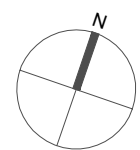
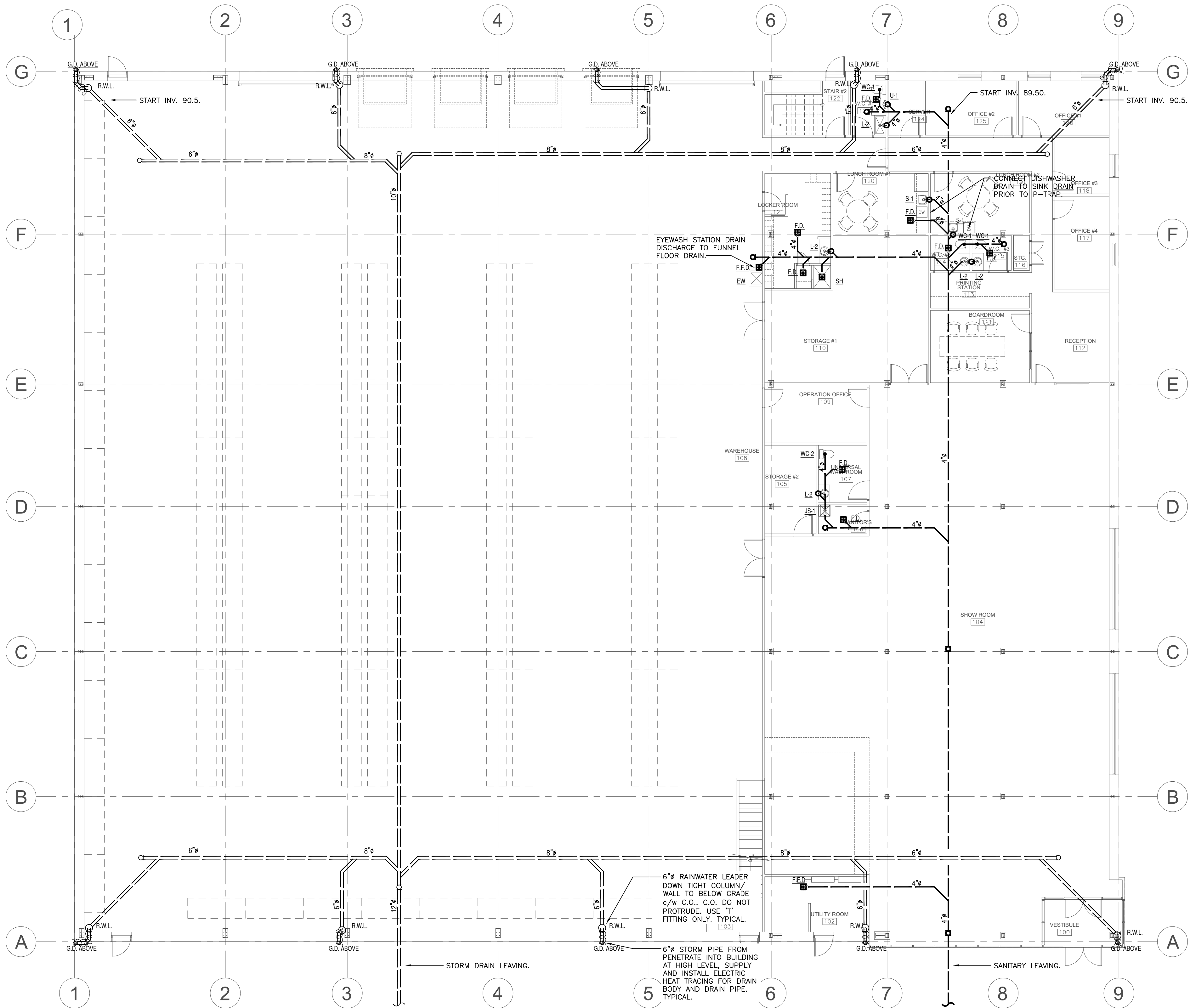


LEGEND	
	SUSPENDED SANITARY DRAIN
	BURIED SANITARY DRAIN
	SUSPENDED STORM DRAIN
	BURIED STORM DRAIN
	SANITARY VENT
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	DOMESTIC HOT WATER RECIRC
	COMPRESSED AIR
	GAS PIPING
	CONDENSATE DRAIN
	CLEANOUT PLUG
	FLOOR CLEANOUT
	PLUMBING TRAP
	FLOOR DRAIN
	FUNNEL FLOOR DRAIN
	HUB DRAIN
	AREA DRAIN/ CATCH BASIN
	TRENCH DRAIN
	ROOF DRAIN
	PIPE UP/ DOWN/ T-OFF AND DOWN
	BALL VALVE
	SHUT-OFF VALVE
	PRESSURE REDUCING VALVE
	BACKWATER PREVENTOR
	SOLENOID VALVE
	SUPPLY AIR DIFFUSER - NECK SIZE 8"Ø, TYPE 'A' 200 CFM
	RETURN AIR EGGRATE - TYPE 'B', SIZE 24"x12"
	DUCT WITH THERMAL INSULATION.
	THERMOSTAT
	STARTER/ SPEED CONTROLLER
	SENSOR
	FIRE DAMPER
	SUPPLY AIR
	RETURN AIR
	EXHAUST AIR
	FRESH AIR
	HIGH LEVEL
	LOWER LEVEL
	CONNECT TO EXISTING
	EXISTING
	NEW LOCATION OF RELOCATED EXISTING
	RELOCATE
	UNDERCUT DOOR

No.	DESCRIPTION	
REVISIONS		
ISSUED FOR CONSTRUCTION		
ISSUED FOR BID		
ISSUED FOR BUILDING PERMIT		JAN.21/21
ISSUED FOR SITE PLAN APPROVAL		DATE
SUBMITTALS		
CONTRACTORS MUST CHECK AND VERIFY ALL DIMENSIONS, AND CONDITIONS ON THE PROJECT AND MUST REPORT ANY DISCREPANCIES TO THE DESIGNER BEFORE PROCEEDING WITH CONSTRUCTION.		
THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SEALED AND SIGNED BY THE DESIGNER.		
DO NOT SCALE DRAWINGS.		
TRISTAR ENGINEERING Division of 1041549 Ontario Limited 8901 Woodbine Avenue, Unit #118 Markham, Ontario Canada, L3R 9Y4 (905) 604-3801 Fax (905) 604-3854		
PROJECT: PROPOSED OFFICE/WAREHOUSE ON 1260 SKAE DRIVE OSHAWA		
DRAWING: MECHANICAL SITE PLAN		
PLOTTED:		PROJECT No. 2019-084
DATE: NOV. 2020		DRAWING No. M-1
SCALE: 1:500		
DRAWN BY: H.C.		REVIEWED BY: J.P.



No.	DESCRIPTION
REVISIONS	

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ISSUED FOR BID	
ISSUED FOR BUILDING PERMIT	JAN.21/21
ISSUED FOR SITE PLAN APPROVAL	DATE
SUBMITTALS	

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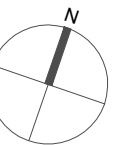
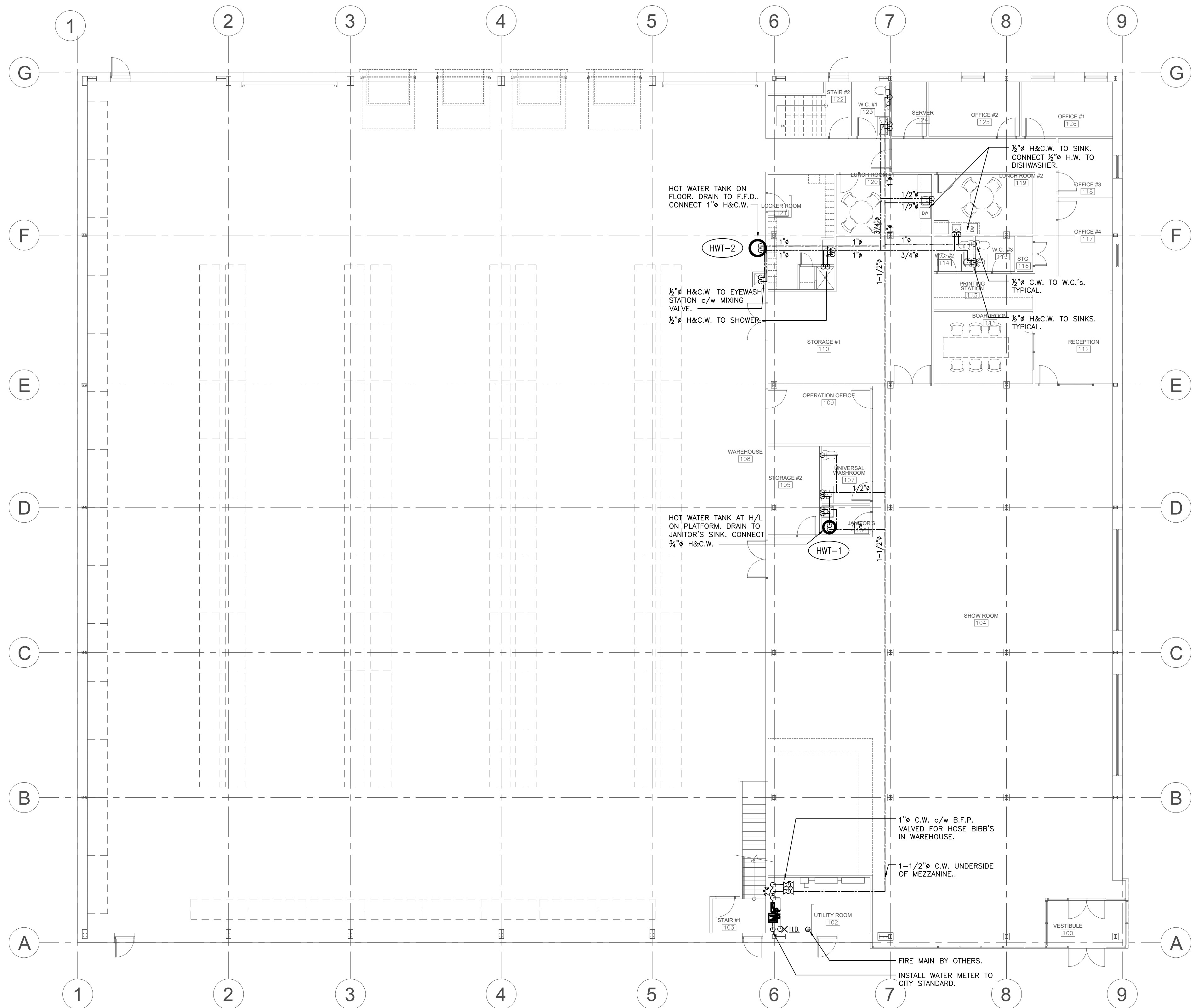
TRISTAR ENGINEERING
Division of 1041549 Ontario Limited
9901 Woodbine Avenue, Unit #118
Markham, Ontario
Canada, L3R 9Y4
(905) 604-3801
Fax (905) 604-3804



PROJECT:
PROPOSED
OFFICE/WAREHOUSE
ON
1260 SKAE DRIVE
OSHAWA

DRAWING:
GROUND FLOOR
DRAINAGE LAYOUT

DATE:	NOV. 2020	PROJECT No.	2019-084
SCALE:	1:125	DRAWING No.	M-2
DRAWN BY:	H.C.	REVIEWED BY:	J.P.



No.	DESCRIPTION	
	REVISIONS	

ISSUED FOR CONSTRUCTION

ISSUED FOR BID

ISSUED FOR BUILDING PERMIT JAN.21/21

ISSUED FOR SITE PLAN APPROVAL	DATE
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SUBMITTALS

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FINDTOPICS AND

CRISPR

INSLAN


ENGINEERING

8901 Woodbine Avenue, Unit #116
Markham, Ontario L3R 9W4
(905) 941-7881

Markham, Ontario
Canada, L3R 9Y4

Figure 1

PROFESSIONAL



100134411

ICE

[Signature]

PROVINCE OF ONTARIO

2021.01.21

2021.01.21

PROJECT: _____

PROPOSED
OFFICE /WAREHOUSEOFFICE/WAREHOUSE
ON

1260 SKAF DRIVE

1200 SIKAL DRIVE

OSHAWA

DRAWING:

GROUND FLOOR

PLUMBING LAYOUT

PLOTTED:

DATE:	PROJECT No.
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NOV. 2020	2019-084
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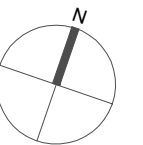
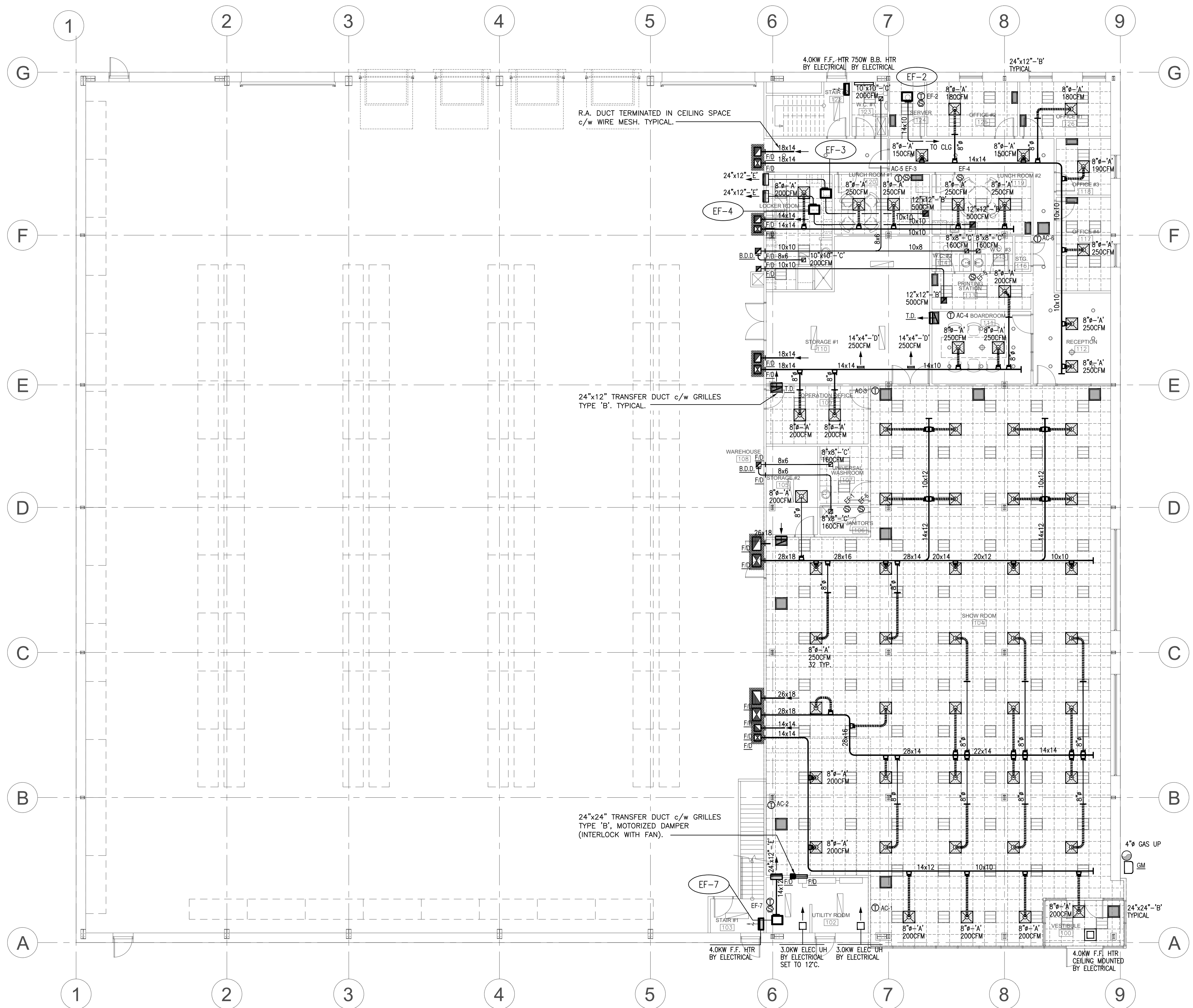
SCALE:	DRAWING No.
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1:125

M-3

DRAWN BY:	REVIEWED BY:	M-3
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H.C.	J.P.	
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No.	DESCRIPTION	
	REVISIONS	

ISSUED FOR CONSTRUCTION

ISSUED FOR BID

ISSUED FOR BUILDING PERMIT JAN.21/21

ISSUED FOR SITE PLAN APPROVAL DATE

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DISCORD

INSIAN

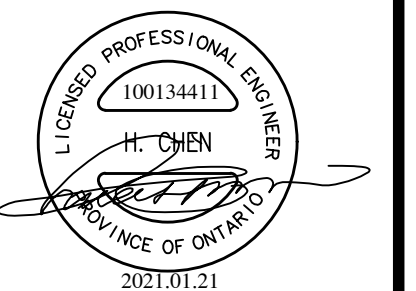
ENGINEERING

Division of 1041549 Ontario Limited
8901 Woodbine Avenue, Unit #116

Markham, Ontario (905) 604-3801
Canada, L3R 9Y4 Fax (905) 604-3954

Figure 1

ESSA



PROJECT:

PROPOSED

OFFICE/WAREHOUSE

ON
1060 SIKAF DRIVE

1260 SKAE DRIVE

OSHAWA

DRAWING:

GROUND FLOOR

H V A C LAYOUT

PLOTTED:

DATE:	PROJECT No.
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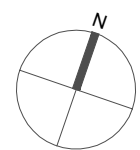
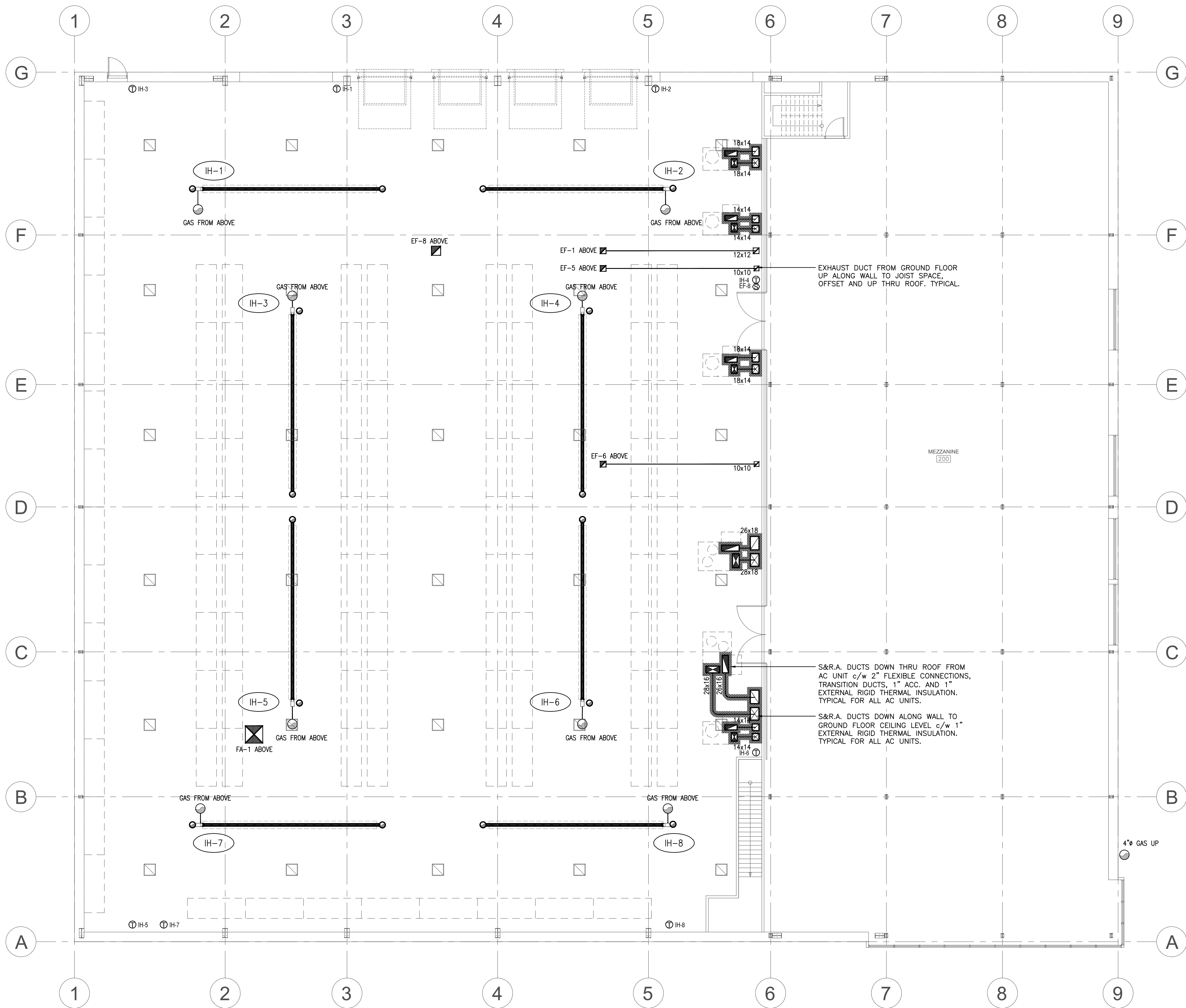
NOV. 2020 | 2019-084

SCALE:	DRAWING No.
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1:125 | M 4

DRAWN BY:	REVIEWED BY:	M-4
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H.C.	J.P.	
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No.	DESCRIPTION
REVISIONS	

ISSUED FOR CONSTRUCTION	
ISSUED FOR BID	
ISSUED FOR BUILDING PERMIT	JAN.21/21
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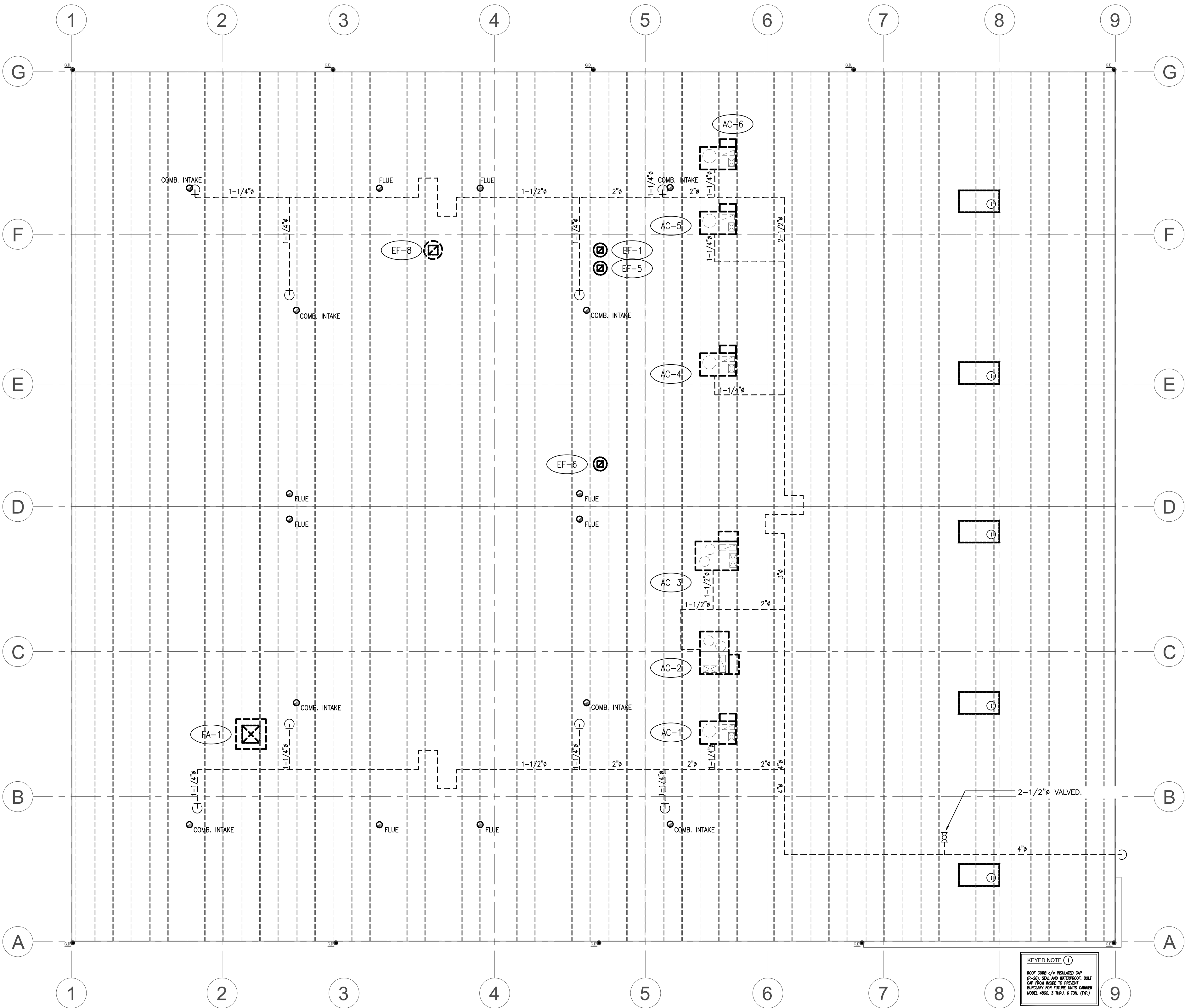
TRISTAR ENGINEERING
Division of 1041549 Ontario Limited
9001 Woodbine Avenue, Unit #118
Markham, Ontario
Canada, L3R 9Y4
(905) 604-3801
Fax (905) 604-3854

LICENSED PROFESSIONAL ENGINEER
100134411
H. CHEN
PROVINCE OF ONTARIO
2021.01.21

PROJECT:
PROPOSED
OFFICE/WAREHOUSE
ON
1260 SKAE DRIVE
OSHAWA

DRAWING:
MEZZANINE FLOOR
H.V.A.C. LAYOUT

DATE:	NOV. 2020	PROJECT No.	2019-084
SCALE:	1:125	DRAWING No.	M-5
DRAWN BY:	H.C.	REVIEWED BY:	J.P.



No.	DESCRIPTION
REVISIONS	

ISSUED FOR CONSTRUCTION	
ISSUED FOR BID	
ISSUED FOR BUILDING PERMIT	JAN.21/21
ISSUED FOR SITE PLAN APPROVAL	DATE
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Division of 1041549 Ontario Limited
9001 Woodbine Avenue, Unit #118
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(905) 604-3801
Fax (905) 604-3804

LICENSED PROFESSIONAL ENGINEER
100134411
H. CHEN
PROV. OF ONTARIO
2021.01.21

PROJECT:
PROPOSED
OFFICE/WAREHOUSE
ON
1260 SKAE DRIVE
OSHAWA

DRAWING:
ROOF PLAN
MECHANICAL LAYOUT

DATE:	NOV. 2020	PROJECT No.	2019-084
SCALE:	1:125	DRAWING No.	M-6
DRAWN BY:	H.C.	REVIEWED BY:	J.P.

MECHANICAL SPECIFICATIONS

GENERAL REQUIREMENTS FOR MECHANICAL WORK

1.0 SCOPE OF WORK

- 1.1 Conform to the applicable provisions of the General Conditions of the contract.
- 1.2 The General Mechanical Specification shall apply to and be part of each of the sections covering the mechanical trades work.

1.3 Comply with the requirements of the current edition of the O.B.C., of all applicable codes, regulations, by-laws and official standards according to the requirements and interpretations of the authorities having jurisdiction. These codes & standards shall constitute an integral part of the contract.

2.0 EXAMINATION OF SITE AND INFORMATION

- 2.1 Each Subcontractor, before tendering, shall examine the site, the Architectural, Structural, Mechanical, and Electrical drawings and he shall familiarize himself with the building construction and material in order that he tender may include everything necessary for the proper completion of the work.

2.2 It shall be the Subcontractor's responsibility that material and equipment be brought into the building in such assemblies and sizes as to enter the building and be stored and to be small enough to be hoisted into the building without difficulty. Any cutting, patching, etc., involved in getting large assemblies into place, shall be the responsibility of the Subcontractor.

3.0 RELATIONSHIP TO OTHER TRADES

- 3.1 The Subcontractor shall confer with all other contractors installing equipment, plant piping, other work, foundations, etc., which may affect his installation, and he shall arrange his equipment, piping, etc., in proper relation with other operations, and with the building construction. He shall also confirm the exact characteristics of the project and cover equipment accordingly.

3.2 Special care shall be taken in the installation of all work, to see that they all come within the limits established by the final line of all walls, floors, ceilings, etc.

3.3 The Subcontractor shall notify the contractor and other Subcontractors who are concerned, of all openings, foundation work, hangers, inserts, anchors, or other provisions necessary in their work for the installation of the work, and he shall furnish all information and necessary materials in ample time so that proper provisions can be made for same, and shall supply and correctly and accurately place all inserts, sleeves, anchors, etc.

3.4 Failure to comply with these requirements on the part of the Subcontractor will render him responsible for the cost of cutting openings, inserting hangers and other provisions at a later date, and the subsequent patching, etc., thereby required.

3.5 No cutting shall be done without permission. All such work shall be done by tradesmen skilled in and certified for this particular trade.

4.0 SHOP DRAWINGS

- 4.1 Each Subcontractor shall submit eight (8) copies of the shop drawings to the Architect for review of material, equipment, and apparatus being provided by him. These shall show in detail the design and construction and performance of all apparatus, etc.

4.2 The Engineer's review of shop drawings and manufacturer's specifications of material is general and is not intended to serve as final check and it shall not relieve the Subcontractor of the responsibility for errors or of the necessity of checking the drawing himself, or of furnishing any of the materials and performing the work required by the drawings and specifications in the full intent of the specification.

4.3 Before submission, the Subcontractor shall check all shop drawings for accuracy of details, dimensions, etc., and shall be satisfied that the drawings are correct and that the equipment will fit the space provided for it. The shop drawings shall be stamped by the Subcontractor with the word "Reviewed", the date of approval, and the firm's name prior to submission.

5.0 REQUIREMENTS OF INSPECTION DEPARTMENTS

- 5.1 All work shall be installed in accordance with all laws and regulations of all authorities having jurisdiction in each case, particularly all affected departments of the Municipality and Province. Electrical equipment required, must conform to the regulations of CEA and the local utility. Anything necessary to make the work comply with these requirements shall be provided by this Subcontractor without additional cost to the owners if it reasonably could have been foreseen when tendering.

5.2 Each subcontractor shall prepare drawings in addition to Engineer's drawings as may be required by various inspection departments having jurisdiction, and obtain their approval before proceeding with the work.

5.3 In the event that the inspection department's request depends from the Engineer's input, Subcontractor shall consult the Engineer before proceeding with same. It shall be noted that Engineer's drawings are generally acceptable to inspection departments and minor supplements need only be made by Subcontractor.

6.0 CERTIFICATES, PERMITS, FEES

- 6.1 Subcontractor shall give all necessary notices, obtain all required permits and pay all fees including payment for street connections to storm, sewer, water, gas, and telephone lines, and for the installation of all existing services. This subcontractor is responsible for all damages and subsequent expenses resulting from his negligence in this respect.

6.2 Subcontractor shall contact the local gas company as soon as possible and verify that gas service is available at pressure and capacity required for the project. He shall inform engineer immediately if there is any problem with gas service otherwise. It shall be the Subcontractor's responsibility to coordinate gas requirements with the gas company before any work proceeds.

7.0 CEMENTATION

7.1 This subcontractor shall guarantee all material and workmanship used in the work to be in strict accordance with the specifications, of best quality and type obtainable to give first-class construction and proper and efficient operation, and free from any defects. Any such defects which may appear in any of the work within one year after completion of the work, shall be repaired and replaced by this Subcontractor without additional expense to the owner. Where such defects occur, this Subcontractor shall be held responsible for all costs incurred in making the defective work good. This shall not constitute any longer warranties on specific items of equipment.

7.2 All injuries to adjacent work, particularly plaster, wood finishes or other materials, or damage to other equipment, caused by such defects in this Subcontractor's work or by subsequent repairs, shall be made good at the expense of this Subcontractor. All repair work shall be done by trades responsible for the original work.

8.0 EXCAVATING AND BACKFILLING

- 8.1 Unless otherwise indicated, all necessary excavating and backfilling shall be done by this subcontractor.
- 8.2 Before commencing any work, the subcontractor shall be responsible for all existing services. This subcontractor is responsible for all damages and subsequent expenses resulting from his negligence in this respect.

9.0 KEEP EXCAVATION FREE OF WATER

9.1 Provide any necessary shoring as may be required for the safety of the trade installing the work.

9.2 Backfill building and under paved areas with pit run gravel or sand properly tamped in 12" layers.

9.3 In all other areas backfill with good clean earth properly tamped in 12" layers.

9.4 Excess excavated material shall be placed on the site where directed by the field engineer for removal by others.

9.5 Lay all piping on a bed of well undisturbed earth or where this is not obtainable, on concrete pads, supported by concrete piers extended down to undisturbed bearing.

9.6 Where necessary, it is necessary in close proximity to or below any footing level, backfill with 1,500 lb. concrete to the level of the highest adjacent footing.

9.7 At the completion of the project fill in and level off exterior excavations.

10.0 DRAINAGE

- 10.1 The drawings show the approximate location for the special openings and the materials throughout the building. The arrangement shown on the drawings is more or less diagrammatic and as such approximate only, and may be altered, as approved by the Engineer, to meet the requirements of the authorities having jurisdiction.

10.2 The Subcontractor shall be responsible for the proper installation of the drainage system, and shall be held responsible for any damage to the drainage system, and shall be held responsible for any damage to the drainage system, and shall be held responsible for any damage to the drainage system.

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3. Carefully set the system for balance using the following procedure: Adjust the system with mixing dampers positioned for minimum design outdoor air quantities noted.

4. Balance the terminal units in each control area in proportion to each other. The following steps may be followed to balance the terminals:
 - a) Once the preliminary flow quantity is set, proportion the terminal unit balance from the outside into the branches to the fan. Consideration should be given to the flow quantity in each branch.
 - b) On horizontal branches and main drains at intervals not exceeding 15 meters (50') for 100 mm (4") and smaller, and 30 meters (100') for 150 mm (6") and larger.
 - c) On vertical branches and main drains at intervals not exceeding 15 meters (50') for 100 mm (4") and smaller, and 30 meters (100') for 150 mm (6") and larger.
 - d) On horizontal branches and main drains at intervals not exceeding 15 meters (50') for 100 mm (4") and smaller, and 30 meters (100') for 150 mm (6") and larger.
 - e) On vertical branches and main drains at intervals not exceeding 15 meters (50') for 100 mm (4") and smaller, and 30 meters (100') for 150 mm (6") and larger.
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 - p) On horizontal branches and main drains at intervals not exceeding 15 meters (50') for 100 mm (4") and smaller, and 30 meters (100') for 150 mm (6") and larger.
 - q) On vertical branches and main drains at intervals not exceeding 15 meters (50') for 100 mm (4") and smaller, and 30 meters (100') for 150 mm (6") and larger.
 - r) On horizontal branches and main drains at intervals not exceeding 15 meters (50') for 100 mm (4") and smaller, and 30 meters (100') for 150 mm (6") and larger.
 - s) On vertical branches and main drains at intervals not exceeding 15 meters (50') for 100 mm (4") and smaller, and 30 meters (100') for 150 mm (6") and larger.
 - t) On horizontal branches and main drains at intervals not exceeding 15 meters (50') for 100 mm (4") and smaller, and 30 meters (100') for 150 mm (6") and larger.
 - u) On vertical branches and main drains at intervals not exceeding 15 meters (50') for 100 mm (4") and smaller, and 30 meters (100') for 150 mm (6") and larger.
 - v) On horizontal branches and main drains at intervals not exceeding 15 meters (50') for 100 mm (4") and smaller, and 30 meters (100') for 150 mm (6") and larger.
 - w) On vertical branches and main drains at intervals not exceeding 15 meters (50') for 100 mm (4") and smaller, and 30 meters (100') for 150 mm (6") and larger.
 - x) On horizontal branches and main drains at intervals not exceeding 15 meters (50') for 100 mm (4") and smaller, and 30 meters (100') for 150 mm (6") and larger.
 - y) On vertical branches and main drains at intervals not exceeding 15 meters (50') for 100 mm (4") and smaller, and 30 meters (100') for 150 mm (6") and larger.
 - z) On horizontal branches and main drains at intervals not exceeding 15 meters (50') for 100 mm (4") and smaller, and 30 meters (100') for 150 mm (6") and larger.

5. Kitchen exhaust fans shall be air balanced as follows:
 - a) Determine total exhaust air volume of discharge side of fan.
 - b) Determine velocity at each filter of the exhaust hood (min hood -19 filters) and average the readings to determine the air volume.
 - c) Adjust the filter area factor of 1.15.
 - d) Record and compare items a) and b) above to obtain true exhaust air volume.

19.0 PAINTING

- 19.1 All equipment fabricated from steel and not factory finish painted shall be supplied with a prime coat done at the supplier's factory. If damaged in transit or on the job, the contractor shall touch up with red lead primer before final painting.

20.0 ACCESS DOORS

- 20.1 Locate access doors where required and of sufficient size for servicing valves, dampers, cleanouts, etc.

20.2 These shall be flush mounting, screwdriver access, metal type, 16 gauge primed steel.

21.0 FIRESTOP SYSTEMS

- 21.1 Provide ULC listed firestop systems for all penetrations through fire rated separations.

PLUMBING, DRAINAGE AND PIPING

1.0 GENERAL

- 1.1 Work shall include all plumbing and drainage as required and/or shown on the drawings. All work shall be installed, tested and inspected in accordance with the National Plumbing Code and all plumbing codes, by-laws and regulations.

- 1.2 All required tests shall be made in the presence of the authorized inspector certifying the test. Upon completion of test, written report to the architect, substantiating compliance with test data and results.

- 1.3 Provide sleeves where piping passes through foundations, floors, roofs, or walls. Sleeves shall be schedule 40 galvanized steel or wrought iron, 1/2" or 1" larger than the pipe, and shall be installed in accordance with the following:
 - a) Sleeves shall be installed in accordance with the following:
 - 1. Pipe size up to 3/4" 6"-8"
 - 2. Pipe size 1/2" to 1" 8"-12"
 - 3. Pipe size 1 1/2" and over 12"-18"

- 1.4 Horizontal piping shall be supported at intervals as follows:
 - a) Pipe size up to 3/4" 6"-8"
 - b) Pipe size 1/2" to 1" 8"-12"
 - c) Pipe size 1 1/2" and over 12"-18"

- 1.5 Pipe hangers shall consist of Drivell No. 260 Cleva hangers with threaded rods and suitable clamping device at top end. Grapple strap hangers shall not be used.

- 1.6 Where supporting copper pipe, the pipe shall be isolated from the hanger with Electrolytic Isolation tape or equivalent.

- 1.7 Vertical piping shall be supported at the roof and/or with intermediate wall supports at 10'-0" intervals for piping 2" and over, and 6'-0" intervals for piping up to 1'-1/2". More frequent supports shall be provided where necessary to prevent movement.

- 1.8 All piping shall be installed to make provision for the expansion and contraction of pipes and to be free from strains and distortions. Provide swing joints on all branch lines, expansion loops on all straight runs over 100 feet, and anchors to limit horizontal expansion.

- 1.9 Provide drain cocks at all low points of water systems and where required to prevent freezing.

- 1.10 All exposed fittings, valves, waste and water piping shall be chrome plated in washroom and kitchen areas and other finished areas.

- 1.11 Provide traps to each plumbing fixture of Localized or Handmade type as specified. Provide backflow valves to each group of plumbing fixtures.

- 1.12 Provide of column chambers at each group of plumbing fixtures. These shall be 1" minimum pipe with cap, 18" long mounted on the top of the supply headers of hot and cold water. The header is larger than 1", the column shall be one size larger than the header.

- 1.13 Provide automatic trap seal primers (pressure driven activated and/or electrically operated) for every floor drain, hot drain, and combination drains. Trap seal primer shall be connected to nearest water supply, where several traps with primer requirements are located in close vicinity, the use of a common trap seal primer is acceptable. If electric trap seal is used, mechanical protection is required to prevent power as required.

- 1.14 Provide Electric Isolation or couplings at all connection between copper and piping.

- 1.15 Provide complete plumbing vent system as required by O.B.C. and local authorities.

2.0 MATERIALS

- 2.1 Underground watermain shall be p.v.c. certified to CAN/CSA-B137.3 "Rigid polyvinyl chloride pipe for pressure applications" minimum pressure rating: 1034 psi (50 psi) size 100 mm (4") dia. to 200 mm (8") dia.

- 2.2 Underground watermain 50 mm (2") dia. and smaller shall be type "K" soft copper certified to ASTM B86, "seamless copper water tube", notes and specifications shall be in accordance with the following:
 - a) 50 mm (2") dia. and over - Cast iron body to ASTM A126, bronze trim, OSAF, forged rising stem.
 - b) 50 mm (2") dia. and over - Cast iron body to ASTM A126, bronze trim, OSAF, forged rising stem.

- 2.3 All above ground domestic water piping - copper type "K", ASTM B86, third party certified with lead free solder.

- 2.4 VALVES FOR DOMESTIC HOT AND COLD WATER DISTRIBUTION
 - a) Domestic and Non-Potable Hot & Cold Water:
 - 1. Ball Valves (Isolation & Balancing)
 - Pressure ratings: 1034 psi (50 psi), 800 W.G.
 - For 1/2" (3") - Brass and/or bronze body, full port, TFE seats, double O-ring design, or Teflon packing, chrome plated solid bronze ball lever operated.
 - Ball valves on hot and cold water riser connections (up to 75 mm (3")) to main runs.

- 2.5 Ball Valves (Isolation & Balancing)
 - Pressure ratings: 1034 psi (50 psi), 800 W.G.
 - For 1/2" (3") - Brass and/or bronze body, full port, TFE seats, double O-ring design, or Teflon packing, chrome plated solid bronze ball lever operated.
 - Ball valves on hot and cold water riser connections (up to 75 mm (3")) to main runs.

- 2.6 Gate Valves (Isolation & Balancing)
 - Pressure ratings: 800 psi (125 psi), 200 W.G.
 - Up to 50 mm (2") - Bronze body to ASTM B82, composition dies.
 - 65 mm (2-1/2") A over - Cast iron body to ASTM A126, bronze trim, OSAF, forged rising stem.

- 2.7 Gate Valves (Isolation & Balancing)
 - Pressure ratings: 800 psi (125 psi), 200 W.G.
 - Up to 50 mm (2") - Bronze body to ASTM B82, composition dies.
 - 65 mm (2-1/2") A over - Cast iron body to ASTM A126, bronze trim, OSAF, forged rising stem.

- 2.8 Gate Valves (Isolation & Balancing)
 - Pressure ratings: 800 psi (125 psi), 200 W.G.
 - Up to 50 mm (2") - Bronze body to ASTM B82, composition dies.
 - 65 mm (2-1/2") A over - Cast iron body to ASTM A126, bronze trim, OSAF, forged rising stem.

- 2.9 Gate Valves (Isolation & Balancing)
 - Pressure ratings: 800 psi (125 psi), 200 W.G.
 - Up to 50 mm (2") - Bronze body to ASTM B82, composition dies.
 - 65 mm (2-1/2") A over - Cast iron body to ASTM A126, bronze trim, OSAF, forged rising stem.

- 2.10 Gate Valves (Isolation & Balancing)
 - Pressure ratings: 800 psi (125 psi), 200 W.G.
 - Up to 50 mm (2") - Bronze body to ASTM B82, composition dies.
 - 65 mm (2-1/2") A over - Cast iron body to ASTM A126, bronze trim, OSAF, forged rising stem.

- 2.11 Gate Valves (Isolation & Balancing)
 - Pressure ratings: 800 psi (125 psi), 200 W.G.
 - Up to 50 mm (2") - Bronze body to ASTM B82, composition dies.
 - 65 mm (2-1/2") A over - Cast iron body to ASTM A126, bronze trim, OSAF, forged rising stem.

- 2.12 Gate Valves (Isolation & Balancing)
 - Pressure ratings: 800 psi (125 psi), 200 W.G.
 - Up to 50 mm (2") - Bronze body to ASTM B82, composition dies.
 - 65 mm (2-1/2") A over - Cast iron body to ASTM A126, bronze trim, OSAF, forged rising stem.

- 2.13 Gate Valves (Isolation & Balancing)
 - Pressure ratings: 800 psi (125 psi), 200 W.G.
 - Up to 50 mm (2") - Bronze body to ASTM B82, composition dies.
 - 65 mm (2-1/2") A over - Cast iron body to ASTM A126, bronze trim, OSAF, forged rising stem.

- 2.14 Gate Valves (Isolation & Balancing)
 - Pressure ratings: 800 psi (125 psi), 200 W.G.
 - Up to 50 mm (2") - Bronze body to ASTM B82, composition dies.
 - 65 mm (2-1/2") A over - Cast iron body to ASTM A126, bronze trim, OSAF, forged rising stem.

- 2.15 Gate Valves (Isolation & Balancing)
 - Pressure ratings: 800 psi (125 psi), 200 W.G.
 - Up to 50 mm (2") - Bronze body to ASTM B82, composition dies.
 - 65 mm (2-1/2") A over - Cast iron body to ASTM A126, bronze trim, OSAF, forged rising stem.

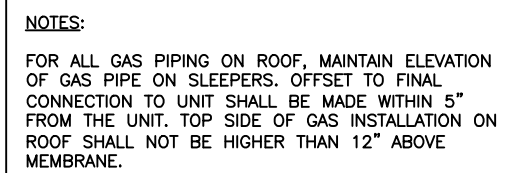
- 2.16 Gate Valves (Isolation & Balancing)
 - Pressure ratings: 800 psi (125 psi), 200 W.G.
 - Up to 50 mm (2") - Bronze body to ASTM B82, composition dies.
 - 65 mm (2-1/2") A over - Cast iron body to ASTM A126, bronze trim, OSAF, forged rising stem.

- 2.17 Gate Valves (Isolation & Balancing)
 - Pressure ratings: 800 psi (125 psi), 200 W.G.
 - Up to 50 mm (2") - Bronze body to ASTM B82, composition dies.
 - 65 mm (2-1/2") A over - Cast iron body to ASTM A126, bronze trim, OSAF, forged rising stem.

- 2.18 Gate Valves (Isolation & Balancing)
 - Pressure ratings: 800 psi (125 psi), 200 W.G.
 - Up to 50 mm (2") - Bronze body to ASTM B82, composition dies.
 - 65 mm (2-1/2") A over - Cast iron body to ASTM A126, bronze trim, OSAF, forged rising stem.

- 2.19 Gate Valves (Isolation & Balancing)
 - Pressure ratings: 800 psi (125 psi), 200 W.G.
 - Up to 50 mm (2") - Bronze body to ASTM B82, composition dies.
 - 65 mm (2-1/2") A over - Cast iron body to ASTM A126, bronze trim, OSAF, forged rising stem.

- 2.20 Gate Valves (



DETAIL FOR GAS PIPING INSTALLATION AND SUPPORT



PIPE DIAMETER (IN)	SUPPORT SPACING (FT)
3/4"	7
1"	7
1 1/4"	8
1 1/2"	8
2"	8
2 1/2"	8
3"	8
4"	8
6"	6
8"	4

No.	DESCRIPTION	
	REVISIONS	

ISSUED FOR CONSTRUCTION	
ISSUED FOR BID	
ISSUED FOR BUILDING PERMIT	JAN.21/21
ISSUED FOR SITE PLAN APPROVAL	DATE
SUBMITTALS	

CONTRACTORS MUST CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS ON THE PROJECT AND MUST REPORT ANY DISCREPANCIES TO THE DESIGNER BEFORE PROCEEDING WITH CONSTRUCTION.

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SEALED AND SIGNED BY THE DESIGNER.

DO NOT SCALE DRAWINGS.

TRISTAR ENGINEERING

Division of 1041549 Ontario Limited

8901 Woodbine Avenue, Unit #116
Markham, Ontario
Canada, L3R 9Y4

(905) 604-3801
Fax (905) 604-3954

2021.01.21

PROJECT:

PROPOSED
OFFICE/WAREHOUSE
ON
1260 SKAE DRIVE
OSHAWA

DRAWING:

DETAILS

PLOTTED:	
DATE:	PROJECT No.

NOV. 2020	2019-084
SCALE:	DRAWING No.

-		M-8
DRAWN BY: H.C.	REVIEWED BY: J.P.	



2" HANGER RODS c/w SPRING ISOLATORS (OR CONCRETE ANCHOR FOR CONCRETE SLAB ABOVE).
THREAD LOWER END T TO ACCEPT NUT AND WASHER SECURING CHANNEL IRON SUPPORT WITH PROPER LENGTH AS REQUIRED. ONE ON EACH CORNER AS REQUIRED.

TEMPERATURE AND PRESSURE RELIEF VALVE.

3/4"Ø RELIEF.

HOT WATER

COLD WATER

UNION. TYPICAL.

SHUT-OFF VALVE.

CHECK VALVE.

2"x4" CHANNEL IRONS WELDED TOGETHER TO MAKE PLATFORM.

1 1/2"Ø DRAIN FROM LOW POINT.

SEPARATELY TO HUB DRAIN (c/w FUNNEL), FUNNEL FLOOR DRAIN OR JANITOR SINK. REFER TO FLOOR PLAN.

HOT WATER TANK

THERMAL EXPANSION TANK. ARMSTRONG MODEL AST-5, 2-1 GAL.

MIN. 2" DEEP BITUMASTIC-COATED 16 GAUGE GALVANIZED STEEL DRIP PAN, AFFIXED TO CHANNEL SUPPORT.

TOP VIEW. CHANNEL IRON TO BE LOCATED UNDER LEGS OF TANK

NOTES:

- PLUMBER TO SUPPLY AND INSTALL HEAT TRAP IN COMPLIANCE WITH ASHRAE 90.1.
- STRUCTURAL ENGINEER MUST APPROVE MOUNTING DETAIL.
- ALL HOT AND COLD WATER PIPING SHALL BE INSULATED AS PER SPECIFICATIONS.
- SPACE CHANNEL IRONS SO THAT HOT WATER TANK IS PROPERLY SUPPORTED.
- PROVIDE EARTHQUAKE SUPPORT TO MEET CODE AND LOCAL STANDARDS.
- ALL ADEQUATE ACCESS SPACE BETWEEN RODS AND HOT WATER TANK FOR REMOVAL OF ACCESS COVERS.
- IF TANK IS INSTALLED ABOVE AN INACCESSIBLE CEILING, A FIRE RATED ACCESS PANEL (24"x24" MIN.) IS REQUIRED.
- WHILE THE HOT WATER TANK BEING HUNG FROM OWSJ, THE TANK IS TO BE HUNG FROM OWSJ TOP CHORD AND TO BE CENTRED BETWEEN THE OWSJ AND BE SUPPORTED BY 2 C75 x 6 CHANNELS SPANNING BETWEEN AND CONNECTED TO TOP CHORD OF OWSJ AT PANEL JOINT.

TYPE 'A'

TYPE 'B'

CONICAL SPIN-IN COLLAR WITH BUILT IN BUTTERFLY DAMPER: 'FLEXMASTER' OR EQUAL. (NO DAMPER IN DRYWALL AREA.)

SUPPLY AIR DUCT.

RIGID DUCT

ACoustic FLEXIBLE DUCT - FLEXMASTER REINFORCED ALUMINUM FLEX DUCT OR APPROVED EQUAL. DUCTWORK SHALL CONFORM TO ULC-S110 AND ULC 181. MAX. LENGTH: 10 FT.

FLEX CONNECT TO DUCT COLLAR WITH MINIMUM 3 S.M. SCREWS AND METAL DUCT TAPE.

MIN. 1" WIDE

CEILING.

INSURE THAT ADEQUATE SUPPORTS HAVE BEEN INSTALLED BY THE CEILING INSTALLER TO SUPPORT THE DIFFUSER WEIGHT.

S/A DIFFUSER SUITABLE FOR T-BAR CEILING.

NOTE:

- SEAL DUCTWORK AND SPIN-INS WITH 'FLEXMASTER' DUCT-BOND SEALER.
- WHEN THE CEILING IS NOT USED AS AIR PLenum OR WHEN FLEXIBLE DUCT PAS

NOTE:

- SEAL DUCTWORK AND SPIN-INERS WITH 'FLEXMASTER' DUCT-BOND SEALER.
- WHEN THE CEILING IS NOT USED AS A RETURN AIR PLENUM OR WHEN FLEXIBLE DUCT PASSES THROUGH UNOCCUPIED SPACE, USE TRIPLE LOCK DUCTING INSULATED WITH 1" THICK FIBERGLASS INSULATION WITH VINYL SLEEVE JACKET.
- FLEXIBLE DUCT TO CONFORM TO NFPA90 & 90A AND UL STANDARD 181.
- INSTALL U.L.C. LABEL FIRE STOP PLUG IF IN FIRE RATED DROPPED CEILING.

NOTES:

ALL PIPING SHALL BE LABALLED PROPERLY.
PROVIDE WHITE PVC JACKETING WHERE PIPING IS
VISIBLE.

No.	DESCRIPTION	
	REVISIONS	

ISSUED FOR CONSTRUCTION

ISSUED FOR BID

ISSUED FOR BUILDING PERMIT JAN 21 / 21

ISSUED FOR SITE PLAN APPROVAL DATE

SUBMITTALS

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PROJECT:

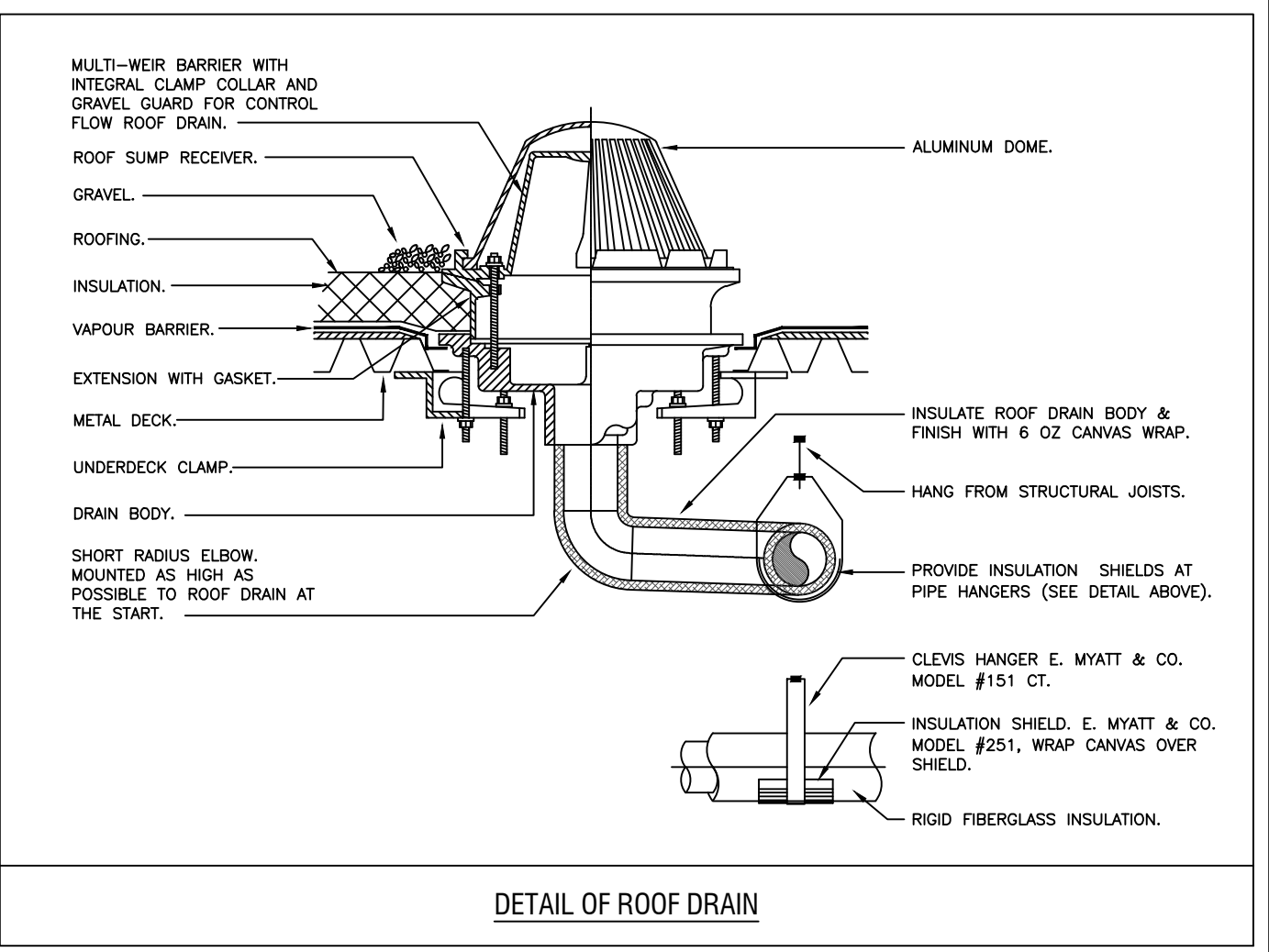
PROPOSED
OFFICE/WAREHOUSE
ON
1260 SKAE DRIVE
OSHAWA

DRAWING:

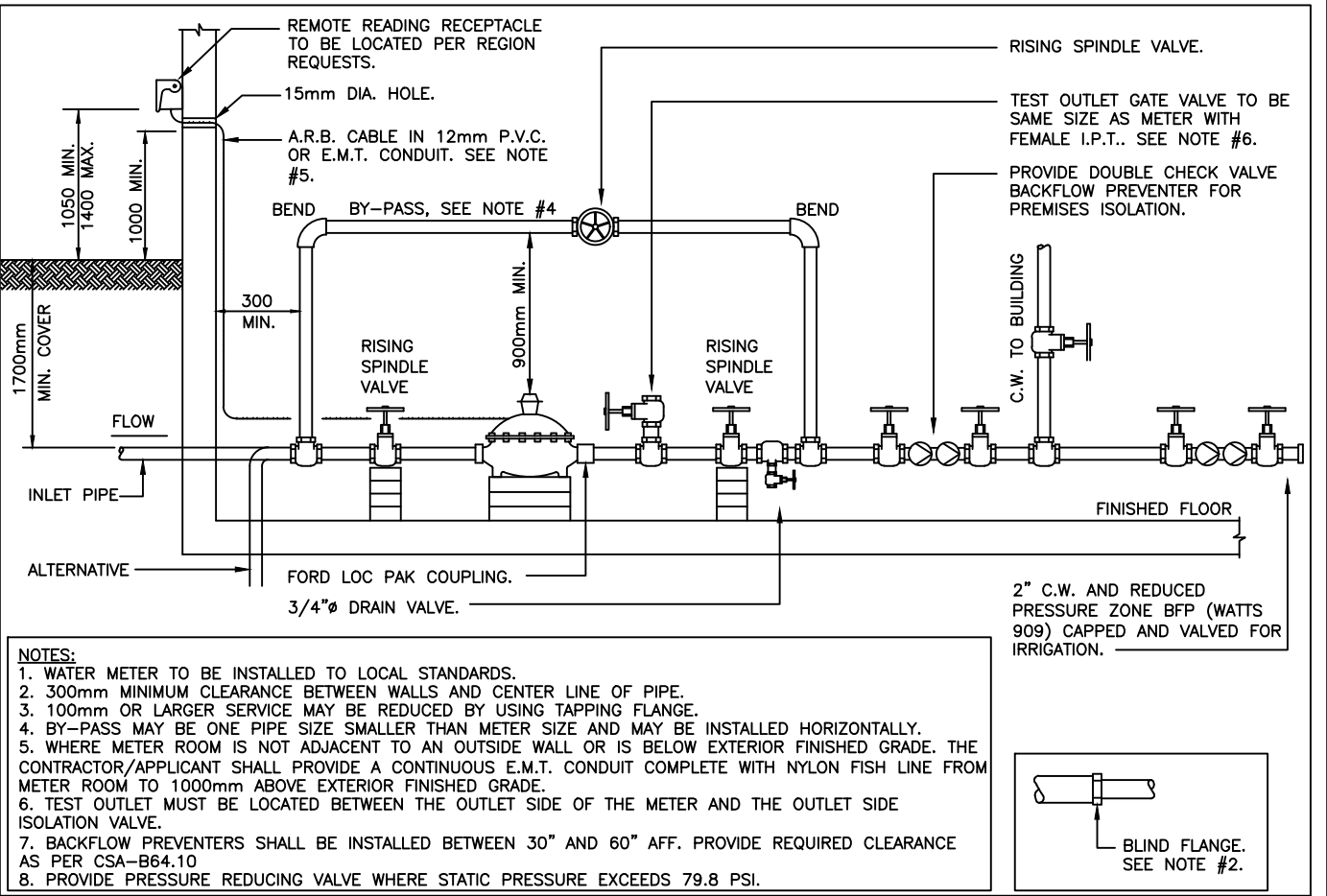
DETAILS

PLOTTED:	
DATE: NOV. 2020	PROJECT No. 2019-084

SCALE:		DRAWING No.
-		
DRAWN BY:	REVIEWED BY:	M-9
H.C.	J.P.	



DETAIL OF ROOF DRAIN



DETAIL OF WATER METER

DIFFUSER AND GRILLE SCHEDULE

DESIG.	TYPE	DESCRIPTION
A	4 CONE SUPPLY AIR DIFFUSER	E.H.PRICE MODEL SCD LOUVERED FACE DIFFUSER, SIZE 24"x24", STEEL CONSTRUCTION, TYPE 31 T-BAR MOUNTED, 4-CONE, c/w O.B. DAMPER (VCR-8E).
B	EGGCRATE RETURN AIR GRILLE	E.H.PRICE MODEL 80 RETURN GRILLE, 1/2"x1/2"x1/2" EGGCRATE GRILLE. TYPE NF FRAME FOR T-BAR. 1-1/4" FLAT SURFACE MOUNTED TYPE F w/ COUNTERSUNK SCREWHOLES TYPE A FOR DRYWALL CEILING.
C	EGGCRATE EXHAUST AIR GRILLE	E.H.PRICE MODEL 80D EXHAUST GRILLE, 1/2"x1/2"x1/2" ALUMINUM EGGCRATE GRID CORE c/w O.B. DAMPER.
D	LOUVERED FACE SUPPLY AIR REGISTER	E.H.PRICE MODEL 520D STEEL REGISTER WITH STEEL DAMPER, 1-1/4" FLAT SURFACE MOUNT BORDER TYPE F, DOUBLE DEFLECTION WITH FRONT LADES PARALLEL TO LONG DIMENSION, 3/4" BLADE SPACING, COUNTERSUNK SCREWHOLES FASTENING TYPE A, c/w SCREW-DRIVER OPERATED O.B. DAMPER,
E	LOUVERED FACE TRANSFER AIR GRILLE	E.H.PRICE MODEL 530 STEEL LOUVRED RETURN GRILL c/w 1-1/4" FLAT SURFACE MOUNT BORDER TYPE F, FIXED LOUVRES PARALLEL TO LONG DIMENSION, 45° DEFLECTION, 3/4" BLADE SPACING, COUNTERSUNK SCREWHOLES FASTENING TYPE A.
K	DOOR GRILLE	E.H.PRICE MODEL ATG ALUMINUM CONSTRUCTION DOOR GRILLE, SIGHTPROOF c/w DOUBLE FLAT FRAME. BORDER STYLES TO SUIT APPLICATION.

NOTES:

- ALL COLOR TO BE B12 WHITE POWDER COAT FINISH, VERIFY WITH ARCHITECTURAL SPECIFICATION.
- ACCEPTABLE ALTERNATES: NAILOR, TITUS.

PLUMBING SPECIALITIES SCHEDULE

SYMBOL	ITEM	DESCRIPTION
G.D.	FULL FLOW ROOF DRAIN	ZURN #ZA-100-C-E-R-84 FOR STANDARD BUILT-UP ROOFS. ZURN #ZA-100-R-C-84 FOR INVERTED OR I.R.M.A. ROOFS.
F.D.	FLOOR DRAIN	ZURN #ZN-415-Y5-P IN TILED AREAS. ZURN #ZN-415-R6-P OR #ZN-211-R6-P FOR SEAMLESS OR THICK FLOORING. ZURN #ZX-415-A5-P FOR HEAVY DUTY AREA. ZURN #Z-556-Y-P IN MECHANICAL ROOM c/w B.W.V. WHERE SHOWN ON FLOOR PLAN. ZURN #ZN-415-B5-P IN OTHER AREAS. c/w PRIMER AS REQUIRED BY CODE.
F.F.D.	FUNNEL FLOOR DRAIN	ZURN #ZN-415-Y5-414-P IN TILED AREAS. ZURN #ZN-415-BE5-P IN OTHER AREAS. c/w PRIMER AS REQUIRED BY CODE.
A.D.	AREA DRAIN	ZURN #Z-610-H-Y-DG. c/w ADJUSTABLE LEVELING FRAME WHERE REQUIRED.
H.D.	HUB DRAIN	ZURN #Z-211-S-G-P.
C.B.	CATCH BASIN	ZURN #Z-887-24-EXT-HD-GDE-Y CATCH BASIN. 24"x24"x36" DEEP; HI DENSITY POLYETHYLENE.
C.O.	CLEANOUT	ZURN #ZX-1612-SP FOR UNFINISHED AREAS. ZURN #ZX-1602-X-SP FOR TILED AREAS. ZURN #ZN-1607-SP FOR TERRAZZO AREAS. ZURN #ZN-1602-SP-CM FOR CARPETED AREAS. ZURN #ZXXN-1612-SP FOR HEAVY DUTY, FINISHED AREAS. ZURN #ZN-1602-SP FOR OTHER AREAS.
S.O.V.	SHUT OFF VALVE	600 WOG, FULL PORT, BRASS OR BRONZE BODY CHROME PLATED BRASS BALL. THREADED ENDS TO BE WATTS B6080 / FBV-3 AND SOLDERED ENDS TO BE WATTS B6081/FBVS-3.
B.W.V.	BACK WATER VALVE	ZURN #Z-1095-15 FOR INSTALLATION IN SLAB. ZURN #Z-1090 FOR EXPOSED INSTALLATION OR INSTALLATION IN PIT.
B.F.P.	BACK FLOW PREVENTOR	WILKINS MODEL #375XL/375A UNLESS OTHERWISE SPECIFIED ON PLANS.
A.A.V.	AUTOMATIC AIR VENT	MAID OF THE MIST.
W.H.A.	WATER HAMMER ARRESTORS	WILKINS 1250AA
N.F.W.H.	NON-FREEZE WALL HYDRANT,	ZURN #Z-1320 UNLESS OTHERWISE SPECIFIED ON PLANS.
H.B.	HOSE BIBB	ZURN #Z-1341-PC

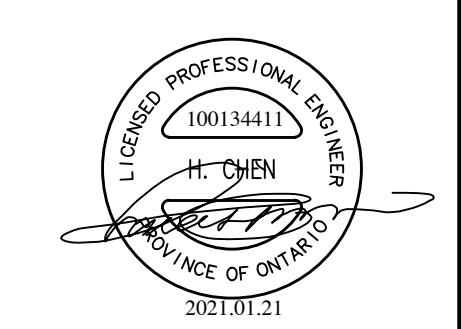
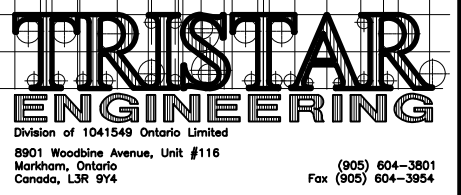
GENERAL NOTES:

- INSTALL GAS-FIRED ROOFTOP A/C UNITS AT LEAST 6'-0" FROM THE EDGE OF THE ROOF (INSIDE FACE OF PARAPET).
- INSTALL GAS-FIRED ROOFTOP A/C UNITS AT LEAST 10'-0" (3 M) FROM AN ADJACENT WALL OF THE SAME BUILDING WHEN SUCH WALL CONTAINS UNPROTECTED OPENING(S) WITHIN 3 STOREYS ABOVE AND 15 (5 M) HORIZONTALLY FROM THE APPLIANCE.
- INSTALL GAS-FIRED ROOFTOP A/C UNITS TO PROVIDE AT LEAST 6'-0" FROM THE FLUE OF ONE UNIT TO FRESH AIR INTAKE OF ANY OTHER UNIT.
- ALL UNITS ON ROOF SHALL INSTALLED WITH REQUIRED CLEARANCES AS PER MANUFACTURER'S INSTRUCTIONS AND APPLICABLE CODES.
- EXACT LOCATIONS OF ROOFTOP A/C UNIT SHALL BE COORDINATED AND VERIFIED WITH OWNER AND STRUCTURAL ENGINEER.
- PROVIDE FIRE DAMPER WHERE DUCT PENETRATES FIRE SEPARATION. PROVIDE ACCESS FOR FIRE DAMPER AS PER O.B.C. DAMPER TYPE SHALL SUIT THE APPLICATION.
- COORDINATE EXACT LOCATIONS OF DUCTS AND GRILLES WITH LIGHTING LAYOUTS, SPRINKLER LAYOUTS, ETC.
- PROVIDE ACOUSTIC LINING ON FIRST 8 FEET FROM UNIT OF A/C SUPPLY DUCTS AND RETURN DUCTS. ENLARGE DUCTS TO PROVIDE INSIDE CLEAR DIMENSIONS AS SHOWN ON DRAWINGS.
- ALL MATERIALS ABOVE CEILING IN PLENUM SHALL BE AS PER CODE - NO WOOD OR PLASTIC (EXCEPT PLENUM REATED PLASTIC PIPES).
- LOCATIONS OF ALL DUCT SHAFTS THROUGH FLOOR MUST BE REVIEWED AND APPROVED BY OWNER BEFORE FINAL COORDINATION AND PRICING.
- COORDINATE EXACT LOCATIONS OF DIFFUSERS AND GRILLES WITH ARCHITECT'S DRAWINGS, LIGHTING LAYOUTS, SPRINKLER LAYOUTS, ETC.
- PLUMBING VENTS SHALL TERMINATE ABOVE ROOF NOT LESS THAN 40" ABOVE OR NOT LESS THAN 12 FEET IN ANY DIRECTION FROM ANY AIR INLET, A/C UNIT FRESH AIR, ETC. ANY VENT EXTENSION MUST BE CONSTRUCTED AS TO BE STABLE AND SECURE.
- FOR CONTINUATION OF SITE SERVICES REFER TO SITE SERVICE DRAWING BY OTHERS. CO-ORDINATE EXACT LOCATION, SIZES AND INVERTS OF SERVICES.
- PROVIDE COMPLETE PLUMBING VENT SYSTEM AS REQUIRED BY O.B.C. AND LOCAL AUTHORITIES, INCLUDING MIN. 3'Ø STACK AT UPSTREAM END OF SANITARY BUILDING DRAIN.
- PROVIDE SUFFICIENT SCUPPERS AT PERIMETER OF ROOF. BOTTOM OF SCUPPER SHALL BE MAX. 5" ABOVE ROOF DRAIN LEVEL. (BY GENERAL CONTRACTOR)
- PROVIDE CLEANOUTS FOR STORM AS REQUIRED BY O.B.C. AND LOCAL AUTHORITIES.
- PROVIDE CLEANOUTS AND TRAP PRIMING FOR SANITARY AS REQUIRED BY O.B.C. AND LOCAL AUTHORITIES.
- ALL ABOVE GROUND RAINWATER LEADERS SHALL BE CAST IRON. NO PLASTIC PIPING SHALL BE USED.
- COORDINATE EXACT LOCATIONS OF ALL RAIN WATER LEADERS (RWL) WITH LOCKER PARTITIONS, CLIENT AND ARCHITECT BEFORE COMMENCING OF ANY INSTALLATION OF RWL'S.
- ENTIRE LENGTH OF RWL'S WITHIN THE TOP FLOOR (HORIZONTAL AND VERTICAL) SHALL BE INSULATED WITH 1" THERMAL INSULATION c/w FOIL VAPOR BARRIER.
- ALL STORM PIPING INCLUDING RWL AND THE BOTTOM OF ROOF DRAIN BODY SHALL BE INSULATED WITH 1" RIGID THERMAL INSULATION WITH FOIL VAPOUR BARRIER.
- MECHANICAL CONTRACTOR TO COORDINATE WITH GENERAL CONTRACTOR TO AVOID CLASHING WITH FOUNDATION BEAMS ETC. WHERE REQUIRED RUN PIPING THRU SLEEVES IN BEAMS TO MAINTAIN.
- ALL CLEANOUTS MUST BE LOCATED IN ACCESSIBLE AREAS.
- ALL SANITARY PIPES 1000mm AND UP TO SLOPE MIN. OF 1% UNLESS OTHERWISE NOTED. ALL SANITARY PIPES 750mm AND BELOW TO SLOPE MIN. 2%.
- USE "WYE" FITTING FOR ALL HORIZONTAL DRAINAGE CONNECTIONS.
- ALL EXPOSED VERTICAL PIPES TO BE PROTECTED FROM DAMAGE. COORDINATE WITH GENERAL CONTRACTOR TO PROVIDE SHAFTS FOR ALL EXPOSED PIPING IN LOBBY & PROTECTIVE GUARDS FOR ALL EXPOSED PIPING IN THE AREA.
- LABEL ALL WATER & GAS PIPING WITH S.M.S. BRAND COIL WRAP/ MARKERS.

No.	DESCRIPTION	
	REVISIONS	

ISSUED FOR CONSTRUCTION	
ISSUED FOR BID	
ISSUED FOR BUILDING PERMIT	JAN.21/21
ISSUED FOR SITE PLAN APPROVAL	DATE
SUBMITTALS	

CONTRACTORS MUST CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS ON THE PROJECT AND MUST REPORT ANY DISCREPANCIES TO THE DESIGNER BEFORE PROCEEDING WITH CONSTRUCTION.
THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SEALED AND SIGNED BY THE DESIGNER.
DO NOT SCALE DRAWINGS.



PROJECT:		PROPOSED OFFICE/WAREHOUSE ON 1260 SKAE DRIVE OSHAWA	
DRAWING:		DETAILS, NOTES AND SCHEDULES	
PLOTTED:			
DATE:	NOV. 2020	PROJECT No.	2019-084
SCALE:	-	DRAWING No.	
DRAWN BY:	H.C.	REVIEWED BY:	J.P.
		M-10	

PIPING SCHEDULE		
SYMBOL	ITEM	DESCRIPTION
=====	ABOVE FLOOR STORM DRAINS	<=3"Ø, COPPER GRADE DWV. >3"Ø, CAST IRON WITH MECHANICAL JOINTS. ALTERNATE (NOT TO BE USED IN SHAFT): IPEX 'SYSTEM XFR 15-50' PVC-DWV PIPING AND FITTINGS w/ ASSOCIATED ADHESIVES. SYSTEM SHALL BE TESTED AND LISTED TO CAN/ULC-S102.2-M WITH A 'FLAME-SPREAD RATING' NOT GREATER THAN 25 AND A 'SMOKE DEVELOPED CLASSIFICATION' NOT GREATER THAN 50. PROVIDE FIRE STOP WHEN PENETRATING FIRE SEPARATION.
== == ==	BURIED STORM DRAINS	PVC OR ABS. TO MINIMIZE CRUSHING DAMAGE, USE SCH.40 PVC FROM BASE OF RWL TO 10 FEET AWAY.
-----	ABOVE FLOOR SANITARY DRAINS	<=3"Ø, COPPER GRADE DWV. URINAL DRAIN PIPING SHALL BE CAST IRON. >3"Ø, CAST IRON WITH MECHANICAL JOINTS. ALTERNATE (NOT TO BE USED IN SHAFT): IPEX 'SYSTEM XFR 15-50' PVC-DWV PIPING AND FITTINGS w/ ASSOCIATED ADHESIVES. SYSTEM SHALL BE TESTED AND LISTED TO CAN/ULC-S102.2-M WITH A 'FLAME-SPREAD RATING' NOT GREATER THAN 25 AND A 'SMOKE DEVELOPED CLASSIFICATION' NOT GREATER THAN 50. PROVIDE FIRE STOP WHEN PENETRATING FIRE SEPARATION.
--- -- ---	BURIED SANITARY DRAINS	PVC OR ABS. TO MINIMIZE CRUSHING DAMAGE, USE SCH.40 PVC FROM BASE OF RWL TO 10 FEET AWAY.
----- - ----- ----- -- -----	ABOVE FLOOR DOMESTIC COLD WATER DOMESTIC HOT WATER	COPPER L WITH SOLDERED FITTINGS. ALTERNATE (IF APPROVED BY LOCAL AUTHORITIES, AND NOT TO BE USED IN SHAFT): PEX TUBING TO ASTM F876, F877, I807 AND CAN/CSA-B137.5. PIPING SYSTEM TO HAVE A 'FLAME-SPREAD RATING' OF NO GREATER THAN 25. IF INSTALLED IN RETURN AIR PLENUM, THE SYSTEM MUST MEET A 'SMOKE DEVELOPED CLASSIFICATION' OF NOT GREATER THAN 50. PROVIDE FIRE STOP WHEN PENETRATING FIRE SEPARATION.
-----G-----	NATURAL GAS PIPING	<=2"Ø, SCH.40 STEEL, SCREWED JOINTS (WELDED IF IN SHAFT.). >2"Ø, SCH.40 STEEL, WELDED JOINTS. INSTALLATION AND IDENTIFICATION AS PER GAS CODE. FOR PIPE INSTALLED ON THE ROOF, USE C-PORT CXP RUBBER SUPPORTS. INSTALL EXPANSION LOOPS AND ANCHORS EVERY 100FT AS PER CGA/CSA B149. FOR HIGH PRESSURE SYSTEM, INSTALL A SEPARATE PRV NEXT TO EACH GAS FIRED EQUIPMENT. FOR INDOOR APPLICATION, ONE PRV MAY SERVE MORE THAN ONE UNIT. PIPE PRV RELIEF TO OUTSIDE. THE CONTRACTOR IS TO HIRE AN INDEPENDENT COMPANY TO X-RAY ALL WELDS IN ENCLOSED SHAFT, SUBMIT REPORT.
-----V-----	VENT	<=3"Ø, COPPER GRADE DWV. >3"Ø, CAST IRON WITH MECHANICAL JOINTS. ALTERNATE (NOT TO BE USED IN SHAFT): IPEX 'SYSTEM XFR 15-50' PVC-DWV PIPING AND FITTINGS w/ ASSOCIATED ADHESIVES. SYSTEM SHALL BE TESTED AND LISTED TO CAN/ULC-S102.2-M WITH A 'FLAME-SPREAD RATING' NOT GREATER THAN 25 AND A 'SMOKE DEVELOPED CLASSIFICATION' NOT GREATER THAN 50. PROVIDE FIRE STOP WHEN PENETRATING FIRE SEPARATION.
-----COND-----	CONDENSATE DRAIN	COPPER L WITH SOLDERED FITTINGS. ALTERNATE (NOT TO BE USED IN SHAFT): IPEX 'SYSTEM XFR 15-50' PVC-DWV PIPING AND FITTINGS w/ ASSOCIATED ADHESIVES. SYSTEM SHALL BE TESTED AND LISTED TO CAN/ULC-S102.2-M WITH A 'FLAME-SPREAD RATING' NOT GREATER THAN 25 AND A 'SMOKE DEVELOPED CLASSIFICATION' NOT GREATER THAN 50. PROVIDE FIRE STOP WHEN PENETRATING FIRE SEPARATION.

INSULATION SCHEDULE	
ITEM	DESCRIPTION
ROOF DRAIN BODIES	DUAL TEMPERATURE FIBRE GLASS INSULATION WITH FIRE RESISTANT VAPOUR BARRIER JACKET AND FIREPROOF ADHESIVE AT ALL JOINTS. THE BODY IS TO BE FINISHED w/ 6 OZ CANVAS WRAP AND PAINTED WITH 2 COATS OF WHITE FIRE RETARDANT PAINT.
STORM PIPING	1" THICK. DUAL TEMPERATURE RIGID FIBRE GLASS INSULATION WITH FIRE RESISTANT VAPOUR BARRIER JACKET AND FIREPROOF ADHESIVE AT ALL JOINTS. BUTT JOINTS SHALL BE WRAPPED WITH WHITE 4" WIDE VAPOUR BARRIER STRIPS SAME MATERIAL AS JACKET. THE INSULATION SHALL PASS UNBROKEN THROUGH ALL PIPE SLEEVES.
DOMESTIC COLD WATER SYSTEM INCLUDING FITTINGS	<= 2"Ø, 1" THICK. >2"Ø, 2" THICK. WATER METER INSULATION TO BE DOUBLE THE THICKNESS. DUAL TEMPERATURE RIGID FIBRE GLASS INSULATION WITH FIRE RESISTANT VAPOUR BARRIER JACKET (WHITE) AND FIREPROOF ADHESIVE AT ALL JOINTS. BUTT JOINTS SHALL BE WRAPPED WITH WHITE 4" WIDE VAPOUR BARRIER STRIPS SAME MATERIAL AS JACKET. SEAL ALL LONGITUDINAL AND CIRCUMFERENTIAL JOINTS WITH ADHESIVE. THE INSULATION SHALL PASS UNBROKEN THROUGH ALL PIPE SLEEVES.
DOMESTIC HOT WATER & HOT WATER RECIRC SYSTEM INCLUDING FITTINGS	2" THICK. DUAL TEMPERATURE RIGID FIBRE GLASS INSULATION WITH FIRE RESISTANT VAPOUR BARRIER JACKET (WHITE) AND FIREPROOF ADHESIVE AT ALL JOINTS. BUTT JOINTS SHALL BE WRAPPED WITH WHITE 4" WIDE VAPOUR BARRIER STRIPS SAME MATERIAL AS JACKET. SEAL ALL LONGITUDINAL AND CIRCUMFERENTIAL JOINTS WITH ADHESIVE. THE INSULATION SHALL PASS UNBROKEN THROUGH ALL PIPE SLEEVES.
REFRIGERANT PIPING	2" THICK. CLOSED CELL INSULATION TYPE ARMAFLEX OR EQUAL. OUTDOOR APPLICATION: SHALL BE COMPLETE WITH SUITABLE INSULATION MINIMUM RATING R25, ARMAFLEX OR EQUAL.
VENT PIPING AT ROOF	1" THICK. DUAL TEMPERATURE RIGID FIBRE GLASS INSULATION WITH FIRE RESISTANT VAPOUR BARRIER JACKET AND FIREPROOF ADHESIVE AT ALL JOINTS START FROM 12" BELOW FINISHED ROOF.
SUPPLY AND RETURN DUCTWORK FROM HEATING AND AIR CONDITIONING UNIT	SEAL DUCTWORK WITH DUCT SEALER. INSULATE FIRST 10 FEET ON DISCHARGE AND RETURN WITH 1" THICK ACOUSTIC LINER.
DUCTWORK PASSING THROUGH SPACE WITH NO MECHANICAL COOLING	SEAL JOINTS WITH DUCT SEALER. USE 2" RIGID FIBRE GLASS INSULATION WITH VAPOUR BARRIER. SECURE THE INSULATION USING APPROVED ADHESIVE AND BY IMPALING ON MECHANICAL FASTENERS. SEAL WITH VAPOUR BARRIER TAPE SO THAT THE VAPOUR BARRIER IS CONTINUOUS. FINISH WITH 6 OZ CANVAS JACKET AND PAINT WITH 2 COATS OF WHITE FIRE RETARDANT PAINT.
EXHAUST DUCTWORK	INSULATE FINAL 5 FEET WITH 1" ACOUSTIC LINER. JOINTS SHALL BE SEALED WITH DUCT SEALER.

THERMOSTAT, STARTER AND CONTROLS SCHEDULE AND SETTINGS	
ITEM	DESCRIPTION
THERMOSTAT OF ROOFTOP AC UNIT IN OFFICE AREA	HONEYWELL COMMERCIAL PROGRAMMABLE THERMOSTAT VISION PRO MODEL TH8321R, c/w WALL PLATE. THERMOSTAT TO BE SET-UP SO THAT THE FAN RUNS CONTINUOUSLY DURING OCCUPIED HOURS, WITH ECONOMIZER SET TO OPEN POSITION AS PER ROOFTOP AC UNIT SCHEDULE; DURING SET-BACK, THE FAN CYCLES AS REQUIRED WITH ECONOMIZER CLOSES FULLY. INSTALL THERMOSTAT AT 5'-6" A.F.F..
THERMOSTAT OF GAS FIRED HEATER (UH, IH, HU, ETC.)	HONEYWELL COMMERCIAL PROGRAMMABLE THERMOSTAT FOCUS PRO MODEL TH6220D1010, c/w WALL PLATE. SET THE FUNCTION TO HEATING MODE AND FAN ON AUTO. INSTALL THERMOSTAT AT 6'-0" A.F.F. RUN CONTROL WIRING IN CONDUIT WHERE EXPOSED.
STARTER TYPE A	SIEMENS SMF MANUAL STARTER FOR 120/1/60, c/w RED PILOT LIGHT AND FLUSH PLATE TO MATCH LIGHT SWITCH PLATES.
STARTER TYPE A2	COMBINATION STARTER FOR 120/1/60. CIRCUIT BREAKER INSIDE PANEL. LOCKABLE MODE SELECTOR SWITCH (H-0-A) AND PILOT LIGHT ON DOOR. AUXILIARY CONTACT FOR INTERLOCK. TIMER ON DOOR (0~4 HRS). c/w LAMACOID IDENTIFICATION PLATE.
STARTER TYPE B	COMBINATION STARTER FOR 600/3/60. FUSIBLE DISCONNECT SWITCH ON DOOR. LOCKABLE MODE SELECTOR SWITCH (H-0-A) AND PILOT LIGHT ON DOOR. AUXILIARY CONTACT FOR INTERLOCK w/ 120V TRANSFORMER. c/w LAMACOID IDENTIFICATION PLATE.
STARTER TYPE B2	COMBINATION STARTER FOR 600/3/60. FUSIBLE DISCONNECT SWITCH ON DOOR. LOCKABLE MODE SELECTOR SWITCH (H-0-A) AND PILOT LIGHT ON DOOR. AUXILIARY CONTACT FOR INTERLOCK w/ 120V TRANSFORMER. TIMER ON DOOR (0~4 HRS). c/w LAMACOID IDENTIFICATION PLATE.
STARTER TYPE C	REVERSE ACTING THERMOSTAT FOR 120/1/60. HONEYWELL T651A-3026, c/w CLEAR PLASTIC LOCKABLE COVER.
STARTER TYPE D	SPEED CONTROLLER.

PLUMBING FIXTURES SCHEDULE		
SYMBOL	ITEM	DESCRIPTION
WC-1	FLOOR MOUNTED WC PRESSURE ASSIST. FLUSH TANK TYPE GENERAL USE	AMERICAN STANDARD #2333.700 'CADET ELONGATED'. VITREOUS CHINA, ELONGATED SYPHON JET FLUSH ACTION BOWL, BOLTED ON TANK COVER. CENTOCO #500STSCC TOILET SEAT, ELONGATED HEAVY DUTY SOLID PLASTIC OPEN FRONT LESS COVER, WITH REINFORCED STAINLESS STEEL CHECK HINGE, POSTS, WASHERS AND NUTS. MCGUIRE #H166LKN3 TOILET SUPPLY, C.P., POLISHED BRASS, HEAVY ALL BRASS ANGLE STOP. PROVIDE FLOOR FLANGE, FLANGE BOLTS AND GASKET. 6 LPF (1.6 GPF) PER FLUSH. ½"Ø C.W., 1-1/2"Ø VENT, 3"Ø DRAIN.
WC-2	FLOOR MOUNTED WC PRESSURE ASSIST. FLUSH TANK TYPE BARRIER-FREE AND GENERAL USE	AMERICAN STANDARD #2467.600 'CADET ELONGATED' 'RIGHT HEIGHT'. VITREOUS CHINA WITH 'EVERCLEAN' ANTIMICROBIAL SURFACE WHICH INHIBITS THE GROWTH OF STAIN AND ODOR CAUSING BACTERIA, MOLD AND MILDEW, ELONGATED SYPHON JET FLUSH ACTION BOWL, BOLTED TANK COMPLETE. CENTOCO #820STS TOILETS SEAT, ELONGATED HEAVY DUTY SOLID PLASTIC OPEN FRONT WITH COVER, REINFORCED STAINLESS STEEL CHECK HINGE, POSTS, WASHERS AND NUTS. MCGUIRE #H166LKN3 TOILET SUPPLY, C.P., POLISHED BRASS, HEAVY ALL BRASS ANGLE STOP. PROVIDE FLOOR FLANGE, FLANGE BOLTS AND GASKET. PROVIDE BOLTED TANK COVER AND/OR RIGHT HAND TRIP LEVER IF REQUIRED - TO MEET LOCAL CODES. 6 LPF (1.6 GPF) PER FLUSH. ½"Ø C.W., 1-1/2"Ø VENT, 3"Ø DRAIN.
U-1	WALL HUNG MANUAL (EXPOSED) FLUSH VALVE GENERAL USE	AMERICAN STANDARD 6561.017 'TRIMBROOK' LOW CONSUMPTION URINAL, VITREOUS CHINA, SYPHON JET FLUSH ACTION, INTEGRAL FLUSH SPREADER, OPEN TRAP, WALL HANGERS. SLOAN #186-1.0-XL REGAL FLUSH VALVE, C.P. LOW CONSUMPTION, QUIET ACTION DIAPHRAGM TYPE WITH NON HOLD OPEN FEATURE, VACUUM BREAKER AND BACK-CHECK ANGLE STOP. JAY R. SMITH #SQ4-1819 URINAL WALL ACCESS CLEANOUT, WITH 4-1/4" V.P. ROUND S.S. ACCESS COVER. 0637 URINAL CARRIER, WITH STEEL PIPE LEGS, BLOCK BASE FEET SUPPORTS AND BEARING PLATES. 3.8 LPF (1.0 GPF) PER FLUSH. 3/4"Ø C.W., 1-1/2"Ø VENT, 3"Ø DRAIN.
L-1	WALL HUNG LAVATORY TWO HANDLE FAUCET BARRIER-FREE AND GENERAL USE	AMERICAN STANDARD#0954.000 'MURRO' BASIN, 4" CENTRES, VITREOUS CHINA, REAR OVERFLOW. AMERICAN STANDARD #0059.020 SEMI-CHINA PEDESTAL, TO COVER EXPOSED PIPING AS PER LOCAL CODES. CHICAGO FAUCETS #802-V-317-XK FAUCET, SOLID CAST BRASS LEAD-FREE BODY, 1/4 TURN CERAMIC DISC VALVE CARTRIDGES, WITH VANDAL-RESISTANT. FLOW PRESSURE COMPENSATING AERATOR OUTLET AND CAST BRASS 4" BLADE HANDLES. MCGUIRE #155A BASIN DRAIN, C.P., CAST BRASS 1 PC. TOP, OPEN GRID. MCGUIRE #H165LKN3RB-LR SUPPLIES, C.P., POLISHED BRASS, HEAVY ALL BRASS ANGLE STOPS, WITH V.P. LOOSE KEY. MCGUIRE #8872C 'P' TRAP, C.P., POLISHED, CAST BRASS ADJUSTABLE BODY, JAY R. SMITH #0700-Z-M BASIN CARRIER, WITH STEEL PIPE LEGS, BLOCK BASE FEET SUPPORT, CONCEALED ARMS AND PEDESTAL PLATE. (FOR NARROW WALL INSTALLATION PROVIDE 'Z' TYPE SLEEVE FOR ARMS.) 8.3 LPM (2.2 GPM). 1/2"Ø H&C.W., 1-1/4"Ø VENT, 1-1/2"Ø DRAIN.
L-2	COUNTERTOP LAVATORY TWO HANDLE FAUCET BARRIER-FREE AND GENERAL USE	AMERICAN STANDARD 'CADET UNIVERSAL ACCESS' #9494.001 BASIN, 4" CENTRES, VITREOUS CHINA, REAR OVERFLOW, SELF-RIMMING WITH SEALANT. CHICAGO FAUCETS #802A-317-E12VP-XK FAUCET, C.P. 4" C.C., SOLID CAST BRASS LEAD-FREE BODY, 1/4 TURN CERAMIC DISC VALVE CARTRIDGES, WITH VANDAL-RESISTANT OUTLET AND CAST BRASS 4" BLADE HANDLES. MCGUIRE #155WC DRAIN, C.P. OFFSET OPEN GRID. MCGUIRE #H165LKN3RB SUPPLIES, C.P., POLISHED, SHORT RIGID HORIZONTAL WITH V.P. LOOSE KEY ANGLE STOPS, ESCUTCHEONS AND BRAIDED FLEXIBLE RISERS. MCGUIRE #8872C-17T 'P' TRAP. ATS SPEC #BF-1 'SANITARY SAFTI-COVERS' TO EXPOSED PIPING AS PER LOCAL CODES. 8 LPM (1.84 GPM). 1/2"Ø H&C.W., 1-1/4"Ø VENT, 1-1/2"Ø DRAIN.
S-1	COUNTERTOP S.S. SINK SINGLE COMP. TWO HANDLE FAUCET GENERAL USE	KINDRED COMMERCIAL LBS680B-1/3 S.S. SINK, 3 HOLE, 8" CENTERS, BACK LEDGE, GRADE 18-8 TYPE 302 STAINLESS STEEL, SINGLE COMPARTMENT, SATIN FINISHED RIM AND BOWL, SELF-RIMMING, SOUND DEADENING AND MOUNTING KIT, STRAINER. CHICAGO FAUCETS #1100-V-L9-XK FAUCET, C.P. 8" C.C., DECK MOUNTED, SOLID CAST BRASS LEAD-FREE BODY, 1/4 TURN CERAMIC DISC VALVE CARTRIDGES, 9" LONG SWING SPOUT WITH VANDAL-RESISTANT AERATOR OUTLET AND CAST BRASS HOODED LEVER HANDLES. PROVIDE SUPPLIES, C.P. WITH METAL ANGLE STOPS, ADAPTORS, ESCUTCHEONS AND METAL FLEXIBLE RISERS. PROVIDE 'P' TRAP, CAST BRASS 1-1/2" WITH CLEANOUT, UNION AND ESCUTCHEON. 8.3 LPM (2.2 GPM). 1/2"Ø H&C.W., 1-1/4"Ø VENT, 1-1/2"Ø DRAIN.
JS-1	JANITOR'S SINK PRECAST TERRAZZO TWO HANDLE FAUCET	STERN WILLIAMS MTB 2424 SINK, 24"x24"x10" DEEP, FLOOR MOUNTED, PRECAST TERRAZZO AND INTEGRAL CAST BRASS DRAIN WITH S.S. STRAINER. CHICAGO FAUCETS #305VB-R-XK-HOSE FAUCET, C.P. 8" C.C., WALL MOUNTED, SOLID CAST BRASS LEADFREE BODY, 1/4 TURN CERAMIC DISC VALVE CARTRIDGES, CAST BRASS LEVER HANDLES, BODY MOUNTED VACUUM BREAKER, INTEGRAL STOPS, 36" HOSE AND HANGER. STERN WILLIAMS #A-20 ALUMINUM BUMPER GUARDS, STERN WILLIAMS #T-40 S.S. TRIPLE MOP HANGER, STERN WILLIAMS #TC-3 MOP SINK DRAIN GASKET. STERN WILLIAMS #BP S.S. BACK SPLASH PANELS, NUMBER OF PANELS TO SUIT INSTALLATION. PROVIDE 'P' TRAP. 1/2"Ø H&C.W., 1-1/2"Ø VENT, 3"Ø DRAIN.
E.W.	EMERGENCY EYEWASH	HAWS #7360B-7460B WALL MOUNTED EYE WASH c/w 11" S.S. RECEPTOR BOWL WITH 1.3 GPM FLOW PLATE INSTALLED WITH MCGUIRE #8872C-17T P-TRAP c/w HAWS MODEL 9201E THERMOSTATIC MIXING VALVE TO PROVIDE 60-90 DEG F TEMPERED WATER AS PER ANSI Z358.1-2009. 1/2"Ø H&C.W., 1-1/2"Ø VENT, 3"Ø DRAIN.
SH	SHOWER STALL TRIM ONLY	ZURN #Z-7301-SS-MT-S9 VALVE, DRAIN WITH S.S. STRAINER, ASSEMBLY C/W ALL NECESSARY ACCESSORIES. 1/2"Ø H&C.W., 1-1/2"Ø VENT, 2"Ø DRAIN.

No.	DESCRIPTION	
	REVISIONS	
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CONTRACTORS MUST CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS ON THE PROJECT AND MUST REPORT ANY DISCREPANCIES TO THE DESIGNER BEFORE PROCEEDING WITH CONSTRUCTION.		
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DO NOT SCALE DRAWINGS.		
<div>TRISTAR ENGINEERING</div> <div>Division of 1041549 Ontario Limited 8901 Woodbine Avenue, Unit #118 Markham, Ontario Canada, L3R 9Y4</div> <div>(905) 604-3801 Fax (905) 604-3954</div>		
<div>LICENSED PROFESSIONAL ENGINEER 100134411 H. CHEN PROVINCE OF ONTARIO 2021.01.21</div>		
PROJECT: PROPOSED OFFICE/WAREHOUSE ON 1260 SKAE DRIVE OSHAWA		
DRAWING: SCHEDULES		
PLOTTED:		PROJECT No. 2019-084
DATE: NOV. 2020	DRAWING No.	
SCALE: -	M-11	
DRAWN BY: H.C.	REVIEWED BY: J.P.	

PACKAGED GAS FIRED ROOFTOP AC UNIT SCHEDULE

DESIG.	BRAND	MODEL	HEATING INPUT (MBH)	HEATING OUTPUT (MBH)	COOLING (TON)	AIR (CFM)	ESP. (IN.)	ELECTRICAL			WEIGHT (LB.)	MIN. FRESH AIR	REMARKS
								MCA	HP	VOLTAGE			
AC-1	CARRIER	48GCEM04	110	88	3	1200	0.8	7	0.5	575/3/60	700	20%	
AC-2	CARRIER	48HCFE08	224	184	10	4000	0.8	17	2.0	575/3/60	1500	15%	c/w POWER EXHAUST, HUMIDITROL w/ HUMIDITY SENSOR KIT.
AC-3	CARRIER	48HCFE08	224	184	10	4000	0.8	17	2.0	575/3/60	1500	15%	c/w POWER EXHAUST, 15AMP NON-POWERED FILED WIRED GFI SERVICE OUTLETS w/ WEATHER COVER.
AC-4	CARRIER	48GCFM05	150	120	4	1600	0.8	8	1.0	575/3/60	800	20%	
AC-5	CARRIER	48GCEM04	110	88	3	1200	0.8	7	0.5	575/3/60	700	20%	
AC-6	CARRIER	48GCFM05	150	120	4	1600	0.8	8	1.0	575/3/60	800	20%	

NOTES TO ROOFTOP AC UNITS:

1. ALL ROOFTOP AC UNITS SHALL BE c/w 18" HIGH ROOF CURB, CONDENSATE DRAIN TRAP, DIFFERENTIAL ENTHALPY ECONOMIZER, WEATHERPROOF DISCONNECT, REFRIGERANT R-410A, 7-DAY PROGRAMMABLE THERMOSTAT w/LOCKABLE COVER AND CONTROL WIRING. CONTROL WIRING TO BE FT-6 RATED. MERV 8 FILTERS.
2. COORDINATE WITH STRUCTURAL FOR WEIGHT AND EXACT LOCATIONS TO AVOID CONFLICT WITH JOISTS.
3. COORDINATE WITH ELECTRICAL FOR EXACT ELECTRICAL DATA PRIOR TO ORDERING.

FAN SCHEDULE

DESIG.	DESCRIPTION	MANUFACTURER	MODEL	AIR (CFM)	S.P. (IN)	ELECTRICAL			WEIGHT (LBS)	REMARKS
						WATTS	HP	VOLTAGE		
EF-1	WASHROOM EXHAUST	CARNES	VEBK 12L1	720	0.5	-	1/4	120/1/60	50	c/w STARTER TYPE 'A', 14"Ø ROOF CURB, MOTORIZED B.D.D., DISCONNECT, BIRD SCREEN.
EF-2	SERVER ROOM TRANSFER FAN	CARNES	VCDD 150C	800	0.25	613	-	120/1/60	90	c/w STARTER TYPE 'A' & 'C', HANGER RODS, ISOLATORS.
EF-3	LUNCHROOM EXHAUST	CARNES	VCDD 090I	500	0.25	306	-	120/1/60	50	c/w STARTER TYPE 'A', B.D.D., HANGER RODS, ISOLATORS.
EF-4	LUNCHROOM EXHAUST	CARNES	VCDD 090I	500	0.25	306	-	120/1/60	50	c/w STARTER TYPE 'A', B.D.D., HANGER RODS, ISOLATORS.
EF-5	PRINTER AREA EXHAUST	CARNES	VEBK 10K2	500	0.4	-	1/6	120/1/60	50	c/w STARTER TYPE 'A', 14"Ø ROOF CURB, MOTORIZED B.D.D., DISCONNECT, BIRD SCREEN.
EF-6	JANITOR & W/R EXHAUST	CARNES	VEBK 10K2	320	0.4	-	1/6	120/1/60	50	c/w STARTER TYPE 'A', 14"Ø ROOF CURB, MOTORIZED B.D.D., DISCONNECT, BIRD SCREEN.
EF-7	UTILITY ROOM TRANSFER FAN	CARNES	VCDD 150C	1000	0.25	613	-	120/1/60	90	c/w STARTER TYPE 'A' & 'C', B.D.D., HANGER RODS, ISOLATORS.
EF-8	WAREHOUSE VENTILATOR	CARNES	VEBK 18R1	3500	0.25	-	3/4	575/3/60	90	c/w STARTER, 14"Ø ROOF CURB, MOTORIZED B.D.D., DISCONNECT, BIRD SCREEN.
FA-1	WAREHOUSE FRESH AIR INTAKE	CARNES	GIGB 3636	3500	-	-	-	-	150	c/w 14"Ø ROOF CURB, MOTORIZED B.D.D., BIRD SCREEN. INTERLOCK WITH EF-5.

EQUIPMENT SCHEDULE

DESIG.	DESCRIPTION
HWT-1	ELECTRIC HOT WATER TANK. JOHNWOOD SPACESAVER MODEL SS19LSEB1, 19 USG STORAGE, 1500W, 120V, c/w T & P VALVE PIPED TO CLOSEST DRAIN.
HWT-2	ELECTRIC HOT WATER TANK. JOHNWOOD COMFORT SMART MODEL 6G80SDE, 80 USG STORAGE, 4500W, 208V, c/w T & P VALVE PIPED TO CLOSEST DRAIN.
IH-1 TO IH-8	GAS FIRED INFRARED HEATER. SUPERIOR RADIANT MODEL TA-125, STRAIGHT TUBE, 125MBH GAS INPUT, 30' LENGTH. 120VOLT. c/w HANGERS, REFLECTORS & SHIELDS w/ DOUBLE-SIDE REFLECTOR EXTENSIONS, END CAPS PACKAGE, FLEXIBLE GAS CONNECTION KIT c/w SHUT-OFF VALVE, HOT ROLLED RADIANT PIPE, ALUMINIZED STEEL TAIL PIPE, VENT WITH ADAPTER, 4"Ø COMBUSTION INTAKE AND VENT TERMINALS, PROGRAMMABLE THERMOSTAT AND TRANSFORMER.

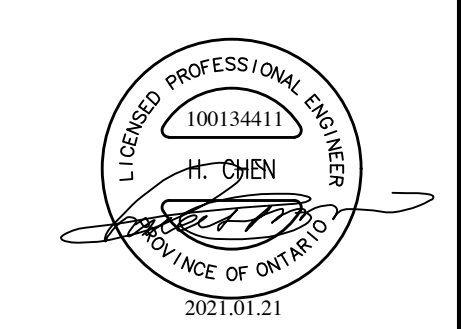
No.	DESCRIPTION	
	REVISIONS	

ISSUED FOR CONSTRUCTION	
ISSUED FOR BID	
ISSUED FOR BUILDING PERMIT	JAN.21/21
ISSUED FOR SITE PLAN APPROVAL	DATE
SUBMITTALS	

CONTRACTORS MUST CHECK AND VERIFY ALL DIMENSIONS, AND CONDITIONS ON THE PROJECT AND MUST REPORT ANY DISCREPANCIES TO THE DESIGNER BEFORE PROCEEDING WITH CONSTRUCTION.

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SEALED AND SIGNED BY THE DESIGNER.

DO NOT SCALE DRAWINGS.



PROJECT:	PROPOSED OFFICE/WAREHOUSE ON 1260 SKAE DRIVE OSHAWA
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DRAWING:	EQUIPMENT SCHEDULES
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DATE:	NOV. 2020	PROJECT No.	2019-Q84
SCALE:	-	DRAWING No.	M-12
DRAWN BY:	H.C.	REVIEWED BY:	J.P.