

# BUILDING PERMIT

This card must be kept posted in a conspicuous place on site of construction.

24 134572 HVA 00 MS

Site Address 400 COMMISSIONERS ST

Project Description Industrial;

Building Permit Related(MS)

Date Issued Monday July 15, 2024

**Kamal Gogna, P. Eng.**  
Interim Chief Building  
Official and Executive

**Natasha Zappulla**  
Deputy Chief Building Official and  
Director

**THIS IS YOUR PERMIT TO CONSTRUCT**  
**PERMIT NUMBER: 24 134572 HVA 00 MS**

**Owner:**

CITY OF TORONTO

**Address:**

55 JOHN ST 13 FLOOR  
TORONTO, ON M5V 3C6  
CANADA

CITY OF TORONTO

C/O AHMAD MIAN  
35 VANLEY CRES  
TORONTO ON M3J 2B7

WORKS DEPARTMENT

METRO HALL STATION 1180  
55 JOHN ST

**Project Description:** Industrial; Building Permit Related(MS)

**Project Location:** 400 COMMISSIONERS ST

**Ward:**

The issuance of this permit is based on the drawings, specifications, details and information submitted with the application. The submitted documents have been reviewed for compliance with the Ontario Building Code, Zoning By-laws, applicable regulations and legislation.

The referenced permit number listed above and on your permit placard also appears on all plans reviewed for this building permit application. The validity of this permit is restricted to the person/company named as owner. Permit ownership cannot be transferred unless prior written authorization is given by the Chief Building Official.

The extent of construction authorized under this permit is limited to the description contained herein as follows:  
HVAC - Proposal to remove and replace the loading dock, overhead doors, lighting, electrical panels and fire protection system.

Stated work and use must be in accordance with the plans, specifications, building permit notes and other information issued with this building permit. Changes to any documents submitted are not to be made unless prior authorization is obtained from the Chief Building Official or designate. False information may be grounds for revocation of the building permit.

Notwithstanding, it is the responsibility of the owner to comply with requirements of the Ontario Building Code and applicable laws as well as to ensure compliance ..

The permit placard must be posted in a conspicuous place on the construction site.

Natasha Zappulla  
Deputy Chief Building Official

**Issued by:** Nyilas, Martin  
**Date Issued:** July 15, 2024

Toronto and East York District

**Please see the second page of this letter for additional requirements and inspection information.**

## **WHEN YOU BEGIN DEMOLITION/CONSTRUCTION ...**

### **Site Fencing**

**As soon as construction or demolition starts, your site must be entirely surrounded by a fence which is in compliance with the City of Toronto Municipal Code Chapter 363, Article III.** The minimum requirement is plastic mesh fencing, 1.2 metres high, tied to posts spaced no more than 1.2 metres apart with an 11 gauge top and bottom wire threaded through the mesh and looped around each post. The Municipal Code is available on the City website at: [http://www.toronto.ca/legdocs/municode/1184\\_363.pdf](http://www.toronto.ca/legdocs/municode/1184_363.pdf)

### **Construction Noise**

Any construction which generates noise is prohibited in residential areas between the hours of 7:00 p.m. one day to 7:00 a.m. the next day, 9:00 a.m. on Saturdays, and all day Sunday and Statutory holidays.

### **When To Call For Inspection**

You are required by Division C, Part 1, Article 1.3.5.1. of the Ontario Building Code, to notify the building inspection office at several prescribed stages of construction. Please contact the building inspection office at the telephone number listed below, when each of the following stages are substantially complete:

### **Inspection Stages**

\* HVAC/Extraction Rough-in

\* HVAC Final

\* Occupancy

### **To Schedule your Next Mandatory Inspection**

When you are ready to book your inspection, you may request an inspection online from your computer or smart phone using Toronto Building's Inspection Request web application at [www.toronto.ca/building-inspection-request](http://www.toronto.ca/building-inspection-request).

Alternatively, you may contact your local building inspection office by telephone at 416-338-0700, by fax 416-696-4151 or by email to [TOBldgInsp@toronto.ca](mailto:TOBldgInsp@toronto.ca).

Inspections will take place within two days commencing at the start of business on the day following your notification (Inspection Request).

Please leave a telephone number where you can be reached or a message can be left.

The inspector assigned to your project is Shameed Ali (416) 338-0892

## **PERMIT PLANS MUST BE ON SITE**

Your permit plans and specifications must be on site at all times. Inspections are conducted with your copy of the plans.

---

## BULLETIN - CONSTRUCTION SAFETY

---

The responsibilities of the City of Toronto under the Occupational Health and Safety Act apply to all our employees regardless of the location at which they are working.

Responsibilities for the Construction Safety Regulations on construction sites are clearly spelled out in the Act under the definitions of constructor, employer, supervisor and worker.

The City of Toronto believes that the goal of safe and injury free construction sites is a priority for all parties involved in building construction.

Safety training for the City of Toronto Building Inspectors is mandatory. However the delivery of a safe working environment on construction sites must include the compliance of individual builders with the Occupational Health and Safety Act.

Safety measures include the following:

1. Temporary guards on all openings,
2. Correct use of ladders,
3. Temporary or permanent stairs above or below grade by the time the sub floor is complete,
4. Clear and safe access to the site,
5. Protection of trenches and excavation below four feet deep, and
6. Correct use of fall prevention equipment where required.

As the employer responsible for the safety of building inspectors, the City of Toronto has instructed its Building Inspectors not to conduct inspections on sites where conditions exist that could jeopardize their health and safety.

The following are examples of conditions which may jeopardize the health and safety of inspectors:

1. Guards are missing,
2. Ladders do not meet regulations,
3. Temporary or permanent stairs, above or below grade, to all floor levels are not provided as required.
4. Access to the site has impediments or hazards, or
5. Trenches or excavations lack required shoring or slope of bank.

Prior to calling for an inspection the appropriate safety measures shall be in place as a site inadequately provided with these measures is not ready for inspection. The City of Toronto Building Inspectors will cooperate with builders regarding the timing of making provision for these safety measures. However, if the measures are not provided, an Order Not To Cover could be issued and the Ministry of Labour informed.

We look forward to working with you toward the goal of a safe environment for all workers.

Notice of Project - Please be advised that the Ministry of Labour requires a Notice of Project be filed with them before starting any project costing \$50,000 or more.

For more information about the Notice of Project form and construction information please visit Ministry of Labour website at: <https://www.labour.gov.on.ca/english/hs/forms/>

### **Report an Incident**

Notify the ministry of fatalities, critical injuries, work refusals, reprisals and unsafe work practices.

Ministry of Labour Health .Safety Contact Centre

Toll-free: 1-877-202-0008

TTY: 1-855-653-9260

Fax: 905-577-1316

Construction of the work approved in this building permit must be carried out with reasonable care to ensure protection for everyone on the construction site from the hazards associated with all overhead and underground power lines. Obtain further information at: <http://www.torontohydro.com/powerlinesafety>

## Building Permit 332\_12

---

The reviewed plans and specifications must be available on site during construction/demolition. Changes to these plans and specifications are not to be made unless prior written approval is obtained from the Chief Building Official.

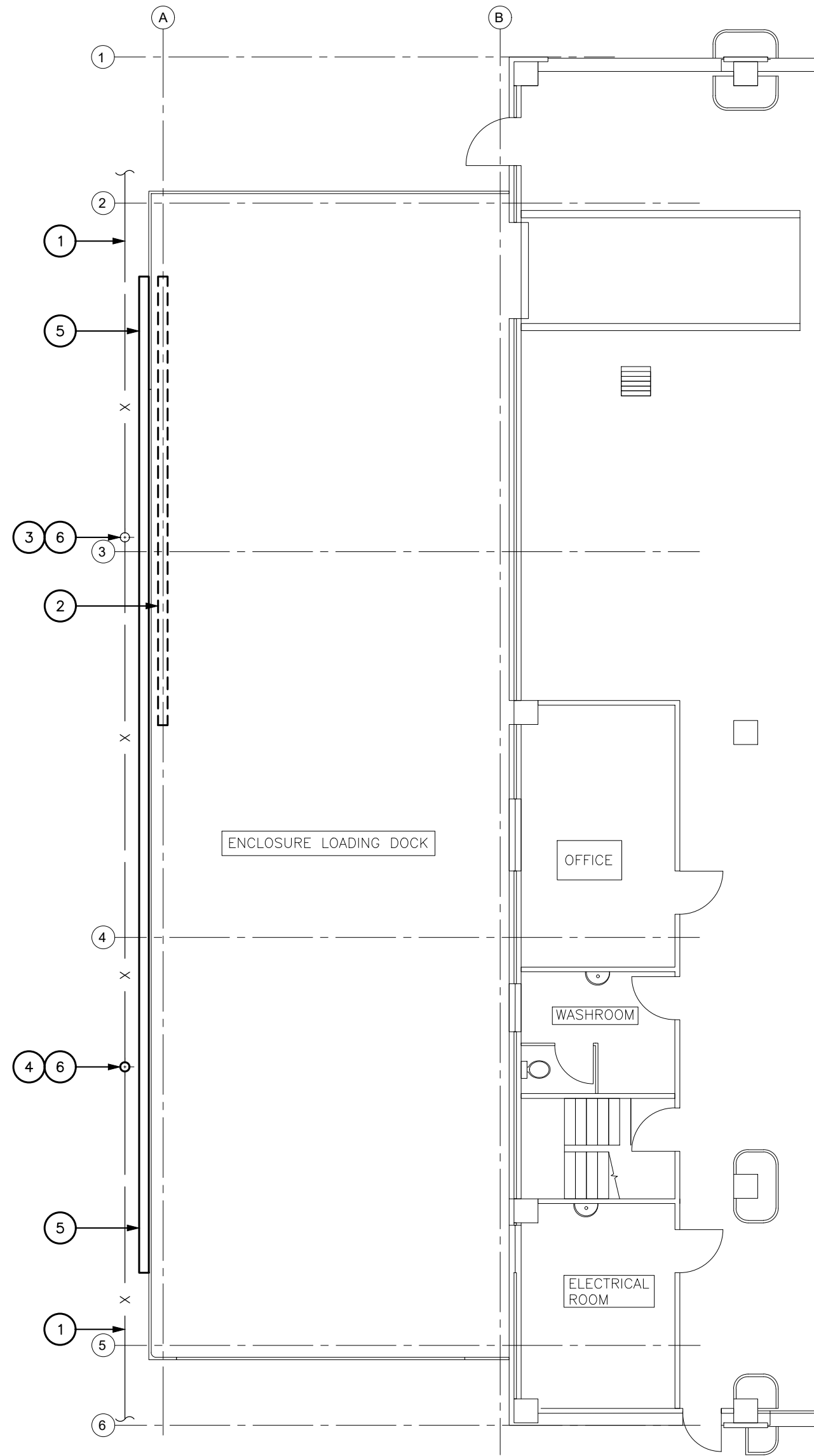
The owner/permit holder is required to comply with the following Permit Notes, which are part of the reviewed permit documents:

---

- ☐ The City has Relied upon the plans and drawings prepared and submitted by the qualified architects and/or engineers on this project.

The issuance of a permit does not imply a complete design review of this project has been performed and does not relieve the owner and designers from the need to comply with the Ontario Building Code and referenced standards where contravention are subsequently noted.

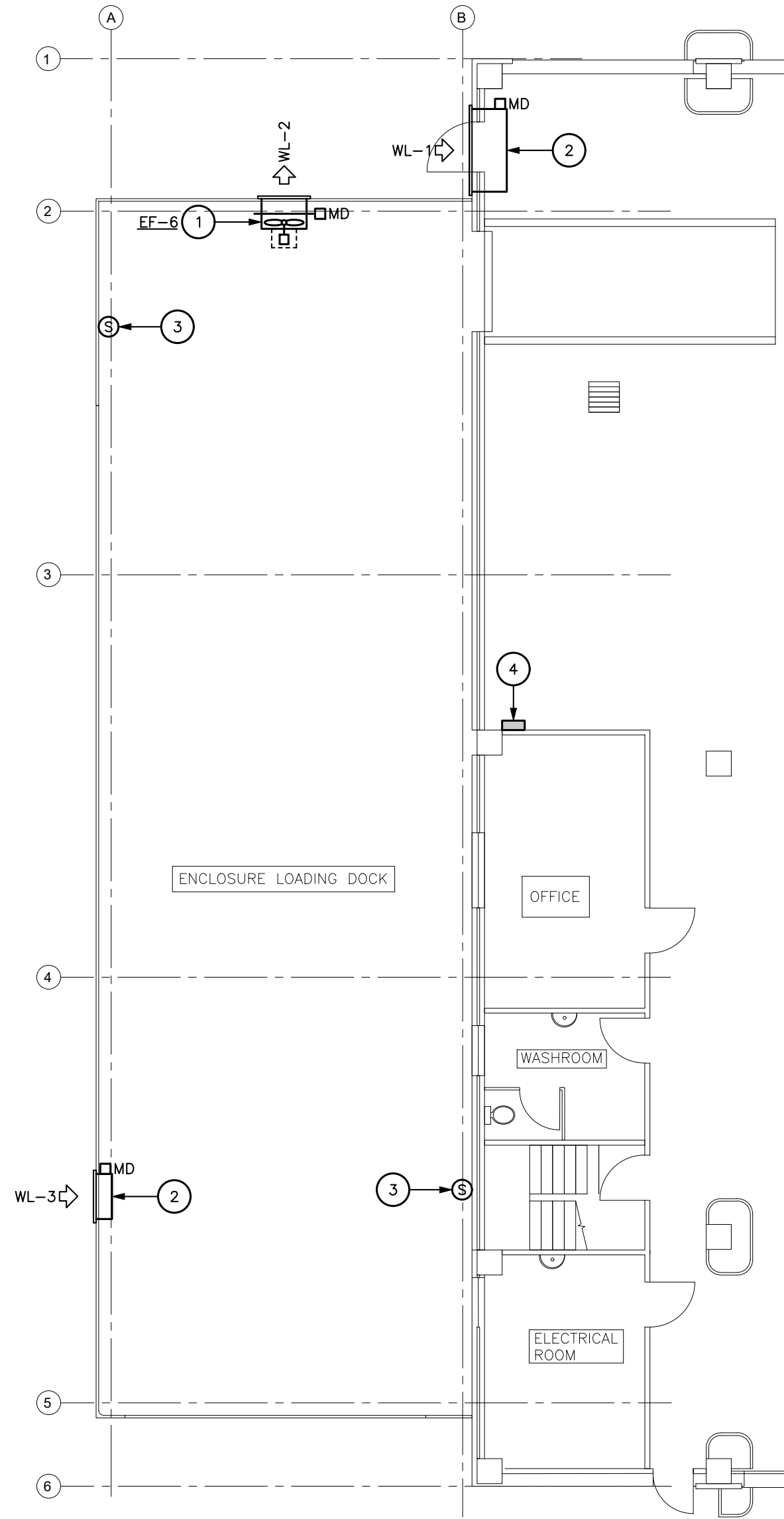
- ☐ Mechanical drawings shall be read in conjunction with architectural drawings and specifications.
- ☐ Carbon monoxide alarm shall be installed in accordance with the provisions of O.B.C. 6.2.12. for fuel burning appliance and storage garage in residential occupancy.
- ☐ All materials within the ceiling space used as a return air plenum shall have a maximum flame spread rating of 25 and a maximum smoke developed rating of 50 as per 6.2.3.2.
- ☐ Do not cover any ductwork and piping prior to inspection.
- ☐ All ductwork and fittings shall be constructed and installed in conformance with SMACNA Manuals and ASHRAE Handbooks
- ☐ Maintain integrity of exits as per Article 3.4.4.4.
- ☐ Openings in a fire rated separation shall be protected with a listed closure per CAN/ULC-5112-M, Standard Method of Fire Test of Fire "Damper Assemblies.
- ☐ Mechanical Ventilation designed to Part 6 requires a pressure test.



**PART GROUND FLOOR  
PLAN – PLUMBING**  
SCALE – 1:100  
0 1 2 3 4 5 6 7 8 9 10  
BAR SCALE – 1:100

#### DRAWING NOTES

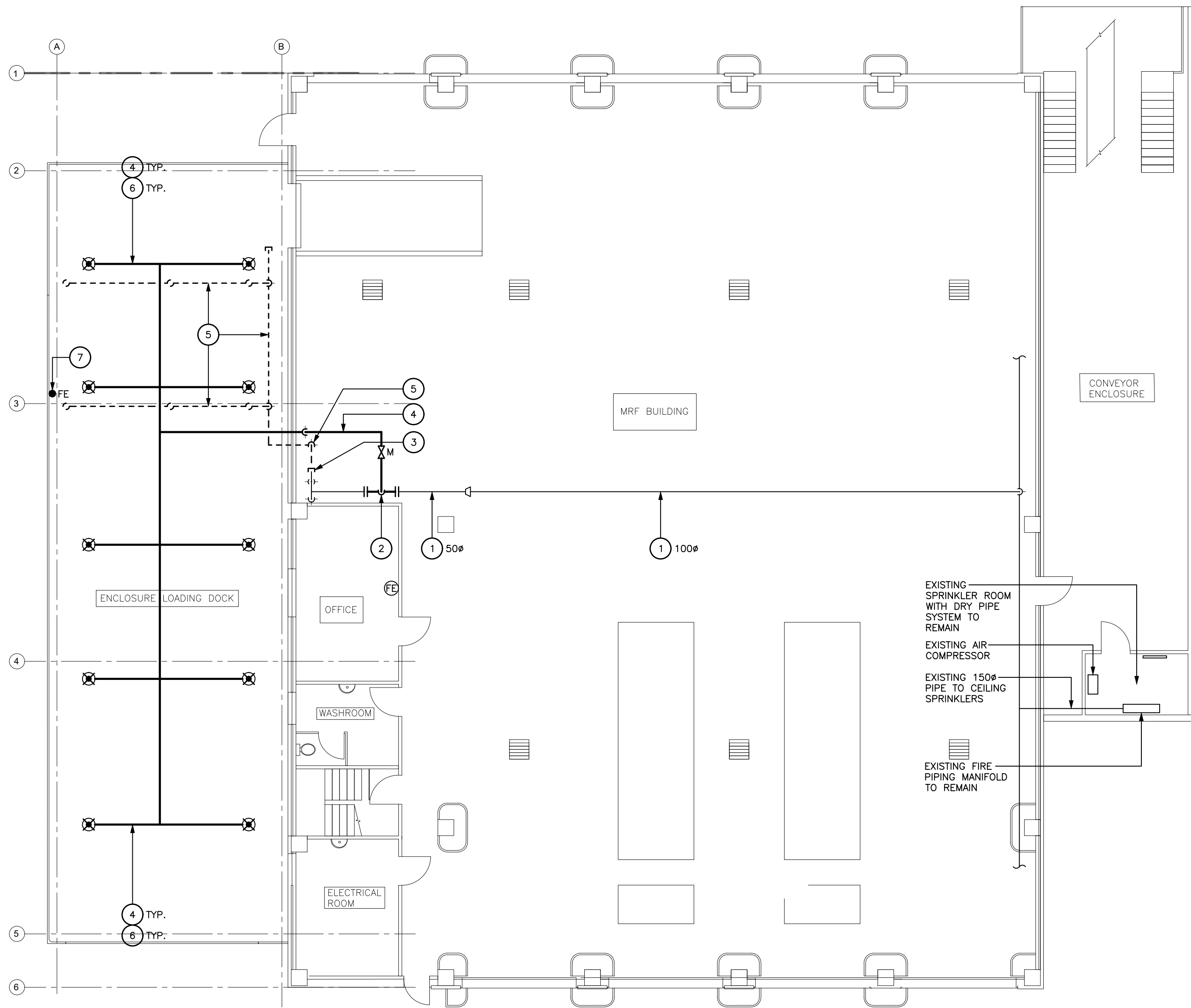
- EXISTING BURIED STORM SEWER TO REMAIN.
- EXISTING ROOF GUTTER AND ASSOCIATED RAINWATER LEADERS TO BE REMOVED FROM SITE.
- EXISTING STORM WATER PIPE RISER TO REMAIN AND BE USED IN THE NEW ROOF GUTTER SYSTEM.
- SUPPLY AND INSTALL NEW STORM WATER PIPE RISER TO CONNECT TO NEW ROOF GUTTER SYSTEM AND EXISTING BURIED STORM SEWER.
- SUPPLY AND INSTALL NEW 200mm WIDE ALUMINUM ROOF GUTTER, SECURED TO ROOF FACIA. COLOUR TO MATCH WALL CLADDING.
- SUPPLY AND INSTALL NEW 100mm x 100mm ALUMINUM RAINWATER LEADER BY GENERAL CONTRACTOR. REFER TO ARCHITECTURAL DRAWING A4



**PART GROUND FLOOR  
PLAN – VENTILATION**  
SCALE – 1:100  
0 1 2 3 4 5 6 7 8 9 10  
BAR SCALE – 1:100

#### DRAWING NOTES

- SUPPLY AND INSTALL NEW EXHAUST AIR LOUVER AT HIGH LEVEL. LOUVER TO BE COMPLETE WITH 900mm x 900mm x 600mm DEEP SHEET METAL EXHAUST PLENUM COMPLETE WITH MOTORIZED DAMPER AND 600mm x 300mm ACCESS DOOR. FLOOR OF PLENUM TO SLOPE DOWN TO LOUVER. PLENUM TO BE COMPLETE WITH ACOUSTIC DUCT LINING. UNDERSIDE OF PLENUM TO BE 4300mm ABOVE FINISHED LOADING DOCK FLOOR.
- SUPPLY AND INSTALL NEW INTAKE SUPPLY AIR MOTORIZED LOUVER AT HIGH LEVEL. UNDERSIDE OF LOUVER TO BE 4800mm ABOVE FINISHED GRADE.
- CO/NO<sub>2</sub> SENSOR TO BE MOUNTED EXPOSED ON WALL.
- CO/NO<sub>2</sub> GAS DETECTOR PANEL TO BE MOUNTED ON WALL. UNDERSIDE OF PANEL TO BE APPROXIMATELY 1500mm ABOVE FINISHED FLOOR.



**PART GROUND FLOOR  
PLAN – SPRINKLERS**  
SCALE – 1:100  
0 1 2 3 4 5 6 7 8 9 10  
BAR SCALE – 1:100

#### DRAWING NOTES

- EXISTING SPRINKLER PIPE TO REMAIN.
- CONNECT NEW SPRINKLER PIPE TO EXISTING SPRINKLER PIPE SYSTEM.
- SUPPLY AND INSTALL NEW CAPPED END CONNECTION.
- NEW SPRINKLER PIPE TO RUN EXPOSED AT HIGH LEVEL HUNG FROM EXISTING ROOF STRUCTURE.
- PORTION OF EXISTING SPRINKLER PIPE TO BE REMOVED FROM SITE.
- NEW SPRINKLER PIPE TO BE GALVANIZED SCHEDULE 40 STEEL PIPE.
- NEW FIRE EXTINGUISHER TO BE MOUNTED EXPOSED ON WALL COMPLETE WITH WALL BRACKET.

SCOPE OF WORK FOR THIS PERMIT IS HVAC ONLY.

#### SOLID WASTE MANAGEMENT SERVICES



BUILDINGS • EARTH & ENVIRONMENT • ENERGY • INDUSTRIAL • INFRASTRUCTURE • SUSTAINABILITY

No.	DATE	REVISIONS	INITIAL	SIGNED
5	JAN 12/24	ISSUED FOR TENDER	MWW	
4	JAN 10/24	ISSUED FOR FINAL APPROVAL	MWW	
3	NOV 20/23	100% DESIGN SUBMISSION	MWW	
2	OCT 26/23	REISSUED 70% DESIGN SUBMISSION	MWW	
1	JULY 18/23	70% DESIGN SUBMISSION	MWW	



#### SOLID WASTE MANAGEMENT SERVICES

MATT KELIHER  
GENERAL MANAGER  
SOLID WASTE MANAGEMENT SERVICES

MATTHEW CASCHERA  
DIRECTOR  
INFRASTRUCTURE AND  
RESOURCE MANAGEMENT

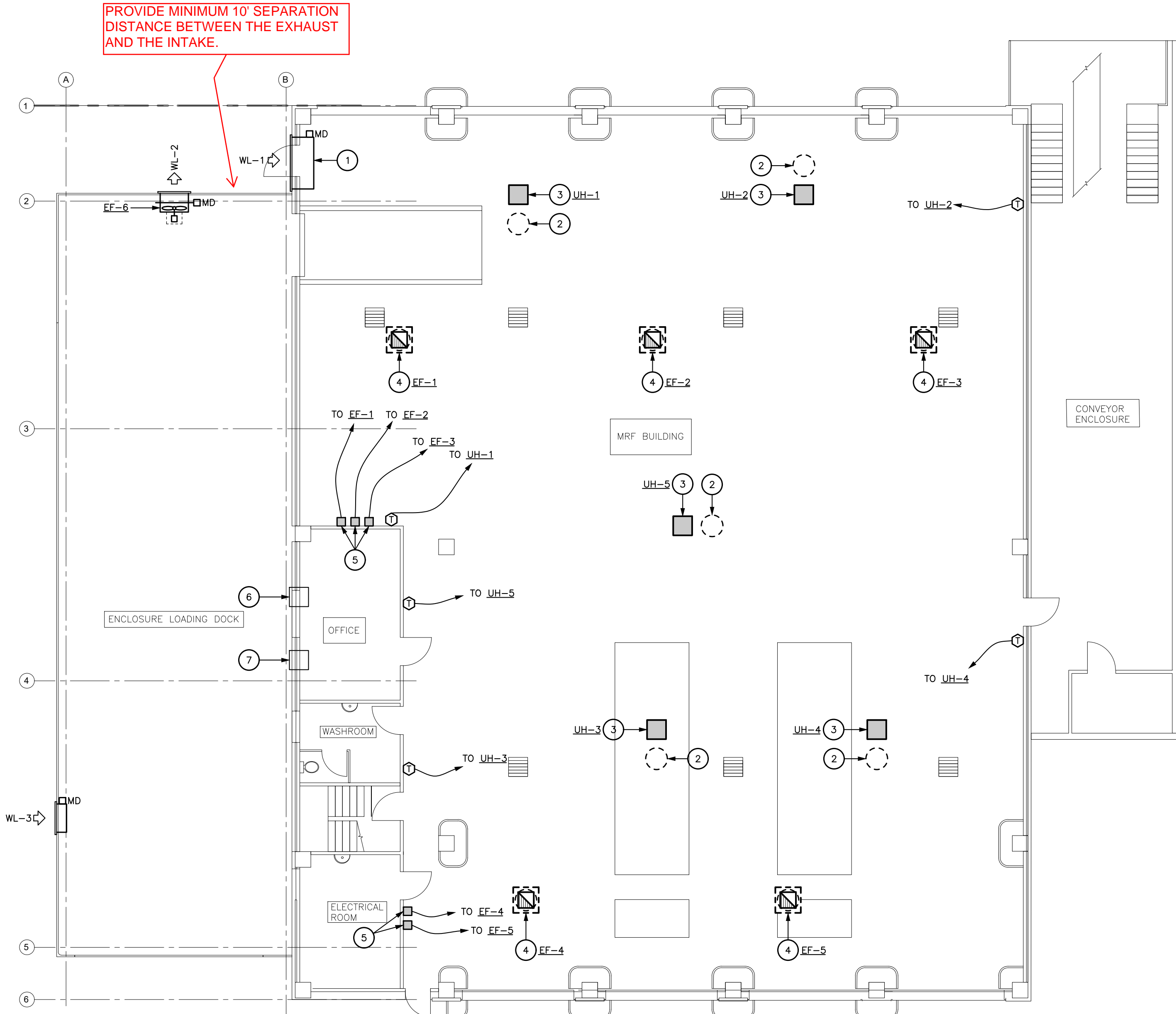
#### COMMISSIONERS TRANSFER STATION

MRF BUILDING UPGRADES  
400 COMMISSIONER STREET, TORONTO, ONTARIO M4M 3K2

#### PART GROUND FLOOR PLANS - PLUMBING, VENTILATION AND SPRINKLERS

DESIGN:	EK	DRAFTING:	DGC	CHECK:	MWW	CONTRACT No.	23SWM-IRM-026CDU
SCALE:	AS NOTED					DRAWING NUMBER:	1601-2023-3-21
DATE:	JULY 18, 2023						M1





## PART GROUND FLOOR PLAN - HEATING AND VENTILATION

SCALE - 1:100

0 1 2 3 4 5 6 7 8 9 10

BAR SCALE - 1:100

### DRAWING NOTES

- 1 SUPPLY AND INSTALL NEW RELIEF AIR MOTORIZED LOUVRE IN EXISTING WALL ABOVE EXISTING DOOR. TOP OF LOUVRE TO MATCH LOUVRE WL-2 SERVING LOADING DOCK.
- 2 EXISTING ELECTRIC UNIT HEATER COMPLETE WITH ACCESSORIES TO BE REMOVED FROM SITE.
- 3 SUPPLY AND INSTALL NEW ELECTRIC UNIT HEATER AT HIGH LEVEL HUNG FROM EXISTING ROOF STRUCTURE. NEW HEATER TO BE IN SAME LOCATION AS THE EXISTING HEATER BEING REMOVED FROM THE SITE. SUPPLY AND INSTALL ADDITIONAL STEEL MEMBERS AS REQUIRED FOR NEW INSTALLATION.
- 4 REMOVE EXISTING OUTDOOR ROOF MOUNTED EXHAUST FAN AND ALL ACCESSORIES AND REPLACE WITH NEW FAN TO MATCH EXISTING CAPACITY AND DIMENSIONS. FIELD VERIFY NEW OUTDOOR ROOF EXHAUST FAN WILL FIT ONTO EXISTING CURB AND ROOF OPENING.
- 5 EXISTING EXHAUST FAN STARTER TO BE REPLACED WITH NEW MANUAL STARTER. SEE ELECTRICAL DRAWINGS.
- 6 EXISTING WINDOW AIR CONDITIONING UNIT AT LOW LEVEL TO REMAIN.
- 7 EXISTING WALL AIR CONDITIONING UNIT AT HIGH LEVEL TO REMAIN.

JOB NAME: COMMISSIONERS TS MRF BUILDING UPGRADE								
JOB No. BRM-22028009-A0								
MECHANICAL SCHEDULE - FANS								
FAN No.	SYSTEM AND FAN LABEL	SPEC TYPE	MODEL	SIZE	CFM ESP "W.G.	RPM ARR	HP VAC/Ø	REMARKS
EF-1	RESIDUE PROCESS BUILDING EXHAUST	ADF	COOK ACRUB	150 RH3B	950 0.50	1300	1/4 120/1	INTERCONNECT TO WL-1
EF-2	RESIDUE PROCESS BUILDING EXHAUST	ADF	COOK ACRUB	150 RH3B	950 0.50	1300	1/4 120/1	INTERCONNECT TO WL-1
EF-3	RESIDUE PROCESS BUILDING EXHAUST	ADF	COOK ACRUB	150 RH3B	950 0.50	1300	1/4 120/1	INTERCONNECT TO WL-1
EF-4	RESIDUE PROCESS BUILDING EXHAUST	ADF	COOK ACRUB	150 R4B	1900 0.50	1200	1/3 120/1	INTERCONNECT TO WL-1
EF-5	RESIDUE PROCESS BUILDING EXHAUST	ADF	COOK ACRUB	150 R4B	1900 0.50	1200	1/3 120/1	INTERCONNECT TO WL-1
EF-6	ENCLOSURE LOADING DOCK	PF	COOK AWD	20 A17D	1700 0.50	1700	1/4 120/1	INTERCONNECT TO WL-2
NOTE 1. USE HIGH EFFICIENCY MOTORS. SEE SECTION 15010.								

JOB NAME: COMMISSIONERS TS MRF BUILDING UPGRADE							
JOB No. BRM-22028009-A0							
MECHANICAL SCHEDULE - ELECTRIC UNIT HEATER SCHEDULE							
DWG. DESIG-NATION	MODEL	DUCT SIZE	CFM	KW	VOLT/Ø	STAGES	REMARKS
UH-1	CHROMALOX HVH	-	1500	20	575/3	-	VERTICAL THROW. HUNG FROM STRUCTURE.
UH-2	CHROMALOX HVH	-	1500	20	575/3	-	VERTICAL THROW. HUNG FROM STRUCTURE.
UH-3	CHROMALOX HVH	-	1500	20	575/3	-	VERTICAL THROW. HUNG FROM STRUCTURE.
UH-4	CHROMALOX HVH	-	850	7.5	575/3	-	VERTICAL THROW. HUNG FROM STRUCTURE.
UH-5	CHROMALOX HVH	-	850	7.5	575/3	-	VERTICAL THROW. HUNG FROM STRUCTURE.

JOB NAME: COMMISSIONERS TS MRF BUILDING UPGRADE				
JOB No. BRM-22028009-A0				
MECHANICAL SCHEDULE - LOUVRES				
DWG. DESIG-NATION	MODEL NO.	WIDTH(MM)	SIZE X HEIGHT(MM)	REMARKS
WL-1	CS 4830	1800 x 1200		COLOUR TO MATCH WALL CLADDING
WL-2	CS A4097	900 x 900		COLOUR TO MATCH WALL CLADDING
WL-3	CS 4830	900 x 900		COLOUR TO MATCH WALL CLADDING

### SOLID WASTE MANAGEMENT SERVICES



BUILDINGS • EARTH & ENVIRONMENT • ENERGY • INDUSTRIAL • INFRASTRUCTURE • SUSTAINABILITY

No.	DATE	REVISIONS	INITIAL	SIGNED
5	JAN 12/24	ISSUED FOR TENDER	MWW	
4	JAN 10/24	ISSUED FOR FINAL APPROVAL	MWW	
3	NOV 20/23	100% DESIGN SUBMISSION	MWW	
2	OCT 26/23	REISSUED 70% DESIGN SUBMISSION	MWW	
1	JULY 18/23	70% DESIGN SUBMISSION	MWW	



### SOLID WASTE MANAGEMENT SERVICES

MATT KELIHER  
GENERAL MANAGER  
SOLID WASTE MANAGEMENT SERVICES

MATTHEW CASCHERA  
DIRECTOR  
INFRASTRUCTURE AND  
RESOURCE MANAGEMENT

### COMMISSIONERS TRANSFER STATION

MRF BUILDING UPGRADES  
400 COMMISSIONER STREET, TORONTO, ONTARIO M4M 3K2

PART GROUND FLOOR PLAN - HEATING AND VENTILATION, MECHANICAL SCHEDULES				
DESIGN:	EK	DRAFTING:	DGC	CHECK:
SCALE:	AS NOTED			MWW
DATE:	JULY 18, 2023			
DRAWING NUMBER:	1601-2023-3-22			M2



MECHANICAL SPECIFICATIONS


1. GENERAL CONDITIONS
- .1 THE WORK SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE ONTARIO BUILDING CODE, THE ONTARIO WATER RESOURCES ACT, THE MINISTRY OF LABOUR, THE CITY OF TORONTO, THE ONTARIO GAS CODE, AND ALL CODES HAVING JURISDICTION, WHICH ARE TO BE CONSIDERED AN INTEGRAL PART OF THESE SPECIFICATIONS.
- .2 SCOPE OF WORK: ALL LABOUR, MATERIALS, EQUIPMENT, FEES, PERMITS AND CHARGES TO PERFORM THE OPERATIONS FOR THE COMPLETE INSTALLATION OF THE PLUMBING, GAS HEATING, VENTILATING AND SHEETMETAL WORK AND SPRINKLERS (DRY SYSTEM), AS INDICATED ON THE DRAWINGS.
- .3 SLEEVES, CUTTING & PATCHING:
- .1 INSTALL SLEEVES AND FRAMES FOR PIPING, DUCTS, FANS, 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.
- .2 THE CONTRACTOR IS RESPONSIBLE FOR THE CUTTING AND PATCHING OF ALL HOLES AND OPENINGS UP TO AND INCLUDING 6" (150 mm) DIAMETER.
- .3 THE CONTRACTOR IS TO LOCATE THE EXACT POSITIONS AND DIMENSIONS OF LARGER OPENINGS FOR CUTTING.
- .4 EXTENT OF THE WORK:
- .1 THE CONTRACT INCLUDES ALL DRAINAGE LINES, PRESSURE PIPING, NATURAL GAS SYSTEMS, AND SPRINKLERS AS SHOWN AND AS NOTED IN DRAWINGS.
- .2 THE SHEET METAL WORK INCLUDES ALL SHEETMETAL SYSTEMS, FANS, CONTROLS, LOUVRES, DAMPERS AND ASSOCIATED VENTS AND FLASHINGS.
- .5 BALANCING, IDENTIFICATION & START-UP
- .1 IDENTIFICATION IS TO BE CARRIED OUT BY THE RESPECTIVE TRADE WITH NAME TAGS IDENTIFYING THE USE OR SERVICE OF ALL MAIN VALVES.
- .2 CLEAN ALL EQUIPMENT AND OTHER INSTALLATIONS.
- .3 PROVIDE MAINTENANCE INSTRUCTIONS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- .4 PROVIDE TWO (2) BOUND COPIES OF THE AIR BALANCING REPORT TO THE CONTRACT ADMINISTRATOR.
- .5 AIR BALANCING SHALL BE DONE BY A PROFESSIONAL TESTING AND BALANCING FIRM. THE AIR BALANCING REPORT SHALL SHOW THE QUANTITIES, VELOCITIES AND AREA OF EACH OUTLET, TYPE AND MODEL, NUMBER OF FANS AND MOTORS INSTALLED, ACTUAL AIR DELIVERED BY THE FAN WITH TOTAL STATIC PRESSURE AND VOLTAGE DRAWN BY THE MOTORS. ADJUST AND RETEST TO THE SYSTEMS TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR.
- .6 SUBMIT TWO (2) COPIES OF MANUFACTURER MAINTENANCE MANUALS TO THE OWNER FOR ALL NEW EQUIPMENT.
- .6 VISIT JOB SITE: THE CONTRACTOR SHALL VISIT THE JOB SITE AND EXAMINE ALL EXISTING CONDITIONS WHICH AFFECT THE WORK.
- .7 CO-ORDINATION: CO-ORDINATE WITH OTHER TRADES REGARDING THE LOCATION OF EQUIPMENT, CONTROL DEVICES, PIPING, AND DUCTWORK. THIS INCLUDES SUPPLYING WIRING DIAGRAMS TO THE ELECTRICAL TRADE FOR CONNECTIONS.
- .8 GUARANTEE:
- .1 GUARANTEE IN WRITING FOR THE MATERIAL AND WORKMANSHIP INCLUDING THE MANUFACTURER'S GUARANTEE FOR THE PERIOD OF TWO (2) YEAR FROM THE DATE OF ACCEPTANCE.
- .2 CERTIFY IN WRITING FOR ALL WORK COMPLETED IN ACCORDANCE WITH THE SPECIFICATIONS AND DRAWINGS. SUBMIT AS-BUILT DRAWINGS SHOWING REVISIONS MADE.
- .9 CO-OPERATION OF TRADES: THE PRIME MECHANICAL CONTRACTOR IS TO CO-OPERATE WITH ALL OTHER TRADES ON THE JOB SO THAT ALL EQUIPMENT CAN BE SATISFACTORILY INSTALLED, AND SO THAT NO DELAY IS CAUSED TO ANY OTHER TRADE. ANY REWORKING OF INSTALLED EQUIPMENT, PIPING, OR DUCTING TO ACCOMMODATE THE INSTALLATION OF OTHER TRADES WORK SHALL BE PERFORMED AT NO EXTRA COST.
- .10 WARRANTY:
- .1 THE CONTRACTOR TO WARRANT PRODUCTS AND EXECUTION OF WORK UNDER THIS DIVISION AGAINST DEFECTS OF MATERIAL AND WORKMANSHIP FOR TWO (2) FULL YEARS AFTER DATE OF SUBSTANTIAL PERFORMANCE.
- .2 REPAIR DEFECTS THAT ARE DISCOVERED OR DEVELOP DURING THIS PERIOD AND MAKE GOOD ANY RESULTING DAMAGE TO EQUIPMENT OR BUILDING. REPAIRS TO BE CARRIED OUT AT NO COST TO OWNER.
- .3 PROVIDE EXTENDED WARRANTIES WHERE INDICATED IN OTHER SECTIONS OF THIS DIVISION. EXTENDED WARRANTIES TO COMMENCE ON TERMINATION OF THE STANDARD TWO YEAR WARRANTY AND TO BE AN EXTENSION OF THESE SAME PROVISIONS.
- .11 EXISTING SERVICES
- .1 WHERE WORK INVOLVES BREAKING INTO OR CONNECTING EXISTING SERVICES, CARRY OUT WORK AT TIMES DIRECTED BY GOVERNING AUTHORITIES, WITH MINIMUM OF DISTURBANCE TO THE PREMISES AND ITS OPERATION.
- .2 BEFORE COMMENCING WORK, ESTABLISH LOCATION AND EXTENT OF SERVICE LINES IN AREA OF WORK AND NOTIFY CONSULTANT OF FINDING.
- .3 WHERE UNKNOWN SERVICES ARE ENCOUNTERED, IMMEDIATELY ADVISE CONSULTANT AND CONFIRM FINDINGS IN WRITING.
- .4 REMOVE ABANDONED SERVICE LINES. CAP OR OTHERWISE SEAL LINES AT CUT-OFF POINTS, IN MANNER APPROVED BY AUTHORITIES HAVING JURISDICTION OVER SERVICE.
- .5 RECORD LOCATIONS OF MAINTAINED, RE-ROUTED AND ABANDONED SERVICE LINES. THE CONTRACTOR SHALL PROVIDE WITH ALL NECESSARY DIMENSIONS REQUIRED TO ACCURATELY LOCATE THOSE SERVICES.
- .6 WHERE THE LOCATION OF ANY OF THESE UTILITIES HAS BEEN SHOWN ON THE PLANS, SUCH INFORMATION IS NOT GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY LOCATIONS AND ELEVATIONS, IMMEDIATELY AFTER THEY MOVE ON THE SITE. IF FOR ANY REASON THE INFORMATION OBTAINED NECESSITATES CHANGES IN PROCEDURES OR DESIGN, THEY MUST ADVISE THE CONSULTANT AT ONCE. IF THIS VERIFICATION OF EXISTING CONDITIONS IS NOT DONE AT THE OUTSET AND ANY PROBLEMS ARISE, THE RESPONSIBILITY FOR SAME IS ENTIRELY THIS CONTRACTOR'S.
- .7 WHERE IT IS NECESSARY TO TEMPORARILY SHUT DOWN EQUIPMENT OR SERVICES SERVING ESSENTIAL AREAS, THIS CONTRACTOR SHALL INCLUDE PREMIUM COSTS TO ENSURE THE WORK FORCE IS SCHEDULED FOR "ROUND THE CLOCK" OPERATION IN ORDER TO MINIMIZE DISRUPTION AND EQUIPMENT DOWNTIME. NO ADDITIONAL COST SHALL BE PAID FOR THIS
- .12 PLACING IN OPERATION
- .1 PRIOR TO ACCEPTANCE AND ON COMPLETION OF WORK MAKE A COMPLETE OPERATIONAL TEST OF SYSTEMS AND WORK CARRIED OUT BY THIS CONTRACTOR.
- .2 BALANCING WILL BE CARRIED OUT AND SYSTEMS SET TO DESIGNED VALUES, AND A REPORT OF FINAL ACTUAL PERFORMANCE OF ALL EQUIPMENT AND BALANCING FOR FINAL SPACE CONDITIONS ON COOLING AND HEATING TO BE CARRIED OUT WHEN RELATIVE CLIMATIC CONDITIONS EXIST.
- .3 DURING THE TWO (2) YEAR GUARANTEE PERIOD, MAINTAIN ALL EQUIPMENT INSTALLED AS PART OF THIS DIVISION. THIS AGREEMENT SHALL BE PART OF THE WRITTEN GUARANTEE. THIS WORK SHALL BE CARRIED OUT IN THE PRESENCE OF THE BUILDING CUSTODIAN, AND A LETTER SHALL BE SENT TO THE CONSULTANT STATING THAT THIS WORK WAS CARRIED OUT. FOUR (4) MAINTENANCE INSPECTIONS MUST BE CARRIED OUT BY THE CONTRACTOR DURING THIS TWO (2) YEAR PERIOD (SIX MONTHS, TWELVE MONTH, EIGHTEEN MONTHS, AND TWENTY FOUR MONTHS AFTER SUBSTANTIAL COMPLETION LETTER ISSUED). SUBMIT WRITTEN REPORT TO OWNER AND CONSULTANT AFTER EACH INSPECTION.
- .13 CLEAN-UP: AVOID ACCUMULATION OF SCRAP AND DEBRIS RESULTING FROM THE WORKS AND AT ALL TIMES HELP MAINTAIN THE WORKING SITE IN A NEAT AND CLEAN CONDITION. ON COMPLETION OF THE CONTRACT, REMOVE ALL SCRAP AND DEBRIS RESULTING FROM THE WORKS AND CLEAN ALL EQUIPMENT INSTALLED.
- .14 START-UP SERVICE:
- .1 PROVIDE SERVICES OF A QUALIFIED TECHNICIAN RESPONSIBLE FOR ASSISTING THE OWNER'S STAFF IN BECOMING FAMILIAR WITH OPERATING OF SYSTEMS. CO-ORDINATING WORK OF CONTROL MANUFACTURER, ACTING ON ANY COMPLAINTS FROM THE OWNERS, OR CONSULTANT REGARDING OPERATION OF ANY OF THE SYSTEMS, INSTALLED UNDER THIS DIVISION.
- .2 PROVIDE START-UP OF MAJOR PIECES OF MECHANICAL EQUIPMENT OR SYSTEMS, BY REPRESENTATIVE OF EQUIPMENT, MANUFACTURER OR PERSON QUALIFIED AND RECOGNIZED BY THE EQUIPMENT MANUFACTURER.
- .3 SUBMIT START-UP REPORTS ON ALL MECHANICAL EQUIPMENT AND SYSTEMS VERIFYING CORRECT INSTALLATION AND OPERATING PARAMETERS IN ALL MODES OF OPERATION. INCLUDE SERVICE REPORTS IN OPERATING AND MAINTENANCE MANUALS.
- .4 NOTIFY CONSULTANT PRIOR TO START-UP ON ANY PIECE OF MECHANICAL EQUIPMENT OR SYSTEM. DEMONSTRATE OPERATION OF ALL OR ANY MECHANICAL SYSTEM OR EQUIPMENT AS DIRECTED BY THE CONSULTANT IN HIS PRESENCE.
- .15 TSSA INSPECTION: THE CONTRACTOR SHALL PAY ALL FEES AND SITE VISITS IN CONNECTION WITH TSSA INSPECTION FOR ALL SERVICES.

- .16 FIRE STOPPING:
- .1 THE CONTRACTOR IS RESPONSIBLE FOR ALL FIRE STOPPING RELATED TO THE MECHANICAL WORK INCLUDING, BUT NOT LIMITED TO, THE NEW DUCTWORK, NEW PIPING AND CONTROL WIRING.
- .2 PROVIDE MATERIALS AND SYSTEMS CAPABLE OF MAINTAINING EFFECTIVE BARRIER AGAINST FLAME, SMOKE AND GASES.
- .3 COMPLY WITH THE REQUIREMENTS OF CAN4-S115-M35, AND DO NOT EXCEED OPENING SIZED FOR WHICH THEY HAVE BEEN TESTED.
- .4 SYSTEMS TO HAVE AN FIRE-RESISTANCE RATING NOT LESS THAN THE FIRE PROTECTION RATING REQUIRED FOR CLOSURES IN A FIRE SEPARATION.
- .5 THE FIRE STOPPING MATERIALS ARE NOT TO SHRINK, SLUMP OR SAG AND TO BE FREE OF ASBESTOS, HALOGENS AND VOLATILE SOLVENTS.
- .6 FIRESTOPPING MATERIALS ARE TO CONSIST OF A COMPONENT SEALANT APPLIED WITH A CONVENTIONAL CAULKING GUN AND TROWEL.
- .7 FIRE STOP MATERIALS ARE TO BE CAPABLE OF RECEIVING FINISH MATERIALS IN THOSE AREAS WHICH ARE EXPOSED AND SCHEDULED TO RECEIVE FINISHES.
- .8 ACCEPTABLE PRODUCTS:
- .1 PYRESLEEVE INDUSTRIES INC.
- .2 GENERAL ELECTRIC PENSIL FIRESTOP SYSTEMS
- .3 INTERNATIONAL PROTECTIVE COATINGS CORP.
- .4 RECTORSEAL CORPORATION (METACAULK)
- .5 3M FIRE PROTECTION SYSTEMS
- .17 SHOP DRAWINGS:
- .1 SUBMIT ELECTRONIC COPIES OF SHOP DRAWINGS FOR REVIEW FOR THE FOLLOWING:
- .1 GAS DETECTOR
- .2 ELECTRICAL UNIT HEATERS
- .3 FANS
- .4 SPRINKLER HEADS
2. SITE SERVICES
- .1 EXCAVATION, TRENCHING, BACKFILLING & BEDDING:
- .1 EXCAVATION SHALL BE PROTECTED WITH FENCING, TIMBER SHEETING, BRACING OR SHORING AS REQUIRED BY THE OUTLINE HEALTH AND SAFETY ACT AND REGULATIONS LATEST ADDITION. PROVIDE ADEQUATE TEMPORARY CROSS-OVERS FOR PEDESTRIAN AND VEHICULAR TRAFFIC, INCLUDING GUARD RAILS, LAMPS AND FLAGS AS DIRECTED.
- .2 ALL PIPING AND EQUIPMENT SHALL HAVE ADEQUATE BEDDING. TRENCHES SHALL BE EXCAVATED 6" (150mm) BELOW THE INTENDED GRADE OF THE PIPING. THE PIPING SHALL BE BEDDED IN A GRANULAR 'A' MATERIAL, BACKFILL BY HAND FROM THE CENTRE LINE OF THE PIPE TO 6" (150 mm) LAYERS BY TAMPING. THE SUBGRADE BENEATH THE PIPE SHALL BE WITHIN 1/4" (6 mm) OF A STRAIGHT LINE BETWEEN JOINTS. BELL HOLES SHALL BE MADE AT EACH JOINT TO PERMIT THE JOINT TO BE PROPERLY MADE. DEBRIS IS TO BE KEPT OUT OF THE PIPE. NO BACKFILL IS PERMITTED UNTIL THE TEST IS WITNESSED. BEDDING SHALL BE COMPACTED TO 95% MODIFIED PROCTOR TEST (AS PER ITEM BELOW).
- .3 OUTSIDE THE BUILDING, BACKFILLING IN UNPAVED AREAS SHALL BE DONE WITH LOOSE EARTH, FREE FROM ROCKS, DEBRIS, CINDERS, OR OTHER NON-CORROSIVE MATERIALS IN LAYERS NOT EXCEEDING 12" (300 mm) IN THICKNESS, COMPACTED TO 95% STANDARD PROCTOR DENSITY.
- .2 MATERIALS:
- .1 PIPE MATERIALS:
- .1 STORM SEWERS: CONCRETE PIPE WITH CEMENT OR RUBBER COUPLERS TO CSA A257.
3. PLUMBING & DRAINAGE
- .1 PIPE MATERIALS:
- .1 ALL BURIED DRAINAGE PIPING:
- .1 CLASS 4000 CAST IRON SHALL BE CERTIFIED TO CAN/CSA B70-M91 — MECHANICAL JOINT.
- .2 DOW PLASTIC PIPE ABA AND SOLVENT WELD, 4" (100 mm) AND SMALLER.
- .3 PVC SDR, 6" (150 mm) AND LARGER.
- .2 FIRE EXTINGUISHERS:
- .1 SUPPLY AND INSTALL FULLY CHARGED NATIONAL FIRE EQUIPMENT LIMITED ABC-050 MULTI-PURPOSE DRY CHEMICAL FIRE EXTINGUISHERS WITH A 2A-10BC RATING COMPLETE WITH WALL BRACKET — DESIGNATED FE.
4. SPRINKLERS
- .1 INSTALLATION SHALL COMPLY WITH THE BUILDING DEPARTMENT, FIRE DEPARTMENT, CUJA, OR NFPA PAMPHLET #13 AND NATIONAL BUILDING CODE, SECTION BUILDING SERVICES, FIRE PROTECTION.
- .2 PIPING FOR EXTENDED SPRINKLER SYSTEM SHALL BE HYDRAULICALLY CALCULATED, DESIGNED AND SUBMITTED TO APPROVING AGENCIES BY THE TRADE RESPONSIBLE FOR THE INSTALLATION.
- .3 SPRINKLER HEADS:
- .1 SPRINKLER HEADS TO BE PENDANT VIKING VK329 MICROMATIC CHROME TYPE, WITH STANDARD BULB RATED AT 155 DEG F (68 DEG C) UNLESS NOTED OTHERWISE. USE HIGH TEMPERATURE HEADS AT HEATERS TO NFPA STANDARDS.
- .2 SPRINKLER HEADS IN AREAS WITH AN 8'-0" (2400 mm) OR LESS CEILING HEIGHT, SHALL HAVE VIKING VK430-HP HEADS COMPLETE WITH ROUND FLAT CEILING PLATE COVER INSTALLED FLUSH TO FINISHED CEILING. COLOUR OF CEILING PLATE TO MATCH CEILING.
- .3 NOTE: PROVIDE SPRINKLER CABINET CONTAINING TEN (10) ADDITIONAL HEADS AND SPRINKLER WRENCH.
4. PIPE & FITTINGS:
- .1 PIPING TO BE ASTM-A-53 LIGHTWALL STEEL PIPE SCHEDULE 40 BLACK STEEL PIPE, GROOVED TO STANDARD ROLL GROOVING SPECIFICATION, COMPLETE WITH APPROVED AND LISTED MECHANICAL COUPLINGS AND FITTINGS.
- .2 ALL VALVES SHALL BE UNDERWRITERS' LABORATORIES OF CANADA (ULC) APPROVED, COMPLETE WITH MONITORING SWITCHES.
- .3 VALVES SHALL BE ALL BRASS UP TO AND INCLUDING 2" (50 mm) SIZE. LARGER SIZES SHALL BE IRON BODY. VALVES OVER 2-1/2" (65 mm) DIAMETER ARE TO HAVE GEAR OPERATORS.
- .5 TESTS & GUARANTEE:
- .1 TEST, ADJUST AND CERTIFY SPRINKLER SYSTEM AFTER COMPLETION OF WORK.
- .2 FURNISH TO THE OWNER, A WRITTEN GUARANTEE COVERING MATERIALS AND WORKMANSHIP, AS PER THE GENERAL CONDITIONS.
5. AIR DISTRIBUTION
- .1 ALL DUCTWORK TO 2" (500 PA) MAXIMUM STATIC PRESSURE SHALL BE FABRICATED TO SMACNA DUCT CONSTRUCTION STANDARDS, SECTION NO. 1, AND AS FOLLOWS:
- .2 MATERIAL & THICKNESS:
- .1 DUCTWORK SHALL BE FABRICATED FROM BEST QUALITY LOCK-FORMING GALVANIZED STEEL SHEETS, OF THE FOLLOWING THICKNESS.
- | SIZE OF DUCT<br>IN WIDTH OR DEPTH | GAUGE OF<br>SHEET STEEL |
|-----------------------------------|-------------------------|
| 12" (300 mm) OR LESS              | NO. 26 U.S.             |
| 13" TO 30" (325 mm TO 750 mm)     | NO. 24 U.S.             |
| 31" TO 48" (775 mm TO 1200 mm)    | NO. 22 U.S.             |
| 49" TO 84" (1225 mm TO 2130 mm)   | NO. 20 U.S.             |
- .3 CONSTRUCTION:
- .1 LONGITUDINAL SEAMS SHALL BE MADE WITH PITTSBURGH LOCK OR BUTTON PUNCH SEAMS IN ALL SIZES. ALL DUCTWORK SHALL BE CROSS-BROKEN OR BEADED 12" (300 mm) O.C. FOR RIGIDITY.
- .4 EXHAUST FANS:
- .1 SUPPLY AND INSTALL THE FOLLOWING EXHAUST AND RECIRCULATING FANS OF THE SIZE, TYPE, MODEL AND DESIGNATION CONTAINED IN THE FAN SCHEDULE. ACCESSORIES LISTED IN THE SPECIFICATIONS APPLIED TO ALL FANS OF THE SAME DESIGNATION. SPECIAL ACCESSORIES FOR INDIVIDUAL FANS ARE DESIGNATED ON THE FAN SCHEDULE.
- .2 SOUND LEVEL PERFORMANCE AND FAN CURVES SHALL BE INCLUDED WITH SUBMITTAL SHOP DRAWINGS.
- .3 SUSPEND FANS FROM STRUCTURE THROUGH VIBRATION ISOLATORS AND CONNECT TO DUCTWORK THROUGH FLEXIBLE DUCT CONNECTIONS. MOUNT FAN IN PLACE WITH BACKDRAFT DAMPERS AND GASKET SEALS. PROVIDE SEISMIC BRACING AS REQUIRED.

- .4 POWER WIRING FOR FANS IS BY ELECTRICAL CONTRACTOR
- .5 CONTROL WIRING IS BY MECHANICAL CONTRACTOR
- .6 PANEL-TYPE PROPELLER FANS — TYPE PF
- .1 PANEL SHALL BE MANUFACTURED OF HEAVY GAUGE STEEL WITH SPUN VENTURI INLET AND WELDED CORNERS.
- .2 PROPELLER BLADES SHALL BE STATICALLY AND DYNAMICALLY BALANCED.
- .3 BELT DRIVE MOTOR SHALL BE MOUNTED ON A BRACKET ATTACHED TO THE PANEL WITH BELT DRIVE AND SHEAVES.
- .4 ACCESSORIES SHALL INCLUDE BACKDRAFT DAMPER, AND WALL MOUNT BOX MOTOR SIDE GUARD, FAN SIDE GUARD.
- .5 DESIGN IS BASED ON COOK
- .6 ACCEPTABLE PRODUCTS:
- .1 GREENHECK
- .2 PENN VENTILATOR
- .3 COOK
- .7 ALUMINUM DOME FANS — TYPE ADF
- .1 SUPPLY AND INSTALL ALUMINUM DOME FAN OF SIZE LISTED IN THE SCHEDULE.
- .2 FANS SHALL BE MANUFACTURED OF ALUMINUM COMPLETE WITH STANDARD FEATURES:
- .1 CENTRIFUGAL WHEEL
- .2 V-BELT DRIVE WITH 1750 RPM MOTORS OR DIRECT-DRIVE MOTOR
- .3 REMOVABLE TOP FOR ACCESS TO FAN AND MOTOR
- .4 CURB CAP AND VIBRATION ISOLATION
- .5 ACCESSORIES SHALL INCLUDE:
- .1 BACKDRAFT DAMPER
- .2 BIRDGUARD
- .3 18" (450 MM) HIGH PRE-FABRICATED ROOF CURB (SOUND CURB)
- .4 DESIGN IS BASED ON COOK
- .5 ACCEPTABLE PRODUCTS:
- .1 PENN VENTILATOR
- .2 COOK
- .3 GREENHECK
- .5. MOTORIZED WEATHER LOUVER — DESIGNATED MWL
- .1 ALL BLADES SHALL BE STORM TYPE, CENTRE PIVOTED WITH REINFORCING BOSSES AND HAVE A 1/2" (15 MM) DIAMETER PINION OPERATING IN A SELF-LUBRICATING NYLON BEARING. LOUVER BLADES SHALL HAVE VINYL GASKET TO EFFECT POSITIVE CLOSURE. MOTORIZED LOUVER SHALL BE FACTORY CONSTRUCTED OF SIZE LISTED IN THE LOUVER SCHEDULE.
- .2 LOUVER BLADES SHALL OPERATE BY A CONCEALED DRIVE ARM AT EACH JAMB AND BE COMPLETE WITH 110 VOLT ELECTRIC MOTOR.
- .3 ALL LOUVRES FURNISHED WITH 1/2" (15 MM) MESH, .063" (1.6 MM) DIAMETER WIRE SECURED TO THE EXTRUDED ALUMINUM FRAME AND SILL EXTENSION.
- .4 FINISH TO BE KYNAR 500 OF A COLOUR SELECTED BY THE CONSULTANT AND/OWNER.
- .5 ACCEPTABLE PRODUCTS:
- .1 E. H. PRICE
- .2 CONSTRUCTION SPECIALTIES
- .3 RUSKIN
6. GAS DETECTION SYSTEM
- .1 SUPPLY GAS DETECTION SYSTEMS AS DESCRIBED HEREIN. SPECIFICATION IS BASED ON CRITICAL ENVIRONMENT TECHNOLOGIES.
- .2 ACCEPTABLE PRODUCTS:
- .1 CRITICAL ENVIRONMENT TECHNOLOGIES, AS SUPPLIED BY O'DELL ASSOCIATES, 905-681-3901
- .2 VULCAN
- .3 MSA CANADA
- .3. LOADING DOCK MULTI-ZONE SYSTEM — DESIGNATED GDS-1
- .1 PROGRAMMABLE DIGITAL CONTROLLER: SUPPLY A PROGRAMMABLE, DIGITAL, FOUR (4) CHANNEL, CONTROLLER EQUAL TO CRITICAL ENVIRONMENT TECHNOLOGIES, MODEL FCS-4-M-L, CONTAINING THE FOLLOWING:
- .1 120 VAC/60 HZ POWER REQUIREMENT
- .2 PROVIDES 24 VDC POWER TO TRANSMITTERS
- .3 FOUR (4) 4-20 MA INPUTS FROM ANALOG TRANSMITTERS
- .4 EIGHT (8) INPUTS FROM DIGITAL TRANSMITTERS
- .5 EIGHT (8) PROGRAMMABLE RELAY OUTPUTS RATED 5A @ 240 VAC
- .6 EXTENSIVE ZONING CAPABILITIES
- .7 PROGRAMMABLE ALARM TIME DELAYS AND MINIMUM FAN RUN TIMES
- .8 LCD DISPLAY OF GAS CONCENTRATION AND ALARM STATUS
- .9 LED ALARM INDICATION (FAULT, LOW, MED, HIGH)
- .10 AUDIBLE ALARM RATED 90 DB @ 10 FEET
- .11 ACKNOWLEDGE/SILENCE BUTTON
- .12 COMPLETELY FIELD PROGRAMMABLE
- .13 AUTOMATED CALIBRATION MAINTENANCE. ONE PUSHBUTTON ACHIEVES "AUTO ZERO" AND "AUTO SPAN"
- .14 DIGITAL PUSHBUTTON SELECTION OF CALIBRATION GAS CONCENTRATION
- .15 CSA/UL AND CE CERTIFICATIONS
- .16 STROBE ALARM LIGHT
- .2 TWO (2) SET MODEL GDS-D-CO-NO2 GAS SENSOR/TRANSMITTER:
- .1 4-20 MA ANALOGUE OR 0 TO 10 VDC OUTPUT SIGNALS
- .2 COMPLETE WITH OPTIONAL PROTECTIVE GUARD
- .3 FACTORY CALIBRATED TO A RANGE OF 0 TO 200 PPM
- .4 COMMUNICATES DIGITALLY WITH PDC PANEL ON 4-WIRE DAISY CHAIN NETWORK
- .3. INSTALLATION OF ALL CONTROL WIRING OF ALL SENSORS IS BY MECHANICAL CONTRACTOR
4. POWER WIRING TO CONTROLLER BY ELECTRICAL CONTRACTOR
5. SENSOR DETECTION SUPPLIER SHALL CALIBRATE, PROGRAM AND TEST ALL EIGHT (8) SENSORS AND BOTH CONTROLLERS. PROVIDE COMPLETE START-UP REPORT TO CONSULTANT. ASSIST ELECTRICAL CONTRACTOR IN WIRING OF SENSORS.
6. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND ALL APPLICABLE CODES AND REGULATIONS.
7. CHECK FINAL LOCATION WITH CONSULTANT, IF DIFFERENT FROM INDICATED LOCATION, PRIOR TO INSTALLATION. SHOULD DEVIATIONS BEYOND ALLOWABLE TOLERANCES ARISE FOLLOW CONSULTANT'S DIRECTIVE.
8. PROVIDE FOR TESTING AND COMMISSIONING TO DEMONSTRATE OPERATION TO SATISFACTION OF CONTRACT ADMINISTRATOR.
9. START-UP COMMISSIONING AND CALIBRATION MUST BE CONDUCTED BY PERSONNEL AUTHORIZED BY CRITICAL ENVIRONMENT TECHNOLOGIES. REPORT SHALL BE PROVIDED.
- .10 PROVIDE START-UP REPORT TO CONTRACT ADMINISTRATOR
7. ELECTRIC UNIT HEATERS
- .1 UNIT TO BE VERTICAL FLOW (DOWN DISCHARGE), HUNG FROM EXISTING ROOF STRUCTURE.
- .2 CABINET TO BE 18 GAUGE STEEL COMPLETE WITH PHOSPHATE UNDERCOAT FOR CORROSION RESISTANCE. FINISH IS A TWO-TONE GRAY POLYESTER POWDER COAT.
- .3 LOUVRES SHALL BE INDIVIDUALLY ADJUSTABLE.
- .4 HEATING ELEMENTS SHALL BE CORROSION-RESISTANT STEEL FINS, FURNACE BRAZED TO A TUBULAR HEATING ELEMENT ASSEMBLY ASSURING LONG LIFE AND SUPERIOR HEAT TRANSFER.
- .5 FAN MOTOR SHALL BE TOTALLY ENCLOSED AND RATED FOR CONTINUOUS DUTY WITH BUILT-IN THERMOSTAT CUT-OUT AND SHALL OPERATE ON THE SAME VOLTAGE AS THE HEATING CIRCUIT.
- .6 FAN SHALL BE PULL-THROUGH ACROSS HEATING ELEMENT.
- .7 UNIT SHALL BE COMPLETE WITH:
- .1 INTEGRAL 24V CONTROL TRANSFORMER
- .2 HEAVY DUTY MAGNETIC CONTACTORS
- .3 LINEAR THERMAL CUT-OUTS
- .4 THERMOSTAT KIT
- .5 DISCONNECT SWITCH KIT.
- .8 DESIGN IS BASED ON CHROMALOX
- .9 ACCEPTABLE PRODUCTS
- .1 CHROMALOX
- .2 TRAN
- .3 P. M. WRIGHT
- .4 OUELLET

6. TEMPERATURE CONTROLS
- .1 GENERAL:
- .1 THE SUB-CONTRACTOR UNDER THIS HEADING SHALL FURNISH ALL MATERIALS, EQUIPMENT AND SUPERVISION FOR THE PROPER INSTALLATION OF A SYSTEM OF AUTOMATIC TEMPERATURE CONTROLS. THIS INCLUDES ALL THERMOSTATS, RELAYS, AND VALVES.
- .2 APPROVED CONTRACTORS:
- .1 LANDIS & STAFA
- .2 HONEYWELL
- .3 JOHNSON
- .3 SERVICE AND GUARANTEE:
- .1 THE CONTROL SYSTEM SPECIFIED HEREIN SHALL BE FREE FROM DEFECTS IN WORKMANSHIP AND MATERIALS UNDER NORMAL USE AND SERVICE. IF WITHIN TWENTY FOUR (24) MONTHS FROM THE DATE OF ACCEPTANCE BY THE OWNER, ANY OF THE EQUIPMENT HEREIN SPECIFIED IS PROVED TO BE DEFECTIVE IN WORKMANSHIP OR MATERIAL, IT WILL BE REPLACED AT NO COST TO THE OWNER.
- .2 AFTER COMPLETION OF THE ORIGINAL TEST OF THE INSTALLATION AND ACCEPTANCE BY THE CONTRACT ADMINISTRATOR AND OWNER, PROVIDE ANY SERVICE INCIDENTAL TO THE PROPER PERFORMANCE OF THE TEMPERATURE CONTROL SYSTEM UNDER GUARANTEE OUTLINE ABOVE FOR THE PERIOD OF TWO (2) YEAR.
- .3 AFTER COMPLETION OF THE INSTALLATION, REGULATE AND ADJUST ALL THERMOSTATS, CONTROL VALVES, MOTORS AND OTHER EQUIPMENT, AND PLACE THEM IN COMPLETE OPERATING CONDITION, SUBJECT TO THE APPROVAL OF THE CONSULTANT.
2. THERMOSTATS:
- .1 THERMOSTATS: INSTALL WALL MOUNTED THERMOSTAT AT 5'-6" (1675 MM) ABOVE FLOOR WHERE INDICATED ON THE DRAWING. THERMOSTAT SHALL BE COMPLETE WITH AN INSULATED SUB-BASE REQUIRED WHERE THERMOSTATS ARE LOCATED ON EXTERIOR WALLS.
3. MECHANICAL SEQUENCE OF OPERATIONS
- .1 EXHAUST FAN EF-1,2,3,4,5 / WALL LOUVER WL-1:
- .1 MECHANICAL CONTRACTOR TO INTERLOCK EACH OF EF-1,2,3,4 & 5 TO WALL LOUVER WL-1 SO THAT WL-1 OPENS WHEN ANY OF THE EXHAUST FANS ARE OPERATING.
- .2 WL-1 IS CLOSED IF NO EXHAUST FANS ARE OPERATING
- .2 EXHAUST FAN EF-6:
- .1 MECHANICAL CONTRACTOR TO INSTALL AND WIRE GAS SENSORS TO GAS DETECTOR.
- .2 MECHANICAL CONTRACTOR SHALL INTERLOCK EF-6, WL-2 AND WL-3 TO GAS DETECTOR. WHEN THE GAS DETECTOR DETECTS ANY UNSAFE CONDITION ABOVE 50PPM CO, EF-6 STARTS AND WL-2 & WL-3 OPENS. WHEN THE GAS DETECTOR SENSOR CO LEVELS BELOW 50 PPM, EF-6 STOPS AND WL-2 & WL-3 CLOSE.

SOLID WASTE MANAGEMENT SERVICES



exp Services Inc.

t: +1 905.793.9800 | f: +1 905.793.0841

1595 clark Boulevard

Brampton, ON L6T 4V1

Canada

www.exp.com

• BUILDINGS • EARTH & ENVIRONMENT • ENERGY •

• INDUSTRIAL • INFRASTRUCTURE • SUSTAINABILITY •

5	JAN 12/24	ISSUED FOR TENDER	MWW	
4	JAN 10/24	ISSUED FOR FINAL APPROVAL	MWW	
3	NOV 20/23	100% DESIGN SUBMISSION	MWW	
2	OCT 26/23	REISSUED 70% DESIGN SUBMISSION	MWW	
1	JULY 18/23	70% DESIGN SUBMISSION	MWW	
No.	DATE	REVISIONS	INITIAL	SIGNED



SOLID WASTE MANAGEMENT SERVICES

MATT KELIHER GENERAL MANAGER SOLID WASTE MANAGEMENT SERVICES	MATTHEW CASCHERA DIRECTOR INFRASTRUCTURE AND RESOURCE MANAGEMENT
--	---

COMMISSIONERS TRANSFER STATION

MRF BUILDING UPGRADES  
400 COMMISSIONER STREET, TORONTO, ONTARIO M4M 3K2

MECHANICAL SPECIFICATIONS

DESIGN:	EK	DRAFTING:	DGC	CHECK:	MWW	CONTRACT No.	23SWM-IRM-026CDU
SCALE:	AS NOTED			DRAWING NUMBER:	1601-2023-3-23		
DATE:	JULY 18, 2023				M3		



24 134572 HVA 00

