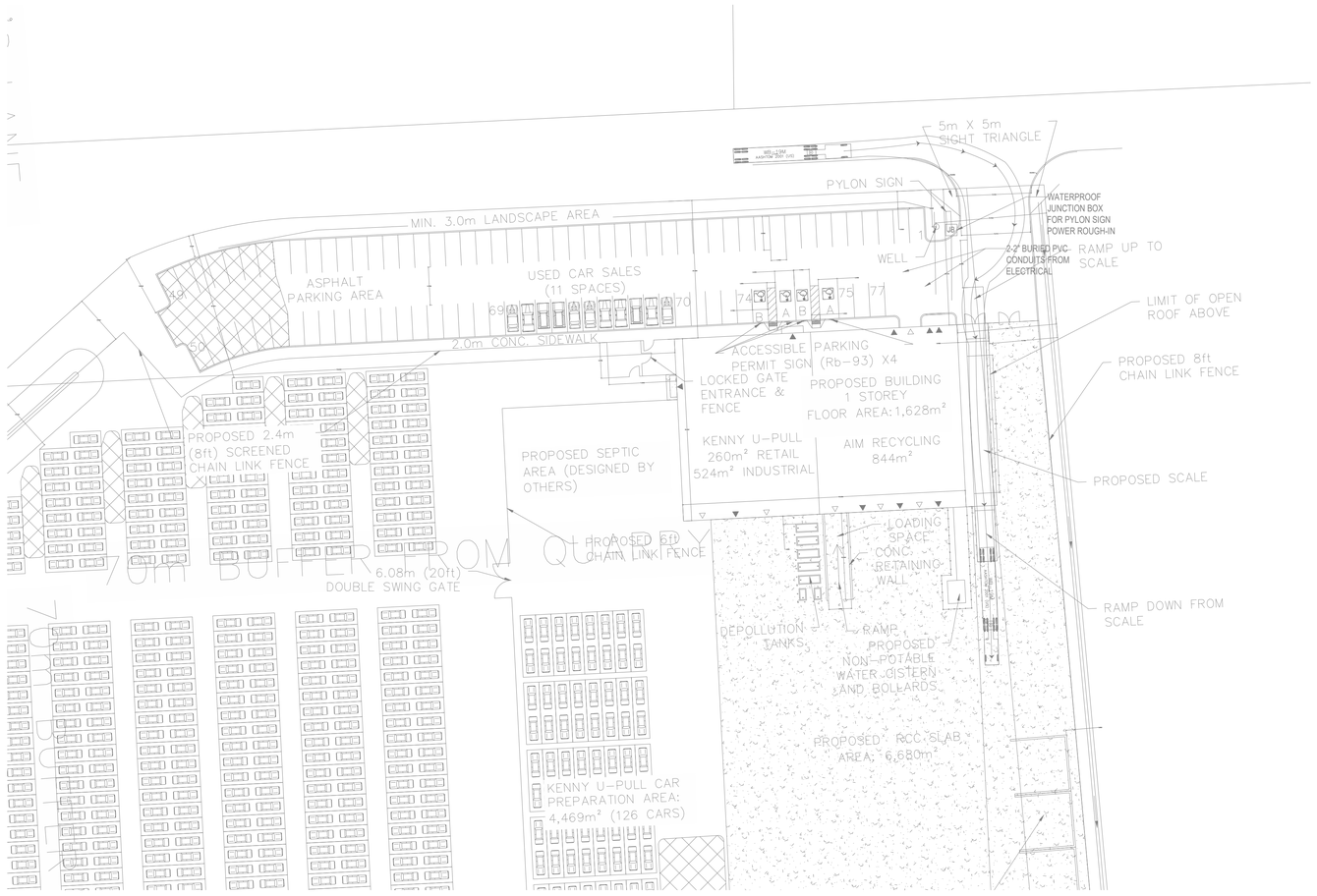

AIM KINGSTON FACILITY
MECHANICAL DRAWING LIST

N°	DRAWING CATERORY	DRAWING NUMBER	DRAWING NAME	REVISION
1	DRAWING LIST	M-0001	MECHANICAL DRAWING LIST	2
2	LEGEND	M-0002	MECHANICAL LEGEND	2
3	PLUMBING	DW-4101	DOMESTIC WATER LAYOUT FIRST FLOOR	2
4	PLUMBING	DW-4201	DOMESTIC WATER LAYOUT SECOND FLOOR	2
5	PLUMBING	SAN-4101	SANITARY LAYOUT FIRST FLOOR	2
6	PLUMBING	SAN-4201	SANITARY LAYOUT SECOND FLOOR	2
7	HVAC	HV-4101	HAVC AND COMPRESSED AIR LAYOUT FIRST FLOOR	2
8	HVAC	HV-4201	HAVC AND COMPRESSED AIR LAYOUT SECOND FLOOR	2
9	HVAC	HV-4901	HAVC LAYOUT ROOF	2
10	UTILITIES	UT-4101	UTILITIES LAYOUT FIRST FLOOR	2
11	MECHANICAL	M-8000	MECHANICAL - HVAC & PLUMBING - SCHEDULES	2
12	MECHANICAL	M-9000	MECHANICAL - HVAC & PLUMBING - SPECIFICATIONS	2

Key plan

Notes:

Rev.	Date	Drawn by	Revision	Checked by
02	2024-03-15	A.B.	ISSUED FOR TENEDER AND BUILDING PERMIT	M.Z.
01	2023-02-08	A.B.	ISSUED FOR TENEDER AND BUILDING PERMIT	M.Z.

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Project

AIM KINGSTON FACILITY

Drawing

MECHANICAL DRAWING LIST

Designed by	A.Bulbul	Drawn by	A.Bulbul	Checked by	M.Zaky
Date	2022-09-19	Scale	1:125	Size	ARCH-D
Project #	AIM-01	Drawing #	M-0001	Revision	02

PIPING COMPONENTS

- GATE VALVE
- GATE ANGLE VALVE
- BUTTERFLY VALVE
- DIAPHRAGM VALVE
- GLOBE VALVE
- GLOBE ANGLE VALVE
- BALANCING VALVE
- NEEDLE VALVE
- CHECK VALVE
- BALL VALVE
- PRESSURE SAFETY VALVE
- PRESSURE AND TEMPERATURE SAFETY VALVE
- INTERNAL PILOT BACK PRESSURE CONTROL VALVE
- GAS PRESSURE REDUCING VALVE (STATIC)
- INTERNAL PILOT PRESSURE REDUCING VALVE
- INTERNAL PILOT FEED FORWARD/BACKWARD BACK PRESSURE VALVE
- CIRCUIT SETTER VALVE
- THREE WAY VALVE
- THREE WAY BALL VALVE
- THERMOMETER
- PRESSURE GAUGE WITH ISOLATION VALVE ASSEMBLY
- PRESSURE GAUGE WITH BUILT-IN ISOLATION VALVE
- PRESSURE GAUGE WITH ISOLATION VALVE AND SIPHON
- PRESSURE GAUGE WITH TRI-CLAMP
- PRESSURE GAUGE FITTING WITH ISOLATION VALVE
- STRAINER
- STRAINER WITH DRAIN VALVE
- DRAIN VALVE WITH CAPPED CONNECTION FOR HOSE
- REDUCER - CONCENTRIC
- REDUCER - ECCENTRIC
- TRI-CLAMP CONNECTION
- DI-ELECTRIC CONNECTION
- ORIFICE
- UNION
- FLANGE
- THREADED HOSE CONNECTION
- CAP
- PIPING UP OR UP AND DOWN
- PIPING DOWN
- BOTTOM CONNECTION
- TOP CONNECTION
- PIPING PITCH (SLOPE)
- INSULATION
- HEAT TRACING
- ACTUATOR - MOTORIZED
- ACTUATOR - GEAR
- ACTUATOR - SOLENOID
- ACTUATOR - PNEUMATIC ON/OFF
- ACTUATOR - PNEUMATIC MODULATING
- ANCHOR
- VACCUM BREAKER
- AUTOMATIC AIR VENT
- PIPE HANGER
- LONGITUDINAL BRACING
- TRANSVERSE BRACING
- SIGHT GLASS
- METER - GAS OR WATER
- FLOW METER
- FLOW METER - MAGNETIC
- FLOW METER - MASS
- PUMP
- STEAM SEPARATOR
- STEAM TRAP
- STEAM TRAP VALVE STATION
- FILTER
- FILTER WITH REGULATOR
- REGULATOR
- INLINE FILTER
- NATURAL GAS VALVE
- GAS QUICK CONNECT
- WATER HAMMER ARRESTOR
- WALL CLEANOUT
- WALL HYDRANT
- INDIRECT DRAIN
- FLOOR DRAIN
- ROOF DRAIN
- FLOOR CLEANOUT
- MANHOLE
- HOSE
- FLEXIBLE-TUBE CLAMP
- FLEXIBLE CONNECTOR
- EXPANSION JOINT WITH ALIGNMENT GUIDES
- SLEEVE

HVAC

- HEATING COIL
- FIRE DAMPER - FLOOR MOUNTED
- FIRE DAMPER - DUCT MOUNTED
- BACKDRAFT DAMPER
- VOLUME DAMPER
- SMOKE DAMPER
- GRAVITY DAMPER
- BRANCH
- ROUND DUCT
- RECTANGULAR DUCT (W x H)
- HUMIDIFIER
- OFFSET
- CONCENTRIC TRANSITION - RECTANGULAR TO CIRCULAR OR REDUCER
- ECCENTRIC TRANSITION
- FLEXIBLE ADAPTOR
- ACCESS PANEL (HORIZONTAL)
- ACCESS PANEL (VERTICAL)
- TURNING VANES
- TURNING VANES, SMOOTH RADIUS
- EXTERIOR INSULATION
- INTERIOR INSULATION
- SUPPLY AIR DUCT UP/DOWN
- RETURN OR EXHAUST AIR DUCT UP/DOWN
- DUCT TYPES
- FLEXIBLE DUCT TYPE 1
- FLEXIBLE DUCT TYPE 2
- SILENCER
- CEILING FAN
- THERMOSTAT / TEMPERATURE SENSOR
- RELATIVE HUMIDITY SENSOR (OR OTHER AS NOTED)
- CARBON MONOXIDE SENSOR
- CARBON DIOXIDE SENSOR
- NITROGEN OXIDE SENSOR
- DEW POINT SENSOR
- WORK TO BE DEMOLISHED
- ELECTRIC HEATER BB = BASEBOARD FF = FORCED FLOW
- DIRECTION OF FLOW
- FAN (PLAN VIEW)
- SUPPLY ROUND DIFFUSER
- SUPPLY SQUARE DIFFUSER
- RETURN GRILLE
- RETURN DIFFUSER
- SUPPLY / RETURN GRILLE (SIDE)
- SUPPLY / RETURN REGISTER
- EXHAUST FAN
- DOWNBLAST FAN
- UPBLAST FAN
- DIFFUSER/GRILLE ID.

GENERAL NOTATION

MO	MODIFY
REL	RELOCATE
RMN	TO REMAIN
REM	REMOVE
FE	FUTURE EQUIPMENT
RE	RELOCATED EQUIPMENT
N	NEW EQUIPMENT
UP	UP
DN	DOWN

- EQPT XX — EQUIPMENT TAG
- XX — MOTOR POWER INDICATOR (HP)
- EE-AAAII — EQUIPMENT NUMBER
- TP 01 — TIE-POINT
- A — REVISION
- 1 — NOTE ON DRAWING
- DESCRIPTION / PRO-XXXX — SUPPLY RETURN ARROW TAG SYSTEM NAME AND DRAWING NUMBER
- 3A-CA-1AG-0001-INSA-HT — FLOW DIRECTION ARROW WITH PIPE LINE DESIGNATION
- 3" STEAM xxx — FLOW DIRECTION ARROW WITH PIPE SIZE AND COMMODITY (ABOVE LINE)
  - FLOW DIRECTION ARROW
  - CIP CIRCUIT NUMBER AND DIRECTION

FIRE PROTECTION / SAFETY

- SPRINKLER, PENDENT
- SPRINKLER,UPRIGHT
- SPRINKLER, SEMI-RECESSED
- SPRINKLER, SIDEWALL
- PREACTION VALVE
- DELUGE VALVE
- SUPERVISORY SWITCH
- STANDPIPE OUTLET
- SIAMESE CONNECTION
- WATER MOTOR ALARM
- FIRE HOSE
- FIRE HYDRANT
- EXTINGUISHER
- HOSE STATION (DRY OR CHANGED STANDPIPE)
- FHC — SURFACE MOUNTED FIRE HOSE STATION
- FHC — RECESSED FIRE HOSE STATION
- BUCKET
- EYE WASH STATION
- SAFETY SHOWER

SYMBOLS FOR FIRE EXTINGUISHING SYSTEM

- AS — FULLY SPRINKLERED SPACE
- AS — PARTIALLY SPRINKLERED SPACE
- NS — NON-SPRINKLERED SPACE
- FCP — FIRE ALARM CONTROL PANEL

EQUIPMENT

- RECIPROCATING COMPRESSOR TYPE 1
- SCREW COMPRESSOR
- COOLING TOWER TYPE 1
- COOLING TOWER TYPE 2
- CHILLER / CONDENSER / EXPANSION TANK
- EXPANSION TANK
- WATER TANK
- AIR SEPARATOR TANK
- CENTRIFUGAL PUMP
- CONDENSATE PUMP
- DOSING PUMP
- COOLING TOWER INLINE FILTER
- PLATE HEAT EXCHANGER
- SHELL AND TUBE EXCHANGER DOUBLE TUBE SHEET
- SHELL AND TUBE EXCHANGER SINGLE TUBE SHEET

LINE TYPES

CONTROL AND INSTRUMENTATION

- PNEUMATIC SIGNAL
- PLC CONTROL/ELECTRICAL SIGNAL
- COMMUNICATION LINK

FUEL OIL / GAS / BOILER

- NG — NATURAL GAS
- PG — PROPANE GAS
- BGF — BOILER GAS FLUE

CLEAN UTILITIES

- CCA — CLEAN COMPRESSED AIR
- CST — CLEAN STEAM SUPPLY(## psig OR kPag)
- DIW — DEIONIZED WATER
- DMW — DEMINERALIZED WATER
- PW — PURIFIED WATER
- WFI — WATER FOR INJECTION
- PRS — PURE STEAM
- ROW — REVERSE OSMOSIS WATER

DUST COLLECTION / EXHAUST

- DUST AND FUME DUCTWORK
- EXHAUST SYSTEM

CHEMICAL TREATMENT / REAGENTS

- CHT — CHEMICAL TREATMENT
- CAU — CAUSTIC
- ACD — ACID
- SZR — SANITIZER

SPECIALIZED LINE DEMARKATIONS

- NEW
- EXISTING TO REMAIN
- DEMOLITION
- FUTURE
- FLOW DIRECTION
- 5D — UPSTREAM SEPARATION
- xx — SUPPLEMENTARY LINE NOTES

DOMESTIC WATER / NON-POTABLE

- CTW — CITY WATER
- DCW — DOMESTIC COLD WATER
- DHW — DOMESTIC HOT WATER
- DHWR — DOMESTIC HOT WATER RECIRC.
- NPCW — NON-POTABLE COLD WATER
- NPHW — NON-POTABLE HOT WATER
- NPHWR — NON-POTABLE HOT WATER RECIRC.
- TW — TEMPERED WATER
- SW — SOFTENED WATER

HVAC

- GENERAL
- DUCTWORK
- EQUIPMENT

DRAINAGE

- SAN — SANITARY DRAINAGE ABOVE FLOOR
- SAN — SANITARY DRAINAGE BELOW FLOOR
- PSD — PUMPED SANITARY DRAINAGE ABOVE FLOOR
- PSD — PUMPED SANITARY DRAINAGE BELOW FLOOR
- PD — PROCESS DRAINAGE ABOVE FLOOR
- PD — PROCESS DRAINAGE BELOW FLOOR
- SD — STORM DRAINAGE ABOVE FLOOR
- SD — STORM DRAINAGE BELOW FLOOR

VENT

- V — SANITARY VENT
- LV — LABORATORY VENT
- PV — PROCESS VENT
- NGV — NATURAL GAS VENT
- PGV — PROPANE GAS NETWORK VENT
- STV — STEAM VENT

FIRE PROTECTION

- FCO2 — CARBON DIOXIDE
- FIRE PROTECTION SYSTEM
- FIW — WATER BRANCH LINE
- FIW — WATER MAIN LINE

HEATING: WATER / GLYCOL / STEAM

- HGS — HEATING WATER SUPPLY
- HGR — HEATING WATER RETURN
- HWS — HEATING GLYCOL SUPPLY
- HWR — HEATING GLYCOL RETURN
- RGS — HEAT RECOVERY GLYCOL SUPPLY
- HGR — HEAT RECOVERY GLYCOL RETURN
- STM — STEAM SUPPLY (## psig OR kPag)
- CON — CONDENSATE (## psig OR kPag)
- CP — CONDENSATE, PUMPED
- HTF — HEAT TRANSFER FLUID

AIR / GAS / SUCTION

- CA — COMPRESSED AIR
- HE — HELIUM
- N2 — NITROGEN
- O2 — OXYGEN
- H2 — HYDROGEN
- CO2 — CARBON DIOXIDE
- VAC — VACUUM

CHILLED WATER / REFRIGERATION

- CWS — CHILLED WATER SUPPLY
- CWR — CHILLED WATER RETURN
- CTWS — COOLING TOWER WATER SUPPLY
- CTWR — COOLING TOWER WATER RETURN
- CGS — CHILLED GLYCOL SUPPLY
- CGR — CHILLED GLYCOL RETURN
- LTGS — CHILLED GLYCOL SUPPLY LOW TEMP.
- LTGR — CHILLED GLYCOL RETURN LOW TEMP.
- MTGS — CHILLED GLYCOL SUPPLY MEDIUM TEMP.
- MTGR — CHILLED GLYCOL RETURN MEDIUM TEMP.
- HTGS — CHILLED GLYCOL SUPPLY HIGH TEMP.
- HTGR — CHILLED GLYCOL RETURN HIGH TEMP.

EQUIPMENT TAGS

PLUMBING TAGS

WC	WATER CLOSET
U	URINAL
L	LAVATORY
S	SINK
SH	SHOWER
EW	EYE WASH
EWS	EYE WASH & SHOWER

HVAC TAGS

S.A.	SUPPLY AIR
R.A.	RETURN AIUR
O.A.	OUTSIDE AIR
C.A.	COMBUSTION AIR
E.A.	EXHAUST AIR

TAGS

DEMO	DEMOLITION
RENO	RENOVATION
SD	SUPPLY DIFFUSER
EG	EXHAUST GRILLE
TG	TRANSFER GRILLE
RG	RETURN GRILLE
EF	EXHAUST FAN
VTR	VENT TO ROOF
VAV	VARIABLE AIR VOLUME
HC	HEATING COIL
RE&RE	REMOVE & REINSTALL

SUPPLEMENTARY PLUMBING & PIPING TAGS

CD	CONDENSATE DRAIN
SAN	SANITARY DRAIN
ST	STORM DRAIN
G	NATURAL GAS
RL	REFRIGERANT LIQUID LINE
W	WASTE

Key plan

Notes:

Rev.	Date	Drawn by	Revision	Checked by
02	2024-03-15	A.B.	ISSUED FOR TENEDER AND BUILDING PERMIT	M.Z.
01	2023-02-08	A.B.	ISSUED FOR TENEDER AND BUILDING PERMIT	M.Z.

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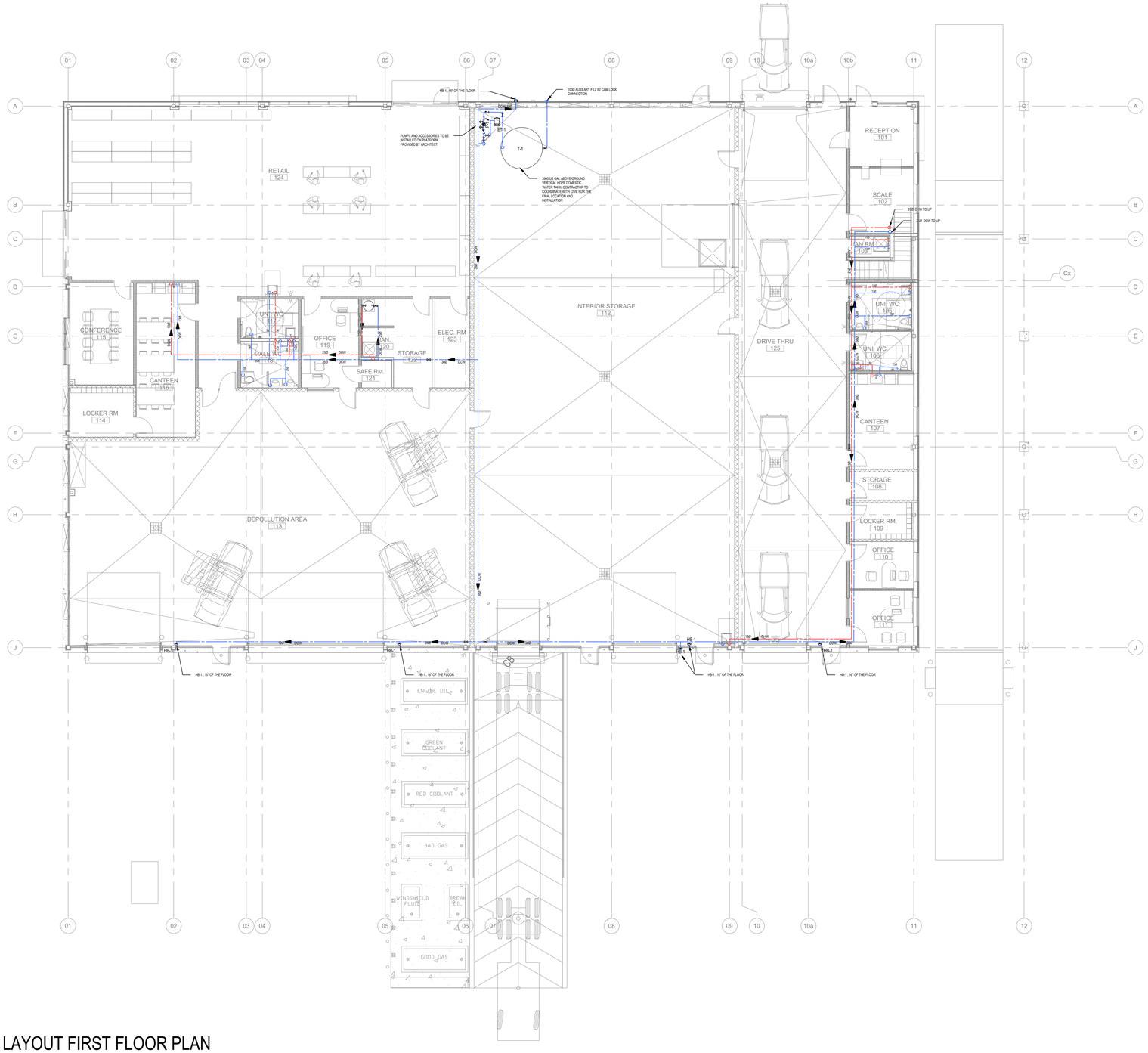
AIM KINGSTON FACILITY

Drawing

MECHANICAL LEGEND

Designed by	D.Guerrero	Drawn by	E.Little	Checked by	D.Guerrero
Date	2022-09-16	Scale	N.T.S.	Size	ARCH-D
Project #	AIM-01	Drawing #	M-0002	Revision	02



DOMESTIC WATER LAYOUT FIRST FLOOR PLAN

SCALE: 1:125

Key plan

Notes:

1. INSTALL VENT FOR ALL FIXTURES AS PER CODE. ALL PLUMBING VENTS NEED TO TERMINATE THROUGH ROOF.
2. MECHANICAL CONTRACTOR TO VERIFY SITE SERVICE LOCATIONS AND INVERTS ON SITE PRIOR TO INSTALLATION.
3. ALL INSTALLATION SHALL BE AS PER LATEST EDITION OF PLUMBING CODE,BUILDING CODE, PROVINCIAL CODES AND STANDARDS AND AUTHORITY HAVING JURISDICTION
4. ALL 3" AND SMALLER SANITARY LINES TO BE SLOPED AT MINIMUM 2.0%. ALL 4" AND LARGER SANITARY LINES TO BE SLOPED AT 1.0% .
5. SEE ARCHITECTURAL/SUPPLIER DRAWINGS FOR EXACT LOCATION AND INSTALLATION HEIGHT OF ALL PLUMBING FIXTURES.
6. ALL FIXTURES SHALL HAVE ISOLATION VALVES FOR EACH HOT AND COLD WATER LINE CONNECTION.
7. INSTALL CLEANOUTS ON SANITARY DRAINAGE PIPING AS PER CODE.

Rev.	Date	Drawn by	Revision	Checked by
02	2024-03-15	A.B.	ISSUED FOR TENEDER AND BUILDING PERMIT	M.Z.
01	2023-02-08	A.B.	ISSUED FOR TENEDER AND BUILDING PERMIT	M.Z.

Seals

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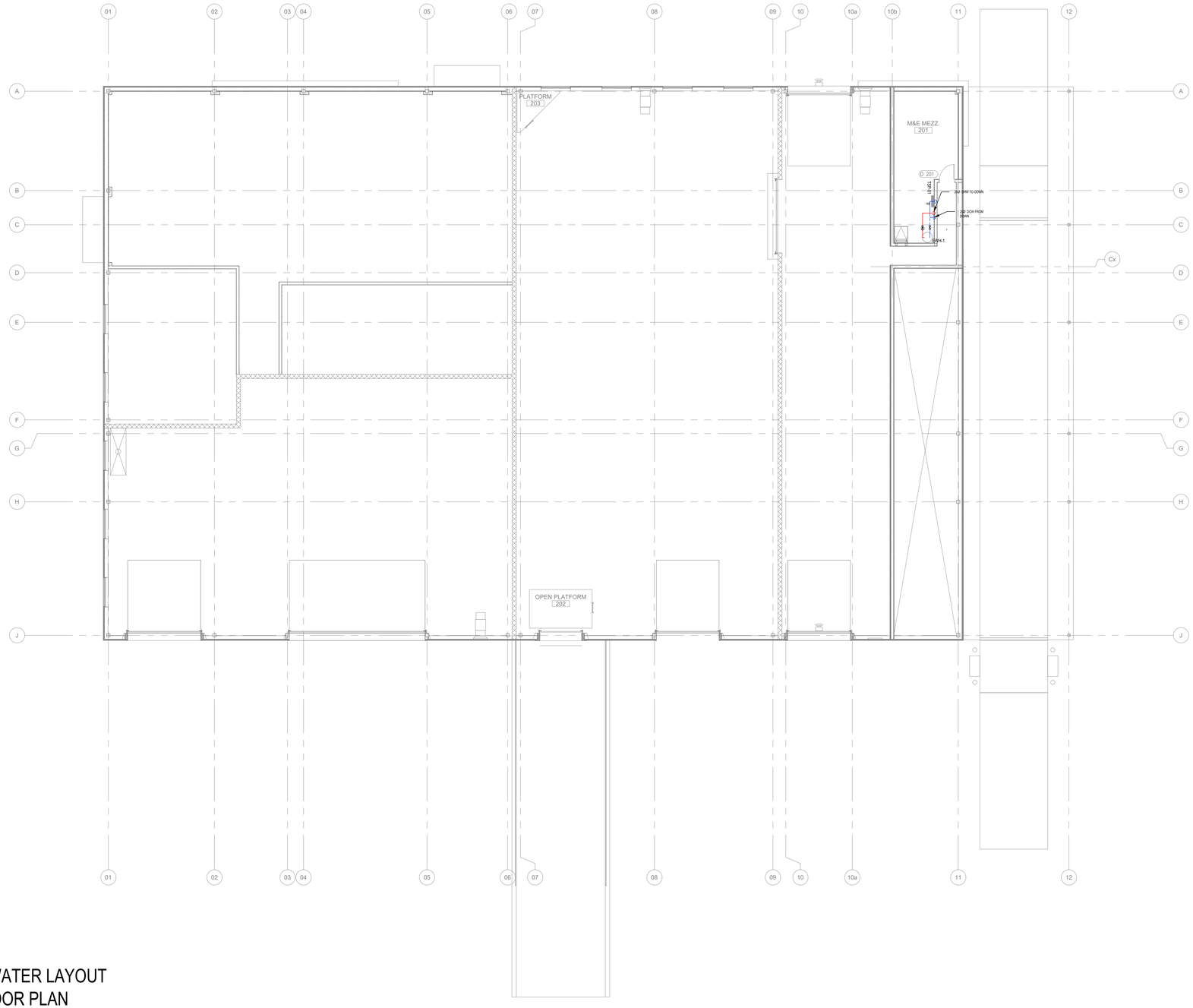
AIM KINGSTON FACILITY

Drawing

DOMISTIC WATER
LAYOUT 1ST FLOOR

Designed by	A.Bulbul	Drawn by	A.Bulbul	Checked by	M.Zaky
Date	2022-09-19	Scale	1:125	Size	ARCH-D
Project #	AIM-01	Drawing #	DW-4101	Revision	02



DOMESTIC WATER LAYOUT
SECOND FLOOR PLAN

SCALE: 1:125

Key plan

Notes:

1. INSTALL VENT FOR ALL FIXTURES AS PER CODE.
   ALL PLUMBING VENTS NEED TO TERMINATE THROUGH ROOF.
2. MECHANICAL CONTRACTOR TO VERIFY SITE SERVICE LOCATIONS AND INVERTS ON SITE PRIOR TO INSTALLATION.
3. ALL INSTALLATION SHALL BE AS PER LATEST EDITION OF PLUMBING CODE,BUILDING CODE, PROVINCIAL CODES AND STANDARDS AND AUTHORITY HAVING JURISDICTION
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5. SEE ARCHITECTURAL/SUPPLIER DRAWINGS FOR EXACT LOCATION AND INSTALLATION HEIGHT OF ALL PLUMBING FIXTURES.
6. ALL FIXTURES SHALL HAVE ISOLATION VALVES FOR EACH HOT AND COLD WATER LINE CONNECTION.
7. INSTALL CLEANOUTS ON SANITARY DRAINAGE PIPING AS PER CODE.

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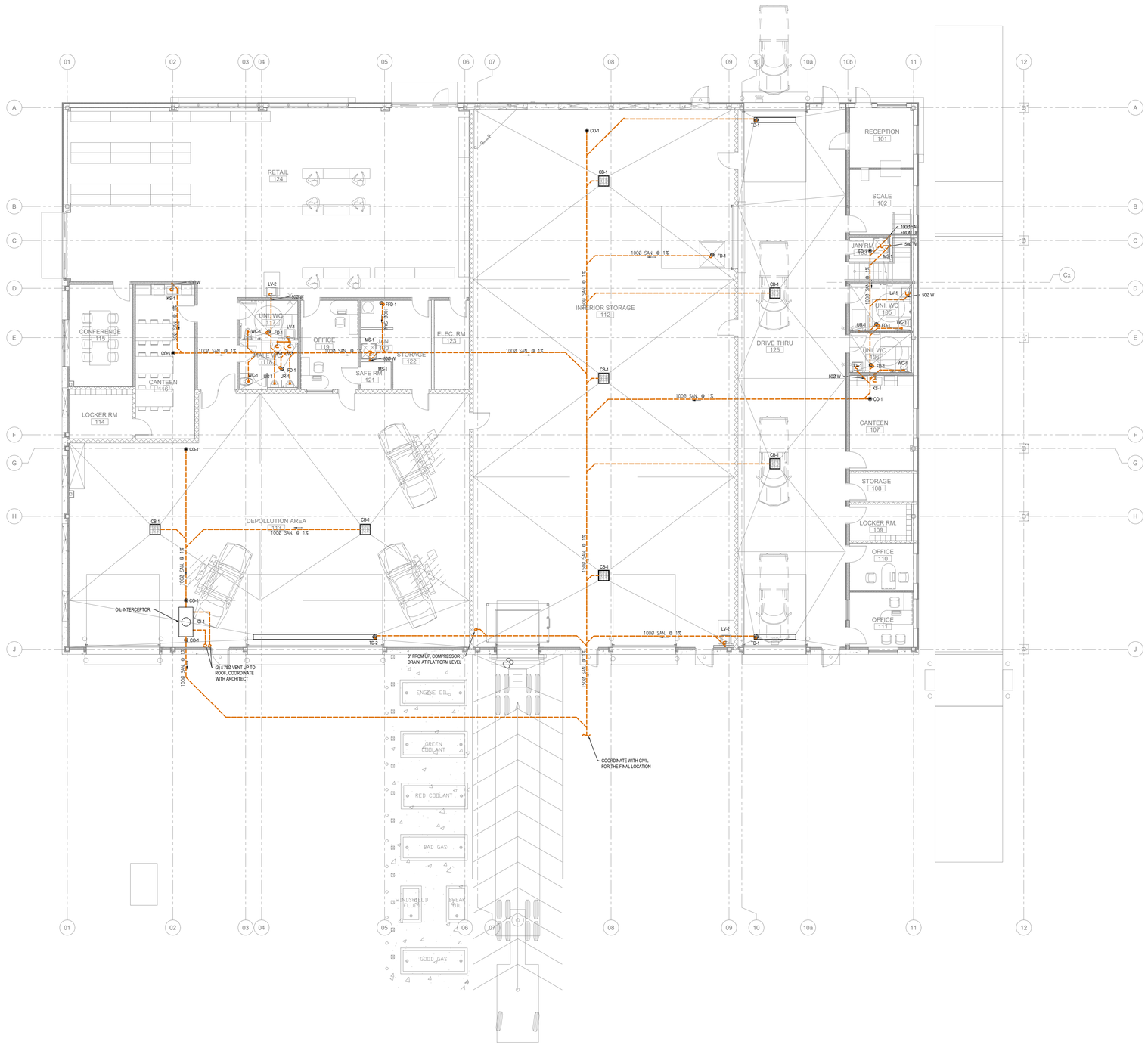
AIM KINGSTON FACILITY

Drawing

DOMISTIC WATER
LAYOUT 2ND FLOOR

Designed by	A.Bulbul	Drawn by	A.Bulbul	Checked by	M.Zaky
Date	2022-09-19	Scale	1:125	Size	ARCH-D
Project #	AIM-01	Drawing #	DW-4201	Revision	02



SANITARY LAYOUT - FIRST FLOOR PLAN

SCALE: 1:125

Key plan

Notes:

1. INSTALL VENT FOR ALL FIXTURES AS PER CODE. ALL PLUMBING VENTS NEED TO TERMINATE THROUGH ROOF.
2. MECHANICAL CONTRACTOR TO VERIFY SITE SERVICE LOCATIONS AND INVERTS ON SITE PRIOR TO INSTALLATION.
3. ALL INSTALLATION SHALL BE AS PER LATEST EDITION OF PLUMBING CODE,BUILDING CODE, PROVINCIAL CODES AND STANDARDS AND AUTHORITY HAVING JURISDICTION
4. ALL 3" AND SMALLER SANITARY LINES TO BE SLOPED AT MINIMUM 2.0%. ALL 4" AND LARGER SANITARY LINES TO BE SLOPED AT 1.0% .
5. SEE ARCHITECTURAL/SUPPLIER DRAWINGS FOR EXACT LOCATION AND INSTALLATION HEIGHT OF ALL PLUMBING FIXTURES.
6. ALL FIXTURES SHALL HAVE ISOLATION VALVES FOR EACH HOT AND COLD WATER LINE CONNECTION.
7. INSTALL CLEANOUTS ON SANITARY DRAINAGE PIPING AS PER CODE.

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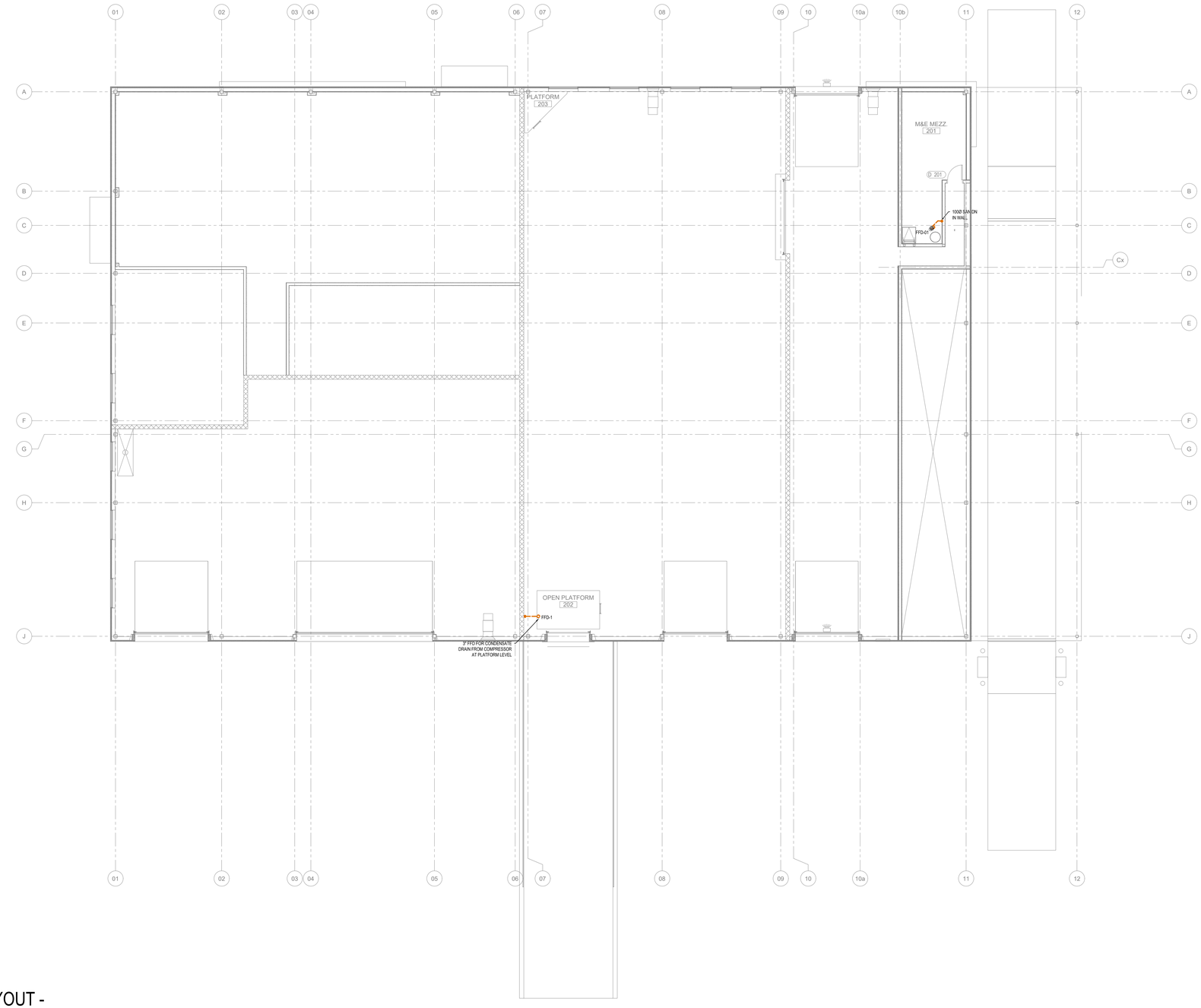
Project

AIM KINGSTON FACILITY

Drawing

SANITARY
LAYOUT 1ST FLOOR

Designed by	A.Bulbul	Drawn by	A.Bulbul	Checked by	M.Zaky
Date	2022-09-16	Scale	1:100	Size	ARCH-D
Project #	AIM-01	Drawing #	SAN-4101	Revision	02



SANITARY LAYOUT - SECOND FLOOR PLAN

SCALE: 1:125

Key plan

Notes:

1. INSTALL VENT FOR ALL FIXTURES AS PER CODE.
   ALL PLUMBING VENTS NEED TO TERMINATE THROUGH ROOF.
2. MECHANICAL CONTRACTOR TO VERIFY SITE SERVICE LOCATIONS AND INVERTS ON SITE PRIOR TO INSTALLATION.
3. ALL INSTALLATION SHALL BE AS PER LATEST EDITION OF PLUMBING CODE,BUILDING CODE, PROVINCIAL CODES AND STANDARDS AND AUTHORITY HAVING JURISDICTION
4. ALL 3" AND SMALLER SANITARY LINES TO BE SLOPED AT MINIMUM 2.0%.
   ALL 4" AND LARGER SANITARY LINES TO BE SLOPED AT 1.0% .
5. SEE ARCHITECTURAL/SUPPLIER DRAWINGS FOR EXACT LOCATION AND INSTALLATION HEIGHT OF ALL PLUMBING FIXTURES.
6. ALL FIXTURES SHALL HAVE ISOLATION VALVES FOR EACH HOT AND COLD WATER LINE CONNECTION.
7. INSTALL CLEANOUTS ON SANITARY DRAINAGE PIPING AS PER CODE.

Rev.	Date	Drawn by	Revision	Checked by
02	2024-03-15	A.B.	ISSUED FOR TENEDER AND BUILDING PERMIT	M.Z.
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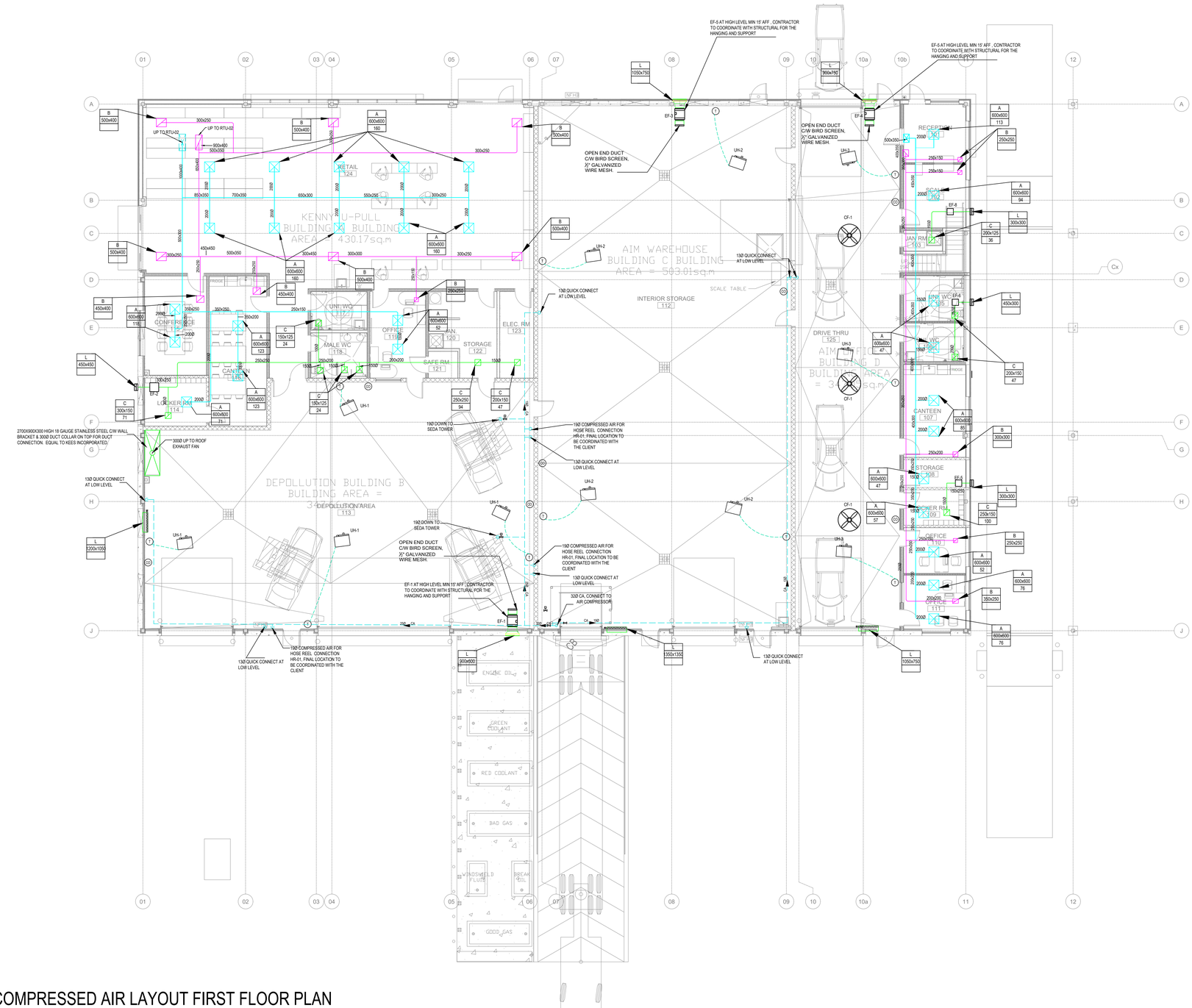
AIM KINGSTON FACILITY

Drawing

SANITARY
LAYOUT 2ND FLOOR

Designed by	A.Bulbul	Drawn by	A.Bulbul	Checked by	M.Zaky
Date	2022-09-16	Scale	1:100	Size	ARCH-D
Project #	AIM-01	Drawing #	SAN-4201	Revision	02



HVAC AND COMPRESSED AIR LAYOUT FIRST FLOOR PLAN

SCALE: 1:125

Key plan

Notes:

Rev.	Date	Drawn by	Revision	Checked by
02	2024-03-15	A.B.	ISSUED FOR TENEDER AND BUILDING PERMIT	M.Z.
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AIM KINGSTON FACILITY

Drawing

HVAC AND COMPRESSED AIR LAYOUT 1ST FLOOR

Designed by	A.Bulbul	Drawn by	A.Bulbul	Checked by	M.Zaky
Date	2022-09-16	Scale	1:125	Size	ARCH-D
Project #	AIM-01	Drawing #	HV-4201	Revision	02

HVAC AND COMPRESSED AIR LAYOUT SECOND FLOOR PLAN

SCALE: 1:125

Key plan

Notes:

Rev.	Date	Drawn by	Revision	Checked by
02	2024-03-15	A.B.	ISSUED FOR TENEDER AND BULDING PERMIT	M.Z.
01	2023-02-08	A.B.	ISSUED FOR TENEDER AND BULDING PERMIT	M.Z.

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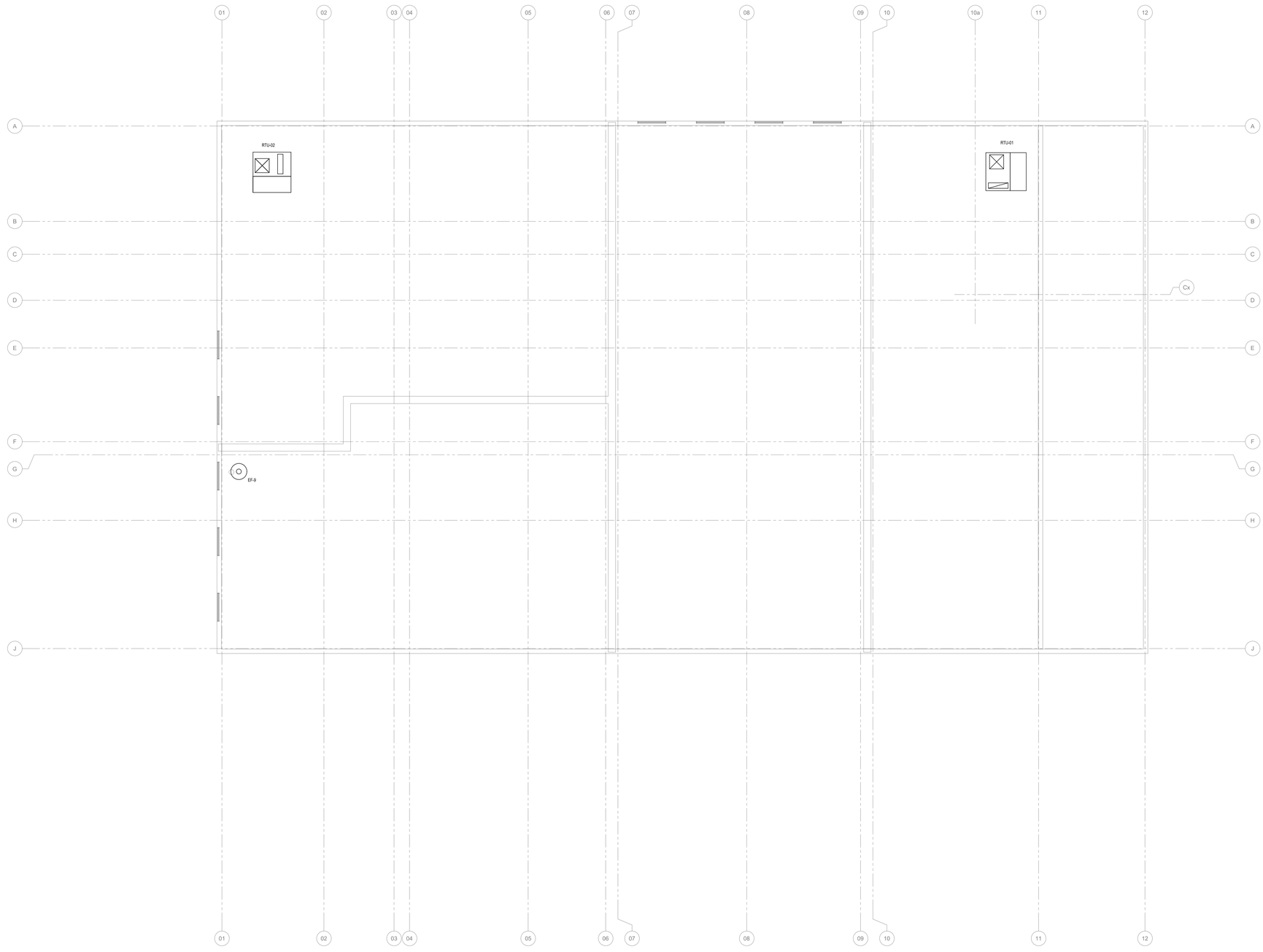
Project

AIM KINGSTON FACILITY

Drawing

HVAC AND COMPRESSED AIR LAYOUT 2ND FLOOR

Designed by	A.Bulbul	Drawn by	A.Bulbul	Checked by	M.Zaky
Date	2022-09-16	Scale	1:125	Size	ARCH-D
Project #	AIM-01	Drawing #	HV-4201	Revision	02



HVAC AND GAS ROOF PLAN

SCALE: 1;125

Key plan

Notes:

Rev.	Date	Drawn by	Revision	Checked by
02	2024-03-28	A.B.	ISSUED FOR TENEDER ADDENDUM #4	M.Z.
01	2023-02-08	A.B.	ISSUED FOR TENEDER AND BUILDING PERMIT	M.Z.

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Project

AIM KINGSTON FACILITY

Drawing

HVAC
LAYOUT
ROOF

Designed by	A.Bulbul	Drawn by	A.Bulbul	Checked by	M.Zaky
Date	2022-04-27	Scale	1:100	Size	ARCH-D
Project #	AIM-01	Drawing #	HV-4901	Revision	2

UTILITIES LAYOUT FIRST FLOOR PLAN

SCALE: 1:125

Key plan

Notes:

Rev.	Date	Drawn by	Revision	Checked by
01	2024-03-15	A.B.	ISSUED FOR TENEDER AND BUILDING PERMIT	M.Z.
01	2023-02-08	A.B.	ISSUED FOR TENEDER AND BUILDING PERMIT	M.Z.

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Project

AIM KINGSTON FACILITY

Drawing

UTILITIES
LAYOUT 1ST FLOOR

Designed by	A.Bulbul	Drawn by	A.Bulbul	Checked by	M.Zaky
Date	2022-09-19	Scale	1:125	Size	ARCH-D
Project #	AIM-01	Drawing #	UT-4101	Revision	02

MECHANICAL SPECIFICATION:

A) GENERAL REQUIREMENTS FOR MECHANICAL WORK.

1.1. SCOPE OF WORK.

1.2. CONFORM TO THE APPLICABLE PROVISIONS OF THE GENERAL CONDITIONS OF THE CONTRACT.
1.3. THE GENERAL MECHANICAL SPECIFICATION SHALL APPLY TO AND BE PART OF EACH OF THE SECTIONS COVERING THE MECHANICAL TRADES WORK.

2.0. EXAMINATION OF SITE AND INFORMATION.

2.1. EACH SUBCONTRACTOR, BEFORE TENDERING, SHALL EXAMINE THE SITE, ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS AND HE SHALL FAMILIARIZE HIMSELF WITH THE BUILDING CONSTRUCTION AND FINISH IN ORDER THAT HIS TENDER MAY INCLUDE EVERYTHING NECESSARY FOR THE PROPER COMPLETION OF THE WORK.
2.2. IT SHALL BE THIS SUBCONTRACTOR'S RESPONSIBILITY THAT MATERIAL AND EQUIPMENT BE BROUGHT INTO THE BUILDING IN SUCH ASSEMBLIES AND SIZES AS TO ENTER INTO THE SPACES WHERE THEY ARE TO BE LOCATED AND TO BE SMALL ENOUGH TO BE HOISTED INTO THE BUILDING WITHOUT DIFFICULTY AND CUTTING, PATCHING, ETC., INVOLVED IN GETTING LARGE ASSEMBLIES INTO PLACE, SHALL BE THE RESPONSIBILITY OF THIS SUBCONTRACTOR.

3.0. RELATIONSHIP TO OTHER TRADES.

3.1. THIS 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 APPARATUS, AND WITH THE BUILDING CONSTRUCTION. HE SHALL ALSO CONFIRM THE ELECTRICAL CHARACTERISTICS OF THE PROJECT AND ORDER 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 FINISH LINES OF ALL WALLS, FLOORS, CEILINGS, ETC.
3.3. THIS 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 HIS 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 THIS SUBCONTRACTOR WILL RENDER HIM RESPONSIBLE FOR THE COST OF CUTTING OPENINGS, INSTALLING 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 THE SHOP DRAWINGS FOR REVIEW OF MATERIAL, EQUIPMENT, AND APPARATUS BEING PROVIDED BY HIM.
4.2. THE ENGINEER'S REVIEW OF SHOP DRAWINGS AND MANUFACTURER'S SPECIFICATIONS OF ANY EQUIPMENT 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 TO THE FULL INTENT OF THIS SPECIFICATION.
4.3. BEFORE SUBMISSION, THIS 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 PROPERLY IN THE ALLOTTED SPACE. THE SHOP DRAWINGS SHALL BE STAMPED BY THIS 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 LWS AND REGULATIONS OF ALL AUTHORITIES HAVING JURISDICTION IN EACH CASE, PARTICULARLY ALL AFFECTED DEPARTMENTS OF THE MUNICIPALITY AND PROVINCE. ELECTRICAL EQUIPMENT SUPPLIED MUST CONFORM TO THE REGULATIONS OF CSA 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 DEVIATES FROM THE ENGINEER'S LAYOUT, 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 SUBCONTRACTORS.

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, SANITARY, WATER, WATER METER AND REQUIRED GAS SERVICES IN ORDER THAT THE WORK HEREIN SPECIFIED MAY BE CARRIED OUT AND HE SHALL FURNISH ANY CERTIFICATES NEEDED AS EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH THE LAWS AND REGULATIONS OF THE MUNICIPALITY AND PROVINCE.

7.0. GUARANTEE.

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 WRITTEN ACCEPTANCE OF HIS 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 OBSOLETE 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 OF THIS SUBCONTRACTOR'S WORK OR BY SUBSEQUENT REPLACEMENTS AND 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 WITH WORK, CHECK LOCATIONS OF ALL EXISTING SERVICES. THIS SUBCONTRACTOR IS RESPONSIBLE FOR ALL DAMAGES AND SUBSEQUENT EXPENSES RESULTING FROM HIS NEGLIGENCE IN THIS RESPECT.
8.3. KEEP EXCAVATION FREE OF WATER.
8.4. PROVIDE ANY NECESSARY SHORING AS MAY BE REQUIRED FOR THE SAFETY OF THE TRADE INSTALLING THE WORK.
8.5. BACKFILL INSIDE BUILDING AND UNDER PAVED AREAS WITH PIT RUN GRAVEL OR SAND PROPERLY TAMPED IN 12" LAYERS.
8.6. IN ALL OTHER AREAS BACKFILL WITH GOOD CLEAN EARTH PROPERLY TAMPED IN 12" LAYERS.
8.7. EXCESS EXCAVATED MATERIAL SHALL BE PILED ON THE SITE WHERE DIRECTED BY THE FIELD SUPERVISOR FOR REMOVAL BY OTHERS.
8.8. LAY ALL PIPING ON A BED OF SOLID UNDISTURBED EARTH OR WHERE THIS IS NOT OBTAINABLE, ON CONCRETE PADS, SUPPORTED BY CONCRETE PIERS EXTENDED DOWN TO UNDISTURBED BEARING.
8.9. WHERE ANY EXCAVATING IS NECESSARY IN CLOSE PROXIMITY TO OR BELOW ANY FOOTING LEVEL, BACKFILL WITH 1,500 LB. CONCRETE TO THE LEVEL OF THE TOP OF THE HIGHEST ADJACENT FOOTING. OBTAIN STRUCTURAL ENGINEERS APPROVAL IN WRITING BEFORE PROCEEDING WITH THE WORK.
8.10. AT THE COMPLETION OF THE PROJECT FILL IN AND LEVEL OFF EXTERIOR EXCAVATIONS.

9.0. CUTTING AND PATCHING.

9.1. INFORM ALL OTHER TRADES IN TIME CONCERNING REQUIRED OPENINGS. WHERE THIS REQUIREMENT IS NOT MET, BEAR THE COST OF ALL CUTTING AND PATCHING OF NEW WORK.
9.2. BEFORE DOING ANY CUTTING, OBTAIN THE ARCHITECTS APPROVAL AND FOLLOW HIS INSTRUCTIONS.
9.3. HAVE ALL CUTTING AND PATCHING DONE, AT EXPENSE OF THE THIS DIVISION BY TRADES WHOSE WORK IS AFFECTED.
9.4. ALL CUTTING AND PATCHING SHALL BE TO THE ARCHITECTS SATISFACTION.

10.0. DRAWINGS.

10.1. THE DRAWINGS SHOW THE APPROXIMATE LOCATION FOR THE SPECIAL APPARATUS 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 APPARATUS, ETC., AND OF THE BUILDING. EACH SUBCONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL MEASUREMENTS FOR HIS WORK THROUGHOUT, AND HE SHALL ARRANGE HIS PIPING, WIRING AND APPARATUS TO CONFORM TO THE ARCHITECTURAL AND STRUCTURAL DETAILS IN A SATISFACTORY MANNER AND SHALL CO-OPERATE WITH OTHER CONTRACTORS TO ENSURE THAT WORK SHALL MEET ALL REQUIREMENTS OF DIVERSE CONTRACTS.
10.2. THE SUBCONTRACTOR IS PARTICUARLY CAUTIONED THAT SMALL SCALE ENGINEER'S PLANS MUST BE SUPPLEMENTED BY HIS OWN DETAIL DRAWINGS WHERE NECESSARY FOR PROPER CO-ORDINATION OF THE WORK.
10.3. ITEMS SHOWN ON THE DRAWINGS BUT NOT SPECIFIED OR SPECIFIED BUT NOT SHOWN SHALL BE INCLUDED.
10.4. ITEMS OBVIOUSLY REQUIRED TO PROVIDE A COMPLETE WORKING SYSTEM BUT NOT SPECIFIED NOR SHOWN SHALL BE INCLUDED.

11.0. CONTRACTOR'S SHOP.

11.1. EACH SUBCONTRACTOR SHALL PROVIDE HIS OWN OFFICE, WORKSHOP, TOOLS AND MATERIALS STORAGE AND BE RESPONSIBLE FOR ANY LOSS OR DAMAGE THERETO. BUILDING SHALL BE ERECTED UNDER THE SUPERVISION OF THE CONTRACTOR.

12.0. RESPONSIBILITY AND LIABILITY.

12.1. EACH SUBCONTRACTOR SHALL SUPERVISE THE LAYING OUT OF HIS WORK AND SHALL ARRANGE IT IN CO-OPERATION WITH OTHERS WHO MAY BE WORKING ON THE PREMISES WHILE THE WORK OF THIS CONTRACT IS IN PROGRESS. HE SHALL PROTECT FINISHED AND UNFINISHED WORK OF THIS CONTRACT AND/OR WORK OF OTHERS ON THE PREMISES UNTIL THE COMPLETED WORK HAS BEEN ACCEPTED. OF ANY DISCREPANCIES OR INCONSISTENCES FOUND IN THE DRAWINGS OR SPECIFICATIONS BEFORE SUBMITTING HIS TENDER. HE SHALL ABIDE BY THE DECISION GIVEN HIM IN WRITING WITH REGARD TO SAME. EACH SUBCONTRACTOR IS CAUTIONED THAT THE WORK AS SHOWN IS INTENDED TO BE COMPLETE IN ALL RESPECTS AND THAT FAILURE ON HIS PART TO NOTIFY THE ENGINEER OF ANY DISCREPANCIES WILL NOT RELIEVE HIM OF THE RESPONSIBILITY OF COMPLETING THE WORK AS INTENDED AT THE CONTRACT PRICE.

13.0. STANDARD OF CARE.

13.1. IN PERFORMING ITS SERVICES AND OBLIGATION UNDER CONTRACT, THE CONTRACTOR SHALL EXERCISE A STANDARD OF CARE, SKILL AND DILIGENCE THAT WOULD NORMALLY BE PROVIDED BY AN EXPERIENCED AND PRUDENT CONTRACTOR SUPPLYING SIMILAR SERVICES FOR SIMILAR PROJECTS. THE CONTRACTOR ACKNOWLEDGES AND AGREES THAT, THROUGHOUT THE CONTRACT, THE CONTRACTOR'S OBLIGATIONS, DUTIES AND RESPONSIBILITIES SHALL BE INTERPRETED IN ACCORDANCE WITH THIS STANDARD. THE CONTRACTOR SHALL EXERCISE THE SAME STANDARD OF DUE CARE AND DILIGENCE IN RESPECT OF ANY PRODUCTS, PERSONNEL OR PROCEDURES WHICH IT MAY RECOMMEND TO THE OWNER.

14.0. CLEAN-UP.

14.1. DURING THE COURSE OF CONSTRUCTION, EACH SUBCONTRACTOR SHALL KEEP HIS WORK TIDY AND NOT ALLOW AN ACCUMULATION OF DEBRIS RESULTING FROM HIS WORK.
14.2. UPON COMPLETION OF HIS WORK HE SHALL LEAVE THE PREMISES IN A BROOM-CLEAN CONDITION.

15.0. PROTECTION.

15.1. PROTECT YOUR WORK FROM CONSTRUCTION DIRT OR DAMAGE FROM ANY CAUSE. SECURELY PLUG AND CAP ALL OPENINGS IN PIPE, EQUIPMENT AND FIXTURES TO PREVENT OBSTRUCTIONS.

16.0. IDENTIFICATION OF EQUIPMENT.

16.1. IDENTIFY ALL FANS, PUMPS, MOTOR STARTERS AND OTHER MECHANICAL EQUIPMENT AS TO SERVICE, BY A ENGRAVED PLASTIC LAMACOID NAMEPLATE, FIRMLY AFFIXED BY ADHESIVE AND SCREWS TO EACH UNIT. NOTE THAT BOTH UNIT AND ITS REMOTE STARTER SHALL BE TAGGED. PROVIDE PRESSURE SENSITIVE TAPE MARKERS, SHOWING PIPE SERVICE AND ARROWS INDICATING DIRECTION OF FLOW ON EXPOSED PIPES. ON CONCEALED PIPES, PROVIDE MARKERS ADJACENT TO ACCESS DOORS THROUGHOUT THE LENGTH OF PIPES AT INTERVALS NOT EXCEEDING 50 FEET. INSTALL MARKERS AFTER PIPE HAS BEEN PAINTED AND ON BOTH SIDES OF ANY WALL THROUGH WHICH PIPE PASSES.

17.0. TAGS.

17.1. AT THE COMPLETION OF THE INSTALLATION, THE MECHANICAL CONTRACTOR SHALL TAG ALL VALVES WITH NUMBERED BRASS DISCS AND SHALL PROVIDE THE OWNER WITH A FRAMED LIST OF THE TAGS TO INDICATE LOCATION AND SERVICE OF ALL VALVES.

18.0. OPERATING INSTRUCTIONS AND RECORD DRAWINGS.

18.1. FOR EACH ITEM OF SPECIAL APPARATUS, OPERATING AND MAINTENANCE INSTRUCTIONS SHALL BE PROVIDED IN 3 COPIES FOR OWNER'S USE. THESE SHALL INCLUDE:
1. GENERAL ARRANGEMENT SHOP DRAWINGS.
2. COMPLETE EXPLANATION OF OPERATING PRINCIPLES AND SEQUENCE.
3. COMPLETE PARTS LIST WITH NUMBERS.
4. RECOMMENDED MAINTENANCE PRACTICES AND PRECAUTIONS.
5. COMPLETE WIRING AND CONNECTION DIAGRAMS.
18.2. OBTAIN TWO SETS OF MECHANICAL DRAWING WHITE PRINTS FROM THE CONTRACTOR AND KEEP A RECORD IN RED PENCIL OF ANY DEVIATION FROM THE DRAWN LOCATION OF PIPES, DUCTS, ETC. ONE SET SHALL BE TURNED OVER TO THE OWNER WITH THE OPERATING INSTRUCTIONS, AND THE OTHER SET SHALL BE HANDED TO THE ENGINEER. ALL BURIED PIPING SHALL BE ADEQUATELY DIMENSIONED FOR FUTURE LOCATION AND DEPTH SHALL BE SHOWN AT MAIN REFERENCE POINTS.

19.0. ELECTRICAL WIRING AND CONTROLS.

19.1. ALL POWER WIRING FOR MECHANICAL EQUIPMENT SHALL BE DONE BY THE ELECTRICAL DIVISION. THE MECHANICAL TRADE INVOLVED SHALL PROVIDE STARTERS, THERMOSTATS, VALVES, CONTROL TRANSFORMERS, RELAYS, ETC. ALL CONTROL WIRING (LOW VOLTAGE) SHALL BE DONE BY THE MECHANICAL CONTRACTOR, UNLESS OTHERWISE NOTED ELSEWHERE IN THIS SPECIFICATION.

20.0. PAINTING.

20.1. ALL EQUIPMENT FABRICATED FROM STEEL AND NOT FACTORY FINISH PAINTED SHALL BE SURFACE PREPARED AND PRIME COAT DONE AT THE SUPPLIER'S FACTORY. IF DAMAGED IN TRANSIT OR ON THE JOB, THIS CONTRACTOR SHALL TOUCH UP WITH RED LEAD PRIMER BEFORE FINISH PAINTING.

21.0. ACCESS DOORS.

21.1. LOCATE ACCESS DOORS WHERE REQUIRED AND OF SUFFICIENT SIZE FOR SERVICING VALVES, DAMPERS, CLEANOUTS, ETC.
21.2. THESE SHALL BE FLUSH MOUNTING, SCREWDRIVER ACCESS, METAL TYPES, 16 GAUGE PRIMED STEEL.

B) 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 LOCAL PLUMBING CODE AND LOCAL 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, SUMMARIZING COMPLETE TEST DATA AND RESULTS.
1.3. PROVIDE SLEEVES WHERE PIPING PASSES THROUGH FOUNDATIONS, LOORS,ROOFS, OR WALLS. SLEEVES SHALL BE SCHEDULE 40 GALVANIZED STEEL SHEET THROUGH ABOVE GRADE WALLS. SLEEVES ARE NOT REQUIRED FOR PLUMBING VENTS. ALL SLEEVES SHALL BE SIZED TO ACCEPT INSULATED PIPE.
1.4. HORIZONTAL PIPING SHALL BE SUPPORTED AT INTERVALS AS FOLLOWS: PIPE SIZES UP TO 3/4" – 6'-0"
PIPE SIZES 1" TO 3" – 8'-0"
PIPE SIZES 4" & OVER – 12'-0"
1.5. PIPE HANGERS SHALL CONSIST OF GRINNELL NO. 260 CLEVES HANGERS WITH THREADED RODS AND SUITABLE CLAMPING DEVICE AT TOP END. GRAPPLER STRAP HANGERS ARE NOT ACCEPTABLE.
1.6. WHERE SUPPORTING COPPER PIPE, THE PIPE SHALL BE ISOLATED FROM THE HANGER WITH ELECTROLYTIC ACTION TAPE OR EQUIVALENT.
1.7. VERTICAL PIPING SHALL BE SUPPORTED AT THE FLOOR 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 ALLOW 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 SYSTEM TO ALLOW DRAINAGE OF SYSTEM 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 STOPS TO EACH PLUMBING FIXTURE OF LOCKSHIELD OR HANDWHEEL TYPE AS SPECIFIED. PROVIDE ISOLATING VALVES TO EACH GROUP OF PLUMBING FIXTURES.
1.12. PROVIDE AIR COLUMN CHAMBERS AT EACH GROUP OF PLUMBING FIXTURES. THESE SHALL BE 4" MINIMUM PIPE WITH CAP. 18" LONG MOUNTED ON THE TOP OF THE SUPPLY HEADERS OF HOT AND COLD WATER. WHERE THE HEADER IS LARGER THAN 1", THE COLUMN SHALL BE ONE SIZE LARGER THAN THE HEADER. WHERE PRACTICAL, PROVIDE ANCON "SHOK-GARD" OR APPROVED EQUAL WATER HAMMER ARRESTOR, SIZED FOR THE APPLICATIONS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
1.13. PROVIDE AUTOMATIC TRAP SEAL PRIMER, ANCON NO. MS-810 OR APPROVED EQUAL, FOR EVERY FLOOR DRAIN, HUB DRAIN, AND COMBINATION DRAINS. TRAP SEAL PRIMER SHALL BE CONNECTED TO NEAREST WATER SUPPLY. WHERE SEVERAL TRAPS WITHIN PRIMER REQUIREMENTS ARE LOCATED IN CLOSE VICINITY, THE USE OF A PROPERLY SIZED FLUSH TANK IS ACCEPTABLE.
1.14. PROVIDE DIELECTRIC UNIONS OR COUPLINGS AT ALL CONNECTION BETWEEN COPPER AND PIPING.

2.0. WATERMAINS.

2.1. UNDERGROUND WATERMAINS SHALL BE P.V.C. CERTIFIED TO CAN/CSA–B137.3 "RIGID POLYVINYL CHORIDE PIPE FOR PRESSURE APPLICATIONS" MINIMUM PRESSURE RATING : 1034KPA (150PSI) SIZE 100MM (4"DIA. PD 200MM (8"DIA.
NOTE: SOME MUNICIPALITIES REQUIRE THAT BURIED P.V.C. WATERMAINS MUST BE DUCTILE IRON. BEFORE BEGINNING A BUILDING, CONTACT THE LOCAL AUTHORITY HAVING JURISDICTION. DUCTILE IRON WATERMAINS SHALL CONFORM TO ANSI/AWWA C151/A21–51 AND WHERE, HAVE A CEMENT MORTAR LINING IN CONFORMANCE WITH ANSI/AWWA C104/A21–4.
2.2. UNDERGROUND WATERMAINS 50MM(2")DIA. AND SMALLER SHALL BE TYPE "K" SOFT COPPER TUBING CERTIFIED TO ASTM B88, "SEAMLESS COPPER WATER TUBE".
NOTE: SOLDER JOINTS ARE NOT PERMITTED IN UNDERGROUND WATERMAIN SYSTEMS.
2.3. ABOVE GROUND WATERMAINS: HOT, COLD AND RECIRCULATING INSIDE BUILDING: 65MM (2 1/2") AND UNDER: TYPE "L" COPPER, CAST BRASS OR WROUGHT COPPER FITTINGS, UNIONS UP TO 25mm (1") WROUGHT COPPER, UNIONS 32mm (1 1/4") TO 75mm (3") BRASS GROUND JOINTS, SOLDER JOINTS ABOVE GROUND SHALL CONFORM TO ANSI B16–18 OR B16–22 FLARED JOINT FITTINGS SHALL CONFORM TO ANSI B16–26.
75mm (3") AND LARGER: TYPE "L" COPPER, MECHANICAL JOINTS OR CASTIRON WATER PIPES CONFORMING TO ANSI/AWWA C151/A21–51 WITH CEMENT MORTAR LINING CONFORMING TO ANSI/AWWA C151/A21–4 OR VICTAULIC COUPLINGS AT JOINTS, FLANGED GALVANIZED CAST IRON FITTINGS OR CEMENT LINED DUCTILE IRON. ALL JOINTS ON CAST OR DUCTILE IRON PIPING SHALL BE MADE ELECTRICALLY CONDUCTIVE.

3.0. VALVES FOR DOMESTIC HOT AND COLD WATER DISTRIBUTION.

3.1. DOMESTIC AND NON–POTABLE HOT & COLD WATER:
– TYPE OF PIPING: TYPE "L" COPPER
– PRESSURE RATING: 1380 KPA (200 PSIG) W.O.G.
1. GATE VALVES
– 65MM (2–1/2") & UNDER – ALL BRONZE, SOLDER ENDS;
– 75MM (3") AND OVER – IRON BODY, BRONZE MOUNTED, FLANGED.
INSTALL BALL VALVES ON HOT AND COLD WATER RISER CONNECTIONS (UP TO 50MM (2")) TO MAIN RUNS.

MANUFACTURER	CATALOGUE NO.			
	65MM (2–1/2") & UNDER		75MM (3") & OVER	
	RISING STEM	NON–RISING STEM	RISING STEM	NON–RISING STEM
RED WHITE	299	281A	421A	415A
CRANE	459	440	465–1/2C	461
KITZ	44	41	72	75

NOTE: USE NON–RISING STEM ONLY WHERE THERE IS INSUFFICIENT CLEARANCE FOR RISING STEM TYPE.

2. GLOBE VALVES
– 50MM (2") & UNDER – BRONZE, COMPOSITION DISC, SOLDER ENDS.

MANUFACTURER	CATALOGUE NO.	
	65MM (2–1/2") & UNDER	75MM (3") & OVER
RED WHITE	220	400A
CRANE	03	76
KITZ	7	851
JENKINS	106AP	234J

NOTE: USE COMPOSITION DISCS TO SUIT FLUID TEMPERATURE RATING.

3. BUTTERFLY VALVES:
– 1065 KPA (150 PSIG) WP;
– 65MM (2–1/2") AND OVER – IRON BODY, DUCTILE IRON COATED DISC, STAINLESS STEEL STEM, FULL EPT LINER, LEVER OPERATION FOR SIZE 150MM (6") AND UNDER, GEAR OPERATION FOR SIZE 200MM (8") AND OVER.

MANUFACTURER	CATALOGUE NO.	
	WAFER	LUG
CENTRELINE	1200W–E	1200L–E
JENKINS	220EL	230EL
KEYSTONE	1000	122

NOTE: BUTTERFLY VALVES MAY BE USED IN LIEU OF GATE OR GLOBE VALVES, 65MM (2–1/2") AND OVER.

4. CHECK VALVES
– 50MM (2") & UNDER – BRONZE, SWING CHECK WITH REGRINNABLE BRONZE DISCS, SOLDER ENDS.
– 65MM (2–1/2") & OVER – IRON BODY, BRONZE MOUNTED, SWING CHECK, FLANGED.

MANUFACTURER	CATALOGUE NO.	
	50MM (2") & UNDER	65MM (2–1/2") & OVER
CRANE	1342	374
JENKINS	4092	587
RED WHITE	236	435A
KITZ	22	78

3.2. INSTALLATION: INSTALL VALVES AT THE FOLLOWING LOCATIONS:
– EACH RISER BASE;
– EACH MAIN BRANCH;
– EACH SINGLE PLUMBING FIXTURE;
– EACH SINGLE ITEM OF EQUIPMENT;
– WHERE INDICATED IN THE CONTRACT DOCUMENTS.

3.3. PRESSURE REDUCING VALVES.
1. CLAYTON SERIES 90–B OR 90–BKT OR APPROVED EQUAL PRESSURE REDUCING VALVES (PILOT OPERATED) WITH IRON BODY, BRONZE & RESILIENT TRIM. FOR SMALLER THAN 50MM (1–1/4") USE CRO–KT 1725 (250 PSI).
2. INSTALL PRESSURE REDUCING VALVE ASSEMBLIES COMPLETE WITH 3 VALVE BY–PASS STRAINER AND OUTLET PRESSURE GAUGE CONNECTION.

3.4. BACKFLOW PREVENTORS
1. LAWN IRRIGATION:
WATTS #909 SERIES OR APPROVED EQUAL BACKFLOW PREVENTOR ASSEMBLY CONSISTING OF TWO CHECK VALVES AND A PROTECTION ZONE WITH A PRESSURE DIFFERENTIAL RELIEF VALVE TO ATMOSPHERIC, 1725 KPA (250 PSI) WORKING PRESSURE, USE STAINLESS CONNECTIONS TO 50MM (2") SIZE, FLANGED CONNECTIONS FOR LARGER SIZED VALVES, BRONZE OR CAST IRON BODY, BRONZE TRIM, AND STAINLESS STEEL PILOT TRIM. BACKFLOW PREVENTOR CERTIFIED TO CAN/CSA B–64.
2. CARBONATED BEVERAGE MACHINES:
WATTS MODEL 50–3 DUAL CHECK WITH ATMOSPHERIC PORT.
3. ALL OTHER APPLICATIONS:
WATTS SERIES 007QT, CERTIFIED TO CSA STANDARD B64.
4. INSTALL BACKFLOW PREVENTORS AT DOMESTIC WATER CONNECTIONS TO ALL HEATING, COOLING AND REFRIGERATION EQUIPMENT AND WHERE SPECIFIED IN THE CONTRACT DOCUMENTS.

4.0. DRAINAGE PIPE & FITTINGS INSIDE BUILDING.

4.1. UNDERGROUND SANITARY & STORM:
1. TRANSITE SOIL PIPE WITH JOHN MANSVILLE RING–TITE SOIL FITTINGS CSSB–34–GP–22.
OR
2. CLASS 4000 CAST IRON MECHANICAL JOINT PIPE AND FITTINGS WITH MECHANICAL JOINT STAINLESS STEEL COUPLINGS, CSA B70–1971.
OR
3. PVC DRAIN, WASTE AND VENT PIPE AND PIPE FITTINGS CERTIFIED TO CAN/CSA–B181.2 SIZES 100MM(4")DIA. TO 900MM(36")DIA.
OR
4. ABS DRAIN, WASTE AND VENT PIPE AND PIPE FITTINGS CERTIFIED TO CAN/CSA–B181.1 FOR SIZES UP TO 75MM(3")DIA.
OR
5. PROFILE (RIBBED) PVC SEWER PIPE AND FITTINGS CERTIFIED TO CAN/CSA–B182.4 FOR STORM SEWERS 200MM(8")DIA. TO 600MM(24")DIA.
ONLY.
4.2. SOIL, WASTE AND VENT STACKS, DRAINS AND RAINWATER LEADERS ABOVE GROUND, 75MM AND LARGER:
1. TRANSITE SOIL PIPE WITH JOHN MANSVILLE RING–TITE SOIL FITTINGS CSSB–34–GP–22.
OR
2. CLASS 4000 CAST IRON MECHANICAL JOINT PIPE AND FITTINGS WITH MECHANICAL STAINLESS STEEL COUPLINGS, CSA–B70–1971.
OR
3. DWV COPPER WITH CAST BRASS OR WROUGHT COPPER DRAINAGE FITTINGS AND SOLDER JOINTS (SOLDERING TO CONTAIN NOT MORE THAN 0.2% LEAD CONTENT).
OR
4. PVC DRAIN WASTE AND VENT PIPE AND PIPE FITTINGS CERTIFIED TO CAN/CSA–B181.1. AND CAN/CSA–B181.2 (SOLVENT WELD ONLY).
5. PLASTIC PIPING SHALL NOT BE USED IN A CEILING SPACE USED AS A RETURN AIR PLENUM UNLESS CERTIFIED TO CAN/CSA–B181–1 ANC CAN/CSA–B181.2.
4.3. SOIL, WASTE AND VENT STACKS, DRAINS 65MM. DIA AND SMALLER:
1. DWV COPPER PIPING WITH WROUGHT COPPER SOLDER JOINTS FOR ABOVE GRADE (OR BELOW GRADE, PROVIDE TYPE 'L' OR TYPE 'K' COPPER PIPING).
2. ABS DRAIN, WASTE AND VENT PIPE AND PIPE FITTINGS CERTIFIED TO CAN/CSA–B181.1.
3. NOTE: ALL PVC OR ABS TYPE PIPING TO BE USED ABOVE GROUND SHALL BE CONFORMED TO BE ACCEPTABLE BY THE AUTHORITY HAVING JURISDICTION.
4. PLASTIC PIPING SHALL NOT BE USED IN A CEILING SPACE USED AS A RETURN AIR PLENUM UNLESS CERTIFIED TO CAN/CSA–B181–1 ANC CAN/CSA–B181.2.
4.4. PIPE INSTALLATION:
1. FOR PIPE INSTALLATION, REFER TO SECTION B.1.0.
2. FOR EXCAVATION AND BACKFILLING, REFER TO SECTION A.8.0.
3. CLASS 4000 MECHANICAL JOINT CAST IRON SOIL PIPE AND MECHANICAL JOINT COUPLINGS SHAL

ROOF TOP UNIT SCHEDULE

UNIT NO.	BRAND	MODEL	SUPPLY FAN				FRESH AIR (L/S)	LOCATION	COOLING COILS				HEATING COILS		ELECTRICAL			FILTERS	WEIGHT (KG)
			TOTAL AIR VOL. (L/S)	ESP (IN WC)	MOTOR (W)	RPM			TOTAL COOLING LOAD (KW)	SENSIBLE COOLING LOAD (KW)	LATENT COOLING LOAD (KW)	AIR TEMP AFTER COIL (C)	HEATING OUTPUT (KW)	AIR TEMP AFTER COIL (C)	VOLTAGE	MCA(A)	MOP(A)		
RTU-1	DAIKIN (LENNOX ALTERNATIVE)	DPS007A	850	0.6	2983	2048	850	ROOF	23.8	16.9	6.9	8.7	18	35.1	575/3/60	32	35	6 (MERV 8)	1109
RTU-2	DAIKIN (LENNOX ALTERNATIVE)	DPS012A	2265	0.6	5966	1572	2265	ROOF	42.5	36.2	6.2	11.8	36	30.3	575/3/60	59	60	6 (MERV 8)	1227

ACCESSORIES:
1- PROVIDE WITH PRE-WIRED NON FUSED WEATHER PROOF DISCONNECT SWITCH SUPPLIED ON THE EQUIPMENT.
2- PROVIDE WITH BACNET IP COMPATIBLE AS PER ASHRAE 135 STANDARD.
3- PROVIDE WITH VFD AS SPECIFIED.
4- PROVIDE WITH SINGLE POINT OF CONNECTION FOR THE UNIT.

FAN SCHEDULE

UNIT NO.	SERVICE AREA	DESCRIPTION	MANUFACTURER	MODEL	AIR VOLUME	E.S.P.	ELECTRICAL			WEIGHT	ACCESSORIES/REMARKS
							R.P.M.	MOTOR	ELECT.		
EF-01	DEPOLLUTION AREA	INLINE	GREENHECK	QEID-22	3398 L/S	0.25" WC	1170	1491 W	575/3/60	202 KG	C/W HANGING BRACKETS , DISCONNECT SWITCH, BACKDRAFT DAMPER , C/W VFD INTERLOCKED WITH CO DETECTOR NORMAL OPERATION 1700 L/S AND 3398 L/S WHEN CO DETECTED.
EF-02	LOCKER ROOM / WC	INLINE	GREENHECK	CSP-A700-VG	330 L/S	0.25" WC	1095	121 W	115/1/60	18.6 KG	C/W HANGING BRACKETS , DISCONNECT SWITCH, BACKDRAFT DAMPER
EF-03	INTERIOR STORAGE	INLINE	GREENHECK	BSQ-180	2360 L/S	0.25" WC	1725	1491 W	575/3/60	92.1 KG	C/W HANGING BRACKETS , DISCONNECT SWITCH, BACKDRAFT DAMPER , REVERSE ACTING THERMOSTAT
EF-04	DRIVE THRU	INLINE	GREENHECK	QEID-15	1888 L/S	0.25" WC	1770	1491 W	575/3/60	82 KG	C/W HANGING BRACKETS , DISCONNECT SWITCH, BACKDRAFT DAMPER , C/W VFD INTERLOCKED WITH CO DETECTOR NORMAL OPERATION 944 L/S AND 1888 L/S WHEN CO DETECTED.
EF-05	STORAGE	INLINE	GREENHECK	CSP-A200	101 L/S	0.25" WC	825	135 W	115/1/60	11.8 KG	C/W HANGING BRACKETS , DISCONNECT SWITCH, BACKDRAFT DAMPER
EF-06	UNI. W.C.	INLINE	GREENHECK	CSP-A200	101 L/S	0.25" WC	789	117 W	115/1/60	11.8 KG	C/W HANGING BRACKETS , DISCONNECT SWITCH, BACKDRAFT DAMPER
EF-07	M&E MEZZ	INLINE	GREENHECK	CSP-A390-VG	190 L/S	0.25" WC	1156	52 W	115/1/60	11.8 KG	C/W HANGING BRACKETS , DISCONNECT SWITCH, BACKDRAFT DAMPER
EF-8	JAN	INLINE	GREENHECK	CSP-A200	45 L/S	0.25" WC	825	117 W	115/1/60	11.8 KG	C/W HANGING BRACKETS , DISCONNECT SWITCH, BACKDRAFT DAMPER
EF-9	DEPOLLUTION AREA HOOD	UPLAST	GREENHECK	CUE-80-VG	141 L/S	0.3" WC	1506	38 W	115/1/60	28 KG	C/W ROOF CURB , DISCONNECT SWITCH

DIFFUSER GRILLE SCHEDULE

BASIS OF DESIGN: "PRICE" , "CAMFIL", "NAILOR" OR APPROVED EQUAL

DESIG.	TYPE	MANUFACTURER/MODEL
A	SUPPLY AIR DIFFUSER	EH PRICE MODEL SPD SQUARE CEILING PLAQUE DIFFUSER C/W VOLUME DAMPER (600X600), NECK SIZE AS PER PLANS.
B	RETURN AIR GRILLE	EH PRICE MODEL 535DL RETURN- 45 DEGREE DEFLECTION, SIZE AS PER PLAN.
C	EXHAUST AIR REGISTER	EH PRICE MODEL 635DL, ALUMINUM GRILLE, 1/2" BLADE SPACING C/W SCREWDRIVER OPERATED OPPOSED BLADE DAMPER.
D	TRANSFER GRILLE	EH PRICE MODEL 535DL RETURN- 45 DEGREE DEFLECTION, C/W FIRE DAMPER ,SIZE AS PER PLAN.
L	LOUVER	EH PRICE MODEL DE439 / 53.6% FREE AREA c/w MOTORIZED DAMPER AS PER DRAWING

1. ALL GRILLES, DIFFUSERS, REGISTERS TO BE MILL FINISH, UNLESS NOTED OTHERWISE.
2. ACCEPTABLE ALTERNATES : TITUS & NAILOR
3. ALL GRILLE SIZES/NECK SIZES/AIR VOLUMES AS PER PLAN.
4. ALL COLOURS TO THE APPROVAL OF THE ARCHITECT.

DOMESTIC WATER PUMP

UNIT TAG.	MAKE	MODEL	WATER CAPACITY	TOTAL DYNAMIC HEAD	RPM	MOTOR	ELECTRIC
P-1	BELL & GOSSETT	1AAB-E-90	40 GPM	40 FT	3450	2 HP	575/3/60
ECM PERMANENT MAGNET SMART MOTOR							

DOMESTIC WATER TANK

UNIT TAG.	MAKE	MODEL	SIZE	DIMENTION	NOTE
T-1	SNYDER	VST-3900-90	3900 GAL	90"Ø x159"	WATER STORAGE TANKS USE AN INTERIOR RESIN THAT MEETS CFIA/FDA/NSF/ANSI STANDARD 61 FOR DRINKING WATER ABOVE-GROUND HDPE C/W MANWAY W/ GASKET &, FILL ASSEMBLY W/ CAM-LOCK QUICK CONNECT,LEVEL SENSOR

PLUMBING FIXTURE SCHEDULE

ITEM	MANUFACTURER	DESCRIPTION
WC-1	FLOOR MOUNTED TOILET TANK TYPE AMERICAN STANDARD (OR EQUIVALENT)	AMERICAN STANDARD CADET FLOWISE RIGHT HEIGHT PRESSURE-ASSISTED ELONGATED #2467601.020 LOW CONSUMPTION TOILET, 3483.001, 4142.601, 419 MM HIGH, VITREOUS CHINA WITH EVERCLEAN ANTIMICROBIAL SURFACE WHICH INHIBITS THE GROWTH OF STAIN AND ODOR CAUSING BACTERIA MOLD AND MILDEW, ELONGATED BOWL, WHITE FINISH, FLOOR MOUNTED, SIPHON JET FLUSH ACTION, 4.2 L (1.1 US GAL) PER FLUSH, RAISED SANITARY BAR, 305 MM X 254 MM (12" X 10") WATER SURFACE, TWO (2) PIECE, "SPEED CONNECT" TANK ASSEMBLY, SIPHON JET FLUSH ACTION, RAISED SANITARY BAR , LEFT HAND TRIPLEVER, BOLTED TANK COVER, 305 MM (12") ROUGH-IN, ELONGATED BOWL, 54 MM (2-1/8") FULLY GLAZED INTERNAL TRAPWAY, FLOOR OUTLET, BOLT CAPS, TOILET SEAT NOT INCLUDED. CENTOCO #820STS.001 TOILET SEAT, EXTRA HEAVY DUTY, FOR ELONGATED BOWL, OPEN FRONT, SOLID PLASTIC, WITH COVER, STAINLESS STEEL CHECK HINGES, METAL FLAT WASHERS STAINLESS STEEL POSTS AND NUTS. MCGUIRE #LFH172BV TOILET SUPPLY, CHROME PLATED FINISH POLISHED BRASS, COMMERCIAL DUTY 1/4 TURN BALL VALVE ANGLE STOPS, 13 MM (1/2") I.D. INLET X 127 MM (5") LONG RIGID HORIZONTAL INTEGRAL COPPER SWEAT TUBE NIPPLES, COMBINATION V.P. LOOSE KEY HANDLES, ESCUTCHEON AND FLEXIBLE COPPER RISERS. PROVIDE FLOOR FLANGE, (SAME MATERIAL AS THE CONNECTING PIPE DRAIN), WITH ALL BRASS BOLTS AND WITH RUBBER GASKET.
UR-1	WALL HUNG URINAL- AMERICAN STANDARD 0R EQUIVALENT	AMERICAN STANDARD WASHBROOK FLOWISE #6590.001.020 URINAL, VITREOUS CHINA, OPERATES IN THE RANGE OF 0.5 L TO 3.8 L (0.125 US GAL TO 1.0 US GAL) PER FLUSH, WALL HUNG, WASHBROOK FLOWISE, FLUSHING RIM, 19 MM (3/4") DIA. TOP SPUD, ELONGATED RIM, INTEGRAL P-TRAP, OUTLET CONNECTION 51 MM (2"), 2 WALL HANGERS,#7301242-100 CHROME PLATED, NON-METALLIC STRAINER, WHITE FINISH. C/W MANUAL FLUSH VALVE
LV-1	COUNTER MOUNTED SELF-RIMMING / DROP-IN BASIN AMERICAN STANDARD (0R EQUIVALENT)	AMERICAN STANDARD CADET UNIVERSAL ACCESS #9494.001.020 BASIN, 3 HOLES, 4" (102 MM) CENTER, 533 MM X 445 MM X 175 MM (21" X 17-1/2" X 6-7/8") HIGH, OVAL, VITREOUS CHINA, WHITE FINISH, SELF-RIMMING / DROP-IN, SIDE REAR OVERFLOW, FAUCET LEDGE. C/W SINGLE HANDLE FAUST
LV-2	SINGLE UTILITY SINK FRANKIE (0R EQUIVALENT)	SINGLE COMPARTMENT "WORLD CLASS SERIES" SCULLERY SINK, FABRICATED FROM HEAVY 14 GAUGE (2.0 MM) TYPE 304 (CNS 18/10) STAINLESS STEEL, POLISHED TO A #4 SATIN FINISH. FINISHED WITH A ROLLED RIM. STAINLESS STEEL TUBULAR LEGS WITH ADJUSTABLE FEET FOR LEVELING. WASTE FITTING INCLUDED. CERTIFIED TO ASME A112.19.3-2008 / CSA B45.4-08. CENTRE WASTE LOCATION. INCLUDES 3 1/2" (89 MM) CRUMB CUP STRAINER WITH 1 1/2" (DN38) BRASS TAILPIECE MODEL .WSL2424-1, C/W 631-ABCP FAUCET WALL MOUNTED 8" BODY, ADJUSTABLE ARMS 7-1/4" - 8-3/4" HOT AND COLD WATER SINK FAUCET
KS-1	COUNTER MOUNTED NOVANNI (0R EQUIVALENT)	NOVANNI SINGLE KITCHEN SINK, 1000D, ALL IN STAINLESS STEEL SINGLE BOWL DROP-IN SINK WITHOUT LEDGE, OFF THE BOWL CLAMP SYSTEM, SELF RIMMING, SYNKSEALTM FOAM IN PLACE GASKET INSTALLED, 1 1/2" BASKET STRAINER ASSEMBLY WITH TAILPIECE INCLUDED AT CENTER. SINGLE HANDLE FAUCET.
FD-1	FLOOR DRAIN - FINISHED AREA WATTS (0R EQUIVALENT)	WATTS # FD-200-A FLOOR DRAIN - FLOOR DRAIN WITH ROUND STRAINER COMPLETE WITH NICKEL BRONZE STRAINER 6", DEEP SEAL P-TRAP, TRAP PRIMER CONNECTION. OUTLET 4"
TD-1	TRENCH DRAIN - 12" WIDE TRENCH SYSTEM WATTS (0R EQUIVALENT)	WATTS TRENCH DRAIN, UV STABILIZED TALC-FILLED POLYPROPYLENE CHANNELS WITH INTEGRAL 6" (152 MM) NO HUB BOTTOM OUTLETS, PRE-SLOPED TRENCH, 12" (305 MM) WIDE, 96" (2440 MM) LONG, INCLUDING FRAME CONNECTORS, GRATE LOCKDOWNS AND CONSTRUCTION COVERS, UV STABILIZED GLASS-FILLED DUCTILE IRON FRAME, FRAMED ANCHORED GRATE, POLYPROPYLENE GRATE, CLASS A.
TD-2	TRENCH DRAIN - 12" WIDE TRENCH SYSTEM WATTS (0R EQUIVALENT)	WATTS TRENCH DRAIN, UV STABILIZED TALC-FILLED POLYPROPYLENE CHANNELS WITH INTEGRAL 6" (152 MM) NO HUB BOTTOM OUTLETS, PRE-SLOPED TRENCH, 12" (305 MM) WIDE, 290" (7240 MM) LONG, INCLUDING FRAME CONNECTORS, GRATE LOCKDOWNS AND CONSTRUCTION COVERS, UV STABILIZED GLASS-FILLED DUCTILE IRON FRAME, FRAMED ANCHORED GRATE, POLYPROPYLENE GRATE, CLASS A.
CB-1	CATCH BASIN DEAD LEVEL- 24" WIDE WATTS (0R EQUIVALENT)	WATTS CB-2424 CATCH BASIN FOR DEAD LEVEL PRE-SLOPED TRENCH DRAIN SYSTEM, 24"(610) (SPECIFY) WIDE X 24"(610) LONG X 24"(610) DEEP, WITH UV STABILIZED TALC-FILLED POLYPROPYLENE BODY WITH 6"(152) NO HUB OUTLET CONNECTIONS, AND DUCTILE IRON FRAME. FRAME-ANCHORED WITH GRATING AND LOCKDOWNS, HATCH COVER, H20 LOAD RATING
FFD-1	FLOOR FUNNEL DRAIN - FINISHED AREA WATTS (0R EQUIVALENT)	WATTS # FD-104-C-EG-50-7-13 FLOOR DRAIN - ALL GALVANIZED CAST IRON BODY, REVERSIBLE FLASHING CLAMP WITH PRIMARY AND SECONDARY WEEPHOLES, 5" (127 MM) DIAMETER NICKEL BRONZE, ADJUSTABLE ROUND STRAINER, 4" X 9" (102 MM X 229 MM) OVAL CAST IRON FUNNEL TRAP PRIMER CONNECTION WITH PLUG, 4"Ø (102 MM) NO HUB OUTLET
MS-1	SERVICE / MOP SINK - TWO HANDLES FAUCET	STERN WILLIAMS #SB-900 SQUARE SERVICE / MOP SINK, (24") WIDE X (24") LONG X (12") HIGH DEEP, FLOOR MOUNTED, TERRAZZO COMPOSED OF PEARL GRAY MARBLE CHIPS AND PORTLAND CEMENT GROUND SMOOTH, SEALED TO RESIST STAIN FINISH, WITHOUT TILING FLANGE, CAST BRASS DRAIN WITH STAINLESS STEEL STRAINER, 3"(75 MM) OUTLET. COMPLETE WITH DRAIN CHICAGO FAUCETS #897-RCF WALL MOUNTED TWO HANDLES FAUCET, ROUGH CHROME FINISH, SOLID BRASS EXPOSED BODY, CERAMIC 1/4 TURN OPERATING CARTRIDGE, UNRESTRICTED HOSE END OUTLET, 203 MM (8") PROJECTION SPOUT WITH ATMOSPHERIC VACUUM BREAKER AND BUCKET HOOK, 60 MM (2-3/8") METAL VANDAL PROOF LEVER HANDLES WITH BLUE AND RED INDEX BUTTONS, WALL BRACE SUPPORT. STERN WILLIAMS T-35 HOSE AND WALL HOOK 36" (914 MM) LONG HOSE WITH 3/4" (19 MM) CHROME COUPLING, STAINLESS STEEL WALL BRACKET. STERN WILLIAMS #T-40 MOP HANGER, STAINLESS STEEL #4 FINISH, 24" (610 MM) LONG WITH 3 RUBBER SPRING LOADED CLIPS. STERN WILLIAMS BP BACK SPLASH PANEL 20 GA. (0.9 MM) TYPE 304 STAINLESS STEEL. PROVIDE P-TRAP, SAME MATERIAL AS THE CONNECTING PIPE DRAIN.
CO-1	CLEANOUT - FLOOR CLEANOUT WATTS (0R EQUIVALENT)	WATTS #CO-1204-R-6-13 CLEANOUT - GALVANIZED CAST IRON BODY, 5-1/8" (130 MM) ROUND ADJUSTABLE GASKETED HEAVY DUTY STAINLESS STEEL TOP, REMOVABLE, GAS TIGHT, GASKETED, BRASS PLUG, VANDAL PROOF, 4"Ø (102 MM), NO HUB OUTLET
CO-2	CLEANOUT - WALL OR EXPOSED ON PIPE CLEANOUT WATTS (0R EQUIVALENT)	GALVANIZED CAST IRON BODY, 5-1/8" (130 MM) ROUND ADJUSTABLE GASKETED, REMOVABLE, GAS TIGHT, GASKETED, BRASS PLUG, VANDAL PROOF, 4"Ø (102 MM), NO HUB OUTLET
TSP-1	ELECTRONIC TRAP SEAL PRIMER	PT-12 TRAP SEAL PRIMER SERVING TWELVE DRAINS ACTIVATED BY A 3/4" (19 MM) NORMALLY CLOSED SOLENOID VALVE, DESIGNED TO INTERFACE WITH LOW VOLTAGE ENERGY MANAGEMENT SYSTEMS CONTROL, 3/4" (19 MM) DIAMETER CONNECTION ANTI-SIPHON ATMOSPHERIC VACUUM BREAKER W/ STAINLESS STEEL ACCESS DOOR
HB-1	HOSE BIB	HY-420 NONE-FREEZE EXPOSED HOSE BIB WITH VACUUM BREAKER WITH CHROME PLATED FACE, INTEGRAL VACUUM BREAKER, ¾" HOSE CONNECTION.

CEILING FAN SCHEDULE

UNIT TAG.	MAKE	MODEL	AMPS	HP	ELEC. DATA	DIAMETER	WEIGHT	DESCRIPTION
CF-1	BANVIL	190A-18S	0.78	90 W	120/1/60	60"	23 Lbs	60" FAN c/w 18" DOWNROD & PLUG

1. DISCONNECT SWITCH
2. THERMO PROTECTION MOTOR

UNIT HEATER SCHEDULE

UNIT NO.	MANUFACTURER	MODEL	OUTPUT	AIR VOLUME	ELECTRICAL			ACCESSORIES/REMARKS
					R.P.M.	MOTOR	ELECT.	
UH-01	REZNOR	EGHB-7	7.6 KW	330L/S	1550	24.8W	600/3	ELECTRIC UNIT HEATER C/W LINE VOLTAGE THERMOSTAT
UH-02	REZNOR	EGHB-7	7.6 KW	330L/S	1550	24.8 W	600/3	ELECTRIC UNIT HEATER C/W LINE VOLTAGE THERMOSTAT
UH-03	REZNOR	EGHB-10	10 KW	330L/S	1550	24.8 W	600/3	ELECTRIC UNIT HEATER C/W LINE VOLTAGE THERMOSTAT

DOMESTIC WATER HEATER SCHEDULE

UNIT NO.	MANUFACTURER	MODEL	TYPE	INPUT	CAPACITY	RECOVERY	ACCESSORIES/REMARKS
EWH-01&02	Rheem	EGSP30	ELECTRIC	4.5 KW	30 US GAL	18 US GAL/HR	FOAM INSULATED UNIT, 150 PSI WORKING PRESSURE MEET ASHREA 90.1, TEMPERATURE CONTROLS, CSA CERTIFIED AND ASME RATED T&P RELIEF VALVE

OIL INTERCEPTOR SCHEDULE

UNIT TAG.	MAKE	MODEL	CAPACITY (GPM)	SERVICE	ACCESSORIES/REMARKS
OI-01	CAPTEURS GR (OR EQUIVALENT)	GR-5515-HE-100	100	WAREHOUSE	C/W WALL-MOUNTED UNIT WITH CONTROL

HOSE REEL

UNIT TAG.	MAKE	MODEL	HOSE DESCRIPRION	HOSE DIA/ LENGTH	MAX PSI	WEIGHT
HR-01	REELCRAFT	H-7158	PVC	1/2" / 50'	300	20 KG

FORCE FLOW HEATER

ITEM TAG	TYPE
FF 2.0 kW	2 kW FORCE FLOW HEATER BY DIV. 26 - ELECTRICAL. OULETTE OAC02008-T (OR EQUAL), 208/1/60, RECESSED.

EXPANSION TANK

UNIT TAG.	MAKE	MODEL	TYPE	TANK SIZE (GAL)	WEIGHT (LBS)	WEIGHT
ET-1	BELL & GOSSET	PTA-30V	DIAPHRAM	15	300	25KG

CO SENSOR

UNIT	MANUFACTURE	SERVICE	SENSOR LOCATION	NOTE
GAS DETECTOR CARBON MONOXIDE	HONEYWELL	ROOM 112, 113, 125	AS SHOWN ON DRAWING, 4 FT ABOVE FLOOR	1,2,3

NOTES:
1. c/w CONTROLLER
2. INSTALLED PER MANUFACTURER'S INSTRUCTIONS
3. SHOULD BE INTERLOCKED WITH EXHAUST FAN IN THE SAME ROOM , WHEN THE SENSOR DETECT THE GAS / CARBON, THE EXHAUST FAN WILL OPERATE ON HIGH SPEED AND THE INTAKE WILL OPEN . THE EXHAUST FAN SHOULD GO TO THE NORMAL SPEED WHEN CONCENTRATION OF GAS / CARBON IS BELOW THE ACCEPTABLE LIMIT.

UTILITIES PUMP

UNIT TAG.	MAKE	MODEL	WATER CAPACITY	TOTAL DYNAMIC HEAD	RPM	MOTOR	ELECTRIC
P-2	PIUSI	SUZZARABLUE PUMP AC	7 GPM	20 FT	1400	400 W	120/1/60

Key plan

Notes:

Rev.	Date	Drawn by	Revision	Checked by
02	2024-03-15	A.B	ISSUED FOR TENEDER AND BUILDING PERMIT	M.Z.
01	2023-02-08	A.B	ISSUED FOR TENEDER AND BUILDING PERMIT	M.Z.

Seals

LICENSED PROFESSIONAL ENGINEER
2024-03-15
A. BULBUL
100526030
PROVINCE OF ONTARIO

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Project
AIM KINGSTON FACILITY

Drawing
MECHANICAL SCHEDULES

Designed by	A.Bulbul	Drawn by	A.Bulbul	Checked by	M.Zaky
Date	2022-09-16	Scale	N.T.S.	Size	ARCH-D
Project #	AIM-01	Drawing #	MS-8000	Revision	02