUILDING AND SERVICES CAUSED BY CUTTING OR DRILLING. IF X-RAYING IS NOT PERMITTED, USE NON-DESTRUCTIVE RADAR SCANNING OR CAREFULLY HAND CHIESEL TO EXPOSE RE-BAR AND BURIED SERVICES AND CHIESEL OUT REQUIRED OPENINGS.

12.4 X-RAY THE FLOOR SHALL ONLY BE PERMITTED AFTER HOURS (10:00PM), AND A MINIMUM 72 HOURS' WRITTEN NOTICE SHALL BE PROVIDED TO THE LANDLORD FOR APPROVAL.

13. DISCONNECTION, REMOVAL AND RELOCATION WORK

13.1 WHERE INDICATED ON DRAWINGS, AND DETERMINED BY SITE VISIT, DISCONNECT AND REMOVE ITEMS OF EXISTING OBSOLETE ELECTRICAL WORK AND RELOCATE DEVICES. WHERE FIXTURES, SWITCHES, RECEPTACLES AND OTHER DEVICES AND/OR EQUIPMENT IS REMOVED, DISCONNECT AT POINT OF ELECTRICAL SUPPLY, REMOVE OBSOLETE WIRING, AND MAKE SYSTEM SAFE. WHERE EXISTING OBSOLETE CONDUIT AND SIMILAR RACEWAY MATERIAL CANNOT BE REMOVED, CUT BACK AND CAP OBSOLETE CONDUITS OR RACEWAYS. REVISE PANELBOARD DIRECTORIES ACCORDINGLY, IF AFFECTED BY WORK.

13.2 UNLESS OTHERWISE NOTED, OBSOLETE MATERIALS WHICH ARE DISCONNECTED AND ARE NOT TO BE RELOCATED OR REUSED WILL BECOME YOUR PROPERTY. REMOVE FROM SITE AND DISPOSE. OBTAIN FROM OWNER, LIST OF EXISTING ITEMS TO BE CAREFULLY REMOVED AND TURNED OVER TO OWNER. SAID ITEMS WILL REMAIN PROPERTY OF OWNER.

13.3 PROVIDE JUNCTION BOXES, OUTLET BOXES, WIRING, PLATES, ETC., AS NECESSARY FOR COMPLETE RELOCATION OF DEVICES. CLEAN AND RELAMP RELOCATED LUMINAIRES. REPLACE FAULTY BALLASTS. WHEN RELOCATION WORK IS COMPLETE, CONFIRM RELOCATED DEVICES ARE IN PROPER WORKING ORDER. ALL RELOCATED OR TEMPORARY REMOVED DEVICES SHALL BE CLEANED AND VERFIED TO BE IN GOOD WORKING CONDITION PRIOR TO BEING REINSTALLED.

13.4 WHERE EXISTING SERVICES PASS THROUGH OR ARE IN AN AREA TO SERVE ITEMS WHICH ARE TO REMAIN, MAINTAIN SERVICES. INCLUDE FOR REROUTING EXISTING SERVICES CONCEALED BEHIND FINISHES AND WHICH BECOME EXPOSED DURING RENOVATION WORK, SO AS TO BE CONCEALED BEHIND FINISHES.

13.5 IN AREAS WHICH ARE NOT BEING ARCHITECTURALLY RENOVATED AND WHICH ELECTRICAL CONTRACTOR MUST RUN SERVICES THROUGH, BE RESPONSIBLE FOR REMOVAL AND REINSTALLATION OF ARCHITECTURAL CEILING TILES, MECHANICAL EQUIPMENT, SPRINKLERS, ETC., AS REQUIRED FOR INSTALLATION OF YOUR WORK. IF THE REQUIRED ELECTRICAL WORK IS REQUIRED TO ACCOMMODATE WORK OF OTHER TRADES, AND IF REMOVAL OF EXISTING CEILING TILES IS NOT THE RESPONSIBILITY OF OTHERS, BE RESPONSIBLE FOR ALL WORK TO GAIN ACCESS TO THOSE DEVICES THAT NEED TO BE WORKED ON. SECURELY SUPPORT ANY DEVICE/LUMINAIRE LEFT "DANGLING" DUE TO REMOVAL OF SUPPORTING MEANS. RE-INSTALL DEVICES AFTER INSPECTION OF WORK IS APPROVED BY CONSULTANT. PRIOR TO REMOVAL OF CEILING TILES OR OTHER DEVICES, INSPECT FOR DAMAGES/WORKING ORDER AND REPORT ANY DEFICIENCIES TO OWNER PRIOR TO START OF WORK. PATCH AND MAKE GOOD (INCLUDING PAINTING) SURFACES TO MATCH EXISTING.

13.6 ANY FIRE ALARM OR COMMUNICATION SYSTEM DEVICE THAT HAS BEEN WORKED ON OR RELOCATED, SHALL BE TESTED AND VERIFIED BY MANUFACTURER'S AUTHORIZED TECHNICIAN AFTER COMPLETION OF WORK. INCLUDE FOR ALL COSTS.

14. HAZARDOUS MATERIALS

14.1 IF AT ANY TIME DURING COURSE OF WORK ASBESTOS MATERIALS ARE ENCOUNTERED OR SUSPECTED, CEASE WORK IN AREA IN QUESTION AND IMMEDIATELY REPORT, IN ACCORDANCE WITH ONTARIO REGULATION 169/97 (SECTION 41) TO CONSULTANT. DO NOT RESUME WORK IN AFFECTED AREA WITHOUT APPROVAL FROM CONSULTANT.

15. RECORD DRAWINGS (AS-BUILTS)

15.1 DRAWINGS FOR THIS PROJECT HAVE BEEN PREPARED ON A CAD SYSTEM. THE SOFTWARE USED IS AUTOCAD RELEASE 2010. COPIES OF DRAWINGS ON DISKS FOR USE IN PREPARING AS-BUILTS, MAY BE PURCHASED FROM CONSULTANT AT A COST OF $25 CDN. PLUS GST PER DRAWING.

15.2 WHEN WORK BEGINS AT SITE, CLEARLY AND ACCURATELY MARK ON A BOUND SET OF WHITE PRINTS OF CONTRACT DRAWINGS, ON A DAILY BASIS, ALL CHANGES AND DEVIATIONS FROM ROUTING OF AND LOCATIONS OF EQUIPMENT SHOWN ON CONTRACT DRAWINGS, CHANGES AND DEVIATIONS INCLUDING THOSE MADE BY ADDENDA, CHANGE ORDERS, AND SITE INSTRUCTIONS, AND CHANGES AND DEVIATIONS INDICATED ON SUPPLEMENTAL DRAWINGS ISSUED WITH ADDENDA, CHANGE ORDERS, AND SITE INSTRUCTIONS. MAINTAIN "AS-BUILT" WHITE PRINTS AT SITE FOR PERIODIC INSPECTION BY CONSULTANT THROUGHOUT DURATION OF WORK. PAY PARTICULAR ATTENTION TO ACCURATELY DIMENSIONING LOCATION OF ALL CONCEALED SERVICES TERMINATED FOR FUTURE EXTENSION, ALL BURIED WORK AND SERVICES, AND WORK CONCEALED WITHIN BUILDING IN INACCESSIBLE LOCATIONS.

15.3 WHEN WORK ENDS AT SITE, UPDATE A COMPUTER FILE COPY OF CONTRACT DOCUMENT DRAWING SET SO THAT IT REFLECTS ALL DEVIATIONS FROM ORIGINAL CONTRACT DOCUMENT DRAWINGS, THUS FORMING A TRUE "AS-BUILT" DRAWING DISK SET. PROVIDE A SET OF REPRODUCIBLE MYLAR PRINTS OF CONTRACT DRAWINGS PRODUCED FROM TRUE "AS-BUILT" DRAWING SET. SUBMIT "AS-BUILT" DRAWING COMPACT DISKS WITH WHITE PRINTS AND CAD PRODUCED "AS-BUILT" MYLAR PRINTS TO CONSULTANT. ALL SUBMITTED DRAWINGS SHALL BE OF THE SAME QUALITY AS ORIGINAL CONTRACT DOCUMENT DRAWINGS.

15.4 UPDATE OWNER'S DISTRIBUTION RISER DIAGRAMS POSTED IN ELECTRICAL ROOMS.

16. SHOP DRAWINGS AND OPERATING/MAINTENANCE INSTRUCTION MANUALS

16.1 SUBMIT SHOP DRAWINGS AND OPERATING/MAINTENANCE INSTRUCTION MANUALS FOR FOLLOWING:

16.1.1 SPECIAL RECEPTACLES AND SWITCHES;

16.1.2 LUMINAIRES;

16.1.3 EXIT SIGN;

16.2 PROPERLY IDENTIFY SHOP DRAWINGS FOR REVIEW AND SHOW IN DETAIL EQUIPMENT AND MATERIALS. ENDORSE EACH DRAWING, INCLUDE COMPANY NAME AND SUBMITTAL DATE. PROVIDE MANUALS AS INDEXED, IDENTIFIED HARD COVER 3-RING BINDERS COMPLETE WITH:

16.2.1TITLE SHEET AND LIST OF CONTENTS;

16.2.2 A COPY OF EACH "REVIEWED" SHOP DRAWING;

16.2.3 EXPLANATIONS OF OPERATING PRINCIPLES AND SEQUENCES;

16.2.4 PART LISTS WITH NUMBERS;

16.2.5 RECOMMEND MAINTENANCE PRACTICES AND PRECAUTIONS;

16.2.6 COPIES OF INSPECTION CERTIFICATES ISSUED BY GOVERNING

16.2.7 WIRING AND CONNECTION DIAGRAMS;

16.2.8 COPIES OF ADDITIONAL AND REVISED PANELBOARD DIRECTORIES.

16.3 PROVIDE 2 SETS OF MANUALS. CONFIRM EXACT QUANTITY AND METHOD OF AUTHORITIES;

17. GENERAL CONDUIT AND CONDUCTOR INSTALLATION REQUIREMENTS

17.1 INSTALL CONDUIT AND CONDUCTORS CONCEALED TO DEGREE MADE POSSIBLE BY FINISHES AND PROVIDE INSTALLATIONS IN ACCORDANCE WITH CEC AND LOCAL GOVERNING AUTHORITIES. PLAN AND COORDINATE LOCATIONS AND ROUTING OF SERVICES, WITH TRADES PRIOR TO INSTALLATION. IN AREAS WHERE A MULTIPLICITY OF SERVICES OCCURS, PREPARE DETAIL DRAWINGS AND SUBMIT TO CONSULTANT FOR REVIEW PRIOR TO START OF AFFECTED WORK.

17.2 WHERE CONDUIT AND/OR CONDUCTORS ARE EXPOSED, ARRANGE SAME TO AVOID INTERFERENCE WITH OTHER WORK AND PARALLEL TO BUILDING LINES.WHERE HORIZONTAL CONDUITS AND/OR CONDUCTORS ARE EXPOSED, INSTALL AS HIGH AS POSSIBLE. DO NOT INSTALL CONDUIT AND/OR CONDUCTORS WITHIN 6" (150 mm) OF "HOT" PIPES OR EQUIPMENT UNLESS CONDUIT AND/OR CONDUCTORS ARE ASSOCIATED WITH EQUIPMENT. INDEPENDENTLY RUN CONDUIT AND CONDUCTORS MUST BE SUPPORTED FROM THE CEILING/WALL STRUCTURE, NOT FROM CEILING HANGERS, DUCTWORK, PIPING, CABLE TRAYS, ETC.

17.3 IDENTIFY CONDUIT RUNS. (I.E.: TAG BOTH ENDS OF CONDUIT RUNS).

17.4 AT NO EXTRA COST, ALLOW FOR FINAL RELOCATIONS OF DEVICES UP TO 10' (3M) TO SUIT FINAL COORDINATED DEVICE LOCATIONS, PRIOR TO INSTALLATION OF WALL COVERINGS.

17.5 GENERALLY, CONDUCTORS AND CONDUIT ARE SIZED ON DRAWINGS, BUT IN ABSENCE OF DIRECTION IN TYPE AND SIZING, TYPE AND SIZE REQUIRED QUANTITY IN ACCORDANCE WITH THE INTENDED APPLICATION, TO APPLICABLE OESC REQUIREMENTS. SIZES WHERE SHOWN, ARE MINIMUM SIZES AND SHALL NOT BE REDUCED UNLESS APPROVED BY CONSULTANT.

17.6 WHERE RECEPTACLE TYPE DEVICES ARE LOCATED IN EXISTING FLOORS AND/OR WHERE FEEDS ARE REQUIRED TO FURNITURE SYSTEMS IN OPEN SPACES, AND WHERE CHASING OF FLOOR SLAB TO RUN CONDUIT IS NOT ACCEPTABLE TO CONSULTANT, PROVIDE "POKE-THRU" ASSEMBLY INSTALLED THROUGH FLOOR AND FEED FROM CONDUIT RUNS PROVIDED IN CEILING SPACE OF FLOOR BELOW.

17.7 CONDUCTORS IN PLENUM SPACES AND IN RAISED FLOOR AREAS SHALL COMPLY WITH OBC AND OESC REQUIREMENTS WITH REGARDS TO FLAME AND SMOKE TEST.

18. CONDUIT

18.1 PROVIDE CONDUIT FOR CONDUCTORS. INTERIOR CONDUIT TO BE EMT (THINWALL) GALVANIZED, ELECTRICAL METALLIC TUBING TO CSA C22.2 NO. 83, COMPLETE WITH FACTORY MADE BENDS WHERE SITE BENDING IS NOT POSSIBLE, AND JOINTS AND TERMINATIONS MADE WITH SET SCREW TYPE CONNECTORS; FOR SHORT BRANCH CIRCUIT CONNECTORS TO MOTORIZED EQUIPMENT AND TRANSFORMERS (MINIMUM LENGTH 18" [450 mm], MAXIMUM LENGTH 24" [600 mm] WITH 180 DEGREE LOOP WHERE POSSIBLE) - GALVANIZED STEEL FLEXIBLE FLUID-TIGHT METALLIC CONDUIT TO CSA C22.2 NO. 56, COMPLETE WITH IDEAL "STEEL TOUGH" LIQUID TIGHT FLEXIBLE CONDUIT CONNECTORS AT TERMINATIONS. FOR EXTERIOR EXPOSED CONDUIT, AND FOR INTERIOR CONDUIT GREATER THAN 2" (50 mm) DIAMETER AND FOR SURFACE MOUNTED CONDUIT AT HEIGH LESS THAN 4' (1200 mm), PROVIDE RIGID GALVANIZED STEEL TO CSA C22.2 NO. 45 COMPLETE WITH FITTINGS, CONNECTORS AND RIGID COUPLINGS.

18.2 SUPPORT AND SECURE CONDUIT AT SPACING IN ACCORDANCE WITH CODE REQUIREMENTS BY MEANS OF GALVANIZED PIPE STRAPS, CONDUIT CLIPS, RING BOLT TYPE HANGERS, OR BY OTHER PROPER MANUFACTURED DEVICES. PROVIDE CONDUIT FITTINGS CONSTRUCTED OF SAME MATERIALS AS CONDUIT AND SUITABLE FOR APPLICATION. SQUARE AND PROPERLY REAM ENDS OF SITE CUT CONDUIT. GENERALLY, CONDUIT IS SIZED ON DRAWINGS. SIZE CONDUIT NOT SIZED ON DRAWINGS IN ACCORDANCE WITH CODE. BEND CONDUIT AT FULL CONDUIT DIAMETER WITH NO KINKING AND NO FLAKING OR CRACKING OF FINISHES.

19. CONDUCTORS

19.1 PROVIDE CONDUCTORS. REFER TO DRAWINGS FOR SIZING OF CONDUCTORS. GENERALLY, BRANCH CIRCUIT CONDUCTOR SIZES ARE INDICATED ON CONSULTANT'S DRAWINGS. SUCH SIZES ARE MINIMUM REQUIREMENTS AND MUST BE INCREASED, TO SUIT LENGTH OF RUN AND VOLTAGE DROP IN ACCORDANCE WITH SCHEDULE OBTAINED FROM CONSULTANT. CONDUCTORS NOT SIZED ON DRAWINGS SHALL BE SIZED IN ACCORDANCE WITH CODE. PROVIDE CABLE SUPPORT SYSTEM ACCESSORIES WHICH ARE NOT SPECIFIED HEREIN OR SHOWN ON DRAWINGS BUT ARE REQUIRED FOR PROPER INSTALLATION.

19.2 INTERIOR CONDUCTORS TO BE "RW90" SINGLE CONDUCTOR TO CSA C22.2 NO. 75, COLOUR CODED, 167 DEGREES F. (75 DEGREES C.) RATED, PVC INSULATED AND NYLON COVERED.

19.3 CONDUCTORS IN ACCESSIBLE SUSPENDED CEILING SPACES, IN STUD WALL CONSTRUCTION TO SUSPENDED CEILING SPACES (MAXIMUM 5' RUN PERMITTED) MAY BE "BX" TYPE, AC-90 FLEXIBLE ARMOURED CABLE WITH "RW-90" CONDUCTORS AND BARE COPPER GROUND CONDUCTOR TO CSA C22.2 NO. 51 (BULLETIN NO. 994). PROVIDE PROPER SQUEEZE TYPE CONNECTORS AND PLASTIC ANTI-SHORT BUSHINGS AT TERMINATIONS. SUPPORT "BX" IN CEILING SPACES AND IN STUD WALL CONSTRUCTIONWITH STEEL 2 HOLE CABLE STRAPS TO "CODE" REQUIREMENTS.

19.4 CONDUCTORS UP TO AND INCLUDING NO. 10 AWG SHALL BE SOLID. CONDUCTORS IN SIZES LARGER THAN NO. 10 AWG SHALL BE STRANDED. PROVIDE CONDUCTORS CONSTRUCTED OF 98% CONDUCTIVE COPPER AND APPROVED FOR 600V. DO NOT USE CONDUCTORS SMALLER THAN NO. 12 AWG UNLESS OTHERWISE NOTED.

19.5 19.5 PROVIDE IDI ELECTRIC "IDEAL" NO. 451, NO. 452 AND NO. 453 "WING-NUT" CSA CERTIFIED 600V RATED PRESSURE TYPE CONNECTORS.

19.6 19.6 COLOUR CODE CONDUCTORS IN ACCORDANCE WITH CODE, THROUGHOUT TO IDENTIFY PHASES, NEUTRALS AND GROUND BY MEANS OF SELF-LAMINATING COLOURED TAPE, COLOURED CONDUCTOR INSULATION, OR PROPERLY SECURED COLOURED PLASTIC DISCS.

19.7 WHEN PULLING WIRES INTO CONDUIT, USE IDI ELECTRIC "IDEAL YELLOW 77" LUBRICANT. ENSURE WIRES ARE KEPT STRAIGHT AND ARE NOT TWISTED OR ABRAISED.

19.8 WIRING FOR EMERGENCY LIGHTING SHALL BE FIRE RATED.

20. OUTLET BOXES, PULLBOXES AND JUNCTION BOXES

20.1 PROVIDE CSA APPROVED STAMPED GALVANIZED STEEL OUTLET BOX FOR EACH LUMINAIRE, FIRE ALARM DEVICE, ETC. REFER TO DRAWINGS FOR LOCATIONS OF OUTLETS. CONFIRM EXACT LOCATIONS PRIOR TO ROUGHING-IN. BOXES FOR RIGID STEEL CONDUITS SHALL BE CAST FS/FD TYPES.

20.2 PROVIDE PULLBOXES AND JUNCTION BOXES WHEREVER NECESSARY TO FACILITATE CONDUCTOR/CONDUIT INSTALLATIONS. GENERALLY, PROVIDE CONDUIT RUNS EXCEEDING 100' (30 m) IN LENGTH, OR WITH MORE THAN 3, 90 DEGREE BENDS WITH PULLBOX INSTALLED AT CONVENIENT AND SUITABLE INTERMEDIATE ACCESSIBLE LOCATION. PROVIDE JUNCTION BOXES AND PULLBOXES SIZED IN ACCORDANCE WITH CODE TO SUIT NUMBER AND SIZE OF CONDUITS AND CONDUCTORS. BOXES TO BE GALVANIZED OR PRIME COATED PLATE STEEL COMPLETE WITH SCREW-ON OR HINGED COVERS AND KNOCKOUTS. BOXES MUST BE ACCESSIBLE AFTER WORK IS COMPLETE.

20.3 SIZE, ARRANGEMENT AND TYPE OF BOXES MUST BE SUITABLE FOR APPLICATION. PROVIDE BLANK COVERPLATES ON EXISTING OBSOLETE BOXES WHICH ARE TO REMAIN. CLEARLY IDENTIFY MAIN PULL OR JUNCTION BOXES BY SPRAY PAINTING COVERS IN ACCORDANCE TO BASE BUILDING STANDARDS AND SHALL BE CONFIRMED ON SITE.

20.4 WHERE REQUIRED, SUPPLY ACCESS DOORS OF MINIMUM NO. 12 GAUGE. PRIME COATED STEEL COMPLETE WITH HINGES AND FRAMES TO GIVE ACCESS TO BOXES AND CONDUCTOR JOINTS AND OTHER SIMILAR ELECTRICAL WORK WHICH MAY NEED MAINTENANCE OR REPAIR, BUT WHICH IS CONCEALED IN INACCESSIBLE CONSTRUCTION. CONFIRM FINISHES WITH OWNER.

21. RECEPTACLES, SWITCHES AND FACEPLATES

21.1 FOR GENERAL AREAS: PROVIDE HUBBELL CANADA HBL1221 CSA APPROVED, HEAVY DUTY, SPECIFICATION GRADE, AC QUIET ACTION TOGGLE TYPE, 20A, 120-277V SWITCHES AND HBL5262, HEAVY DUTY, SPECIFICATION GRADE PREMIUM QUALITY DUPLEX NYLON CONSTRUCTION U-GROUND, 15A-125V, 3W RECEPTACLES. DEVICES SHALL BE BACK AND SIDE WIRED. PROVIDE IMPACT RESISTANT THERMOPLASTIC FACEPLATES WITH MATCHING SCREWS. CONFIRM TYPE AND FINISH OF DEVICES WITH OWNER PRIOR TO ORDERING.

21.2 FOR PUBLIC SPACES OR OTHER AREAS WHERE DESIGNER DEVICES ARE REQUIRED: PROVIDE HUBBELL CANADA CSA APPROVED, "STYLE LINE" SPECIFICATION GRADE, ROCKER TYPE, 20A, 120-277V DECORATIVE TYPE SWITCHES AND "STYLE LINE" SPECIFICATION GRADE DUPLEX NYLON CONSTRUCTION U-GROUND, 15A-125V, 3W DECORATIVE RECEPTACLES. DEVICES SHALL BE BACK AND SIDE WIRED. PROVIDE IMPACT RESISTANT THERMOPLASTIC FACEPLATES WITH MATCHING SCREWS. CONFIRM TYPE AND FINISH OF DEVICES WITH OWNER PRIOR TO ORDERING. POLE, 3W, ORANGE COLOURED, SPECIFICATION GRADE ISOLATED GROUND DUPLEX

21.3 WHERE SHOWN, PROVIDE HUBBELL NO. IG.5262, 15A-125V, ULC LISTED, 2 RECEPTACLE COMPLETE WITH STAINLESS STEEL FACEPLATE AND MATCHING SCREWS.

21.4 WHERE SHOWN, PROVIDE HUBBELL NO. GF.5252, 15A-125V, ULC LISTED, CLASS A, GROUP ONE, 2-POLE, 3W, IVORY COLOURED, SPECIFICATION GRADE, GROUND FAULT INTERRUPTER DUPLEX RECEPTACLE, COMPLETE WITH STAINLESS STEEL FACEPLATES AND MATCHING SCREWS.

21.5 IDENTIFY CIRCUIT NUMBERS ON RECEPTACLE DESIGNATED LABELLING SPACES. PROVIDE PERMANENTLY LABELLED, SELF ADHESIVE, IDENTIFICATION TAPE ON OUTSIDE OF EACH DEVICE OUTLET, IDENTIFYING LOCATION FROM WHERE EACH DEVICE IS FED.

22. FASTENING AND SECURING HARDWARE

22.1 PROVIDE PROPER FASTENERS AND SIMILAR HARDWARE REQUIRED FOR CONDUIT, CONDUCTORS, AND FOR EQUIPMENT HANGER AND/OR SUPPORT MATERIAL UNLESS OTHERWISE NOTED. EXPLOSIVE POWDER ACTUATED FASTENERS WILL NOT BE PERMITTED UNLESS SPECIFIC WRITTEN APPROVAL FOR THEIR USE AND TYPE HAS BEEN OBTAINED FROM CONSULTANT. UNDER NO CIRCUMSTANCES USE CEILING SUSPENSION HANGERS OR GRIDS FOR SUSPENSION OF CONDUIT AND CONDUCTORS.

23. IDENTIFICATION NAMEPLATES

23.1 FOR EACH PIECE OF ELECTRICAL DISTRIBUTION EQUIPMENT FROM ELECTRICALSOURCE OF SUPPLY UP TO AND INCLUDING PANELBOARDS, PROVIDE ENGRAVED LAMACOID IDENTIFICATION NAMEPLATES SECURED TO APPARATUS WITH STAINLESS STEEL SCREWS, WORDING TO INDICATE SOURCE OF ELECTRICAL SUPPLY AND SIZED TO SUIT EQUIPMENT FOR WHICH IT IS PROVIDED. CONFIRM EXACT NAMEPLATE WORDING, DESIGNATIONS, AND SIZES WITH OWNER PRIOR TO MANUFACTURE. LEMACOID NAMEPLATES TO MATCH BASE BUILDING STANDARDS FOR SIZE.

24. DISTRIBUTION TRANSFORMERS

24.1 HAMMOND POWER SOLUTIONS, DRY TYPE TRANSFORMERS AS PER DRAWING SCHEDULE, CSA APPROVED AND/OR ULC LISTED AND LABELLED, CONSTRUCTED AND FACTORY TESTED IN ACCORDANCE WITH LATEST REQUIREMENTS OF FOLLOWING:

24.1.1 CSA STANDARD C9;

24.1.2 CAN/CSA C22.2 NO. 47;

24.1.3 CAN/CSA-C802.2

24.1.4 UL 1561;

24.1.5 NEMA TP1;

24.1.6 LOCAL GOVERNING AUTHORITY CODES AND STANDARDS.

24..2 Dry type transformers to be complete with:

24.2.1 MINIMUM NEMA 3R ENCLOSURE WITH A RIGID END FRAME, REMOVABLE PLATES, A TERMINAL COMPARTMENT; VENTILATION LOUVRES DESIGNED TO PREVENT PENETRATION OF WATER SPRAY FROM ACTIVATED SPRINKLERS ONTO LIVE PARTS, AND GASKETTED DOORS AND COMPONENT OPENINGS;

24.2.2 CLASS "H", 220°C CLASS, SILICONE TYPE COIL INSULATION, SUCH THAT WINDING TEMPERATURE RISE TO NOT EXCEED 150C'(270F') AND ENCLOSURE TEMPERATURE RISE NOT EXCEED 65C'(117F') UNDER FULL LOAD IN A 40'C (104F') AMBIENT TEMPERATURE;

24.2.3 TOP MOUNTED FACTORY PAINTED DRIP SHIELD;

24.

DIV 28 SECURITY SPECIFICATIONS CONTINUATION

153. ACCESS CONTROL SYSTEM

154. THE ACCESS CONTROL SYSTEM SHALL BE AS DESCRIBED IN THIS SPECIFICATION AND ILLUSTRATED ON THE DRAWINGS.

155. N/A.

156. THE SYSTEM SHALL HAVE ON THE FOLLOWING FUNCTIONS:

157. REGULATE AND MONITOR ACCESS AT SYSTEM CONTROLLED DOORS.

158. MONITOR CONNECTED DETECTORS (SUPERVISED AND AUXILIARY INPUTS) WITH THE ABILITY TO MANUALLY OR AUTOMATICALLY ARM AND DISARM THEM.

159. CONTROL EVENT INITIATED DEVICES CONNECTED TO SYSTEM OUTPUTS, SUCH AS ALARMS OR VIDEO RECORDERS, WITH THE ABILITY TO AUTOMATICALLY OR MANUALLY ARM OR DISARM THEM.

160. REPORT AN ALARM CONDITION.

161. ESTABLISH A HIERARCHY OF ALARM TYPES TO PRIORITIZE HANDLING ALARM CONDITIONS.

162. MAINTAIN A COMPREHENSIVE DATABASE RECORDING ALL SITE ACTIVITY.

163. PROVIDE ALL ACCESS CONTROL SYSTEM CONTROL PANELS AND ASSOCIATED EQUIPMENT, POWER SUPPLY, CABLING, CONNECTORS, ENCLOSURES, AND ALL OTHER HARDWARE AND SOFTWARE TO PROVIDE A FULLY OPERATIONAL SYSTEM.

164. THE ACCESS CONTROL SYSTEM SHALL BE CCURE 9000 ENTERPRISE, HARTMANN CONTROL, KANTECH ENTRAPASS CORPORATE, KEYSCAN AURORA MODIFY AND OR LIST APPROVED ACCESS SYSTEM SOFTWARE

165. ALL COMPONENTS SHALL BE GOOD QUALITY COMMERCIAL GRADE.

166. CONTROLLER: LIST APPROVED DOOR AND INPUT/OUTPUT CONTROLLERS. COMPLETE WITH POWER SUPPLY.

167. CREDENTIAL READER: HID RP40, RP10 (FOR MULLION) AND RPK40.

168. CREDENTIALS: PROVIDE 100 HID iCLASS® FOBS OR APPROVED EQUIVALENT FOR OWNERS USE.

169. MOTION REQUEST TO EXIT DEVICE: KANTECH T.REX–XL2–NL.

170. DOOR CONTACTS: FLUSH MOUNTED FOR STEEL AND WOOD DOORS SENTROL 1078.

171. PROVIDE CONTROLLER ENCLOSURES FOR ALL CONTROLLERS. ALL CONTROLLER ENCLOSURES SHALL BE A SINGLE KEY LOCKING METAL BOX. EQUIPPED WITH DOOR TAMPER SWITCH.

172. POWER SUPPLY: PROVIDE ALL POWER SUPPLIES AS REQUIRED TO FACILITATE COMPLETE TURNKEY SYSTEMS. POWER SUPPLIES SHALL INCLUDE UNINTERRUPTIBLE POWER SUPPLY BATTERY BACKUP TO SUSTAIN OPERATIONS OF ALL SYSTEMS AND RELATED DEVICES FOR MINIMUM 20 MINUTES AFTER POWER FAIL.

173. VIDEO SURVEILLANCE SYSTEM

174. THE NETWORK VIDEO MANAGEMENT SYSTEMS (NVMS) SYSTEM, CAMERAS AND ACCESSORIES SHALL PROVIDE REAL TIME SURVEILLANCE, RECORDING OF REAL TIME EVENTS AND HISTORICAL VIDEO DATA FOR VIDEO EVIDENCE OF A SECURITY EVENT; AND PROVIDE A DETERRENT THROUGHOUT THE FACILITY AND THE SITE AT DESIGNATED LOCATIONS AS REQUIRED IN THE CONTRACT DOCUMENT.

175. PROVIDE ALL SECURITY VIDEO CAMERAS, PAN/TILT/ZOOM (PTZ) CAMERAS, MOUNTS, HOUSINGS, POWER SUPPLY SYSTEMS, NETWORK CABLES, CONNECTORS, EQUIPMENT RACKS, MONITORS AND CONSOLES, COMPUTER CONTROLLED NETWORK SWITCHERS, WORKSTATIONS, NETWORK VIDEO RECORDERS, ENCODERS, DECODERS, DISPLAYS, AND ALL OTHER HARDWARE AND SOFTWARE TO PROVIDE A FULLY OPERATIONAL NVMS SYSTEM.

176. THE VIDEO SURVEILLANCE SYSTEM SERVER AND NETWORK VIDEO RECORDERS SHALL BE SIZED, EQUIPPED TO RECORD ALL VIDEO STREAMS FROM ALL VIDEO SURVEILLANCE CAMERAS AT MINIMUM 15 FRAMES PER SECOND AT 1080P RESOLUTION FOR 30 DAYS.

177. NETWORK VIDEO RECORDER: TRENDNET TV–NVR104 COMPLETE WITH 8 TERABYTE HARD DRIVE OR APPROVED EQUAL.

178. PROVIDE 1 VIDEO SURVEILLANCE SYSTEM CLIENT SOFTWARE AND LICENCE. COORDINATE WITH THE OWNER'S IT REPRESENTATIVE AND INSTALL THE CLIENT SOFTWARE AND LICENCE ON AN OWNER PROVIDED COMPUTER THAT IS CONNECTED TO THE CORPORATE DATA NETWORK. CONFIGURE THE CLIENT SOFTWARE TO VIEW VIDEO STREAMS FROM ALL VIDEO SURVEILLANCE SYSTEM CAMERAS AND VIEW RECORDED VIDEO STREAMS FROM THE NETWORK VIDEO RECORDER.

153. THAT IS CONNECTED TO THE CORPORATE DATA NETWORK. CONFIGURE THE CLIENT SOFTWARE TO VIEW VIDEO STREAMS FROM ALL VIDEO SURVEILLANCE SYSTEM CAMERAS AND VIEW RECORDED VIDEO STREAMS FROM THE NETWORK VIDEO RECORDER.

154. VSS CAMERA TYPE F1 – INDOOR FIXED CAMERA: AXIS 3MP DOME CAMERA OR APPROVED EQUAL.

155. 155. VSS CAMERA TYPE F2 – OUTDOOR FIXED CAMERA: AXIS 5MP DOME CAMERA OR APPROVED EQUAL.

5. SECURITY SYSTEMS INTEGRATION

   a. THE ACCESS CONTROL AND INTERCOM SYSTEM SHALL BE INTEGRATED TO PROVIDE INTEGRATED FUNCTIONS AS DESCRIBED IN THIS SPECIFICATIONS DOCUMENT AND ON CONTRACT DRAWINGS.

   b. ALL MASTER INTERCOM STATIONS SHALL BE INTEGRATED WITH ACCESS CONTROL SYSTEM TO FACILITATE ABILITY TO RELEASE MAIN DOOR VESTIBULE DOOR BY PRESSING INTEGRATED DOOR RELEASE BUTTON ON EACH MASTER INTERCOM.

   c. ALL HARDWARE, CLIENT AND OR SEVER SOFTWARE; SOFTWARE LICENSES SHALL BE PROVIDED AND INSTALLED AND CONFIGURED ON ALL DEVICES TO PROVIDE INTEGRATED FUNCTIONS.

   d. DATA SWITCH: 24–PORT, POE, 10/100/1000BASE–T GIGABIT, STACKABLE MANAGED SWITCH WITH 10GB SFP+ UPLINKS, POE POWER BUDGET TO POWER ALL CONNECTED DEVICES.

   e. CENTRAL MONITORING STATION: DELL OPTIPLEX 5060 SFF PC – 8TH GEN INTEL CORE I7–8700 3.2GHZ, 8GB DDR4, 500GB HDD, UHD GRAPHICS 630, DVDRW, 1X USB–C, GIGE, WIN 10 PRO 64–BIT – MOD9T, COMPLETE WITH DUAL 21" LED MONITORS, KEYBOARD AND MOUSE.

   f. KEYBOARD VIDEO MOUSE (KVM) SWITCH: TRIPLITE NETDIRECTOR 8–PORT 1U RACK–MOUNT CONSOLE HDMI KVM SWITCH WITH 17 IN. LCD AND IP REMOTE ACCESS, DUAL RAIL

6. EXECUTION:

1. ALL EQUIPMENT SHALL BE INSTALLED AND CONFIGURED IN ACCORDANCE WITH DEVICE AND SYSTEM MANUFACTURER'S INSTALLATION INSTRUCTIONS AND RECOMMENDATIONS, AS PER THE OWNERS' REQUIREMENTS AND AS PER CONTRACT DRAWINGS AND SPECIFICATIONS.
2. COORDINATE THE EXACT MOUNT LOCATION OF ALL EQUIPMENT WITH THE ELECTRICAL CONTRACTOR TO ENSURE THAT ALL CONDUITS AND BACK BOXES ARE INSTALLED IN THE OPTIMAL LOCATIONS.
3. COORDINATE EXACT MOUNTING LOCATIONS OF ALL EQUIPMENT ON SITE WITH SECURITY ENGINEER'S REPRESENTATIVE AND OWNER.
4. SUPPLY AND INSTALL ALL EQUIPMENT WHERE INDICATED ON CONTRACT DRAWINGS AND DOCUMENTS AND AS REQUIRED FOR COMPLETE AND OPERATIONAL SYSTEMS.
5. ALL EQUIPMENT SHALL BE INTER–COMPATIBLE.
6. BUNDLE AND TIE WIRE AND CABLE WITH CABLE TIES.
7. SEPARATE HIGH VOLTAGE (120 VAC AND ABOVE) CABLES FROM LOW VOLTAGE CABLES WITHIN ENCLOSURES.
8. RUN WIRE AND CABLE CONTINUOUS FROM DEVICE LOCATION TO THE FINAL POINT OF TERMINATION. NO MID–RUN CABLE SPLICES WILL BE ALLOWED.
9. NEATLY ROUTE CABLES PARALLEL OR PERPENDICULAR TO BUILDING LINES.
10. PROVIDE J HOOKS AND OTHER CABLE SUPPORT SYSTEMS (SPACED AT REGULAR INTERVALS) WITHIN ACCESSIBLE CEILING SPACES. FASTEN CABLES TO THE CABLE SUPPORT SYSTEMS AND PROVIDE STRAIN RELIEF TO PROTECT CABLES AND ENSURE COMPLIANCE WITH REQUIRED CABLE BENDS.
11. SUBMIT SHOP DRAWINGS OF ALL EQUIPMENT TO THE SECURITY ENGINEER'S REPRESENTATIVE FOR APPROVAL PRIOR TO PROCUREMENT AND INSTALLATION.
12. SUPPLY AND INSTALL POWER SUPPLIES AS REQUIRED FOR FULLY FUNCTIONAL SYSTEMS. POWER SUPPLIES SHALL INCLUDE BUT NOT LIMITED TO ALL CONTROLLER POWER SUPPLIES, ALL PERIPHERAL DEVICE POWER SUPPLIES. ALL POWER SUPPLIES SHALL BE INSTALLED TO MANUFACTURES RECOMMENDATIONS AND AS REQUIRED TO FURNISH FULLY FUNCTIONAL SYSTEMS.
13. THE SYSTEMS SHALL HAVE A MINIMUM OF CONTROL PRIMARY POWER AND BACKUP BATTERY. THE BATTERY SHALL BE ABLE TO SUPPORT THE SYSTEM AND DEVICES FOR 24 HOURS CONTINUOUS OPERATION. THE BATTERY INPUT, AUXILIARY, AND ALARM OUTPUTS SHALL BE PROTECTED USING PTC CIRCUIT BREAKERS. ALL OUTPUTS SHALL BE POWER LIMITED.
14. ALLOW FOR NEEDS ASSESSMENT SESSIONS WITH THE OWNER AND DETERMINE THE EXACT OWNER REQUIRED MODES OF OPERATION OF EACH DEVICE AND SYSTEM. CONFIGURE EACH CONFIGURE DEVICE AND SYSTEM TO SUIT THE OWNERS' REQUIREMENTS.
15. ALL EQUIPMENT SHALL BE INSTALLED WITH SUFFICIENT CLEARANCE TO MEET ALL APPLICABLE CODES AND FACILITATE OBSERVATION AND TESTING. ALL EQUIPMENT SHALL BE SECURELY FASTENED WITH APPROPRIATE FITTINGS TO ENSURE POSITIVE GROUNDING AND BE FREE OF GROUND LOOPS.
16. PROVIDE AND INSTALL ALL SOFTWARE AND SOFTWARE LICENSES, HOUSINGS, MOUNTING BRACKETS AND ACCESSORIES FOR COMPLETE OPERATION OF ALL SYSTEMS.
17. COORDINATE THE EXACT MOUNT LOCATION OF DEVICES WITH THE ELECTRICAL CONTRACTOR TO ENSURE THAT ALL CONDUITS AND BACK BOXES ARE INSTALLED IN THE OPTIMAL LOCATIONS.
18. WARRANTY
    a. PROVIDE WARRANTY FOR THE COMPLETED WORK TO BE FREE OF DEFECTS IN WORKMANSHIP AND MATERIALS FOR A PERIOD OF TWO YEARS FROM THE DATE OF SYSTEM ACCEPTANCE.
    b. IF THE WORKMANSHIP OR MATERIALS IS FOUND TO BE DEFECTIVE OR NOT IN ACCORDANCE WITH THE CONTRACT DOCUMENTS DURING THE WARRANTY PERIOD, THE CONTRACTOR SHALL CORRECT IT PROMPTLY WITH FACTORY CERTIFIED TECHNICIANS AT NO COST TO THE OWNER. ALL LABOUR AND MATERIALS SHALL BE PROVIDED BY THE CONTRACTOR.

CLIENT

MUNICIPALITY OF CASSELMAN

PROJECT NORTH

6	ISSUED FOR ADD-#E1	2025-04-14
5	ISSUED FOR TENDER	2025-03-24
4	ISSUED FOR PERMIT	2025-03-18
3	ISSUED FOR REVISED 99% REVIEW	2025-02-19
2	ISSUED FOR 99% COORDINATION	2023-06-13
1	ISSUED FOR 66% COORDINATION	2023-05-12
ISSUE	DESCRIPTION	DATE

IT IS THE RESPONSIBILITY OF THE APPROPRIATE CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON SITE AND PROMPTLY REPORT ALL ERRORS AND/OR OMISSIONS TO THE CONSULTANT BEFORE WORK COMMENCES.

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PROJECT

1 INDUSTRIEL STREET
OFFICE FIT-UP

DRAWING

ELECTRICAL
SPECIFICATIONS 4 OF 4

PROJECT No: MRK-23002008-A0	REVISION:
DRAWN: KL	DATE: MAY 2023
APPROVED: DL	SCALE: AS SHOWN

DRAWING No:

E-12

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E-mail: ottawa@exp.com,
Web Site: www.exp.com

Mechanical
Addendum No. M1

Reference: Tender Addendum M1 Issue Date: April 14, 2025

Project: 1 Industriel Street Office Fit-up, Casselman, ON.

This addendum shall form an integral part of the Bid Documents for the above project and shall be read in conjunction therewith. This addendum shall, however, take precedence over all requirements of the previously issued Drawings and Specifications with which it may prove to be at variance, unless otherwise clarified by the Consultant.

This addendum must be signed by the Bidder in the appropriate space and must be attached to the back of the Bid Form for submission at the time of bidding. Bids not including this addendum signed as requested may be rejected as informal.

Revisions / Clarifications

The following changes and clarifications shall be considered when submitting your bid.

1. MECHANICAL DRAWINGS

1.1. DRAWING M-1 – MECHANICAL NOTES AND LEGENDS

1.1.1. Drawings list has been updated.

1.2. DRAWING M-6 – MECHANICAL GROUND FLOOR PLUMBING PLAN

1.2.1. New sheet for ground floor plumbing plan has been added.

---------- END OF MECHANICAL ADDENDUM No. M1 ----------

PLUMBING PIPING LEGEND

—DCW—	DOMESTIC COLD WATER	—IW—	INDUSTRIAL WASTE ABOVE FLOOR OR GROUND
— CA —	COMPRESSED AIR		
— CAI —	COMPRESSED AIR INTAKE	—IW—	INDUSTRIAL WASTE BELOW FLOOR OR GROUND
—CWW	CLEAR WATER WASTE ABOVE FLOOR OR GROUND	—KW—	KITCHEN WASTE ABOVE FLOOR/GROUND
—CWW—	CLEAR WATER WASTE BELOW FLOOR OR GROUND	—KW—	KITCHEN WASTE BELOW FLOOR/GROUND
— CWV—	CLEAR WATER WASTE VENT	—G—	NATURAL GAS
— DI —	DEIONIZED WATER SUPPLY	— HG —	NATURAL GAS – HIGH PRESSURE
— DIR —	DEIONIZED WATER RETURN	— MG —	NATURAL GAS – MEDIUM PRESSURE
—GW—	GRAY WATER ABOVE FLOOR OR GROUND	— PD —	PUMP DISHARGE
—GW—	GRAY WATER BELOW FLOOR OR GROUND	— RW —	RECLAIMED WATER
—DHW—	DOMESTIC HOT WATER	— RO —	REVERSE OSMOSIS WATER
—HW140—	HOT WATER (140°F)	—ROR—	REVERSE OSMOSIS WATER RETURN
—HWR140—	HOT WATER RETURN (140°F)	—SAN—	SANITARY SEWER ABOVE FLOOR/GROUND
—HW160—	HOT WATER (160°F)	—SAN—	SANITARY SEWER BELOW FLOOR/GROUND
—HWR160—	HOT WATER RETURN (160°F)	— —V— —	SANITARY SEWER VENT
—DHWR—	DOMESTIC HOT WATER RETURN	— SD —	STORM DRAIN ABOVE FLOOR/GROUND
—SCW—	SOFT COLD WATER	— SD —	STORM DRAIN BELOW FLOOR/GROUND
—SHW—	SOFT HOT WATER	—SSD—	SECONDARY STORM DRAIN ABOVE FLOOR OR GROUND
—SHWR—	SOFT HOT WATER RETURN		
—FOR—	FUEL OIL RETURN	—SSD—	SECONDARY STORM DRAIN BELOW FLOOR OR GROUND
— FO —	FUEL OIL SUPPLY		
— ICW —	INDUSTRIAL NONPOTABLE COLD WATER	—SUB—	SUBSURFACE STORM DRAIN
— IHW —	INDUSTRIAL NONPOTABLE HOT WATER	— TP —	TRAP PRIMER
—IHWR—	INDUSTRIAL NONPOTABLE HOT WATER RETURN	— TW —	TEMPERED WATER
		—TWR—	TEMPERED WATER RETURN
—ISCW—	INDUSTRIAL NONPOTABLE SOFT COLD WATER	—VAC—	VACUUM
		—VEX—	VACUUM EXHAUST
—ISHW—	INDUSTRIAL NONPOTABLE SOFT HOT WATER	— WO —	WASTE OIL
		— —WOV— —	WASTE OIL VENT
—ISHWR—	INDUSTRIAL NONPOTABLE SOFT HOT WATER RETURN		DEMOLITION PIPING
			DEMOLITION EQUIPMENT
— —IV— —	INDUSTRIAL VENT		

GENERAL ABBREVIATIONS

°F	DEGREES FAHRENHEIT	MFR	MANUFACTURER
°C	DEGREES CELSIUS	MIN	MINIMUM
ø	DIAMETER	MTD	MOUNTED
AD	ACCESS DOOR	N/A	NOT APPLICABLE
ADJ	ADJUSTABLE	NC	NORMALLY CLOSED OR NOISE CRITERIA
AFF	ABOVE FINISHED FLOOR	NIC	NOT IN CONTRACT
AFG	ABOVE FINISHED GRADE	NO	NORMALLY OPEN OR NUMBER
BFF	BELOW FINISHED FLOOR	NOM	NOMINAL
BHP	BRAKE HORSEPOWER	NTS	NOT TO SCALE
BOD	BOTTOM OF DUCT	OB	OCTAVE BAND
BMS	BUILDING MANAGEMENT CONTROL SYSTEM	OC	ON CENTER
BOP	BOTTOM OF PIPE	OD	OUTSIDE DIAMETER
BTU	BRITISH THERMAL UNIT	OV	OUTLET VELOCITY
BTUH	BRITISH THERMAL UNIT PER HOUR	PD	PRESSURE DROP
CLG	CEILING	PH	PHASE
COL	COLUMN	POC	POINT OF CONNECTION
CUF	CUBIC FEET	POD	POINT OF DEMARCATION
DB	DRY BULB TEMPERATURE	POS	POSITION OR POSITIVE
DN	DOWN	PSIG	POUNDS PER SQUARE INCH GAUGE
DP	DIFFERENTIAL PRESSURE	QTY	QUANTITY
DWG	DRAWING	RC	ROOM CRITERIA (NOISE)
EA	EACH	RET	RETURN
EFF	EFFICIENCY	REQD	REQUIRED
ELEV	ELEVATION	RH	RELATIVE HUMIDITY
ENT	ENTERING	RM	ROOM
EQUIP	EQUIPMENT	RPM	REVOLUTIONS PER MINUTE
EXH	EXHAUST	SCH	SCHEDULE
EXP	EXPANSION	SHT	SHEET
(E)	EXISTING	SPEC	SPECIFICATION
EXTRM	EXISTING TO BE REMOVED	SQ	SQUARE
ETR	EXISTING TO REMAIN	SQFT	SQUARE FEET
FA	FIRE ALARM	STD	STANDARD
FD	FLOOR DRAIN	SUP	SUPPLY
FLR	FLOOR	TEMP	TEMPERATURE
FPM	FEET PER MINUTE	TO	TRANSFER OPENING
FT	FEET	TOD	TOP OF DUCT
FT/SEC	FEET PER SECOND	TON	TONS OF REFRIGERATION
GA	GAUGE	TOP	TOP OF PIPE
GAL	GALLONS	TYP	TYPICAL
GPH	GALLONS PER HOUR	UNO	UNLESS NOTED OTHERWISE
GPM	GALLONS PER MINUTE	UTR	UP THROUGH ROOF
HP	HORSEPOWER	V	VENT
HR	HOUR	VAV	VARIABLE AIR VOLUME
HZ	HERTZ	VEL	VELOCITY
ID	INSIDE DIAMETER	VFD	VARIABLE FREQUENCY DRIVE
IN	INCHES	VOL	VOLUME
KW	KILOWATT	VTR	VENT THROUGH ROOF
LB	POUND	W	WIDTH
LF	LINEAR FEET	W/	WITH
LVG	LEAVING	W/O	WITHOUT
MAX	MAXIMUM	WB	WET BULB TEMPERATURE
MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR	WF	WIDE FLANGE
		WG	WATER GAUGE
MEZZ	MEZZANINE	WT	WEIGHT

AIR SYSTEM LEGEND

	RECTANGULAR SUPPLY/ OUTSIDE AIR DUCT UP	CFM	SPACE PRESSURIZATION ARROW
	RECTANGULAR SUPPLY/ OUTSIDE AIR DUCT DOWN	DL/ UC	DOOR LOUVER / UNDERCUT DOOR
	RECTANGULAR RETURN/ RELIEF AIR DUCT UP		SUPPLY AIRFLOW ARROW
	RECTANGULAR RETURN/ RELIEF AIR DUCT DOWN		RETURN OR EXHAUST AIRFLOW ARROW
	RECTANGULAR EXHAUST AIR DUCT UP		AIR VOLUME TRAVERSE STATION
	RECTANGULAR EXHAUST AIR DUCT DOWN		CEILING DIFFUSER (SUPPLY)
	ROUND SUPPLY/ OUTSIDE AIR DUCT UP		RETURN AIR GRILLE OR REGISTER
	ROUND SUPPLY/ OUTSIDE AIR DUCT DOWN		EXHAUST AIR GRILLE OR REGISTER
	ROUND RETURN/ RELIEF AIR DUCT UP		LIGHT TROFFER DIFFUSER
	ROUND RETURN/ RELIEF AIR DUCT DOWN		
	ROUND EXHAUST AIR DUCT UP		DIFFUSER WITH FLOW DIRECTION. NO FLOW ARROWS INDICATES STANDARD 4-WAY PATTERN.
	ROUND EXHAUST AIR DUCT DOWN		
	DUCT WITH LINING OR SOUND INSULATION		CIRCULAR CEILING DIFFUSER (SUPPLY)
	STAINLESS STEEL DUCT		SIDE WALL GRILLE
	PVC COATED DUCT	(H) X	HUMIDITY SENSOR / HUMIDISTAT & NUMBER
	DOUBLE WALL DUCT	(S) X	SENSOR AND NUMBER
ACD	AUTOMATIC CONTROL DAMPER FOR ROUND AND RECTANGULAR DUCT	(S) X	SWITCH AND NUMBER
BDD	BACKDRAFT DAMPER FOR ROUND AND RECTANGULAR DUCT	(T) X	TEMPERATURE SENSOR / THERMOSTAT & ZONE NUMBER
FD	FIRE DAMPER FOR ROUND AND RECTANGULAR DUCT	(T) X	TEMPERATURE SENSOR / THERMOSTAT W/ VANDAL GUARD & ZONE NUMBER
SD	SMOKE DAMPER FOR ROUND AND RECTANGULAR DUCT	(YM)	REMOTE DAMPER OPERATOR
SFD	COMBINATION SMOKE/FIRE DAMPER FOR ROUND AND RECTANGULAR DUCT	(DP)	DIFFERENTIAL PRESSURE SENSOR
SGD	SLIDE GATE DAMPER FOR ROUND AND RECTANGULAR DUCT	(SD)	DUCT SMOKE DETECTOR
VD	MANUAL VOLUME DAMPER FOR ROUND AND RECTANGULAR DUCT	(SP)	STATIC PRESSURE SENSOR
	FLEXIBLE CONNECTION	(CO)	CARBON MONOXIDE SENSOR
OR	ROOF EXHAUST FAN (SHOWN ON ROOF)	(CO2)	CARBON DIOXIDE SENSOR
		AA-## / ##	DIFFUSER TYPE – DIFFUSER SIZE / DIFFUSER CFM
OR	ROOF EXHAUST FAN (SHOWN ON FLOOR PLAN)	CTE	CONNECT TO EXISTING

PLUMBING SYMBOL LEGEND

	PIPING TURN DOWN OR DROP		WALL HYDRANT
	PIPING TURN UP OR RISE		UNION
	PIPING TEE DOWN OR DROP		FLOW SWITCH
	PIPING TEE UP OR RISE		PRESSURE SWITCH
	P-TRAP		EXPANSION JOINT
	GATE VALVE		AUTOMATIC AIR VENT
	CHECK VALVE		PRESSURE GAUGE WITH GAUGE COCK
	BALL VALVE		VALVE ON PIPING RISE OR DROP
	MIXING VALVE		TRAP PRIMER
	BUTTERFLY VALVE		THERMOMETER
	GLOBE VALVE		WATER HAMMER ARRESTOR
	PRESSURE REDUCING VALVE		DIRECTION OF FLOW
	BACKFLOW PREVENTER		SLOPE & DIRECTION OF FALL
	BALANCING VALVE		REDUCER OR INCREASER
	AUTOMATIC FLOW CONTROL VALVE		POINT OF CONNECTION
	TEMP. & PRESSURE RELIEF VALVE		POINT OF DEMARCATION
	PRESSURE RELIEF VALVE	ø	DIAMETER
	MOTORIZED SHUT-OFF VALVE		SQUARE FEET
	SOLENOID VALVE		DRAIN RECEPTOR
	STRAINER		FLOOR DRAIN
	FLOOR CLEAN OUT		AREA DRAIN
	WALL CLEAN OUT		FLOOR SINK
	EXTERIOR CLEAN OUT		ROOF DRAIN
	CAPPED PIPE / CLEAN OUT	(M)	WATER METER
	FLEXIBLE CONNECTION (PIPE)	EX.	EXISTING
	HOSE BIBB		BY-PASS TERMINAL UNIT

TAGS & CALLOUTS

EQUIP #f	EQUIPMENT REQUIRING ELECTRICAL SERVICE. REFER TO SCHEDULES FOR PERFORMANCE REQUIREMENTS.		REVISION CALLOUT
		1	KEYNOTE CALLOUT
EQUIP #f	EQUIPMENT NOT REQUIRING ELECTRICAL SERVICE. REFER TO SCHEDULES FOR PERFORMANCE REQUIREMENTS.		POINT OF CONNECTION
			POINT OF DEMARCATION
1 P3.1	SECTION CALLOUT – SECTION DESIGNATION – SHEET NUMBER	E	FURNISHED & INSTALLED BY ELECTRICAL
		M	FURNISHED & INSTALLED BY MECHANICAL
A P3.1	DETAIL CALLOUT – DETAIL DESIGNATION – SHEET NUMBER	P	FURNISHED AND INSTALLED BY PLUMBING
		S 1 E 1	HEAT TRACE CIRCUIT START AND END HEAT TRACE CIRCUIT NUMBER

FIRE PROTECTION LEGEND

△	PORTABLE FIRE EXTINGUISHER

GENERAL NOTES

1. ALL DRAWINGS ARE DIAGRAMMATIC ONLY. THE ARRANGEMENTS OF EQUIPMENT SHOWN ARE APPROXIMATIONS ONLY AND MAY BE ALTERED BY THE ENGINEERS TO MEET THE REQUIREMENTS OF THE PROJECT. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE ARCHITECT'S, INTERIOR DESIGNER, AND MECHANICAL DRAWINGS FOR LOCATION OF ALL LUMINARIES, SWITCHES, DEVICES, OUTLETS, FURNITURE FEEDING POINTS, DIMENSIONS, MOUNTING HEIGHTS, AND CONSTRUCTION DETAILS.
2. IN EVERY INSTANCE WHERE IT IS REQUIRED IN THE SPECIFICATION OR ON DRAWING THAT EQUIPMENT AND MATERIALS BE REMOVED FROM EXISTING LOCATIONS AND RE-INSTALLED, EITHER IN WHOLE OR IN PART IN NEW LOCATIONS, ALL SUCH EQUIPMENT AND MATERIALS SHALL BE THOROUGHLY CLEANED AND WHERE NECESSARY PUT INTO GOOD OPERATING CONDITION BEFORE BEING RE-INSTALLED IN THE NEW LOCATION. TEST ALL PARTS OF THE RE-USED OR RELOCATED ELECTRICAL EQUIPMENT AND CORRECT ALL FAULTS AND GROUNDS.
3. ALL SLAB OPENINGS SHALL BE X-RAYED AND REVIEWED WITH LANDLORD AND BASE BUILDING STRUCTURAL CONSULTANT. CONTRACTOR SHALL X-RAY THE FLOOR AND SUBMIT TO BASE BUILDING STRUCTURAL ENGINEER FOR WRITTEN APPROVAL AT LEAST 72 HOURS PRIOR TO ANY CORE DRILLING ON THE BUILDING. THE CONTRACTOR SHALL INCLUDE THE COST OF STRUCTURAL ENGINEER. COORDINATE ALL CORE DRILLING WITH LANDLORD'S SITE REPRESENTATIVE AND TENANT. ALL NOISY WORK SHALL BE PERFORMED AFTER HOURS.
4. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LANDLORD'S GUIDELINES AND SHALL ADHERE TO THE REQUIREMENTS STATED IN THE BASE BUILDING CONSTRUCTION MANUAL.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL WORK WITH ALL OTHER TRADES, CONSULTANTS, TENANT & LANDLORD. ALL WORK SHALL BE SCHEDULED AND CARRIED OUT IN SUCH A MANNER TO ENSURE CONTINUED AND NON-INTERRUPTED OPERATION OF EXISTING FACILITY.
6. ALL OPENINGS IN BUILDING RISER, IF APPLICABLE, SHALL BE SEALED WITH APPROVED FIRE STOP MATERIAL. ANY FIRE STOPPING MATERIAL REMOVED WILL BE REPLACED WITH A SUITABLE AND APPROVED FIRE STOPPING MATERIAL AND SHALL BE INSTALLED AS PER BUILDING AND FIRE CODE.
7. ALL PIPE PENETRATIONS THROUGH FIRE RATED WALLS & FLOORS SHALL BE SEALED WITH FIRE STOP MATERIAL. FIRE STOP MATERIAL SHALL BE THAT WHICH IS APPROVED BY THE LANDLORD FOR USE IN THE BUILDING. REFER TO BASE BUILDING CONSTRUCTION MANUAL FOR FIRE STOPPING REQUIREMENTS.
8. SEAL AIR-TIGHT AROUND ALL DUCT, PIPE, CONDUIT & WIRE PENETRATIONS THROUGH PARTITIONS, BAFFLES ABOVE CEILINGS & THROUGH FLOORS THAT ARE NOT FIRE RATED.
9. COORDINATE WITH TENANT & LANDLORD TO CONFIRM EQUIPMENT, SYSTEMS & DEVICES TO REMAIN.
10. PROVIDE TEMPORARY FILTERS ON ALL BASE BUILDING RETURN AIR OPENINGS, AND TRANSFER DUCTS CONNECTING TO THE ADJACENT TENANT SPACE THAT REMAIN OPERATIONAL DURING CONSTRUCTION. FILTERS SHALL HAVE A MERV RATING OF 13. FILTERS SHALL BE REPLACED WEEKLY & SHALL BE REMOVED UPON COMPLETION OF CONSTRUCTION.
11. ALL FILTERS IN BASE BUILDING AIR HANDLING EQUIPMENT SERVING THE CONSTRUCTION AREA SHALL BE REPLACED UPON COMPLETION OF CONSTRUCTION.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REFINISHING OF DAMAGED BUILDING AREAS AND FINISHES AFFECTED BY THE WORK AS OUTLINED UNDER SCOPE OF WORK OF THIS PROJECT.
13. ALL INSTALLATIONS WITHIN EXISTING AREAS SHALL BE COORDINATED WITH LANDLORD AND BASE BUILDING MANAGEMENT. INSTALLATION MUST BE PERFORMED IN A MANNER TO ELIMINATE ANY INTERFERENCES TO STAFF AND NORMAL OPERATION OF THE FACILITY.
14. THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION AND DISTRIBUTION OF TEMPORARY POWER WITHIN THE PREMISES DURING THE CONSTRUCTION PERIOD. EXPOSED ELECTRICAL CORDS OUTSIDE THE LEASED PREMISES SHALL NOT BE PERMITTED.
15. DIMENSIONS ON DRAWINGS ARE EXPRESSED IN METRIC UNITS AND FLOWS ON DRAWINGS ARE EXPRESSED IN IMPERIAL UNITS.
16. ALL HVAC CONTROLS WORK SHALL BE PREFORMED BY THE BASE BUILDING HVAC CONTROLS CONTRACTOR, CONVERGINT TECHNOLOGIES. CONTRACTOR SHALL CARRY BASE BUILDING HVAC CONTROLS CONTRACTOR FOR ALL HVAC CONTROLS WORK. CONTACT OMAR YAKOBI: OMAR.YAKOBI@CONVERGINT.COM OR (905) 602-8622.
17. ALL SPRINKLER AND FIRE PROTECTION WORK SHALL BE PERFORMED BY THE A SPRINKLER CONTRACTOR APPROVED TO DO WORK IN THE BUILDING. REFER TO TENANT DESIGN AND CONSTRUCTION MANUAL.
18. ALL TESTING, ADJUSTING, AND BALANCING (TAB) WORK SHALL BE PERFORMED BY AN INDEPENDENT AIR AND WATER BALANCING CONTRACTOR APPROVED TO DO WORK IN THE BUILDING. REFER TO TENANT DESIGN AND CONSTRUCTION MANUAL.
19. ANY SHUTDOWN, DRAINAGE, AND/OR FILLING OF BASE BUILDING SYSTEMS AND/OR SERVICES SHALL BE DONE BY THE LANDLORD'S BUILDING MANAGEMENT STAFF. SCHEDULE & COORDINATE ANY SHUTDOWNS WITH THE LANDLORD AT LEAST 72 HOURS IN ADVANCE. CONTRACTOR SHALL FOLLOW ALL LANDLORD'S INSTRUCTIONS, & SHALL CARRY ALL COSTS ASSOCIATED WITH THIS WORK IN THE TENDER PRICE.
20. ALL NOISY WORK (CORE DRILLING, ETC.) SHALL BE PERFORMED AFTER HOURS AND SHALL BE COORDINATED WITH THE LANDLORD & THE FACILITY AT LEAST 72 HOURS IN ADVANCE OF THE WORK TAKING PLACE.
21. ALL CORE DRILLING SHALL BE COORDINATED WITH THE CLIENT AND THE LANDLORD AT LEAST 72 HOURS IN ADVANCE OF ANY WORK TAKING PLACE. LOCATIONS OF ALL CORE SHALL BE COORDINATED WITH, AND APPROVED BY THE LANDLORD'S STRUCTURAL ENGINEER.
22. LOCATIONS OF CORES SHALL BE X-RAYED PRIOR TO START OF CORING WORK. COORDINATE X-RAY WORK WITH CLIENT AND LANDLORD AT LEAST 72 HOURS IN ADVANCE.
23. SUBMIT TO TENANT & LANDLORD OPERATIONS & MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT PROVIDED UNDER THIS CONTRACT. OPERATION & MAINTENANCE MANUALS SHALL INCLUDE DATA SHEETS, BROCHURES, MAINTENANCE INFORMATION, RECOMMENDED SPARE PARTS LISTS, LUBRICATION INSTRUCTIONS, & START-UP CERTIFICATES.
24. SUBMIT TO TENANT & LANDLORD A REVIEWED SET OF ALL SHOP DRAWINGS CLEARLY MARKED WITH "REVIEWED" BY THE INSTALLING CONTRACTOR & THE TENANT ENGINEER.
25. SUBMIT TO TENANT & LANDLORD A COMPLETE SET OF AS-BUILT RECORD DRAWINGS. AS-BUILT DRAWINGS SHALL BE PREPARED USING CAD SOFTWARE (I.E. AUTOCAD) & SUBMITTED IN DIGITAL PDF & DWG FORMATS, AND AS A HARD COPY TO EACH THE TENANT & THE LANDLORD. SCANNED REDLINE MARKED-UP DRAWINGS ARE NOT ACCEPTABLE.

DRAWING LIST

M-1	MECHANICAL NOTES AND LEGENDS
M-2	MECHANICAL SPECIFICATIONS
M-3	MECHANICAL SPECIFICATIONS
M-4	MECHANICAL SPECIFICATIONS
M-5	MECHANICAL SCHEDULES AND DETAILS
M-6	MECHANICAL – GROUND FLOOR – PLUMBING PLAN
M-7	MECHANICAL – SECOND FLOOR – PLUMBING & FIRE PROTECTION PLAN
M-8	MECHANICAL – SECOND FLOOR – HVAC PLAN
M-9	MECHANICAL – ROOF PLAN

CLIENT

MUNICIPALITY OF CASSELMAN

PROJECT NORTH

5	ISSUED FOR ADD-M1	2025-04-14
4	ISSUED FOR TENDER	2025-03-24
3	ISSUED FOR PERMIT	2025-03-18
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ISSUE	DESCRIPTION	DATE

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PROJECT

1 INDUSTRIEL STREET
OFFICE FIT-UP

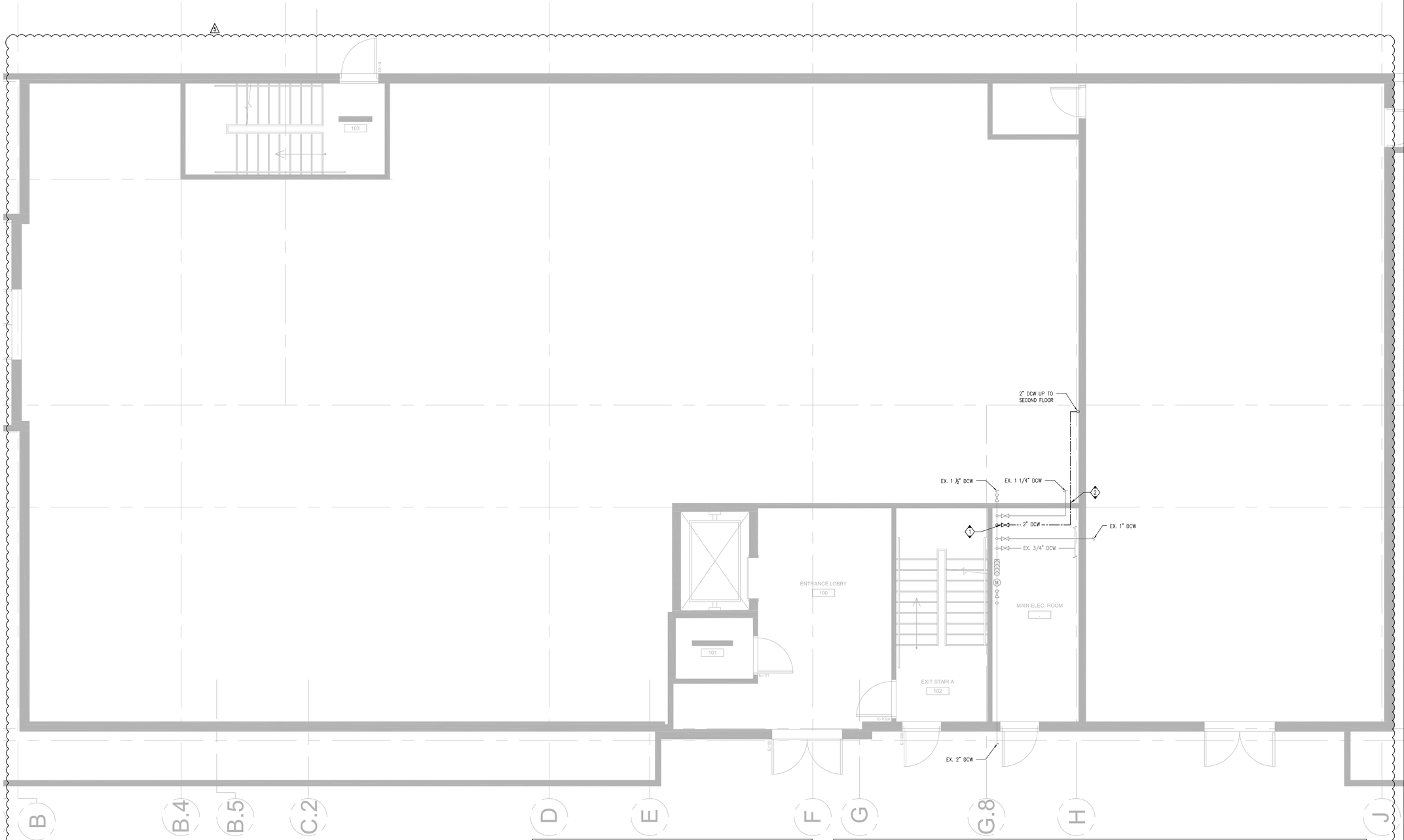
DRAWING

MECHANICAL
NOTES AND LEGENDS

PROJECT No: MRK-23002008-A0	REVISION:
DRAWN: M. OMAR	DATE: JUNE 2023
APPROVED: B. BROWN	SCALE: AS SHOWN

DRAWING No:

M-1



MECHANICAL – GROUND FLOOR – PLUMBING & FIRE PROTECTION PLAN

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

GENERAL NOTES

1. ALL CUTTING AND PATCHING OF FLOORS AND WALLS BY THIS CONTRACTOR.
2. SUPPLY AND INSTALL PIPE SLEEVES FOR PIPES PASSING THROUGH EXISTING WALLS OR FLOORS.
3. COORDINATE PIPE RUNS WITH SHEETMETAL AND ELECTRICAL DIVISIONS.
4. ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED.
5. ENSURE MATERIALS AND INSTALLATION ARE COMPLIANT WITH ONTARIO BUILDING CODE REQUIREMENTS.
6. REFER TO DETAILS AND SPECIFICATIONS FOR EQUIPMENT & PIPING INSTALLATION REQUIREMENTS.

KEYNOTES

1	2"ø DCW DOWNSTREAM OF THE BUILDING MAIN WATER METER AND BACKFLOW PREVENTER. CONFIRM CONNECTION POINT ON SITE AND COORDINATE CONNECTION WITH EXISTING TENANTS.
2	PROVIDE FIRE STOPS AT THE WALL PENETRATIONS POINTS. REFER TO SPECIFICATIONS FOR DETAILS.

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PROJECT

1 INDUSTRIEL STREET
OFFICE FIT-UP

DRAWING

MECHANICAL
GROUND FLOOR
PLUMBING PLAN

PROJECT No: MRK-23002008-A0	REVISION:
DRAWN: M. OMAR	DATE: JUNE 2023
APPROVED: B. BROWN	SCALE: AS SHOWN

DRAWING No:

M-6

PYE & RICHARDS - TEMPRANO & YOUNG ARCHITECTS INC.

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Municipality of Casselman Office Fit-Up
1 Industriel Street, Casselman, ON

ADDENDUM No. 2 to Drawings and Specifications
Job No. 22045
17/04/2025

The following additions, deletions, and revisions form part of the Contract Documents.

ARCHITECTURAL

- All Demountable Partition Systems must specify vertical mullions between glazing panels.

QUESTIONS AND ANSWERS

- Further clarification to question Q8: *We've reviewed the tender for the Municipality of Casselman New Townhall Office project and would like to submit DIRTT as an alternate for the interior office fronts scope.*

  Please find attached the DIRTT specification sheets for the following systems for your review and consideration:

  • DIRTT Evil Twin Walls (Double Pane Acoustic Walls) - https://www.dirtt.com/products/double-pane-glass-walls/
  • DIRTT Solid Core Wood Doors -

  These solutions meet the performance requirements outlined in the tender under 10 22 19.54 DEMOUNTABLE PARTITIONS - POST AND PANEL, including STC ratings and laminated tempered glass.

  Please let me know if the Architect is willing to get alternate bids as per the attached documents.
    - A: The DIRTT Evil Twin Walls (Double Pange Acoustic Walls) is considered an equivalent product, so long as the system is procured as per the following to achieve an STC 46:
      - Insulated aluminum frames around the perimeter
      - Laminate Glass with a 0.30" acoustical PVB. 2 Options:
        - 6mm laminated one side and 10mm laminated on the other side
        - 10mm laminated on both sides
      - Vertical Mullions between glazing
      - Solid core wood swing doors with a drop seal

- Doors to be standard height c/w glazed clerestory above

END OF ADDENDA No. 2

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ADDENDUM No. 3 to Drawings and Specifications
Job No. 22045
17/04/2025

The following additions, deletions, and revisions form part of the Contract Documents.

ELECTRICAL

DRAWING E-10 – ELECTRICAL SPECIFICATIONS 2 OF 4

- Remove Section 3.2 which states "Communications contractor to provide a unit price to supply & install one (1) RG-6 coaxal CMP cable c/w peripherals for complete connectivity, terminated, tested and labelled. Communications contractor to assume that cable lengths will be approximately 250 feet and that work will be done during regular hours.

- Remove Section 3.5 which states "Communications contractor shall provide a separate price to supply and install one hundred (100) additional cables. Communications contractor to assume that cable lengths will be approximately 250 feet. Locations to be determined on site with client".

QUESTIONS AND ANSWERS

- Further clarification to question Q29 in the Addendum #1: It is unclear if the cabling contractor or the electrical contractor are to carry cost for the cable tray, conduits and sleeves. As mentioned in the response, usually Division 26 (Electrical) carry the pricing for conduits and pathway. Can this be confirmed?
    - A: All rough-ins including cable tray, conduits, coring and sleeves for the IT/Security/AV systems are by Division 26 (Electrical contractor). The low voltage contractors shall coordinate with the Electrical contractor on the exact rough-in requirements on site. This updated answer suspends the previous response to Q29.

- Further clarification to question Q35 in the Addendum #1: After requesting Avigilon for a CCTV system substitute, we would like to request if a more affordable CCTV system could be considered? Is Uniview an accepted camera/NVR manufacturer:
    - A: No preference on manufacturer, and as long as VSS complies with commercial grade performance and quality standards. Other considerations are warranty and serviceability for further support. Final approval of products

will be based on the final shop drawing review. Any equal performance based specifications, warranty and certification products are acceptable as long as the performance, quality and warranty of manufacturers meet our specifications

END OF ADDENDA No. 3