

PROJECT SCOPE
NEW CULTURAL CENTER CROATIAN NATIONAL HOME MECHANICAL
PREPARED FOR
'HRVATSKI NARODNI DOM'
ADDRESS
615 BARTON STREET STONEY CREEK ONTARIO

DRAWING NUMBER	DESCRIPTION
M.01	SITE SERVICING PLAN AND INDEX
M.02	BASEMENT LEVEL - HVAC
M.03	GROUND LEVEL - HVAC
M.04	SECOND LEVEL - HVAC
M.05	ROOF - HVAC
M.06	DETAILS - HVAC
M.07	DETAILS CONT. - HVAC
M.08	VVT SPECS - HVAC
M.09	SCHEDULE A - HVAC
M.10	SCHEDULE B - HVAC
M.11	SPECIFICATIONS HVAC AND PLUMBING
P.01	BASEMENT FLOOR PLAN - PLUMBING AND DRAINAGE
P.02	GROUND FLOOR PLAN - PLUMBING AND DRAINAGE
P.03	SECOND FLOOR PLAN - PLUMBING AND DRAINAGE
P.04	ROOF PLAN - PLUMBING AND DRAINAGE
P.05	PLUMBING - DETAILS AND FIXTURE SPECS
P.06	PLUMBING - SCHEDULES

MECHANICAL SYMBOLS	
SYMBOL	DESCRIPTION
	SUPPLY DIFFUSER - CEILING
	SUPPLY DIFFUSER - GRILLE
	SPIN COLLAR WITH MANUAL DAMPER
	EXHAUST AND RETURN AIR GRILLE - CEILING
	EXHAUST AND RETURN AIR GRILLE - WALL
	SUPPLY AIR DUCT UP - THROUGH SLAB
	SUPPLY AIR DUCT DOWN
	RETURN AIR DUCT UP - THROUGH SLAB
	RETURN AIR DUCT UP
	RETURN AIR DUCT DOWN
	BELLMOUTH RETURN
	THERMAL INSULATION
	HEAT TRACED PIPE
	PIPE ANCHOR
	BACKDRAFT DAMPER
	MANUAL/BALANCING DAMPER
	FIRE DAMPER
	COMBO FIRE AND SMOKE DAMPER
	MOTORIZED DAMPER
	OCCUPANCY SENSOR
	THERMOSTAT
	CARBON OXIDE SENSOR
	NITROUS DIOXIDE SENSOR
	CONCENTRIC VENT
	AIR TRANSFER DUCT
	AIR FLOW DIRECTION
	FORCED FLOW HEATER
	ENERGY/HEAT RECOVERY UNIT
	INTAKE LOUVER
	WALL BOX
	CENTRIFUGAL PUMP
	UNIT HEATER
	VENT/COMBUSTION INTAKE PIPE UP/DN
	DOOR UNDERCUT
	WALL MOUNTED CIRCULATING FAN
AIR TERMINAL LABEL	
	DENOTES: (24"x24"x0.24") DIFF. FRAME SIZE
	DENOTES: (80) DIFF. NECK SIZE
	DENOTES: AIR QUANTITY (CFM)
	DENOTES: SUPPLY DIFFUSER TYPE
TO BE DEMOLISHED	
FIRE PROTECTION SYMBOLS	
	SUPERVISED O.S.S.V. VALVE WIRED TO FIRE ANNUNCIATOR PANEL (BY DIV. 26)
	CHECK VALVE WITH BALL DROP
	DRY VALVE WIRED TO ANNUNCIATOR PANEL (BY DIV. 26)
	WET VALVE WIRED TO ANNUNCIATOR PANEL (BY DIV. 26)
	FLOW SWITCH WIRED TO FIRE ANNUNCIATOR PANEL (BY DIV. 26)
	PRESSURE GAUGE
	PRESSURE SWITCH WIRED TO FIRE ANNUNCIATOR PANEL (BY DIV. 26)
SPRINKLER SYMBOLS	
	PENDANT SPRINKLER HEAD
	UPRIGHT SPRINKLER HEAD
	CONCEALED/SEMI-RECESSED SPRINKLER HEAD
	SIDEWALL SPRINKLER HEAD
NOTE	
ALL SYMBOLS AND ABBREVIATIONS SHOWN ON THIS SHEET MAY NOT BE APPLICABLE TO THIS PROJECT	

PROJECT ORIENTATION:



SEAL:



NOTES:

ONLY LATEST APPROVED
'ISSUED FOR CONSTRUCTION' DRAWINGS TO BE USED.
DRAWINGS ARE NOT TO BE SCALED.

NO.	REVISION / NOTE	DATE
4	ISSUED FOR TENDER	FEB.18.26
3	RE-ISSUED FOR PERMIT	DEC.5.25
2	RE-ISSUED FOR PERMIT	NOV.17.25
1	ISSUED FOR PERMIT	MAR.14.25

PREPARED FOR:



PROJECT:

NEW CULTURAL CLUB
CROATIAN NATIONAL
HOME

LOCATION:

615 BARTON STREET
STONEY CREEK,
ONTARIO

DRAWING DESCRIPTION:

MECHANICAL HVAC
SITE PLAN AND
INDEX

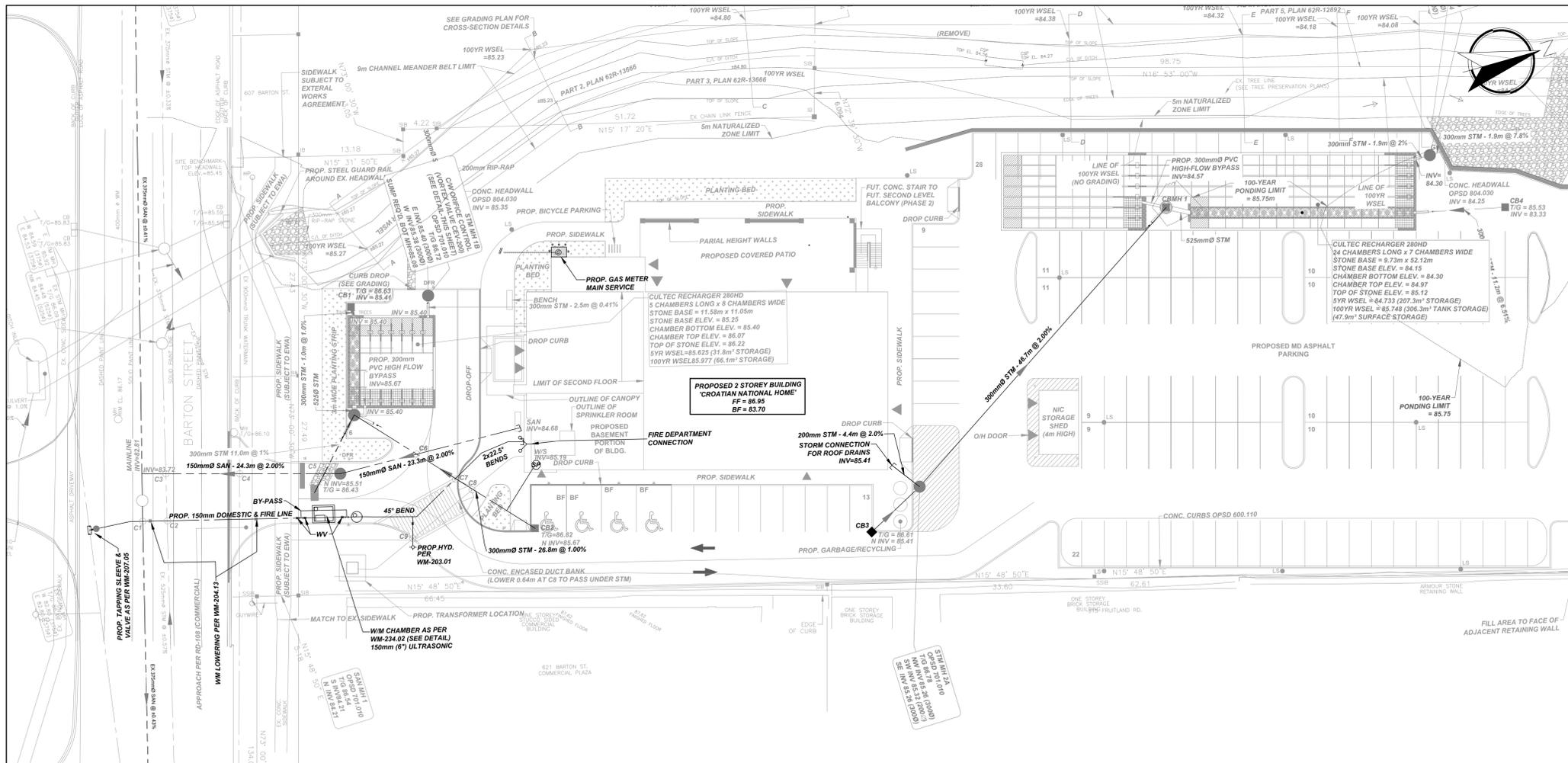
CLIENT NUMBER: TRINITYENG PROJECT NUMBER: M24-0355

DRAWN: D.P. DESIGNED: A.A. APPROVED: A.A.

DATE: MAY 15, 2024

SCALE: AS SHOWN DRAWING NUMBER:

DRAWING SIZE: ARCH D (610mmx914mm) **M.01**



1 M01 SITE SERVICING PLAN
N.T.S.

PROJECT ORIENTATION:



SEAL:



NOTES:
ONLY LATEST APPROVED
ISSUED FOR CONSTRUCTION DRAWINGS TO BE USED.
DRAWINGS ARE NOT TO BE SCALED.

NO.	REVISION / NOTE	DATE
4	ISSUED FOR TENDER	FEB. 18. 26
3	RE-ISSUED FOR PERMIT	DEC. 5. 25
2	RE-ISSUED FOR PERMIT	NOV. 17. 25
1	ISSUED FOR PERMIT	MAR. 14. 25



PROJECT:
**NEW CULTURAL CLUB
CROATIAN NATIONAL
HOME**

LOCATION:
**615 BARTON STREET
STONEY CREEK,
ONTARIO**

DRAWING DESCRIPTION:
**GROUND FLOOR
PLAN - HVAC**

CLIENT NUMBER:	TRINITYENG PROJECT NUMBER: M24-0355	
DRAWN:	DESIGNED:	APPROVED:
D.P.	A.A.	A.A.

DATE:
MAY 15, 2024

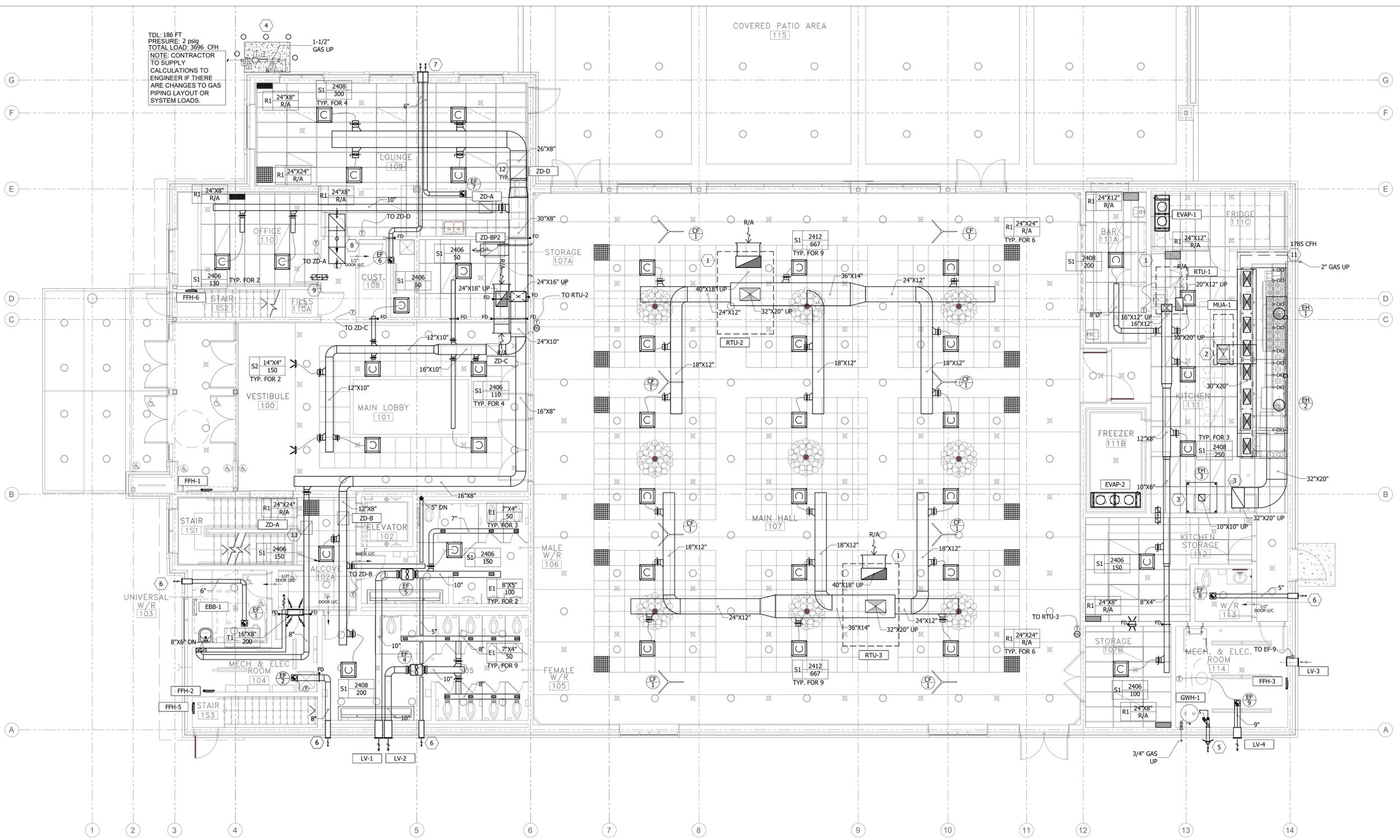
SCALE:
AS SHOWN

DRAWING NUMBER:
M.03

DRAWING SIZE:
ARCH D
(610mmx914mm)

of 11

TDL-186 FT
PRESSURE: 2 psig
TOTAL LOAD: 3696 CFH
NOTE: CONTRACTOR
TO SUPPLY
CALCULATIONS TO
ENGINEER IF THERE
ARE CHANGES TO GAS
PIPING LAYOUT OR
SYSTEM LOADS.



1 GROUND HVAC
M03 1:75

HVAC KEYNOTES	
1	ROOF TOP UNIT AT ROOF ABOVE. INSULATE SUPPLY AND RETURN AIR DUCT FROM EXTERIOR AS SPECIFICATIONS.
2	MAKE-UP AIR UNIT AT ROOF ABOVE. INSULATE SUPPLY AIR DUCT FROM EXTERIOR AS SPECIFICATIONS.
3	KITCHEN EXHAUST FAN AT ROOF ABOVE. KITCHEN EXHAUST TO COMPLY WITH NFPA 96 AND INSTALL AS PER MANUFACTURER'S INSTRUCTIONS.
4	GAS METER, REGULATOR AND INCOMING GAS SERVICE BY LOCAL GAS COMPANY. INSTALL NEW CONCRETE PAD AND BOLLARDS AS PER LOCAL GAS COMPANY REQUIREMENTS. (ENBRIDGE) SEE DETAIL DWG. M.07
5	CONCENTRIC AIR VENT FOR COMBUSTION AIR AND EXHAUST AT HIGH ELEVATION.
6	REVERSOMETIC SINGLE WALL BOX SWBW-8 FOR EXHAUST AT HIGH ELEVATION.
7	REVERSOMETIC DOUBLE WALL BOX DWBW-8 FOR EXHAUST AT HIGH ELEVATION.
8	26" X 12" ACOUSTIC AIR TRANSFER DUCT LOCATED AT HIGH ELEVATION OF CEILING.
9	8" X 8" ACOUSTIC AIR TRANSFER DUCT LOCATED AT HIGH ELEVATION OF CEILING. (TYP.)
10	ALL FIRE DAMPERS AT AIR DUCT THROUGH WALL AND FLOOR SLAB, DAMPER RATING AS PER ARCHITECTURAL FIRE RESISTANCE RATING SCHEDULE.
11	GAS CONNECTION FOR KITCHEN APPLIANCES (1785 CFH CAPACITY), CONTRACTOR TO VERIFY THE KITCHEN EQUIPMENT GAS CONSUMPTION.
12	ZONE DAMPER CONNECTED WITH T-STAT FOR CONTROL. (TYP.)
13	T-STAT LOCATED AT BASEMENT FLOOR

GENERAL NOTES:
- LOCATION OF DIFFUSER TO BE COORDINATED WITH DIVISION 26.
- ALL ELECTRIC HEATERS TO BE SUPPLIED AND INSTALLED BY DIVISION 26.
- LOCATION OF THERMOSTAT TO BE COORDINATED WITH DIVISION 26 AND BE PLACED CLOSE TO END OF WALL, NEVER IN THE MIDDLE OF THE WALL.
- THE CONTRACTOR SHALL BALANCE THE AIRFLOW RATES FOR ALL DIFFUSERS AND PROVIDE AIR BALANCING REPORT.
- ALL DOORS WITH FIRE DAMPERS/GRILLES TO BE A MINIMUM ON 1-3/4" THICK TO ACCOMMODATE DAMPER. COORDINATE WITH ARCHITECTURAL DOOR SCHEDULE.
- VENT ALL GAS APPLIANCES AS PER OBC AND CSA-B149
- ALL REFRIGERANT WORK MUST BE PERFORMED IN COMPLIANCE WITH FEDERAL HALOCARBON REGULATIONS AND BJCC HALOCARBON POLICIES AND PROCEDURES. REFER TO SPECIFICATIONS FOR REQUIREMENTS.
- CONTRACTOR TO COORDINATE WITH LANDLORD FOR ROOF OPENING REQUIREMENTS AND LOCATION OF EXTERNAL CONDENSING UNIT OF ROOF.
- FLEX DUCT TO NOT EXCEED 10FT AS NOTED IN THE GENERAL SPECIFICATIONS,
- FOR KITCHEN AND BAR EQUIPMENT AND FIXTURES SHOWN ON DRAWING, REFER TO EQUIPMENT LIST PREPARED BY OTHERS.

PROJECT ORIENTATION:



SEAL:



NOTES:

ONLY LATEST APPROVED
ISSUED FOR CONSTRUCTION DRAWINGS TO BE USED.
DRAWINGS ARE NOT TO BE SCALED.

NO.	REVISION / NOTE	DATE
4	ISSUED FOR TENDER	FEB.18.26
3	RE-ISSUED FOR PERMIT	DEC.5.25
2	RE-ISSUED FOR PERMIT	NOV.17.25
1	ISSUED FOR PERMIT	MAR.14.25

PREPARED FOR:



PROJECT:

**NEW CULTURAL CLUB
CROATIAN NATIONAL
HOME**

LOCATION:

**615 BARTON STREET
STONEY CREEK,
ONTARIO**

DRAWING DESCRIPTION:

**SECOND FLOOR
PLAN - HVAC**

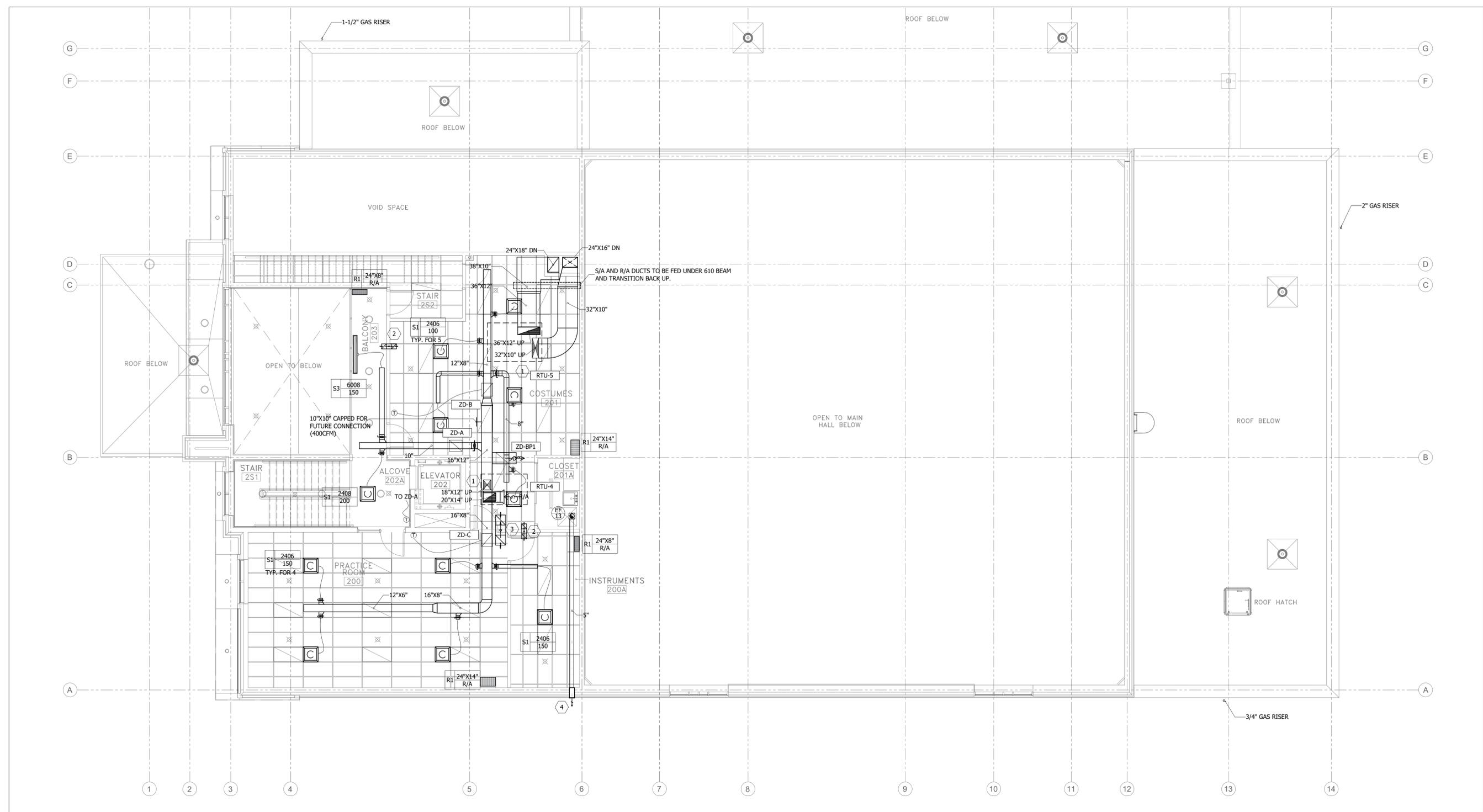
CLIENT NUMBER: - TRINITYENG PROJECT NUMBER: M24-0355

DRAWN: D.P. DESIGNED: A.A. APPROVED: A.A.

DATE: MAY 15, 2024

SCALE: AS SHOWN DRAWING NUMBER:

DRAWING SIZE: ARCH D (610mmx914mm) **M.04**



1 SECOND FLOOR HVAC
M04 1:75

HVAC KEYNOTES

1	ROOF TOP UNIT AT ROOF ABOVE. INSULATE SUPPLY AND RETURN AIR DUCT FROM EXTERIOR AS SPECIFICATIONS.
2	8" X 8" RETURN AIR TRANSFER DUCT ABOVE CEILING.
3	16" X 10" RETURN AIR TRANSFER DUCT ABOVE CEILING.
4	REVERSOMETIC SINGLE WALL BOX SWBW-8 FOR EXHAUST AT HIGH ELEVATION.

GENERAL NOTES:

- LOCATION OF DIFFUSER TO BE COORDINATED WITH DIVISION 26.
- ALL ELECTRIC HEATERS TO BE SUPPLIED AND INSTALLED BY DIVISION 26.
- LOCATION OF THERMOSTAT TO BE COORDINATED WITH DIVISION 26 AND BE PLACED CLOSE TO END OF WALL, NEVER IN THE MIDDLE OF THE WALL.
- THE CONTRACTOR SHALL BALANCE THE AIRFLOW RATES FOR ALL DIFFUSERS AND PROVIDE AIR BALANCING REPORT.
- ALL DOORS WITH FIRE DAMPERS/GRILLES TO BE A MINIMUM ON 1-3/4" THICK TO ACCOMMODATE DAMPER. COORDINATE WITH ARCHITECTURAL DOOR SCHEDULE.
- VENT ALL GAS APPLIANCES AS PER OBC AND CSA-B149
- ALL REFRIGERANT WORK MUST BE PERFORMED IN COMPLIANCE WITH FEDERAL HALOCARBON REGULATIONS AND BJCC HALOCARBON POLICIES AND PROCEDURES. REFER TO SPECIFICATIONS FOR REQUIREMENTS.
- CONTRACTOR TO COORDINATE WITH LANDLORD FOR ROOF OPENING REQUIREMENTS AND LOCATION OF EXTERNAL CONDENSING UNIT OF ROOF.
- FLEX DUCT TO NOT EXCEED 10FT AS NOTED IN THE GENERAL SPECIFICATIONS,
- FOR KITCHEN AND BAR EQUIPMENT AND FIXTURES SHOWN ON DRAWING, REFER TO EQUIPMENT LIST PREPARED BY OTHERS.

PROJECT ORIENTATION:



SEAL:



NOTES:
ONLY LATEST APPROVED
ISSUED FOR CONSTRUCTION DRAWINGS TO BE USED.
DRAWINGS ARE NOT TO BE SCALED.

4	ISSUED FOR TENDER	FEB. 18. 26
3	RE-ISSUED FOR PERMIT	DEC. 5. 25
2	RE-ISSUED FOR PERMIT	NOV. 17. 25
1	ISSUED FOR PERMIT	MAR. 14. 25

NO.	REVISION / NOTE	DATE

PREPARED FOR:



PROJECT:
**NEW CULTURAL CLUB
CROATIAN NATIONAL
HOME**

LOCATION:
**615 BARTON STREET
STONEY CREEK,
ONTARIO**

DRAWING DESCRIPTION:
ROOF - HVAC

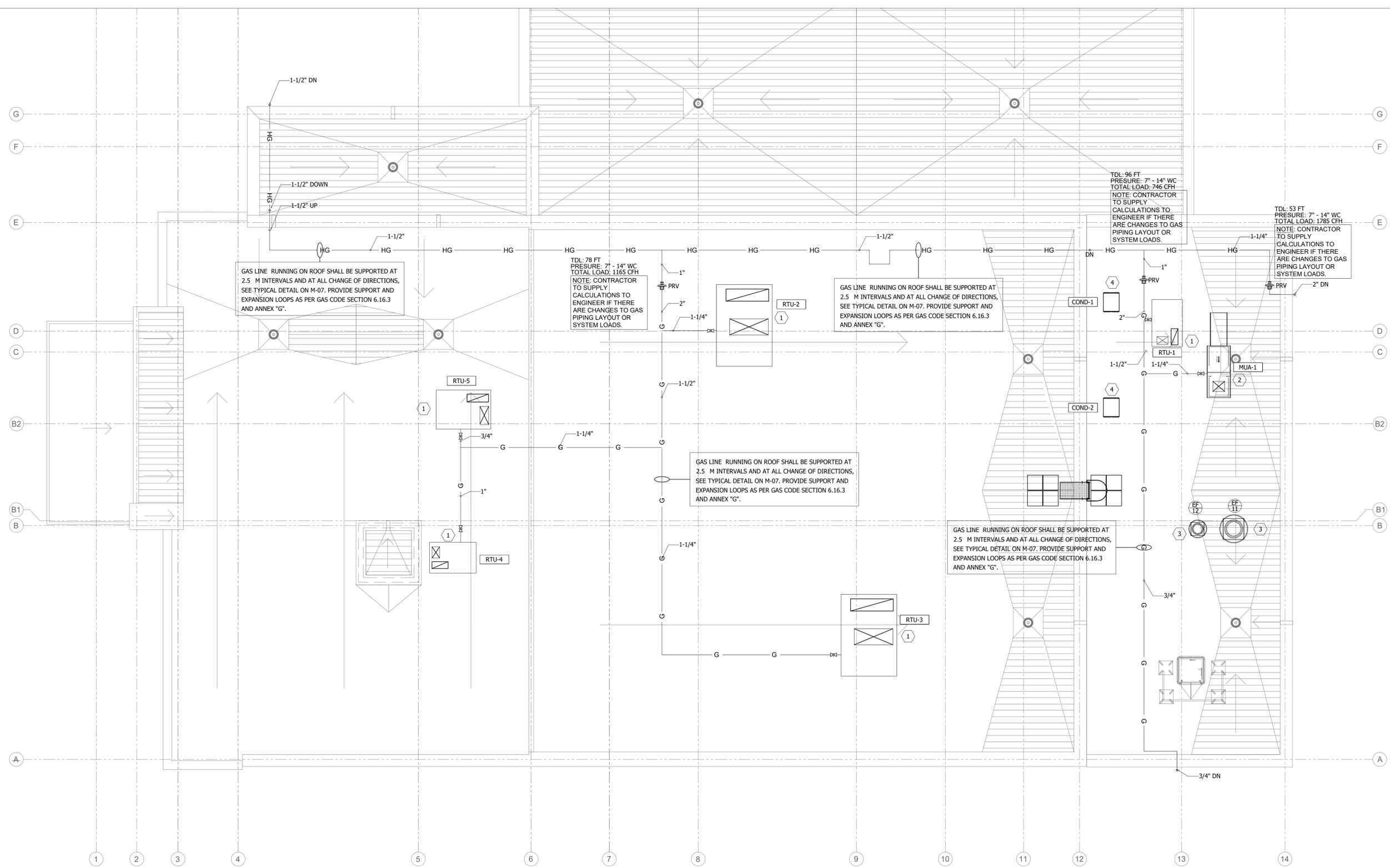
CLIENT NUMBER: - TRINITYENG PROJECT NUMBER: M24-0355

DRAWN: D.P. DESIGNED: A.A. APPROVED: A.A.

DATE: MAY 15, 2024

SCALE: AS SHOWN DRAWING NUMBER:

DRAWING SIZE: ARCH D (610mmx914mm) **M.05**
of 11



GAS LINE RUNNING ON ROOF SHALL BE SUPPORTED AT 2.5 M INTERVALS AND AT ALL CHANGE OF DIRECTIONS, SEE TYPICAL DETAIL ON M-07. PROVIDE SUPPORT AND EXPANSION LOOPS AS PER GAS CODE SECTION 6.16.3 AND ANNEX "G".

TDL: 78 FT
PRESSURE: 7" - 14" WC
TOTAL LOAD: 1165 CFH
NOTE: CONTRACTOR TO SUPPLY CALCULATIONS TO ENGINEER IF THERE ARE CHANGES TO GAS PIPING LAYOUT OR SYSTEM LOADS.

GAS LINE RUNNING ON ROOF SHALL BE SUPPORTED AT 2.5 M INTERVALS AND AT ALL CHANGE OF DIRECTIONS, SEE TYPICAL DETAIL ON M-07. PROVIDE SUPPORT AND EXPANSION LOOPS AS PER GAS CODE SECTION 6.16.3 AND ANNEX "G".

GAS LINE RUNNING ON ROOF SHALL BE SUPPORTED AT 2.5 M INTERVALS AND AT ALL CHANGE OF DIRECTIONS, SEE TYPICAL DETAIL ON M-07. PROVIDE SUPPORT AND EXPANSION LOOPS AS PER GAS CODE SECTION 6.16.3 AND ANNEX "G".

GAS LINE RUNNING ON ROOF SHALL BE SUPPORTED AT 2.5 M INTERVALS AND AT ALL CHANGE OF DIRECTIONS, SEE TYPICAL DETAIL ON M-07. PROVIDE SUPPORT AND EXPANSION LOOPS AS PER GAS CODE SECTION 6.16.3 AND ANNEX "G".

TDL: 96 FT
PRESSURE: 7" - 14" WC
TOTAL LOAD: 746 CFH
NOTE: CONTRACTOR TO SUPPLY CALCULATIONS TO ENGINEER IF THERE ARE CHANGES TO GAS PIPING LAYOUT OR SYSTEM LOADS.

TDL: 53 FT
PRESSURE: 7" - 14" WC
TOTAL LOAD: 1785 CFH
NOTE: CONTRACTOR TO SUPPLY CALCULATIONS TO ENGINEER IF THERE ARE CHANGES TO GAS PIPING LAYOUT OR SYSTEM LOADS.

1 ROOF HVAC
M05 1:75

HVAC KEYNOTES

1	ROOF TOP UNIT AT ROOF INSTALLED ON 24" HIGH ROOF CURB. INSTALL AS PER CSA 149.1 AND MANUFACTURER'S INSTRUCTIONS. PROVIDE GAS COCK AND DRIP LEG.
2	MAKE-UP AIR UNIT AT ROOF INSTALLED ON 24" HIGH ROOF CURB. INSTALL AS PER CSA 149.1 AND MANUFACTURER'S INSTRUCTIONS. PROVIDE GAS COCK AND DRIP LEG.
3	KITCHEN EXHAUST FAN AND DISHWASHER FAN AT ROOF INSTALLED ON 24" HIGH VENTED ROOF CURB.
4	WALK-IN FRIDGE AND FREEZER CONDENSING UNITS AT ROOF INSTALLED ON 24" HIGH ROOF CURB.

GENERAL NOTES:

- LOCATION OF DIFFUSER TO BE COORDINATED WITH DIVISION 26.
- ALL ELECTRIC HEATERS TO BE SUPPLIED AND INSTALLED BY DIVISION 26.
- LOCATION OF THERMOSTAT TO BE COORDINATED WITH DIVISION 26 AND BE PLACED CLOSE TO END OF WALL, NEVER IN THE MIDDLE OF THE WALL.
- THE CONTRACTOR SHALL BALANCE THE AIRFLOW RATES FOR ALL DIFFUSERS AND PROVIDE AIR BALANCING REPORT.
- ALL DOORS WITH FIRE DAMPERS/GRILLES TO BE A MINIMUM ON 1-3/4" THICK TO ACCOMMODATE DAMPER. COORDINATE WITH ARCHITECTURAL DOOR SCHEDULE.
- VENT ALL GAS APPLIANCES AS PER OBC AND CSA-B149
- ALL REFRIGERANT WORK MUST BE PERFORMED IN COMPLIANCE WITH FEDERAL HALOCARBON REGULATIONS AND BJCC HALOCARBON POLICIES AND PROCEDURES. REFER TO SPECIFICATIONS FOR REQUIREMENTS.
- CONTRACTOR TO COORDINATE WITH LANDLORD FOR ROOF OPENING REQUIREMENTS AND LOCATION OF EXTERNAL CONDENSING UNIT OF ROOF.
- FLEX DUCT TO NOT EXCEED 10FT AS NOTED IN THE GENERAL SPECIFICATIONS,
- FOR KITCHEN AND BAR EQUIPMENT AND FIXTURES SHOWN ON DRAWING, REFER TO EQUIPMENT LIST PREPARED BY OTHERS.

PROJECT ORIENTATION:



SEAL:



NOTES:
ONLY LATEST APPROVED ISSUED FOR CONSTRUCTION DRAWINGS TO BE USED. DRAWINGS ARE NOT TO BE SCALED.

4	ISSUED FOR TENDER	FEB.18.26
3	RE-ISSUED FOR PERMIT	DEC.5.25
2	RE-ISSUED FOR PERMIT	NOV.17.25
1	ISSUED FOR PERMIT	MAR.14.25
NO.	REVISION / NOTE	DATE

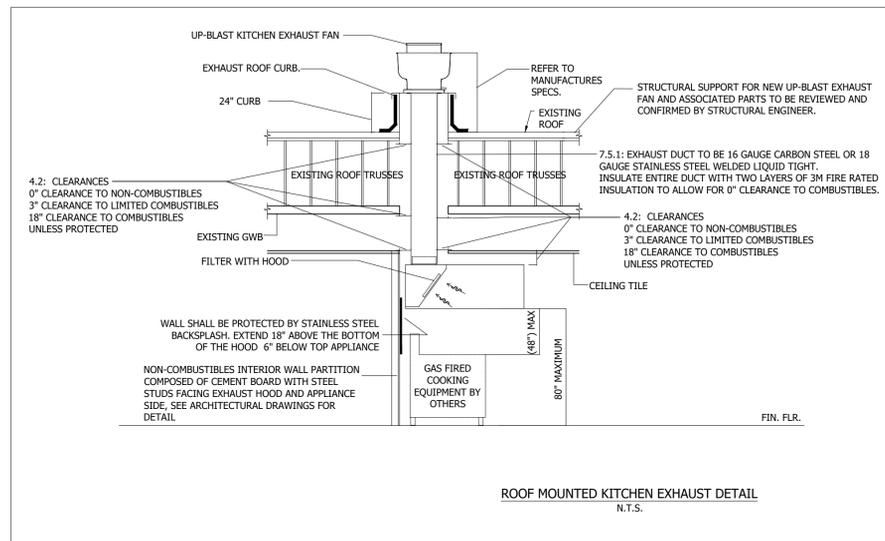
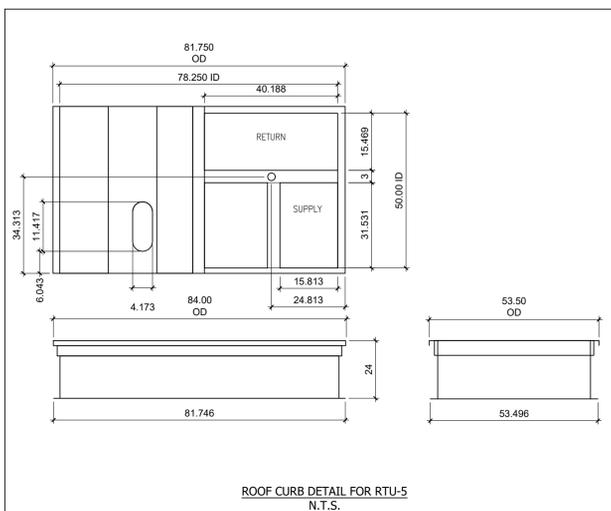
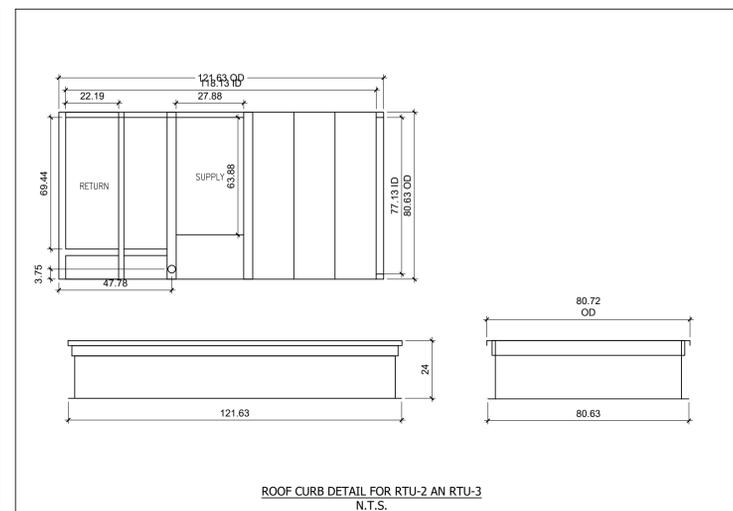
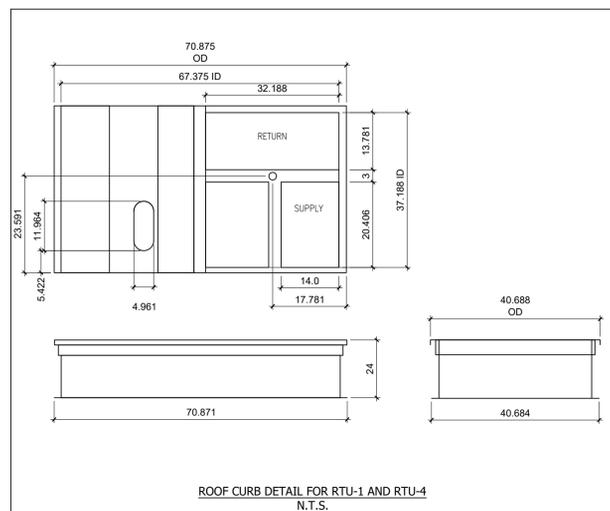


PROJECT:
NEW CULTURAL CLUB CROATIAN NATIONAL HOME

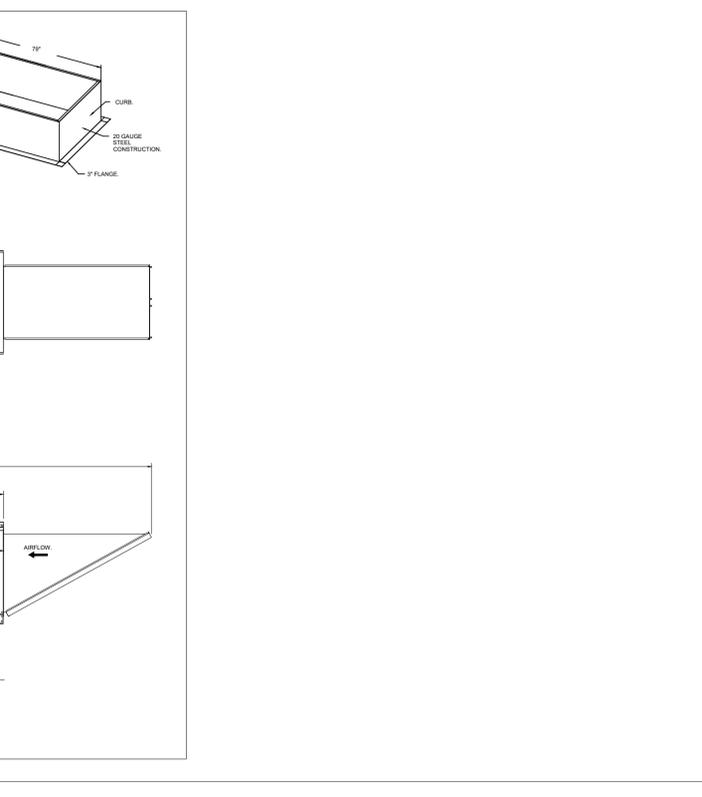
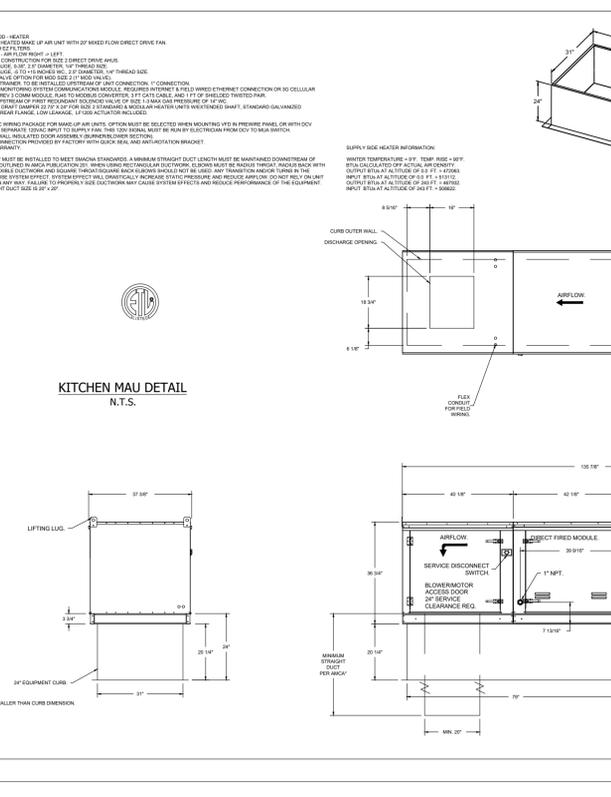
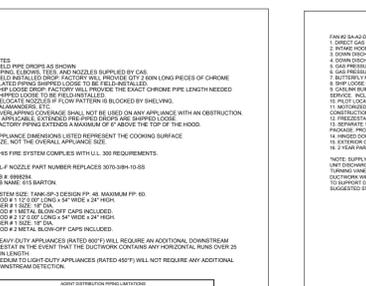
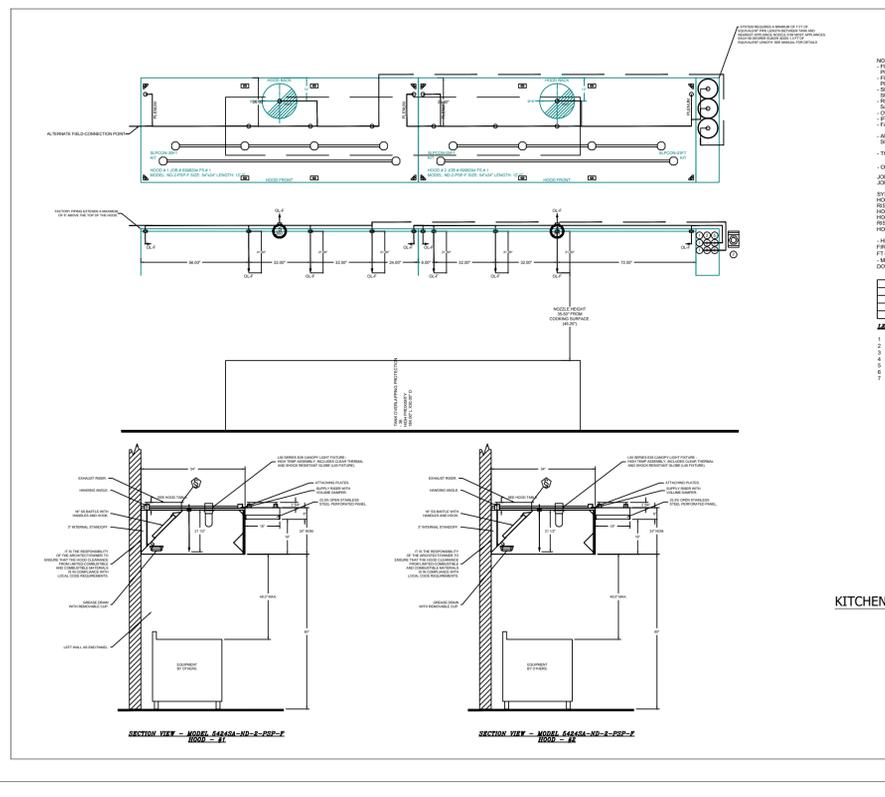
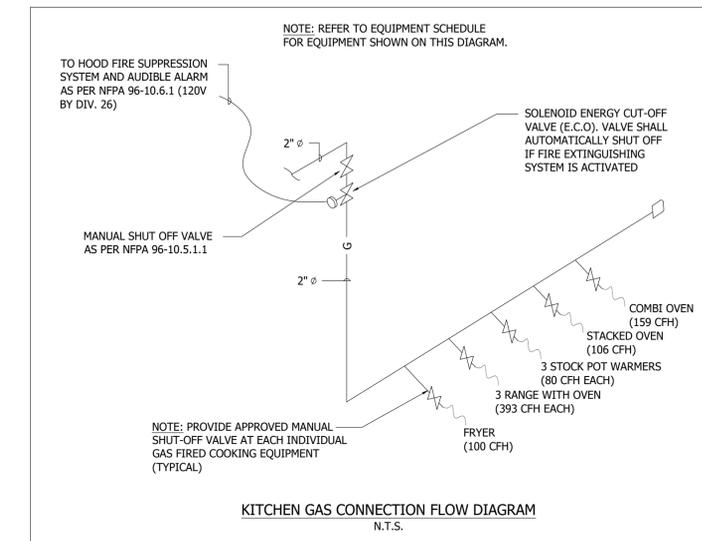
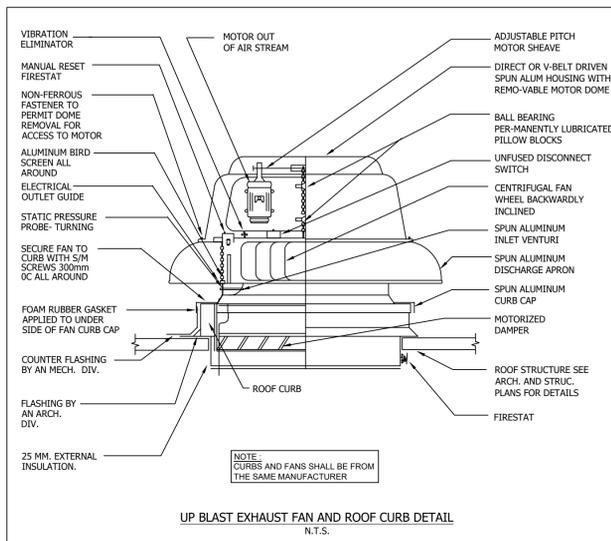
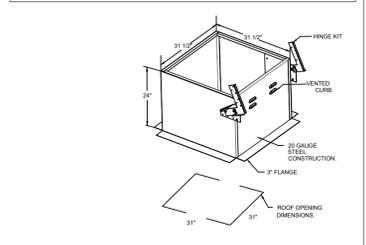
LOCATION:
615 BARTON STREET STONEY CREEK, ONTARIO

DRAWING DESCRIPTION:
DETAILS - HVAC

CLIENT NUMBER:	TRINITYENG PROJECT NUMBER:	
-	M24-0355	
DRAWN:	DESIGNED:	APPROVED:
D.P.	A.A.	A.A.
DATE:	MAY 15, 2024	
SCALE:	DRAWING NUMBER:	
AS SHOWN	M.06	
DRAWING SIZE:	(610mmx914mm)	
	of 11	



- NOTE FOR EXHAUST CANOPY SYSTEM:
- KITCHEN EXHAUST CANOPY SHALL BE CONSTRUCTED OF 18 GAUGE STEEL. DUCTWORK SHALL BE A MINIMUM OF 16 GAUGE STEEL WITH ALL SEAMS WELDED LIQUID TIGHT.
 - FAN ON/OFF SWITCH SHALL BE COMPLETE WITH PILOT LIGHT.
 - CONTRACTOR SHALL VERIFY ALL LOCATIONS OF DUCTWORK, HOOD AND EQUIPMENT.
 - CLEARANCE AROUND DUCT TO FIRE RATED ENCLOSURES AS SHOWN.
 - EXHAUST CANOPY CONSTRUCTION AND INSTALLATION SHALL BE AS PER NFPA 96.
 - FIRE PROTECTION SYSTEM IN HOOD SHALL BE AS PER LATEST NFPA 96.
 - FAN SHALL BE A MINIMUM 10FT FROM PROPERTY LINE, ANY AIR INTAKE AND OPERABLE WINDOWS.
 - FAN SHALL BE INTERLOCKED WITH ROOF MOUNTED MAKE UP AIR AND ROOFTOP UNIT.
 - FAN SHALL CONTINUE TO OPERATE AFTER THE EXTINGUISHING SYSTEM HAS BEEN ACTIVATED.
 - MAKE UP AIR UNIT AND ROOFTOP UNIT SHALL BE SHUT OFF IF FIRE EXTINGUISHING SYSTEM HAS BEEN ACTIVATED.
 - UPON ACTIVATION OF AN AUTOMATIC FIRE EXTINGUISHING SYSTEM, AN AUDIBLE ALARM SHALL BE ACTIVATED. INTERCONNECT TO FIRE ALARM IF PRESENT.
 - ALL LOW POINTS IN DUCTWORK REQUIRE GREASE DRAIN.



VVT SYSTEM SPECIFICATIONS

GENERAL SPECIFICATIONS - CONTROLS

- THE BUILDING AUTOMATION SYSTEM CONTRACTOR SHALL BE THE PRIMARY MANUFACTURER-OWNED BRANCH OFFICE THAT IS REGULARLY ENGAGED IN THE ENGINEERING, PROGRAMMING, INSTALLATION AND SERVICE OF TOTAL INTEGRATED BUILDING MANAGEMENT SYSTEMS.
- THE BAS CONTRACTOR SHALL BE A RECOGNIZED NATIONAL MANUFACTURER, INSTALLER AND SERVICE PROVIDER OF BAS.
- THE BAS CONTRACTOR SHALL HAVE A BRANCH UTILITY WITHIN A 100-MILE RADIUS OF THE JOB SITE SUPPLYING COMPLETE MAINTENANCE AND SUPPORT SERVICES ON A 24 HOUR, 7-DAY-A-WEEK BASIS.
- THE BAS MUST BE CAPABLE OF WIRELESS CAPABILITIES. MANUFACTURERS NOT CAPABLE OF PROVIDING THIS WILL NOT BE ACCEPTABLE.
- THE BAS MUST BE ABILITY TO OPERATE AS A STANDALONE SYSTEM

ACCEPTABLE MANUFACTURERS

- JOHNSON CONTROLS (BRANCH OFFICE), METASYS CONTACT: TEGAN DIETSCH (TEGAN.DIETSCH@JCI.COM, 416-668-0473)
- ALTERNATES FOR SAVINGS (HONEYWELL BRANCH - EBI PRODUCT ONLY)
- ANY ALTERNATES MUST BE PROPOSED BEFORE CLOSING FOR REVIEW AND APPROVAL. SCHEMATICS AND SEQUENCES MUST BE PROVIDED.

BMS WIRING

- ALL CONDUIT, WIRING, ACCESSORIES AND WIRING CONNECTIONS REQUIRED FOR THE INSTALLATION OF THE BMS, AS HEREIN SPECIFIED, SHALL BE PROVIDED BY THE BMS CONTRACTOR UNLESS SPECIFICALLY SHOWN ON THE ELECTRICAL DRAWINGS UNDER DIVISION 26 ELECTRICAL. ALL WIRING SHALL COMPLY WITH THE REQUIREMENTS OF APPLICABLE PORTIONS OF DIVISION 26 AND ALL LOCAL AND NATIONAL ELECTRIC CODES, UNLESS SPECIFIED OTHERWISE IN THIS SECTION.
- ALL BMS WIRING MATERIALS AND INSTALLATION METHODS SHALL COMPLY WITH BMS MANUFACTURER RECOMMENDATIONS.
- THE SIZING, TYPE AND PROVISION OF CABLE, CONDUIT, CABLE TRAYS, AND RACEWAYS SHALL BE THE DESIGN RESPONSIBILITY OF THE BMS CONTRACTOR. IF COMPLICATIONS ARISE, HOWEVER, DUE TO THE INCORRECT SELECTION OF CABLE, CABLE TRAYS, RACEWAYS AND/OR CONDUIT BY THE BMS CONTRACTOR, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS INCURRED IN REPLACING THE SELECTED COMPONENTS.

CLASS 2 WIRING

- ALL CLASS 2 (24 VAC OR LESS) WIRING SHALL BE INSTALLED IN CONDUIT UNLESS OTHERWISE SPECIFIED.
- CONDUIT IS NOT REQUIRED FOR CLASS 2 WIRING IN CONCEALED ACCESSIBLE LOCATIONS. CLASS 2 WIRING NOT INSTALLED IN CONDUIT SHALL BE SUPPORTED EVERY 5' FROM THE BUILDING STRUCTURE UTILIZING METAL HANGERS DESIGNED FOR THIS APPLICATION. WIRING SHALL BE INSTALLED PARALLEL TO THE BUILDING STRUCTURAL LINES. ALL WIRING SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS.
- CLASS 2 SIGNAL WIRING AND 24 VAC POWER CAN BE RUN IN THE SAME CONDUIT. POWER WIRING 120VAC AND GREATER CANNOT SHARE THE SAME CONDUIT WITH CLASS 2 SIGNAL WIRING.
- PROVIDE FOR COMPLETE GROUNDING OF ALL APPLICABLE SIGNAL AND COMMUNICATIONS CABLES, PANELS AND EQUIPMENT SO AS TO ENSURE SYSTEM INTEGRITY OF OPERATION. GROUND CABLING AND CONDUIT AT THE PANEL TERMINATIONS. AVOID GROUNDING LOOPS.

FRONT END SYSTEM

- THE NETWORK AUTOMATION ENGINE OR NETWORK CONTROL ENGINE(SNE/SNC) SHALL BE A FULLY USER-PROGRAMMABLE, SUPERVISORY CONTROLLER. THE SNE/SNC SHALL MONITOR THE NETWORK OF DISTRIBUTED APPLICATION-SPECIFIC CONTROLLERS, PROVIDE GLOBAL STRATEGY AND DIRECTION, AND COMMUNICATE ON A PEER-TO-PEER BASIS WITH OTHER NETWORK AUTOMATION ENGINES.
- AUTOMATION NETWORK - THE SNE/SNC SHALL RESIDE ON THE AUTOMATION NETWORK AND SHALL SUPPORT A SUBNET OF SYSTEM CONTROLLERS.
- USER INTERFACE - EACH SNE/SNC SHALL HAVE THE ABILITY TO DELIVER A WEB BASED USER INTERFACE (UI) AS PREVIOUSLY DESCRIBED. ALL COMPUTERS CONNECTED PHYSICALLY OR VIRTUALLY TO THE AUTOMATION NETWORK SHALL HAVE ACCESS TO THE WEB BASED UI.
 - THE WEB BASED UI SOFTWARE SHALL BE IMBEDDED IN THE SNE/SNC. SYSTEMS THAT REQUIRE A LOCAL COPY OF THE SYSTEM DATABASE ON THE USER'S PERSONAL COMPUTER ARE NOT ACCEPTABLE.
 - THE SNE/SNC SHALL SUPPORT A MINIMUM OF TWO (2) CONCURRENT USERS.
 - THE WEB BASED USER SHALL HAVE THE CAPABILITY TO ACCESS ALL SYSTEM DATA THROUGH ONE SNE/SNC.
 - REMOTE USERS CONNECTED TO THE NETWORK THROUGH AN INTERNET SERVICE PROVIDER (ISP) OR TELEPHONE DIAL UP SHALL ALSO HAVE TOTAL SYSTEM ACCESS THROUGH ONE SNE/SNC.
 - SYSTEMS THAT REQUIRE THE USER TO ADDRESS MORE THAN ONE SNE/SNC TO ACCESS ALL SYSTEM INFORMATION ARE NOT ACCEPTABLE.
 - THE SNE/SNC SHALL HAVE THE CAPABILITY OF GENERATING WEB BASED UI GRAPHICS. THE GRAPHICS CAPABILITY SHALL BE IMBEDDED IN THE SNE/SNC.

INTERFACE

EITHER A DISPLAY OR COLOUR TOUCHSCREEN OR PC HARDWARE SHALL BE PROVIDED.

COLOUR TOUCHSCREEN - THE COLOUR TOUCHSCREEN SHALL BE CONFIGURED AS FOLLOWS:

- HIGH RESOLUTION TFT TOUCH DISPLAY WITH DIMMABLE BACKLIGHT
- ANODIZED ALUMINUM FRONT FRAME
- FLUSH-MOUNTING IN COMBINATION WITH THE MOUNTING FRAME
- SUPPORTS ALARMING, SCHEDULING, AND TRENDING (AST) LOCALLY AND BY REFERRING TO REMOTE BACNET SCHEDULE, AND NOTIFICATION OBJECTS

PC HARDWARE - THE PERSONAL COMPUTER(S) SHALL BE CONFIGURED AS FOLLOWS:

- MEMORY - 1 GB (512 MB MINIMUM)
- CPU- PENTIUM 4 PROCESSOR. 2.8 HZ CLOCK SPEED (2.0 GHZ MINIMUM),
- HARD DRIVE - 80 GB FREE HARD DRIVE SPACE (40GB MINIMUM)
- HARD DRIVE BACKUP SYSTEM
- 17" FLAT PANEL MONITOR 1280 X 1024 RESOLUTION MINIMUM

DISPLAY - 240 X 64 PIXELS WITH WHITE LED BACKLIGHTING (ADJUSTABLE)

CANADA: UL LISTED, FILE E107041, CCN PAZK7, CAN/CSA C22.2 NO. 205, SIGNAL EQUIPMENT; INDUSTRY CANADA COMPLIANT, ICES-003

VVT CONTROLLER (CVM 16X0)

- THE VAV MODULAR ASSEMBLY SHALL PROVIDE BOTH STANDALONE AND NETWORKED DIRECT DIGITAL CONTROL OF PRESSURE-INDEPENDENT, VARIABLE AIR VOLUME TERMINAL UNITS.
- THE VMA SHALL BE BACNET TESTING LABS (BTL) CERTIFIED AND CARRY THE BTL LABEL.

ROOFTOP CONTROLLER (TEC/CGM)

TERMINAL EQUIPMENT CONTROLLER (26X6)

- THE TEC SHALL COMMUNICATE OVER THE FIELD CONTROLLER BUS USING BACNET STANDARD MS/TP BUS PROTOCOL ASHRAE SSPC-135, CLAUSE 9.
- THE TEC SHALL BE BACNET TESTING LABS (BTL) CERTIFIED AND CARRY THE BTL LABEL.
- THE TEC SHALL BE TESTED AND CERTIFIED AS A BACNET APPLICATION SPECIFIC CONTROLLER (B-ASC).
- A BACNET PROTOCOL IMPLEMENTATION CONFORMANCE STATEMENT SHALL BE PROVIDED FOR THE TEC.

FIELD APPLICATION CONTROLLER (CGM)

- THE FIELD EQUIPMENT CONTROLLER (CGM) SHALL BE A FULLY USER-PROGRAMMABLE, DIGITAL CONTROLLER THAT COMMUNICATES VIA BACNET MS/TP PROTOCOL.
 - THE CGM SHALL SUPPORT BACNET STANDARD MS/TP BUS PROTOCOL ASHRAE SSPC-135, CLAUSE 9 ON THE CONTROLLER NETWORK.
 - THE CGM SHALL BE BACNET TESTING LABS (BTL) CERTIFIED AND CARRY THE BTL LABEL.
 - THE CGM SHALL BE TESTED AND CERTIFIED AS A BACNET APPLICATION SPECIFIC CONTROLLER (B-ASC).
 - A BACNET PROTOCOL IMPLEMENTATION CONFORMANCE STATEMENT SHALL BE PROVIDED FOR THE CGM.
 - THE CGM SHALL EMPLOY A FINITE STATE CONTROL ENGINE TO ELIMINATE UNNECESSARY CONFLICTS BETWEEN CONTROL FUNCTIONS AT CROSSOVER POINTS IN THEIR OPERATIONAL SEQUENCES. SUPPLIERS USING NON-STATE BASED DDC SHALL PROVIDE SEPARATE CONTROL STRATEGY DIAGRAMS FOR ALL CONTROLLED FUNCTIONS IN THEIR SUBMITTALS.
 - CONTROLLERS SHALL BE CGMOTORY PROGRAMMED WITH A CONTINUOUS ADAPTIVE TUNING ALGORITHM THAT

SENSES CHANGES IN THE PHYSICAL ENVIRONMENT AND CONTINUALLY ADJUSTS LOOP TUNING PARAMETERS APPROPRIATELY. CONTROLLERS THAT REQUIRE MANUAL TUNING OF LOOPS OR PERFORM AUTOMATIC TUNING ON COMMAND ONLY SHALL NOT BE ACCEPTABLE. THE CGM SHALL BE ASSEMBLED IN A PLENUM-RATED PLASTIC HOUSING WITH FLAMMABILITY RATED TO UL94-5VB.

- THE CGM SHALL HAVE THE ABILITY TO RESIDE ON A FIELD CONTROLLER BUS (FC BUS).
 - THE FC BUS SHALL BE A MASTER-SLAVE/TOKEN-PASSING (MS/TP) BUS SUPPORTING BACNET STANDARD PROTOCOL SSPC-135, CLAUSE 9.
 - THE FC BUS SHALL SUPPORT COMMUNICATIONS BETWEEN THE CGMS AND THE NAE.
 - THE FC BUS SHALL ALSO SUPPORT INPUT/OUTPUT MODULE (IOM) COMMUNICATIONS WITH THE CGM AND WITH THE NAE.
 - THE FC BUS SHALL SUPPORT A MINIMUM OF 100 IOMS AND CGMS IN ANY COMBINATION.
 - THE FC BUS SHALL OPERATE AT A MAXIMUM DISTANCE OF 15,000 FT. BETWEEN THE CGM AND THE FURTHEST CONNECTED DEVICE.

SEQUENCE OF OPERATIONS

ROOFTOP UNITS - CONSTANT VOLUME

SUPPLY FAN START/STOP: THE SUPPLY FAN WILL BE STARTED ACCORDING TO THE SCHEDULE. AFTER THE SUPPLY FAN HAS BEEN STARTED, THE CONTROL SEQUENCE WILL BE ENABLED.

ZONE CONTROL: THE MIXED AIR DAMPERS, GAS HEATING STAGES, AND THE DX COOLING STAGES WILL MODULATE/CYCLE IN SEQUENCE TO MAINTAIN THE ZONE TEMPERATURE AT SETPOINT.

ECONOMIZER DRY BULB SWITCHOVER: WHEN THE SHARED OUTSIDE AIR TEMPERATURE IS BELOW THE SWITCHOVER SETPOINT, THE ECONOMIZER WILL BE ENABLED. WHEN THE SHARED OUTSIDE AIR TEMPERATURE RISES ABOVE THE SWITCHOVER SETPOINT PLUS A DIFFERENTIAL, THE ECONOMIZER WILL BE DISABLED.

NIGHT SETBACK/NIGHT SETUP: WHEN IN "UNOCCUPIED" MODE, THE UNIT WILL CYCLE AS NECESSARY TO MAINTAIN THE NIGHT SETBACK ZONE TEMPERATURE AT SETPOINT. A DIFFERENTIAL PREVENTS THE UNIT FROM CYCLING EXCESSIVELY.

SHUTDOWN:

WHEN THE UNIT IS SHUTDOWN BY EITHER A STOP COMMAND OR SYSTEM SAFETY THE UNIT WILL BE SET AS FOLLOWS:

- SUPPLY FAN WILL BE OFF
- OUTSIDE AIR DAMPER WILL CLOSE
- RETURN AIR DAMPER WILL OPEN
- DX COOLING WILL BE OFF
- ELECTRIC (OR GAS) HEAT WILL BE OFF

TYPE	POINT	DESCRIPTION
SOFTWARE AO	ZN-T	ZONE TEMPERATURE
SOFTWARE AO	HTG-SP	HEATING SETPOINT
SOFTWARE AO	CLG-SP	COOLING SETPOINT
SOFTWARE AO	OA-T	OUTSIDE AIR TEMPERATURE
SOFTWARE BO	SF-C	SUPPLY FAN COMMAND
SOFTWARE BO	HTG1-C	HEATING STAGE 1 COMMAND
SOFTWARE BO	HTG2-C	HEATING STAGE 2 COMMAND
SOFTWARE BO	CLG1-C	COOLING STAGE 1 COMMAND
SOFTWARE BO	CLG2-C	COOLING STAGE 2 COMMAND
SOFTWARE BO	OCC-C	OCCUPIED COMMAND
SOFTWARE AO	ECON-SP	ECONOMIZER SWITCHOVER SETPOINT
SOFTWARE BI	ECON-S	ECONOMIZER STATUS
SOFTWARE BO	SF-MODE	SUPPLY FAN MODE
SOFTWARE MV	MODE	SYSTEM MODE

ROOFTOP UNIT - VAV

SUPPLY FAN CONTROL: THE VARIABLE SPEED SUPPLY FAN WILL BE STARTED BASED ON OCCUPANCY SCHEDULE. WHEN THE SUPPLY FAN STATUS INDICATES THE FAN STARTED, THE CONTROL SEQUENCE WILL BE ENABLED. THE SUPPLY FAN WILL MODULATE TO MAINTAIN THE DISCHARGE STATIC PRESSURE AT SETPOINT. UPON A LOSS OF AIRFLOW, THE SYSTEM WILL AUTOMATICALLY RESTART.

TEMPERATURE CONTROL: THE UNIT WILL CONTROL TO MAINTAIN A CONSTANT DISCHARGE AIR TEMPERATURE.

MINIMUM OA CONTROL:

THE FRESH AIR INTAKE OF THE UNIT WILL BE LIMITED TO PREVENT THE PREHEAT TEMPERATURE (PH-T) FROM FALLING BELOW THE LOW LIMIT SETPOINT (OALT-SP).

OCCUPIED MODE: THE OCCUPANCY MODE WILL BE CONTROLLED VIA A NETWORK INPUT. THE OCCUPANCY MODE CAN ALSO BE OVERRIDDEN BY A NETWORK INPUT.

UNOCCUPIED MODE: THE UNIT WILL REMAIN OFF DURING UNOCCUPIED PERIODS.

COOLING COIL: THE COOLING COIL WILL BE STAGED IN SEQUENCE TO MAINTAIN THE TEMPERATURE SETPOINT.

REHEAT COIL: THE REHEAT COIL WILL BE STAGED IN SEQUENCE TO MAINTAIN THE TEMPERATURE SETPOINT.

ADDITIONAL POINTS MONITORED BY THE FMS:

- OUTDOOR AIR TEMPERATURE (OA-T)
- OUTDOOR AIR HUMIDITY (OA-H)
- RETURN AIR TEMPERATURE (RA-T)
- PREFILTER STATUS (PFILT-S)

TYPE	POINT	DESCRIPTION	UNITS
UI IN1	DA-T	DISCHARGE AIR TEMPERATURE	DEG F
UI IN2	RA-T	RETURN AIR TEMPERATURE	DEG F
UI IN3	OA-H	OUTSIDE AIR HUMIDITY	%RH
UI IN4	OA-T	OUTSIDE AIR TEMPERATURE	DEG F
UI IN5	DA1-P	DISCHARGE STATIC PRESSURE 1	IN WC
UI IN6			
BI IN7	SF-S	SUPPLY FAN STATUS	OFF ON
BI IN8	PFILT-S	PRE-FILTER STATUS	NORMAL ALARM
NET STAT			
BO OUT1	SF-C	SUPPLY FAN COMMAND	OFF ON
BO OUT2	CLG1-C	COOLING STAGE 1 COMMAND	OFF ON
BO OUT3	CLG2-C	COOLING STAGE 2 COMMAND	OFF ON
CO OUT4	HTG1-C	HEATING STAGE 1 COMMAND	OFF ON
CO OUT5	HTG2-C	HEATING STAGE 2 COMMAND	OFF ON

VVT CONTROLLER

OCCUPIED MODE: WHEN THE ZONE TEMPERATURE IS BETWEEN THE OCCUPIED HEATING AND COOLING SETPOINTS (INSIDE OF THE BIAS), THE PRIMARY AIR DAMPER WILL BE AT THE MINIMUM CFM. ON A RISE IN ZONE TEMPERATURE ABOVE THE COOLING SETPOINT, THE PRIMARY AIR DAMPER WILL INCREASE THE CFM. ON A DROP IN ZONE

TEMPERATURE BELOW THE HEATING SETPOINT, THE DAMPER IS CONTROLLED TO PROVIDE A MINIMUM CFM.

UNOCCUPIED (NIGHT SETBACK) MODE: WHEN THE AIR HANDLING UNIT SHUTS DOWN, ALL BOX CONTROLLERS ARE INDEXED TO UNOCCUPIED MODE. WHEN THE ZONE TEMPERATURE IS BETWEEN THE UNOCCUPIED HEATING AND COOLING SETPOINTS (INSIDE OF THE BIAS), THE PRIMARY AIR DAMPER WILL BE AT THE MINIMUM CFM. ON A RISE IN ZONE TEMPERATURE ABOVE THE UNOCCUPIED COOLING SETPOINT, THE PRIMARY AIR DAMPER WILL INCREASE THE CFM (IF AVAILABLE).

TYPE	NAME	DESCRIPTION	SIGNAL
AI	DA-VP	DISCHARGE AIR VELOCITY PRESSURE	INTEGRATED VELOCITY PRESSURE
AI	ZN-SP	ZONE SETPOINT	SAB
AI	ZN-T	ZONE TEMPERATURE	SAB
BO	SUPHTG1-C	SUPPLEMENTAL HEATING STAGE 1 COMMAND	24VAC MAINTAINED
MO	OCC-MODE	OCCUPANCY STATUS DISPLAY	SAB
PAO	DPR-O	SUPPLY AIR DAMPER OUTPUT	INTEGRATED
BI	ZN-TOCC	ZONE TEMPORARY OCCUPANCY	SAB

VVT - MODULATING SUPPLEMENTAL HEAT

OCCUPIED MODE:

WHEN THE ZONE TEMPERATURE (ZN-T) IS BETWEEN THE OCCUPIED HEATING (EFFHTG-SP) AND COOLING (EFFCLG-SP) SETPOINTS (INSIDE OF THE BIAS), THE PRIMARY AIR DAMPER (DPR-O) WILL BE AT THE MINIMUM CFM (SA-F) AND THERE WILL BE NO MECHANICAL HEATING. ON A RISE IN ZONE TEMPERATURE (ZN-T) ABOVE THE COOLING SETPOINT (EFFCLG-SP), THE PRIMARY AIR DAMPER (DPR-O) WILL INCREASE THE CFM (SA-F) AND THERE WILL BE NO MECHANICAL HEATING. ON A DROP IN ZONE TEMPERATURE (ZN-T) BELOW THE HEATING SETPOINT (EFFHTG-SP), THE REHEAT COIL WILL BE USED TO MAINTAIN THE ZONE TEMPERATURE (ZN-T) AND THE DAMPER (DPR-O) IS CONTROLLED TO PROVIDE A MINIMUM CFM (SA-F).

UNOCCUPIED MODE:

WHEN IN THIS MODE, WHILE THE ZONE TEMPERATURE (ZN-T) IS BETWEEN THE UNOCCUPIED HEATING (EFFHTG-SP) AND COOLING (EFFCLG-SP) SETPOINTS (INSIDE OF THE BIAS), THE PRIMARY AIR DAMPER (DPR-O) WILL BE AT THE MINIMUM CFM (SA-F) AND THERE WILL BE NO MECHANICAL HEATING. ON A RISE IN ZONE TEMPERATURE (ZN-T) ABOVE THE UNOCCUPIED COOLING SETPOINT (EFFCLG-SP), THE PRIMARY AIR DAMPER (DPR-O) WILL INCREASE THE CFM (SA-F) (IF AVAILABLE) AND THERE WILL BE NO MECHANICAL HEATING. ON A DROP IN ZONE TEMPERATURE (ZN-T) BELOW THE UNOCCUPIED HEATING SETPOINT (EFFHTG-SP), THE REHEAT COIL WILL BE USED TO MAINTAIN THE ZONE TEMPERATURE (ZN-T) AND THE PRIMARY AIR DAMPER (DPR-O) WILL BE AT THE MINIMUM CFM (SA-F).

OCCUPANCY CONTROL:

AN OCCUPANCY SENSOR (OCC-S) WILL SWITCH THE BOX MODE WHEN OCCUPANCY OF THE ZONE IS DETECTED.

NETWORK WARMUP-COOLDOWN:

WARM-UP AND COOLDOWN MODES WILL BE ACTIVATED BY A NETWORK COMMAND (WC-C). WHEN THE ZONE TEMPERATURE (ZN-T) IS BELOW THE EFFECTIVE HEATING SETPOINT (EFFHTG-SP), THE BOX WILL USE WARM AIR FLOW, THEN REHEAT COIL TO MAINTAIN THE ZONE TEMPERATURE (ZN-T). WHEN THE BOX IS SATISFIED THE FLOW WILL REMAIN AT THE WARM-UP MINIMUM POSITION UNTIL THE WARM COMMAND HAS BEEN REMOVED.

TYPE	NAME	DESCRIPTION	SIGNAL
AI	DA-VP	DISCHARGE AIR VELOCITY PRESSURE	INTEGRATED DIGITAL VELOCITY PRESSURE
PAO	DPR-O	SUPPLY AIR DAMPER OUTPUT	INTEGRATED
AO	HTG-O	HEATING OUTPUT	0-10VDC
MO	OCC-MODE	OCCUPANCY STATUS DISPLAY	SAB
BI	OCC-S	OCCUPANCY STATUS	SAB
AI	ZN-SP	ZONE SETPOINT	SAB
AI	ZN-T	ZONE TEMPERATURE	SAB

VVT - COOLING ONLY

OCCUPIED MODE:

WHEN THE ZONE TEMPERATURE (ZN-T) IS BELOW THE COOLING SETPOINT (EFFCLG-SP), THE PRIMARY AIR DAMPER (DPR-O) WILL BE AT THE MINIMUM CFM (SA-F). ON A RISE IN ZONE TEMPERATURE (ZN-T) ABOVE THE COOLING SETPOINT (EFFCLG-SP), THE PRIMARY AIR DAMPER (DPR-O) WILL INCREASE THE CFM (SA-F).

UNOCCUPIED MODE:

WHEN IN THIS MODE, WHILE THE ZONE TEMPERATURE (ZN-T) IS BETWEEN THE UNOCCUPIED HEATING (EFFHTG-SP) AND COOLING (EFFCLG-SP) SETPOINTS (INSIDE OF THE BIAS), THE PRIMARY AIR DAMPER (DPR-O) WILL BE AT THE MINIMUM CFM (SA-F). ON A RISE IN ZONE TEMPERATURE (ZN-T) ABOVE THE UNOCCUPIED COOLING SETPOINT (EFFCLG-SP), THE PRIMARY AIR DAMPER (DPR-O) WILL INCREASE THE CFM (SA-F) (IF AVAILABLE). ON A DROP IN ZONE TEMPERATURE (ZN-T) BELOW THE UNOCCUPIED HEATING SETPOINT (EFFHTG-SP), THE PRIMARY AIR DAMPER (DPR-O) WILL BE AT THE MINIMUM CFM (SA-F).

UNIT ENABLE:

A NETWORK UNIT ENABLE (UNITEN-MODE) SIGNAL WILL CONTROL THE MODE OF THE BOX.

VVT - SUPPLEMENTAL HEAT

OCCUPIED MODE:

WHEN THE ZONE TEMPERATURE (ZN-T) IS BELOW THE COOLING SETPOINT (EFFCLG-SP), THE PRIMARY AIR DAMPER (DPR-O) WILL BE AT THE MINIMUM CFM (SA-F). ON A RISE IN ZONE TEMPERATURE (ZN-T) ABOVE THE COOLING SETPOINT (EFFCLG-SP), THE PRIMARY AIR DAMPER (DPR-O) WILL INCREASE THE CFM (SA-F).

UNOCCUPIED MODE:

WHEN IN THIS MODE, WHILE THE ZONE TEMPERATURE (ZN-T) IS BETWEEN THE UNOCCUPIED HEATING (EFFHTG-SP) AND COOLING (EFFCLG-SP) SETPOINTS (INSIDE OF THE BIAS), THE PRIMARY AIR DAMPER (DPR-O) WILL BE AT THE MINIMUM CFM (SA-F). ON A RISE IN ZONE TEMPERATURE (ZN-T) ABOVE THE UNOCCUPIED COOLING SETPOINT (EFFCLG-SP), THE PRIMARY AIR DAMPER (DPR-O) WILL INCREASE THE CFM (SA-F) (IF AVAILABLE). ON A DROP IN ZONE TEMPERATURE (ZN-T) BELOW THE UNOCCUPIED HEATING SETPOINT (EFFHTG-SP), THE PRIMARY AIR DAMPER (DPR-O) WILL BE AT THE MINIMUM CFM (SA-F).

UNIT ENABLE:

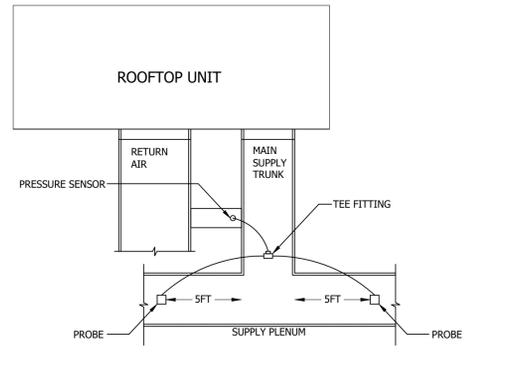
A NETWORK UNIT ENABLE (UNITEN-MODE) SIGNAL WILL CONTROL THE MODE OF THE BOX.

LOCATING THE STATIC PRESSURE SENSOR AND PROBE

LOCATE THE STATIC PRESSURE SENSOR IN THE CORRECT POSITION TO ENSURE YOU CAN CONTROL THE BYPASS DAMPER PROPERLY. BELOW DETAIL SHOWS THE CORRECT SENSOR LOCATION.

IN ADDITION, LOCATE THE DUCT STATIC PRESSURE PROBE IN AN AREA WHERE SUPPLY PLENUM PRESSURE IS STABLE. FOLLOW THESE GUIDELINES WHEN LOCATING THE PROBE:

- LOCATE THE PROBE AT LEAST 10FT DOWNSTREAM FROM THE ROOF TOP UNIT.
 - LOCATE THE PROBE AT LEAST 5FT DOWNSTREAM FROM THE FIRST TURN OFF OF THE SUPPLY PLENUM TRUNK.
 - AVOID LOCATING THE PROBE EXCESSIVELY FAR FROM THE SUPPLY PLENUM TRUNK OR PAST MULTIPLE ZONE TAPS.
- FOR A SUPPLY PLENUM TEE, LOCATE TWO PROBES AT LEAST 5FT DOWNSTREAM FROM THE MAIN SUPPLY TRUNK ON OPPOSING SUPPLY PLENUM BRANCHES. CONNECT THE PROBES WITH A TEE FITTING TO AVERAGE THE DUCT STATIC PRESSURE READINGS FROM THE TWO SUPPLY PLENUM BRANCHES, AS SHOWN BELOW.



PROJECT ORIENTATION:



SEAL:



NOTES:

ONLY LATEST APPROVED ISSUED FOR CONSTRUCTION DRAWINGS TO BE USED. DRAWINGS ARE NOT TO BE SCALED.

NO.	REVISION / NOTE	DATE
4	ISSUED FOR TENDER	FEB.18.26
3	RE-ISSUED FOR PERMIT	DEC.5.25
2	RE-ISSUED FOR PERMIT	NOV.17.25
1	ISSUED FOR PERMIT	MAR.14.25
NO.		

PREPARED FOR:



PROJECT:

**NEW CULTURAL CLUB
CROATIAN NATIONAL
HOME**

LOCATION:

**615 BARTON STREET
STONE CREEK,
ONTARIO**

DRAWING DESCRIPTION:

VVT SPECS - HVAC

CLIENT NUMBER: TRINITYENG PROJECT NUMBER:
- M24-0355

DRAWN: D.P. DESIGNED: A.A. APPROVED: A.A.

DATE:

MAY 15, 2024

SCALE: AS SHOWN DRAWING NUMBER:

DRAWING SIZE: ARCH D

(610mmx914mm)

M.08

of 11

FAN SCHEDULE												
TAG	LOCATION	MANUFACTURER	MODEL	TYPE	FUNCTION	AIR FLOW (CFM)	ESP (IN)	RPM	FLA/HP	V/PH/C	CONTROL	REMARKS
EF-1	UNIVERSAL W/R	REVERSOMATIC	CF-130	CEILING	EXHAUST	100	0.25	1,400	0.7	120/1/60	TIMER AND SENSOR	C/W MOUNTING BRACKET, BACKDRAFT DAMPER, AND WHITE POLYMERIC GRILLE. TIMER SET TO ON DURING HOURS OF OPERATION.
EF-2	MECH & ELEC. ROOM	CARNES	VCDD020C	CEILING	EXHAUST	200	0.25	740	1.8	120/1/60	REVERSE ACTING THERMOSTAT	CEILING MOUNTED FAN C/W MOUNTING BRACKETS, BACKDRAFT DAMPER, AND INLET BIRD SCREEN. PROVIDE RUBBER GROMMET VIBRATION ISOLATORS AT THE MOUNTING POINTS.
EF-3	-	-	-	-	-	-	-	-	-	-	-	UN-ASSIGNED.
EF-4	FEMALE W/R	CARNES	VCDD050I	INLINE	EXHAUST	450	0.5	990	2.2	120/1/60	TIMER AND SENSOR	INLINE EXHAUST FAN C/W MOUNTING BRACKET AND ACOUSTICAL LINING. TIMER SET TO ON DURING HOURS OF OPERATION.
EF-5	MALE W/R	CARNES	VCDD040I	INLINE	EXHAUST	350	0.3	875	1.4	120/1/60	TIMER AND SENSOR	INLINE EXHAUST FAN C/W MOUNTING BRACKET AND ACOUSTICAL LINING. TIMER SET TO ON DURING HOURS OF OPERATION.
EF-6	CUSTODIAN	REVERSOMATIC	CF-130	CEILING	EXHAUST	100	0.25	1,400	0.7	120/1/60	WALL SWITCH	C/W MOUNTING BRACKET, BACKDRAFT DAMPER, AND WHITE POLYMERIC GRILLE.
EF-7	LOUNGE	REVERSOMATIC	CF-130	CEILING	EXHAUST	100	0.25	1,400	0.7	120/1/60	WALL SWITCH	C/W MOUNTING BRACKET, BACKDRAFT DAMPER, AND WHITE POLYMERIC GRILLE.
EF-8	W/R	REVERSOMATIC	CF-130	CEILING	EXHAUST	75	0.35	1,400	0.7	120/1/60	TIMER AND SENSOR	C/W MOUNTING BRACKET, BACKDRAFT DAMPER, AND WHITE POLYMERIC GRILLE. TIMER SET TO ON DURING HOURS OF OPERATION.
EF-9	MECH. & ELEC. ROOM	CARNES	VCDD030C	CEILING	EXHAUST	300	0.375	940	2.7	120/1/60	REVERSE ACTING THERMOSTAT	CEILING MOUNTED FAN C/W MOUNTING BRACKETS, BACKDRAFT DAMPER, AND INLET BIRD SCREEN. PROVIDE SPRING TYPE VIBRATION ISOLATORS AT THE MOUNTING POINTS. FAN TO BE INTERLOCKED WITH FRESH AIR INTAKE MOTORIZED DAMPER.
EF-10	BASEMENT MECH. ROOM	CARNES	VCDD015C	CEILING	EXHAUST	130	0.5	710	1.4	120/1/60	REVERSE ACTING THERMOSTAT	CEILING MOUNTED FAN C/W MOUNTING BRACKETS, BACKDRAFT DAMPER, AND INLET BIRD SCREEN. PROVIDE SPRING TYPE VIBRATION ISOLATORS AT THE MOUNTING POINTS.
EF-11	KITCHEN HOOD EXHAUST	SUNAIR	SA-DU240HFA	ROOF	EXHAUST	5400	1.5	980	15.2	208/3/60	SWITCH	DIRECT DRIVE ROOF MOUNTED EXHAUST FAN C/W ODP MOTOR, GREASE CUP, 24" H INSULATED ROOF CURB, AND DISCONNECT SWITCH.
EF-12	KITCHEN DISHWASHER HOOD EXHAUST	SUNAIR	SA-DU33HFA	ROOF	EXHAUST	400	0.5	1108	4.3	115/1/60	SWITCH	DIRECT DRIVE ROOF MOUNTED EXHAUST FAN C/W TEAD-ECM MOTOR, GREASE CUP, 24" H INSULATED ROOF CURB, AND DISCONNECT SWITCH.
EF-13	DRYER BOOSTER	REVERSOMATIC	TLD-200	CEILING	EXHAUST	148	0.3	2,500	0.7	120/1/60	ON/OFF SWITCH ON THE UNIT	ONE INLET C/W MOUNTING BRACKET AND DAS 200 AMP. SENSOR TO RUN THE FAN WITH DRYER. PROVIDE RUBBER GROMMET AT THE MOUNTING POINTS.
EH-1	KITCHEN HOOD	SUNAIR	5424 SA-ND-2-PSP-F	-	-	-	-	-	-	-	-	OVERALL SIZE: 144" W X 54" D. EXHAUST RISER: 1 X 18" C/W FIRE SUPPRESSION SYSTEM. ALL DATA TO BE CONFIRMED AT TIME OF SHOP DRAWINGS.
EH-2	KITCHEN HOOD	SUNAIR	5424 SA-ND-2-PSP-F	-	-	-	-	-	-	-	-	OVERALL SIZE: 144" W X 54" D. EXHAUST RISER: 1 X 18" C/W FIRE SUPPRESSION SYSTEM. ALL DATA TO BE CONFIRMED AT TIME OF SHOP DRAWINGS.
EH-3	KITCHEN DISHWASHER HOOD	SUNAIR	4824-SA-VHB	-	-	-	-	-	-	-	-	OVERALL SIZE: 48" W X 48" D. EXHAUST RISER: 8" X 6" C/W FIRE SUPPRESSION SYSTEM. ALL DATA TO BE CONFIRMED AT TIME OF SHOP DRAWINGS.
CF-1	MAIN HALL	CANARM	CP48	CEILING	VENTILATION	7370	-	318	0.6	120/1/60	SWITCH	VARIABLE SPEED CEILING MOUNTED DESTRATIFICATION FAN.

NOTES:
1. DUCTWORK SHALL BE INSULATED FOR A MINIMUM OF 6'-0" (1.8M) FROM EXTERIOR WALL AS PER MECHANICAL SPECIFICATIONS.
2. ALL ROOF MOUNTED FANS MUST BE INSTALLED ON 24" HIGH ROOF CURBS WITH WATER PROOFED FLASHING UNLESS OTHERWISE NOTED.

GAS FIRED MAKE-UP AIR UNIT SCHEDULE															
SYMBOL	DUTY	MANUFACTURER	MODEL	SUPPLY AIR FLOW RATE (CFM)	ESP (IN)	HEATING		TEMPERATURE RISE (°F)	V/PH/C	MAX. FUSE SIZE (AMP)	M.C.A. (AMP)	FLA (AMP)	UNIT SIZE [L X W X H] (IN)	WEIGHT (LBS)	REMARKS
						INPUT (BTU/HR)	OUTPUT (BTU/HR)								
MUA-1	KITCHEN	SUNAIR	SA-A2-D.500-20D	5,130	0.5	508,622	467,932	90	208/3/60	30	18.8	15	135-7/8" X 79" X 36-3/4"	697	MAKE-UP AIR UNIT, 20" MIXED FLOW DIRECT DRIVE FAN, C/W 24" ROOF CURB, FILTERS - 2" PLEATED MERV 8, FRESH AIR INTAKE HOOD, MODULATING 15:1 TURNDOWN OF HEATING, 92% BURNER EFFICIENCY WITH A MAX. TURNDOWN RATIO OF UP TO 30 TO 1, DISCONNECT SWITCH, WEATHER PROOF CASING, MOTORIZED BACKDRAFT DAMPER. DUCT SMOKE SENSOR BY DIVISION 26. ALL DATA TO BE CONFIRMED AT TIME OF SHOP DRAWINGS.

NOTE:
1. ENERGY EFFICIENCY RATINGS TO CONFORM TO ASHRAE 90.1-2019 STANDARD FOR ENERGY CONSERVATION.
2. OUTDOOR UNITS TO BE COMPLETE WITH INLET HOOD W/ BIRDSCREEN, WEATHER PROOF ENCLOSURE AND WEATHER PROOF CONTROL PANEL.
3. UNIT VOLTAGE TO BE CONFIRMED ON SITE BY CONTRACTOR BEFORE ORDERING.

CONDENSER AND EVAPORATOR SCHEDULE															
TAG	MANUFACTURER	DUTY	MODEL	REFRIGERANT	SYSTEM CAPACITY (BTU/H)	FAN POWER (W)	CONDENSER AMBIENT (°F)	SUCTION TEMP (°F)	EVAPORATOR TD (°F)	MCA	MOC	V/PH/C	UNIT SIZE L x W x H (IN)	WEIGHT (LBS)	REMARKS
COND-1	KEEPRITE	KEG FRIDGE	KEZA009H-HT3D	R-448A	9,609	100	95	23.7	13.8	7.6	15	208/3/60	24-7/8" X 30-3/8" X 27-3/8"	188	C/W DISCONNECTION SWITCH, ELECTRIC DEFROST KIT AND FUSE PACK, DISCHARGE AIR HOOD, EXTENDED LEG KIT. HEATED/INSULATED RECEIVER SUCTION LINE ACCUMULATOR.
EVAP-1	KEEPRITE		KTM207ME-S2D	R-448A		2X60							0.7	15	208/3/60
COND-2	KEEPRITE	FREEZER	KEZA020L8-HT3D	R-448A	7,172	100	95	-18.8	8.3	11.8	20	208/3/60	24-7/8" X 30-3/8" X 27-3/8"	315	C/W DISCONNECTION SWITCH, ELECTRIC DEFROST KIT AND FUSE PACK, DISCHARGE AIR HOOD, EXTENDED LEG KIT. HEATED/INSULATED RECEIVER SUCTION LINE ACCUMULATOR.
EVAP-2	KEEPRITE		KTM309LE-S2D	R-448A		3X90							1	15	208/3/60

NOTE:
1. ENERGY EFFICIENCY RATINGS TO CONFORM TO ASHRAE 90.1-2013 STANDARD FOR ENERGY CONSERVATION.
2. OUTDOOR UNITS TO BE COMPLETE WITH INLET HOOD W/ BIRDSCREEN, WEATHER PROOF ENCLOSURE AND WEATHER PROOF CONTROL PANEL.
3. UNIT VOLTAGE TO BE CONFIRMED ON SITE BY CONTRACTOR BEFORE ORDERING.

ELECTRIC FAN HEATER SCHEDULE							
SYMBOL	MANUFACTURER	MODEL	POWER (KW)	V/PH/C	UNIT SIZE (L X W X H)	APPROX. WEIGHT (LBS)	REMARKS
FFH-1	OUELLET	OAC02007-T	2	347/1/60	16-1/8" X 22-1/16" X 4-5/16"	24	WALL FAN HEATER C/W BUILT-IN T' STAT BY DIV.26
FFH-2	OUELLET	OAC02007-T	2	347/1/60	16-1/8" X 22-1/16" X 4-5/16"	24	WALL FAN HEATER C/W BUILT-IN T' STAT BY DIV.26
FFH-3	OUELLET	OAC02007-T	2	347/1/60	16-1/8" X 22-1/16" X 4-5/16"	24	WALL FAN HEATER C/W BUILT-IN T' STAT BY DIV.26
FFH-4	OUELLET	OAC02007-T	2	347/1/60	16-1/8" X 22-1/16" X 4-5/16"	24	WALL FAN HEATER C/W BUILT-IN T' STAT BY DIV.26
FFH-5	OUELLET	OAC01507-T	1.5	347/1/60	16-1/8" X 22-1/16" X 4-5/16"	24	WALL FAN HEATER C/W BUILT-IN T' STAT BY DIV.26
FFH-6	OUELLET	OAC02007-T	2	347/1/60	16-1/8" X 22-1/16" X 4-5/16"	24	WALL FAN HEATER C/W BUILT-IN T' STAT BY DIV.26

NOTE:
1. ENERGY EFFICIENCY RATINGS TO CONFORM TO ASHRAE 90.1-2016 STANDARD FOR ENERGY CONSERVATION.

ELECTRIC BASEBOARD HEATER SCHEDULE							
SYMBOL	MANUFACTURER	MODEL	POWER (KW)	V/PH/C	UNIT SIZE (L X W X H)	APPROX. WEIGHT (LBS)	REMARKS
EBB-1	OUELLET	OPR1002	1	120/1/60	45-3/4" X 3-1/8" X 10-1/8"	26	C/W PEDESTAL KIT AND BUILT-IN T' STAT BY DIV.26
EBB-2	-	-	-	-	-	-	UN-ASSIGNED
EBB-3	OUELLET	OPR1002	1	120/1/60	45-3/4" X 3-1/8" X 10-1/8"	26	C/W PEDESTAL KIT AND BUILT-IN T' STAT BY DIV.26
EBB-4	OUELLET	OPR1002	1	120/1/60	45-3/4" X 3-1/8" X 10-1/8"	26	C/W PEDESTAL KIT AND BUILT-IN T' STAT BY DIV.26

NOTE:
1. ENERGY EFFICIENCY RATINGS TO CONFORM TO ASHRAE 90.1-2016 STANDARD FOR ENERGY CONSERVATION.

LOUVER SCHEDULE					
TAG	MANUFACTURER	MODEL	SIZE W X H	FUNCTION	REMARKS
LV-1	REVERSOMATIC	4000 E.A	12"x12"	EXHAUST	C/W BACKDRAFT DAMPER AND BIRD SCREEN, COLOR TO MATCH EXTERIOR COLORS.
LV-2	REVERSOMATIC	4000 E.A	12"x12"	EXHAUST	C/W BACKDRAFT DAMPER AND BIRD SCREEN, COLOR TO MATCH EXTERIOR COLORS.
LV-3	REVERSOMATIC	4000 E.A	12"x12"	INTAKE	C/W MOTORIZED DAMPER AND BIRD SCREEN, COLOR TO MATCH EXTERIOR COLORS.
LV-4	REVERSOMATIC	4000 E.A	12"x12"	EXHAUST	C/W BACKDRAFT DAMPER AND BIRD SCREEN, COLOR TO MATCH EXTERIOR COLORS.

NOTE:
1. LOUVERS SHALL BE CONSTRUCTED OF EXTRUDED ALUMINUM ALLOY WITH REINFORCING BASES AND BE A MINIMUM OF 50% OF FREE AREA
2. LOUVERS TO HAVE STORM TYPE BLADES AND SHALL BE COMPLETE WITH 50MM (2") WIDE FLANGED FRAMES AND BIRDSCREEN.
3. COLOUR SELECTION SHALL BE CONFIRMED BY THE ARCHITECT.
4. COORDINATE LOCATIONS WITH GENERAL CONTRACTOR PRIOR TO CONSTRUCTION.

AIR TERMINAL AND DOOR GRILLE SCHEDULE					
TAG	MAKE	MODEL	FUNCTION	MOUNTING SURFACE	REMARKS
S1	EH PRICE	SPD	SUPPLY	T-BAR	SPIRAL DUCT SUPPLY AIR GRILLE AT 22.5° C/W DAMPER/EXTRACTOR
S2	EH PRICE	520	SUPPLY	DRYWALL	SUPPLY AIR GRILLE C/W VOLUME DAMPER
S3	EH PRICE	SDS100	SUPPLY	DRYWALL	SDS100 - 2 SLOTS - 1" SLOT WIDTH LINEAR DIFFUSER C/W SDA INSULATED PLENUM. MOUNTING TYPE TO SUIT DRYWALL CEILING. LINEAR DIFFUSERS TO BE LOCATED 6" FROM WALL TO EDGE OF DIFFUSER.
R1	EH PRICE	85	RETURN	T-BAR/DRYWALL	RETURN AIR GRILLE C/W VOLUME DAMPER
E1	EH PRICE	535	EXHAUST	DUCT/CEILING	EXHAUST AIR GRILLE C/W VOLUME DAMPER
T1	NAIOL	61DGD-FR	TRANSFER	DOOR	FIRE RATED TRANSFER DOOR GRILLE, RATING TO MATCH WITH FIRE SEPARATION RATING.

NOTE:
1. THE COLOR OF GRILLES AND DIFFUSERS SHALL BE COORDINATED WITH THE ARCHITECT PRIOR TO PURCHASE.
2. COORDINATE TRANSFER AIR GRILLE LOCATIONS WITH GENERAL CONTRACTOR PRIOR TO CONSTRUCTION START.

ZONE DAMPER SCHEDULE			
SYMBOL	SIZE	CFM	REMARKS
ZD-A	8"Ø	250-350	EQUAL TO "JOHNSON CONTROLS" METASYS. ROUND DAMPER ASSEMBLY C/W TRANSFORMER, ROOMS SENSOR WITH 50FT LOOSE CONTROL WIRING AND REFER TO VVT SYSTEM CONTROLS SPECIFICATION.
ZD-B	10"Ø	400-550	
ZD-C	12"Ø	600-800	
ZD-D	16"Ø	1100-1300	
ZD-BP1	14"x12"	1400-1800	
ZD-BP2	16"x16"	2400-3000	

PROJECT ORIENTATION:



SEAL:



NOTES:
ONLY LATEST APPROVED ISSUED FOR CONSTRUCTION DRAWINGS TO BE USED. DRAWINGS ARE NOT TO BE SCALED.

NO.	REVISION / NOTE	DATE
4	ISSUED FOR TENDER	FEB.18.26
3	RE-ISSUED FOR PERMIT	DEC.5.25
2	RE-ISSUED FOR PERMIT	NOV.17.25
1	ISSUED FOR PERMIT	MAR.14.25

PREPARED FOR:



PROJECT:

**NEW CULTURAL CLUB
CROATIAN NATIONAL
HOME**

LOCATION:

**615 BARTON STREET
STONE CREEK,
ONTARIO**

DRAWING DESCRIPTION:

**SCHEDULE A -
HVAC**

CLIENT NUMBER: TRINITYENG PROJECT NUMBER: M24-0355

DRAWN: D.P. DESIGNED: A.A. APPROVED: A.A.

DATE: MAY 15, 2024

SCALE: AS SHOWN DRAWING NUMBER:

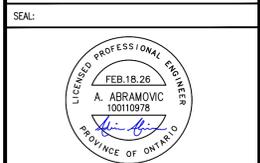
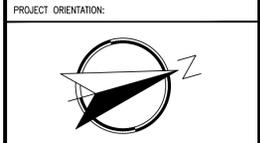
DRAWING SIZE: ARCH D (610mmx914mm) **M.09**

MINIMUM REQUIRED VENTILATION AND EXHAUST												
REFERENCE: ASHRAE 62.1 2019: TABLE 6-1, TABLE 6-4 AND TABLE 6-2												
ROOM IDENTIFICATION	ROOM AREA [FT ²]	OCCUPANT LOAD [PERSONS]	OCCUPANCY CATEGORY	PEOPLE OUTDOOR AIR RATE R _p [CFM / PERSON]	AREA OUTDOOR AIR RATE R _a [CFM / FT ²]	TOTAL VENTILATION RATE REQUIRED FOR ZONE [CFM]	AIR DISTRIBUTION CONFIGURATION	AIR DISTRIBUTION EFFECTIVENESS E _a	TOTAL OUTDOOR AIRFLOW REQUIRED V _{out} [cfm]	MINIMUM EXHAUST RATE [CFM / FT ²]	NUMBER OF UNITS	TOTAL EXHAUST RATE REQUIRED [CFM]
001 Vestibule	54		Food and Beverage Service, General: Corridors	0	0.06	3	Well-Mixed Air Distribution Systems	1.0	3	0.00	0	0
100 Vestibule	173		Food and Beverage Service, General: Corridors	0	0.06	10	Well-Mixed Air Distribution Systems	1.0	10	0.00	0	0
101 Main Lobby	894	22	Food and Beverage Service, General: Corridors	0	0.06	54	Well-Mixed Air Distribution Systems	1.0	54	0.00	0	0
103 Universal W/R	108		EXHAUST ONLY: Toilets - Public	0	0.00	0	Well-Mixed Air Distribution Systems	1.0	0	0.00	1	50
105 Female W/R	388		EXHAUST ONLY: Toilets - Public	0	0.00	0	Well-Mixed Air Distribution Systems	1.0	0	0.00	9	450
106 Male W/R	242		EXHAUST ONLY: Toilets - Public	0	0.00	0	Well-Mixed Air Distribution Systems	1.0	0	0.00	7	350
107 Main Hall	5043	493	Food and Beverage Service, General: Conference/meeting	5	0.06	2768	Well-Mixed Air Distribution Systems	1.0	2768	0.00	0	0
107A Storage	133		Food and Beverage Service, General: Occupiable storage rooms for liquids or gels	5	0.12	16	Well-Mixed Air Distribution Systems	1.0	16	0.00	0	0
107B Storage	150		Food and Beverage Service, General: Occupiable storage rooms for liquids or gels	5	0.12	18	Well-Mixed Air Distribution Systems	1.0	18	0.00	0	0
108 Custodian	89		EXHAUST ONLY: Janitor closets slop sink (as per OBC)	0	0.00	0	Well-Mixed Air Distribution Systems	1.0	0	0.00	1	50
109 Lounge	662	56	Food and Beverage Service: Bars, cocktail lounges	7.5	0.18	539	Well-Mixed Air Distribution Systems	1.0	539	0.00	0	0
110 Office	111	2	Office Buildings: Office space	5	0.06	17	Well-Mixed Air Distribution Systems	1.0	17	0.00	0	0
111 Kitchen	715	8	Food and Beverage Service: Kitchen (cooking)	7.5	0.12	146	Well-Mixed Air Distribution Systems	1.0	146	0.70	0	501
111A Bar	160	1	Food and Beverage Service: Bars, cocktail lounges	7.5	0.18	36	Well-Mixed Air Distribution Systems	1.0	36	0.00	0	0
112 Kitchen Storage	237		Food and Beverage Service, General: Occupiable storage rooms for liquids or gels	5	0.12	28	Well-Mixed Air Distribution Systems	1.0	28	0.00	0	0
113 WR	52		EXHAUST ONLY: Toilets - Private - Intermittent Operation	0	0.00	0	Well-Mixed Air Distribution Systems	1.0	0	0.00	1	50
200 Practice Room	711	15	Educational Facilities: Multiuse assembly	7.5	0.06	155	Well-Mixed Air Distribution Systems	1.0	155	0.00	0	0
201 Costumes	651	2	Food and Beverage Service, General: Occupiable storage rooms for liquids or gels	5	0.12	88	Well-Mixed Air Distribution Systems	1.0	88	0.00	0	0
203 Balcony	124		Food and Beverage Service, General: Corridors	0	0.06	7	Well-Mixed Air Distribution Systems	1.0	7	0.00	0	0
	11957	600				3914			3914			1451

References:
ASHRAE 62.1 2019: Table 6-1 Minimum Ventilation Rates in Breathing Zone, Table 6-2 Minimum Exhaust Rates and OBC 6.2.3.8(14)
OBC Table 3.1.17.1: Occupant Load

MINIMUM DUCT INSULATION R-VALUE, COMBINED HEATING AND COOLING SUPPLY DUCTS AND RETURN DUCTS							
Climate Zone	Duct Location						
	Exterior	Ventilated Attic	Unvented Attic Above Insulated Ceiling	Unvented Attic with Roof Insulation	Unconditioned Space ^a	Indirectly Conditioned Space ^b	Buried
SUPPLY DUCTS							
1	R-6	R-6	R-8	R-3.5	R-3.5	None	R-3.5
2 to 4	R-6	R-6	R-6	R-3.5	R-3.5	None	R-3.5
5	R-6	R-6	R-6	R-1.9	R-3.5	None	R-3.5
6 to 7	R-8	R-6	R-6	R-1.9	R-3.5	None	R-3.5
8	R-8	R-8	R-8	R-1.9	R-6	None	R-6
RETURN DUCTS							
1 to 8	R-3.5	R-3.5	R-3.5	None	None	None	None

^a Includes crawl spaces, both ventilated and nonventilated.
^b Includes return air plenums with or without exposed roofs above.
Reference: ASHRAE 90.1-2013 Table 6.8.2-2



NOTES:
ONLY LATEST APPROVED ISSUED FOR CONSTRUCTION DRAWINGS TO BE USED. DRAWINGS ARE NOT TO BE SCALED.

NO.	REVISION / NOTE	DATE
4	ISSUED FOR TENDER	FEB.18.26
3	RE-ISSUED FOR PERMIT	DEC.5.25
2	RE-ISSUED FOR PERMIT	NOV.17.25
1	ISSUED FOR PERMIT	MAR.14.25



PROJECT:
NEW CULTURAL CLUB CROATIAN NATIONAL HOME

LOCATION:
615 BARTON STREET STONEY CREEK, ONTARIO

DRAWING DESCRIPTION:
SCHEDULE B - HVAC

CLIENT NUMBER:	TRINITYENG PROJECT NUMBER:	
-	M24-0355	
DRAWN:	DESIGNED:	APPROVED:
D.P.	A.A.	A.A.
DATE:		
MAY 15, 2024		
SCALE:	DRAWING NUMBER:	
AS SHOWN	M.10	
DRAWING SIZE:	of 11	
ARCH D (610mmx914mm)		

ROOFTOP UNIT SCHEDULE																						
TAG	MANUFACTURER	MODEL	TONS (NOM.)	NOM. AIRFLOW (CFM)	REFRIGERANT	FRESH AIR		ESP (IN)	GAS HEATING		COOLING CAPACITY (BTU/HR)	MOTOR HP (NOM.)	RPM	MCA	MOC	V/PH/C	UNIT SIZE L x W x H (IN)	WEIGHT (LBS)	SUPPLY AIR L x W (IN)	RETURN AIR L x W (IN)	CONTROL	REMARKS
						%	CFM		INPUT (BTU/HR)	OUTPUT (BTU/HR)												
RTU-1	JOHNSON CONTROLS	KYG04E581AA5 G121A1	3.0	1,200	R-454B	20	240	0.6	112,000	90,000	40,200	2.4	1,048	8.2	15	575/3/60	74 X 48 X 33	565	12-1/8 X 17-3/4	25-5/8 X 10-7/8	CAV SYSTEM, AUTO T-STAT	DISCHARGE DOWN C/W TWO STAGE GAS HEAT, DISCONNECT SWITCH, WEATHER PROOF CASING, DRY BULB ECONOMIZER WITH HOOD, BELT DRIVE BLOWER, GFCI WITH COVER, DISCHARGE AIR, RETURN AIR AND OUTDOOR AIR TEMPERATURE SENSORS AND FILTERS.
RTU-2	JOHNSON CONTROLS	AD15N3BQ5E1 AFH12A3	15.0	6,000	R-454B	5-23	1385	0.6	400,000	324,000	191,100	2.3	780	27.3	35	575/3/60	129-3/4 X 88-3/4 X 49-1/4	2115	61-5/8 X 25-1/2	68 X 19-1/4	VAV SYSTEM, AUTO T-STAT	DISCHARGE DOWN C/W FOUR STAGE COMPRESSOR OPERATION, STAGED GAS HEAT, SINGLE ZONE VAV FAN OPERATION, DISCONNECT SWITCH, WEATHER PROOF CASING, ECONOMIZER WITH BAROMETRIC RELIEF, BELT DRIVE BLOWER, GFCI WITH COVER, DISCHARGE AIR, RETURN AIR AND OUTDOOR AIR TEMPERATURE SENSORS, AND FILTERS. FRESH AIR TO BE VARIABLE AND INTERLOCK WITH SPACE CO2 SENSOR.
RTU-3	JOHNSON CONTROLS	AD15N3BQ5E1 AFH12A3	15.0	6,000	R-454B	5-23	1385	0.6	400,000	324,000	191,100	2.3	780	27.3	35	575/3/60	129-3/4 X 88-3/4 X 49-1/4	2115	61-5/8 X 25-1/2	68 X 19-1/4	VAV SYSTEM, AUTO T-STAT	DISCHARGE DOWN C/W FOUR STAGE COMPRESSOR OPERATION, STAGED GAS HEAT, SINGLE ZONE VAV FAN OPERATION, DISCONNECT SWITCH, WEATHER PROOF CASING, ECONOMIZER WITH BAROMETRIC RELIEF, BELT DRIVE BLOWER, GFCI WITH COVER, DISCHARGE AIR, RETURN AIR AND OUTDOOR AIR TEMPERATURE SENSORS, AND FILTERS. FRESH AIR TO BE VARIABLE AND INTERLOCK WITH SPACE CO2 SENSOR.
RTU-4	JOHNSON CONTROLS	KYG06F581AA5 G121A1	5.0	2000	R-454B	22	440	0.6	145,000	116,000	64,600	2.4	1,144	11.5	15	575/3/60	74 X 48-7/8 X 40-1/2	646	12-1/8 X 17-3/4	25-5/8 X 10-7/8	VAV SYSTEM, VVT CONTROL	DISCHARGE DOWN C/W TWO STAGE GAS HEAT, DISCONNECT SWITCH, WEATHER PROOF CASING, DRY BULB ECONOMIZER WITH HOOD, BELT DRIVE BLOWER, GFCI WITH COVER, DISCHARGE AIR, RETURN AIR AND OUTDOOR AIR TEMPERATURE SENSORS AND FILTERS.
RTU-5	JOHNSON CONTROLS	KYG08F583AA5 G121A1	7.5	3,000	R-454B	22	660	0.6	220,000	176,000	100,400	2.4	786	17	20	575/3/60	87-1/8 X 61-5/8 X 48-1/2	990	14 X 28-3/4	12-5/8 X 36-3/8	VAV SYSTEM, VVT CONTROL	DISCHARGE DOWN C/W TWO STAGE COOLING, TWO STAGE GAS HEAT, VFD SPEED CONTROL, DISCONNECT SWITCH, WEATHER PROOF CASING, ECONOMIZER WITH BAROMETRIC RELIEF, BELT DRIVE BLOWER, GFCI WITH COVER, DISCHARGE AIR, RETURN AIR AND OUTDOOR AIR TEMPERATURE SENSORS AND FILTERS.

NOTE:
1. ENERGY EFFICIENCY RATINGS TO CONFORM TO ASHRAE 90.1-2013 STANDARD FOR ENERGY CONSERVATION.
2. OUTDOOR UNITS TO BE COMPLETE WITH INLET HOOD W/ BIRDSCREEN, WEATHER PROOF ENCLOSURE AND WEATHER PROOF CONTROL PANEL.
3. MAKE-UP AIR UNIT AND ROOF-TOP UNIT TO BE INTERLOCKED WITH KITCHEN HOOD EXHAUST FANS AS REQUIRED BY NFP96.
4. UNIT VOLTAGE TO BE CONFIRMED ON SITE BY CONTRACTOR BEFORE ORDERING.
5. AS PER NFPA 90A, UNITS WITH AIR CAPACITIES OF 2000 CFM OR GREATER SHALL HAVE SMOKE SENSING DEVICE INSTALLED ON THE SUPPLY DUCT DOWNSTREAM OF ANY BRANCH DUCTS AND UPSTREAM OF ANY BRANCH DUCTS AND WIRED TO STOP THE SYSTEM IN ACTIVATION.
6. FRESH AIR INLET CONNECTION IN A AIR RETURN SYSTEM, ALL VOID SPACES IN ROOF CURBS TO BE PACKED WITH ROXUL ACOUSTIC INSULATION.
7. THE RETURN AIR DUCT TO THE UNIT SHALL BE C/W (25MM) 1" THICK ACOUSTIC LINER, APPLIED AS ABOVE, FROM PLENUM PICK UP OR 4.5MM (15'-0") WHICHEVER IS SHORTER, UNLESS INDICATED OTHERWISE.
8. ACOUSTIC DUCT LINER (25MM) 1" THICK SHALL BE APPLIED TO SUPPLY DUCT TO A DISTANCE OF 4.5M (15'-0") DUCT RUN FROM THE SUPPLY FAN DISCHARGE UNLESS INDICATED OTHERWISE.
9. AC-UNIT GRATER THAN STON SHALL BE COMPLETED WITH SMOKE DETECTOR MOUNTED IN R/A DUCT.
10. ALL RTU UNITS EXCEPT VVT CONTROLLED UNITS, TO BE PROVIDED WITH HEATING/COOLING PROGRAMMABLE AUTO CHANGE OVER THERMOSTAT UNLESS NOTED OTHERWISE.
11. ALL ECONOMIZERS TO BE DUAL ENTHALPY CONTROLLED.
12. ALL AIR HANDLING UNITS MUST BE INSTALLED ON 24" HIGH ROOF CURBS WITH WATER PROOFED FLASHING UNLESS OTHERWISE NOTED.
13. ALL UNITS TO COME WITH DISCONNECT SWITCH, PHASE MONITOR, BAGNET CARD WITH BACKUP BATTERY IN CASE OF POWER FAILURE.

MECHANICAL NOTES AND SPECIFICATIONS

GENERAL REQUIREMENTS FOR MECHANICAL WORK

1. SCOPE OF WORK
 - (a) The General Requirements of the Contract Documents, and the Supplementary Requirements for Mechanical Work, shall form an integral part of this Specification.
 - (b) This General Specification shall apply to and form a part of each of the sections covering Mechanical and Electrical Trades work.
2. RESPONSIBILITY OF BIDDERS
 - (a) Each Contractor before tendering, shall attend and examine the site, the Architectural, Structural, Mechanical, Electrical and any other relevant documents, and fully familiarize himself with the designer's intent, so that the tender price will include everything necessary for the proper completion of the work in accordance with the intent of the documents. This includes reviewing the architectural drawings for colours and finishes of grilles and other components associated with achieving the aesthetic of the space as outlined by the architect and/or interior designer. Obtain the approval of the Engineer, Architect and Project Manager before any alterations to the work indicated.
 - (b) Ensure that all products and materials necessary for the execution of the contract can be brought into the spaces where they are to be located, either through specified openings or partially assembled. Any cutting or restoration work required, due to failure to accomplish this, will be the responsibility of this contractor.
 - (c) Bidders shall not rely on any verbal clarification of the drawings or specifications. Any questions or clarifications shall be referred to the Engineer at least five (5) working days prior to completion of bidding to allow for issuance of an addendum.
 - (d) Delivery, storage and handling of materials and equipment is the responsibility of the contractor.
 - (e) All materials removed become the property of the Contractor and must be disposed of in conformance with municipal, provincial, federal and Workers Compensation Board requirements.
 - (f) If conflicts occur between mechanical drawings and applicable codes or the requirements of the local authority having jurisdiction, the latter requirements shall govern.
 - (g) The contractor shall base all bids ONLY on the approved current versions of the ISSUED FOR TENDER drawings or ISSUED FOR CONSTRUCTION drawings. Any resulting extras from bids, and the subsequent executed contracts, which were prepared based on any other sets of drawings shall be borne solely by the contractor.
3. RELATIONSHIP TO OTHER TRADES
 - (a) The Contractor shall confer with other trades working in the area, to ensure that his installation will be the result of co-operation between all parties. All devices must be accessible for service, and the recommendations of the equipment suppliers shall govern.
 - (b) Ensure that all work will be installed within the prescribed limited of the building, such as ceiling heights, and notify the General Trade of any requirements for inserts, sleeves, openings, curbs and bases in sufficient time to have the items completed in the normal course of construction.
 - (c) Confirm with the Electrical trade, the available electrical power supply characteristics, before finalizing equipment orders. No compensation will be allowed to change any device due to this contractor's failure to verify the supply.
 - (d) All newly installed piping, ductwork, or equipment must have a minimum clearance of 3" from underside of roof decking.
4. SUBMITTAL / SHOP DRAWINGS AND ALTERNATIVE EQUIPMENT
 - (a) This review is for General conformity only and does not relieve the supplier and/or subcontractor from providing the necessary details to meet the design intent.
 - (b) Provide electronic copies of submittal/shop drawings for each piece of equipment to be used in construction to the Engineer for review. The contractor shall verify that the submittal/shop drawings correctly identify the equipment that will be supplied, that the equipment will fit the space allotted, and perform the service intended.
 - (c) Before submission, all submittal/shop drawings must be checked for accuracy and the inclusion of all necessary details such as: project identification, item labels (tags), clear indication of which item is being submitted (e.g. Model) and all associated accessories or features associated with the submission. Shop drawings/submittals without this information and that are confusing, unclear, or ambiguous will be rejected and considered as not approved.
 - (d) Equipment described either generically or by brand name is to establish the minimum standard required for the installation. Alternative equipment may be suggested by the bidder, but the equivalence shall be determined by the Engineer. Bidders must tender on the basis of the specified equipment, and if alternatives are proposed, they will be considered on their own merits, after the close of tenders. Any lowering of the price based on alternative suppliers will be permitted with the savings being passed to the Owner.
 - (e) Any equipment installed without prior acceptance shall be subject to rejection.
5. CONSTRUCTION SUPERVISION
 - (a) All work shall comply with the governing Codes and local requirements. Any items required to accomplish this, whether explicitly noted or not, shall be provided.
 - (b) Where the Authority Having Jurisdiction (AHJ) person requests items not deemed to be included, the matter shall be immediately referred to the Engineer for a ruling. No extra will be considered if the work done by the Contractor to satisfy such a request, could have been avoided by discussion between the Inspector and the Engineer.
 - (c) Provide notice to AHJ as required for the progress of the project, and ensure that such inspections are carried out, before work is covered.
 - (d) Any changes or alterations required by AHJ shall be rectified at the contractor's cost.
 - (e) During the course of construction, the Engineer will conduct field reviews as deemed necessary to confirm compliance with specifications.
 - (f) The Contractor is to contact the Engineer a minimum of 48 hrs prior to concealing any piping and ductwork to determine if a field review is necessary and prior to performing any testing procedures to allow the Engineer to witness test.
6. CERTIFICATES, PERMITS AND FEES
 - (a) Obtain all required permits, and pay all inspections fees, except where specifically noted to the contrary.
 - (b) Furnish to the Owner any certificates that may be necessary as evidence that the work as installed conforms to all the laws and regulations of those authorities having jurisdiction. Before final certificates are issued, make these alterations that are required by the authority having jurisdiction, and accepted by the Engineer as a law, or regulation that should have been followed by the contractor.
7. GUARANTEE
 - (a) Guarantee all material and workmanship for a period of two (2) years from the date of certified substantial completion by the Owner, or his authorized agent. This shall not supersede any warranties for specific items of equipment, which may be for a longer term. This warranty shall be in writing and shall include written copies of factory warranties.
 - (b) The cost of repair of damage to any other work, caused by the failure of either material or workmanship within the period covered by the guarantee noted in (a) shall be included in this warranty.
 - (c) Where equipment is put into operation prior to completion of the work the period of guarantee covering such equipment shall commence as noted in item 8(a) above. The putting into operation of any equipment prior to completion of the work shall only be with written approval of the Engineer and Owner. No equipment shall be started up without first ascertaining that all systems and services associated with its operation are functioning and that responsibilities for equipment maintenance have been arranged.
8. DRAWINGS
 - (a) The drawings produced by the Engineer are intended to be diagrammatic. They are not intended to show every item in its exact location or all the details of the equipment. The contractor shall verify the actual dimensions of the equipment proposed to ensure that the equipment will fit in the available space with adequate space for maintenance.
 - (b) The drawings are issued for the express purpose of obtaining tenders for the work and for the erection of the systems described in the scope of work to be done. Unless specifically shown, the responsibility for the installation and workability of the system(s) rests with the Contractor.
 - (c) Drawings, specifications, diagrams and schedules are complementary, each to the other, and what is required by one, to be binding as if required by all.
 - (d) Should any conflict or discrepancy appear between documents, which leaves doubt as to the intent or meaning, obtain guidance or direction from the Engineer. Where necessary, the Contractor shall prepare interference drawings to ensure that the installation will be coordinated with all services to be installed in the area. The Engineer and other Professionals of Record may be required to approve of these proposals.
 - (e) Install piping, conduit or wire conductors and fixtures not shown or indicated diagrammatically in schematic or riser diagrams, to result in an operational assembly or system. Install components to physically conserve headroom, to minimize furring spaces, or obstructions. Locate devices with primary regard for convenience of operation and usage.
 - (f) Examine all discipline drawings, specifications, and schedules and related Work to ensure that Work can be satisfactorily executed. Conflicts or perceived additional work, beyond work described, notify the Engineer.
 - (g) The contractor shall refer to the architectural edge of slab drawings for the exact location of equipment, fixtures and penetrations. Engineering drawings provide the general design intent and are therefore not dimensioned. Refer to architectural drawings for dimensions.
 - (h) It is the contractor's responsibility to record red lines on the construction drawings and plans. The contractor shall convert the record drawings to electronic AutoCAD (latest version) drawing format and provide a copy to the Engineer and Owner.
9. RESPONSIBILITY AND LIABILITY
 - (a) Notify the Engineer of any discrepancies for inconsistencies and abide by the decision of the Engineer. Failure to notify the Engineer will not relieve this Contractor of the responsibility to provide a fully working system.
 - (b) This contractor shall correct any deficiencies noted by the owner or engineer at the contractor's cost.
10. OPERATOR TRAINING AND INSTRUCTIONS
 - (a) Provide complete operating and Maintenance instructions for all equipment supplied, complete with parts lists and the names of the suppliers.
 - (b) Provide a written description of the systems and the operating characteristics, for use by the system operators/maintenance personnel, and to instruct the users how to set thermostats, fan control switches, etc. Consult the Engineer when preparing this instruction sheet, to ensure that the system will be operated as intended.
11. ELECTRICAL WIRING AND CONTROLS
 - (a) All power wiring for all mechanical equipment shall be done by Division 26 - Electrical, except where specifically noted otherwise.
 - (b) All electric heaters to be supplied and installed by Division 26 - Electrical.

- (c) The Mechanical division shall provide all starters, relays, control devices, and any built-in safety switches. The Electrical will provide all field-mounted safety disconnects.
 - (d) The Mechanical division shall provide all connections and wiring for controls, and interlocks (control wiring).
 - (e) All electrical devices shall be Canadian where possible and all motors up to 1/2 HP shall be single phase, larger motors 3 phase, except as noted. CONFIRM ALL ELECTRICAL CHARACTERISTICS ON SITE.
12. COMPLETION, TESTING, BALANCING AND ADJUSTMENTS
 - (a) Certify to the Engineer that all systems have been completely installed per the documents, set in operation, and adjusted to the requirements of the project.
 - (b) Provide a Balancing Report for all air and hydronic systems, which has been prepared by an INDEPENDENT Testing company approved by the Engineer. Record model and serial numbers for all equipment on report.
 - (c) Replace all filters, and any indicator lights that have burned out, and lubricate all rotating devices immediately prior to turn over to the Owner or his agent.
 - (d) Touch up or repaint as necessary, all scratches or other finish defects, that have occurred on any devices supplied under this contract.
 13. ACCESS DOORS AND FIRE STOPPING
 - (c) Provide adequately sized access doors to permit servicing of any mechanical device, cleanout, check valve, etc. The doors will be installed by the Trade providing the surface where the door is to be located. This Contractor shall be fully responsible for accurately locating the door, considering all obstructions.
 - (d) Provide sleeves for pipes passing through walls and floors where pipe movement is possible. Use Schedule 40 pipe sections for masonry walls, large enough to accommodate pipe insulation. Floor sleeves through drainable floors shall extend up above the finished floor level.
 - (e) Fire stop all sleeves passing through fire separations with an approved fire stopping material, and make waterproof. Provide escutcheons for all exposed penetrations through walls, and floors as directed.
 14. WORKMANSHIP
 - (a) Only first class workmanship will be accepted, not only with regards to safety, efficiency, durability, etc., but also with regards to the neatness of detail. All pipe work shall be lined up parallel, or at right angles to the building walls where possible. Equipment must be accurately set, plumb and level, and all hangers must be in true vertical alignment. In general, the entire work shall be first class and workman like and present a neat clean appearance upon completion.

PLUMBING AND DRAINAGE

1. WORK INCLUDED
 - (a) This Contractor shall do all plumbing, drainage, and fire protection work, including all underground services within the building lines, except where specifically noted otherwise. Work to include all Domestic and DWV testing as required by OBC 7.3.6 and 7.3.7. Remove all obsolete piping from the site, and cap all unused services.
2. SERVICE CONNECTIONS
 - (a) Provide all work from the existing service connection points and coordinate on site exact locations of any existing service points to the Engineer as to the exact location. Start all drain work at the connection point to ensure that connection provided by the existing service will be at an elevation equal to or lower than the design.
3. DRAINAGE SYSTEMS
 - (a) Provide complete drainage systems as shown on the drawings and/or modified as required, all as noted.
4. PIPE AND FITTINGS FOR PLUMBING AND DRAINAGE
 - (a) Unless otherwise noted, all buried solid drain piping shall be SDR-35 PVC pipe. When located on unstable soil, special bedding in reinforced concrete shall be used.
 - (b) All weeper tubing shall be corrugated and perforated HDPE tubing with filter sock. Tubing shall be Armtec Big "O" or approved equal.
 - (c) All above ground domestic water piping shall be Certified copper type "L", CPVC certified to CAN/CSA-B137.6 for CPVC Pipe and Fittings for Hot and Cold Water Distribution Systems (IPEX AquaRise or equal alternate), or PE-XA certified as a system by CSA conforming to CAN/CSA B137.5 (Upon or equal alternate) piping can also be used where permitted by local codes. Drain, waste and vent piping shall be IPEX System 15 or IPEX System XFR (or equal alternate), see specifications below. Where piping runs in return air plenum or penetrating through fire rated wall, piping shall be copper, Uponor PEX-A, cast iron hubless (M) depending on size, or System XFR, see specifications below. All rain water leaders shall be hub & spigot cast iron with caulked joints and hub support at each floor, or System 15 or System XFR (or equal alternate), see specifications below
 - *Sanitary and Storm Drainage System*
Pipe and Fitting Requirements:
(O.B.C. 3.1.5.16 Combustible Piping Materials)
In compliance with the Ontario Building Code 7.2.5.12, this pipe and fitting system shall be Tested and Certified to CAN/CSA-B181.2 for Drain, Waste and Vent applications. In addition, in compliance with the requirements outlined in the O.B.C. 3.1.5.16, when installed in buildings Classified as low-rise non-combustible, this pipe and fitting system shall be Tested and Listed to CAN/ULC-S102.2-M and have a "flame-spread rating" not more than 25 (IPEX System 15 or equal alternate). Further, when installed in plenums as noted by O.B.C. 3.6.4.3 (1a) or buildings Classified as High Building as noted by O.B.C. 3.2.6 or parking garages, this pipe and fitting system shall also have a smoke developed classification not more than 50 (IPEX System XFR or equal alternate).
 - (d) All sewer lines shall be graded as shown on the drawings and inside the building drains shall be sloped at not less than 1%, except where noted. Flush all water lines after installation.
 - (e) Label all piping with acceptable identification system. All valves to be tagged and all equipment to be identified with Lama-cold Labels (and matching electrical disconnect switch where applicable). All identification to be neat and legible and agree with labels in maintenance manuals. Provide sufficient identification markers & arrows for easy identification of all piping in any location.
 - (f) All pipe sizes are based on type L copper piping. Any changes to the type of piping used may result in different pipe sizes. Contractor to notify engineer of pipe material change. If no notification is provided, the Contractor is responsible for re-sizing pipes based on pipe material used.

ROOF AND FLOOR DRAINS

- (a) All floor drains shall be cast iron floor drains complete with sump, adjust-to-level strainer, and double drainage flange with weep holes and primer connection. Strainers shall be polished bronze 130mm diameter in all areas. Floor drains for wet areas with membrane floor finish such as "Altro" shall have membrane clamp integral with the drain and strainer as above.
- (b) All floor drains shall be primed and vented to Code requirements through the use of a proper trap seal primer device. Suggested trap primer make P.P.P.Inc., model PO-500 automatic trap seal primer valve, serving individual or remote area drains with 1/2" (12.7mm) NPT connections with strainer and integral backflow preventer and vacuum breaker.

VALVES

- (a) Provide isolation water valves for each fixture, group of fixtures, and each main.
- (b) Valves shall be certified for the use, and minimum 150 psi pressure rated, except where noted otherwise.
- (c) Wall hydrants or hose bibs shall be with detachable key and with inside stop and waste valve located in common area.
- (d) Wherever isolating valves are located behind wall finishes, provide suitably sized access doors in the proper location to permit access.
- (e) Isolation valves used on Expansion Tanks shall have a drain.

PIPE SUPPORTS

- (a) Provide necessary hangers, rods, concrete inserts and supports to properly secure piping and ensure that required grading is maintained, vibration is minimized, and to provide for movement due to expansion and contraction and to protect against movement due to earthquakes.
- (b) Pipe supports shall be provided at maximum 8' intervals, more frequent intervals for smaller sizes. Where structural members are not spaced accordingly, provide intermediate support members as required.
- (c) Hangers shall be clevise type with threaded rod supports fastened into the structure. Isolate pipe from hanger where dissimilar materials exist such as copper on steel or aluminum hanger straps. Perforated strap material shall not be accepted under any circumstances. Where hangers are supporting large diameter pipes subject to lateral movement provide spring isolation.
- (d) Vertical piping shall be supported at each floor, and all elbows at the bottom of, or offset in stacks shall be independently supported to eliminate longitudinal force in the M) clamp. Use riser clamps to fasten the pipe, and isolate the clamp from bearing on concrete with neoprene pads.
- (e) Where supported pipe is insulated the hangers are either to support the pipe around the outside of the insulation with a sleeve and sleeves surrounding the lower half of the insulation or alternately, the insulation is to be completely enclosed around the hanger (where acceptable to the Engineer). Where dissimilar metals are used, an approved wrap/covering of the hanger/support must be used.

EXPANSION COMPENSATION

- (a) Make adequate provision for pipe expansion through the use of pipe loops with anchors at the appropriate points, expansion joints and use swing offset take-offs at each branch.
- (b) Make sure that pipes are free of structure so that they can move without noise.
- (c) Provide anchors in all horizontal piping networks to constrain overall movement, and prevent branch breakage.

EXPANSION TANKS

- (a) Install all expansion tanks with an isolation valve and with a drain installed between the isolation valve and the expansion tank to allow for isolating tank and checking pressure of tank charge.
- (b) The contractor is responsible for setting/adjusting the pressure of the charge in all expansion tanks to suit the system pressure being connected into. The contractor is to isolate the tank and open the drain to ensure that pressure of

- expansion tank charge is being measured/set (as per manufacturer's recommendations) and not the piping system pressure.
- (c) All domestic hot water expansion tanks to be ASME rated (unless otherwise noted) with tank pressure selected to suite the system pressure required, and tanks to be suitable and rated for domestic water application.
 - (d) Install all tanks to the manufacturer's recommendations including installing at acceptable tank angle for proper operation.

CLEANOUTS

- (a) Provide cleanouts at every change in direction, ends of lines and wherever else in necessary for the proper maintenance of the drainage system. Cleanout spacing shall not exceed 50' on all pipe sizes up to 4" and 100' for larger sizes.
- (b) Extend all cleanouts in buried drains up to the floor level, and provide bronze screw cap, or special cover for tile or carpet insert as directed on site. Clarify with the Architect prior to ordering.
- (c) For stack cleanouts, provide Barrett style at the base of the stack, and ensure accessibility by locating cover on proper side of stack. Provide access door as required.

TRAPS AND VENTS

- (a) Provide every fixture and drain with a proper trap and vent as required by the Code. Provide certified flashing cone fitting for each vent penetrating the roof.

SHOCK ABSORBERS

- (a) Provide "shockstops" at the top of all risers, and in the water piping, hot and cold, at each group of fixtures.

DOMESTIC HOT WATER SYSTEM

- (a) Provide system as shown on the drawings, complete with all required fittings, pumps, tanks, and heaters etc. Vents will be provided by Heating Contractor.
- (b) Recirculation System: All piping to be minimum 3/4" in size, designed and operated at 2fps in velocity as well as under 140°F in temperature.

PLUMBING FIXTURES

- (a) Refer "Plumbing Fixture Connection Schedule" for specifications
- (b) Provide plumbing fixtures and trim and as shown on the plans. This Contractor shall also obtain a copy of the latest Architectural and Interior Design plans for exact type and quantity of plumbing fixtures. Any discrepancies between the plans are to be reported to Engineer at once.
- (c) Provide thermostatic mixing valve on all lavatory and sinks when not on main hot water supply. "Lawler" # TMM-1000 Mechanical Mixing Valve with Thermostatic Limit Stop, with temperature adjustment dial and with integral back checks. Set valve temperature at 115°F (46° C), shut-off temp. at 120° F (48.8° C). Mixer installed in H & CW supplies to provide tempered water to hot side of faucet.
- (d) All fixtures shall be new and free from flaws or blemishes. All finished surfaces shall be clear, smooth and bright and guaranteed not to craze, colour or scale. All visible parts of all fixtures including faucets, escutcheons, of the trimmings wastes, strainers, traps, supplies, etc., shall be chrome plated unless otherwise noted.
- (e) Fixtures shall be complete with all accessories, supplies, frames, all hangers, etc. Fixtures shall be accurately installed to structure and lavatories shall be supplied with steel brackets accurately attached to masonry walls.

PIPE INSULATION

- (a) Compliance: Materials shall conform to Flame Spread and Smoke Developed requirements of the Ontario Building Code. Pipe Insulation shall be Greenguard Certified
- (b) All domestic cold water piping shall be insulated with thermal cell insulation to prevent condensation on the piping.
- (c) All domestic hot water piping shall be insulated as per ASHRAE 90.1-2013.
- (d) All horizontal storm piping located in ceilings to be insulated the full length of the horizontal pipe to limit potential damage due to condensation as per OBC 7.3.5.6. Protection from Condensation.

PIPE SLEEVES

- (a) Provide sleeves for all piping passing through walls or floors of a sufficient size to accommodate insulation.
- (b) Sleeves for wet shall extend 6" above the floor level to prevent water damage to the insulation.
- (c) Contractor shall provide fire-stop systems for all piping, at all penetrations through fire-rated separations tested and listed in accordance with CAN/ULC-S115.

ACCESS PANELS

- (a) Access panels to be 8"x8" for clean-out access and for hand entry (provide larger where required for appropriate access, to allow for full range of movement, etc.). Doors to open 180 degrees, have rounded safety corners, concealed hinges, screwdriver latches and anchor straps. For special areas such as tiled or marble type surfaces use stainless steel with brushed satin or polished finish. For other areas use prime coated steel.
- (b) Access panels required in fire partitions/separations shall be U.L.C. approved suitable for the structure and orientation in which they are to be mounted.

HEATING, VENTILATING AND AIR CONDITIONING

1. WORK INCLUDED

- (a) This contractor shall do all heating, ventilation and air conditioning work as shown on the drawings, including all forced insulation, flue gas vents, and provisions for any gas fired equipment required by the manufacturer for a fully functioning system.
- (b) Provide all gas piping, thermostatic controls, interlocking devices, damper controls and wiring for them, except as may be specifically noted.
- (c) Label all piping and all duct-work with acceptable identification system. All valves to be tagged and all equipment to be identified with Lama-cold Labels (and matching electrical disconnect switch where applicable). All identification to be neat and legible and agree with labels in maintenance manuals. Provide sufficient identification markers & arrows for easy identification of all piping in any location.
- (d) Install all condensate piping required for all new equipment as per manufacturer's instructions.

2. WORK NOT INCLUDED

- (a) Power wiring to all equipment and provision of safety disconnects, EXCEPT where the piece of equipment comes with a built-in disconnect provided as a part of the package.

3. TESTING, START-UP AND GUARANTEE

- (a) Start up all systems in conjunction with manufacturer's representative. Log all operating conditions such as temperature rise, air volume and pressure. Provide associated reports to the Engineer. Balance air systems to within 5% of design.
- (b) Lubricate all equipment, change filters and any indicator lamps, and provide a warranty letter to the Owner recording the date of start and the duration of warranty.
- (c) Warranty on all systems is one full year parts and labor, and an additional one year on all refrigeration systems including labor.

- (d) Performs tests on all piping as required by Authority Having Jurisdiction. Piping Tests as follows:
 - Test hydronic piping systems to 1½ times maximum operating pressure.
 - Test ground source field piping as specified in ground source specification.

4. HEATING & VENTILATING UNITS

- (a) Provide units as shown on the drawings complete with discharge modulating thermostat with electronic modulation gas valve for smooth linear discharge temperature. As per NFPA 90A, units with air capacities of 2000 cfm or greater shall have smoke sensing device installed on the supply duct downstream of the air filters and upstream of any branch ducts, and wired to stop the system on activation. Provide factory standard high temperature cutoff limit, all to suit AGA requirements.
- (b) Thermostat mounting height shall be 1,200 mm above finished floor as per OBC 3.8.1.5.(a)(i).
- (c) Make sure that unit will not draw in air from exhaust fans or gas or plumbing vents. If this is a possibility, extend the vents to maintain 10 feet above the unit.

5. DUCTWORK

- (a) Ductwork shown is diagrammatic and locations shall be adjusted to suit site conditions. All metal shall be prime coat galvanized cold rolled steel with gauges and construction per SMACNA and ASHRAE standards.
- (b) Where ducts are acoustically lined, duct sizes shown are net.
- (c) Ducts shall be supported using angle iron trapeze hangers with threaded rod supports. 18ga. Strips are acceptable for ducts less than 18" longest side.
- (d) Elbows shall be round throat where possible with one duct width radius. Square throat or back elbows shall only be used where space does not permit standard elbows and turning vanes shall be installed.
- (e) All take-offs shall be fitted with manual balancing dampers to ensure proper balancing of airflow through all terminals. Manual balancing dampers to come with factory mounted louver hand quadrant and shall be expanded throat type, with exception of spin-in fittings which are acceptable for diffused branches.
- (f) Flex ducts shall not exceed 3m (10 ft) in length, be supported every 5ft and shall not be used in lieu of rigid elbows or fittings. Where flex ducts connect to a diffuser, a metal elbow shall be mounted on the diffuser and connected to the duct, to provide equal flow out of the diffuser.
- (g) Provide flex connections to all pieces of equipment, and where the unit is outside, provide a rain shield over the top of the connection. For exterior ducts, break the duct on top to provide positive rain shedding, and brace from inside if necessary.
- (h) Supply duct or return ducts located in an unconditioned space or outdoors shall have all joints of the ductwork sealed to a Class A seal level in accordance with the SMACNA, "HVAC Duct Construction Standards – Metal and Flexible". (OBC 6.2.4.3.(11))
- (i) Supply duct located in a conditioned space shall be sealed to a Class C seal level in accordance with the SMACNA,

"HVAC Duct Construction Standards – Metal and Flexible". (OBC 6.2.4.3.(12))

DUCT INSULATION

- (a) All exhaust ductwork (with the exception of commercial kitchen exhaust ductwork, which must comply with NFPA 96) shall be externally wrap with 25mm (1") thick fiber glass vinyl jacket insulation for a minimum length of 6'-0" (1.8m) from exterior wall or insulated the entire length when passing through unheated space. Insulation sleeve may be used in place of aforementioned insulation if approved for application. Minimum insulation thermal resistance of RSI 0.5 required (OBC 9.32.3.10(3)).
- (b) Intake ducts carrying un-tempered outdoor air passing through heated space shall be insulated a minimum of RSI 0.5 if the duct is less than 3m length. If greater than 3m length, intake duct shall be insulated with vapour barrier as per O.B.C. Table 9.32.3.10A for associated outdoor design air temperature as per 5B-1. (OBC 9.32.3.10(4))
- (c) All ducts handling outside air shall be insulated for the entire length of duct.
- (d) Insulate all supply air and return air ductwork with 2" thick insulation c/w vapour barrier inside attic space (typical for all ductwork routed throughout attic) to achieve a minimum thermal resistance of RSI 2.1 (R-12) as per OBC 6.2.4.3(10)
- (e) All exterior ductwork shall have 1" (25mm) mold proof acoustic insulation inside duct and shall be covered with 2" thick rigid thermal insulation c/w vapor barrier and covered with 26 ga. Galvanized steel, 22 ga. Aluminum or Aluma-Clad along the top and sides of the duct, and extending below the insulation but clear of water ponding on the roof. Tie the sections together to ensure stability of the final cladding. Provide all necessary supports for exterior ductwork before thermal covering is installed.
- (f) All ductwork from VVT terminal up to roof top Air conditioning unit shall be of medium pressure duct standard.
- (g) All air conditioning ductwork shall be sealed with high pressure duct sealer.
- (h) All supply ducts and return ducts located in an unconditioned space or outdoors shall be sealed to Class A seal level as per OBC 6.2.4.3.(11)
- (i) All supply ducts and return ducts located in a conditioned space shall be sealed to Class C seal level as per OBC 6.2.4.3.(12).

HYDRONIC SYSTEMS AND PIPING

- (a) Due to on-site conditions and slight changes to pipe runs, locations of air vents shown on drawings may need to be adjusted. Contractor to ensure air vent is installed on hydronic system at critical points in system as required.
- (b) All condensate drain pans and equipment drain connections to be drained c/w p-trap as per manufacturer's recommendations. Install p-trap with vent on discharge side (as per manufacturer's recommendations).

HYDRONIC SYSTEM INSULATION

- (a) Hydronic system components including but not limited to pumps, piping, tanks, vessels, heat exchangers shall be insulated to minimize condensation by keeping surface temperature above dew point of surrounding air and to minimize unwanted heat loss/gain of the HVAC systems as per ASHRAE Fundamentals 2017 Chapter 23. Equipment such as pumps and heat exchangers etc. shall be completely insulated with thermal blankets to minimize exposure to the surrounding environment.
- (b) Insulation covering chilled-water piping, refrigerant suction piping, or cooling ducts located outside the conditioned space shall include a vapor retardant located the insulation (unless the insulation is inherently retardant), all penetrations and joints of which shall be sealed. All exposed insulated pipe to be finished with all service white paper covering (or other approved covering system). Exposed areas includes mechanical rooms, parking garages, exposed ceilings, storage areas, etc.
- (c) Geothermal Heat Pump Piping: ½" (12mm) min. insulation on runouts up to 12' (3.65m) and 1"(25mm) or less diameter. 1" (25mm) min. insulation on all other piping.
- (d) All piping, flexible connections, equipment connections, valves, etc in water source heat pump loop system must be insulated to prevent condensation. All insulation to have vapour barrier jacket.

FIRE DAMPERS

- (a) Fire dampers shall be provided at each duct opening in a fire separation and the dampers shall be Type B unless otherwise noted, and installed in accordance with the Manufacturer's instructions.
- (b) Fire dampers must comply with UL555 and CAN/ULC S112 as required by OBC.
- (c) Access panels are required for each fire damper.

LOUVRES, GRILLES, DIFFUSERS AND REGISTERS

- (a) Provide units as shown on the plans and listed in the schedule.
- (b) Ceiling diffusers shall be adjustable pattern, lay-in style in off-white color to match ceiling grid. Each unit shall have a volume damper and where close to a wall provide additional blank-off baffles to prevent downdraft.
- (c) Registers shall be double deflection, with front bars to suit throw pattern as listed on drawings, and be complete with OB damper. All ceiling registers shall have curved blades, except where noted otherwise, and all wall registers for corridor supplies shall be curved blade style.
- (d) Return grilles shall be ½" aluminum grid for ceilings and steel, framed units with fixed 35 deg. bars for wall or ceiling installation with ducted return, complete with OB damper. Exhaust grilles same.
- (e) Door grilles shall be single vane with frame on both sides.
- (f) All wall grilles and louvers to be complete with bird screen

EXHAUST FAN

- (a) Provide exhaust fans as shown on the drawings complete with back draft damper and control as listed.
- (b) Roof mounted fans shall be provided with integral disconnect switch, and shall be mounted on a prefabricated curb with a neoprene insulation strip on top of curb, under the fan. For direct drive fans provide integral electronic speed control mounted under the cover.

GAS PIPING

- (a) Provide all gas piping as shown on the drawings to the requirements of the National Fuel Code, most recent edition. Roof mounted fans shall be provided with integral disconnect switch, and shall be mounted on a prefabricated curb with a neoprene insulation strip on top of curb, under the fan. For direct drive fans provide integral electronic speed control mounted under the cover.
- (b) Provide all gas piping as shown on the drawings to the requirements of the National Fuel Code, most recent edition. Roof mounted fans shall be provided with integral disconnect switch, and shall be mounted on a prefabricated curb with a neoprene insulation strip on top of curb, under the fan. For direct drive fans provide integral electronic speed control mounted under the cover.
- (c) Emergency Gas generators shall be protected by a 2hr. rated construction assembly or located in a service room of the same rating as per CSA 282 7.3.9.2 as required by the General Contractor
- (d) Paint all exterior gas piping to Code and identify all interior gas piping as per CSA B149.1.
- (e) Where higher gas pressures are used, provide pounds to inches gas regulators with internal relief, for each appliance or group and vent the relief to the exterior in a safe manner.

GAS FIRED HEATING APPLIANCES

- (a) Provide gas fired furnaces, or other heating appliances as shown on the drawings, complete with approved venting system, controls and gas piping.
- (b) Condensing units to be mounted on concrete slab pad. Refrigeration piping sized as per equipment manufacturer recommendation.

VIBRATION ISOLATION

- (a) All mechanical equipment shall be mounted on vibration isolators to prevent the transmission of vibration and mechanically transmitted sound to the building structure. Vibration isolators shall be selected in accordance with the weight distribution so as to produce reasonably uniform deflection.

GENERAL INSULATION

MINIMUM PIPE INSULATION THICKNESS FOR HEATING SYSTEMS (Steam, Steam Condensate, Hot Water, Domestic Hot Water)							
Fluid Design Operating Temp. Range (°F) and Usage	Insulation Conductivity		Nominal Pipe or Tube Size (in)				
	Conductivity (BTU-in/ hr-°F)	Mean Rating Temperature (°F)	<1	1 to <1½	1½ to <4	4 to <8	≥8

PROJECT ORIENTATION:



SEAL:



NOTES:
ONLY LATEST APPROVED
ISSUED FOR CONSTRUCTION DRAWINGS TO BE USED.
DRAWINGS ARE NOT TO BE SCALED.

NO.	REVISION / NOTE	DATE
4	ISSUED FOR TENDER	FEB. 18.26
3	RE-ISSUED FOR PERMIT	DEC. 5.25
2	RE-ISSUED FOR PERMIT	NOV. 17.25
1	ISSUED FOR PERMIT	MAR. 14.25

PREPARED FOR:

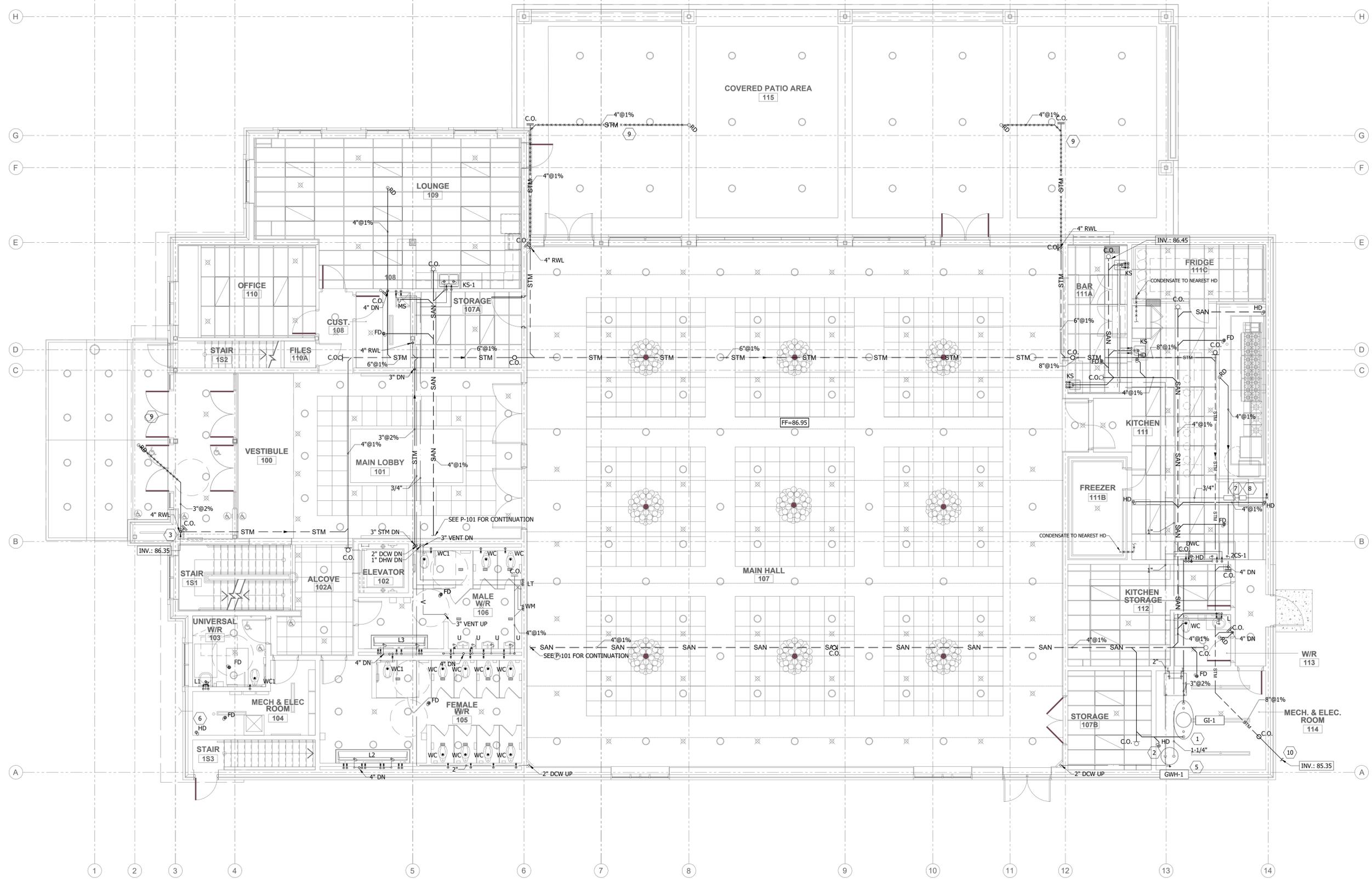


PROJECT:
**NEW CULTURAL CLUB
CROATIAN NATIONAL
HOME**

LOCATION:
**615 BARTON STREET
STONE CREEK,
ONTARIO**

DRAWING DESCRIPTION:
**GROUND FLOOR
PLAN -
PLUMBING AND
DRAINAGE**

CLIENT NUMBER:	TRINITYENG PROJECT NUMBER: M24-0355
DRAWN: D.P.	DESIGNED: A.A.
DATE: MAY 23 2024	APPROVED: A.A.
SCALE: AS SHOWN	DRAWING NUMBER: P.02
DRAWING SIZE: ARCH D (610mmx914mm)	of 6



1 P02 1:75	GROUND - PLUMBING AND DRAINAGE
-------------------------	---------------------------------------

PLUMBING AND DRAINAGE KEYNOTES	
1	GREASE INTERCEPTOR, ZURN-GREEN TURTLE PROCEPTOR, GMC 50, 50 GPM, 100 LBS CAPACITY. REQUIRED FLOW RATE: 37 GALLONS @ 2 MINUTE DRAIN DOWN TIME. INTERCEPTOR TO BE VENTED AS PER 7.5.5.2.
2	GAS HOT WATER HEATER: GWH-1. INSTALL AS PER MANUFACTURERS INSTRUCTIONS. VENTING AS PER MANUFACTURERS RECOMMENDATIONS.
3	4" RAIN WATER LEADER (RWL) DOWN ALONG WALL C/W CLEAN-OUT AT BASE. (TYP.)
4	FOOD PREP SINK DRAINS TO BE TERMINATED 1" ABOVE HUB DRAIN.
5	CONDENSATE DRAIN LINE AND PRESSURE RELIEF TO BE TERMINATED 1" ABOVE HUB DRAIN.
6	HUB DRAIN FOR SPRINKLER SYSTEM BACKFLOW PREVENTER TEST DRAIN.
7	BACKFLOW PREVENTER TO BE INSTALLED ON COMBI STEAMER WATER LINE.
8	WATER FILTER TO BE INSTALLED AS PER COMBI STEAMER MANUFACTURER'S RECOMMENDATIONS.
9	STORM LINE SHALL BE INSULATED C/W ELECTRIC TRACE BY DIVISION 26. LABEL PIPING AS HEAT TRACED.
10	CONNECT TO EXISTING STORM LINE. CONTRACTOR TO CONFIRM EXACT LOCATION AND SIZE. MODIFY TO SUIT. REFER TO SITE SERVICING PLAN FOR DETAILS.

GENERAL NOTES:
 - REFER TO "PLUMBING FIXTURE CONNECTION SCHEDULE" FOR CONNECTION SIZES.
 - PROVIDE ISOLATION VALVES FOR EACH PLUMBING FIXTURE.
 - VENT ALL PLUMBING FIXTURES AS PER PROVINCIAL CODE. PROVIDE MIN 3" VENT SIZE AT ROOF TERMINATION.
 - PROVIDE CLEANOUTS AND TRAP PRIMING FOR SANITARY DRAINAGE SYSTEM AS REQUIRED BY PROVINCIAL CODE. POWER P-TRAP PRIMERS FROM THE NEAREST RECEPTACLE CIRCUIT IN THE ROOM.
 - EXACT LOCATION OF EXISTING SERVICES TO BE VERIFIED ON SITE BY CONTRACTOR
 - FOR KITCHEN AND BAR EQUIPMENT AND FIXTURES SHOWN ON DRAWING, REFER TO EQUIPMENT LIST PREPARED BY OTHERS.
 - PROVIDE BACKFLOW PREVENTER FOR KITCHEN EQUIPMENT AS REQUIRED BY PROVINCIAL CODE

PROJECT ORIENTATION:



SEAL:



NOTES:

ONLY LATEST APPROVED ISSUED FOR CONSTRUCTION DRAWINGS TO BE USED. DRAWINGS ARE NOT TO BE SCALED.

NO.	REVISION / NOTE	DATE
4	ISSUED FOR TENDER	FEB. 18.26
3	RE-ISSUED FOR PERMIT	DEC. 5.25
2	RE-ISSUED FOR PERMIT	NOV. 17.25
1	ISSUED FOR PERMIT	MAR. 14.25

PREPARED FOR:



PROJECT:

**NEW CULTURAL CLUB
CROATIAN NATIONAL HOME**

LOCATION:

**615 BARTON STREET
STONE CREEK,
ONTARIO**

DRAWING DESCRIPTION:

**SECOND FLOOR
PLAN -
PLUMBING AND
DRAINAGE**

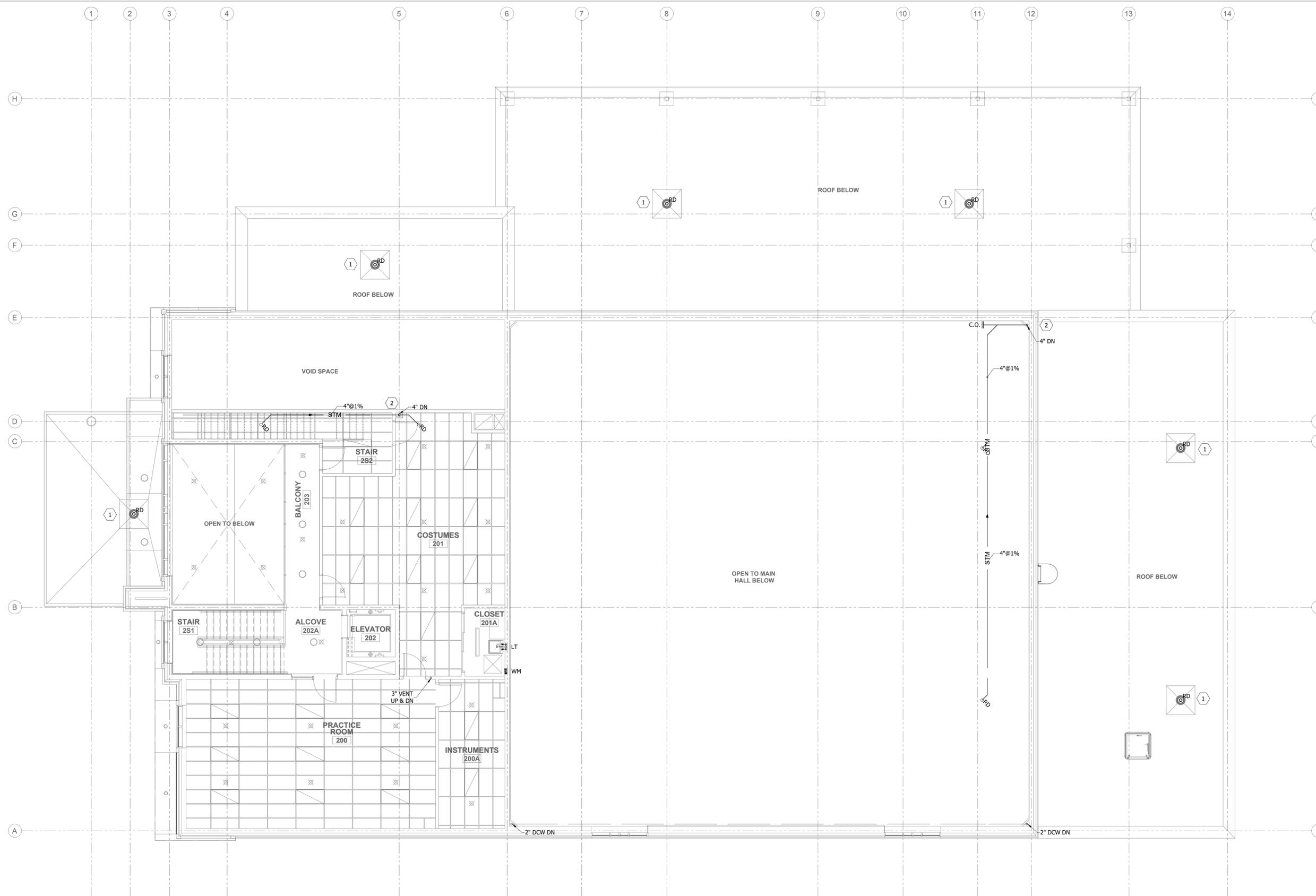
CLIENT NUMBER: - TRINITYENG PROJECT NUMBER: M24-0355

DRAWN: D.P. DESIGNED: A.A. APPROVED: A.A.

DATE: MAY 23, 2024

SCALE: AS SHOWN DRAWING NUMBER: P.03

DRAWING SIZE: ARCH D (610mmx914mm) of 06



1 SECOND - PLUMBING AND DRAINAGE
P03 1:75

PLUMBING AND DRAINAGE KEYNOTES

- 1 4" 1-WEIR FLOW CONTROL ROOF DRAIN EQUAL TO WATTS # RD-104-A1 NH BED C/W CAST IRON DOME, C/W CAST IRON DOME (30 GPM MAXIMUM FLOW).
- 2 4" RAIN WATER LEADER (RWL) DOWN ALONG WALL C/W CLEAN-OUT AT BASE.

GENERAL NOTES:

- REFER TO "PLUMBING FIXTURE CONNECTION SCHEDULE" FOR CONNECTION SIZES.
- PROVIDE ISOLATION VALVES FOR EACH PLUMBING FIXTURE.
- VENT ALL PLUMBING FIXTURES AS PER PROVINCIAL CODE. PROVIDE MIN 3" VENT SIZE AT ROOF TERMINATION.
- PROVIDE CLEANOUTS AND TRAP PRIMING FOR SANITARY DRAINAGE SYSTEM AS REQUIRED BY PROVINCIAL CODE. POWER P-TRAP PRIMERS FROM THE NEAREST RECEPTACLE CIRCUIT IN THE ROOM.
- EXACT LOCATION OF EXISTING SERVICES TO BE VERIFIED ON SITE BY CONTRACTOR
- FOR KITCHEN AND BAR EQUIPMENT AND FIXTURES SHOWN ON DRAWING, REFER TO EQUIPMENT LIST PREPARED BY OTHERS.
- PROVIDE BACKFLOW PREVENTER FOR KITCHEN EQUIPMENT AS REQUIRED BY PROVINCIAL CODE

PROJECT ORIENTATION:



SEAL:



NOTES:
ONLY LATEST APPROVED
ISSUED FOR CONSTRUCTION DRAWINGS TO BE USED.
DRAWINGS ARE NOT TO BE SCALED.

NO.	REVISION / NOTE	DATE
4	ISSUED FOR TENDER	FEB. 18.26
3	RE-ISSUED FOR PERMIT	DEC. 5.25
2	RE-ISSUED FOR PERMIT	NOV. 17.25
1	ISSUED FOR PERMIT	MAR. 14.25

NO.	REVISION / NOTE	DATE

PREPARED FOR:



PROJECT:
**NEW CULTURAL CLUB
CROATIAN NATIONAL
HOME**

LOCATION:
**615 BARTON STREET
STONE CREEK,
ONTARIO**

DRAWING DESCRIPTION:
**ROOF PLAN -
PLUMBING AND
DRAINAGE**

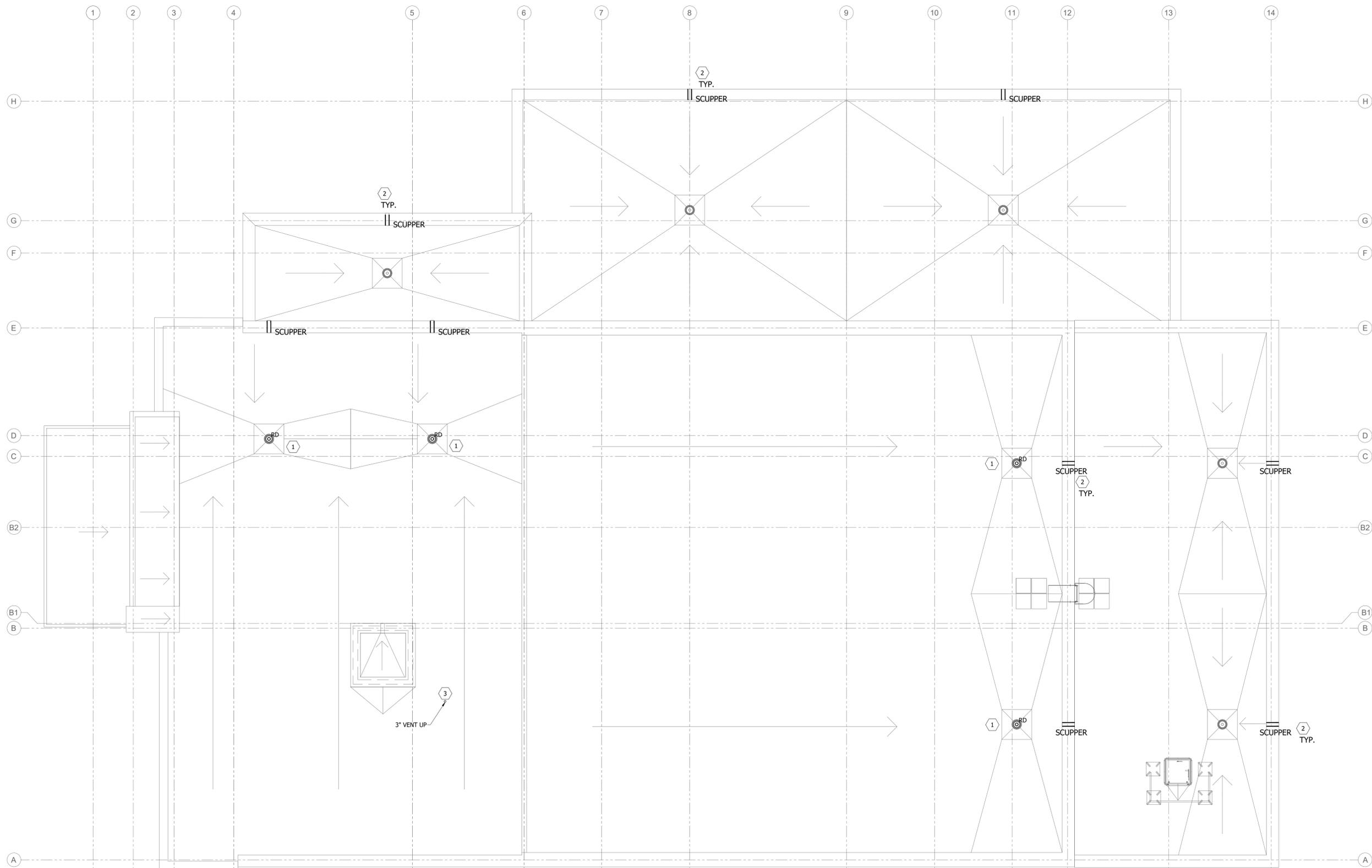
CLIENT NUMBER: TRINITYENG PROJECT NUMBER:
M24-0355

DRAWN: DESIGNED: APPROVED:
D.P. A.A. A.A.

DATE: MAY 23, 2024

SCALE: AS SHOWN DRAWING NUMBER:

DRAWING SIZE: ARCH D (610mmx914mm) **P.04**
of 6

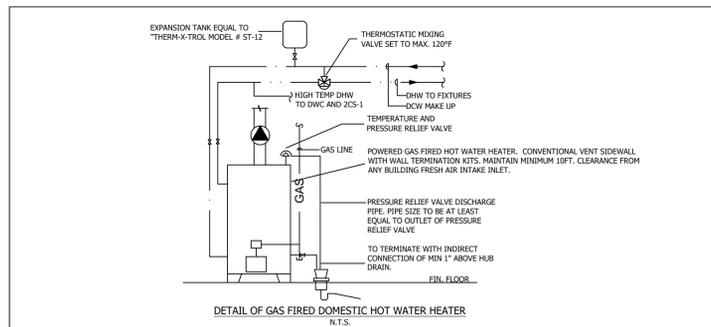
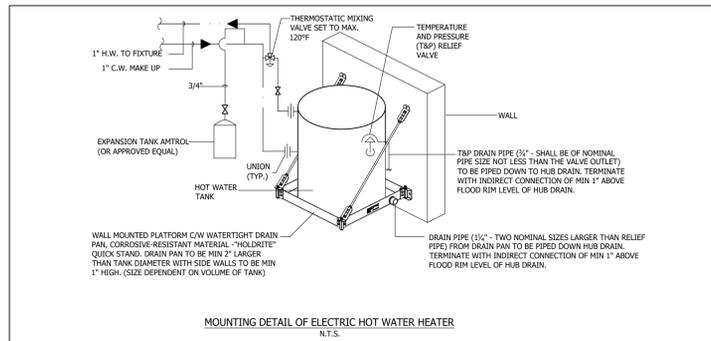
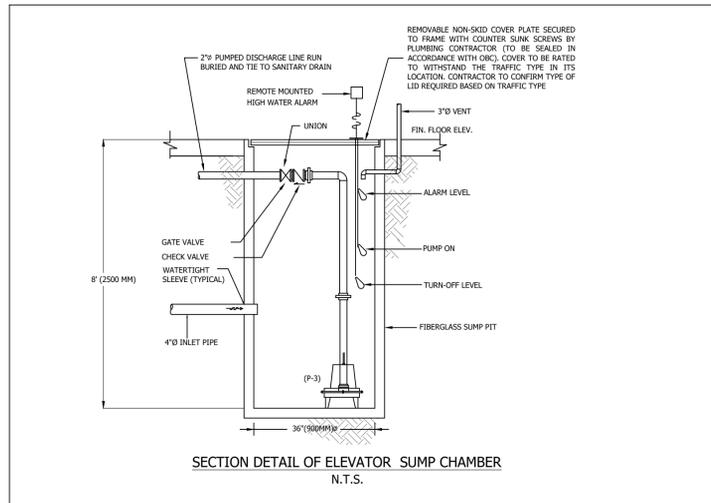
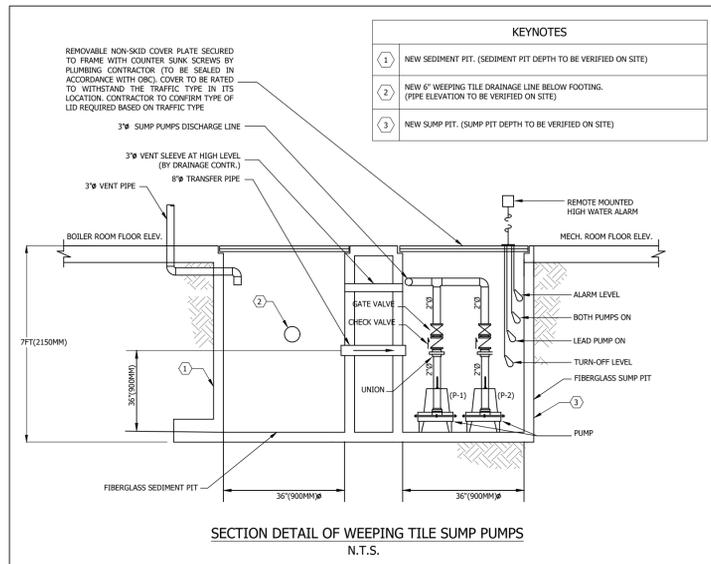


1 ROOF - PLUMBING AND DRAINAGE
P04 1:75

PLUMBING AND DRAINAGE KEYNOTES

- 1 4" 1-WEIR FLOW CONTROL ROOF DRAIN EQUAL TO WATTS # RD-104-A1 NH BED C/W CAST IRON DOME, C/W CAST IRON DOME (30 GPM MAXIMUM FLOW).
- 2 SCUPPERS DRAINS SHALL BE INSTALLED AT A MAXIMUM OF 30M BETWEEN EACH OTHER AS PER OBC 7.4.10.4(2)(C). REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS.
- 3 3" SANITARY VENT TERMINATES AT MIN. 18" ABOVE ROOF DECK WITH 'GOOSENECK' C/W BIRD SCREENS.

GENERAL NOTES:
 - REFER TO "PLUMBING FIXTURE CONNECTION SCHEDULE" FOR CONNECTION SIZES.
 - PROVIDE ISOLATION VALVES FOR EACH PLUMBING FIXTURE.
 - VENT ALL PLUMBING FIXTURES AS PER PROVINCIAL CODE. PROVIDE MIN 3" VENT SIZE AT ROOF TERMINATION.
 - PROVIDE CLEANOUTS AND TRAP PRIMING FOR SANITARY DRAINAGE SYSTEM AS REQUIRED BY PROVINCIAL CODE. POWER P-TRAP PRIMERS FROM THE NEAREST RECEPTACLE CIRCUIT IN THE ROOM.
 - EXACT LOCATION OF EXISTING SERVICES TO BE VERIFIED ON SITE BY CONTRACTOR
 - FOR KITCHEN AND BAR EQUIPMENT AND FIXTURES SHOWN ON DRAWING, REFER TO EQUIPMENT LIST PREPARED BY OTHERS.
 - PROVIDE BACKFLOW PREVENTER FOR KITCHEN EQUIPMENT AS REQUIRED BY PROVINCIAL CODE



PLUMBING FIXTURES SPECIFICATIONS-TO BE APPROVED BY THE ARCHITECT/OWNER

'WC' - FLUSH VALVE WATER CLOSET

ZURN Z5665-BWL1-AM VITREOUS CHINA ELONGATED BOWL WITH SMARTSILVER™ SURFACE (ANTIMICROBIAL FINISH), 425 MM (16 3/4 IN) IN HEIGHT, SIPHON JET ACTION, 54 MM (2 1/8 IN) COMPLETELY GLAZED TRAPWAY, BOLT CAPS, 38 MM (1 1/2 IN) TOP SPUD CONNECTION, 6 L (1.6 US GAL) OR 4.8 L (1.28 US GAL) PER FLUSH, DEPENDING ON THE FLUSH VALVE SELECTED. ZEMS6000AV-IS-HET EXPOSED ELECTRONIC FLUSH VALVE FOR WATER CLOSETS, TPE CHLORAMINE RESISTANT DUAL SEAL DIAPHRAGM WITH TRIPLE FILTER BY-PASS, POWERED BY HARDWIRED 6 VDC POWER CONVERTER, INFRARED CONVERGENCE TYPE PROXIMITY SENSOR, MOTORIZED ACTUATOR WITH OVERRIDE BUTTON, METAL CASING, CONTROL STOP WITH VANDAL RESISTANT STOP CAP, CAST WALL FLANGE, 38 MM (1 1/2 IN) VACUUM BREAKER TUBE WITH WATER SUPPLY 406 MM (16 IN) ABOVE CLOSET BOWL, POLISHED CHROME FINISH, 4.8 L (1.28 US GAL) PER FLUSH. MUST BE INSTALLED WITH ELECTRICAL POWER CONVERTER 120 VAC/6 VDC (P6000-HW6). NOTE :REQUIRES A MIN. DYNAMIC PRESSION OF 25 PSI. PRODUCTS NOTES : VERIFY THE INSTALLATION HEIGHT OF BACKREST AND GRAB BAR DETERMINED BY ARCHITECT. THE FLUSH TUBE MAY NEED TO BE CUT. P6000-HW6 HARDWIRED POWER CONVERTER 120VAC/7.6 VDC, 2 AMP., CAPABLE OF SUPPLYING FOR 8 FAUCETS OR 8 FLUSH VALVES OR 8 FAUCETS/ FLUSH VALVES COMBINED. WHEN USED WITH W1 CONNECTED PRODUCTS, CAPABLE OF SUPPLYING FOR 6 FAUCETS OR 6 FLUSH VALVES OR 6 FAUCETS/ FLUSH VALVES COMBINED. Z5956SS-AM SOLID PLASTIC ELONGATED SEAT FOR SUPER-INTENSIVE USE WITH ANTI-MICROBIAL PROTECTION, OPEN FRONT, COVERLESS, MOLDED BUMPER GUARD, STAINLESS STEEL CHECK HINGES AND FASTENERS. (WHITE).

'WC1' - FLUSH VALVE WATER CLOSET - BARRIER FREE

ZURN Z5665-BWL1-AM VITREOUS CHINA ELONGATED BOWL WITH SMARTSILVER™ SURFACE (ANTIMICROBIAL FINISH), 425 MM (16 3/4 IN) IN HEIGHT, SIPHON JET ACTION, 54 MM (2 1/8 IN) COMPLETELY GLAZED TRAPWAY, BOLT CAPS, 38 MM (1 1/2 IN) TOP SPUD CONNECTION, 6 L (1.6 US GAL) OR 4.8 L (1.28 US GAL) PER FLUSH, DEPENDING ON THE FLUSH VALVE SELECTED. ZER6000AV-1-IS-HET EXPOSED ELECTRONIC GEAR DRIVEN FLUSH VALVE FOR WATER CLOSETS, TPE CHLORAMINE RESISTANT DUAL SEAL DIAPHRAGM WITH TRIPLE FILTER BY-PASS, POWERED BY HARDWIRED 6 VDC POWER CONVERTER, INFRARED CONVERGENCE TYPE PROXIMITY SENSOR, MOTORIZED ACTUATOR WITH OVERRIDE BUTTON, METAL CASING, CONTROL STOP WITH VANDAL RESISTANT STOP CAP, CAST WALL FLANGE, 38 MM (1 1/2 IN) VACUUM BREAKER TUBE WITH WATER SUPPLY 406 MM (16 IN) ABOVE CLOSET BOWL, POLISHED CHROME FINISH, 4.8 L (1.28 US GAL) PER FLUSH. MUST BE INSTALLED WITH ELECTRICAL POWER CONVERTER 120 VAC/6 VDC (P6000-HW6). NOTE :REQUIRES A MIN. DYNAMIC PRESSION OF 25 PSI. PRODUCTS NOTES : VERIFY THE INSTALLATION HEIGHT OF BACKREST AND GRAB BAR DETERMINED BY ARCHITECT. THE FLUSH TUBE MAY NEED TO BE CUT. P6000-HW6 HARDWIRED POWER CONVERTER 120VAC/7.6 VDC, 2 AMP., CAPABLE OF SUPPLYING FOR 8 FAUCETS OR 8 FLUSH VALVES OR 8 FAUCETS/ FLUSH VALVES COMBINED. WHEN USED WITH W1 CONNECTED PRODUCTS, CAPABLE OF SUPPLYING FOR 6 FAUCETS OR 6 FLUSH VALVES OR 6 FAUCETS/ FLUSH VALVES COMBINED. Z5956SS-AM SOLID PLASTIC ELONGATED SEAT FOR SUPER-INTENSIVE USE WITH ANTI-MICROBIAL PROTECTION, OPEN FRONT, COVERLESS, MOLDED BUMPER GUARD, STAINLESS STEEL CHECK HINGES AND FASTENERS. (WHITE). 3777-T1-8 STAINLESS STEEL TUBULAR BACKREST OF 32 MM (1 1/4 IN), SATIN FINISH, RECESSED FASTENERS, PHENOLIC COMPOSITE BACKPLATE 102 MM (4 IN) IN HEIGHT X 254 MM (10 IN) IN LENGTH, ANTIQUE WHITE. *A* DIMENSION OF 203 MM (8 IN)

'U' - URINAL

ROCA A353149000 VITREOUS CHINA WALL HUNG SPUN URINAL, WASHDOWN ACTION, CONSUMING BETWEEN 3.8 L (0.83 IMP. GAL.) AND AS LITTLE AS 0.5 L (1/8 US GAL) PER FLUSH, GRAVITY FLUSH, INCORPORATED PRIVACY SCREEN, INTEGRAL FRAP 19 MM (3/4 IN) TOP SPUD CONNECTION, DN 2 IN FEM. IPS BACK OUTLET, WALL HOOKS, BASIN FRONT AT 361 MM (14 1/4 IN) FROM FINISHED WALL. VANDAL RESISTANT STAINLESS STEEL STRAINER INCLUDED. ZERS6003AV-IS-ULF-MOB1.9 L (0.5 GUS) EXPOSED ELECTRONIC GEAR DRIVEN, FLUSH VALVE FOR URINALS, TPE CHLORAMINE RESISTANT DUAL SEAL DIAPHRAGM WITH TRIPLE FILTER BY-PASS, POWERED BY HARDWIRED 6 VDC POWER CONVERTER, INFRARED CONVERGENCE TYPE PROXIMITY SENSOR, MOTORIZED ACTUATOR WITH MECHANICAL OVERRIDE BUTTON, METAL CASING, CONTROL STOP WITH VANDAL RESISTANT STOP CAP, CAST WALL FLANGE, 19 MM (3/4 IN) VACUUM BREAKER TUBE, CAST BRASS BODY WITH POLISHED CHROME FINISH 0.5 L (1/8 USG) PER FLUSH. MUST BE INSTALLED WITH ELECTRICAL POWER CONVERTER 120 VAC/6 VDC (P6000-HW6). NOTE :REQUIRES A MIN. DYNAMIC PRESSION OF 25 PSI. P6000-HW6 HARDWIRED POWER CONVERTER 120VAC/7.6 VDC, 2 AMP., CAPABLE OF SUPPLYING FOR 8 FAUCETS OR 8 FLUSH VALVES OR 8 FAUCETS/ FLUSH VALVES COMBINED. WHEN USED WITH W1 CONNECTED PRODUCTS, CAPABLE OF SUPPLYING FOR 6 FAUCETS OR 6 FLUSH VALVES OR 6 FAUCETS/ FLUSH VALVES COMBINED. Z1221 FIXING KIT PROVIDED AND INCLUDED WITH URINAL. WALL BACKING TO BE TILED/ CONCRETE.

'L' - LAVATORY

ROCA SOFIA REF: A32772200A UNDERMOUNT VITREOUS CHINA SINK DIMENSIONS: 24 X 16 2/16 X 8 5/16 INCHES. CHICAGO FAUCETS, 410-E2805ABCP, MANUAL SINK FAUCET, SINGLE HOLE DECK MOUNT, VANDAL PROOF PRESSURE COMPENSATING, NON-AERATING LAMINAR SPRAY 0.5GPM. 4-1/4" LEVEL HANDLE, CHROME PLATED. CERAMIC OPERATING CARTRIDGE WITH VOLUME CONTROL AND HOT WATER LIMIT STOP. RIGID, CAST BRASS SPOUT, LOW LEAD <0.25% (NSF/ANSI 372), SS SUPPLY HOSES INCLUDED. MEETS ADA ANSI/ICC A117.1 REQ., EXTRA HEAVY DUTY QUARTER TURN STOPS, LOW LEAD, WHEEL HANDLE, FLANGES CHROME PLATED FINISH. DAISY TYPE STRAINER OFFSET DRAIN ASSEMBLY, CAST BRASS BODY 32MM, POLISHED CHROME FINISH. CAST BRASS ADJUSTABLE P-TRAP 32MM WITH DEEP WALL FLANGE AND CLEANOUT, CHROME PLATE FINISH. ANTIMICROBIAL INSULATED WHITE PROTECTORS, RESISTS THERMAL TRANSFERS FOR P-TRAP, DRAIN ASSEMBLY, STOP AND SUPPLY.

'LT' - LAUNDRY SINK

CANAQUA CA-EUPS-SD-1818-DU-RCTGR 21-1/4" X 23-1/2" SINGLE STAINLESS STEEL UTILITY SINK ON LEGS WITH LEDGE/WITHOUT BACKSPASH, 304 TYPE, 18 GAUGE, SATIN FINISH, 0.625 RADIUS CORNER, ROUNDED RIM, STAINLESS STEEL LEGS WITHADJUSTABLE FEET, 38 MM (1 1/2 IN) STRAINER, LEFT WASTE, STAND PIPE OVERFLOW (W/GUARD), PREDRILLED AS PER REQUIRED. Z871C4-XL SINGLE-PIECE FAUCET FOR INTENSIVE USE, 203 MM (8 IN) CENTER, CERAMIC DISC CARTRIDGES, POLISHED CHROME FINISH, 102 MM (4 IN) VANDAL-RESISTANT COLOR-CODED METAL LEVER HANDLES, 203 MM (8 IN) SWING/RIGID GOOSENECK SPOUT WITH 8.3 L/MIN. (2.2 USGPM) VANDAL-RESISTANT PRESSURE COMPENSATING AERATOR. STANDARDS: ASME A112. 18. 1/CSA B125.1ZH8824XL-LRLKQ-8860-12-PC (2) 10 X 300 MM (3/8 X 12") EXTRA HEAVY DUTY QUARTER TURN STOPS, LOW LEAD, DN 1/2 IN COMPRESSION, LOOSE KEY, VERTICAL FLEXIBLE STAINLESS BRAIDED HOSES OF 10 X 300 MM (3/8 X 12 IN), FLANGE, CHROME PLATED FINISH. EG/304 610 X 610 MM (24 X 24")STAINLESS STEEL REMOVABLE DRAINBOARD, 304 TYPE, 18 GAUGE, SATIN FINISH, 51 MM (2") IN HEIGHT 3 SIDED RIM, 16 GAUGE DOUBLE ANGLE BRACE, FOR INSTALLATION ON LEFT OR RIGHT.Z8702-9BD 38 MM (1 1/2")CAST BRASS ADJUSTABLE P-TRAP, 38 MM (1 1/2 IN) WITH CLEANOUT, DEEP SEAL FLANGE, POLISHED CHROME FINISH.

'KS-1' - 2 KITCHEN SINK

DCFU3118-D1125 UNDERMOUNT STAINLESS STEEL DOUBLE BOWL SINK, 806 X 467 X 203 MM (31 3/4 X 18 1/4 X 8 IN), TYPE 300, 18 GAUGE, SATIN FINISH, SOUND DEADENING PADS, RIM SEAL PRE-INSTALLED, INSTALLATION KIT, 89 MM (3 1/2 IN) CENTERED BASKET STRAINER ASSEMBLY. LKAV3032CR SINGLE LEVER FAUCET WITH PULL-OUT SPRAY, CAST BRASS BODY, CERAMIC DISC CARTRIDGES, POLISHED CHROME FINISH, WITH LEVER HANDLE, 224 MM (8 13/16 IN) IN SWIVEL 360° GOOSENECK SPOUT WITH AERATOR LIMITING FLOW TO 6.8 LPM (1.8 GPM), MAXIMUM COUNTERTOP THICKNESS 76 MM (3 IN). OPTIONAL MODEL LK135 COVER PLATE SOLD SEPARATELY. STANDARDS: ASME A112. 18. 1/CSA B125.1 ZH8824XL-LRLKQ-8860-12-PC (2) 10 X 300 MM (3/8 X 12") EXTRA HEAVY DUTY QUARTER TURN STOPS, LOW LEAD, DN 1/2 IN COMPRESSION, LOOSE KEY, VERTICAL FLEXIBLE STAINLESS BRAIDED HOSES OF 10 X 300 MM (3/8 X 12 IN), FLANGE, CHROME PLATED FINISH. Z8702-9BD 38 MM (1 1/2") CAST BRASS ADJUSTABLE P-TRAP, 38 MM (1 1/2 IN) WITH CLEANOUT, DEEP SEAL FLANGE, POLISHED CHROME FINISH

'2CS-1' - 2 COMPARTMENT SINK

EFRU311810T/LK35 781 X 470 X 254 MM (30 3/4 X 18 1/2 X 10") STAINLESS STEEL DOUBLE BOWL SINK FOR UNIVERSAL / UNDERMOUNT INSTALLATION, 781 X 470 X 254 MM (30 3/4 X 18 1/2 X 10 IN), TYPE 304, 16 GAUGE, SATIN FINISH, SOUND DEADENING PADS, RIM SEAL PRE-INSTALLED, INSTALLATION KIT, 89 MM (3 1/2 IN) BASKET STRAINER ASSEMBLY. LKAV1061CR SINGLE-LEVER FAUCET, CAST BRASS BODY, CERAMIC DISC CARTRIDGES, POLISH CHROME FINISH, WITH LEVER HANDLE, 216 MM (8 1/2 IN) SWIVEL 360° GOOSENECK SPOUT WITH AERATOR LIMITING FLOW TO 6.8 LPM (1.8 GPM), MAXIMUM COUNTERTOP THICKNESS 64 MM (2 1/2 IN). OPTIONAL COVER PLATE MODEL LK134 SOLD SEPARATELY STANDARDS: ASME A112. 18. 1/CSA B125.1 ZH8824XL-LRLKQ-8860-12-PC (2) 10 X 300 MM (3/8 X 12") EXTRA HEAVY DUTY QUARTER TURN STOPS, LOW LEAD, DN 1/2 IN COMPRESSION, LOOSE KEY, VERTICAL FLEXIBLE STAINLESS BRAIDED HOSES OF 10 X 300 MM (3/8 X 12 IN), FLANGE, CHROME PLATED FINISH. Z8702-9BD 38 MM (1 1/2") CAST BRASS ADJUSTABLE P-TRAP, 38 MM (1 1/2 IN) WITH CLEANOUT, DEEP SEAL FLANGE, POLISHED CHROME FINISH.

'KS' - KITCHEN SINK

ECTRU17197-LK35.18 1/2 X 18 1/2 X 9 " (470 X 470 X 229 MM)STAINLESS STEEL SINGLE BOWL SINK FOR UNIVERSAL / UNDERMOUNT INSTALLATION, 470 X 470 X 229 MM (18 1/2 X 18 1/2 X 9 IN), TYPE 304, 18 GAUGE, SATIN FINISH, SOUND DEADENING PADS, RIM SEAL PRE-INSTALLED, INSTALLATION KIT, 89 MM (3 1/2 IN) BASKET STRAINER ASSEMBLY.LKAV3032CRSINGLE LEVER FAUCET WITH PULL-OUT SPRAY, CAST BRASS BODY, CERAMIC DISC CARTRIDGES, POLISHED CHROMEFINISH, WITH LEVER HANDLE, 224 MM (8 13/16 IN) IN SWIVEL 360° GOOSENECK SPOUT WITH AERATOR LIMITINGFLOW TO 6.8 LPM (1.8 GPM), MAXIMUM COUNTERTOP THICKNESS 76 MM (3 IN). ZH8824XL-LRLKQ-8860-12-PC (2)10 X 300 MM (3/8 X 12")EXTRA HEAVY DUTY QUARTER TURN STOPS, LOW LEAD, DN 1/2 IN COMPRESSION, LOOSE KEY, VERTICAL FLEXIBLE STAINLESS BRAIDED HOSES OF 10 X 300 MM (3/8 X 12 IN), FLANGE, CHROME PLATED FINISH.Z8702-9BD 38 MM (1 1/2") CAST BRASS ADJUSTABLE P-TRAP, 38 MM (1 1/2 IN) WITH CLEANOUT, DEEP SEAL FLANGE, POLISHED CHROME FINISH.

'MS' - MOP BASIN

ZURN Z1996-24 MOLDED HIGH DENSITY COMPOSITE MOP BASIN, 610 X 610 X 254 MM (24 X 24 X 10 PO), 44 X 16 MM (1 3/4 X 5/8 IN) RIM, 76 MM (3 IN) PVC DRAIN BODY WITH STAINLESS STEEL DOME STRAINER/LINT BASKET, NPS 76 MM (3 IN) GASKETED OUTLET. ZURN Z1996-WG24 STAINLESS STEEL 2 PANELS WALL GUARD, 610 MM (24") FOR CORNER INSTALLATION, 20 GAUGE, SATIN FINISH, 305 MM (12") HIGH, CORNER MOLDING. ZURN Z843M4-XL WALL MOUNT POLISHED CHROME-PLATED CAST BRASS 203MM (8 IN) SINK FAUCET, LOW LEAD, SHORT SWIVEL INLETS, 184 TO 222 MM (7 1/4 TO 8 3/4 IN) ADJUSTABLE CENTERS, INTEGRAL SERVICE STOPS, CERAMIC DISC CARTRIDGES, POLISHED CHROME FINISH, 102 MM (4 IN) VANDAL-RESISTANT COLOR-CODED METAL WRIST BLADE HANDLES, RIGID SPOUT WITH ATMOSPHERIC VACUUM BREAKER, WALL BRACE, PAIL HOOK AND HOSE THREADED OUTLET, OUTLET AT 232 MM (9 1/8 IN) FROM FINISHED WALL. ZURN Z1996-BS24 STAINLESS STEEL BUMPER GUARD. QUANTITY TO BE DETERMINED. 610 MM (24 IN) IN LENGTH. NOTE: THE ITEM IS SOLD BY DEFAULT AS A PAIR. ZURN Z1996-HH 16 X 762 MM (5/8 X 30 PO) REINFORCED HOSE FOR INTENSIVE USE 16 X 762 MM (5/8 X 30 IN) IN LENGTH WITH BRASS COUPLING WITH HOSE BRACKET WITH RUBBER GRIP. ZURN Z1996-MH 610 X 76 MM (24 X 3") STAINLESS STEEL MOP HANGER, WITH 3 WALL HOOKS. ZURN Z1996-SDL DN 3", STAINLESS STEEL DOME STRAINER/LINT BASKET WITH LOCKING NUT, NEOPRENE GASKET FOR PUSH-ON CONNECTIONS.

'L1' - LAVATORY - BARRIER FREE

ROCA A32768H00A WALL-HUNG, VITREOUS CHINA SINK, 31.5"x18 1/8"x4.5", SINGLE HOLE CONFIGURATION, WHITE FINISH, REAR OVER FLOW, ONA. ADA COMPLIANT. WALL HUNG CARRIER, STEEL UPRIGHTS WITH WELDED FEET, CAST IRON ADJUSTABLE HEADERS, CEONEALED ARMS, ALIGNMENT TRUSS AND MOUNTING FASTENERS. ZURN FAUCET: ZG6953-CVNB-N-BN RECTANGULAR, HARDWIRED ELECTRONIC SENSOR FAUCET, 1.9 L/MIN. (0.5 USGPM) SPRAY OUTLET, SINGLE HOLE INSTALLATION, POLISHED CHROME FINISH, INFRARED CONVERGENCE TYPE PROXIMITY SENSOR, ON-DEMAND ACTIVATION WITH A 30 SECONDS RUN TIME, IN-LINE FILTER, PRE-MIXED WATER SUPPLY. INCLUDES 4 "AA" BATTERIES AS BATTERY BACK-UP TO FAUCET DURING POWER OUTAGES. P6000-HW6 HARDWIRED POWER CONVERTER 120VAC/7.6 VDC, 2 AMP., CAPABLE OF SUPPLYING FOR 8 FAUCETS OR 8 FLUSH VALVES OR 8 FAUCETS/ FLUSH VALVES COMBINED. BRAIDED STAINLESS STEEL HOSE. SUPPLIED WITH 85" CABLE WIRE (CWB). MEETS ADA ANSI/ICC A117.1 REQ., HEAVY DUTY QUARTER TURN STOPS, LOW LEAD, WHEEL HANDLE, FLANGES CHROME PLATED FINISH. DAISY TYPE STRAINER OFFSET DRAIN ASSEMBLY, CAST BRASS BODY 32MM, POLISHED CHROME FINISH. CAST BRASS ADJUSTABLE P-TRAP 32MM WITH DEEP WALL FLANGE AND CLEANOUT, CHROME PLATE FINISH. ANTIMICROBIAL INSULATED WHITE PROTECTORS, RESISTS THERMAL TRANSFERS FOR P-TRAP, DRAIN ASSEMBLY, STOP AND SUPPLY.

'L2' AND 'L3' - HANDWASHING STATIONS

'L2' - SLOAN HANDWASHING 4-STATION SINK, ELGR-84000 GRADIENT SERIES (COLOUR: BY ARCH) SOLID SURFACE MATERIAL, WALL-HUNG, 3048 MM (120") LONG, 559 MM (22") WIDE, 864 MM (34") FROM TOP TO FINISHED FLOOR, NUMBER OF STATIONS: FOUR STATIONS. FOUR (4) FAUCETS, 762MM (30") O/C. INCLUDES SS ANGLED ENCLOSURE & ACCESS PANEL TO CONCEAL PIPING BY SLOAN STONE.

'L3' - SLOAN HANDWASHING 3-STATION SINK, ELGR-83000 GRADIENT SERIES (COLOUR: BY ARCH) SOLID SURFACE MATERIAL, WALL-HUNG, 2286 MM (90") LONG, 559 MM (22") WIDE, 864 MM (34") FROM TOP TO FINISHED FLOOR, NUMBER OF STATIONS: THREE STATIONS. THREE (3) FAUCETS, 762MM (30") O/C. INCLUDES SS ANGLED ENCLOSURE & ACCESS PANEL TO CONCEAL PIPING BY SLOAN STONE.

CHICAGO FAUCETS, 410-E2805ABCP, MANUAL SINK FAUCET, SINGLE HOLE DECK MOUNT, VANDAL PROOF PRESSURE COMPENSATING, NON-AERATING LAMINAR SPRAY 0.5GPM. 4-1/4" LEVEL HANDLE, CHROME PLATED. CERAMIC OPERATING CARTRIDGE WITH VOLUME CONTROL AND HOT WATER LIMIT STOP. RIGID, CAST BRASS SPOUT, LOW LEAD <0.25% (NSF/ANSI 372), SS SUPPLY HOSES INCLUDED. MEETS ADA ANSI/ICC A117.1 REQ., EXTRA HEAVY DUTY QUARTER TURN STOPS, LOW LEAD, WHEEL HANDLE, FLANGES CHROME PLATED FINISH. DAISY TYPE STRAINER OFFSET DRAIN ASSEMBLY, CAST BRASS BODY 32MM, POLISHED CHROME FINISH. CAST BRASS ADJUSTABLE P-TRAP 32MM WITH DEEP WALL FLANGE AND CLEANOUT, CHROME PLATE FINISH. MCGUIRE 155A OPEN GRID WASTE.

PROJECT ORIENTATION:

SEAL:



NOTES:

ONLY LATEST APPROVED ISSUED FOR CONSTRUCTION DRAWINGS TO BE USED. DRAWINGS ARE NOT TO BE SCALED.

NO.	REVISION / NOTE	DATE
4	ISSUED FOR TENDER	FEB. 18.26
3	RE-ISSUED FOR PERMIT	DEC. 5.25
2	RE-ISSUED FOR PERMIT	NOV. 17.25
1	ISSUED FOR PERMIT	MAR. 14.25

PREPARED FOR:



PROJECT:

NEW CULTURAL CLUB CROATIAN NATIONAL HOME

LOCATION:

615 BARTON STREET STONEY CREEK, ONTARIO

DRAWING DESCRIPTION:

PLUMBING - DETAILS AND FIXTURE SPECS

CLIENT NUMBER: TRINITYENG PROJECT NUMBER: M24-0355

DRAWN: D.P. DESIGNED: A.A. APPROVED: A.A.

DATE: MAY 23, 2024

SCALE: AS SHOWN DRAWING NUMBER:

DRAWING SIZE: ARCH D (610mmx914mm) **P.05** of 6

PROJECT ORIENTATION:

SEAL:



NOTES:
ONLY LATEST APPROVED
ISSUED FOR CONSTRUCTION DRAWINGS TO BE USED.
DRAWINGS ARE NOT TO BE SCALED.

4	ISSUED FOR TENDER	FEB.18.26
3	RE-ISSUED FOR PERMIT	DEC.5.25
2	RE-ISSUED FOR PERMIT	NOV.17.25
1	ISSUED FOR PERMIT	MAR.14.25
NO.	REVISION / NOTE	DATE



PROJECT:

**NEW CULTURAL CLUB
CROATIAN NATIONAL
HOME**

LOCATION:

**615 BARTON STREET
STONE CREEK,
ONTARIO**

DRAWING DESCRIPTION:

**PLUMBING -
SCHEDULES**

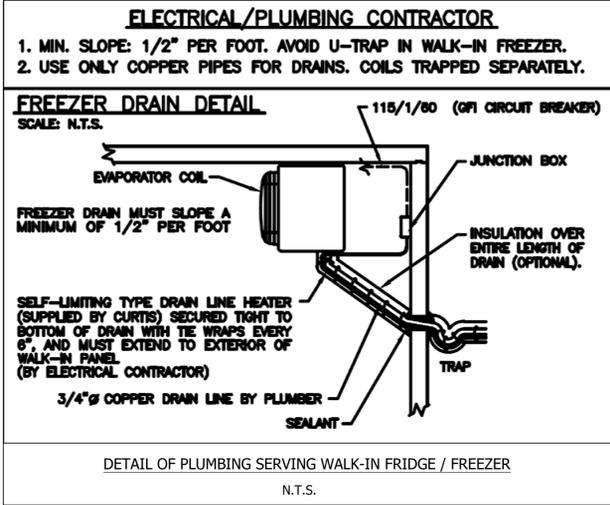
CLIENT NUMBER: TRINITYENG PROJECT NUMBER:
M24-0355

DRAWN: D.P. DESIGNED: A.A. APPROVED: A.A.

DATE: MAY 23, 2024

SCALE: AS SHOWN DRAWING NUMBER:

DRAWING SIZE: ARCH D (610mmx914mm) **P.06**
of 06



SYMBOL	DESCRIPTION	HW	CW	WASTE	VENT	REMARKS
KS-1	KITCHEN SINK	12MM (1/2")	12MM (1/2")	40MM (1-1/2")	32MM (1-1/4")	
2CS-1	2 COMPARTMENT SINK	12MM (1/2")	12MM (1/2")	50MM (2")	40MM (1-1/2")	TO GREASE INTERCEPTOR
FD	FLOOR DRAIN	-	-	100MM (4")	40MM (1-1/2")	WATTS SERIES FD-200-A C/W EXTENSION TO SUIT FLOOR LEVEL.
HD	HUB DRAIN	-	-	100MM (4")	40MM (1-1/2")	PIPE CONDENSATE DRAIN 1" ABOVE HUB DRAIN.
HB	HOSE BIBB	-	20MM (3/4")	-	-	ZURN Z1345-CP3 3/4" UNLESS OTHERWISE NOTED
KS	KITCHEN SINK/ BAR SINK	12MM (1/2")	12MM (1/2")	40MM (1-1/2")	32MM (1-1/4")	
DWC	DISHWASHER (COMMERCIAL)	20MM (3/4")	20MM (3/4")	-	-	DISHWASHERS USING WATER TEMPERATURES GREATER THAN 140°F MUST USE CAST IRON FOR DRAIN PIPE. TO GREASE INTERCEPTOR
L/L2/L3	LAVATORY	12MM (1/2")	12MM (1/2")	32MM (1-1/4")	32MM (1-1/4")	
L1	LAVATORY (WALL HUNG) - BARRIER FREE	12MM (1/2")	12MM (1/2")	32MM (1-1/4")	32MM (1-1/4")	INSULATE DRAIN PIPE. DRAIN PIPE TO BE CLEAR OF BF WHEEL PATH.
LT	LAUNDRY TUB SINK	12MM (1/2")	12MM (1/2")	32MM (1-1/4")	32MM (1-1/4")	
MS	MOP SINK	12MM (1/2")	12MM (1/2")	75MM (3")	40MM (1-1/2")	
U	URINAL	-	20MM (3/4")	50MM (2")	40MM (1-1/2")	
WC	WATER CLOSET (FLUSH VALVE)	-	25MM (1")	75MM (3")	40MM (1-1/2")	
WC1	WATER CLOSET (FLUSH VALVE) - BARRIER FREE	-	25MM (1")	75MM (3")	40MM (1-1/2")	CONTRACTOR TO ENSURE FLUSHING CONTROL IS LOCATED ON TRANSFER SIDE.
WM	RESIDENTIAL CLOTHES WASHING MACHINE	12MM (1/2")	12MM (1/2")	50MM (2")	32MM (1-1/4")	

GENERAL NOTES:
 - PROVIDE ISOLATING VALVES ON HOT AND COLD WATER LINES TO EACH PLUMBING FIXTURE (TYPICAL UNLESS OTHERWISE NOTED)
 - WRAP ALL EXPOSED HOT WATER AND DRAIN PIPING AT BARRIER FREE LAVATORY WITH INSULATION
 - INCLUDE FIXTURES WITH BUILT-IN CHECK VALVES AT SPRAY ARM / FAUCET TO PREVENT WATER FLOW THROUGH WATER PIPES WHILE SPRAY NOT IN USE.
 - SIZES NOTED ABOVE ARE MINIMUM SIZES AS NOTED IN OBC TABLE 7.6.3.2.A. PLEASE REFER TO FIXTURE SPECIFICATIONS FOR ACTUAL SIZES REQUIRED IF NOT SHOWN ON DRAWINGS.
 - PLUMBING FIXTURES SELECTED BY OTHERS. IF NOT LISTED ABOVE, REFER TO MANUFACTURERS SPECIFICATIONS FOR EQUIPMENT CONNECTIONS.
 - ALL FIXTURES MUST BE APPROVED BY CLIENT PRIOR TO ORDERING.
 - ELECTRONIC TRAP SEAL PRIMER (ZURN Z1020-82) REQUIRED ON ALL AREA DRAINS AND FLOOR DRAINS. TRAP GUARDS MAY BE USED IN PLACE OF TRAP SEAL PRIMER IF PERMITTED BY AHJ.
 - CLEAN OUT TO BE WATTS SERIES CO-200-R EPOXY COATED CAST IRON FLOOR CLEANOUT WITH 5" ROUND ADJUSTABLE GASKETED NICKEL BRONZE TOP AND REMOVABLE GAS TIGHT GASKETED BRASS CLEANOUT PLUG. FINISHED FLOOR CLEANOUTS WITH ADJUSTABLE TOPS TO SUIT FLOOR FINISHES.

TAG	LOCATION	MANUFACTURER	MODEL	CAPACITY (U.S. GAL)	RECOVERY @ 90°F RISE (GPH)	KW	V/PH/C	FLA	DIAMETER	HEIGHT	WEIGHT (LBS)	REMARKS
EWH-1	BASEMENT	AO SMITH	DEL-30	30	20	4.5	208/1/60	21.6	24	31-5/8"	120	C/W DOUBLE ELEMENT, ZINC PLATED COPPER SHEATHS, RELIEF VALVE, ADJUSTABLE TEMPERATURE CONTROL. NEW TMV.

NOTE:
1. ENERGY EFFICIENCY RATINGS TO CONFORM TO ASHRAE 90.1-2016 STANDARD FOR ENERGY CONSERVATION.

TAG	MANUFACTURER	MODEL	VOLUME (USG)	INPUT (BTU/HR)	RECOVERY @ 100°F RISE (GPH)	V/PH/C	DIAMETER (IN)	HEIGHT (IN)	GAS CONNECTION	WEIGHT (LBS)	NOTES
GWH-1	BRADFORD WHITE	EF-60T-125E	60	125,000	144	120/1/60	28-1/4"	57"	3/4" NPT	570	C/W CONCENTRIC VENT KIT, ADJUSTABLE THERMOSTAT, TEMP SET TO 140°F. C/W TMV TO FIXTURES. HIGH TEMP TO KITCHEN DW AND SINK AS REQUIRED.

NOTE:
1. ENERGY EFFICIENCY RATINGS TO CONFORM TO ASHRAE 90.1-2016 STANDARD FOR ENERGY CONSERVATION.

TAG	LOCATION	MANUFACTURER	MODEL	GPM	GREASE CAPACITY (US GALLON)	L (INCHES)	W (INCHES)	H (INCHES)	REMARKS
GI-1	KITCHEN	ZURN	GMC 50	50	18	62	32	24	ZURN GREEN TURTLE PROCEPTOR, TO BE VENTED AS PER 7.5.5.2. C/W ONE PIECE REMOVABLE BAFFLE ASSEMBLY, SEAL TRAP, SECURED AND GASKETED NON SLIP COVER AND INLET.

NOTE:
1. GREASE INTERCEPTOR SHALL CONFORM TO ONTARIO BUILDING CODE (OBC) REQUIREMENTS.
2. GREASE INTERCEPTOR ON DISHWASHERS SHALL BE DEPENDENT ON LOCAL JURISDICTION; BARRIE AND ORILLIA DOES NOT REQUIRE ON DISHWASHER WHEREAS OAKVILLE, TORONTO AND BRAMPTON DOES REQUIRE ON DISHWASHER

SYMBOL	DUTY	LOCATION	MANUFACTURER	MODEL	GPM	HEAD (FT)	HP	V/PH/C	STARTER	REMARKS
P-1,2	SUBMERSIBLE DUPLEX WEEPING TILE PUMPING SYSTEM	BASEMENT LEVEL	PENTAIR	HYDROMATI C SPX50H	20	30	0.5	208-230/1/60	INCL.	SUBMERSIBLE PUMPS C/W POWER CORD, FLOAT SWITCH, STARTER, AUDIO/VISUAL HIGH WATER ALARM FRAME (LOCAL AND REMOTE) AND CONTROL PANEL.
P-3	ELEVATOR SUMP PIT PUMP	BASEMENT LEVEL	PENTAIR	HYDROMATI C SPD50H	50	24	0.5	120/1/60	INCL.	C/W FLOAT SWITCH, STARTER, HIGH WATER ALARM FRAME AND COVER PLATE, CONTROL PANEL.

NOTE:
1. ENERGY EFFICIENCY RATINGS TO CONFORM TO ASHRAE 90.1-2019 STANDARD FOR ENERGY CONSERVATION.

FOR SINK		VOLUME	
2-COMP. SINK BOWL SIZE	2	30.75" L	18.5" W
TOTAL VOLUME IN CU. INCH		10" D	11,378 CU. INCH
TOTAL VOLUME IN USGAL			49.3 USGAL
DISPLACEMENT			36.9 USGAL
2 MINUTE DRAIN PERIOD			18.47 GPM
			18.47 GPM

A 30 GPM INTERCEPTOR WOULD PERMIT THE SINK TO DRAIN IN TWO MINUTE.

FOR DISHWASHER		VOLUME	
RACKS PER HR (PER MANUFACTURERS SPEC)			45
GALLONS PER RACK (PER MANUFACTURERS SPEC)			0.67 USGAL
TOTAL GALLONS PER HR			30.2 GPH
CONVERT TO GPM X SEPARATION FACTOR (10MIN)	30.2 GPH / 60 x 10 MIN.		5.0 GPM
OR			
PEAK / MAX DISCHARGE (AS PER MANUFACTURER'S SPEC)			18.5 GPM
			37.0 GPM

A 50 GPM INTERCEPTOR WOULD PERMIT THE DISHWASHER AND SINK TO DRAIN SUFFICIENTLY.