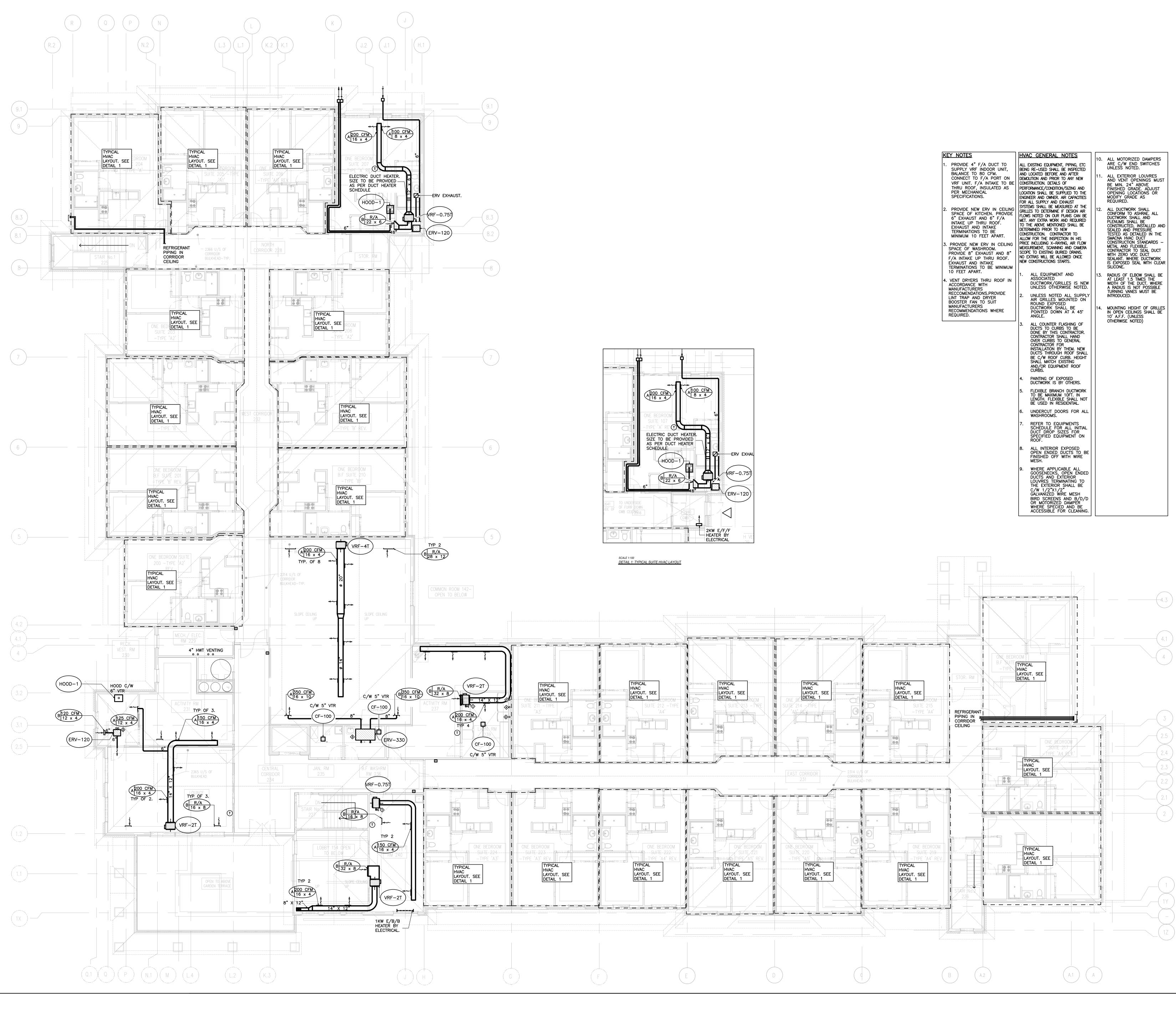
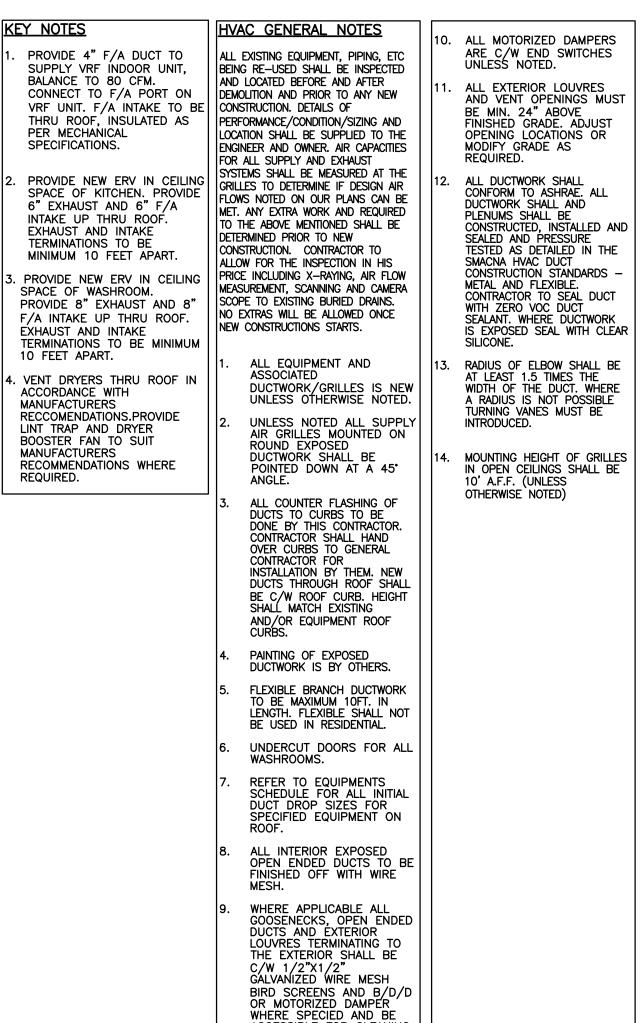


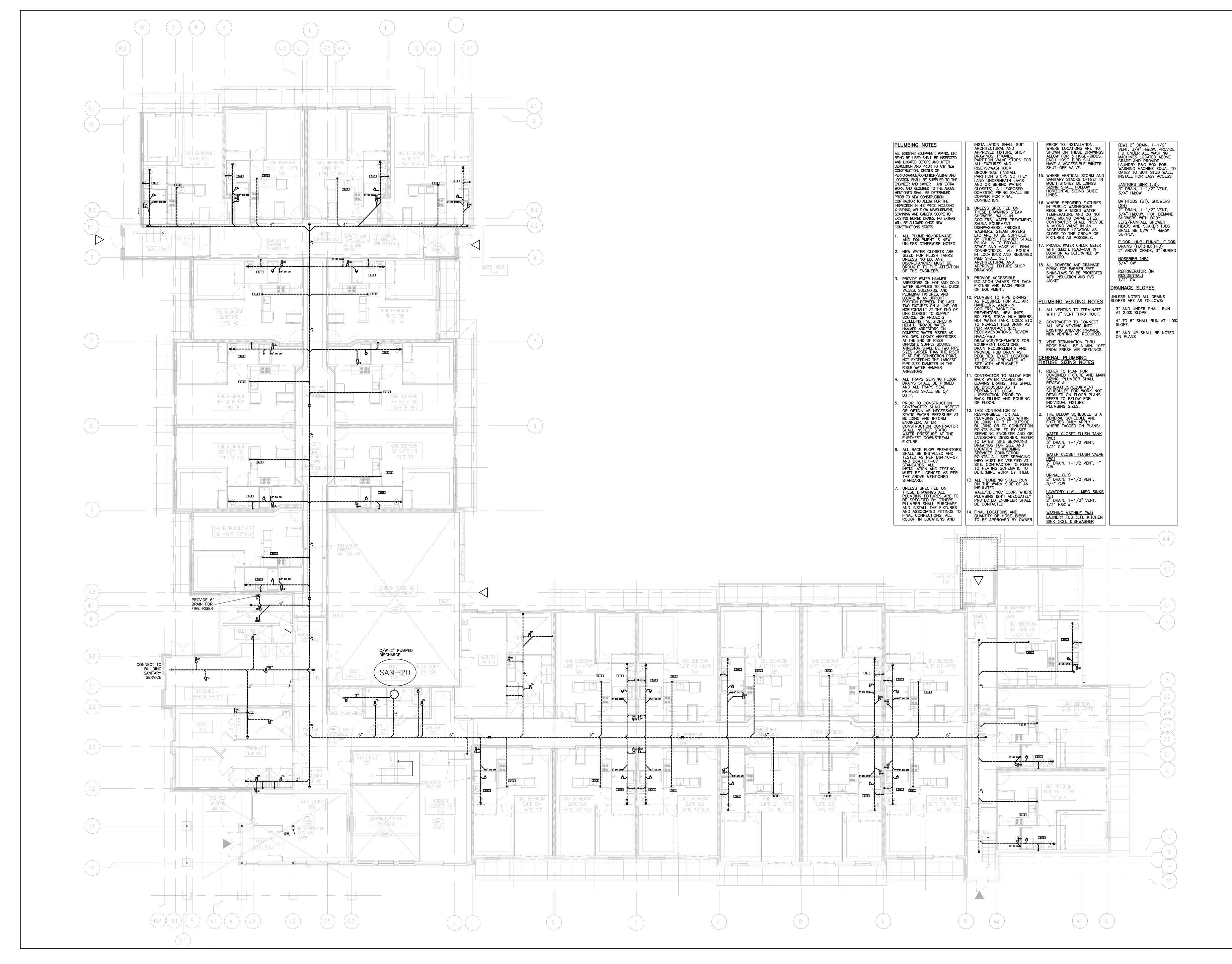
<u>KE</u>	<u>Y NOTES</u>	HVA	AC GENERAL NOTES	10.	ALL MOTORIZED DAMPERS
1.	PROVIDE 4" F/A DUCT TO SUPPLY VRF INDOOR UNIT, BALANCE TO 80 CFM. CONNECT TO F/A PORT ON VRF UNIT. F/A INTAKE AS SHOWN, INSULATED AS PER MECHANICAL SPECIFICATIONS.	BEIN AND DEMO CONS PERF	EXISTING EQUIPMENT, PIPING, ETC G RE-USED SHALL BE INSPECTED LOCATED BEFORE AND AFTER DLITION AND PRIOR TO ANY NEW STRUCTION. DETAILS OF "ORMANCE/CONDITION/SIZING AND TION SHALL BE SUPPLIED TO THE	11.	ARE C/W END SWITCHES UNLESS NOTED. ALL EXTERIOR LOUVRES AND VENT OPENINGS MUST BE MIN. 24" ABOVE FINISHED GRADE. ADJUST OPENING LOCATIONS OR
2.	PROVIDE 4" F/A DUCT TO SUPPLY VRF INDOOR UNIT, BALANCE TO 50 CFM. CONNECT TO F/A PORT ON VRF UNIT. F/A INTAKE AS SHOWN, INSULATED AS PER MECHANICAL SPECIFICATIONS.	FOR SYST GRILL FLOW MET. TO T DETE CON	NEER AND OWNER. AIR CAPACITIES ALL SUPPLY AND EXHAUST EMS SHALL BE MEASURED AT THE LES TO DETERMINE IF DESIGN AIR /S NOTED ON OUR PLANS CAN BE ANY EXTRA WORK AND REQUIRED THE ABOVE MENTIONED SHALL BE RMINED PRIOR TO NEW STRUCTION. CONTRACTOR TO	12.	MODIFY GRADE AS REQUIRED. ALL DUCTWORK SHALL CONFORM TO ASHRAE. ALL DUCTWORK SHALL AND PLENUMS SHALL BE CONSTRUCTED, INSTALLED ANE SEALED AND PRESSURE TESTED AS DETAILED IN THE
3.	PROVIDE NEW ERV IN CEILING SPACE OF KITCHEN. PROVIDE 6" EXHAUST AND 6" F/A INTAKE UP THRU ROOF. EXHAUST AND INTAKE TERMINATIONS TO BE MINIMUM 10 FEET APART.	PRIC MEAS SCOF	W FOR THE INSPECTION IN HIS E INCLUDING X-RAYING, AIR FLOW SUREMENT, SCANNING AND CAMERA PE TO EXISTING BURIED DRAINS. EXTRAS WILL BE ALLOWED ONCE CONSTRUCTIONS STARTS.		SMACNA HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE. CONTRACTOR TO SEAL DUCT WITH ZERO VOC DUCT SEALANT. WHERE DUCTWORK IS EXPOSED SEAL WITH CLEAF SILICONE.
4.	VENT DRYERS THRU WALL IN ACCORDANCE WITH MANUFACTURERS RECCOMENDATIONS. PROVIDE	1.	ALL EQUIPMENT AND ASSOCIATED DUCTWORK/GRILLES IS NEW UNLESS OTHERWISE NOTED.	13.	RADIUS OF ELBOW SHALL BE AT LEAST 1.5 TIMES THE WIDTH OF THE DUCT. WHERE A RADIUS IS NOT POSSIBLE TURNING VANES MUST BE
	LINT TRAP AND DRYER BOOSTER FAN TO SUIT MANUFACTURERS RECOMMENDATIONS WHERE REQUIRED.	2.	UNLESS NOTED ALL SUPPLY AIR GRILLES MOUNTED ON ROUND EXPOSED DUCTWORK SHALL BE POINTED DOWN AT A 45° ANGLE.	14.	INTRODUCED. MOUNTING HEIGHT OF GRILLE: IN OPEN CEILINGS SHALL BE
6.	EXHAUST VENTING FOR DRYERS, CEILING MOUNTED EXHAUST FAN AND STOVE EXHAUST HOOD OUT THRU WALL. QTY 2, 1" GAS LINES TO SERVE GROUND FLOOR GAS FIRE PLACES AND DRYERS AND SECOND FLOOR GAS FIRE PLACES AND DRYERS	3.	ANGLE. ALL COUNTER FLASHING OF DUCTS TO CURBS TO BE DONE BY THIS CONTRACTOR. CONTRACTOR SHALL HAND OVER CURBS TO GENERAL CONTRACTOR FOR INSTALLATION BY THEM. NEW DUCTS THROUGH ROOF SHALL BE C/W ROOF CURB. HEIGHT SHALL MATCH EXISTING AND/OR EQUIPMENT ROOF CURBS.		10' A.F.F. (UNLESS OTHERWISE NOTED)
		4.	PAINTING OF EXPOSED DUCTWORK IS BY OTHERS.		
		5.	FLEXIBLE BRANCH DUCTWORK TO BE MAXIMUM 10FT. IN LENGTH. FLEXIBLE SHALL NOT BE USED IN RESIDENTIAL.		
		6.	UNDERCUT DOORS FOR ALL WASHROOMS.		
		7.	REFER TO EQUIPMENTS SCHEDULE FOR ALL INITIAL DUCT DROP SIZES FOR SPECIFIED EQUIPMENT ON ROOF.		
		8.	ALL INTERIOR EXPOSED OPEN ENDED DUCTS TO BE FINISHED OFF WITH WIRE MESH.		
		9.	WHERE APPLICABLE ALL GOOSENECKS, OPEN ENDED DUCTS AND EXTERIOR LOUVRES TERMINATING TO THE EXTERIOR SHALL BE C/W 1/2"X1/2" GALVANIZED WIRE MESH BIRD SCREENS AND B/D/D OR MOTORIZED DAMPER WHERE SPECIED AND BE ACCESSIBLE FOR CLEANING.		

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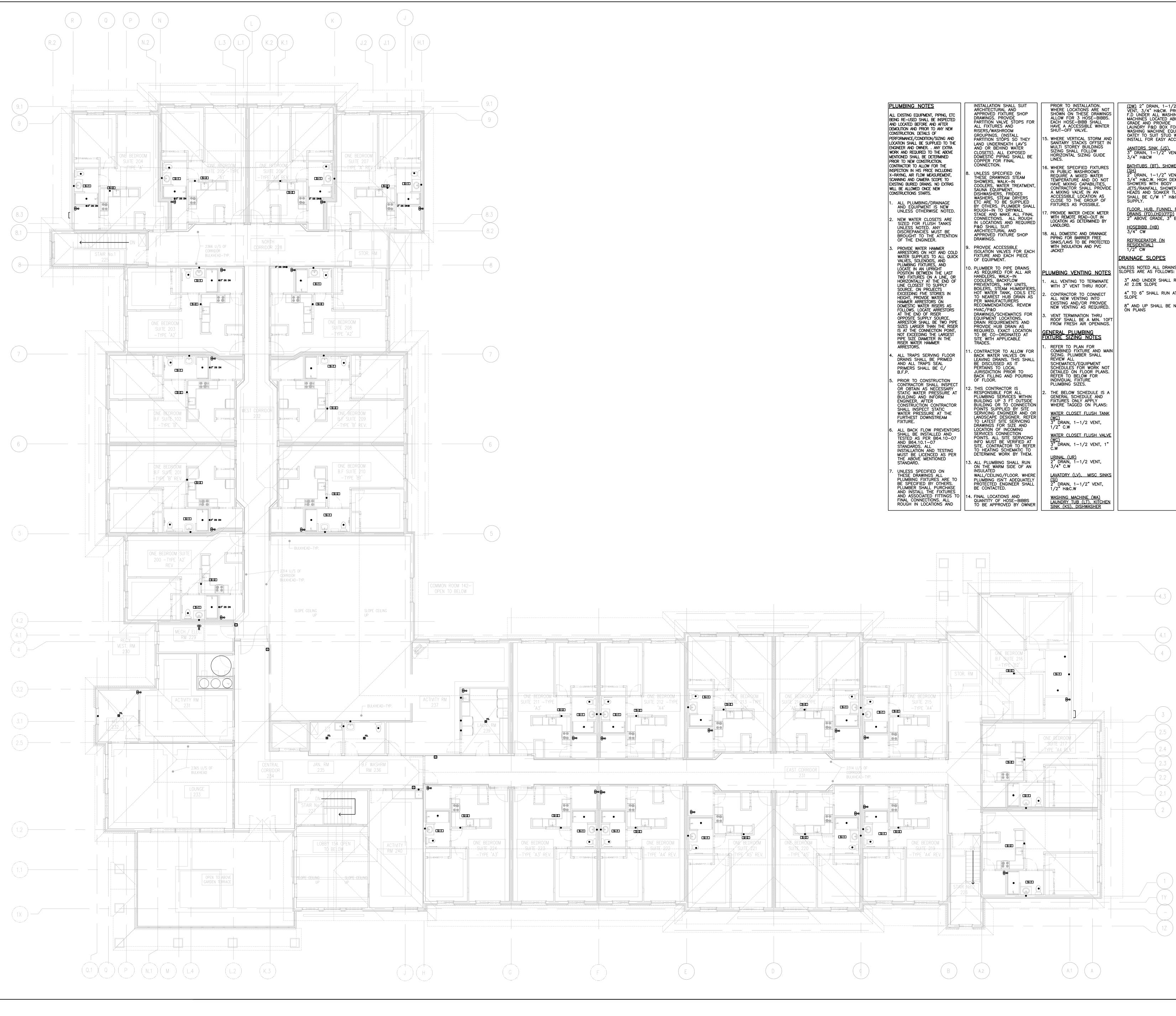


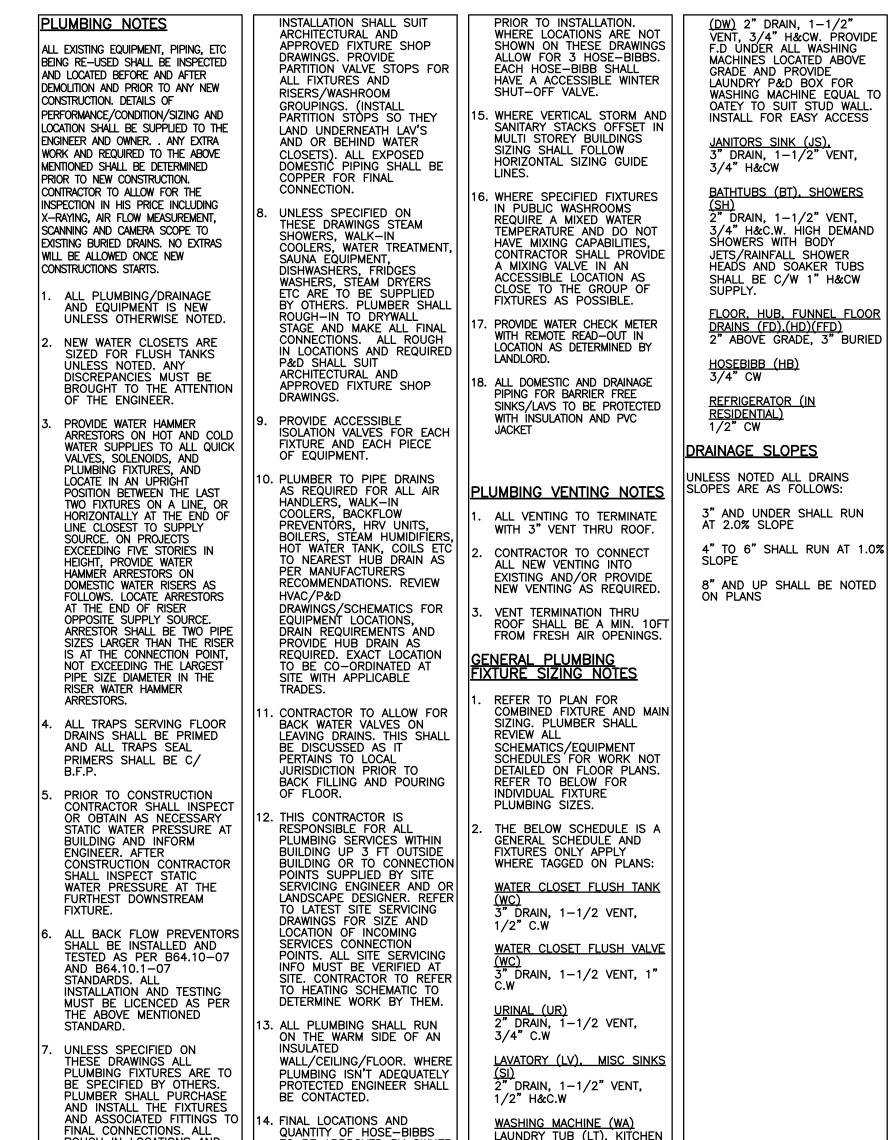


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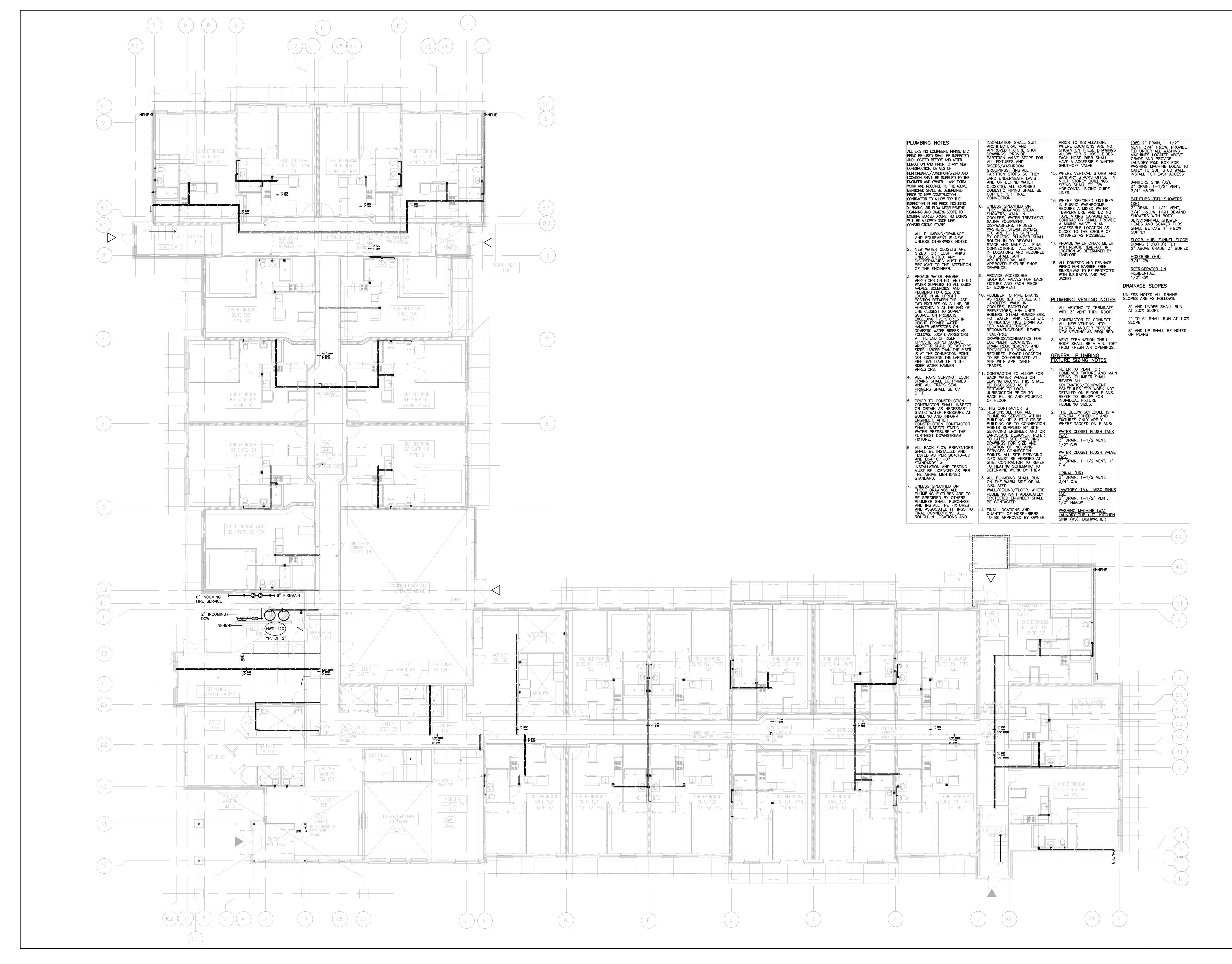


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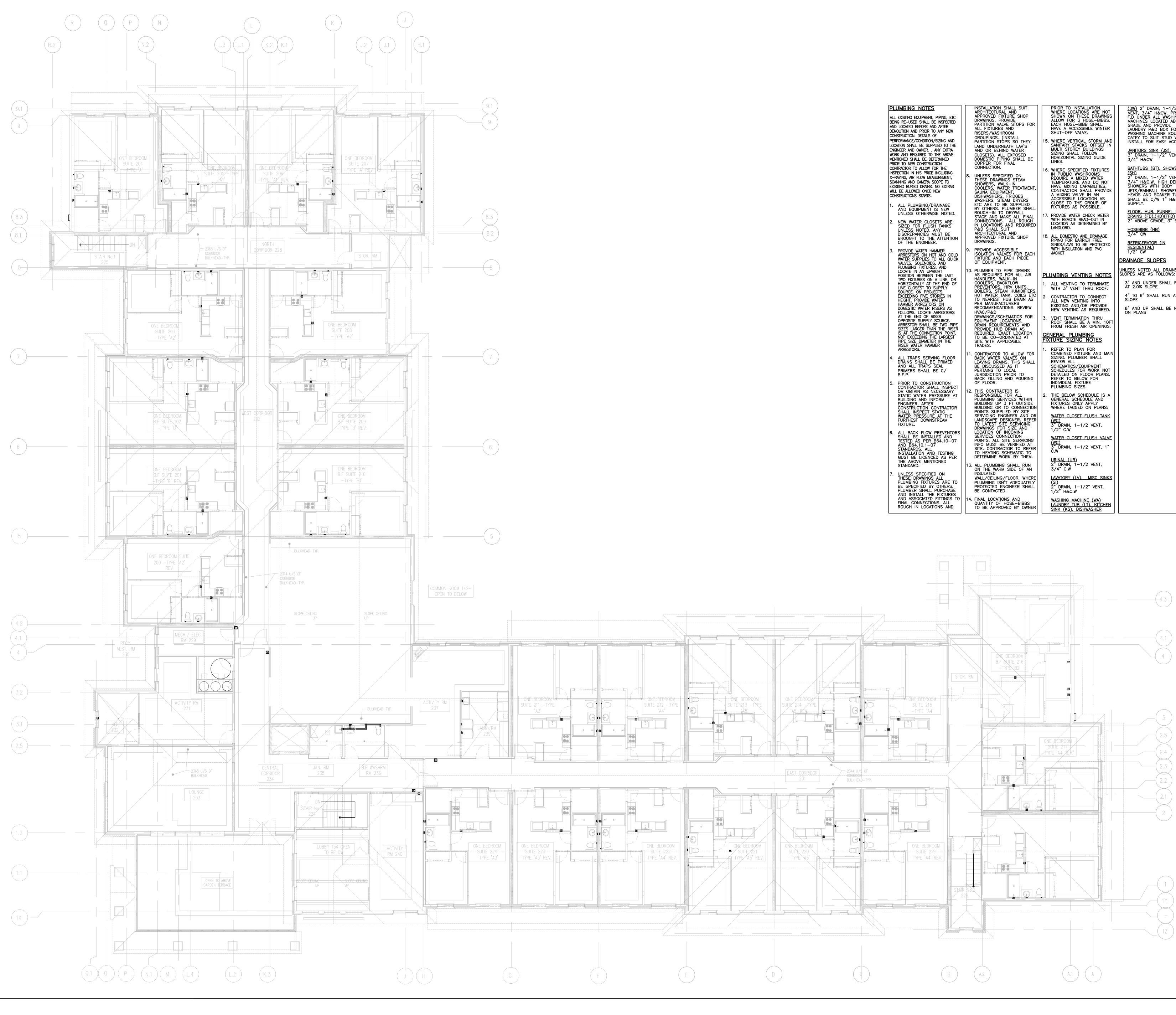


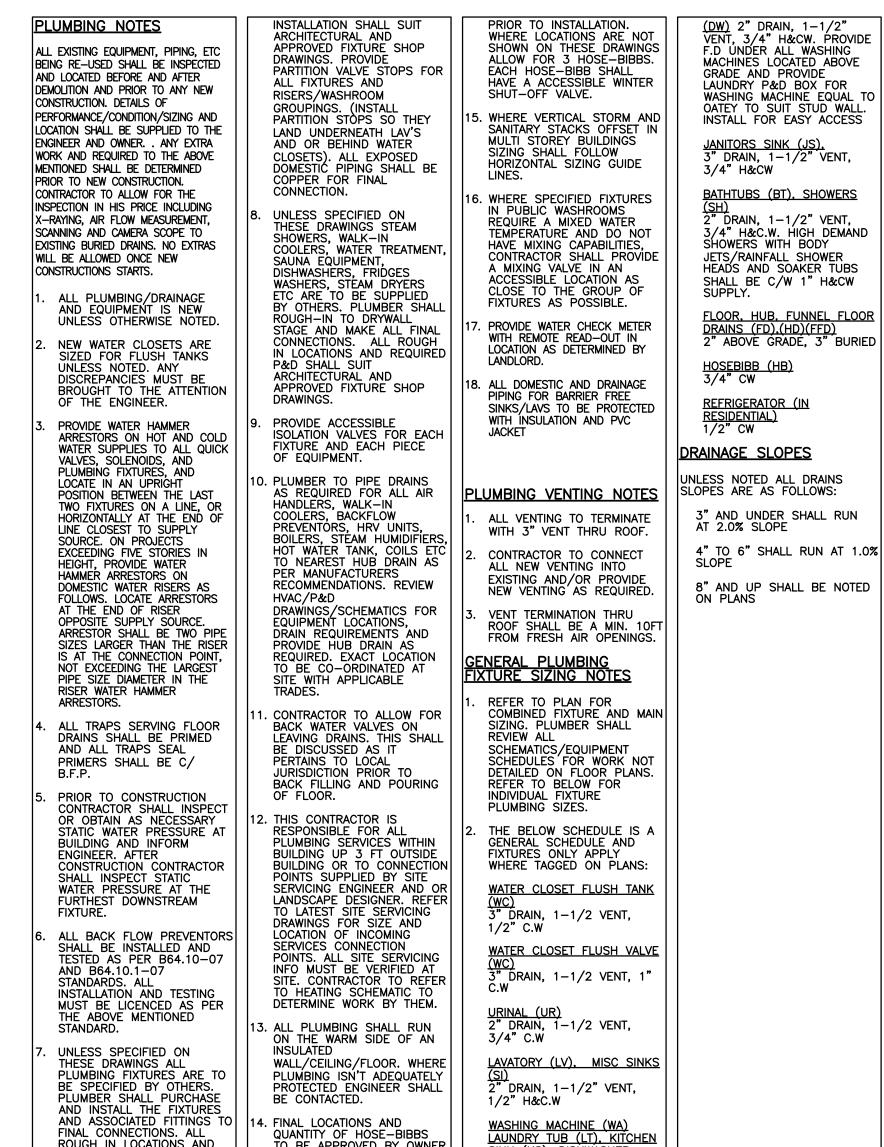


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SPECIFICATIONS

- REFER TO THE ARCHITECTURAL SPECIFICATIONS. THE GENERAL CONDITIONS, TENDER FORMS, SCHEDULE OF COMPLETION, ETC. CO-ORDINATE YOUR WORK WITH ALL OTHER TRADES ON
- HE SITE TO THE EXTENT OF PROPERLY LOCATING ALL EQUIPMENT, PIPING, DUCTWORK, ETC. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ACCURATE DIMENSIONS FROM THE ARCHITECTURAL DRAWINGS, OR AT THE SITE.
- EACH CONTRACTOR SHALL SUPERVISE THE LAYING OUT OF HIS WORK AND SHALL ARRANGE IT IN O-ORDINATION WITH OTHERS WORKING ON THE SITE WHILE THE WORK OF THIS CONTRACT IS IN PROGRESS HE SHALL PROTECT FINISHED AND UNFINISHED WORK THE CONTRACT AND/OR WORK OF OTHERS ON THE SI UNTIL THE COMPLETE WORK HAS BEEN ACCEPTED.
- ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH ALL BY-LAWS AND CODES OF THE AUTHORITIES HAVING JURISDICTION MAKE ALL NECESSARY TESTS AND ALTERATION AS REQUIRED BY AUTHORITIES HAVING JURISDICTION. INCLUDE ALL NECESSARY MATERIALS, LABOUR AND
- EQUIPMENT TO INSTALL MECHANICAL WORK AS SHOWN ON THE DRAWINGS, AS THE MINIMUM REQUIREMENT, INCLUDE AS PART OF CONTRACT ANY WORK REQUIRED O MAKE THE INSTALLATION CONFORM WITH ALL APPLICABLE REGULATIONS. ALL MATERIALS REQUIRED FOR THE PERFORMANCE OF
- THE WORK SHALL BE THE BEST OF THEIR RESPECTIVE KINDS, CSA APPROVED, OF UNIFORM PATTERN THROUGHOUT, WHERE THIS WORK IS WITHIN A BASE BUILDING. THE HIGHER SPECIFICATION STANDARD BETWEEN THE BASE BUILDING AND THIS SPECIFICATION MUST BE ADHERED TO.
- THE DRAWINGS ARE TO BE CONSIDERED AS DIAGRAMMATIC ONLY, AND DO NOT SHOW ALL STRUCTURAL AND CONSTRUCTION DETAILS. INFORMATION INVOLVING ACCURATE MEASUREMENTS OF THE BUILDING SHALL BE TAKEN AT THE SITE. ANY NECESSARY CHANGES OR ADDITIONS TO ACCOMMODATE STRUCTURE CONDITIONS SHALL BE MADE WITHOUT ADDITIONAL CHARGE
- ALL ENQUIRIES PERTAINING TO ADJACENT WORK PARTICULARLY PLASTER. WOOD FINISHES AND OTHER MATERIALS OR DAMAGE TO OTHER EQUIPMENT CAUSEI BY SUCH DEFECTS OF THIS CONTRACTOR'S WORK OR BY SUBSEQUENT REPLACEMENT AND REPAIRS SHALL BE MADE GOOD AT THE EXPENSE OF THIS CONTRACTOR CONCEAL PIPING AND DUCTWORK IN PARTITIONS AND
- WALLS, AT BETWEEN FLOOR AND CEILING, EXCEPT AS SPECIFIED OTHERWISE. . ALL EXCAVATION, REMOVAL OF EXCESS MATERIAL BEDDING, BACKFILLING, COVERING, ETC., SHALL BE CARRIED OUT BY THE TRADES CONCERNED. PIPING BEDDING, BACKFILLING AND TESTING SHALL CONFORM
- MANUFACTURER'S RECOMMENDATIONS AND LOCAL AUTHORITIES REQUIREMENTS. ALL TRADES MUST KEEP AN UP TO DATE SET OF AS BUILT DRAWINGS ON SITE AS IT RELATES TO SCOPE. A FINAL SET MUST BE PROVIDED TO ENGINEER PRIOR TO FINAL INSPECTION. ALL BURIED PIPING DUCTWORK AND GEO-THERMAL PIPING MUST BE MARKED ON AS BUILT DRAWINGS SHOWING LOCATION AND DEPTH PRIOR TO COVERING. IN ADDITION PICTURES MUST BE TAKEN OF ALL BURIED PIPING, DUCTWORK AND/OR
- GEO-THERMAL PIPING PRIOR TO COVERING. AS BUILT MARK UPS MUST BE SUBMITTED PRIOR TO A FINAL INSPECTION . ALL EQUIPMENT AND INSTALLATION TO BE IN ACCORDANCE WITH ASHRAE STANDARDS, INCLUDING
- WORKMANSHIP, ENERGY, NOISE, ETC. . FURNISH ALL LABOUR, MATERIAL, TOOLS AND EQUIPMENT REQUIRED TO COMPLETE THE INSTALLATION AND TESTING OF MECHANICAL SYSTEMS AS SHOWN ON THE DRAWINGS AND AS SPECIFIED HEREIN, INCLUDING; HEATING,
- VENTILATION & AIR CONDITIONING, PLUMBING & DRAINAGE AND FIRE PROTECTION 4. ALL INSTALLATIONS ARE TO COMPLY WITH LOCAL BUILDING CODE REQUIREMENTS AND ALL APPLICABLE
- . IT IS THE CONTRACTORS RESPONSIBILITY TO NOTIFY TH ENGINEER AND TO INFORM THE GENERAL CONTRACTOR THAT WE MUST BE CONTACTED FOR AN INSPECTION PRIOR TO POURING THE FLOOR, DRY-WALLING AND AFTER FINAL COMPLETION OF THERE WORK SO WE CA DO OUR INSPECTIONS. A MINIMUM OF THREE DAYS NOTICE SHALL BE GIVEN. A REQUEST FOR AN INSPECTION SHALL BE DONE IN AN EMAIL TO THE ENGINEER JOB CAPTAIN, BEFORE A FINAL REPORT IS ISSUED CONTRACTOR TO PROVIDE (WHERE APPLICABLE) AIR BALANCING REPORTS, COMMISSIONING NFPA LETTERS, BACK FLOW PREVENTOR TESTING
- REPORTS, AS BUILT MARK UPS ETC . ALL EQUIPMENT, PIPING, INSULATION, CONTROLS ICTWORK, FITTINGS, ETC AND ASSOCIATED PRODUCTS MUST BE INSTALLED AS PER MANUFACTURERS RECOMMENDATIONS. WHERE THERE IS A DISCREPANCY ENGINEER MUST BE CONTACTED FOR FURTHER
- INSTRUCTION. CONTRACTOR IS TO REMOVE FROM SITE AND DISPOSE OF ANY UN-USED EQUIPMENT AND ASSOCIATED DUCT WORK/PIPING/GRILLES ETC AND CAP OFF EXISTING AS REQUIRED. MAKE GOOD ON ALL REDUNDANT OPENINGS AS A RESULT OF CONSTRUCTION
- 18. ALL ROOF PENETRATION, EQUIPMENT HUNG FROM STRUCTRE AND DUCT SLEEVING THROUGH STRUCTURA MEMBERS SHALL BE APPROVED BY ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION CONTRACTOR TO PROVIDE APPROVED SHOP DRAWINGS O GENERAL CONTRACTOR FOR REVIEW. ALL DUCT DROPS FROM EQUIPMENT IS TO TERMINATE AT 24"
- BELOW LOWEST STRUCTURE WHERE IT IS DISCOVERED THAT EXISTING PIPING. MATERIALS BEING RE-USED IN THIS BUILDING IS ASBESTOS OR NON METALLIC CONTRACTOR SHALL NOTIFY ENGINEER TO DETERMINE PIPING MEETS CODE. O. WHERE THE SCOPE OF WORK TAKES PLACE WITHIN AN EXISTING BUILDING THIS CONTRACTOR SHALL CONFIRM
- ALL WORK MEETS THE BASE BUILDING STANDARDS PRICING SHALL BE AS PER THESE DRAWINGS. CHANGES TO THESE SPECIFICATIONS TO SUIT BASE BUILDING SHALL BE DETERMINED AND APPROVED.

WORKMANSHIP USED IN THE WORK TO BE IN STRICT

GUARANTEE THIS SUBCONTRACTOR SHALL GUARANTEE ALL MATERIAL AND

ACCORDANCE WITH THE SPECIFICATIONS, OF BEST QUALITY ANI TYPE OBTAINABLE TO GIVE FIRST-CLASS CONSTRUCTION AND PROPER AND EFFICIENT OPERATION, AND FREE FROM ANY DEFECTS. ANY SUCH DEFECTS WHICH MAY APPEAR IN ANY THE WORK WITHIN 1 YEAR AFTER WRITTEN ACCEPTANCE OF HIS WORK TO SUIT CLOSE OUT REQUIREMENTS, SHALL BE REPAIRED AND REPLACED BY THIS SUBCONTRACTOR WITHOUT ADDITIONAL EXPENSE TO THE OWNER, WHERE SUCH DEFECTS OCCUR, THI SUBCONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL COSTS INCURRED IN MAKING THE DEFECTIVE WORK GOOD. THIS NOT OBSOLETE ANY LONGER WARRANTIES ON SPECIFIC ITEM OF EQUIPMENT.

CUTTING AND PATCHING ITTING, CORING, DRILLING, PATCHING AND REPAIRS EXISTING SURFACES REQUIRED AS A RESULT OF THI

- REMOVAL AND/OR RELOCATION OF EXISTING EQUIPMENT AND PIPING, AND/OR INSTALLATION OF NEW EQUIPMENT AND PIPING TO BE INCLUDED BY DIVISION 15 -MECHANICAL IN TENDER PRICE. DIVISION 15 TO EMPLOY AND PAY APPROPRIATE SUB-TRADE WHOSE WORK IS INVOLVED, FOR CARRYING OUT WORK DESCRIBED ABOVE THE CUTTING OF OPENINGS NOT REQUIRING LINTELS OR OTHER STRUCTURAL SUPPORT WILL BE THE RESPONSIBILIT IF TRADE REQUIRING THE OPENING, THE OPENING SI WILL BE THE MINIMUM REQUIRED, AND THAT PATCHING V E THE RESPONSIBILITY OF THE TRADES NORMALLY ENGAGED IN WORKING WITH THE FINISHING MATERIALS
- REQUIRED TO RESTORE THE OPENING TO THE ORIGINAL SPECIFIED CONDITIONS WHERE OPENINGS REQUIRE LINTELS OR OTHER STRUCTURAL SUPPORT, OR ROOFING WORK, SUCH OPENINGS WILL BE SPECIFIED UNDER OTHER DIVISIONS. PRODUCT CHANGES AND SUBMITTALS

WHERE THE CONTRACT DOCUMENTS STIPULATE PARTICULA PRODUCTS/MATERIALS, EQUAL ALTERNATES MAY BE CONSIDERED BY THE CONSULTANT FOLLOWING TH CONTRACT AWARD. WHEN A REQUEST TO SUBSTITUT PRODUCTS/MATERIALS IS MADE, THE CONSULTANT MAY APPROVE OR REJECT THE SUBSTITUTION. IF A SUBSTITUTION

- IS REJECTED. A RESPONSE TO THE PARTY SUBMITTING WILL E RENDERED. IT IS RECOMMEDNED TO GET APPROVAL PRIOR TO DURING TENDER PROCESS. THESE SUBMISSIONS MUST BE DETAILED AND COMPLETE E IDENTIFYING THE PRODUCTS, MATERIALS OR SYSTEMS SPECIFIED AND COMPARED TO AN ALTERNATIVE PRODUC MATERIALS OR SYSTEMS, CONTRACTOR MUST STATE TH
- DIFFERENCE IN THE CONTRACT COST AND TIME. EACH TRADE SHALL EMAIL ONE <u>COMPLETE</u> BOUND PDI OF SHOP DRAWINGS FOR REVIEW TO THE PROJECT ENGINEER FOR REVIEW AND COMMENTS PRIOR TO ORDERING. EQUIPMENT SHALL BE TAGGED TO CORRESP WITH EQUIPMENT SCHEDULE AND PLANS NOTING ALL ACCESSORIES ETC. THE ASSOCIATED CONTRACTOR SHALL ICLUDE THEIR CONTACT INFORMATION WITHIN TH DOCUMENT. ENGINEER WILL REQUIRE MINIMUM ONE WEEK

TO REVIEW. WHERE PDF FILE IS TOO LARGE TO EMAIL CONTRACTOR TO CONTACT ENGINEER FOR ALTERNATE <u>FIRE/SMOKE DAMPERS AND FIRESTOPPING</u>

UNIESS NOTED THE BELOW WORK SHALL BE DONE BY THE TRADE WHO IS RESPONSIBLE FOR THE MATERIAL BEING RATED OR FIRE STOPPED. ALL PRODUCTS SHALL BE INSTALLED AS PER MANUFACTURERS LISTING AND INSTRUCTION GUIDELINES. FIRE AND OR SMOKE DAMPERS SHALL BE INSTALLED IN THE PLANE OF PENETRATION OF FIRE SEPARATIONS AND IN ACCORDANCE WITH NFPA-90A AND ULC-S505. AND SHALL BEAR THE ULC SEAL. A TIGHTLY FITTED ACCESS DOOR SHALL BE INSTALLED FOR EACH FIRE DAMPER TO PROVIDE ACCESS FOR INSPECTION, AND RESETTING OF DAMPER, AND REPLACING OF FUSIBLE LINK. DAMPERS SHALL BE SUPPORTED INDEPENDENTLY FROM DUCTWORK. DAMPERS SHALL BE OF THE SAME MATERIAL AS THE ASSOCIATED DUCTWORK, FIRE STOP ALL PIPE AND DUCT PENETRATIONS THROUGH ALL RATED SEPARATIONS. FIRE STOPPING MATERIALS TO SATISFY CURRENT CAN4/ULC-S115 STANDARD. PROVIDE FIRE-STOPPING FOR ALL OPENINGS IN FIRE SEPARATIONS FOR PASSAGE OF PIPES. DUCTS, ETC. TO MAINTAIN INTEGRITY OF FIRE SEPARATIONS AND SATISFY THE APPLICABLE FIRE-STOP AND SMOKE SEAL RATING. INSTALLATIONS TO CONFORM TO APPROVED MANUFACTURERS DETAILS AND CURRENT CAN/ULC STANDARDS. FIRE-STOPPING TO BE EQUAL TO 3M, HILTI OR TREMCO FIRE STOP SYSTEMS. CONTRACTOR TO SUBMIT INSTALLATION DETAILS AND SHOP DRAWINGS OF APPROVED SYSTEM FOR EACH VARIATION OF PENETRATION. CONTRACTOR SHALL BE PREPARED O REMOVE FIRE-STOPPING ASSEMBLY FOR THREE (3) RANDOM INSPECTIONS BY CONSULTANT AND REPLACE AT NO EXTRA

- MATERIAL IDENTIFICATION IDENTIFY PIPING WITH FACTORY FABRICATED SNAP ON PIPE MARKERS AND DUCTWORK WITH FACTORY FABRICATED NAMEPLATES, PIPE MARKERS SHALL BE FLEXIBLE. SEMI-RIGID PREFORMED TO FIT AROUND PIPE WITH WITHOUT COVERING, MARKERS SHALL INDICATE FLOW DIRECTION, FLUID, OR AIR SYSTEM BEING CONVEYED NDICATING ASSOCIATED ZONES WHERE APPLICABLE. APPLY LABELS AT 50 FT INTERVALS. BEFORE AND AFTER PIPES/DUCTS PASS THROUGH WALLS, AT ACCESS DOOR OPENINGS OR CLOSER. COLOR TO CONFORM TO ASME
- PROVIDE 3/4" DIAMETER BRASS NUMBER TAGS WITH NUMBER STAMPED IN BLACK, SECURED TO VALVE WHEEL WITH KEY CHAIN FOR VALVES NOT IN PLAIN SIGHT OF APPARATUS CONTROLLED. PROVIDE NEAT, TYPEWRITTEN DIRECTORIES GIVING VALVE NUMBER, VALVE SERVICE AND LOCATION OF VALVES. FRAME ONE COPY UNDER GLASS FOR
- WALL MOUNTING. IDENTIFY EQUIPMENT, FLECTRIC STARTING SWITCHES AND REMOTE PUSH-BUTTON STATIONS WITH 1/4" LAMINATED PLASTIC PLATES.
- WHERE HVAC/PLUMBING SERVICES ARE CAPPED IN FUTURE SPACE FOR FUTURE CONNECTION, CONTRACTOR TO EXTEND HVAC/PLUMBING SERVICES MINIMUM 12" INTO SPACE TO ALLOW FOR IDENTIFICATION.

DISINFECTION OF WATER PIPING AND CHEMICAL TREATMENT

CONTRACTOR TO CONTACT LOCAL WATER SPECIALIST PRIOR TO CONSTRUCTION TO ADVISE ON APPROPRIATE WATER TREATMENT THIS CONTRACTOR SHALL ADVISE ENGINEER OF ANALYSIS AND PROVIDE A SEPARATE PRICE TO SUPPLY AND INSTALL THE REQUIRED EQUIPMENT. PERFORM ALL TESTS AS REQUIRED BY CODE AND/OR LOCAL AUTHORITIES APPLY 1035 KPA (150 PSI) WATER PRESSURE FOR FIGHT (8) HOURS WITHOUT A DROP IN PRESSURE, REPAIR LEAKS AND RE-TEST UNTIL SYSTEM DOES NOT DROP IN PRESSURE OVER 8 HOURS. FLUSH ALL SYSTEMS WITH SUFFICIENT VELOCITY UNTIL WATER IS CLEAR. L DISINFECTION AND CHEMICAL TREATMENT SHALL BE DONE BY A SPECIALISTS WITH MINIMUM 3 YEARS OF RELATED EXPERIENCE AND APPROVED BY ENGINEER. CONTRACTOR SHALL PROVIDE ALL NECESSARY EQUIPMENT TO OBTAIN DESIRED

DISINFECTION OF DOMESTIC WATER (AWWA C651) INTRODUCE CHLORINE (AWWA B301) INTO SYSTEM FOR 24 HOURS. AFTER 24 HOURS FLUSH SYSTEM AGAIN AND CHECK FOR RESIDUAL CHLORINE. WHERE REQUIRED FLUSH AGAIN TO ACCEPTABLE LEVELS OF LESS THAN 10 PPM. CHEMICAL TREATMENT PROVIDE SHOP DRAWING OF EQUIPMENT.

ION, MATERIALS AND PROPOSED CHEMICALS FOR APPROVAL. ALL PIPING SYSTEMS SHALL BE CHEMICALLY TREATED AND VENTED AS PER MANUFACTURES COMMISSIONING GUIDELINES. ENSURE PH LEVELS AND WATER HARDNESS IS WITHIN MANUFACTURERS GUIDELINES, CONTRACTOR TO CONTACT LOCAL WATER COMPANY FOR A CHEMICAL ANALYSIS AND ADVISE N WRITING TO THE ENGINEER THE RESULT OF THE CHEMICAL ANALYSIS TO DETERMINE IF FILTERS AND OR WATER SOFTENERS MAY BE REQUIRED. PROVIDE AN OUTLINE OF ANY ADDITIONAL TREATMENT AND/OR PERMANENT EQUIPMENT THAT MAY BE REQUIRED FOR THE SYSTEM. THIS SHALL BE DONE BY THE HVAC CONTRACTOR AT AWARD OF TENDER AND PRIOR TO CHEMICAL TREATMENT PROCEDURE. CONTRACTOR TO ADVISE THE DATE OF CLEANING FOR ENGINEER PRESENCE. WHERE ANY

SYSTEM, IS REQUIRED CONTRACTOR TO PROVIDE A SEPARATE PRICE TO SUPPLY AND INSTALL. CHEMICAL TREATMENT PROCEDURE. ESTABLISH CIRCULATION AND APPLY HEAT TO RAISE TEMPERATURE SLOWLY TO 160°F. CIRCULATE FOR 12 HOURS AND ENSURE FLOW IN ALL CIRCUITS. REMOVE HEAT AND CONTINUE TO CIRCULATE OR LESS. DRAIN SYSTEM AS QUICKLY AS POSSIBLE. REFIL

ADDITIONAL PERMANENT EQUIPMENT IE. WATER SOFTENER/FILTER

WITH CLEAN WATER, CIRCULATE FOR 6 HOURS AT DESIGN TEMPERATURE, DRAIN. REFILL WITH CLEAN WATER AND ADD APPROVED CHEMICALS IN APPROPRIATE CONCENTRATIONS A PROVIDE EQUIPMENT TO ADD CHEMICALS AS REQUIRED.

- PREVENT DEBRIS AND DIRT FROM ENTERING SYSTEM DURING CONSTRUCTION. PROVIDE ADEQUATE DRAIN CONNECTIONS TO COMPLETELY DRAIN EACH SYSTEM IN ONE HOUR. CLEAN STRAINERS FREQUENTLY.
- CONTRACTOR TO ENSURE ALL SYSTEMS ARE OPERATIONAL TO ENSURE FLOW THROUGH ALL SYSTEMS.
- . SYSTEM PUMPS MAY BE USED FOR CLEANING PROVIDED SEALS ARE REPLACED, PUMPS ARE DISMANTLED AND INSPECTED BY PUMP MANUFACTURER.

DUCTWORK MATERIAL AND GAUGE

- 6" TO 12" WIDE OR ROUND - 26 GAUGE GALVANIZED, 24 GAUGE ALUMINUM 14" TO 30" WIDE OR ROUND - 24 GAUGE GALVANIZED, 22 GAUGE ALUMINUM 32" TO 54" WIDE OR ROUND - 22 GAUGE GALVANIZED 20 GAUGE ALUMINUM

- NFPA GREASE DUCTWORK SHALL BE 16 GAUGE WELDED SIZES ABOVE ARE BASED ON 2" W.G, 2000FPM. ALL GOOSENECKS TO BE 22 GAUGE, TERMINATE 24" AFR.
- UNLESS NOTED ON PLANS ALL OUTDOOR HORIZONTAL OUCTWORK OR BURIED DUCTWORK WITH EXCEPTION TO NFPA DUCTWORK SHALL BE 20 GAUGE.
- ALL DUCTWORK SERVING DISHWASHERS, POOLS OR APPLICATIONS WITH HIGHER THAN NORMAL HUMIDITY APPLICATIONS SHALL BE ALUMINUM.
- DISHWASHER DUCTWORK SHALL BE SLOPED BACK FOR RAINAGE AND PIPED TO AN APPROVED DRAIN. ALL MUST BE SOLDERED TO PREVENT LEAKING. AN ACCESSIBLE BALANCING DAMPER SHALL BE PROVIDED AT TH DISHWASHER CONNECTION TO THE EXHAUST SYSTEM.
- REFER TO BURIED DUCTWORK DETAIL FOR BURIED DUCTWORK. IF NOT SHOWN ON PLANS PLEASE CONTAC ENGINEER FOR DETAIL. ALL BURIED DUCT TO BE BELOW

ALL DUCTWORK SHALL BE PRESSURE TESTED AND SEALED AS PER ASHRAE 90.1 SQUARE DUCTWORK SUPORTS

UP TO 18" – PAIR OF 1"X16 GAUGE HANGER STRAPS OR PAIR DF 1/4" RODS AND 1"X1"X1/8" ANGLES. SUPPORT EVERY 8FT 18" TO 30" - PAIR OF 1"X16 GAUGE HANGER STRAPS OR PAIR OF 1/4" RODS AND 1"X1"X1/8" ANGLES. SUPPORT EVERY

TO 42" - PAIR OF 1"X16 GAUGE HANGER STRAPS OR PAIR OF 1/4" RODS AND 11/2"X11/2"X1/8" ANGLES. SUPPORT EVERY 8FT

<u>TO 60"</u> – PAIR OF 3/8" RODS AND 11/2"X11/2"X1/8" ANGLES. SUPPORT EVERY 4FT IN ADDITION TO ABOVE SUPPORT AT 2FT FROM EACH ELBOW AND WITHIN 4 FT OF EACH BRANCH INTERSECTION.

- 2FT FROM EACH PIECE OF ASSOCIATED EQUIPMENT TO WHICH IT IS ATTACHED. HANGER STRAPS SHALL NOT BE USED WHERE DUCTWORK IS
- HANGER STRAPS SHALL TURN 2" AT UNDERSIDE OF DUCT AND BE FASTENED AT SIDES AND BOTTOM.
- ALL HANGERS ARE FROM BUILDING STRUCTURE IN ADDITION TO THE ABOVE SPACING SUPPORT VERTICAL OUCTS THROUGH FLOOR WITH CONTINUOUS LENGTHS OF STRUCTURAL ANGLE. SIZED AT LEAST TO THAT OF

ROOFTOP EXPOSED DUCTWORK SHALL BE SUPPORTED WITH MIFAB C-PORT DSA SYSTEM ROUND DUCTWORK SUPORTS

UP TO 24"-1/4" ROD WITH 20 GAUGE BAND AND GRINNELL FIGURE 114 TURNBUCKLE. SUPPORT EVERY 10FT <u>5"-36"</u> - 3/8" ROD WITH 18 GAUGE BAND AND GRINNELL FIGURE 114 TURNBUCKLE. SUPPORT EVERY 8 FT 38"-50" - TWO 3/8" RODS WITH TWO 18 GAUGE BANDS AND GRINNELL FIGURE 114 TURNBUCKLE. SUPPORT EVERY 8 FT

IN ADDITION TO ABOVE SUPPORT AT 2FT FROM EACH ELBOW AND WITHIN 4 FT OF EACH BRANCH INTERSECTION FT FROM EACH PIECE OF ASSOCIATED EQUIPMENT TO WHICH IT IS ATTACHED.

- ROUND FLEXIBLE DUCTWORK SHALL BE SUPPORTED EVERY 5 FT AND SHALL NOT BE USED IN RESIDENTIAL APPLICATIONS. ALL HANGERS ARE FROM BUILDING STRUCTURE.
- ALL DUCTWORK SHALL BE SUPPORTED BEFORE AND AFTER WALL OPENINGS/SLEEVES. DO NOT REST DUCTS ON WALL OPENINGS/SLEEVES. DUCTWORK INSULATION
- L REQUIRED INSULATION TO BE OF 100% COVERAGE AND INSTALLED WITHOUT SAGGING. PROVIDE ACCESSORIES AS
- ALL DUCTWORK SURFACES MUST BE CLEANED PRIOR TO INSTALLATION. ALL EQUIPMENT SHALL BE INSULATED TO THE SAME STANDARD AS THE CONNECTED DUCT OR PIPE.

CONTINUE INSULATION THROUGH PENETRATIONS WITH VAPOUR BARRIER. **<u>TYPE A</u>** – FLEXIBLE GLASS FIBRE; K VALUE OF 0.29 AT 75 DEGREES F FOIL SCRIM FACING TYPE B -- RIGID GLASS FIBRE; K VALUE OF 0.24 AT 75

EXHAUST – 11/2" TYPE A TO 10 FT. FROM EXTERIOR WALL/ROOF OUTDOOR AIR INTAKE – 3" TYPE A (R-8.4) UP TO HEAT SOURCE. 11/2" (R-4.2) AFTER HEAT SOURCE EXPOSED DUCTWORK (OUTDOORS) - 4" TYPE B (MIN R-1 PROVIDE AS PER MANUFACTURERS RECOMMENDATIONS VENTURECLAD CW1577 INSULATION CLADDING SUPPLY DUCTWORK - 11/2" TYPE A (R-4.2) - UNLESS ALL DUCTWORK IN UNHEATED AREAS - 3" TYPE B (MIN R-1 DISHWASHER. KITCHEN EXHAUST DUCTWORK - 2" TYPE A ACOUSTIC INSULATION - ALL SUPPLY AIR AND RETURN AIR DUCTWORK FOR AIR HANDLING UNITS INCLUDING KE/EXHAUST FANS SHALL BE INTERNAL ACOUSTICALLY LINED TO 15 FEET FROM UNIT OR AS SHOWN ON DRAWINGS WITH 1 TYPE B NEOPRENE COATED RIGID FIBERGLASS, WITH

MECHANICAL FASTENER AT 16" CENTERS. UPSIZE DUCTWORK AS REQUIRED TO SUIT INSULATION THICKNESS

- SYSTEM BALANCING AND COMMISSIONING PRIOR TO COMMISSIONING AND ONCE AGAIN PRIOR TO OCCUPANCY CONTRACTOR SHALL ENSURE ALL FILTERS ARE CLEANED/REPLACED, PARTS LUBRICATED, WATER SYSTEMS CLEANED AND FLUSHED, BELTS TIGHTENED, CONTROLS COMPLETED, DUCTWORK CLEANED ETC. CONTRACTOR TO ALLOW FOR THIS IN HIS SCOPE OF WORK. CONTRACTOR TO ADJUST AND SET ALL CONTROLS FOR A EQUIPMENT THAT FALLS WITHIN THERE SCOPE PRIOR TO COMMISSIONING SO THAT THE SYSTEM WORKS AS INTENDED AND AS PER OWNERS REQUIREMENTS. ALL SYSTEMS AND EQUIPMENT SHALL BE COMMISSIONED AND BALANCED AS PER DRAWINGS, SPECIFICATIONS AND MANUFACTURES RECOMMENDATIONS FOR A COMPLETE WORKING SYSTEM. ALL COMMISSIONING SHALL BE CO-ORDINATED AND EXECUTED WITH THE APPLICABLE CONTRACTOR AND FOR LARGER CENTRAL SYSTEMS THE MANUFACTURERS REPRESENTATIVE. ALL SYSTEMS AND
- COMPONENTS MUST BE CONNECTED AND COMPLETE AS PER DRAWINGS. A CLEAR, DATED AND LEGIBLE TYPED START UP, COMMISSIONING AND BALANCING REPORT COMPLETE WITH SYSTEM SCHEMATICS NOTING ACTUAL SITE CONDITIONS SHALL BE PROVIDED TO ENGINEER FOR APPROVAL. ALL SYSTEMS SHALL BE BALANCED BY AN INDEPENDEN LICENSED CONTRACTOR TO WITHIN 10%. CONTRACTOR TO MAKE ADJUSTMENTS AS REQUIRED TO ACHIEVE DESIGN. THE ABOVE MENTIONED REPORT SHALL NOTE ALL ADDITIONAL WORK DONE IE REPLACING/CLEANING FILTERS, DUCTWORK CLEANING, WATER TREATMENT, CHANGING PULLEYS ETC.
- CONTRACTOR TO ALLOW FOR TWO ADDITIONAL SITE VISITS O MAKE FURTHER ADJUSTMENTS AS REQUIRED. APPLICABLE CONTRACTOR SHALL PROVIDE MAINTENANCE A OPERATION MANUALS CLEARLY HIGHLIGHTING MAINTENANCE SCHEDULE AND OPERATING OF EQUIPMENT/CONTROLS TO
- BUILDING OWNER AND/OR BUILDING ENGINEER. CONTRACTOR O REVIEW IN PERSON MAINTENANCE PROCEDURE, SCHEDULE AND OPERATION OF ALL EQUIPMENT AND CONTROLS TO BUILDING OWNER OR ENGINEER. WHERE SEASONAL CONSTRAINTS PREVENT EQUIPMENT TO FOLLOW THE ABOVE PROCEDURES CONTRACTOR TO
- SCHEDULE AS REQUIRED FOR SUCH EQUIPMENT AND BALANCING CONTRACTOR SHALL BE A MEMBER OF A.A.B.C
- OR N.E.B.B. ALL BALANCING SHALL BE IN ACCORDANCE WITH NATIONAL ENVIRONMENTAL BALANCING BUREAU STANDARDS.

GRILLES. DAMPERS. LOUVRES. TERMINATION THE FOLLOWING SPECIFICATIONS ONLY APPLY WHERE NOTED ON PLANS OR IN THE EQUIPMENT SCHEDULE . ALL GRILLES AND DIFFUSERS TO BE C/W APPROPRIATE

BORDER/FRAME TO SUIT CEILING/WALL/DOOR. CONTRACTOR TO CONFIRM CEILING/WALL/DOOR TYPES PRIOR TO DRDERING . ALL NEW S.A AND R.A GRILLES ARE TO BE OF HIGH QUALITY AND SAMPLES ARE TO BE SUBMITTED TO ARCHITECT AND OR INTERIOR DESIGNER OR OWNER FOR APPROVAL PRIOR TO ORDERING. FINISH IS TO BE SELECTED BY ARCHITECT AND

- OR INTERIOR DESIGNER 3. EXACT LOCATION AND MOUNTING HEIGHTS OF ALL SUPPLY. RETURN AND EXHAUST GRILLES TO BE APPROVED BY ARCHITECT AND/OR INTERIOR DESIGNER PRIOR TO INSTALLATION.
- ALL EXTERIOR TERMINATIONS SHALL BE APPROVED B ARCHITECT PRIOR TO ROUGH-IN. PROVIDE INSULATED PLENUM WHERE MULTIPLE DUCTS CONNECT INTO ONE
- 5. AIR EXTRACTORS SHALL BE ADDED WHERE SUPPLY AIR OUTLETS ARE CONNECTED DIRECLTY TO A DUCT SERVING MULTIPLE OUTLETS. 3. CONTRACTOR TO ENSURE ALL NEW WALL LOUVRES AND ROOF PENETRATIONS AND CAPS MATCH BASE BUILDING 7. FINISH TO BE OFF-WHITE OR TO MATCH INTERIOR.
- GRILLES AND DIFFUSERS SHALL BE EQUAL TO EH PRICE UNLESS NOTED OTHERWISE
- <u>**TYPE A**</u> SUPPLY AIR REGISTER, SIZE AS SHOWN, MODEL 620L C/W ALUMINUM OBVD AND TYPE F BORDER, B-12TYPE B - RETURN/EXHAUST AIR GRILLE, SIZE AS SHOWN, MODEL 630. C/W ALUMINUM OBVD AND TYPE F BORDER WHEN USED FOR DUCTED EXHAUST, B-12 FINISH. TYPE C - RETURN/EXHAUST AIR GRILLE (EGG CRATE), SIZE AS SHOWN, MODEL CORE 80. PROVIDE TYPE F BORDER/FRAME
- FOR DUCTED AND SURFACE MOUNTED. PROVIDE ALUMINUM OBVD WHEN DUCTED, B-12 FINISH <u>TYPE D</u> – SQUARE CEILING SUPPLY AIR DIFFUSER, SIZE AS SHOWN, MODEL SCD C/W OBVD, B-12 FINISH. TYPE E - LINEAR SUPPLY SLOT DIFFUSER, 1" SLOT, SURFACE MOUNT CONCEALED FRAME. SIZE OF LINEAR AND PLENUMS A
- SHOWN ON PLANS, MODEL SDS-100 C/W VOLUME CONTROL USE EH PRICE SDBI-100 INSULATED PLENUM. PLENUMS ARE OFFERED IN 2,3,4 AND 5 FT SECTIONS. COLLAR SIZES ARE 6,8,10,12. CUSTOM MADE PLENUMS SHALL MATCH MANUFACTURED PLENUMS. TYPE F - LINEAR RETURN SLOT DIFFUSER, 1" SLOT, SURFACE MOUNT CONCEALED FRAME, SIZE AS SHOWN ON PLANS, MODEL
- SDR-100. <u>TYPE G</u> – LINEAR SUPPLY BAR GRILLE, SIZE AS SHOWN, MODEL LBP15B FOR ALL APPLICATIONS EXCEPT FLOOR MOUNTED WHICH SHALL BE LBMH15B. C/W OBVD, CONCEALED FASTENING AND 3/4" BORDER. WHERE BEING SERVED BY A BRANCH DUCT CONTRACTOR IS TO PROVIDE INSULATED PLENUM BOOT EQUAL TO EH PRICE UP OR UPL, B-12 FINISH WHERE
- PAINTED OR #66 WHERE NOT PAINTED. EXACT FINISH TBD. YPE H – LINEAR RETURN BAR GRILLE, SIZE AS SHOWN. MODEL LEP15B. C/W CONCEALED EASTENING AND 3/4" BORDER, B-12 FINISH WHERE PAINTED OR #66 WHERE NOT PAINTED. EXACT FINISH TBD.
- TYPE I ROUND CEILING SUPPLY AIR DIFFUSER, SIZE AS HOWN IS NOMINAL DUCT SIZE), MODEL RCD C/W OBVD, B-1
- **TYPE J** DOOR TRANSFER GRILLE SIZE AS SHOWN, MODEL ATG1, B-12 FINISH. <u>TYPE K</u> – FIRE RATED DOOR TRANSFER GRILLE, SIZE AS SHOWN. NAILOR MODEL 61DGD-FR, B-12 FINISH.
- <u>TYPE L1 AND L-2</u> LINEAR VANE GRILLE, SIZE AS SHOWN, MODEL (L1 FOR LV-1) (L2 FOR LV-2) C/W OBVD, CONCEALED FASTENING AND 3/4" BORDER. WHERE BEING SERVED BY A BRANCH DUCT CONTRACTOR IS TO PROVIDE CUSTOM 1/2" INSULATED PLENUM BOOT. BOOT SHALL BE SIZED AS FOLLOWS LENGTH AND WIDTH 2" LARGER THAN LINEAR COLLAR SIZE AND HEIGHT SHALL BE 2" LARGER THAN ASSOCIATED DUCT BRANCH
- **TYPE M** SQUARE PERFORATED CEILING DIFFUSER, SIZE AS SHOWN, MODE APDDR B-12 FINISH. TYPE N - LINEAR ADJUSTA SLOT DIFFUSER MUD IN TYPE. IGLE SLOT MODEL (REFER TO PLANS FOR LENGTH AND SLO WIDTH) AS210 WITH 22 BORDER, CONCEALED MOUNTING, DUAL
- PATTERN CONTROLLERS, XX ENDS. REFER TO PLANS FOR PROVIDE INSULATED UNIVERSAL PLENUM MODEL UP22SM WITH 6" CONNECTION TO MATCH ASSOCIATED LINEAR. PLENUMS ARE OFFERED IN 2,3,4 AND 5FT SECTIONS. LOUVRES AND TERMINATIONS
- WALL BOX- GREENHECK FOR MASONRY USE BRICK VENT BVF808 FOR UP TO 250CFM FOR C/W B/SC AND B/D/D AKED ENAMEL. COLOUR BY OTHERS. WALL LOUVRE L-2 - MODEL ESD-202 WITH ALUMINUM SLEEVE AS REQUIRED. MIN 8" DEEP. WALL LOUVRE L-4 - MODEL ESD-403 WITH ALUMINUM SLEEVE AS REQUIRED MIN 12" DEEP.
- L2 AND L-4 LOUVRE SIZES AS NOTED ON PLANS C/W PRIME COAT FINISH FOR FIELD PAINTING, B/SC, B/D/D (UNLESS NOTED AS A MOTORIZED DAMPER ON PLANS). WALL OPENING SIZE SHALL BE LISTED LOUVRE SIZE. EXAMPLE 6X6 LOUVRE WILL NEED AN 6X6 OPENING. OPENING SIZE SHALL BE CONFIRMED AND SUPPLIED TO MANUFACTURER PRIOR TO
- RV-EXH, RV-INT (ROOF VENTILATOR FOR EXH./INTAKE) GREENHECK FABRA MODEL FGI FOR INTAKE AND FGR FOR EXHAUST. SPUN ALUMINUM, COLOUR AS PER OWNER/ARCHITECT. C/W 12" TALL BASE ROOF CURB OR PITCHED ROOF CURB AS REQUIRED, B/SC, PRIME COAT FINISH FOR FIELD PAINTING AND FULL SIZE INSULATED DUCT DROP
- ACT LENGTH OF DROP T.B.D AT SITE). PROVIDE $B/D/D^{-1}$ ACH CONNECTION AT PLENUM DROP OR MOTORIZED DAMPER HERE NOTED ON PLANS, ROOF CAP (ALUMINUM) - GREENHECK - MODEL RCC-7 (UNLESS LISTED ON PLAN) C/W B/SC AND HORIZONTAL B/D/D AND 12" CURB.
- .BACK DRAFT- GREENHECK -- COMMERCIAL WD SERIES C/W ACTUATOR PACK WHERE NOTED ON PLANS, CONTRACTOR TO VERIFY ORIENTATION AND DIRECTION OF AIRFLOW WITH MANUFACTURER WHEN ORDERING. HORIZONTAL MOUNTED DAMPERS SHALL BE C/W COUNTERBALANCE WHERE MOTORIZED DAMPER IS NOT SPECIFIED ON PLANS, PROVIDE ALUMINUM SLEEVE AND OR FLANGE AS REQUIRED. WHERE DAMPER IS
- ATTACHED TO LOUVRE, LOUVRE SHALL BE ORDERED WITH SLEEVE TO ACCOMMODATE THIS DAMPER. CONTRACTOR TO VERIFY WALL OPENING PRIOR TO ORDERING. MANUAL BALANCING DAMPER- GREENHECK - MDB-15 SERIES CONTRACTOR TO VERIFY ORIENTATION AND DIRECTION OF AIRFLOW WITH MANUFACTURER WHEN ORDERING. . PROVIDE ALUMINUM SLEEVE AND OR FLANGE AS REQUIRED. MOTORIZED DAMPER- GREENHECK - COMMERCIAL VCD-20 ERIES C/W --- MOTORIZED DAMPER PACK WHERE NOTED PLANS. PROVIDE ALUMINUM SLEEVE AND OR FLANGE AS REQUIRED. WHERE DAMPER IS ATTACHED TO LOUVRE, LOUVRE SHALL BE ORDERED WITH SLEEVE TO ACCOMMODATE THIS DAMPER. CONTRACTOR TO VERIFY WALL.
- FIRE DAMPER- GREENHECK MODEL FD SHALL BE TYPE B, --- HOUR FIRE RATED AND COMPLETE WITH 160 DEG. REPLACEABLE LINK. DISHWASHER, KITCHEN OR ANY DUCTWORK DISCHARGING HIGH TEMPERATURE SHALL BE COMPLETE WITH A 350°F REPLACEABLE LINK. SMOKE DAMPER- GREENHECK - MODEL SMD, 3-V BLADE CLASS 2 C/W ACTUATOR, SLEEVE AND SMOKE DETECTOR OR TIED INTO BUILDING MONITORING SYSTEM. POWER FOR ACTUATOR SHALL BE ---.

FIRE/SMOKE DAMPER- GREENHECK - TBD

FACE OF EXTERIOR WALL. OVER 2" PIPE.

JACKETS

ALL PIPING MUST BE APPROVED FOR THE WATER TEMPERATURES WHERE APPROVED ALL NON METALLIC PIPING MUST BE APPROVED BY ENGINEER IN WRITING AND BE INSTALLED AS PER MANUFACTURERS GUIDLINES. IN ADDITION, TO ENSURE COMPATIBILITY, PERFORMANCE AND MATERIAL QUALITY, IT IS RECOMMENDED THAT THE PIPE AND FITTING DRAINAGE SYSTEM SHALL BE PRODUCED BY THE SAME MANUFACTURER. T MANUFACTURER OF THE PIPE AND FITTING SYSTEM SHALL CONTACTED BY THE TRADE CONTRACTOR PRIOR TO THE INSTALLATION TO OBTAIN PRECISE INSTALLATION INSTRUCTIONS AS WELL, SITE MEETINGS SHALL BE ARRANGED AND INCLUDE. CONTRACTOR, MANUFACTURER AND BUILDING INSPECTOR. ALL BLACK STEEL PIPING AND ACCESSORIES LOCATED IN AREAS HAT ARE CORROSIVE OR AREAS WHICH ARE SUBJECT TO HIGH HUMIDITY CONDITIONS SUCH AS AN INDOOR POOL OR AN ARENA SHALL BE GALVANIZED.

<u>PIPE MATERIAL</u>

BEING SERVED

POTABLE WATER.

FITTINGS/JOINTS.

AS FOLLOWS.

VERTICAL SHAFT

CONCEALING.

WELDED OVER 2"

ALL PIPING SHALL MEET THE FLAME AND OR SMOKE RATING AS SPECIFIED IN THE APPLICABLE CODES. ADD AN ADDITIONAL 1" INSULATION TO THE VALUES BELOW WHERE PIPING IS LOCATED IN UNHEATED AREAS WITHOUT OR WITHOUT PROVIDE EXPANSION LOOPS, COMPENSATORS, GUIDES, ANCHORS OR JOINTS AS REQUIRED BY APPLICABLE CODES. WHERE CONTRACTOR IN UNSURE OF THESE CODES ENGINEER SHALL BE

CONTACTED INSTRUCTION. WHERE NON METALLIC PIPING IS NOT APPROVED DURING TENDER PROCESS IT IS ASSUMED THAT IT IS NOT BEING USED. USE UNIONS, FLANGES, AND COUPLINGS DOWNSTREAM OF VALVES AND AT EQUIPMENT OR APPARATUS CONNECTIONS. DO NOT USE DIRECT WELDED OR THREADED CONNECTIONS TO VALVES. EQUIPMENT OR OTHER APPARATUS.

USE NON-CONDUCTING DIELECTRIC CONNECTIONS WHENEVER JOINTING DISSIMILAR METALS IN OPEN SYSTEMS. . ALL DRAINAGE PIPING SHALL BE CHECKED FOR SLOPES TO THE SATISFACTION OF THE ENGINEER. ALL UNBURIED DOMESTIC WATER PIPING - 4" AND UNDER SHALL B TYPE 'L' COPPER COMPLETE WITH WROUGHT COPPER OLDERED/BRAZED JOINT PRESSURE FITTINGS. PIPING OVER 4" SHA

ALTERNATIVELY WHERE APPROVED DURING TENDER PROCESS BY LANDLORD/ENGINEER PIPING MAY BE AS FOLLOWS. PEX-A FOR SIZES 11/2" AND UNDER. IT MUST BE ENGEL METHOD PEX-A FOR SIZES 11/2" AND UNDER. IT MUST BE ENGEL METHOD PEX-A. PEX SHALL NOT BE USED WHERE EXPOSED TO UV LIGHT AND FOR INDIVIDUAL FIXTURE SUPPLIES. PEX SHALL BE INSTALLED TO SUIT MANUFACTURERS LISTED RATINGS. ALL PEX PIPING SHALL BE PLENUM RATED.

BURIED DOMESTIC WATER PIPING - FOR SIZE 2" DIAMETER AND SMALLER TO BE TYPE 'K' COPPER COMPLETE WITH WROUGHT COPPER SOLDERED/BRAZED JOINT PRESSURE FITTINGS. FOR SIZES 3" AND LARGER TO BE PVC C-900 C.S.A. LABELED AND COMPLETE WITH WIRE TRACER. PIPE TO BE BEDDED AS REQUIRED BY LOCAL AUTHORITIES AND PROVIDE MINIMUM 6ET COVER WHERE EXPOSED T FROST. WHERE 6FT COVERAGE IS NOT POSSIBLE CONTRACTOR TO IOTIFY ENGINEER PRIOR TO ANY WORK BEING DONE. CROSS LINKED DLYETHYLENE MAY BE USED IN AREAS WITHIN BUILDING AS LONG AS THE PIPING IS NOT EXPOSED TO FROST. IS 11/2" AND SMALLER. RUN IN CONDUIT C/W WIRE TRACER AND IS APPROVED BY BUILDING LANDLORD AND/OR OWNER. PEX PIPING MUST BE APPROVED FOR

UNBURIED STORM, SANITARY, VENT, CONDENSATE, PIPING SHALL BE TYPE L DWV COPPER WITH WROUGHT COPPER SOLDERED/BRAZED JOINTS OR CAST IRON PIPE AND APPROVED

ALTERNATIVELY WHERE APPROVED DURING TENDER PROCESS AND PRIOR TO CONSTRUCTION BY LANDLORD/ENGINEER PIPING, MAY B NON HIGH RISE BUILDINGS OF NON COMBUSTIBLE CONSTRUCTION IPEX SYSTEM 15. SYSTEM XFR SHALL BE USED IN PLENUMS AND UNLESS APPROVED OTHERWISE ALL AREAS LOCATED AT 7FT ABOVE

FLOOR. NO COMBUSTIBLE PIPING SHALL BE USED IN VERTICAL NON HIGHRISE BUILDING OF COMBUSTIBLE CONSTRUCTION IPEX SYSTEM 15 AND ABS. NO COMBUSTIBLE PIPING SHALL BE USED

N VERTICAL SHAFTS. HIGH RISE BUILDINGS OF ALL CONSTRUCTION PEX SYSTEM XFR. NO COMBUSTIBLE PIPING SHALL BE USED IN LL IPEX SYSTEMS SHALL BE INSTALLED AS PER MANUFACTURERS UIDELINES USING THE APPROVED FITTINGS AND SOLVENT CEMENT.

BURIED STORM AND SANITARY PIPING – SHALL BE PVC AND SHALL LEAVE THE BUILDING WITH MINIMUM 6FT OF COVERAGE. PROVIDE APPROVED SOLVENT CEMENT. WHERE THIS IS NOT POSSIBLE HEAT TRACING AND INSULATION SHALL BE ADDED. ENGINEER TO E CONTACTED FOR FURTHER DETAIL. HOT WATER TANK RELIEF PIPING - SHALL BE DWV COPPER.

GAS PIPING - SHALL BE SCHEDULE 40 STEEL SCREWED FOR 2" AND SMALLER AND WELDED FOR LARGER SIZES. ALL SIZED GAS PIPING SHALL BE WELDED WITHIN CONCEALED SPACES. INSTALLATION AND DENTIFICATION SHALL BE AS PER LOCAL GAS CODE AND INSTALLED Y LICENSED CONTRACTOR FAMILIAR WITH APPLICABLE CODES. PIPING SHALL NOT BE RUN IN A HEATING OR VENTILATING PLENUM UNLESS TS A FAKE REMOVABLE CEILING OR IN A STAIRWELL WITHIN A ENTILATED SHAFT. PIPING WITH FITTINGS CANNOT RUN WHERE TH JOINTS CANNOT BE INSPECTED IN THERE FINAL POSITION PRIOR T

BURIED GAS PIPING - SHALL BE BURIED MINIMUM 3FT BELOW GRADE AND C/W TRACER WIRE AND MARKING TAPE. INSTALLATION AND DENTIFICATION SHALL BE AS PER LOCAL GAS CODE AND INSTALLED Y LICENSED CONTRACTOR FAMILIAR WITH APPLICABLE CODES. HEATING/HEATPUMP/CHILLED WATER PIPING - SHALL BE TYPE L COPPER OR BLACK STEEL SCHEDULE 40 THREADED TO 2" AND

<u>PIPING SUPPORTS</u> ANVIL OR EQUIVALENT. ALL COMPONENTS ARE TO BE GALVANIZED.

WHERE SADDLE IS SPECIFIED HANGER SHALL NOT TOUGH PIPING. REFER TO ANVIL MANUAL FOR SIZING AND DETAILS FOR ALL COMPONENETS. USE TRAPEZE HANGERS WHERE PIPES CAN BE HUNG IS

FOR ROOFTOP PIPE SUPPORTS USE MIFAB C RUBBER SUPPORT SERIES. PROVIDE PIPE EXTENSIONS AS REQUIRED TO SUIT LOCAL BY LAWS AND OBSTRUCTIONS PIPING LOWER ATTACHMENT

UP TO 2" USE FIGURE 65 WITH FIGURE 167 SADDLE . SADDLE ONLY USED WHERE PIPING IS INSULATED. USE CT-65 FOR UN-INSULATED COPPER APPLICATIONS. 21/2"-4" USE FIGURE 260 WITH FIGURE 167 SADDLE. SADDLE ONLY USED WHERE PIPING IS INSULATED. USE CT-65 FOR UN-INSULATED COPPER APPLICATIONS.

6" AND OVER USE FIGURE 260 WHERE NOT INSULATED AND USE FIGURE 260ISS WHERE PIPING IS INSULATED. PIPING UPPER ATTACHMENT - CONCRETE INSERTS USE FIGURE 152. STEEL BEAMS USE FIGURE(S) 92 OR 93 BEAM CLAMPS. PIPING INTERMEDIATE ATTACHMENT - USE FIGURE 146 THREADED

WALL SUPPORTS - USE FIGURE 67 FOR STEEL, USE FIGURE 67F VERTICAL SUPPORTS - FOR UNDER 2" USE FIGURE 261 FOR STEEL

AND CAST IRON, USE FIGURE CT-121 FOR COPPER. PIPE SUPPORT SPACING ALL PIPING SHALL BE SUPPORTED BEFORE AND AFTER WALL OPENINGS/SLEEVES. DO NOT REST PIPE ON OPENINGS.

STEEL - 6FT INTERVAL FOR 4" AND LESS, 10FT INTERVAL FOR OVER 4" AND AT ALL PIPE CONNECTIONS. <u>CAST IRON</u> – AT EACH HUB OR JOINT, INTERVALS NOT EXCEEDING 10FT AND AT INTERVALS NOT EXCEEDING 3FT IF PIPE HAS MECHANICAL JOINTS AND THE LENGTH OF PIPE BETWEEN ADJACENT

FITTINGS IS LESS THAN 12". IPEX DRAINAGE SYSTEMS - 4FT INTERVAL OR AS PER MANUFACTURES GUIDELINES. SUPPORT AT END OF BRANCHES, CHANGE OF DIRECTION/ELEVATION. IF FIXTURE DRAIN IS MORE THAN 3FT PROVIDE SUPPORT AT TRAP.

COPPER - 6FT FOR 1" AND LESS AND 8FT FOR 11/4" AND ABOVE. HEATING AND DOMESTIC PEX SYSTEMS – 3FT INTERVAL OR AS PER MANUFACTURERS GUIDLINES. **<u>GAS PIPE</u>** – 8FT. FOR $3/4^{"}$, 10FT FOR $11/4^{"}-21/2^{"}$, 14FT FOR $3^{"}-4^{"}$, 18 FT FOR $6^{"}-8^{"}$ AND AT ALL PIPE CONNECTIONS. PIPE AND EQUIPMENT INSULATION

TYPE A INSULATION SHALL BE GLASS FIBRE INSULATION; <<K VALUE OF 0.24 AT 75 DEGREES F>>. ALL EQUIPMENT SHALL BE INSULATED TO THE SAME STANDARD A THE CONNECTED DUCT OR PIPE. ALL REQUIRED INSULATION TO BE OF 100% COVERAGE INCLUDIN WHERE THIS WORK IS PART OF AN EXISTING BASE BUILDING TH BASE BUILDING STANDARDS MUST BE ADHERED TO UNLESS THE THE BELOW SPECIFICATION IS MORE STRINGENT. BASE BUILDING CONSULTANTS TO CONFIRM.

ALL PIPING AND EQUIPMENT MUST BE TESTED AND SURFACES CLEANED PRIOR TO INSTALLATION. CONTINUE INSULATION THROUGH PENETRATIONS WITH VAPOUR

FOR INTERIOR CONCEALED AREAS USE VAPOUR BARRIER JACKETS: KRAFT REINFORCED FOIL VAPOUR BARRIER WITH SELF-ADHESIVE FOR INTERIOR EXPOSED AREAS USE PVC JACKETS: ONE PIECE,

PRE-MOULDED TYPE. FOR OUTSIDE EXTERIOR PIPING USE ALUMINUM JACKETS: <0.51 MM> <<0.020 INCH>> THICK ABOVE GRADE DOMESTIC PIPING, CONDENSATE PIPING, TRAP PRIMER LINES AND SUMP PUMP DISCHARGE MAINS -1" INSULATION

ABOVE GRADE DOMESTIC HOT. RECIRCULATION PIPING " INSULATION UP TO 2", 11/2" INSULATION OVER 2" ABOVE GRADE STORM - 1" INSULATION

ABOVE GRADE SANITARY - 1" INSULATION ON HORIZONTAL PIPING AND 1" WHERE THERE IS A CONTINUOUS FLOW OF BELOW AMBIENT SANITARY VENTING - 1" INSULATION UP TO 10 FEET FROM INSIDE

HEATING WATER PIPING AND TWO PIPE FAN COIL - 1" INSULATION UP TO 3/4", 11/2" INSULATION UP TO 11/2", 2" INSULATION FOR CHILLED WATER PIPING - 1" INSULATION UP TO 4", 11/2" INSULATION OVER 4".

FIRE STANDPIPE AND WET SPRINKLER PIPING – 2" TYPE A INSULATION WHERE RUNNING THROUGH UNHEATED AREAS.

HEAT TRACING – UNLESS NOTED OTHERWISE THE FOLLOWING SHALL APPLY. WHERE EXPOSED TO OUTDOOR TEMPERATURES OR LOCATED BELOW 6 FT FROST LINE ALL PIPING MENTIONED IN THESE

SPECIFICATIONS INCLUDING FIRE STANDPIPE. WET SPRINKLER SYSTEMS. SUMP PUMP DISCHARGE LINES AND DRY PIPE DRUM DRIPS PIPING SHALL BE HEAT TRACED C/W 2" OF INSULATION. ONLY TRACE STORM PIPING FROM ROOF DRAIN UP TO 5 FT WITHIN HEATED SPACE. PIPE TRACING CABLES SHALL BE SUPPLIED AND INSTALLED BY CONTRACTOR INSTALLING ASSOCIATED PIPING. POWER SUPPLY SHALL E SUPPLIED AND INSTALLED BY ELECTRICAL DIVISION. PIPE TRACING CABLES SHALL BE SELF REGULATING TYPE, MIN 5 WATTS/SQ.FT, CUT D LENGTH, HARD WIRED, C/W ALL REQUIRED SENSORS, TERMINATION ITS HARDWARE AND ACCESSORIES 3M TTS SERIES OR APPROVED EQUAL. MECHANICAL AND ELECTRICAL DIVISIONS SHALL COORDINATE WORK FOR EXACT QUANTITIES & LOCATIONS OF REQUIRED PIPE TRACING, POWER SUPPLY LOCATIONS AND POWER/VOLTAGE REQUIREMENTS.

OUTLET SIZE TO BE AS PER PLUMBING SIZING NOTES UNLESS NOTED ON PLANS. IN QUARRY OR MOSAIC TILED AREAS, PROVIDE SQUARE NICKEL BRONZE STRAINER. FOR FLOATING FLOORS PROVIDE 9340-WSH.

CONTRACTOR TO CONFIRM WITH SUPPLIER EXACT USE AND INSTALLATION DETAILS FOR FURTHER RECOMMENDATIONS. FLOOR DRAIN (FINISHED FLOORS) – SERIES 2005-A05NB-P050 NICKLE BRONZE, NO HUB, 5" DIA STRAINER, PRIMER CONNECTION. FLOOR DRAIN (UNFINISHED FLOORS) – SERIES 2320–P050 CAST IRON TRACTOR GRATE, NO HUB, 8" DIA STRAINER, PRIMER FLOOR DRAIN (COMMERCIAL KITCHEN) - PROVIDE 9700-C-U ALL STAINLESS STEEL DRAINS WITH FLASHING CLAMP, 7" STRAINER AND TAMPER PROOF GRATE. (ALTERNATE) FLOOR DRAIN (COMMERCIAL KITCHEN) - PROVIDE 2005-A06NBSS-B-U CAST IRON DRAINS WITH FLASHING CLAMP, DO5-AO6NBSS-B-U CAST IRON DRAINS WITH FLASHING CLAMP, 6" TAINLESS STEEL STRAINER, SEDIMENT BUCKET AND TAMPER PROOF <mark>FUNNEL FLOOR DRAIN (FINISHED FLOORS)</mark> – SERIES 2005–A05NB–2695–3591NB, 5' DIA NICKLE BRONZE OPEN THRROAT RAINER, NO HUB, NICKEL BRONZE OVAL FUNNEL--- ADAPTER PRIMER CONNECTION. FUNNEL FLOOR DRAIN (UNFINISHED FLOORS) – SERIES 2320–2695–3591, CAST IRON TRACTOR GRATE WITH F 2320-2695-3591, CAST IRON TRACTOR GRATE WITH FULL OPEN HROAT, NO HUB, OVAL CAST IRON FUNNEL--- ADAPTER PRIMER HUB DRAIN (FINISHED FLOORS) – SERIES 2005–2645RB–P050, ROUGH BRONZE HUB FUNNEL, NO HUB, 4" ADAPTER, PRIMER ONNECTION. H<mark>UB DRAIN (UNFINISHED FLOORS)</mark> – SERIES 2005–2645–P050, CSAT IRON HUB FUNNEL, NO HUB, 4" ADAPTER, PRIMER CONNECTION. TRAFFIC AREA DRAINS (LARGE CAPACITY) - SERIES SQ-2-1717B FLOOR DRAIN. PROVIDE SMITH SQ-2-1717-ADJ-B DRAIN WHEN AN JUSTABLE EXTENSION SLEEVE IS REQUIRED – HEIGHT TO S DECK CONSTRUCTION. **GARAGE DRAIN (LARGE CAPACITY)** – SERIES SQ-2-1717B FLOOR DRAIN. PROVIDE SMITH SQ-2-1717-ADJ-B DRAIN WHEN AN ADJUSTABLE EXTENSION SLEEVE IS REQUIRED – HEIGHT TO SUIT DECK CONSTRUCTION. AREA DRAIN (LIGHT TRAFFIC AREAS) – SERIES 2320NB NICKEL BRONZE TRACTOR GRATE, NO HUB, 8" DIA STRAINER. TERRACE DRAIN (BALCONY AREA) – SERIES 1670T NICKEL BRONZE SRRAINER, THREADED CONNECTION, 6" DIA STRAINER WITH SIDE

TERRACE DRAIN (BALCONY AREA) – SERIES 1610T-B4 NICKEL BRONZE SRRAINER, THREADED CONNECTION, 6" DIA STRAINER WITH 4' DEEP BODY, BOTTOM OUTLET. TRENCH_DRAINS – SMITH SERIES 9930 TRENCH DRAIN SYSTEMS. FOR APPLICATIONS WITH TRAFFIC UNDER 3500 LBS-70PSI USE GRATE 9870-451-SSPA GRATE AND TYPE 304 STAINLESS STEEL OVERLAY RAIL EDGE OR 9870-491-HPP POLYPROPYLENE. FOR TRAFFIC OVER ADD VELVEV DATE DATE OF TRAFFIC OVER 00 LBS-70PSI AND VEHICLE TRAFFIC USE GRATE 9870-455-SSHD ROOF DRAIN – SMITH SERIES 1010ERCCID ROOF DRAIN. ON SMALL AREA ROOFS PROVIDE SERIES 1330ERCCID DRAIN. INVERTED ROOF INSTALLATION USE SERIES 1017RCCID DRAINS. PROVIDE SUMP ROOF DRAIN (FLOW CONTROL) – SMITH SERIES 1083-CAN ROOF DRAIN. INVERTED ROOF INSTALLATION USE SERIES 1017-83 DRAINS. OVIDE SUMP RECEIVER. <u>VALVES</u>

WHERE POSSIBLE PROVIDE VALVES OF SAME MANUFACTURER THROUGHOUT PROVIDE VALVES WITH MANUFACTURER'S NAME AND PRESSURE RATING CLEARLY MARKED ON BODY (PER MSS-SP-25), PRODUCT SHALL CARRY VALID CRN (CANADIAN REGISTRATION NUMBER) ISSUED BY RESPECTIVE PROVINCES. ALL PRESSURE RATINGS MANUFACTURERS TRADEMARK AND SIZE TO CONFORM AS PER MSS-SP-25. DISSIMILAR METALLIC CONNECTION USE DIELECTRIC ISOLATING COUPLING FOR BUSHINGS. NSTALL VALVES WITH STEMS UPRIGHT OR HORIZONTAL, NO

INVERTED BALL VALVES (ISOLATION & BALANCING) - UP TO 4", 1034 KPA (150PSIG)/600WOG RATING, BRASS AND OR BRONZE BODY, FULI PORT, TFE SEATS, DOUBLE O-RING DESIGN, OR TEFLON PACKING CHROME PLATED SOLID BRONZE BALL, LEVER HANDLE. PROVIDE STEM EXTENSION WITH PIPING THAT IS INSULATED. SOLDERED: KITZ 59, HREADED: KITZ 58. DRAIN VALVE - KITZ 3/4" 68AC

CHECK VALVES (BACKFLOW PREVENTION) HORIZONTAL & VERTICAL UP TO 2", 860KPA (125PSIG)/200 WOG RATING, BRONZE BODY TO ASTM B62, BRONZE TRIM, AND Y SWING PATTERN. SOLDERED: KITZ 2 THREADED: KITZ 22. OVER 2". 860KPA (125PSIG) /200WOG RATING. CAST IRON BODY, TO ASTM A126 BRONZE TRIM, BOLTED BONNET, FLANGED. FLANGED: KITZ 78.

CIRCUIT BALANCING VALVES - B&G PIC-V UP TO 4.5 GPM, B&G CIRCUIT SENTRY FOR ABOVE 4.5 GPM. PLUMBING AND HYDRONIC SPECIALTIES STRAINERS - UP TO 2", 860KPA (125PSIG)/200 WOG RATING BRONZE BODY, SCREWED CAP, Y-PATTERN, S.S SCREEN WITH 1/32

PERFORATION, SOLDERED: KITZ 16, THREADED: KITZ 15. OVER 2", 860KPA (125 PSIG) / 200 WOG RATING, CAST IRON BODY, BOLTED COVER, Y-PATTERN, S.S. SCREEN WITH 1/32 PERFORATION, FLANGED WALL HYDRANT BOX - SMITH SERIES 5509QTSAP BOX TYPE WALL

CLEANOUTS – SERIES 4100 FLOOR CLEANOUT, DUCO COATED CAST IRON BODY AND REMOVABLE POSITIVE GASKET SEAL CLOSURE. PLUG AND HEAVY DUTY 6" (150MM) WITH EXTRA HEAVY NICKEL BRONZE COVER AND FRAME, SECURED WITH STAINLESS STEE SCREWS, C.O. CAST IN COVER. (FOR WATER-PROOFED AREAS PROVIDE 'FC' FLANGE WITH FLASHING CLAMP).

<mark>NON FREEZE WALL HYDRANT − BOX − EXTERIOR</mark> − JAY R. SMITH SERIES 5509QT BOX TYPE WALL HYDRANT, 1/4 TURN NON−DRIP, CERAMIC CARTRIDGE, 3/4" (19MM) NON FREEZE WALL TYPE WITH BRONZE FACE AND STAINLESS STEEL WITH FULL 180 DEG. COVER OPENING BOX, ADJUSTABLE WALL-FLANGE OPERATING KEY AND SELF-DRAINING INTEGRAL VACUUM BREAKER. LENGTH TO SUIT WALL

WATER HAMMER ARRESTORS - SMS INC. #SC SERIES SC SERIES SERIES 'SC' WATER HAMMER ARRESTORS WITH BRASS PISTON IN A TYPE 'K' COPPER CASING SIZE ACCORDING TO MANUFACTURER'S RECOMMENDATIONS CHART BELOW TO ELIMINATE WATER HAMMER AND SHOCK FROM PIPING SYSTEM. PROVIDE AT ALL FIXTURES TRAP SEAL PRIMER - SERVING 1 TO 4 DRAINS - SMS INC. PR-500 SMS INC. #PR-500 AUTOMATIC TRAP SEAL PRIMER VALVE CAST BRASS BODY. SERVING INDIVIDUAL OR REMOTE AREA DRAINS (PRIMER AUTOMATICALLY ACTIVATED WHEN THERE IS A PRESSURE DROP IN THE SYSTEM) WITH 1/2" (12.7MM) NPT (MTOF) CONNECTIONS WITH STRAINER AND INTEGRAL BACK FLOW PREVENTE VACUUM BREAKER. PROVIDE APPROPRIATE DISTRIBUTION FITTING UP) 4 DRAINS MAXIMUM, WHERE CONTRACTOR SUBSITUTES PRIMER WITH ALRERNATIVE REQUIREING POWER CONTRACTOR MUST INFORM CTRICIAN

HERMOMETERS - TRERICE BX9 SERIES. PROPER RANGE SHALL BE SELECTED SO THAT OPERATING TEMPERATURE OF THE MATERIAL BEING MEASURED WILL FAL APPROXIMATELY IN THE MIDDLE OF THE SCALE. WHERE INSULATION EXCEEDS 2" THICK, A LONGER STEM THERMOMETER WILL BE JSED WITH AN EXTENSION NECK BRASS SEPARABLE THERMOWELL THE EXTENSION NECK WILL BE AT LEAST 2" LONG.

THERMOMETERS FOR MEASURING FLUID WILL HAVE STEMS WITH NSERTION LENGTHS ROUGHLY HALF THE PIPE DIAMETER, MINIMUM INSERTION LENGTH WILL BE 2". THERMOMETERS INSTALLED ON TANKS WILL HAVE MIMIMUM INSERTION LEGTHS OF 5". THERMOMETERS FOR MEASURING AIR TEMPERATURES WILL BE SAME AS LIQUID WITH THE EXCEPTION OF HAVING A PERFORATED

GUARD STEM AND A MOUNTING FLANGE INSTEAD OF A BRASS SEPARABLE THERMOWELL. THERMOSTATS SHALL BE EASILY ACCESSIBLE AND READABLE. PRESSURE GAUGES - TRERICE 450 SERIES WITH 316 STAINLESS TEEL BOURDON TUBE/SOCKET AND STAINLESS STEEL NEEDLE

PROPER RANGE SHALL BE SELECTED SO THAT THE AVERAGE OPERATING PRESSURE OF THE MATERIAL BEING MEASURED WILL FALL APPROXIMATELY IN THE MIDDLE OF THE SCALE. GAUGES ON ANY SERVICE WHERE PRESSURE SURGES OR

PULSATIONS ARE POSSIBLE WILL BE PROVIDED WITH TRERICE #872 PRESSURE SNUBBERS. GAUGES SHALL BE EASILY ACCESSIBLE AND READABLE. AUTOMATIC AIR VENTS - B&G SERIES #792.

INSTALL AIR VENTS AT HIGH POINTS IN PIPING SYSTEMS, WHERE SPECIFIED, WHERE SHOWN ON THE DRAWINGS, AND WHERE REQUIRED TO FULLY VENT PIPING SYSTEMS. INSTALL BALL VALVE IN THE PIPING TO EACH AIR VENT.

FOR ALL VENTS, EXCEPT FOR CREWDRIVER-OPERATED TYPE AT CONVECTORS AND UNITARY HEATING EQUIPMENT, PROVIDE 9MM (3/8") COPPER DRAINS TO NEAREST FLOOR DRAIN. INSTALL DRAIN PIPING TO NEAREST SUITABLE APPROVED DRAIN OR

LOCATION AND TERMINATE SO DISCHARGE IS VISIBLE. AIR SEPARATOR - B&G USE BLA FOR 10 GAL AND UP USE HFT FOR . FOR 2" AND UNDER SERIES USE B&G EAS. SIZED AS PER INCOMING/DISCHARGE PIPE SIZE.

. FOR 3" AND UP SERIES USE B&G ROLAIRTROL. SIZED AS PER INCOMING/DISCHARGE PIPE SIZE. ZONE VALVES - CALEFFI MODEL 6442 UP TO 1" AND MODEL Z-4

SAFETY RELIEF VALVES - B&G SERIES. THERMOSTATIC MIXING VALVE - CALEFFI 521 MIXCAL WITH BUILT IN PRESSURE GUAGE

PRESSURE REDUCING VALVE - WATTS UB5-Z3 REDUCED PRESSURE BACKFLOW PREVENTOR - WATTS 009 UP TO 3 AND WATTS 909 OVER 3". SIDE SREAM FILTER - AXIOM CBF SERIES WITH FLOW RATE AS NOTED CHEMICAL POT FEEDER - AXIOM SFP SERIES WITH SIZE AS NOTED

	ENT SCHEDUL		AL PROCESS. REFER TO	4. ALL EQUIPM ISOLATED TO A	ENT SHALL BE ADEQU /OID VIBRATION TRAN	DLATORS, HANGERS ETC AS JATELY SUPPORTED TO BUIL SMISSION TO BUILDING STRU S REQUIRED TO SUIT EQUIP	DING STRUCTURE AND JCTURE. CONTRACTOR TO	ALL VENTING F		T BE AS PER MANUFACTU . WHERE MANUFACTURER	RER RECOMMENDATIONS AND ALLOWS PVC OR CPVC IT		N<u>G</u>LEGEND — Sanitary Drain – Unburied	
UAL UIPMEI	AND MAGNETIC	STARTERS THAN OR EQUAL TO 1/3		BUILDING STRU ASHRAE AND M DRAWINGS TO T	CTURE. NOISE LEVEL OE STANDARDS. THIS 'HIS ENGINEER AND S	FROM MECHANICAL EQUIPME CONTRACTOR SHALL PROVI STRUCTURAL ENGINEER OF F PIPING AND DUCTWORK SHA	ENT SHALL NOT EXCEED DE APPROVED SHOP RECORD FOR APPROVAL	MANUFACTURERS	S GUIDELINES USING ED ALL METAL VENTIN	SYSTEMS SHALL BE INSTAL THE APPROVED FITTINGS NG SHALL BE DOUBLE WA PIPING SHALL MEET THE A	AND SOLVENT CEMENT. LL INSULATED AL-294C AND		SANITARY DRAIN – BURIED	
UIPMEI THE M RS.	NT WITH MOTORS THAT ARE NOTOR WILL START OR SHU' NOTES	INTERLOCKED OR NOT N	VANUALLY OPERATED, L HAVE MAGNETIC	RATED WHERE 6. ALL EQUIPM TO MANUFACTU	LOCATED IN A PLENU ENT, DAMPERS VALVE RERS GUIDELINES AN	S, ETC IS TO BE ACCESSIBI D PROVIDE ULC LISTED ACC	LE FOR SERVICING. REFER ESS PANELS AS	ALL DIRECT VER LOW PROFILE K APPROVAL PRIC WHERE MANUFA	(ITS. KITS SHALL BE OR TO PURCHASING. I OCTURER OF APPLIAN(HANDED OVER TO ARCHIT KITS SHALL BE APPROVED CE OFFERS LOW PROFILE	BY MANUFACTURER AND KITS THEY SHOULD BE		 STORM DRAIN – BURIED DOMESTIC COLD WATER DOMESTIC HOT WATER 	
ARY C ES FOI BUT RE	VILL SUPPLY/MOUNT ALL EI ONTROLS, STATS, CONTROL R EQUIPMENT SUPPLIED BY QUIRES INTERLOCKING BY	ACCESSORIES, RELAYS, I THEM. WHERE EQUIPMEN THEM DIVISION 15 SHALL	DISCONNECTS AND NT IS NOT SUPPLIED BY . OBTAIN SHOP DRAWING	7. REFER TO C WHERE REFERE S	RILLES, DIFFUSERS L NCED IN EQUIPMENT		IEDULE FOR SPECIFICATION	TO THE OUTDO N <u>NON HIGH RISE</u> IPEX SYSTEM S	ORS UNLESS NOTED <u>BUILDINGS OF NON</u> 636 PVC. SYSTEM 63	OTHERWISE <u>COMBUSTIBLE CONSTRUC</u> 36 CPVC SHALL BE USED	IN PLENUMS AND UNLESS		- DOMESTIC HOT WATER RECIRCULATED	
LL DÓ N 15 S E CON	MOUNT ALL PREVIOUSLY MI ALL INTERLOCKING OF EQU SHALL CO-ORDINATE AND O TROL WIRING AND ALL CON . BE PLENUM RATED WHERE	UIPMENT AS NOTED ON T OBTAIN SERVICES OF DIVIS IDUIT. ALL WIRING SHALL	THESE DRAWINGS. SION 16 FOR ALL LINE	AND ARCHITECT APPROVED LADD LOCATED MORE	WHERE ACCESSIBILITY (ER AND NOTIFY ENGINE THAN 10 FEET ABOVE	FOR SERVICING, CONTRACTOR CANNOT BE OBTAINED BY A PH IER AND ARCHITECT WHERE GA FINISHED FLOOR FOR FURTHER OS FOR ALL EQUIPMENT EXT	ERMANENT OR CSA S FIRED EQUIPMENT IS NINSTRUCTION	VENTING SHALL <u>NON HIGHRISE</u>	BE USED IN SHAFTS BUILDING OF COMBUS	OCATED AT 7FT ABOVE FL S <u>STIBLE CONSTRUCTION</u> JSTIBLE VENTING SHALL B			- GAS LINE - FAN COIL SUPPLY	
APPRC	NT GENERAL NO	INSTALLED AND COMMISS		EQUIPMENT. 10. PROVIDE C		ZING KITS FOR ALL GAS AN		IPEX SYSTEM S	DINGS OF ALL CONS 636 CPVC. NO COME E VENTING IN	BUSTIBLE VENTING SHALL	BE USED IN SHAFTS			
GUIDL CEILIN S NOT	INES AND PROVIDE ALL NEW G HUNG EQUIPMENT THAT I LOCATED IN A MECHANICAL D DRAIN PAN SIZED TO PR	CESSARY ACCESSORIES A RECEIVES WATER OR PRO ROOM WITH A DRAIN SH	S REQUIRED DDUCES CONDENSATE HALL BE C/W A	A PROPERTY L	NE. CONTRACTOR TO	WHERE APPLIANCE VENTING ALLOW FOR FLUSH MOUNT AIN OR NEW PERMANENT SY G CONSTRUCTION UNLESS W	ALTERNATIVE VENTING KIT STEMS AS NOTED IN THE	<u>TYPE A</u> – FLE) FACING. USE AF APPLICATIONS L	KIBLE GLASS FIBRE; F PPROVED INSULATION IKE EMERGENCY GEN	K VALUE OF 0.29 AT 75 AND THICKNESS FOR HIG	DEGREES F FOIL SCRIM H TEMPERATURE		HEATING SUPPLY HEATING RETURN	
DINATE AS REG	SHALL BE BY ASSOCIATED E DRAIN PAN LOCATIONS WIT QUIRED MENT SHALL BE MOUNTED	TH HVAC CONTRACTOR AN	ND PIPE TO NEARETS	ENGINEER.	MPS ARE AFFECTED E	BY CITY WATER PRESSURE C		<u>AIR INTAKE</u> –	2" TYPE A UP TO BO		Y INSULATE INTAKE AND		HEAT PUMP SUPPLY HEAT PUMP RETURN	
				LEN	NOX - V	RF - SCHE	DULE		1			R	CONDENSATE DRAIN REFRIGERANT PIPING FIRE STAND PIPE	
RK	MANUFACTURER		SUPPLY AIR FAN DATA (VARIABLE SPEED)	HEATING	DATA	COOLING DATA	ELECTRI	ICAL DATA		SIZE(IN)	WEIGHT	SPК	- SPRINKLER LINE	
).75T	LENNOX	VMDA009H4	CFM E.S.P. 300 .3"	TYPE HEATING	HEATING OUTPUT 11MBH	TYPE TOTAL 9MBH	VOLTAGE 208/1/60	MOP 15	MCA 0.7	39 X 20 X 9	60LBS		BALL VALVE UNLESS SPECIFIED OTHERWISE	
-1T	LENNOX	VMDA012H4	300 .3"		13MBH	12MBH	208/1/60	15	0.7	39 X 20 X 9	60LBS		SOLENOID VALVE GLOBE VALAVE	
-2T -4T	LENNOX	VMDA024H4 VMDA048H4	600 .6" 1200 6"		27MBH 54MBH	24MBH 48MBH		15	0.6	49 X 10 X 13 51 X 27 X 16	83LBS 103LBS	図	GATE VALVE CIRCUIT BALANCING VALVE WITH P/T PORT	
-1/2 3/4/5	LENNOX LENNOX	VPA144H4M-2Y VPA120H4M-2Y			150MBH 120MBH	136MBH 112MBH		70 60	53.8 38.6	49.5 X 30 X 63 49.5 X 30 X 63	750LBS 750LBS		CHECK VALVE THERMOSTATIC MIXING VALVE	
-	R410A REFRIGERANT			IG LENGTH ON SITE									PRESSURE REDUCING VALVE DRAIN VALVE REDUCED PRESSURE BACK FLOW	
-	FLEXIBLE CONNECTION VIBRATION ISOLATOR	RS	W AIR CAP									C≕O AV Ţ	PREVENTOR AUTO AIR VENT	
			,	RGY REC	OVERY	VENTILATO	ORS SCHEI	DULE				FS 中 PS 中	FLOW SWITCH PRESSURE SWITCH	
NO.	LOCATION	MANUFACTURER	MODEL NO	AIRFLOW	E.S.P	SIZE(IN) LXWXH	VOLTAGE	BLOW HP	FAN WATTS	BLOW NO.	WEIGHT	Ψ ♀	THERMOMETER PRESSURE GUAGE	
-120 -330	RESIDENTIAL UNITS COMMON ROOM	LIFEBREATH	METRO 120ERV 330 ERV	50 CFM 330 CFM	0.3IN W.C. 0.3IN W.C.	21 X 19 X 10 35 X 28 X 18	120/1/60	1 /10 1 /6	154		34 LBS 120 LBS		PUMP STRAINER	
2.		VENTILATED AREAS)	, VIBRATION ISOLAT ED ON PLANS TERMI	ORS. EXACT LOCAT	ION OF TERMINAT	IN EACH ROOM BEING E ION TO BE CO-ORDINATE OUVRE TYPE .		ASSOCIATED ERV L	JNIT, INSULATED C	CASE (TO PREVENT			THERMOSTAT REVERSE ACTING T-STAT	
4.	PIPE COND. TO NEARES	ST HUBDRAIN C/W AIR	GAP.	UNITS SERVING CO	MMON AREAS DE	SIGN AIRFLOW RATE IS 1	20 CFM.						SPEED CONTROL	
					LINE FA	AN SCHED	ULE	1				• wc	PLUMBING FIXTURE FROM FLOOR ABOVE PLUMBING FIXTURE DRAIN DN	
	MANUFACTURER GREENHECK	MODEL # SQ-95	CFM E.S 400 .3	N DATA 5.P. H.P. 1/15	VOLTAGE 120/1/60		PERATION 7 TIMER	WEIGHT(LBS)	SIZE 15" DEEP	LOCATION			PENDANT SPRINKLER HEAD	
	 DISCONNECT FLEXIBLE CONNECTION 	IONS											SIDEWALL SPRINKLER HEAD FULLY CONCEALED SPRINKLER HEAD BALANCING DAMPER	6 DEC/14/2018 ISSUED FOR CONSTRUCTION 5 JUL/13/2018 ISSUED FOR PERMIT
	 - 50FT. OF CONTROL V - INSULATED CABINET - MOTOR COVERS 	WIRING OR AS NOTED	ON PLANS										SPLITTER DAMPER FIRE DAMPER	4 JUN/22/2018 UPDATED COORDINATION SET 3 JUN/11/2018 UPDATED COORDINATION SET
		UCTION FOR HIGH HU	MIDITY AREAS										MOTORIZED DAMPER BACK DRAFT DAMPER	2 JUN/04/2018 ISSUED FOR COORDINATION 1 APR/27/2018 PRELIMINARY ISSUE FOR REVIEW NO. DATE DESCRIPTION
	- SPEED CONTROLLER	кэ 				ER TANK SC							SPIN COLLAR WITH BALANCING DAMPER	THIS DRAWING SHALL BE USED ONLY FOR THE PURPOSE INDICATED IN THE LATEST ISSUED COLUMN ABOVE
AG N	D. LOCATIO	ON MAI	NUFACTURER	MODEL NO.				RECOVERY @ 100 RISE		ZE(IN) IA X H	WEIGHT	2 	BREAK END CAP	ALL DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF THE DESIGNER AND MAY NOT BE REPRODUCED WITHOUT
VT-12	- HEAT TRAP, TE	 MPERATURE SENSOR				500MBH	120 GAL	576 GPH		" X 76"	1855 LB		CUT AND EXTEND EXISTING	WRITTEN PERMISSION. DRAWINGS MUST NOT BE SCALED. CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS ON SITE AND REPORT ERRORS AND OMISSIONS TO THE DESIGNER. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION UNLESS COUNTERSIGNED BY THE DESIGNER.
		X			,	D IN COMMERCIAL APPL		G MUST BE PLENUN	1 RATED UNLESS A	APPROVED OTHERWIS			CONNECT TO EXISTING	THESE DRAWINGS ARE NOT TO BE SCALED.
	- PIPE RELIEF TC	D NEAREST HUB DRAIN	N C/W AIR GAP										CEILING AND WALL SUPPLY AIR GRILLE	CONSTRUCTION NORTH
	MANUFACTURER	MODEL #		AN DATA S.P. H.P.				WEIGHT(LBS)	LOCATION		MOUNTING		CEILING AND WALL RETURN AIR GRILLE	
0 0	PANASONIC PANASONIC	FV15VQ5 FV11VQ5	150 .2 100 .2	5 1/4 5 1/4	VOLTAGE 120/1/60 120/1/60		SWITCH SWITCH	10 10			CEILING MOUNT CEILING MOUNT		PPLY DUCT UP	
2. 3.	EXACT LOCATION OF TE	D BY OWNER/ARCHITE ERMINATION TO BE CO	ECT) EXCEPT LAUND D-ORDINATED WITH A	RY ROOM BY HUMID		D DUCT 10FT FROM INSIE			TT OR SIDEWALL A	AS SHOWN.			TURN DUCT DN	
E	LECTRIC D		FERS SCE	DULE								Пто нв но	N-FREEZE WALL HYDRANT SE BIBB	BK
MAF DH-		JFACTURER ERMOLEC	CAPACITY 2KW	VOLTAGE 208/1/60			SUITES ,102,103,105,106, 108,					© DC	MESTIC WATER UP MESTIC WATER DOWN TO ABOVE FLOOR MESTIC WATER DOWN TO BELOW FLOOR	C O N S U L T I N G I N C . 490 Harry Walker Parkway South Unit #3
DH	3 тні	ERMOLEC	ЗКW	208/1/60		9,110,111,112,113,114,115 205,206,208,209,210,211,2 			3,224				M. VALVED PLUMBING FIXTURE CONNECTION	Newmarket, Ontario L3Y 0B3 Bus. (905) 773-0200 Fax 1-866-830-5484 staff@bkconsulting.ca
DH	4 THE	ERMOLEC	4KW	208/1/60			116						FETY RELIEF VALVE	SENIORS RESIDENCE 100 McKAY STREET
	C/W ELECT SECTION, H TEMPERATU	L. VOLTAGE MUST B. TRONIC AIR FLOW S HI-TEMP CUT-OUT, JRE ADJUSTMENT SI DDITIONAL FREEZE	ENSOR, SCR CONT DUCT STAT WITH ET TO 70°F. CONTF	ROL, FILTER REMOTE RACTOR TO								AFF – ABOVE FINISHED AFG – ABOVE FINISHED AFR – ABOVE FINISHED BFP– BACK FLOW PREVE BRD – BFLOW ROOF DF	FLOOR <u>GENERAL PLUMBING</u> GRADE BWV – BACK WATER VALVE NTOR CFRD – CONTROL FLOW ROOF	
	WILL SHUT 50°F. SUPF	DDITIONAL FREEZE DOWN WHERE SUF PLIED, INSTALLED AI BY DIV 16. MUST E	PLY TEMPERATURE	DROPS BELOW								BRD – BELOW ROOF DEC EX. – EXISTING N – NEW NA – NOT APPLICABLE R – RELOCATED TBD – TO BE DETERMINE	CK DRAIN DS – DRAIN STACK RWL – RAIN WATER LEADER VTR – VENT THRU ROOF	
			KITCH fan data	IEN FAN	I SCHEI	DULE						<u>GENERAL HVAC</u> AL – ACOUSTIC LINED EA – EXHAUST AIR	<u>DRAINS</u> AD – AREA DRAIN FD – FLOOR DRAIN FFD – FUNNEL FLOOR DRAIN	PLOT DATE PROJECT NO. 18-660
EN	MANUFACTURER REVERSOMATIC	MODEL # CFM 2000-200 150	E.S.P. H.P. RF .3"		OLTAGE OPERA 20 SWITC		KITCHEN 6" C/					ETR - EXISTING TO REM, FR - FIRE RATED GM - GAS METER HWR - HIGH WALL RETU LWR - LOW WALL RETUR LWS - LOW WALL SUPPL	AIN HD – HUB DRAIN PD – PAVED AREA DRAIN RD – ROOF DRAIN RN SAD – SODDED AREA DRAIN N SD – SCUPPER DRAIN	DRAWING TITLE
								OVABLE ASE				NC – NORMALLY CLOSED OED – OPENED ENDED I RA – RETURN AIR SA – SUPPLY AIR TAD – TRANSFER AIR DU	DUCT <u>DAMPERS</u> B/D – BALANCING DAMPER CT F/D – FIRE DAMPER	MECHANICAL SPECIFICATIONS
							I	I]			TAG – TRANSFER AIR GR BSC – BIRD SCREEN UC – UNDERCUT DSD – DUCT SMOKE DET	S/D – SPLITTER DAMPER B/D/D – BACK DRAFT DAMPER	DATE 2018
														DRAWN BY AL M-7
														NTS OF 8

FOUIPM	ENT SCHEE			c	CONTRACTOR TO	MODIFY CURBS, IS	SOLATORS, HAN	GERS ETC AS I	REQUIRED	APPLIAN	CE VENTING	3		DRAWIN	<u>G LEGEND</u>	
<u>REFER TO SPEC</u> PLANS FOR EX	CIFICATIONS FOR PRO ACT QUNATITY AND L	DUCT CHANGES AND SUI OCATION OF EACH PIECE	BMITTAL PROCESS. REFE	<u>R 10</u> IS P	SOLATED TO AVO PROVIDE UNISTRU	ID VIBRATION TRANT T AND ANCHORS	ASMISSION TO	BUILDING STRU	ING STRUCTURE AND CTURE. CONTRACTOR TC IENT WEIGHT AND IT SHALL NOT EXCEED	ALL VENTING AS PER LATE	FOR APPLIANCES	_			- Sanitary Drain – Unburied - Sanitary Drain – Buried	
ALL EQUIPMENT MANUAL STARTE	T WITH MOTORS GRE ERS UNLESS NOTED	IC STARTERS ATER THAN OR EQUAL TO OTHERWISE OR AS BELOV	N. 1	A D 5	SHRAE AND MOE RAWINGS TO THI 5. ALL EQUIPMEN	E STANDARDS. THI S ENGINEER AND T CONNECTED TO	S CONTRACTOR STRUCTURAL E PIPING AND E	SHALL PROVID NGINEER OF RI	E APPROVED SHOP ECORD FOR APPROVAL L BE C/W FLEXIBLE	WHERE REQU SLOPED BACK RATINGS	IIRED ALL METAL V	ISING THE APPROVED FITTINGS /ENTING SHALL BE DOUBLE W ALL PIPING SHALL MEET THE	ALL INSULATED AL-294C AND	<u></u>	= STORM DRAIN – UNBURIED STORM DRAIN – BURIED	
WHERE THE MO STARTERS.	DTOR WILL START OR	FARE INTERLOCKED OR N SHUT-DOWN BY ITSELF		6 R	ATED WHERE LO	CATED IN A PLEN	UM ES, ETC IS TO	BE ACCESSIBLI	TIONS SHALL BE PLEN	ALL DIRECT V LOW PROFILE R APPROVAL PR	KITS. KITS SHALL RIOR TO PURCHASI	/C TERMINATION KITS MUST H/ _ BE HANDED OVER TO ARCHI ING. KITS SHALL BE APPROVE PLIANCE OFFERS LOW PROFILE	TECT AND OWNER FOR D BY MANUFACTURER AND		- DOMESTIC COLD WATER	
NECESSARY CO	LL SUPPLY/MOUNT / NTROLS, STATS, CON	ALL ELECTRIC MOTORS, S ITROL ACCESSORIES, RELA	AYS, DISCONNECTS AND	R 5, 7	EQUIRED. ACCES	S PANELS SHALL	NOT BE SURF	ACE MOUNTED	DULE FOR SPECIFICATION	USED. ALL DI TO THE OUTE DN	IRECT VENT APPLIA DOORS UNLESS NO	ANCES SHALL TERMINATE INTA	KE AND DISCHARGE DIRECTLY		DOMESTIC HOT WATERDOMESTIC HOT WATER RECIRCULATED	
THEM BUT REC AND SUPPLY/M 15 SHALL DO /	QUIRES INTERLOCKING MOUNT ALL PREVIOUS ALL INTERLOCKING O	D BY THEM. WHERE EQU BY THEM DIVISION 15 S SLY MENTIONED STARTERS F EQUIPMENT AS NOTED NND OBTAIN SERVICES OF	SHALL OBTAIN SHOP DRA , TRANSFORMER ETC. DI' ON THESE DRAWINGS.	WINGS VISION 8 A	3. ALL EQUIPMENT ND ARCHITECT WH PPROVED LADDER	TO BE ACCESSIBLE FERE ACCESSIBILITY AND NOTIFY ENGIN	E FOR SERVICIN CANNOT BE OB EER AND ARCHI	TAINED BY A PEI TECT WHERE GAS	FIRED EQUIPMENT IS	IPEX SYSTEM APPROVED 0	S636 PVC. SYSTE	EM 636 CPVC SHALL BE USE EAS LOCATED AT 7FT ABOVE F	D IN PLENUMS AND UNLESS		- GAS LINE	
VOLTAGE CONTI WIRING SHALL		. CONDUIT. ALL WIRING S WHERE REQUIRED.		_L ^{L'} 9		an 10 feet above			INSTRUCTION	IPEX SYSTEM		OMBUSTIBLE CONSTRUCTION COMBUSTIBLE VENTING SHALL I CONSTRUCTION	BE USED IN SHAFTS		- FAN COIL SUPPLY - FAN COIL SUPPLY	
1. ALL APPROV MANUFACTURER	ED EQUIPMENT SHAL	L BE INSTALLED AND CO AND INSTALLATION GUID L NECESSARY ACCESSOR	LINES. CONTRACTOR TO	E	QUIPMENT DISCH	ARGING CONDENS	ATE		OR PROPANE FIRED	ipex system APPLIAN	S636 CPVC. NO	COMBUSTIBLE VENTING SHALL	BE USED IN SHAFTS	HS	– FAN COIL RETURN – HEATING SUPPLY	
2. ALL CEILING THAT IS NOT L	HUNG EQUIPMENT OCATED IN A MECHA	THAT RECEIVES WATER OR NICAL ROOM WITH A DRA TO PROTECT SURROUNDIN	R PRODUCES CONDENSAT	E 1	2. DO NOT USE	E. CONTRACTOR TO EXISITNG TO REM	ALLOW FOR	FLUSH MOUNT A	TERMINATE ON OR OVE ALTERNATIVE VENTING K TEMS AS NOTED IN THI RITTEN APPROVAL BY	IT <u>TYPE A</u> - FL FACING. USE E APPLICATIONS	APPROVED INSULA S LIKE EMERGENCY	BRE; K VALUE OF 0.29 AT 75 ATION AND THICKNESS FOR HI (GENERATOR EXHAUST 10 FT. FROM EXTERIOR WALL	GH TEMPERATURE		- HEATING RETURN	
DRAIN PANS SH	HALL BE BY ASSOCIA DRAIN PAN LOCATION	TED EQUIPMENT INSTALLE IS WITH HVAC CONTRACTO	R. PLUMBER SHALL	E S 1	NGINEER.	'S ARE AFFECTED			NTRACTOR TO ALLOW	AIR INTAKE -	- 2" TYPE A UP 1			— — HPS — —	 HEAT PUMP SUPPLY HEAT PUMP RETURN 	
3. ALL EQUIPM	ENT SHALL BE MOUI	NTED LEVEL AS PER MAN	UFACTURERS INSTRUCTIO	NS.		NOX - \	/RF _ (SCHEI		EXHAUST WITH	H 2" TYPE A			11	– CONDENSATE DRAIN – REFRIGERANT PIPING	
			SUPPLY AIR FAN DATA	1						RICAL DATA					- FIRE STAND PIPE	
MARK	MANUFACTUREF	R MODEL	(VARIABLE SPEEI		HEATING	HEATING						SIZE(IN) LXWXH	WEIGHT		- SPRINKLER LINE - SANITARY VENT	
VRF-0.75T	LENNOX	VMDA009H4	CFM E.S.I 300 .3"		INPUT	OUTPUT 11MBH	TYPE	TOTAL 9MBH	208/1/60	MOP 15	0.7	39 X 20 X 9	60LBS	□	BALL VALVE UNLESS SPECIFIED OTHERWISE SOLENOID VALVE	
VRF-1T	LENNOX	VMDA012H4	300 .3"			13MBH		12MBH	208/1/60	15	0.7	39 X 20 X 9	60LBS	₩ ₩	GLOBE VALAVE	
VRF-2T VRF-4T	LENNOX	VMDA024H4 VMDA048H4	600 .6" 1200 6"			27MBH 54MBH		24MBH 48MBH	208/1/60	15	0.6	49 X 10 X 13 51 X 27 X 16	83LBS 103LBS	▶	GATE VALVE CIRCUIT BALANCING VALVE WITH P/T PORT	
ODU-1/2	LENNOX	VPA144H4M-2Y				54MBH 150MBH		48MBH	208/1/60	15 70	53.8	49.5 X 30 X 63	750LBS		CHECK VALVE	
ODU-3/4/5	LENNOX	VPA120H4M-2Y				120MBH		112MBH	208/3/60	60	38.6	49.5 X 30 X 63	750LBS	₩ ₩	THERMOSTATIC MIXING VALVE PRESSURE REDUCING VALVE	
-		TO CONFIRM THE AC	TUAL REFRIGERANT I		GTH ON SITE A	ND CONFIRM S	IZES								DRAIN VALVE REDUCED PRESSURE BACK FLOW	
-	FLEXIBLE CONNE	ATORS												AV ק	PREVENTOR AUTO AIR VENT	
-	PIPE COND. TO	NEAREST HUB DRA	,	FRG					RS SCHE					FS 中 PS 中	FLOW SWITCH PRESSURE SWITCH	
TAG NO.	LOCATION	MANUFACTURE				E.S.P	SIZ	E(IN)	VOLTAGE	BLOW HP	FAN WAT	TS BLOW NO.	WEIGHT	Щ Ф	THERMOMETER	
ERV-120	RESIDENTIAL	LIFEBREATH			60 CFM	0.3IN W.C.		VXH	120/1/60	1 /10	154	-	34 LBS	↓ ♀ ►	PRESSURE GUAGE PUMP	
ERV-330	UNITS COMMON ROOM				30 CFM	0.3IN W.C.		28 X 18	120/1/60	1 /6		-	120 LBS	↓ ↓	STRAINER	
C	ONDENSATION IN	I PLANS ALL ERV UNIT NON VENTILATED ARI D B/SCREEN. UNLESS	EAS), VIBRATION ISO	LATORS. E>	KACT LOCATIO	N OF TERMINAT	TION TO BE C	O-ORDINATE		E ASSOCIATED ERV	/ UNIT, INSULAT	ED CASE (TO PREVENT			THERMOSTAT REVERSE ACTING T-STAT	
4. P	IPE COND. TO NE	UATORS TO BE C/W 1' AREST HUBDRAIN C/W AATE IS 50 CFM FOR R	AIR GAP.	FOR UNITS	SERVING COM	IMON AREAS DE	SIGN AIRFLO	OW RATE IS 12	20 CFM.						SPEED CONTROL FLOOR, HUB, FUNNEL FLOOR DRAIN	
					N									• wc	PLUMBING FIXTURE FROM FLOOR ABOVE	
				FAN DATA		_INE_F#]		UHEDI	JLE					•	PLUMBING FIXTURE DRAIN DN PENDANT SPRINKLER HEAD	
MARK F-400	MANUFACTURE GREENHECK	R MODEL # SQ-95	CFM 400	E.S.P. .3	Н.Р. ∦₅	VOLTAGE 120/1/60	RPM 1300		ERATION TIMER	WEIGHT(LBS)	SIZE 15" DEEP	LOCATION -		×	UPRIGHT SPRINKLER HEAD SIDEWALL SPRINKLER HEAD	
-	DISCONNECT														FULLY CONCEALED SPRINKLER HEAD	6 DEC/14/2018 ISSUED FOR CONSTRUCTION 5 JUL/13/2018 ISSUED FOR PERMIT
-	50FT. OF CONTR	ROL WIRING OR AS NO	DTED ON PLANS												BALANCING DAMPER SPLITTER DAMPER	4 JUN/22/2018 UPDATED COORDINATION SET 3 JUN/11/2018 UPDATED COORDINATION SET
-	MOTOR COVER													E M B	FIRE DAMPER MOTORIZED DAMPER BACK DRAFT DAMPER	2 JUN/04/2018 ISSUED FOR COORDINATION 1 APR/27/2018 PRELIMINARY ISSUE FOR REVIEW
-	ALUMINUM CON SPEED CONTRO	ISTRUCTION FOR HIGH	H HUMIDITY AREAS												SPIN COLLAR WITH BALANCING DAMPER	NO. DATE DESCRIPTION
				G	AS HO		FR TA	NK SC	HEDULE						HUNG/LEAVING/BURIED CLEANOUTS	THIS DRAWING SHALL BE USED ONLY FOR THE PURPOSE INDICATED IN THE LATEST ISSUED COLUMN ABOVE
TAG NO	. LO	CATION	MANUFACTURER		MODEL NO.		INPUT		DRAGE CAPACITY	RECOVERY @ 1 RISE	100°F	SIZE(IN) DIA X H	WEIGHT	C 	BREAK END CAP	ALL DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF
HWT-120		R TO PLAN	A.O.SMITH		CLONE BTH-50	00	500MBH		120 GAL	576 GPH		33" X 76"	1855 LB		CUT AND EXTEND EXISTING	THE DESIGNER AND MAY NOT BE REPRODUCED WITHOUT WRITTEN PERMISSION. DRAWINGS MUST NOT BE SCALED. CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS ON SITE AND REPORT ERRORS AND OMISSIONS TO THE DESIGNER. THIS DRAWING SHALL NOT BE USED FOR
		-				NS) WHERE USI	ED IN COMM	ERCIAL APPLI	CATIONS ALL VENTI	NG MUST BE PLENU	JM RATED UNLE	ESS APPROVED OTHERWIS	3		CONNECT TO EXISTING	CONSTRUCTION UNLESS COUNTERSIGNED BY THE DESIGNER.
		VATER TANKS MOUNT		DE OVERSIZ	ZED DRAIN PA	N, ANGLE IRON	AND MOUNT	ING PLATFOR	M AS REQUIRED.						FLOOR SUPPLY AIR GRILLE	THESE DRAWINGS ARE NOT TO BE SCALED.
															CEILING AND WALL SUPPLY AIR GRILLE CEILING AND WALL RETURN AIR GRILLE	
				FAN DAT	A	EILING F									CEILING AND WALL REFORM AIR GRILLE	
MARK CF-150	MANUFACTURE PANASONIC	FV15VQ5	CFM 150	E.S.P. .25	H.P. 1/4 1/4	VOLTAGE 120/1/60	RPM	s	WITCH	WEIGHT(LBS)	LOCAT	ION	MOUNTING CEILING MOUNT	SUP	PLY DUCT UP	
2. C	W TIMER (AS DEC	FV11VQ5 FAN TO BE MIN. 10FT. CIDED BY OWNER/ARC	HITECT) EXCEPT LAU	INDRY ROO	M BY HUMIDIS	120/1/60 TAT, INSULATE	D DUCT 10F		WITCH E FACE OF EXTERIO	10 R WALL, ROOF, SOI	FFIT OR SIDEWA	ALL AS SHOWN.	CEILING MOUNT	SUP	PLY DUCT DN UNLESS NOTED. DUCT RISER SHALL MATCH ASSOCIATED	
		DF TERMINATION TO B D B/SCREEN. UNLESS				S SHALL BE A W	ALL BOX. TE	RMINATIONS	THRU ROOF SHALL I	BE A ROOF CAP.					JRN DUCT UP	
FI	FCTRIC	DUCT HE	ATERS SO	CEDU											-FREEZE WALL HYDRANT	
															E BIBB ESTIC WATER UP	
MAR			CAPACITY		OLTAGE				SUITES					C DON	ESTIC WATER DOWN TO ABOVE FLOOR	CONSULTING INC.
DH-2	2	THERMOLEC	2KW	2	08/1/60			2,113,114,115,	102,103,105,106, 108, 117,119,120,121,122, 2,213,214,215,217,21	123,124,200,201,202					ESTIC WATER DOWN TO BELOW FLOOR . VALVED PLUMBING FIXTURE CONNECTION	490 Harry Walker Parkway South Unit #3 Newmarket, Ontario L3Y 0B3 Bus. (905) 773-0200 Fax 1-866-830-5484
DH-3	3	THERMOLEC	ЗКѠ	2	08/1/60			104,	107,118,207,216,						SEPARATOR	staff@bkconsulting.ca SENIORS RESIDENCE
DH-4	ł	THERMOLEC	4KW	2	08/1/60				116						TY RELIEF VALVE	100 McKAY STREET
		COIL. VOLTAGE MUS LECTRONIC AIR FLO												GENERAL	OOR <u>GENERAL PLUMBING</u>	
	SÉCTIC TEMPE PROVIE	N, HI-TEMP CUT-C RATURE ADJUSTMEN DE ADDITIONAL FREE	OUT, DUCT STAT W T SET TO 70°F. CO ZE PROTECTION CO	/ITH REMO DNTRACTOR DNTROL SC	TE 1 TO 2 THAT FAN									AFF – ABOVE FINISHED FL AFG – ABOVE FINISHED G AFR – ABOVE FINISHED R BFP– BACK FLOW PREVEN BRD – BELOW ROOF DECH EX. – EXISTING	DRAIN	
	WILL S 50°F.	SHUT DOWN WHERE SUPPLIED, INSTALLE IED BY DIV 16. MU	SUPPLY TEMPERAT D AND INTERLOCKE	URE DROP D BY DIV.	S BELOW									EX. – EXISTING N – NEW NA – NOT APPLICABLE R – RELOCATED TBD – TO BE DETERMINED	DS – DRAIN STACK RWL – RAIN WATER LEADER VTR – VENT THRU ROOF WM – WATER METER	
			KIT	CHEN	I FAN	SCHE	DULE							<u>GENERAL HVAC</u> AL – ACOUSTIC LINED	<u>DRAINS</u> AD — AREA DRAIN FD — FLOOR DRAIN	MECHANICAL PLOT DATE PROJECT NO.
				DI										EA – EXHAUST AIR ETR – EXISTING TO REMAI FR – FIRE RATED GM – GAS METER	FFD — FUNNEL FLOOR DRAIN HD — HUB DRAIN PD — PAVED AREA DRAIN RD — ROOF DRAIN	DRAWING TITLE
MARK KITCHEN	MANUFACTUR REVERSOMAT			RPM P/	ACKAGE VO	DETAGE OPER SWITE		VEIGHT(LBS)	KITCHEN 6" C REI	MOVABLE	>			HWR - HIGH WALL RETURI LWR - LOW WALL RETURN LWS - LOW WALL SUPPLY NC - NORMALLY CLOSED	SAD – SODDED AREA DRAIN SD – SCUPPER DRAIN	MECHANICAL SPECIFICATIONS
	-								GR FIL	EASE TER				OED – OPENED ENDED DU RA – RETURN AIR SA – SUPPLY AIR TAD – TRANSFER AIR DUC TAG – TRANSFER AIR GRIL	B/D – BALANCING DAMPER T F/D – FIRE DAMPER	
									I	I				TAG – TRANSFER AIR GRIL BSC – BIRD SCREEN UC – UNDERCUT DSD – DUCT SMOKE DETE	S/D – SPLITTER DAMPER B/D/D – BACK DRAFT DAMPER	DATE 2018
																DRAWN BY AL M-7

EQUIPM	ENT SCHEDU	JLE		со	NTRACTOR TO M	IODIFY CURBS, IS	OLATORS, HAN	GERS ETC AS R	EQUIRED	APPLIAN	CE VENTING			DRAWI	NG LEGEND	
<u>REFER TO SPE</u> PLANS FOR EX	CIFICATIONS FOR PROD ACT QUNATITY AND LOG	UCT CHANGES AND SUBM CATION OF EACH PIECE O	MITTAL PROCESS. REFER DF EQUIPMENT	<u>IO</u> ISC PR	OLATED TO AVOID OVIDE UNISTRUT	VIBRATION TRAN AND ANCHORS A	SMISSION TO AS REQUIRED	BUILDING STRUC TO SUIT EQUIPM	NG STRUCTURE AND TURE. CONTRACTOR TC ENT WEIGHT AND T SHALL NOT EXCEED	AS PER LATES SHALL BE AS	ST B149-1 GAS COD FOLLOWS. ALL IPEX	E. WHERE MANUFACTURER A SYSTEMS SHALL BE INSTALL	LED AS PER		 SANITARY DRAIN – UNBURIED SANITARY DRAIN – BURIED 	
ALL EQUIPMEN MANUAL START	ERS UNLESS NOTED OT	ER THAN OR EQUAL TO 1 HERWISE OR AS BELOW.		DR. 5.	AWINGS TO THIS ALL EQUIPMENT	ENGINEER AND	STRUCTURAL E	NGINEER OF RE	APPROVED SHOP CORD FOR APPROVAL BE C/W FLEXIBLE	WHERE REQUI SLOPED BACK RATINGS	RED ALL METAL VENT	G THE APPROVED FITTINGS A ING SHALL BE DOUBLE WAL PIPING SHALL MEET THE AF	LL INSULATED AL-294C AND		= STORM DRAIN – UNBURIED = STORM DRAIN – BURIED	
ALL EQUIPMEN WHERE THE M STARTERS.	T WITH MOTORS THAT A OTOR WILL START OR S	ARE INTERLOCKED OR NO SHUT-DOWN BY ITSELF SI		RA ⁻ 6.	ALL EQUIPMENT,	ATED IN A PLENU	JM IS, ETC IS TO	BE ACCESSIBLE	FOR SERVICING. REFE	ALL DIRECT V LOW PROFILE R APPROVAL PR	KITS. KITS SHALL BE	E HANDED OVER TO ARCHITE KITS SHALL BE APPROVED	BY MANUFACTURER AND		 STORM DRAIN - BURIED DOMESTIC COLD WATER 	
	ILL SUPPLY/MOUNT ALI	LELECTRIC MOTORS, STAI		RE 7.	QUIRED. ACCESS REFER TO GRILI		NOT BE SURF	ACE MOUNTED	SS PANELS AS	USED. ALL DII TO THE OUTD ON	RECT VENT APPLIANCE OORS UNLESS NOTED) OTHERWISE	E AND DISCHARGE DIRECTLY		 DOMESTIC HOT WATER DOMESTIC HOT WATER RECIRCULATED 	
SWITCHES FOR THEM BUT REC AND SUPPLY/I 15 SHALL DO	EQUIPMENT SUPPLIED QUIRES INTERLOCKING E MOUNT ALL PREVIOUSLY ALL INTERLOCKING OF	BY THEM. WHERE EQUIP BY THEM DIVISION 15 SH/ MENTIONED STARTERS, T EQUIPMENT AS NOTED ON	MENT IS NOT SUPPLIED ALL OBTAIN SHOP DRAWI TRANSFORMER ETC. DIVIS N THESE DRAWINGS.	INGS SION 8. ANI	ALL EQUIPMENT	RE ACCESSIBILITY	FOR SERVICINO CANNOT BE OB	TAINED BY A PER		R IPEX SYSTEM	S636 PVC. SYSTEM 6	LOCATED AT 7FT ABOVE FLO	IN PLENUMS AND UNLESS	G	- GAS LINE	
VOLTAGE CONT WIRING SHALL	ROL WIRING AND ALL (BE PLENUM RATED WH			LOC 9.	CATED MORE THAN	N 10 FEET ABOVE	FINISHED FLOOP	R FOR FURTHER	FIRED EQUIPMENT IS NSTRUCTION NDING 6" BEYOND			<u>USTIBLE_CONSTRUCTION</u> BUSTIBLE_VENTING_SHALL_BE	E USED IN SHAFTS		- FAN COIL SUPPLY - FAN COIL SUPPLY	
1. ALL APPRO		IOTES BE INSTALLED AND COMM AND INSTALLATION GUIDLI		10.	. PROVIDE COND	ENSATE NEUTRALI RGING CONDENSA		R ALL GAS AND	OR PROPANE FIRED	IPEX SYSTEM	j <u>ildings of all con</u> s636 cpvc. no com CE VENTING I	BUSTIBLE VENTING SHALL E	BE USED IN SHAFTS		- FAN COIL RETURN	
REVIEW GUIDLI	NES AND PROVIDE ALL 3 HUNG EQUIPMENT TH	NECESSARY ACCESSORIES AT RECEIVES WATER OR F CAL ROOM WITH A DRAIN	S AS REQUIRED PRODUCES CONDENSATE	А	PROPERTY LINE.	CONTRACTOR TO	ALLOW FOR I	FLUSH MOUNT A	ERMINATE ON OR OVEL LTERNATIVE VENTING K EMS AS NOTED IN THI	R IT <u>TYPE A</u> - FL FACING. USE	EXIBLE GLASS FIBRE;	K VALUE OF 0.29 AT 75 [N AND THICKNESS FOR HIGH			— HEATING SUPPLY — HEATING RETURN	
WATERPROOFEL DRAIN PANS S) DRAIN PAN SIZED TO HALL BE BY ASSOCIATE DRAIN PAN LOCATIONS	PROTECT SURROUNDING D EQUIPMENT INSTALLER. WITH HVAC CONTRACTOR	WALLS AND ĆEILINGS E . PLUMBER SHALL	TC. PL EN	ANS OR SCHEDU GINEER.	JLE BELOW DURIN	IG CONSTRUCT	ION UNLESS WR	ITTEN APPROVAL BY	<u>EXHAUST</u> – 1		FT. FROM EXTERIOR WALL		HPS	- HEAT PUMP SUPPLY	
3. ALL EQUIPM	IENT SHALL BE MOUNT	ED LEVEL AS PER MANUF	FACTURERS INSTRUCTIONS	FO	R TRIMMING AS		BI GITT WATE			WHERE VENTIN EXHAUST WITH		JNCONDITIONED AREAS FULL	Y INSULATE INTAKE AND		- CONDENSATE DRAIN	
					LENI	NOX - V	/RF - \$	SCHEE	DULE					R	— REFRIGERANT PIPING — FIRE STAND PIPE	
MARK	MANUFACTURER	MODEL	SUPPLY AIR FAN DATA (VARIABLE SPEED)		HEATING DA	ATA	COOL	ING DATA	ELECT	RICAL DATA		SIZE(IN)	WEIGHT	11	- SPRINKLER LINE	
			CFM E.S.P.	TYPE	HEATING INPUT	HEATING OUTPUT	TYPE	TOTAL	VOLTAGE	МОР	MCA	LXWXH		│	 SANITARY VENT BALL VALVE UNLESS SPECIFIED OTHERWISE 	
VRF-0.75T	LENNOX	VMDA009H4	300 .3"			11MBH		9MBH	208/1/60	15	0.7	39 X 20 X 9	60LBS		SOLENOID VALVE	
VRF-1T VRF-2T	LENNOX	VMDA012H4 VMDA024H4	300 .3" 600 .6"			13MBH 27MBH		12MBH 24MBH	208/1/60	15	0.7	39 X 20 X 9 49 X 10 X 13	60LBS 83LBS	図 図	GLOBE VALAVE GATE VALVE	
VRF-4T	LENNOX	VMDA048H4	1200 6"			54MBH		48MBH	208/1/60	15	3.0	51 X 27 X 16	103LBS		CIRCUIT BALANCING VALVE WITH P/T PORT	
ODU-1/2	LENNOX	VPA144H4M-2Y				150MBH		136MBH	208/3/60	70	53.8	49.5 X 30 X 63	750LBS	L	CHECK VALVE THERMOSTATIC MIXING VALVE	
ODU-3/4/5	LENNOX R410A REFRIGERA	VPA120H4M-2Y				120MBH		112MBH	208/3/60	60	38.6	49.5 X 30 X 63	750LBS	k Z	PRESSURE REDUCING VALVE	
-		O CONFIRM THE ACTU	JAL REFRIGERANT PI	PING LENG	TH ON SITE AN	ND CONFIRM SI	ZES							کے ح ت	DRAIN VALVE REDUCED PRESSURE BACK FLOW PREVENTOR	
	VIBRATION ISOLAT	ORS NEAREST HUB DRAIN	N C/W AIR GAP											AV प् FS प्	AUTO AIR VENT FLOW SWITCH	
			ENE	ERGY	' RECC	VERY	VENT	ILATO	RS SCHE	DULE				PSP	PRESSURE SWITCH	
TAG NO.	LOCATION	MANUFACTURER	R MODEL NO	AIR	FLOW	E.S.P		E(IN) VXH	VOLTAGE	BLOW HP	FAN WATTS	BLOW NO.	WEIGHT	Щ Щ Ф	THERMOMETER PRESSURE GUAGE	
ERV-120	RESIDENTIAL UNITS	LIFEBREATH	METRO 120ERV	/ 50	CFM	0.3IN W.C.	21 X 1	9 X 10	120/1/60	1 /10	154	-	34 LBS		PUMP	
ERV-330		LIFEBREATH	330 ERV			0.3IN W.C.			120/1/60	1 /6		-	120 LBS	↓↓	STRAINER	
2. F	CONDENSATION IN N PROVIDE B/D/D AND I	ON VENTILATED AREA B/SCREEN. UNLESS NO ATORS TO BE C/W 1" A	AS), VIBRATION ISOLA OTED ON PLANS TER	ATORS. EXA	ACT LOCATION	OF TERMINAT	ION TO BE C	O-ORDINATED			UNIT, INCOLATED				REVERSE ACTING T-STAT	
4. F	PIPE COND. TO NEAR	EST HUBDRAIN C/W A TE IS 50 CFM FOR RES	AIR GAP.	OR UNITS S		MON AREAS DE	SIGN AIRFLC	W RATE IS 12	0 CFM.					ା <u>ତି</u> ପ୍ରାଭାଷ	SPEED CONTROL) FLOOR, HUB, FUNNEL FLOOR DRAIN	
						INE FA		<u></u>	IJF					● wc	PLUMBING FIXTURE FROM FLOOR ABOVE PLUMBING FIXTURE DRAIN DN	
				FAN DATA										•	PENDANT SPRINKLER HEAD	
MARK F-400	MANUFACTURER GREENHECK	MODEL # SQ-95	CFM E	E.S.P. .3	H.P. ½5	VOLTAGE 120/1/60	RPM 1300		ERATION	WEIGHT(LBS)	SIZE 15" DEEP	LOCATION			UPRIGHT SPRINKLER HEAD SIDEWALL SPRINKLER HEAD	
	- DISCONNECT - FLEXIBLE CONNE	CTIONS	I I								I			©	FULLY CONCEALED SPRINKLER HEAD	6 DEC/14/2018 ISSUED FOR CONSTRUCTION 5 JUL/13/2018 ISSUED FOR PERMIT
	- 50FT. OF CONTRO - INSULATED CABIN	OL WIRING OR AS NOT	ED ON PLANS												BALANCING DAMPER SPLITTER DAMPER	4 JUN/22/2018 UPDATED COORDINATION SET 3 JUN/11/2018 UPDATED COORDINATION SET
	- MOTOR COVERS - SPRING ISOLATO														FIRE DAMPER MOTORIZED DAMPER BACK DRAFT DAMPER	2 JUN/04/2018 ISSUED FOR COORDINATION 1 APR/27/2018 PRELIMINARY ISSUE FOR REVIEW
	- ALUMINUM CONS - SPEED CONTROL	TRUCTION FOR HIGH I LERS	HUMIDITY AREAS												SPIN COLLAR WITH BALANCING DAMPER	NO. DATE DESCRIPTION THIS DRAWING SHALL BE USED ONLY FOR THE PURPOSE INDICATED IN THE LATEST ISSUED COLUMN ABOVE INIT ABOVE
				GA	AS HO	T WATE	ER TA	NK SC	HEDULE						HUNG/LEAVING/BURIED CLEANOUTS BREAK	IN THE LATEST ISSUED COLUMN ABOVE
TAG NO). LOCA	ATION M	MANUFACTURER	1	MODEL NO.		INPUT	STC	RAGE CAPACITY	RECOVERY @ 1 RISE		SIZE(IN) DIA X H	WEIGHT		END CAP	ALL DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF THE DESIGNER AND MAY NOT BE REPRODUCED WITHOUT
HWT-120		TO PLAN	A.O.SMITH		CTURER	0	500MBH		120 GAL	576 GPH	3	3" X 76"	1855 LB		CUT AND EXTEND EXISTING	WRITTEN PERMISSION. DRAWINGS MUST NOT BE SCALED. CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS ON SITE AND REPORT ERRORS AND OMISSIONS TO THE DESIGNER. THIS DRAWING SHALL NOT BE USED FOR
	- VENTING AN	D TERMINATION KIT (A	AS PER MANUFACTUR	RERS RECO	MMENDATION	IS) WHERE USE	ED IN COMME		CATIONS ALL VENTI	NG MUST BE PLENU	IM RATED UNLESS	APPROVED OTHERWIS		∥ ∓	CONNECT TO EXISTING	CONSTRUCTION UNLESS COUNTERSIGNED BY THE DESIGNER.
		TER TANKS MOUNTED		E OVERSIZI	ED DRAIN PAN	I, ANGLE IRON /	AND MOUNT	ING PLATFORI	M AS REQUIRED.						FLOOR SUPPLY AIR GRILLE	THESE DRAWINGS ARE NOT TO BE SCALED.
															CEILING AND WALL SUPPLY AIR GRILLE	
				FAN DATA		ILING F									CEILING AND WALL RETORN AIR GRILLE	
MARK CF-150	MANUFACTURER PANASONIC	MODEL # FV15VQ5	150	E.S.P. .25	H.P. 1/4	VOLTAGE 120/1/60	RPM	S	PERATION WITCH	WEIGHT(LBS)			MOUNTING CEILING MOUNT	su	PPLY DUCT UP	
2.0	C/W TIMER (AS DECI	FV11VQ5 AN TO BE MIN. 10FT. F DED BY OWNER/ARCH	ITECT) EXCEPT LAUN	IDRY ROOM		120/1/60 AT, INSULATE	DUCT 10FT		WITCH	10 R WALL, ROOF, SOF	FIT OR SIDEWALL		CEILING MOUNT	SU SU	PPLY DUCT DN	
		TERMINATION TO BE B/SCREEN. UNLESS NO				SHALL BE A W	ALL BOX. TE	RMINATIONS ⁻	THRU ROOF SHALL I	BE A ROOF CAP.					TURN DUCT UP	
	FCTRIC	DUCT HEA			F										N-FREEZE WALL HYDRANT	$ \mathbf{B} \mathbf{K} $
					- L									Птарана но	SE BIBB	
MAR	K MA	NUFACTURER	CAPACITY	VOI	LTAGE				SUITES					© DO	MESTIC WATER UP MESTIC WATER DOWN TO ABOVE FLOOR	CONSULTING INC.
DH-2	2	THERMOLEC	2KW	208	8/1/60	109 203,204,2	9,110,111,112 205,206,208,2	2,113,114,115,1	02,103,105,106, 108, 17,119,120,121,122, 2,213,214,215,217,21	123,124,200,201,202,	23,224				MESTIC WATER DOWN TO BELOW FLOOR	490 Harry Walker Parkway South Unit #3 Newmarket, Ontario L3Y 0B3 Bus. (905) 773-0200 Fax 1-866-830-5484
DH-3	3	THERMOLEC	ЗКW	208	8/1/60			104,1	07,118,207,216,						SEPARATOR	staff@bkconsulting.ca
DH-4	4	THERMOLEC	4KW	208	8/1/60				116					SAI	ETY RELIEF VALVE	SENIORS RESIDENCE 100 McKAY STREET
	- OPEN C	OIL. VOLTAGE MUST	BE VERIFIED PRIO	DR TO ORD	DERING,									GENERAL	VIATIONS	
	C/W ELI SECTION TEMPER/	ECTRONIC AIR FLOW , HI-TEMP CUT-OU ATURE ADJUSTMENT	V SENSOR, SCR CO IT, DUCT STAT WIT SET TO 70°F. CON	NTROL, FII TH REMOTE NTRACTOR	LTER E TO									AFF – ABOVE FINISHED F AFG – ABOVE FINISHED O AFR – ABOVE FINISHED O BFP– BACK FLOW PREVE BRD – BELOW ROOF DEC	LOOR <u>GENERAL PLUMBING</u> RADE COOF BWV – BACK WATER VALVE VTOR CFRD – CONTROL FLOW ROOF	
	PROVIDE WILL SH 50°F. SU	ADDITIONAL FREEZE UT DOWN WHERE S JPPLIED, INSTALLED	E PROTECTION CON SUPPLY TEMPERATU AND INTERLOCKED	NTROL SO RE DROPS) BY DIV.	THAT FAN BELOW									N – NEW NA – NOT APPLICABLE	DS – DRAIN STACK RWL – RAIN WATER LEADER	CANNINGTON ONTARIO
L	SUPPLIE	D BY DIV 16. MUST			Ι ΓΔΝΙ	SCHEI]			R – RELOCATED TBD – TO BE DETERMINE <u>GENERAL HVAC</u>	D WM – WATER METER <u>DRAINS</u>	MECHANICAL
			FAN DATA	A										AL – ACOUSTIC LINED EA – EXHAUST AIR ETR – EXISTING TO REMA FR – FIRE RATED		PLOT DATE PROJECT No. 18-660
MARK KITCHEN	MANUFACTURE		E.S.P. H.P. .3" -	RPM PAG		TAGE OPER		/EIGHT(LBS)	KITCHEN 6" C					GM – GAS METER HWR – HIGH WALL RETUR		DRAWING TITLE
									GR	MOVABLE EASE TER				LWS – LOW WALL SUPPL NC – NORMALLY CLOSED OED – OPENED ENDED E RA – RETURN AIR SA – SUPPLY AIR	UCT B/D - BALANCING DAMPER	MECHANICAL SPECIFICATIONS
	-													TAD – TRANSFER AIR DU TAG – TRANSFER AIR GR BSC – BIRD SCREEN UC – UNDERCUT	LLE M/D – MOTORIZED DAMPER S/D – SPLITTER DAMPER B/D/D – BACK DRAFT DAMPER	DATE
														DSD – DUCT SMOKE DET		2018 DRAWN BY 7
																BRAWN BY AL M-7

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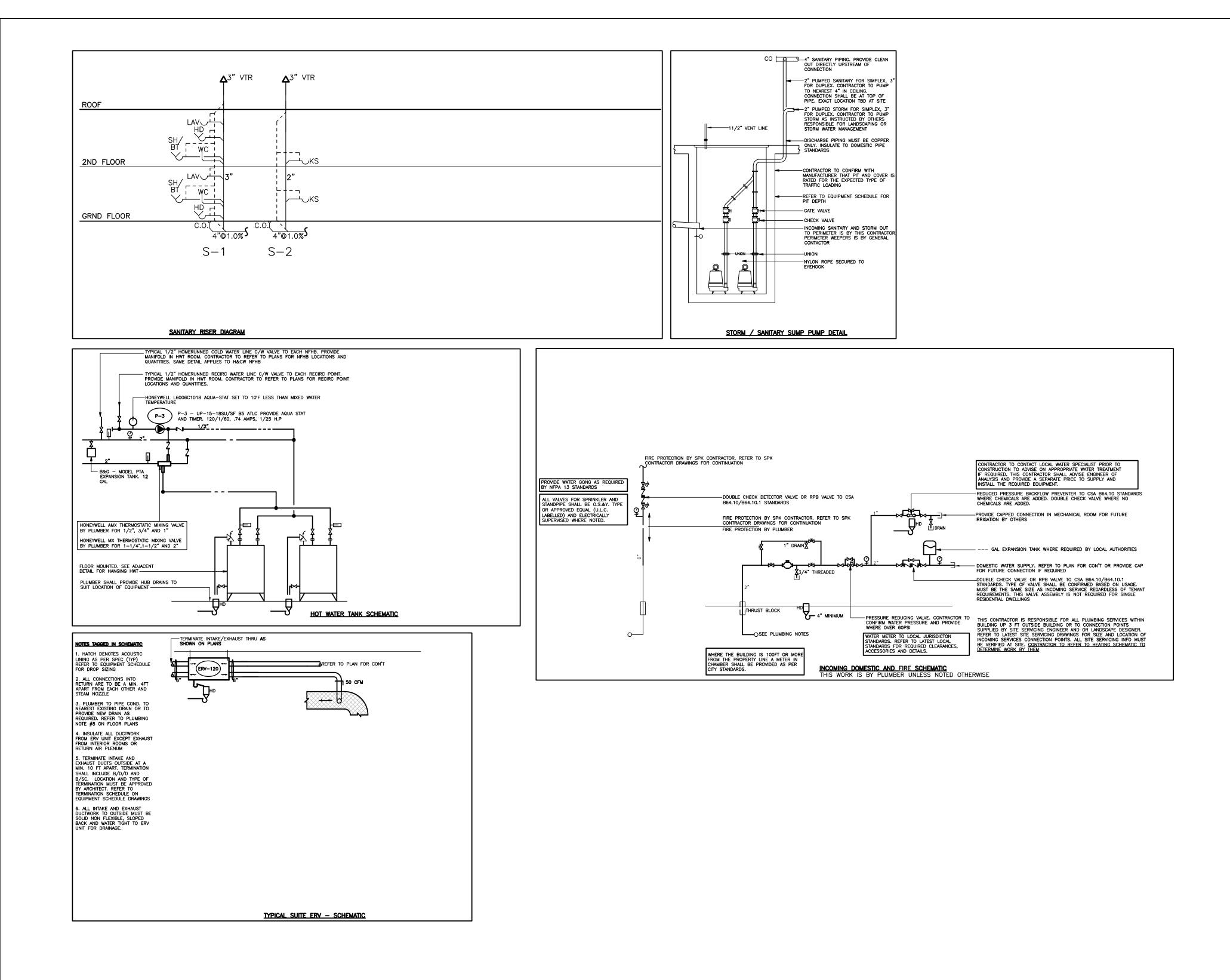
NOT I COOFEI ANS S INATE S REQ	EILING HUNG EQUIPMENT THAT RECEIVES WATER OR PRODUCES CONDENSATE NOT LOCATED IN A MECHANICAL ROOM WITH A DRAIN SHALL BE C/W A OOFED DRAIN PAN SIZED TO PROTECT SURROUNDING WALLS AND CEILINGS ETC. NS SHALL BE BY ASSOCIATED EQUIPMENT INSTALLER. PLUMBER SHALL NATE DRAIN PAN LOCATIONS WITH HVAC CONTRACTOR AND PIPE TO NEARETS REQUIRED										
	IENT SHALL BE MOUNTE	ED LEVEL AS PER MANUFA	ACTURERS INST	RUCTIONS.							
к	MANUFACTURER	MODEL	SUPPLY A DAT/ (VARIABLE	4							

FLEXIBLE CONNECTIONS VIBRATION ISOLATORS PIPE COND. TO NEAREST HUB DRAIN C/W AIR GAP ENE				
- PIPE COND. TO NEAREST HUB DRAIN C/W AIR GAP	-	FLEXIBLE CONNECT	IONS	
ENE	-	VIBRATION ISOLATO	RS	
	-	PIPE COND. TO NE	EAREST HUB DRAIN C	/W AIR GAP
				ENE
	g no.	LOCATION	MANUFACTURER	MODEL NO
V-120 RESIDENTIAL UNITS LIFEBREATH METRO 120ERV	V-120		LIFEBREATH	METRO 120ERV
V-330 COMMON ROOM LIFEBREATH 330 ERV	V-330	COMMON ROOM	LIFEBREATH	330 ERV

ERV-120	RESIDENTIAL UNITS	LIFEBREATH	METRO 120ERV	
ERV-330	COMMON ROOM	LIFEBREATH	330 ERV	
C 2. P 3. B 4. P	ONDENSATION IN NC ROVIDE B/D/D AND B/ OXES AND ATTENUA IPE COND. TO NEARE	ANS ALL ERV UNITS ARE IN VENTILATED AREAS), SCREEN. UNLESS NOTE TORS TO BE C/W 1" ACO EST HUBDRAIN C/W AIR C E IS 50 CFM FOR RESIDE	VIBRATION ISOLATO D ON PLANS TERMIN USTIC LINING. GAP.) J

						F/
MARK		MANUFACTURER	MODEL #	(CFM	E.\$
F-400		GREENHECK	SQ-95	4	400	.3
	-	DISCONNECT	I	I		I
	-	FLEXIBLE CONNECTI	ONS			
	-	50FT. OF CONTROL V	VIRING OR AS N	IOTED ON P	LANS	
	-	INSULATED CABINET				
	-	MOTOR COVERS				
	-	SPRING ISOLATORS				
	-	ALUMINUM CONSTRU	JCTION FOR HIG	GH HUMIDIT	Y AREAS	3
	-	SPEED CONTROLLER	RS			

			G
TAG NO.	LOCATION	MANUFACTURER	
HWT-120G	REFER TO PLAN	A.O.SMITH	CYC
-	HEAT TRAP, TEMPERATUR	E SENSOR AND DRAIN AS PER	MANUFA
-	VENTING AND TERMINATIC	ON KIT (AS PER MANUFACTURE	RS RECO
-	FOR HOT WATER TANKS M	OUNTED IN CEILING PROVIDE	OVERSIZ



6 DEC/14/2018 ISSUED FOR CONSTRUCTION
5 JUL/13/2018 ISSUED FOR PERMIT
4 JUN/22/2018 UPDATED COORDINATION SET 3 JUN/11/2018 UPDATED COORDINATION SET
3 JUN/11/2018 UPDATED COORDINATION SET 2 JUN/04/2018 ISSUED FOR COORDINATION
1 APR/27/2018 PRELIMINARY ISSUE FOR REVIEW
NO. DATE DESCRIPTION THIS DRAWING SHALL BE USED ONLY FOR THE PURPOSE INDICATED IN THE LATEST ISSUED COLUMN ABOVE State of the purpose indicated
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CONSTRUCTION NORTH
B
CONSULTING INC. 490 Harry Walker Parkway South Unit #3 Newmarket, Ontario L3Y 0B3 Bus. (905) 773-0200 Fax 1-866-830-5484 staff@bkconsulting.ca
SENIORS RESIDENCE 100 McKAY STREET
CANNINGTON ONTARIO MECHANICAL
DRAWING TITLE MECHANICAL DETAILS
DATE 2018 DRAWN BY AL M-8 SCALE NTS OF 8