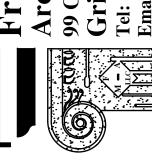


Architects, anners



odificat

Plans **MECHANICAL GENERAL NOTES**

AND LEGEND

2022-10.22

24" x 36"

AS NOTED DRAWN BY:

CHECKED BY:

12/22/2022

www.rzdesignassociates.c

ABBREVIATIONS

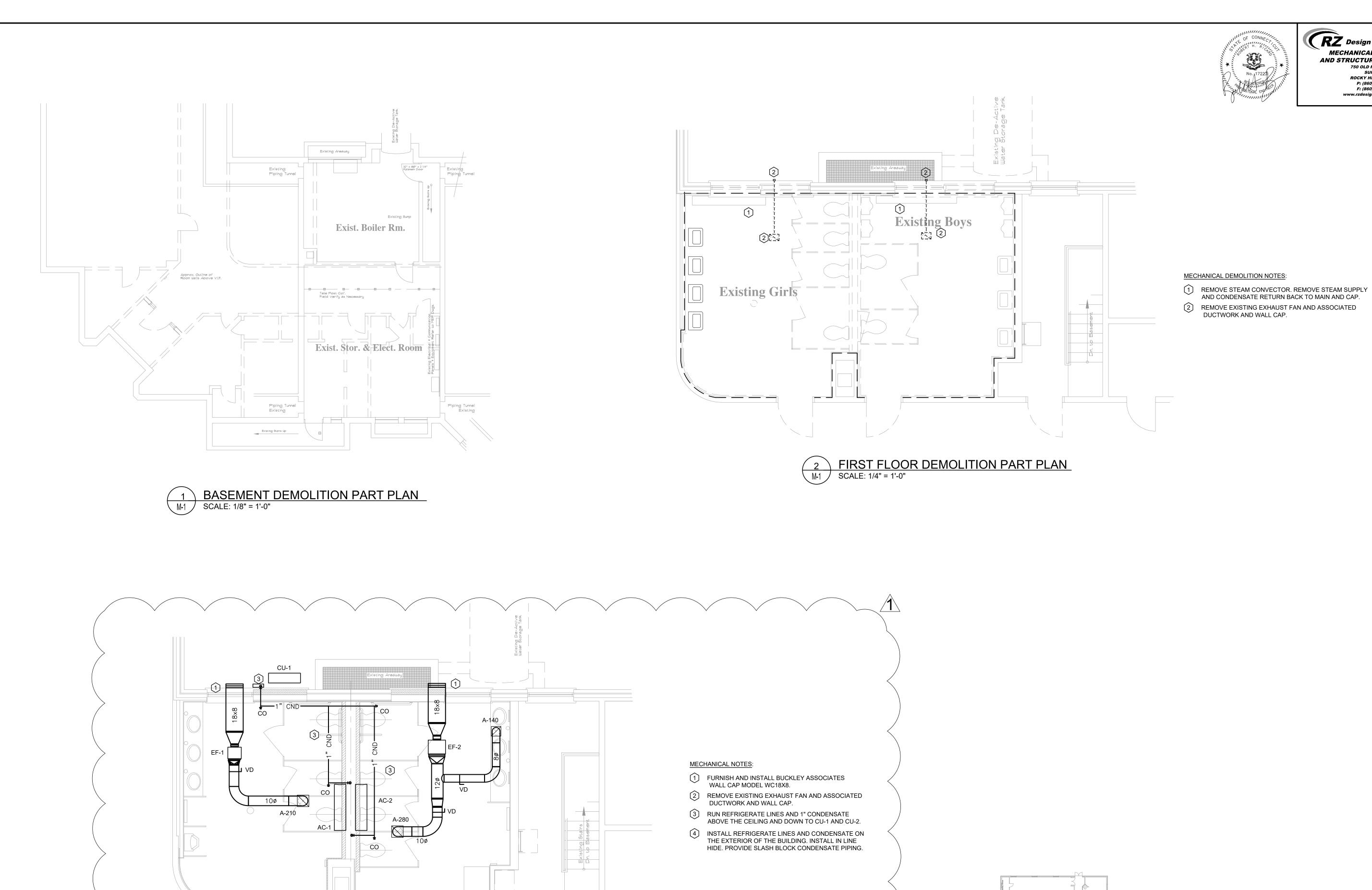
a	48" ABOVE FINISHED FLOOR GENERAL SERVICE COMPRESSED AIR AMPERE AIR COMPRESSOR ALTERNATING CURRENT AUTOMATIC COOLING CONDENSATE PUMP AIRFLOW CENTRIFUGAL FAN AIR CONDITIONING UNIT(S) ACCESS DOOR AREA DRAIN ARC FAULT ABOVE FINISHED FLOOR ABOVE FINISHED FLOOR ABOVE FINISHED GRADE AIR HANDLING UNIT AMPS INTERRUPTING CURRENT ANNUNCIATOR AIR PRESSURE DROP APPROXIMATE AXIAL ROOF VENTILATOR AIR SEPARATOR AUTOMATIC TEMPERATURE CONTROL AUTOMATIC TRANSFER SWITCH ACID VENT (CHEMICAL) AVERAGE ACID VENT THRU ROOF ACID WASTE AMERICAN WIRE GAUGE AVERAGE WATER TEMPERATURE 42" ABOVE FINISHED FLOOR BUILDING AUTOMATION SYSTEM BACK DRAFT DAMPER BUILDING ENERGY SYSTEM BOILER FEED WATER BRAKE HORSEPOWER BACKWARD INCLINED CENTRIFUGAL FAN BUILDING MANAGEMENT SYSTEM BASEMENT BRITISH THERMAL UNITS/HOUR	FD	FIRE DAMPER
Ā	GENERAL SERVICE COMPRESSED AIR	FD/SB	FIRE DAMPER WITH INTEGRAL SECURITY BARS
A /AMP	AMPERE	FD	FLOOR DRAIN
ΔC	AIR COMPRESSOR	FDC	FIRE DEPARTMENT CONNECTION
AC	ALTERNATING CURRENT	FDV	FIRE DEPARTMENT VALVE
A C D	ALITOMATIC COOLING CONDENSATE DUMP	FHC	FIRE HOSE CARINET
ACD	ALDELOW CENTRICULAL FAN	FM	FLOW METER
ACF	AIRFLOW CENTRIFUGAL FAIN	FMC	FLEXIBLE METALLIC TUBING
ACU	AIR CONDITIONING UNIT(S)	FOR	FLAT ON DOTTOM
AD	ACCESS DOOR	FOE	FLET ON BUTTOM
AD	AREA DRAIN	FOR	FUEL OIL FILL
AF	ARC FAULT	FOR	FUEL OIL CURRIN
AFF	ABOVE FINISHED FLOOR	FUS FOT	FLAT ON TOP
AFG	ABOVE FINISHED GRADE	FOI	FLAT ON TOP
AHU	AIR HANDLING UNIT	FOV	FUEL OIL VENI
AIC	AMPS INTERRUPTING CURRENT	FP.	FIRE PUMP
AMB	AMBIENT	FPM	FEET PER MINUTE
ANN	ANNUNCIATOR	FPS	FEET PER SECOND
APD	AIR PRESSURE DROP	FS	FLOOR SINK
APPROX	APPROXIMATE	FT	FOOT OR FEET
ARV	AXIAL ROOF VENTILATOR	FVC	FIRE VALVE CABINET
AS	AIR SEPARATOR	G	GAS
ATC	AUTOMATIC TEMPERATURE CONTROL	GA	GAUGE
ATS	AUTOMATIC TRANSFER SWITCH	GAL	GALLONS
Δ\/	ACID VENT (CHEMICAL)	GCC	GRAVITY COOLING CONDENSATE
AVG	AVERAGE	GF	GROUND FAULT
AVTR	ACID VENT THRU ROOF	GND	GROUND
V 11/	ACID WASTE	GPH	GALLONS PER HOUR
V A M/C	AMEDICAN WIDE CALICE	GPM	GALLONS PER MINUTE
AWG	AVEDACE WATED TEMPEDATURE	GR	GRAINS
AWI	AVERAGE WATER TEMPERATURE	GRU	GREASE RECOVERY UNIT
D DAG	42 ABOVE FINISHED FLOOR	GW	GREASE WASTE
BAS	BUILDING AUTOMATION SYSTEM	GWA	GREASE WASTE ABOVE GRADE
BDD	BACK DRAFT DAMPER	GWB	GREASE WASTE BURIED
BEZ	BUILDING ENERGY SYSTEM	GWH	GAS WATER HEATER
BL M	BOILER FEED WATER	Н	HFIGHT
BHP	BRAKE HORSEPOWER	HC.	HEATING COIL
BICF	BACKWARD INCLINED CENTRIFUGAL FAN	H /C	HEATING /COOLING
BMS	BUILDING MANAGEMENT SYSTEM	HD	HEAD
BSMT	BASEMENT	HDCP	HANDICAP
	BRITISH THERMAL UNITS/HOUR	HP	HORSEPOWER
С	CONDUIT	HTR	HEATER
C/B	CIRCUIT BREAKER		HEAT EXCHANGER
CV	COEFFICIENT, VALVE FLOW	HX	
CC	COOLING COIL	HZ	FREQUENCY (CYC, PER SEC.)
CLPS	CLEAN LOW PRESSURE STEAM	ICF	IN-LINE CENTRIFUGAL FAN
CLG	CEILING	IEF .	IN-LINE EXHAUST FAN
CMPS	CLEAN MEDIUM PRESSURE STEAM	LBS/HR	POUNDS PER HOUR
CMV	CEILING MOUNTED VENTILATOR	MA	MIXED AIR
CO	CLEANOUT	MFR	MANUFACTURER
CO2	CARBON DIOXIDE	NTS	NOT TO SCALE
COMP	COMPRESSOR	T'STAT	THERMOSTAT
COND	CONDENSER	TYP	TYPICAL
CONV	CONVECTOR	VD	VOLUME DAMPER
CND	CONDENSATE PIPING	VIF	VERIFY IN FIELD
EF	EXHAUST FAN		
EXH	EXHAUST		

HVAC DEMOLITION GENERAL NOTES

- BEFORE SUBMITTING BID, THE CONTRACTORS SHALL VISIT THE JOB SITE AND BECOME FULLY FAMILIAR WITH THE EXISTING CONDITIONS AND THE DOCUMENTS OF OTHER TRADES UNDER WHICH THEIR WORK WILL BE ACCOMPLISHED. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY ASSUMPTIONS, OMISSIONS OR ERRORS MADE AS A RESULT OF FAILURE TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS.
- THE CONTRACTOR SHALL COORDINATE AND SCHEDULE ANY DAILY INTERRUPTIONS OR SHUTDOWNS OF THE EXISTING SYSTEMS IN ADVANCE WITH OWNER'S DESIGNATED REPRESENTATIVE. THIS SHALL INCLUDE SERVICES INTERRUPTIONS, CONNECTIONS AND DISRUPTIONS EFFECTING OTHER TRADES (MECHANICAL AND ELECTRICAL). INCLUDE ALL WORK REQUIRED TO ALLOW PHASED CONSTRUCTION WHERE NECESSARY.
- DEMOLITION DRAWINGS ARE STRICTLY DIAGRAMMATIC AND SHOW GENERAL ARRANGEMENT AND APPROXIMATE LOCATION OF EXISTING MECHANICAL AND ELECTRICAL EQUIPMENT. IT IS NOT THE INTENT OF THESE DRAWINGS TO SHOW ALL EQUIPMENT, PIPING OR CONDUIT TO BE REMOVED. EQUIPMENT NOT BEING REUSED SHALL BE REMOVED, INCLUDING ALL ASSOCIATED HANGERS, SUPPORTS, PIPES, CONDUITS, WIRES, AND CONTROLS BACK TO THE POINT OF ORIGIN.
- REFER TO THE ARCHITECTURAL DEMOLITION DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS. THE FULL EXTENT OF THE DEMOLITION AND RECONSTRUCTION SCOPE OF WORK SHALL BE DETERMINED BY THE ENTIRE SET OF BID DOCUMENTS.
- THE CONTRACTORS SHALL COORDINATE THE DEMOLITION SCOPE OF WORK WITH THE GENERAL CONTRACTOR'S OR CONSTRUCTION MANAGER'S PHASING SCHEDULE PRIOR TO COMMENCEMENT OF WORK. CARE MUST BE TAKEN SO AS NOT TO DESTROY. REMOVE OR DEMOLISH ANY EQUIPMENT. APPURTENANCES OR DEVICES INTENDED TO REMAIN. PROVIDE TEMPORARY SERVICES AND SYSTEM MODIFICATIONS TO ACCOMMODATE CONTINUOUS OPERATION OF ACTIVE SYSTEM.
- 6. THE LOCATION OF EXISTING HVAC SYSTEM SHOWN ON FLOOR PLANS. IS BASED ON THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL FIELD VERIFY PRIOR TO COMMENCEMENT OF CONSTRUCTION, EXACT QUANTITY AND LOCATION(S) OF EXISTING EQUIPMENT, PIPING, DUCTWORK, ETC. TO BE REMOVED AND ADJUST AS NECESSARY.
- ALL EQUIPMENT, AND ASSOCIATED PIPING INDICATED TO BE REMOVED OR RELOCATED, SHALL BE DISCONNECTED AND REMOVED, INCLUDING HANGERS AND OTHER COMPONENTS, UP TO NEAREST EXISTING ACTIVE MAIN OR BRANCH LINE AND CAPPED AS CLOSE TO THE ACTIVE LINE AS POSSIBLE. NO EQUIPMENT, PIPING, OR CONDUIT SHALL BE ABANDONED IN PLACE, UNLESS SPECIFICALLY NOTED.
- ALL SYSTEMS TO BE REMOVED SHALL BE REMOVED BACK TO THE POINT OF SOURCE. THE CONTRACTOR SHALL VERIFY WHICH SYSTEMS MUST REMAIN ACTIVE TO SERVE ADJACENT SPACES DURING CONSTRUCTION. SHOULD THE CONTRACTOR ENCOUNTER, DURING DEMOLITION OF EXISTING WALLS OR CHASES, ANY PIPING OR CONDUIT WHICH MUST REMAIN ACTIVE, HE SHALL IMMEDIATELY GIVE NOTICE TO THE ENGINEER, GENERAL CONTRACTOR OR CONSTRUCTION MANAGER.
- ALL SALVAGEABLE MATERIALS OR EQUIPMENT TO BE REMOVED SHALL BE TURNED OVER TO THE OWNER AT THE END OF EACH DAY. ITEMS REMOVED AND NOT REUSED OR CLAIMED BY THE OWNER SHALL BECOME PROPERTY OF THE TRADE CONTRACTOR AND SHALL BE TRANSPORTED FROM THE SITE. SITE STORAGE OF REMOVED ITEMS WILL NOT BE PERMITTED.
- 10. PROPERLY DISPOSE OF ALL DEMOLISHED EQUIPMENT IN COMPLIANCE WITH CODES AND REGULATIONS; THIS APPLIES TO HAZARDOUS MATERIALS AND CONTAMINATED ITEMS TO BE DEMOLISHED.
- 11. THE CONTRACTOR SHALL OBTAIN EXISTING MECHANICAL DRAWINGS FROM THE OWNER IF AVAILABLE TO HELP DETERMINE FULL SCOPE OF WORK.

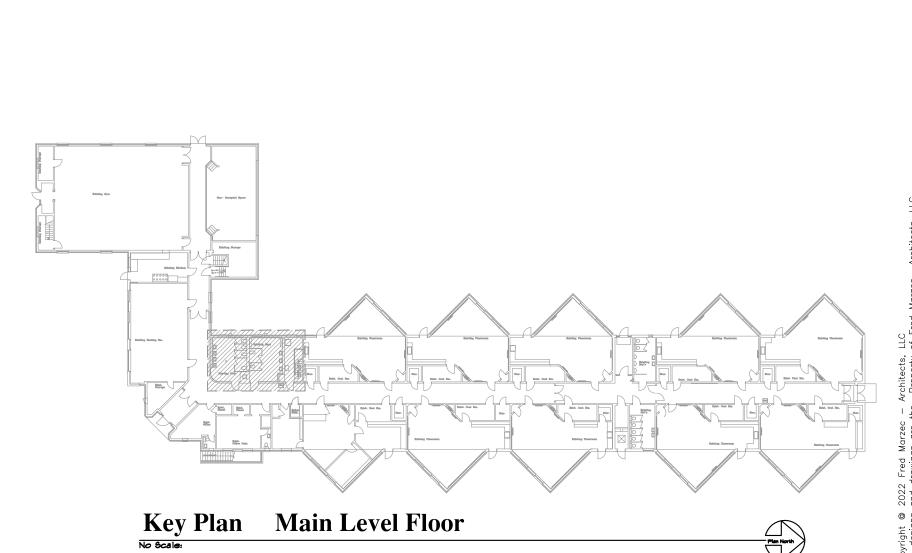
HVAC GENERAL NOTES

- ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH CURRENT APPLICABLE CODES, ORDINANCES, REGULATORY AGENCIES HAVING JURISDICTION, AND SPECIFICATIONS, SPECIFICATIONS MAY EXCEED REQUIREMENTS OF THE CODE. IN WHICH CASE, THE SPECIFICATION MUST BE FOLLOWED.
- THE INTENT OF THESE DOCUMENTS IS FOR THE MEP TRADES TO FURNISH AND INSTALL COMPLETE MECHANICAL, AND ELECTRICAL SYSTEMS. THE SPECIFIED HVAC SYSTEM SHALL BE COMPLETE IN ALL RESPECTS: OPERATIONAL. TESTED. ADJUSTED, APPROVED BY AUTHORITIES HAVING JURISDICTION AND READY FOR BENEFICIAL USE BY THE OWNER.
- THE TRADES SHALL OBTAIN AND REVIEW ALL CONTRACT DOCUMENTS BEFORE SUBMITTING THEIR BID. INFORMATION IS PROVIDED ON THE VARIOUS DRAWINGS, SCHEDULES, SPECIFICATIONS, AND ALL OF THE VARIOUS DOCUMENTS IN THE BIDDING PACKAGE. THE CONTRACT DOCUMENTS ARE COMPLEMENTARY AND FORM A TOTAL PROJECT DESIGN AND INFORMATION SOURCE FOR CONSTRUCTION PURPOSES.
- 4. THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT. COORDINATE LOCATIONS OF EQUIPMENT WITH OTHER TRADES BEFORE AND DURING CONSTRUCTION. ANY MODIFICATION TO THE EQUIPMENT LAYOUT, REQUIRED FOR INSTALLATION, IS TO BE PERFORMED UNDER THE CONTRACT AGREEMENT, AT NO ADDITIONAL COST. REFER TO DETAILS, SCHEDULES AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- THE CONTRACTOR SHALL BECOME THOROUGHLY FAMILIAR WITH THE PROJECT DOCUMENTS OF ALL TRADES. DRAWINGS ARE DIAGRAMMATIC AND SHOW THE GENERAL ARRANGEMENT OF EQUIPMENT AND PIPING. CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF EQUIPMENT AND PIPING INSTALLATION WITH ALL TRADES BEFORE COMMENCING WORK.
- EQUIPMENT SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS, WHEN EQUIPMENT MUST BE LOCATED ABOVE AN INACCESSIBLE CEILING (GYP BOARD OR EQUIVALENT). OR BEHIND A WALL. AN APPROPRIATE ACCESS DOOR SHALL BE PROVIDED. IF AN ACCESS DOOR IS REQUIRED. IT SHALL BE OF A RATING APPROPRIATE FOR THE WALL/CEILING IN WHICH IT IS TO BE INSTALLED. CONTRACTOR SHALL COORDINATE LOCATIONS OF ACCESS PANELS FOR ALL VALVES AND DEVICES, REQUIRING ACCESS, WITH THE ARCHITECT, PRIOR TO INSTALLATION OF SUCH DEVICES OR OTHER APPURTENANCES.
- REFER TO THE ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATION AND MOUNTING HEIGHTS OF VARIOUS EQUIPMENT. ALL SUCH EQUIPMENT AND EQUIPMENT COLORS AND FINISHES SHALL BE COORDINATED WITH THE ARCHITECT: MOUNTING HEIGHTS SHALL BE APPROVED BY THE ARCHITECT.
- WHERE A CONFLICT OCCURS BETWEEN THE DOCUMENTS, IT SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT. CARRY AS PART OF THE BID THE LARGER QUANTITY AND/OR MORE EXPENSIVE ITEM(S).
- 9. COORDINATE PIPING AND CONDUITS ENTERING OR LEAVING THE BUILDING WITH THE SITE CONTRACTOR(S) BEFORE INSTALLATION. COORDINATE INVERTS WITH THE STRUCTURE AND SYSTEM REQUIREMENTS, PRIOR TO INSTALLATION.
- 10. PROVIDE THE REQUIRED/SPECIFIED SLEEVES AND SEALS FOR PIPES OR CONDUIT PENETRATING INTERIOR, AND EXTERIOR WALLS AND FLOOR SLABS.
- 11. INSTALL FLOOR-MOUNTED EQUIPMENT ON A CONCRETE HOUSEKEEPING PAD.
- 12. THIS CONTRACT SHALL INCLUDE ALL THE NECESSARY PIPING, FITTINGS, TRANSITIONS ETC. AS REQUIRED TO INSTALL PIPING AND EQUIPMENT, AND TO AVOID ANY CONFLICTS WITH OTHER TRADES AND THE BUILDING STRUCTURE. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY ASSUMPTIONS, OMISSIONS OR ERRORS HE MAKES AS A RESULT OF HIS FAILURE TO COORDINATE WITH OTHER TRADES OR BECOME FULLY FAMILIAR WITH THE PROJECT DOCUMENTS
- 13. DO NOT INSTALL ANY PIPING OVER ELECTRICAL PANELS. TRANSFORMERS. SPECIAL EQUIPMENT. OR THROUGH ELECTRICAL ROOMS, DATA ROOMS, ELEVATOR MACHINE ROOM, STAIRWELL OR STAIRWELL WALLS THAT ARE NOT ASSOCIATED WITH OR SERVE THE RESPECTIVE ROOMS. COORDINATE THE LOCATION OF ELECTRICAL EQUIPMENT IN THE FIELD AND ADJUST AS NECESSARY.
- 14. INSTALL SMOKE DETECTORS IN BOTH SUPPLY & RETURN AIR DUCTS FOR AIR HANDLING EQUIPMENT 2,000 CFM AND
- 15. PROVIDE SMOKE DAMPERS AND DUCT SMOKE DETECTORS IN BOTH SUPPLY & RETURN AIR DUCTS (AT EACH FLOOR) FOR AIR HANDLING EQUIPMENT 15.000 CFM AND GREATER.
- 16. PROVIDE SMOKE DAMPERS AND SMOKE DETECTORS AT DUCT PENETRATIONS OF SMOKE-BARRIERS, AND AT ELEVATOR SHAFT VENTS PER CODE REQUIREMENTS.
- 17. PROVIDE FIRE DAMPERS AT DUCT PENETRATIONS OF FIRE-RATED CONSTRUCTION, INCLUDING WALLS, SHAFTS AND FLOOR PENETRATIONS. COORDINATE WITH ARCHITECTURAL DRAWINGS.
- 18. PROVIDE AN AUTOMATIC TEMPERATURE CONTROL SYSTEM COMPLETE IN ALL REGARDS. ALL ZONES, VAV'S AND SYSTEM SHALL BE THERMOSTATICALLY CONTROLLED. REVIEW THE PLANS AND SPECIFICATIONS OF ALL MEP TRADES FOR A COMPLETE SCOPE OF THE WORK.
- 20. TEST AND BALANCE BOTH AIR AND HYDRONIC SYSTEMS, PROVIDE BALANCING REPORT TO ARCHITECT AND ENGINEER.
- 21. PIPING SHALL BE SUPPORTED FROM STRUCTURE ABOVE. TO MAXIMIZE HEAD ROOM, INSTALL PIPING TIGHT TO BOTTOM OF BEAMS WHEN RUNNING PERPENDICULAR TO BEAM; INSTALL PIPING TIGHT TO FLOOR SLAB WHEN RUNNING PARALLEL TO BEAM; PROVIDE ALL NECESSARY FITTINGS AND TRANSITIONS.
- 22. PROVIDE THROTTLING VALVES AND SHUT-OFF VALVES AS INDICATED IN SPECIFICATIONS IN ADDITION TO THOSE
- INDICATED ON THE DOCUMENTS. 23. INSTALL ALL EQUIPMENT VALVES AS REQUIRED BY MANUFACTURERS INSTRUCTIONS AND RECOMMENDATIONS AND AS
- 24. PROVIDE AIR VENTS AT ALL HIGH POINTS AND DRAINS AT ALL LOW POINTS.
- 25. PROVIDE PRESSURE RELIEF DOORS FOR AIR SYSTEMS, PER THE SPECIFICATIONS.
- 26. PROVIDE MOTORIZED DAMPERS AT ALL PERMANENT OPENINGS (EXHAUST, SUPPLY, RELIEF, O.A. INTAKES, MAKE-UP AIR, SMOKE VENTS, ETC.) EXCEPT DRYER, KITCHEN, AND FUME EXHAUST AND PROVIDE A MEANS TO CONTROL THE DAMPER
- 27. ALL SUPPLY RECTANGULAR 90° ELBOWS SHALL HAVE TURNING VANES.
- 28. PROVIDE DUCT TAKE-OFF TYPES AND VOLUME DAMPERS PER THE SPECIFICATIONS AND DUCT TAKE-OFF DETAILS ON DRAWINGS. TAKE-OFFS SHOWN ON FLOOR PLANS DO NOT REPRESENT THE SPECIFIC TYPE OF TAKE-OFF REQUIRED; CONSULT THE DETAILS AND SPECIFICATIONS.
- 29. PROVIDE VOLUME DAMPERS ON ALL SUPPLY, EXHAUST, AND RETURN BRANCH DUCTS.
- 30. COORDINATE AND VERIFY LOCATIONS OF ALL ITEMS REQUIRING ACCESS WITH ARCHITECT IN FIELD., INCLUDING VALVES, VOLUME DAMPERS, FIRE DAMPERS, ETC.
- 31. ALL EQUIPMENT LOCATED ON THE ROOF THAT REQUIRES SERVICING SHALL BE LOCATED A MINIMUM 10'-0" FROM EDGE
- 32. ALL EXPOSED DUCTWORK SHALL BE FLAT, OVAL, OR ROUND. COORDINATE WITH ARCHITECT'S CEILING PLANS AND IDENTIFY ON DUCTWORK SHOP DRAWINGS.
- 33. PROVIDE DUCT TRANSITIONS AT RTU/AHU CONNECTIONS, ADJUST STEEL FRAMING AND SUPPORTS AFTER FINAL AIR HANDLING UNIT APPROVAL.
- 34. IN TIGHT AREAS ALL DUCTWORK SHALL BE INSTALLED AS HIGH AS POSSIBLE, BETWEEN STEEL & TRUSSES, BRUNCH DUCTWORK SHALL RUN THRU JOIST OPENINGS.
- 35. ALL THERMOSTATS LOCATED ON OUTSIDE WALL SHALL HAVE INSULATED PAD BEHIND.
- 36. ALL MOTORIZED DAMPERS SHALL BE WIRED BY ATC CONTRACTOR, COORDINATE VOLTAGE REQUIREMENTS WITH EQUIPMENT.
- 37. ALL TOILETS & BATHROOMS SHALL HAVE 3/4" UNDERCUT DOORS.
- 38. ALL LOUVERS ARE SELECTED AND SCHEDULED BY ARCHITECT. LOUVER TAGS ARE SHOWN FOR COORDINATION ONLY.
- 39. SEISMICALLY SUPPORT THE EQUIPMENT AS REQUIRED BY CODE, THE AUTHORITY HAVING JURISDICTION, AND/OR AS SPECIFIED. SUBMIT ENGINEERED INSTALLATION DETAILS PER THE SPECIFICATIONS. THE CONTRACTOR'S SEISMIC ENGINEER SHALL REVIEW THE INSTALLATION AND PROVIDE A DETAILED REPORT FOR THE RECORD.
- 38. ALL DUCTWORK AND PIPING CROSSING SEISMIC JOINTS SHALL ACCOMMODATE DIFFERENTIAL MOTION. REFER TO DETAILS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR LOCATIONS.
- 39. PROVIDE PIPE EXPANSION COMPENSATION FOR THE VARIOUS PIPING SYSTEMS. SUBMIT ENGINEERED DETAILS FOR APPROVAL AND VERIFY INSTALLATION IS IN ACCORDANCE WITH THE CODE. THE CONTRACTOR'S CONSULTING ENGINEER SHALL REVIEW THE INSTALLATION AND PROVIDE A REPORT OF THE FINDINGS.



FIRST FLOOR NEW WORK PART PLAN

SCALE: 1/4" = 1'-0"



24" x 36"

MECHANICAL, ELECTRICAL,
AND STRUCTURAL ENGINEERING
750 OLD MAIN STREET
SUITE 202
ROCKY HILL, CT 06067
P: (860) 436-4336
F: (860) 436-4450

RZ Design Associates, Inc.

zec - Architects, Ind Planners

Plans MECHANICAL

FLOOR PLANS

2022-10.22

AS NOTED

CHECKED BY:



20.0

22.1

25

208/1



Fred Marzec - Architects, I. Architects and Planners 99 Colonel Brown Road Griswold, CT. 06351
Tel: (860) 376-2999
Email address: feet.

HANGERS MUST NOT DEFORM DUCT SHAPE ┌ RATED — FASTENERS \ WIRES OR -SECURE STRAPS WIRE 24" DIA. MAX. BAND OF SAME SIZE AS HANGER — ONE HALF-ROUND MAY BE

MININ	MUM HANG	ER SIZES FOR	ROUND DUCT
DIA.	MAXIMUM SPACING	WIRE DIA.	STRAP
10" dn 11-18"	12' 12'	One 12 ga. Two 12 ga. or One 8 ga.	1" x 22 ga. 1" x 22 ga.
19-24" 25-36"	12' 12'	Two 10 ga. Two 8 ga.	1" x 22 ga. 1" x 20 ga.
37-50" 51-60" 61-84"	12' 12' 12'		Two 1" x 20 ga. Two 1" x 18 ga. Two 1" x 16 ga.

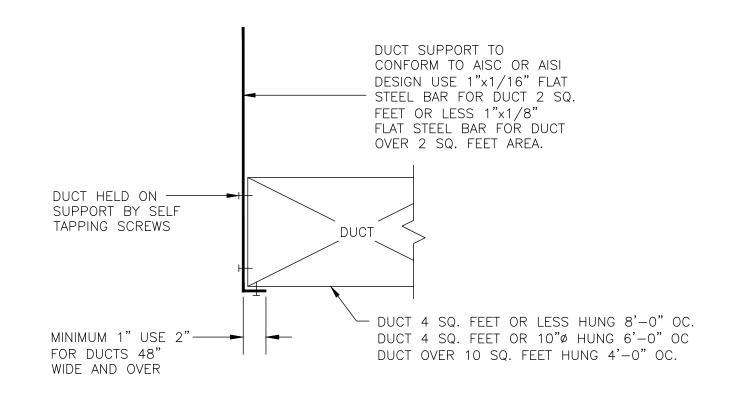
USED IF DUCT SHAPE IS

MAINTAINED.

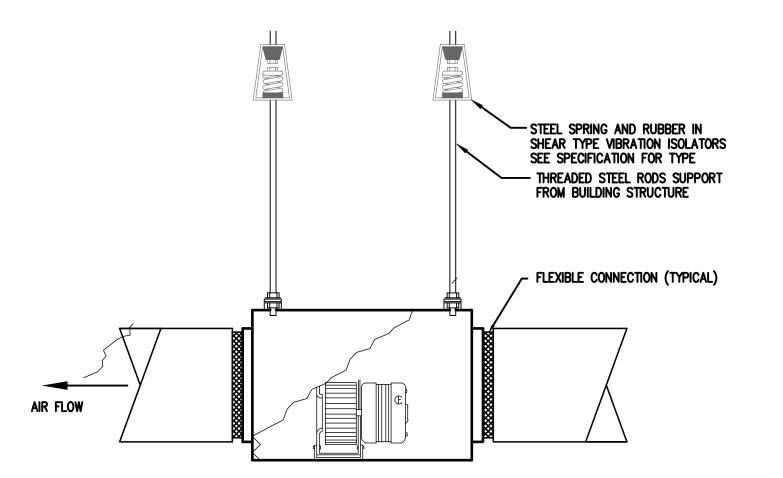
FOR ADDITIONAL INFORMATION REFER TO THE LATEST EDITION OF SMACNA

1 ROUND DUCT HANGER DETAIL
M-2 SCALE: N.T.S

STRAP



RECTANGULAR DUCT HANGER DETAIL SCALE: N.T.S



(3)	IN-LINE FAN	DETAIL
M-2	SCALE: N.T.S	

	DUCTLESS SPLIT SYSTEM SCHEDULE													
					EVA	PORATOR	UNIT							
TAG	Mf	-R	MODI	MODEL CFM COOLING HEATING MAX SOUND LEVE (BTUH) MAX SOUND LEVE (BTUH)				VEL	MOUN	ITING	VOLTS/ PHASE			
AC-1	MITSL	JBISHI	MSZ-FS	512NA	137-226-221-304-424		12,000	12,300	21	21-24-29-36-44		WA	LL	208/1
AC-2	MITSU	JBISHI	MSZ-FS	512NA	137-226-221-304-424		12,000	12,300	21	21-24-29-36-44		WA	LL	208/1
	CONDENSING UNIT													
TAG		CAPAC	CITY (TONS)		MODEL REFRIGER		RANT TYPE	SEER		MCA	М	OCP		DLTS/ HASE

R410A

CU-1

GENERAL NOTES/ACCESSORIES:

1. ACCEPTABLE MANUFACTURERS BY: DAIKIN, SAMSUNG, FUJITSU

2. PROVIDE WIRED DELUXE REMOTE CONTROLLER 3. PROVIDE CONDENSATE PUMP EQUAL TO ASPEN MINI.

1.5

4. PROVIDE EACH AC UNIT WITH MODEL PAC-YT53CRAU THERMOSTAT AND LOCKING COVER.

MXZ-3C24NA3

5. LOW AMBIENT BAFFLE KIT.

6. PROVIDE UL LISTED DRAIN PAN CONDENSATE OVERFLOW SENSOR
7. VARIABLE COMPRESSOR SPEED INVERTER TECHNOLOGY

8. PROVIDE CONDENSING UNIT SUPPORTS.

8.1. 18" HIGH STAND

9. INSTALL REFRIGERANT PIPING IN STRICT ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS AND RECOMMENDATIONS.

TAG	MFR	MODEL NUMBER	TYPE	TYPE DRIVE		CF	М	ESP (IN WC)	RPM	MOTOR WATTS
EF-1	GREENHECK	CSP-A290	INLINE	INLINE DIRE		21	0	.5	840	102
EF-2	GREENHECK	CSP-A510	INLINE	DIRE	ECT	42	0	.25	1070	210
TAG	VOLTS/ PHASE	SERVICES	SONE	ES				REMARKS		
EF-1	115/1	GIRLS BATHROOM	4.1		1	2				
EF-2	115/1	BOYS BATHROOM	2.8		1	2				

F	REGISTERS, GRILLES, AND DIFFUSERS (RGD'S)								
		CEILING RE	TURN/EXHA	UST REGISTER TYPE A					
		CFM		NECK SIZE					
0-150				8 x 8					
151-250				10 x 10					
		251-350		12 x 12					
		351-500		14 x 14					
TYPE	MFG	MODEL	DESCRIPTION						
А	PRICE	630	RETURN/EXHAUST CEILING/WALL REGISTER, 0.666" SPACING, ALUMINUM CONSTRUCTION WITH FLANGED BORDERS.						

2 RUBBER ISOLATED MOUNTING BRACKET

ACCEPTABLE MANUFACTURES: TITUS, KRUEGER

Modifical

Plans MECHANICAL SCHEDULE AND DETAILS

2022-10.22

AS NOTED CHECKED BY:

24" x 36"

- 1. WHEN A CONFLICT BETWEEN THE DRAWINGS, NOTES AND/OR SPECIFICATIONS OCCUR, THE MORE STRINGENT, AND/OR LARGER QUANTITY AND/OR MORE EXPENSIVE SHALL APPLY. THE REQUIREMENTS LISTED WITHIN NOTES OR SPECIFICATIONS SHALL BE REQUIRED. PROVIDED AND INSTALLED WHETHER SPECIFICALLY INDICATED ON THE DRAWINGS OR NOT.
- 2. IT IS THE INTENTION OF THE SPECIFICATIONS AND DRAWINGS TO PROVIDE FOR FINISHED WORK, TESTED AND READY FOR OPERATION.
- 3. ITEMS AND SERVICES NOT SHOWN ON DRAWINGS OR SPECIFICATIONS BUT REQUIRED TO RENDER THE WORK COMPLETE AND READY FOR OPERATION, SHALL BE PROVIDED WITHOUT ADDITIONAL COST.
- 4. WORK OF THIS SECTION SHALL BE GOVERNED BY THE CONTRACT DOCUMENTS. PROVIDE MATERIALS, LABOR, EQUIPMENT AND SERVICES NECESSARY TO FURNISH, DELIVER AND INSTALL ALL WORK AS REQUIRED BY JOB SHUT DOWNS CONDITIONS. WHERE A CONFLICT EXISTS BETWEEN THESE NOTES. THE DRAWINGS AND THE SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT SHALL APPLY.
- 5. DRAWINGS ARE DIAGRAMMATIC AND INDICATE A GENERAL ARRANGEMENT OF WORK AND ARE NOT TO BE CONSIDERED SUB-CONTRACTOR DOCUMENTS. IT IS THE INTENT OF THESE DOCUMENTS TO INCLUDE THE PROVISION AND INSTALLATION OF ALL NECESSARY WORK AND MATERIALS FOR COMPLETE, OPERATIONAL AND CODE COMPLIANT SYSTEMS BY THE CONTRACTOR. GENERAL DESIGN CONCEPTS INDICATED MUST BE FOLLOWED OR BETTERED. THE BID SHALL INCLUDE OFFSETS, ADDITIONAL PIPING, VALVES AND EQUIPMENT AND COMPONENTS AS REQUIRED TO MEET CONSTRUCTION CONDITIONS FOR PROPER OPERATION. DO NOT SCALE DRAWINGS. CONSULT ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR SPACE CONDITIONS AND ADDITIONAL REQUIREMENTS. DO NOT SCALE THE DRAWINGS.
- 6. PERFORM THE WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT GENERAL CONDITIONS AND IN COORDINATION WITH ALL OTHER TRADES. ALL WORK SHALL BE DONE IN CONFORMANCE AND PROVISIONS OF ALL APPLICABLE LOCAL, STATE AND FEDERAL CODES AND LAWS.

CODES AND STANDARDS:

- CONNECTICUT BUILDING CODE AND ALL SUPPLEMENTS IBC 2015 INTERNATIONAL BUILDING CODE IEBC 2015 INTERNATIONAL EXISTING BUILDING CODE IMC 2015 INTERNATIONAL MECHANICAL CODE IMP 2015 INTERNATIONAL PLUMBING CODE IECC 2015 INTERNATIONAL ENERGY CONSERVATION CODE NEC 2017 NATIONAL ELECTRICAL CODE / NFPA 70 NFPA NFPA-101 FIRE SAFETY CODE ICC/ANSI A117.1-2003 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES
- 7. WORK SHALL INCLUDE ALL INCIDENTALS, LABOR, MATERIALS, EQUIPMENT APPLIANCES, SERVICES, HOISTING, SCAFFOLDING, SUPPORTS, TOOLS. CONSUMABLE ITEMS, FEES, LICENSES, AND ADMINISTRATIVE TASKS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.
- 8. STORE MATERIALS INSIDE AND PROTECTED FROM DEBRIS, WEATHER AND
- 9. THE CONTRACTOR SHALL EXAMINE THE DRAWINGS AND SPECIFICATIONS RELATING TO THE WORK OF ALL DIVISIONS AND TRADES AND BECOME FULLY FAMILIAR AND INFORMED AS TO THE EXTENT AND CHARACTER OF WORK REQUIRED. AND ITS RELATIONSHIP TO THE REQUIREMENTS OF THIS DIVISION. INCLUDE ALL SUCH REQUIREMENTS AS PART OF THIS MECHANICAL WORK.
- 10. BEFORE SUBMITTING A BID, THE CONTRACTOR SHALL VISIT THE SITE, AND SHALL BECOME THOROUGHLY FAMILIAR WITH ALL CONDITIONS UNDER WHICH THE WORK WILL BE INSTALLED. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY ASSUMPTIONS, OMISSIONS OR ERRORS MADE AS A RESULT OF FAILURE TO BECOME FAMILIAR WITH THE SITE AND EXISTING BUILDING AND THE CONTRACT DOCUMENTS.

PERMITS AND FEES

THE CONTRACTOR SHALL GIVE ALL NECESSARY NOTICES, OBTAIN ALL PERMITS; AND PAY ALL GOVERNMENT AND STATE SALES TAXES AND FEES WHERE APPLICABLE, AND OTHER COSTS, INCLUDING UTILITY CONNECTIONS OR EXTENSIONS IN CONNECTION WITH THE WORK, FILE ALL NECESSARY DRAWINGS. PREPARE ALL DOCUMENTS AND OBTAIN ALL NECESSARY APPROVALS OF ALL GOVERNMENTAL AND STATE DEPARTMENTS HAVING JURISDICTION, OBTAIN ALL REQUIRED CERTIFICATES OF INSPECTIONS FOR HIS WORK, AND DELIVER A COPY TO THE OWNER'S REPRESENTATIVE BEFORE REQUEST FOR ACCEPTANCE AND FINAL PAYMENT FOR THE WORK. REFER TO THE SUPPLEMENTARY GENERAL CONDITIONS FOR INFORMATION ON WAIVING OF PERMIT FEES.

ALTERATION WORK AND DEMOLITION

- 1. ALL EQUIPMENT, DUCTWORK, PIPING, CONTROL DEVICES ETC... TO BE REMOVED, SHALL BE DISPOSED OF, TURNED OVER TO THE OWNER, OR SALVAGED AS DIRECTED BY THE OWNER. EQUIPMENT, DUCTWORK, PIPING, CONTROL DEVICES, ETC. SHALL NOT BE REMOVED FROM THE PREMISES WITHOUT THE OWNERS APPROVAL. REMOVE ALL EXISTING COMPONENTS REQUIRED TO MEET THE FUNCTIONAL INTENT OF THE DESIGN DRAWINGS.
- 2. NO DEAD ENDS SHALL BE LEFT ON ANY DUCTWORK AND PIPING SYSTEMS UPON COMPLETION OF WORK. ALL DUCTWORK AND PIPING BEING REMOVED SHALL BE PROPERLY VALVED AND CAPPED AT THE MAINS.
- 3. ALL SYSTEMS SHALL BE LEFT IN WORKING ORDER TO THE SATISFACTION OF THE OWNER UPON COMPLETION OF ALL NEW WORK.
- 4. CONDUCT SELECTIVE DEMOLITION WORK IN A MANNER THAT WILL MINIMIZE NEED FOR DISRUPTION OF NORMAL OPERATIONS IN OTHER AREAS OF THE BUILDING. PROVIDE MINIMUM OF 48 HOURS ADVANCE NOTICE TO OWNER OF DEMOLITION OR SYSTEM SHUTDOWN ACTIVITIES THAT WILL AFFECT NORMAL OPERATIONS IN THE BUILDING OR REQUIRE THE INTERRUPTION OF UTILITY SERVICES.
- 5. DRAINING OF PIPING SYSTEMS: WHERE EXISTING PIPING SYSTEMS REQUIRE DRAINING OF FLUIDS FROM EQUIPMENT AND PIPING, ALL DRAINAGE SHALL BE DIRECTED BY HOSE OR PIPE TO SUITABLE, FREE FLOWING DRAINS OR SUITABLE CONTAINERS. DO NOT ALLOW EXCESSIVE FLUID/WATER BUILDUP ON FLOORS OR SITE AREA. ENSURE THAT EXISTING DRAINS ARE KEPT CLEAR OF DEBRIS TO PREVENT BLOCKAGES.
- 6. CERTAIN ITEMS OF EXISTING EQUIPMENT AND PIPING OR DUCTWORK MAY BE INDICATED FOR REMOVAL, RELOCATION OR ABANDONMENT. ITEMS NOTED FOR REMOVAL SHALL BE DISCONNECTED AND DISPOSED OF BY THE CONTRACTOR OR TURNED OVER TO THE OWNER IF THE OWNER SO REQUESTS. IF INSTRUCTED TO DISPOSE OF ITEMS, THE CONTRACTOR SHALL REMOVE THE ITEMS FROM THE PREMISES AND DISPOSE OF THEM IN A SAFE, LEGAL AND RESPONSIBLE MANNER AND LOCATION. ITEMS NOTED FOR RELOCATION ARE INTENDED FOR REUSE IN ANOTHER LOCATION AS DESIGNATED ON THE DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE THE MATERIAL FROM ITS PRESENT LOCATION, STORE THE MATERIAL IN A SAFE PLACE, AND REINSTALL THE MATERIAL IN ITS NEW LOCATION. QUESTIONS REGARDING THE SUITABILITY OF THE MATERIAL OR EQUIPMENT SHALL BE BROUGHT, IN WRITTEN FORM, TO THE ATTENTION OF THE OWNER/ENGINEER. ABANDONMENT SHALL BE DEFINED AS LEAVING IN PLACE ANY ITEM SO DESIGNATED AND SHALL INCLUDE PROPER PIPING OR DUCTWORK TERMINATION WITHIN ANY OCCUPIED OR OPEN AREA. ALL ABANDONED PIPES AND DUCTS SHALL BE DISCONNECTED AND CAPPED AT THEIR

COORDINATION WITH OTHER DIVISIONS

- 1. ALL WORK SHALL BE CARRIED OUT IN CONJUNCTION WITH OTHER TRADES AND FULL COOPERATION SHALL BE GIVEN IN ORDER THAT ALL WORK MAY PROCEED WITH A MINIMUM OF DELAY AND INTERFERENCE. PARTICULAR EMPHASIS IS PLACED ON TIMELY INSTALLATION OF MAJOR APPARATUS AND FURNISHING OTHER CONTRACTORS, ESPECIALLY THE CONSTRUCTION MANAGER, WITH INFORMATION AS TO OPENINGS, CHASES, SLEEVES, BASES, INSERTS, EQUIPMENT LOCATIONS, PANELS, ETC., REQUIRED BY OTHER TRADES.
- 2. THE CONTRACTORS ARE REQUIRED TO EXAMINE ALL OF THE PROJECT DRAWINGS,

- INCLUDING THE SITE, ARCHITECTURAL, STRUCTURAL AND THOSE OF OTHER MECHANICAL AND ELECTRICAL TRADES AND MUTUALLY ARRANGE WORK SO AS TO AVOID INTERFERENCE WITH THE WORK OF OTHER TRADES AND / OR EXISTING SYSTEMS AND EQUIPMENT. IN GENERAL, DUCTWORK, HEATING PIPING, SPRINKLER PIPING AND DRAINAGE LINES TAKE PRECEDENCE OVER WATER, GAS AND ELECTRICAL CONDUITS. THE ENGINEER SHALL MAKE FINAL DECISIONS REGARDING THE ARRANGEMENT OF WORK WHICH CANNOT BE AGREED UPON BY THE CONTRACTORS.
- 3. WHERE THE WORK OF THE CONTRACTOR WILL BE INSTALLED IN CLOSE PROXIMITY TO OR WILL INTERFERE WITH WORK OF OTHER TRADES, THE CONTRACTORS WILL COOPERATE IN WORKING OUT SPACE CONDITIONS TO MAKE A SATISFACTORY ADJUSTMENT.
- 4. IF THE WORK UNDER A SECTION IS INSTALLED BEFORE COORDINATING WITH OTHER DIVISIONS OR SECTIONS OR SO AS TO CAUSE INTERFERENCE WITH WORK OF OTHER SECTIONS, THE NECESSARY CHANGES TO CORRECT THE CONDITION SHALL BE MADE BY THE CONTRACTOR CAUSING THE INTERFERENCE WITHOUT EXTRA CHARGE TO THE OWNER.

- 1. WHEN INSTALLATION OF A NEW SYSTEM REQUIRES THE TEMPORARY SHUTDOWN OF AN EXISTING OPERATING SYSTEM, THE CONNECTION OF THE NEW SYSTEM SHALL BE PERFORMED AT SUCH TIME AS DESIGNATED BY THE ENGINEER OR THE OWNER'S REPRESENTATIVE.
- 2. THE ENGINEER AND THE OWNER SHALL BE NOTIFIED OF THE ESTIMATED DURATION OF THE SHUTDOWN PERIOD AT LEAST THREE (3) DAYS IN ADVANCE OF THE DATE THE WORK IS TO BE PERFORMED.
- 3. WORK SHALL BE ARRANGED FOR CONTINUOUS PERFORMANCE WHENEVER POSSIBLE. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY LABOR, INCLUDING OVERTIME IF REQUIRED, TO ASSURE THAT EXISTING OPERATING SERVICES WILL BE SHUT DOWN ONLY DURING THE TIME ACTUALLY REQUIRED TO MAKE NECESSARY CONNECTIONS.

ELECTRICAL CONNECTIONS

- 1. UNLESS OTHERWISE SPECIFIED, ALL WIRING SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH DIVISION 26.
- 2. ALL POWER WIRING SHALL BE FURNISHED AND INSTALLED UNDER DIVISION 26 COMPLETE FROM POWER SOURCE TO MOTOR OR EQUIPMENT JUNCTION BOX INCLUDING POWER WIRING THROUGH THE STARTERS. ALL STARTERS NOT FACTORY MOUNTED ON EQUIPMENT SHALL BE MOUNTED UNDER THE SPECIFICATION SECTION FURNISHING THE STARTER.
- 3. THE MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL TEMPERATURE CONTROL WIRING, INTERLOCK WIRING AND EQUIPMENT CONTROL WIRING FOR THE EQUIPMENT FURNISHED UNDER THIS DIVISION.
- 4. THE MECHANICAL CONTRACTOR SHALL FURNISH STARTERS AND/OR DISCONNECTS TO THE ELECTRICAL CONTRACTOR FOR EQUIPMENT PROVIDED. THE MECHANICAL CONTRACTOR SHALL PROVIDE AND BE RESPONSIBLE FOR THE PROPERLY SIZED OVERLOAD HEATERS IN ALL STARTERS THAT HE FURNISHES.

SHOP DRAWINGS

- 1. PRIOR TO DELIVERY TO THE JOBSITE AND SUFFICIENTLY IN ADVANCE TO ALLOW THOROUGH REVIEW, THE CONTRACTOR SHALL SUBMIT, FOR REVIEW, DETAILED SHOP DRAWINGS OF ALL EQUIPMENT AND MATERIAL SPECIFIED IN EACH SECTION AND COORDINATED DUCTWORK LAYOUTS. ALL DUCTWORK SHOP DRAWINGS, AUTOMATIC TEMPERATURE CONTROLS AND ALL DIAGRAMS AND RISERS SHALL BE SUBMITTED IN HARD COPY FORMAT. NO MATERIAL OR EQUIPMENT MAY BE DELIVERED TO THE JOB SITE OR INSTALLED UNTIL THE CONTRACTOR HAS RECEIVED SHOP DRAWINGS FOR THE PARTICULAR MATERIAL OR EQUIPMENT WHICH HAVE BEEN PROPERLY REVIEWED.
- 2. SHOP DRAWINGS SHALL BE SUBMITTED WITHIN 30 DAYS AFTER AWARD OF CONTRACT BEFORE ANY MATERIAL OR EQUIPMENT IS PURCHASED. THE CONTRACTOR SHALL SUBMIT FOR REVIEW COPIES OF ALL SHOP DRAWINGS TO BE INCORPORATED IN THE MECHANICAL CONTRACT. REFER TO THE GENERAL CONDITIONS AND SUPPLEMENTARY GENERAL CONDITIONS FOR THE QUANTITY OF COPIES REQUIRED FOR SUBMISSION. WHERE QUANTITIES ARE NOT SPECIFIED, PROVIDE SEVEN (7) COPIES FOR REVIEW.
- 3. PROVIDE SHOP DRAWINGS FOR ALL DEVICES SPECIFIED ON DRAWINGS IN EQUIPMENT SCHEDULES AND FOR ALL SYSTEMS INCLUDING DUCTWORK, PIPING, CONTROLS, ETC., OR WHERE CALLED FOR ELSEWHERE IN THE SPECIFICATIONS. SHOP DRAWINGS SHALL INCLUDE MANUFACTURERS' NAMES, CATALOG NUMBERS CUTS, WIRING AND PIPING DIAGRAMS AND OTHER SUCH DESCRIPTIVE DATA AS MAY BE REQUIRED TO IDENTIFY AND ACCEPT THE EQUIPMENT, CERTIFIED DIMENSIONAL DRAWINGS, ACCURATE LAYOUT AND ARRANGEMENT DRAWINGS, LOCATIONS AND SIZES OF ALL CONNECTIONS, AND EQUIPMENT WEIGHTS. ALL PERFORMANCE DATA REQUIRED TO VERIFY THE EQUIPMENT'S SUITABILITY SHALL BE CLEARLY PRESENTED. A COMPLETE LIST IN EACH CATEGORY (EXAMPLE: ALL DIFFUSERS) OF ALL SHOP DRAWINGS, CATALOG CUTS, MATERIAL LISTS, ETC., SHALL BE SUBMITTED TO THE ENGINEER AT ONE TIME. NO CONSIDERATION WILL BE GIVEN TO A PARTIAL SHOP DRAWING SUBMITTAL.
- A. EQUIPMENT SHOP DRAWINGS SHALL CONTAIN FULL RANGE PERFORMANCE CURVES, GRAPHS, TABLES OR OTHER PERTINENT DATA WHICH CLEARLY INDICATES OPERATIONAL RANGE OF A GIVEN UNIT SIZE. COMPUTER GENERATED/PLOTTED CURVES OR INFORMATION, BASED SOLELY ON THE DESIGN PERFORMANCE, WILL NOT BE ACCEPTED.
- B. ALL SUBMITTALS OF EQUIPMENT FURNISHED WITH MOTORS SHALL CONTAIN A COMPLETE DESCRIPTION OF THE MOTOR'S OPERATING CHARACTERISTICS (HORSEPOWER, VOLTAGE, PHASE, SERVICE FACTOR) AND THE NAMEPLATE MOTOR EFFICIENCY.

AS-BUILT DRAWINGS

- 1. PROVIDE A COMPLETE SET OF AS -BUILT DRAWINGS REFLECTING AS INSTALLED CONDITIONS. AS-BUILT DRAWINGS SHALL INDICATE ALL INSTALLED CONDITIONS OF SYSTEMS WITHIN THIS DISCIPLINE. DRAWINGS SHALL BE OF SIMILAR SCALE AS THE CONSTRUCTION DOCUMENTS AND INCLUDE DETAILS AS NECESSARY TO CLEARLY REFLECT THE INSTALLED CONDITION. DRAWINGS SHALL BE BOUND IN A COMPLETE AND CONSECUTIVE SET. SUPPLEMENTAL SKETCHES AND LOOSE PAPERWORK WILL NOT BE ACCEPTABLE AND WILL BE RETURNED FOR REVISION. THE CONTRACTOR SHALL COMPLY WITH THE ENGINEERS COMMENTS TO PRODUCE A CLEAR AND CONCISE SET OF DRAWINGS. DRAWINGS SHALL BE SUBMITTED IN BOTH HARD COPY AND ELECTRONIC (AUTO-CAD VERSION AS REQUIRED BY THE OWNER) VERSION. NUMBER OF COPIES OF EACH AS REQUESTED BY THE OWNER.
- 2. PROVIDE "AS-BUILT DRAWINGS" INDICATING IN A NEAT AND ACCURATE MANNER A COMPLETE RECORD OF ALL REVISIONS OF THE ORIGINAL DESIGN OF THE WORK. INDICATE THE FOLLOWING INSTALLED CONDITIONS:
- A. INCLUDE ALL CHANGES AND AN ACCURATE RECORD, ON REPRODUCTIONS OF PIPING INSULATION: THE CONTRACT DRAWINGS OR APPROPRIATE SHOP DRAWINGS, OF ALL DEVIATIONS, BETWEEN THE WORK SHOWN AND THE WORK INSTALLED.
- B. MAINS AND BRANCHES OF PIPING SYSTEMS, WITH VALVES AND CONTROL DEVICES LOCATED AND NUMBERED, CONCEALED UNIONS LOCATED, AND WITH ITEMS REQUIRING MAINTENANCE LOCATED (I.E. TRAPS, STRAINERS, EXPANSION COMPENSATORS, TANKS, ETC.) VALVE LOCATION DIAGRAMS, COMPLETE WITH VALVE TAG CHART.
- C. EQUIPMENT LOCATIONS (EXPOSEED AND CONCEALED), DIMENSIONED FROM PROMINENT BUILDING LINES.
- D. APPROVED SUBSTITUTIONS, CONTRACT MODIFICATIONS, AND ACTUAL EQUIPMENT AND MATERIALS INSTALLED.
- E. CONTRACT MODIFICATIONS, ACTUAL EQUIPMENT AND MATERIALS INSTALLED.
- 3. SUBMIT FOR REVIEW BOUND SETS OF THE REQUIRED DRAWINGS, MANUALS AND OPERATING INSTRUCTIONS.

4. SUBMIT A COMPLETE MAINTENANCE MANUAL OF ALL EQUIPMENT INSTALLED UNDER THIS CONTRACT.

HANGERS AND SUPPORT

- SEISMIC RESTRAINT: PROVIDE SEISMIC RESTRAINT AND EXPANSION OF ALL MECHANICAL EQUIPMENT AND SYSTEMS IN ACCORDANCE WITH STATE AND LOCAL BUILDING CODE REQUIREMENTS. SUBMIT SHOP DRAWINGS SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT INDICATING ALL NECESSARY COMPONENT CUTS, PLAN LOCATIONS AND CALCULATIONS FOR A COMPLETE SYSTEM.
- PROVIDE ALL NECESSARY STRUCTURAL MEMBERS INCLUDING ADDITIONAL STRUCTURAL SUPPORT TO SUPPORT PIPING AND EQUIPMENT, HANGERS AND SUPPORTS SHALL BE OF AN APPROVED DESIGN NECESSARY TO SUPPORT DUCTWORK, PIPING EQUIPMENT AND TO KEEP IN PROPER ALIGNMENT AND PREVENT TRANSMISSION OF INJURIOUS THRUSTS AND VIBRATIONS. IN ALL CASES WHERE HANGERS, BRACKETS, ETC. ARE SUPPORTED FROM CONCRETE CONSTRUCTION, DO NOT WEAKEN CONCRETE OR PENETRATE WATERPROOFING. ALL HANGERS AND SUPPORTS SHALL BE CAPABLE OF SCREW ADJUSTMENT AFTER PIPING IS ERECTED. HANGERS SUPPORTING PIPING EXPANDING INTO LOOPS, BENDS, AND OFFSETS SHALL BE SECURED TO THE BUILDING STRUCTURE IN SUCH A MANNER THAT HORIZONTAL ADJUSTMENT PERPENDICULAR TO THE RUN OF PIPING SUPPORTED MAY BE MADE TO ACCOMMODATE DISPLACEMENT DUE TO EXPANSION. ALL SUCH HANGERS SHALL BE FINALLY ADJUSTED BOTH IN THE VERTICAL AND HORIZONTAL DIRECTION, AS REQUIRED. HANGERS IN CONTACT WITH COPPER OR BRASS PIPE SHALL BE DIELECTRIC, COMPATIBLE WITH COPPER AND BRASS ALLOY OR PROVIDED WITH FELT SLEEVE.
- 3. PROVIDE ADDITIONAL SUPPORT FOR DUCTWORK, PIPING AND EQUIPMENT WHEN DECK IS NOT CAPABLE OF SUPPORT.
- BEAM CLAMPS HANGERS SUPPORTED FROM STEEL SHALL BE CENTER LOADING BEAM CLAMPS FOR HANGERS SUPPORTING PIPING 2 INCHES FOR 2-1/2 INCHES AND LARGER, I BEAM CLAMPS SHALL BE FORGED STEEL. "C" CLAMPS ARE NOT TO BE USED.
- 5. PROVIDE AND INSTALL EXPANSION COMPENSATION FOR ALL PIPING. SUBMIT PLANS, CALCULATIONS AND EQUIPMENT DATA.

WIND RESTRAINTS

1. ALL MECHANICAL EQUIPMENT, APPLIANCES AND SUPPORTS THAT ARE EXPOSED TO WIND SHALL BE DESIGNED AND INSTALLED TO RESIST THE WIND PRESSURES DETERMINED IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE FOR THE SITE BASED ON ASCE 7. WIND PRESSURE REQUIREMENTS ARE BASED ON THE EXPOSURE OF THE BUILDING AND WIND SPEEDS FOR THAT REGION. SUBMIT SHOP DRAWINGS SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT INDICATING ALL NECESSARY COMPONENT CUTS, PLAN LOCATIONS AND CALCULATIONS FOR A COMPLETE SYSTEM.

- DUCTWORK SHALL BE FABRICATED FROM HOT-DIPPED GALVANIZED STEEL SHEET CONFORMING TO ASTM A653, WITH G60 COATING. EXHAUST DUCTWORK SERVING TOILET/SHOWER SPACES SHALL BE ALUMINUM SHEET ALLOY 3003-H14, ASTM B 209, ALUMINUM CONNECTORS AND BAR STOCK: ALLOY 6061-T6 OR OF EQUIVALENT
- MANUFACTURED METAL DUCTWORK AND FITTINGS SHALL BE BY LINDAB, SEMCO OR UNITED McGILL CORP. FLAT OVAL AND ROUND DUCTS: MACHINE MADE FROM SPIRAL LOCKSEAM DUCT WITH LIGHT REINFORCING CORRUGATIONS; FITTINGS MANUFACTURED OF AT LEAST TWO GAGES HEAVER THAN METAL DUCT.
- 3. FABRICATE, SUPPORT, INSTALL AND SEAL IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE, AND AS INDICATED. PROVIDE DUCT MATERIAL, GAUGES, REINFORCING AND SEALING FOR OPERATING PRESSURES INDICATED.
- 4. INSULATED FLEXIBLE DUCTS SHALL BE FABRICATED FROM MULTIPLE LAYERS OF ALUMINUM LAMINATE SUPPORTED BY HELICALLY WOUND SPRING STEEL WIRE WITH FIBERGLASS INSULATION AND POLYETHYLENE VAPOR BARRIER. PRESSURE RATING SHALL BE 10 INCH W.G. POSITIVE AND 1.0 INCH W.G. NEGATIVE. FLEXIBLE DUCTS SHALL NOT PASS THROUGH WALLS NOR EXCEED 8 FEET IN LENGTH. SECURE TO DUCT TAP WITH CLAMP OR DRAWBAND. PROPERLY SUPPORT SO AS NOT TO SAG OR KINK.
- JOINT SEALERS AND SEALANTS SHALL BE NON-HARDENING, WATER, MILDEW AND MOLD RESISTANT. MAXIMUM FLAME SPREAD OF 25, SMOKE DEVELOPED OF 50 WHEN TESTED IN ACCORDANCE WITH ASTM E84.
- 6. PROVIDE AIR FOIL TURNING VANES WHEN RECTANGULAR ELBOWS MUST BE
- ACCESS DOORS SHALL BE PROVIDED UNDER THIS SECTION AS REQUIRED TO PROVIDE ACCESS TO FIRE AND SMOKE DAMPERS, CONTROLS, HUMIDIFIERS, COILS VALVES, ETC., WHICH ARE LOCATED IN DUCTS.
- 8. ON ALL AIR HANDLING EQUIPMENT INCLUDING AIR HANDLERS, ERV UNITS, UTILITY AND CABINET FANS, FURNISH AND INSTALL FLEXIBLE DUCT CONNECTORS TO ISOLATE FAN VIBRATION FROM THE DUCT SYSTEM. (EXCEPTION: AIR HANDLING UNITS WITH INTERNAL FAN VIBRATION ISOLATORS AND FLEXIBLE CONNECTORS INSTALLED BETWEEN FAN AND HOUSING.)
- 9. ACCESSORY DUCTWORK MATERIALS SUCH AS TAPES, SEALANTS, FASTENERS, ETC., SHALL COMPLY WITH NFPA 90A WITH A MAXIMUM FLAME SPREAD RATING OF 25 AND A MAXIMUM SMOKE DEVELOPED RATING OF 50, AND SHALL BE SMACNA AND UL APPROVED.

REGISTERS, GRILLES AND DIFFUSERS

- 1. REGISTERS, GRILLES AND DIFFUSERS SHALL BE AS SCHEDULED ON THE DRAWINGS. FINISH SHALL BE AS SELECTED BY THE ARCHITECT.
- 2. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- 3. CHECK LOCATIONS OF OUTLETS AND INLETS AND MAKE NECESSARY ADJUSTMENTS IN POSITION TO CONFORM WITH ARCHITECTURAL FEATURES, SYMMETRY AND LIGHTING ARRANGEMENT. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR LOCATIONS OF REGISTERS, GRILLS AND DIFFUSERS.
- INSTALL DIFFUSERS TO DUCTWORK WITH AIR TIGHT CONNECTION.PAINT INSIDE OF DUCT CONNECTION TO REGISTERS AND DIFFUSERS BLACK FOR A DISTANCE OF 18" WHEREVER SHINY SHEETMETAL IS VISIBLE FORM THE OCCUPIED SPACE.
- PROVIDE BALANCING DAMPERS ON DUCT TAKE-OFFS TO DIFFUSERS, GRILLES AND REGISTERS, DESPITE WHETHER DAMPERS ARE SPECIFIED AS PART OF THE DIFFUSER, GRILLE OR REGISTER ASSEMBLY.

- A. PROVIDE RIGID MOLDED, NONCOMBUSTIBLE FIBERGLASS PIPE INSULATION WITH WHITE KRAFT PAPER VAPOR BARRIER JACKET AND SELF-SEALING LAP JOINT AND BUTT STRIPS. INSULATION SHALL BE 1.5 PCF DENSITY WITH K VALUE OF 0.24 AT 75 DEG F. INSULATION SHALL BE RATED FOR OPERATING TEMPERATURES FROM 0 DEG F TO 850 DEG F AND BE EQUIVALENT TO OWENS CORNING ASJ-SSL II OR EQUIVALENT.
- B. FITTINGS SHALL BE COVERED WITH FLEXIBLE FIBERGLASS INSULATION AND ZESTON PVC FITTING COVERS. INSULATION THICKNESS SHALL BE IN CONFORMANCE WITH THE 2015 INTERNATIONAL ENERGY CODE.
- C. ALL INSULATION MATERIALS, INCLUDING JACKETS AND ADHESIVES, SHALL MEET THE REQUIREMENTS OF NFPA 90A, ACCORDING TO ASTM TEST E-84, NFPA 255 AND UL 723, HAVING A FLAME-SPREAD RATING OF NOT OVER 25, A SMOKE-DEVELOPED RATING OF NOT OVER 50 AND A FUEL-CONTRIBUTED RATING OF NOT OVER 50.
- PIPING INSTALLATION
- A. ALL PIPE CONNECTIONS SHALL BE INSTALLED TO ALLOW FOR FREEDOM OF

MOVEMENT OF THE PIPING DURING EXPANSION AND CONTRACTION WITHOUT SPRINGING. SWING JOINTS. EXPANSION LOOPS AND EXPANSION JOINTS WITH PROPER ANCHORS AND GUIDES SHALL BE PROVIDED BY THE CONTRACTOR WHERE NECESSARY AND/OR WHERE SHOWN ON THE DRAWINGS. ANCHORS AND GUIDES SHALL BE SUBJECT TO THE REVIEW OF THE ENGINEER. PAY PARTICULAR ATTENTION TO PLASTIC PIPING WITH HIGH COEFFICIENTS OF EXPANSION.

- B. REMOVE SCALE AND DIRT ON INSIDE AND OUTSIDE OF PIPE BEFORE
- C. AFTER COMPLETION, FILL, CLEAN AND TREAT SYSTEM. VENT AIR FROM
- D. INSTALL HOT WATER AND CHILLED WATER PIPING TO ASME B31.9 REQUIREMENTS.
- E. ROUTE PIPING IN AN ORDERLY MANNER, PARALLEL TO BUILDING STRUCTURE, AND MAINTAIN GRADIENT. GROUP PIPING WHENEVER PRACTICAL AT COMMON ELEVATIONS. SLEEVE PIPING PASSING THROUGH PARTITIONS. WALLS AND FLOORS. SLOPE PIPING AND ARRANGE TO DRAIN AT LOW POINTS.
- F. PIPING SYSTEMS SHALL BE PERMANENTLY LABELED TO IDENTIFY FLUID INSIDE PIPES, DIRECTION OF FLUID FLOW AND APPROXIMATE WORKING PRESSURE. LABELING SYSTEM SHALL BE "OPTI-CODE" WITH "ARROWS ON A ROLL TAPE" PERMANENTLY AFFIXED TO PIPING AS MANUFACTURED BY SETON NAME PLATE CORP., OR AN ACCEPTED EQUIVALENT.
- G. UNIONS ARE TO BE USED AT CONNECTIONS TO FIXTURES AND OTHER APPARATUS TO ALLOW EASY REMOVAL. PROVIDE ACCEPTABLE DIELECTRIC UNIONS OR ADAPTERS AT ALL CONNECTIONS BETWEEN FERROUS AND NON-FERROUS PIPING.
- H. ANY EXPOSED, UNINSULATED PIPING LOCATED IN FINISHED AREAS WHERE PIPING PASSES THROUGH WALLS, FLOOR OR CEILING, SHALL BE CHROME-PLATED WITH CHROME-PLATED ESCUTCHEONS.
- I. PROVIDE HOSE BIB DRAINS WITH BRASS CAPS AT LOW POINTS OF PIPING RISERS FOR DRAINAGE.
- 6. PIPE HANGERS AND SUPPORTS
- A. ALL HANGER, SUPPORT AND ANCHOR TYPES OR MODEL NUMBERS SPECIFIED HEREIN ARE BASED ON GRINNELL OR ACCEPTABLE EQUIVALENT. SUPPORTS SHALL CONFORM TO MSS-SP-69 AND ANSI B31.1. WIRE AND/OR STRAP HANGERS WILL NOT BE ACCEPTABLE.
- B. ALTERNATE PIPING SUPPORT SYSTEMS MAY BE ACCEPTABLE BASED ON TYPE AND SIZE OF PIPING INSTALLED AND SUPPORT SYSTEM EMPLOYED. STRUT SYSTEMS SUCH AS B-LINE, UNI-STRUT, SUPER STRUT, ETC. WITH INTEGRAL PIPE CLAMPING AND SUPPORTING HARDWARE OR INNOVATIVE SUPPORT PRODUCTS MAY BE ACCEPTED. SUBMIT A DRAFT SUBMITTAL TO ENGINEER PRIOR TO OFFICIAL SUBMITTAL FOR APPROVAL TO DETERMINE ACCEPTABILITY OF ALTERNATIVE SUPPORT SYSTEMS.
- C. IN NO CASE SHALL PIPING BE BOTTOM OR FLOOR SUPPORTED ON THREADED ROD ONLY. A MANUFACTURED SUPPORT / BASE SHALL BE EMPLOYED WHICH IS DURABLE AND SUITABLE RESISTANT TO THE EFFECTS OF CORROSION AND
- D. HANGERS FOR PIPE SIZES TWO (2") INCHES AND SMALLER SHALL BE LIGHT-DUTY, CLEVIS-TYPE HANGERS, #65. FOR COPPER PIPES TWO (2") INCHES AND SMALLER, USE CT-69 COPPER BAND HANGERS OR CT-65 COPPER PLATED
- E. HANGERS FOR PIPING OVER 2-1/2 INCHES SHALL BE GENERAL-DUTY, CLEVIS-TYPE HANGERS, #260. FOR COPPER SIZES 2-1/2 INCHES THROUGH 4 INCHES, USE CT-65. THESE HANGERS MAY BE USED FOR LARGER SIZES IN PLASTIC DRAINAGE PIPING. USE SADDLES OR INSULATION PROTECTORS FOR PLASTIC PIPE OR USE FEE & MASON FIGURE 108.
- F. FOR INSULATED COLD AND/OR CHILLED WATER PIPING SYSTEMS, HANGERS SHALL BE SIZED FOR THE SPECIFIED INSULATION THICKNESS, PROVIDE NON-COMPRESSIBLE. FOAM-TYPE PIPE COVERING SADDLES OF THE REQUIRED THICKNESS AND A SHEET METAL HANGER SADDLE TO PREVENT CRUSHING OF INSULATION BY THE HANGER. INSULATED HOT WATER PIPING MAY BE INSTALLED WITH LINE- SIZE HANGERS. INSULATE AROUND HANGER.
- G. VERTICAL RISERS SHALL BE SUPPORTED WITH RISER CLAMPS. FOR PIPES 2-1/2" AND SMALLER, USE FIGURE 261. FOR PIPES 3" THROUGH 8", USE RISER CLAMPS, FIGURE 261 WITH SHEAR LUGS WELDED TO PIPE. RISERS 10" AND LARGER, OR WHERE RISER CLAMP MUST BE HUNG FROM STRUCTURE ABOVE OR ON HIGH PRESSURE STEAM OR HIGH TEMPERATURE HOT WATER SYSTEMS USE A 4 OR 6 BOLT CLAMP, FIGURE 40.
- H. UPPER ATTACHMENTS FOR PIPING IN WOOD CONSTRUCTION SHALL BE MALLEABLE IRON SIDE BEAM BRACKET, GRINNELL #202, WITH LEG BOLT INTO SIDE OF WOOD MEMBER OR APPROVED "SAMMY" TYPE SCREWS.

- 1. DRAWN (RIGID) COPPER TUBE SHALL BE TYPE ACR, R410 RATED, ASTM B280, H58 TEMPER, CLEAN, DRY AND CAPPED. FITTINGS SHALL BE ASME B16.22 WROUGHT COPPER. JOINTS SHALL BE BRAZED WITH AWS A5.8 BCUP SILVER / PHOSPHORUS /
- 2. ANNEALED (SOFT) COPPER TUBE SHALL BE TYPE ACR. R410 RATED. ASTM B280. O60 TEMPER, CLEAN, DRY AND CAPPED. FITTINGS SHALL BE ASME 16.22 WROUGHT COPPER. JOINTS SHALL BE FLARED OR BRAZED WITH AWS A5.8 BCUP SILVER / PHOSPHORUS / COPPER ALLOY.
- 3. INSULATION SHALL BE FLEXIBLE ELASTOMERIC. INSULATION THICKNESS SHALL BE IN CONFORMANCE WITH THE 2015 INTERNATIONAL ENERGY CODE.
- 4. PIPING INSTALLATION
- A. INSTALL REFRIGERATION PIPING IN ACCORDANCE WITH VRF SYSTEM MANUFACTURER'S INSTRUCTIONS AND ASME B31.5.
- B. ROUTE PIPING IN AN ORDERLY MANNER, PARALLEL TO BUILDING STRUCTURE AND MAINTAIN GRADIENT. GROUP PIPING WHENEVER PRACTICAL AT COMMON ELEVATIONS. SLEEVE PIPING PASSING THROUGH PARTITIONS, WALLS AND FLOORS. SLOPE PIPING AND ARRANGE TO DRAIN AT LOW POINTS.

TESTING, ADJUSTING AND BALANCING

- 1. AFTER COMPLETION OF THE WORK, BUT BEFORE SUBSTANTIAL COMPLETION, TEST, ADJUST AND BALANCE ALL AIR AND WATER SYSTEMS IN ACCORDANCE WITH EITHER AABC, NEBB, OR TABB STANDARDS.
- 2. TESTING AND BALANCING CONTRACTORS SHALL BE CERTIFIED BY EITHER AABC,
- 3. AIR HANDLING SYSTEMS SHALL BE BALANCED TO WITHIN PLUS OR MINUS 5 PERCENT OF DESIGN FOR SUPPLY SYSTEMS AND PLUS OR MINUS 10 PERCENT FOR RETURN AND EXHAUST SYSTEMS.
- 4. AIR OUTLETS AND INLETS SHALL BE BALANCED TO WITHIN PLUS 10 PERCENT AND MINUS 5 PERCENT OF DESIGN TO SPACE. ADJUST OUTLETS AND INLETS IN SPACE TO WITHIN PLUS OR MINUS 10 PERCENT OF DESIGN.
- 5. ADJUST HYDRONIC SYSTEMS TO WITHIN PLUS OR MINUS 10 PERCENT OF DESIGN.
- PERMANENTLY MARK SETTINGS OF VALVES, DAMPERS, AND OTHER ADJUSTMENT DEVICES ALLOWING SETTINGS TO BE RESTORED. SET AND LOCK MEMORY STOPS.
- 7. SUBMIT FINAL REPORT INDICATING DESIGN VERSUS FINAL PERFORMANCE: NOTABLE CHARACTERISTICS OF THE SYSTEM; DESCRIPTION OF SYSTEMS OPERATION SEQUENCE; TEST CONDITIONS; AND A LIST OF INSTRUMENTS USED. FINAL REPORT SHALL BE SUBMITTED PRIOR TO SUBSTANTIAL COMPLETION OF THE PROJECT.



RZ Design Associates, Inc. MECHANICAL, ELECTRICAL, AND STRUCTURAL ENGINEERING 750 OLD MAIN STREET SUITE 202 ROCKY HILL. CT 06067 P: (860) 436-4336 F: (860) 436-4450

www.rzdesignassociates.co

odifi

Plans MECHANICAL SPECIFICATIONS

2022-10.22

AS NOTED DRAWN BY: CHECKED BY:

12/22/2022



F: (860) 436-4450 www.rzdesignassociates.co

Archite inners

<u> </u>	ABBREVIATIONS
AAV	AIR ADMITTANCE VALVE
ABV.	ABOVE
AFF	ABOVE FINISHED FLOOR
BEL.	BELOW
BFP	BACKFLOW PREVENTER DEVICE
BV	BALANCE VALVE
CW	COLD WATER
HW	HOT WATER
СО	CLEANOUT
ECO	CLEANOUT, EXISTING
CLG	CEILING
СР	CIRCULATOR PUMP
CFH	CUBIC FEET PER HOUR
CND	CONDENSATE DRAIN PIPING
DF	DRINKING FOUNTAIN
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EX., EXIST.	EXISTING
FL	FLOOR
FS	FLOOR SINK
G	GAS
GPM	GALLONS PER MINUTE
HW	HOT WATER
НС	HANDICAPPED ACCESSIBLE
INV. ELEV.	INVERT ELEVATION
LAV	LAVATORY
PSI	POUNDS PER SQUARE INCH
RD	ROOF DRAIN
SAN	SANITARY
TMV	THERMOSTATIC MIXING VALVE
UR	URINAL
V	VENT
VIF	VERIFY IN FIELD
VTR	VENT THRU ROOF
W	WASTE

WATER CLOSET

WALL CLEANOUT

WHA

WCO

WATER HAMMER ARRESTOR

PLUM	PLUMBING SYMBOL LEGEND					
→ Б—→	BALL VALVE					
— 	BUTTERFLY VALVE					
——————————————————————————————————————	GATE VALVE					
	CHECK VALVE					
——————————————————————————————————————	BACKFLOW PREVENTER ASSEMBLY (RPZ)					
→	BALANCING VALVE (CALIBRATED)					
\ →	GAS VALVE, (BALL OR PLUG)					
	PRESSURE REDUCING VALVE					
	SOLENOID VALVE					
─────	THERMOSTATIC MIXING VALVE					
──	HOT WATER RETURN PUMP					
├ \(\(\bar{c}_{\mu_{j}}\)	HOSE BIBB (HB) OR DRAIN VALVE					
	WALL HYDRANT (WH) (EXTERIOR)					
→	GLOBE VALVE					
─ ─ ─ ─ ─ ─ ─ ─ ─ ─	MOTORIZED VALVE					
├	UNION					
≥ > - 	STRAINER					
├	PIPE DROP WITH VALVE					
——————————————————————————————————————	PIPE ELBOW DOWN OR DROP					
├	PIPE ELBOW UP					
├	WALL CLEANOUT					
	PIPE CAP					
~—>	P-TRAP					
\Box	OVERFLOW DOWNSPOUT NOZZLE (ODN)					
R	T&P RELIEF VALVE					
ı k W ə ı	WATER METER ASSEMBLY					
III/GMIII	GAS METER ASSEMBLY					
	GAS PRESSURE REGULATOR					
arphi	PRESSURE GAUGE					
į.	THERMOMETER					
TP	TRAP PRIMER					
ETP	ELECTRONIC TRAP PRIMER					
0	FLOOR CLEANOUT					
\bigcirc	FLOOR DRAIN (FD)					
	FLOOR SINK (FS)					

PLUMBING PIPING SYMBOL LEGEND						
├	FIRE SERVICE					
~ —₩——	WATER SERVICE					
~	COLD WATER					
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	HOT WATER					
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	HOT WATER RECIRCULATION					
≻	VENT PIPING					
├ s -	SANITARY OR WASTE ABOVE GRADE					
 	SANITARY OR WASTE BURIED					
├	COMBINATION WASTE & VENT ABOVE GRADE					
── ₩∨ ─ ─	COMBINATION WASTE & VENT BURIED					
├	INDIRECT WASTE					
├ - SD - -	STORM DRAIN BURIED					
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	PIPING WITH HEAT TRACE or HEAT CABLE					
<del>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</del>	PIPING - DEMOLITION (TO BE REMOVED)					

# PLUMBING RENOVATION/ DEMOLITION GENERAL NOTES

- 1. BEFORE SUBMITTING BID, THE CONTRACTORS SHALL VISIT THE JOB SITE AND BECOME FULLY FAMILIAR WITH THE EXISTING CONDITIONS AND THE DOCUMENTS OF OTHER TRADES UNDER WHICH THEIR WORK WILL BE ACCOMPLISHED. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY ASSUMPTIONS, OMISSIONS OR ERRORS MADE AS A RESULT OF FAILURE TO BECOME FAMILIAR WITH THE EXISTING
- 2. THE CONTRACTOR SHALL COORDINATE AND SCHEDULE ANY DAILY INTERRUPTIONS OR SHUTDOWNS OF THE EXISTING SYSTEMS IN ADVANCE WITH OWNER'S DESIGNATED REPRESENTATIVE. THIS SHALL INCLUDE SERVICES INTERRUPTIONS. CONNECTIONS AND DISRUPTIONS EFFECTING OTHER TRADES (MECHANICAL AND ELECTRICAL). INCLUDE ALL WORK REQUIRED TO ALLOW PHASED CONSTRUCTION WHERE
- 3. DEMOLITION DRAWINGS ARE STRICTLY DIAGRAMMATIC AND SHOW GENERAL ARRANGEMENT AND APPROXIMATE LOCATION OF EXISTING MECHANICAL AND ELECTRICAL EQUIPMENT. IT IS NOT THE INTENT OF THESE DRAWINGS TO SHOW ALL EQUIPMENT, PIPING OR CONDUIT TO BE REMOVED. EQUIPMENT NOT BEING REUSED SHALL BE REMOVED, INCLUDING ALL ASSOCIATED HANGERS, SUPPORTS, PIPES, CONDUITS, WIRES, AND CONTROLS BACK TO THE POINT OF ORIGIN.
- 4. REFER TO THE ARCHITECTURAL DEMOLITION DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS. THE FULL EXTENT OF THE DEMOLITION AND RECONSTRUCTION SCOPE OF WORK SHALL BE DETERMINED BY THE ENTIRE SET OF BID DOCUMENTS.
- 5. THE CONTRACTORS SHALL COORDINATE THE DEMOLITION SCOPE OF WORK WITH THE GENERAL CONTRACTOR'S OR CONSTRUCTION MANAGER'S PHASING SCHEDULE PRIOR TO COMMENCEMENT OF WORK. CARE MUST BE TAKEN SO AS NOT TO DESTROY, REMOVE OR DEMOLISH ANY EQUIPMENT, APPURTENANCES OR DEVICES INTENDED TO REMAIN. PROVIDE TEMPORARY SERVICES AND SYSTEM MODIFICATIONS TO ACCOMMODATE CONTINUOUS OPERATION OF ACTIVE SYSTEM.
- 6. THE LOCATION OF EXISTING PLUMBING SYSTEM SHOWN ON FLOOR PLANS, IS BASED ON THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL FIELD VERIFY PRIOR TO COMMENCEMENT OF CONSTRUCTION, EXACT QUANTITY AND LOCATION(S) OF EXISTING EQUIPMENT, PIPING, PLUMBING FIXTURES TO BE REMOVED AND ADJUST AS NECESSARY.
- 7. ALL EQUIPMENT, PLUMBING FIXTURES AND ASSOCIATED PIPING INDICATED TO BE REMOVED OR RELOCATED, SHALL BE DISCONNECTED AND REMOVED, INCLUDING HANGERS AND OTHER COMPONENTS, UP TO NEAREST EXISTING ACTIVE MAIN OR BRANCH LINE AND CAPPED AS CLOSE TO THE ACTIVE LINE AS POSSIBLE. NO EQUIPMENT, PIPING, OR CONDUIT SHALL BE ABANDONED IN PLACE, UNLESS SPECIFICALLY
- 8. ALL SYSTEMS TO BE REMOVED SHALL BE REMOVED BACK TO THE POINT OF SOURCE. THE CONTRACTOR SHALL VERIFY WHICH SYSTEMS MUST REMAIN ACTIVE TO SERVE ADJACENT SPACES DURING CONSTRUCTION. SHOULD THE CONTRACTOR ENCOUNTER, DURING DEMOLITION OF EXISTING WALLS OR CHASES, ANY PIPING OR CONDUIT WHICH MUST REMAIN ACTIVE, HE SHALL IMMEDIATELY GIVE NOTICE TO THE ENGINEER, GENERAL CONTRACTOR OR CONSTRUCTION MANAGER.
- 9. ALL SALVAGEABLE MATERIALS OR EQUIPMENT TO BE REMOVED SHALL BE TURNED OVER TO THE OWNER AT THE END OF EACH DAY. ITEMS REMOVED AND NOT REUSED OR DISCLAIMED BY THE OWNER SHALL BECOME PROPERTY OF THE TRADE CONTRACTOR AND SHALL BE TRANSPORTED FROM THE SITE. SITE STORAGE OF REMOVED ITEMS WILL NOT BE PERMITTED.
- 10. PROPERLY DISPOSE OF ALL DEMOLISHED EQUIPMENT IN COMPLIANCE WITH CODES AND REGULATIONS; THIS APPLIES TO HAZARDOUS MATERIALS AND CONTAMINATED ITEMS TO BE DEMOLISHED.
- 11. THE PLUMBING CONTRACTOR SHALL VERIFY EXACT LOCATION AND INVERT ELEVATION OF EXISTING BURIED SANITARY, WASTE OR STORM PIPING PRIOR TO ANY EXCAVATION FOR NEW PIPING CONNECTION AND SHALL NOTIFY ENGINEER OF ANY PROBLEMS.

#### PLUMBING GENERAL NOTES

- 1. THE PROJECT DRAWINGS AND SPECIFICATIONS ARE BASED ON THE CONSTRUCTION SPECIFICATIONS INSTITUTE (CSI) DOCUMENTATION FORMAT. SPECIFICATION AND DRAWING CONTENTS ARE ARRANGED BY TOPIC AND CATEGORY AND ARE NOT INTENDED TO AWARD DIVISION OF WORK.
- 2. ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH CURRENT APPLICABLE CODES, ORDINANCES, THE REGULATORY AGENCIES HAVING JURISDICTION AND THE SPECIFICATIONS. THE SPECIFICATIONS MAY
- 3. THE INTENT OF THESE DOCUMENTS IS FOR THE MEP TRADES TO FURNISH AND INSTALL COMPLETE AND READY FOR BENEFICIAL USE BY THE OWNER.
- 4. THE TRADES SHALL OBTAIN AND REVIEW ALL CONTRACT DOCUMENTS BEFORE SUBMITTING A BID. INFORMATION IS PROVIDED ON THE VARIOUS DRAWINGS, SCHEDULES, SPECIFICATIONS AND ALL OF THE VARIOUS DOCUMENTS IN THE BIDDING PACKAGE. THE CONTRACT DOCUMENTS ARE COMPLEMENTARY AND FORM A TOTAL PROJECT DESIGN AND INFORMATION SOURCE FOR CONSTRUCTION PURPOSES.
- 5. THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT. COORDINATE LOCATIONS OF EQUIPMENT WITH OTHER TRADES BEFORE AND DURING CONSTRUCTION. ANY MODIFICATION TO THE EQUIPMENT LAYOUT, REQUIRED FOR INSTALLATION, IS TO BE PERFORMED UNDER THE CONTRACT AGREEMENT, AT NO ADDITIONAL COST.
- 6. THE CONTRACTOR SHALL BECOME THOROUGHLY FAMILIAR WITH THE PROJECT DOCUMENTS OF ALL AND PIPING. THE CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF EQUIPMENT AND PIPING
- 7. EQUIPMENT SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS, WHEN EQUIPMENT MUST BE LOCATED ABOVE AN INACCESSIBLE CEILING (GYP BOARD OR EQUIVALENT), OR BEHIND A WALL, AN APPROPRIATE ACCESS DOOR SHALL BE PROVIDED. IF AN ACCESS DOOR IS REQUIRED, IT SHALL BE OF A RATING APPROPRIATE FOR THE WALL/CEILING IN WHICH IT IS TO BE INSTALLED. THE CONTRACTOR SHALL COORDINATE LOCATIONS OF ACCESS PANELS FOR ALL VALVES AND DEVICES, REQUIRING ACCESS, WITH THE ARCHITECT, PRIOR TO INSTALLATION OF SUCH DEVICES OR OTHER APPURTENANCES.
- 8. COORDINATE EXACT LOCATION OF PLUMBING SERVICES ENTERING THE BUILDING WITH THE SITE CONTRACTOR AND UTILITY DRAWINGS PRIOR TO INSTALLATION. COORDINATE ALL FOUNDATION WALL PENETRATIONS AND INVERT ELEVATIONS WITH THE GENERAL CONTRACTOR AND/OR CONSTRUCTION
- 10. THIS CONTRACT SHALL INCLUDE ALL THE NECESSARY PIPING, FITTINGS, TRANSITIONS ETC. AS REQUIRED TO INSTALL PIPING AND EQUIPMENT, AND TO AVOID ANY CONFLICTS WITH OTHER TRADES AND THE BUILDING STRUCTURE. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY ASSUMPTIONS, OMISSIONS OR ERRORS HE MAKES AS A RESULT OF HIS FAILURE TO COORDINATE WITH OTHER TRADES OR BECOME FULLY FAMILIAR WITH THE PROJECT DOCUMENTS OF ALL TRADES.
- 11. DO NOT INSTALL ANY PIPING OVER ELECTRICAL PANELS, TRANSFORMERS, SPECIAL EQUIPMENT, OR THROUGH ROOMS THAT ARE NOT ASSOCIATED WITH OR SERVING THE RESPECTIVE ROOMS. COORDINATE
- 13. REFER TO THE ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATION AND MOUNTING HEIGHTS OF PLUMBING FIXTURES OR EQUIPMENT. ALL SUCH EQUIPMENT AND EQUIPMENT COLORS AND FINISHES SHALL BE COORDINATED WITH THE ARCHITECT. MOUNTING HEIGHTS SHALL BE APPROVED BY THE
- 14. FLOOR MOUNTED PLUMBING EQUIPMENT SHALL BE INSTALLED ON A 6" CONCRETE HOUSE-KEEPING PAD.
- 15. INSTALL WATER HAMMER ARRESTORS (WHA) AT ALL QUICK CLOSING VALVES (FLUSH VALVES, SOLENOID VALVES, ETC.); SIZE SHALL BE BASED ON FIXTURE UNITS PER PDI STANDARDS AND INSTALLED PER
- 16. ALL PIPING, DRAINS, STRAINERS, FAUCETS, FAUCET AERATORS, FILTERS, ETC. SHALL BE THOROUGHLY CLEANED AND FLUSHED IMMEDIATELY BEFORE PROJECT COMPLETION. PROVIDE CERTIFICATION ON CONTRACTOR'S LETTER HEAD THAT THIS WORK HAS BEEN COMPLETED.
- SIDE OF INSULATION AND THE LOCATION SHALL BE MADE INFILTRATION FREE.
- REQUIRED SERVICE CONNECTIONS, FACTORY START UPS AND INSTALLATION OF FIELD DEVICES.
- 19. PIPE ALL CONDENSATE DRAINS FROM MECHANICAL EQUIPMENT COOLING COILS, BY GRAVITY (INTERIOR AIR HANDLING UNITS, FAN COIL UNITS, AC UNITS, ETC.) TO FLOOR DRAINS OR JANITOR'S SINKS OR OTHER APPROVED LOCATION THROUGH AN AIR GAP. EACH CONDENSATE DRAIN SHALL BE TRAPPED AT THE EQUIPMENT DRAIN OUTLET, REFER TO TRAP DETAILS ON DRAWINGS. COORDINATE EXACT LOCATION OF
- 21. ALL INDIRECT WASTE DRAINS SHALL BE PIPED TO FLOOR DRAINS, FUNNELS OR FIXED AIR GAP FITTINGS, THROUGH AIR GAP OR TO A SINK DRAIN TAILPIECE.
- 22. INSTALL TRAP PRIMERS FOR EACH INDIVIDUAL FLOOR DRAIN OR, AS A OPTION, CONTRACTOR MAY UTILIZED UTILITY DISTRIBUTION UNIT FOR MULTIPLE DRAIN. CONNECT TRAP PRIMER TO NEAREST ACTIVE COLD
- 25. PROVIDE PIPE EXPANSION COMPENSATION FOR THE VARIOUS PIPING SYSTEMS. SUBMIT ENGINEERED DETAILS FOR APPROVAL AND VERIFY INSTALLATION IS IN ACCORDANCE WITH THE CODE. THE CONTRACTOR'S CONSULTING ENGINEER SHALL REVIEW THE INSTALLATION AND PROVIDE A REPORT OF THE FINDINGS.

- EXCEED THE REQUIREMENTS OF THE CODE, IN WHICH CASE, THE SPECIFICATION MUST BE FOLLOWED.
- MECHANICAL AND ELECTRICAL SYSTEMS. THE SPECIFIED PLUMBING SYSTEM SHALL BE COMPLETE IN ALL RESPECTS; OPERATIONAL, TESTED, ADJUSTED, APPROVED BY THE AUTHORITIES HAVING JURISDICTION

- TRADES. THE DRAWINGS ARE DIAGRAMMATIC AND SHOW THE GENERAL ARRANGEMENT OF EQUIPMENT INSTALLATION WITH ALL THE TRADES BEFORE COMMENCING WORK.
- MANAGER BEFORE COMMENCING WORK.
- 9. WHERE A CONFLICT OCCURS BETWEEN THE DOCUMENTS, IT SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT. CARRY AS PART OF THE BID THE LARGER QUANTITY AND/OR MORE EXPENSIVE ITEM(S).
- THE LOCATION OF ELECTRICAL EQUIPMENT IN THE FIELD AND ADJUST AS NECESSARY.
- 12. IT IS NOT THE INTENT OF THE DRAWINGS TO SHOW INDIVIDUAL BRANCH PIPING TO EACH PLUMBING FIXTURE: ONLY THE BRANCH PIPING TO GROUPS OF FIXTURES IS INDICATED. EACH AND EVERY FIXTURE SHALL BE PROPERLY PIPED TO WATER. WASTE, AND VENT PIPING SYSTEMS. REFER TO THE PLUMBING SCHEDULES FOR INDIVIDUAL PIPE SIZES TO EACH FIXTURE.
- COORDINATE SIZE AND FINAL LOCATION OF ALL CONCRETE PADS WITH THE STRUCTURAL ENGINEER. PADS SHALL BE MINIMUM 6" LARGER THAN THE EQUIPMENT IN BOTH HORIZONTAL DIRECTIONS.
- MANUFACTURER'S RECOMMENDATION.
- 17. DOMESTIC WATER DROPS AND RISERS INSTALLED IN EXTERIOR WALLS SHALL BE INSTALLED ON THE WARM
- 18. BEFORE INSTALLATION, COORDINATE THE WORK WITH OWNER-FURNISHED EQUIPMENT, INCLUDING
- EQUIPMENT WITH THE HVAC CONTRACTOR AND ADJUST AS NECESSARY.
- 20. INSULATE ALL WASTE ABOVE SLAB "P" TRAPS AND BRANCH WASTE PIPING RECEIVING CONDENSATE FROM
- WATER MAIN; PROVIDE ISOLATION VALVES AND EXTEND TO FLOOR DRAIN.
- 23. COORDINATE ALL PLUMBING EQUIPMENT REQUIRING POWER, FOR EXACT LOCATION AND POWER REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR.
- 24. SEISMICALLY SUPPORT THE EQUIPMENT AS REQUIRED BY CODE, THE AUTHORITY HAVING JURISDICTION, AND/OR AS SPECIFIED. SUBMIT ENGINEERED INSTALLATION DETAILS PER THE SPECIFICATIONS. THE CONTRACTOR'S SEISMIC ENGINEER SHALL REVIEW THE INSTALLATION THE INSTALLATION AND PROVIDE A DETAIL REPORT FOR THE RECORD.

odificat estroom

**Plans PLUMBING GENERAL NOTES** AND LEGEND

2022-10.22

AS NOTED CHECKED BY:





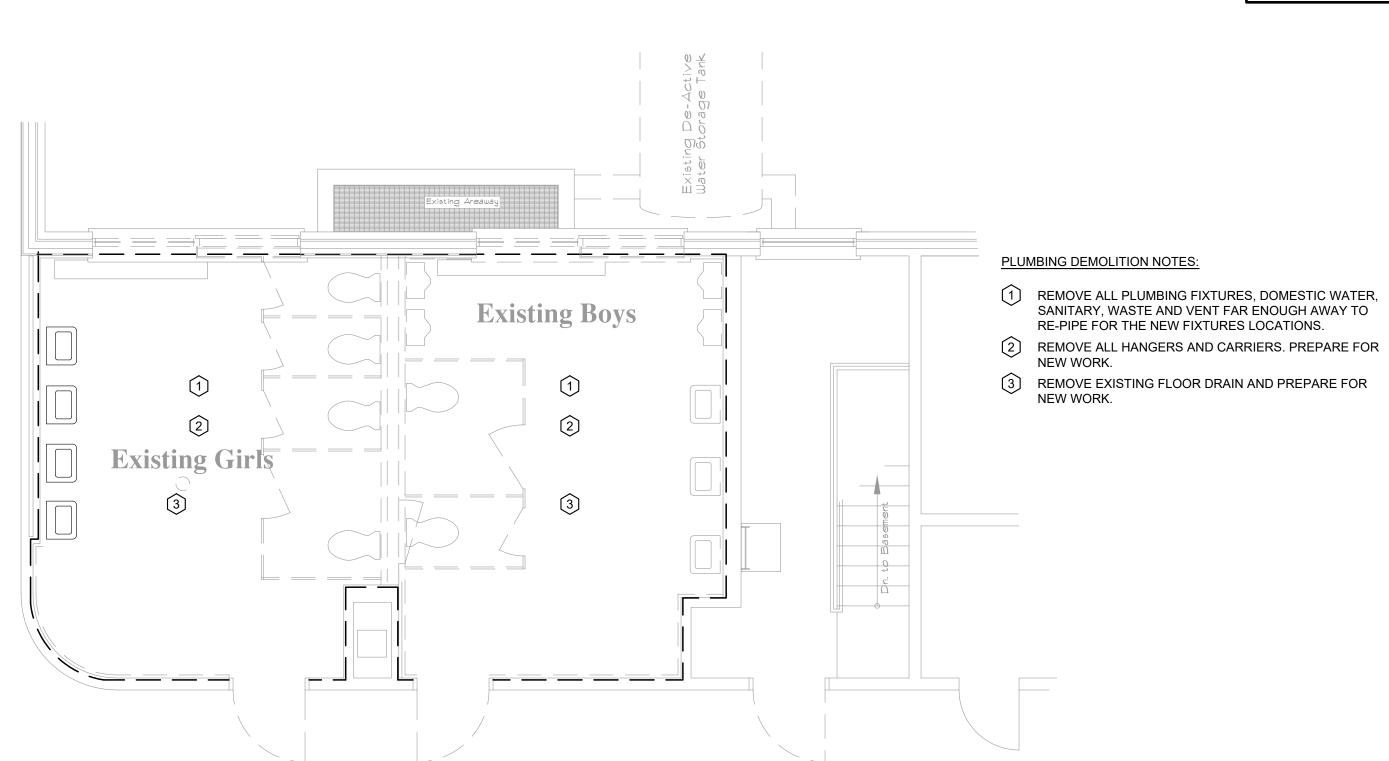
Architects, anners

Plans PLUMBING

FLOOR PLANS

2022-10.22

AS NOTED DRAWN BY: CHECKED BY:



FIRST FLOOR DEMOLITION PART PLAN

SCALE: 1/4" = 1'-0"

Existing Areaway Exist. Boiler Rm. Approx. Outline of Room Walls Above V.I.F. Exist. Stor. & Elect. Room Piping Tunnel Existing

BASEMENT DEMOLITION PART PLAN

SCALE: 1/8" = 1'-0"

PLUMBING KEY NOTES:

(1) CONNECT NEW 2" VENT TO EXISTING. VERIFY EXACT LOCATION IN THE FIELD.

2 INSTALL ALL NEW CARRIERS FOR WATER CLOSETS AND RE-PIPE THE DOMESTIC COLD WATER. INSTALL WATER HAMMER ARRESTERS PER DETAIL #1 ON DRAWING P-2.

3 INSTALL ALL NEW CARRIERS FOR URNILS AND RE-PIPE THE DOMESTIC COLD WATER, WASTE AND VENT. INSTALL WATER HAMMER ARRESTERS PER DETAIL #1 ON DRAWING P-2. RE-PIPE THE DOMESTIC HOT & COLD WATER, WASTE AND VENT FOR NEW LAVATORY SINK LOCATIONS.

(5) 4" SANITARY DOWN TO BASEMENT. CONNECT TO EXISTING SANITARY IN BASEMENT. VERIFY THE EXACT LOCATION IN

(7) CONNECT NEW 2" WASTE TO EXISTING. FIELD VERIFY THE EXISTING LOCATION.

6 CONNECT NEW 3/4" DCW TO EXISTING IN WET WALL. FIRST FLOOR NEW WORK PART PLAN
SCALE: 1/4" = 1'-0"





d Marzec - Architects, I nitects and Planners wold, CT. 06351

Modificat

Plans PLUMBING SCHEDULE AND DETAILS

2022-10.22

SCALE:
AS NOTED

DRAWN BY:
FSM

CHECKED BY:
BJZ

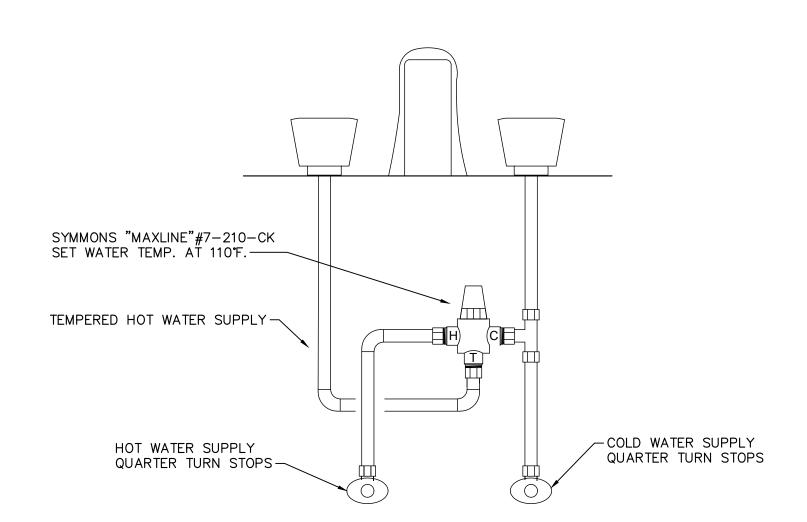
DATE:
12/22/2022

ON HORIZONTAL BRANCH LINE LESS THAN 20'-0" LONG, PLACE ONE WITHIN 6'-0" OF THE LAST FIXTURE SERVED — WATER SUPPLY — ON BRANCH LINE GREATER THAN 20'-0" LONG, PLACE ANOTHER ARRESTER IN THE MIDDLE, EACH IS SIZED FOR HALF THE FIXTURE UNITS ARRESTER WITHIN 6'-0" OF FIXTURE SERVED

SINGLE	<u>FIXTURE</u>		MULTIPLE FIXTURES		
PDI	FIXTURE		FIXTURE UNIT TABULA	ATION	
SIZE	UNIT LOAD		FIXTURE	COLD	НОТ
AA	1-3		VALVE WATER CLOSET	10	ı
Α	4-11		TANK WATER CLOSET	5	1
В	12-32		URINAL	5	•
С	33-60		LAVATORY	1.5	1.5
D	61-113		SINK	2	2
Е	114-154		MOP BASIN	3	3
F	155-330		SHOWER/BATHTUB	2	3
		-	DRINKING FOUNTAIN	0.5	-

PROVIDE WATER HAMMER ARRESTERS BY SIOUX CHIEF, PRECISION PLUMBING PRODUCTS, WATTS OR APPROVED EQUIVALENT WITH PISTON AND 0-RING CONSTRUCTION, HAVING PDI #WH-201, ASSE #1010 OR ANSI #A112.26.1M CERTIFICATION. SIZE AND INSTALL PER PDI #WH-201 STANDARD OR MANUFACTURER'S INSTRUCTION. TABLES ABOVE ARE BASED ON SIOUX CHIEF PRODUCT LINE. IF PRESSURE IS IN EXCESS OF 65 PSIG THEN UPSIZE ARRESTER BY ONE (EXAMPLE: AN 'A' ARRESTER WOULD BECOME A 'B' ARRESTER.)







					Р	LUME	BING FIXTURE SCHEDULE
		MANUFACTURER		PIPE	E SIZES		
<u>SYMBOL</u>	<u>FIXTURE TYPE</u>	MODEL NUMBER	HOT (IN)	COLD (IN)	SOIL OR WASTE (IN)	VENT (IN)	<u>DESCRIPTION</u>
A & HC	WATER CLOSET WALL MOUNTED FLUSH VALVE TYPE ACCESSIBLE	AMERICAN STANDARD "AFWALL" MODEL #3351.128		1	4	2	WALL MOUNTED, SIPHON JET FLUSH ACTION TYPE, WATER CLOSET. VITREOUS CHINA. ELONGATED BOWL, 1.28 GALLON FLUSH CYCLE, 1–1/2" TOP SPUD, FURNISH COMPLETE WITH GASKET, BOLTS AND CAPS, COLOR: WHITE  SEAT: CHURCH, MODEL 3155C: ELONGATED OPEN FRONT SEAT, WITHOUT COVER, ANTI-BACTERIAL. COLOR: WHITE  CARRIER: SMITH OR EQUAL  FLUSH VALVE: SLOAN ROYAL, MODEL 115–1.28 MANUAL WATER CLOSET FLUSH VALVE, DIAPHRAGM TYPE, 1.28 GPF, VACUUM BREAKER, 1–1/2" TOP SPUD, ANGLE VALVE SCREWDRIVER STOP, VANDAL RESISTANT STOP CAP, BUMPER.
B	WATER CLOSET WALL MOUNTED FLUSH VALVE TYPE STANDARD	AMERICAN STANDARD "AFWALL" MODEL #3351.128		1	4	2	WALL MOUNTED, SIPHON JET FLUSH ACTION TYPE, WATER CLOSET. VITREOUS CHINA. ELONGATED BOWL, 1.28 GALLON FLUSH CYCLE, 1-1/2" TOP SPUD, FURNISH COMPLETE WITH WAX GASKET, BOLTS AND CAPS, COLOR: WHITE  SEAT: CHURCH, MODEL 3155C: ELONGATED OPEN FRONT SEAT, WITHOUT COVER, ANTI-BACTERIAL. COLOR: WHITE  CARRIER: SMITH OR EQUAL  FLUSH VALVE: SLOAN ROYAL, MODEL 115-1.28 MANUAL WATER CLOSET FLUSH VALVE, DIAPHRAGM TYPE, 1.28 GPF, VACUUM BREAKER, 1-1/2" TOP SPUD, ANGLE VALVE SCREWDRIVER STOP, VANDAL RESISTANT STOP CAP, BUMPER.
C	URINAL  WALL MOUNTED FLUSH VALVE TYPE  MOUNTED AT 24" TO RIM A.F.F.	AMERICAN STANDARD "WASHBROOK" MODEL #6590.125		3/4	2	2	WALL HUNG, FLUSHING RIM, WASHOUT FLUSH ACTION, VITREOUS CHINA, EXTENDED SIDES, 0.125 GALLON FLUSH, 3/4" TOP INLET, 2" OUTLET. FURNISH COMPLETE WITH GASKET, AND MOUNTING HARDWARE. COLOR: WHITE MEETS ANSI A117.1 AND A.D.A. REQUIREMENTS.  CARRIER: SMITH OR EQUAL  FLUSH VALVE: SLOAN ROYAL, MODEL 186-0.13 URINAL FLUSH VALVE, DIAPHRAGM TYPE, 0.13 GPF, VACUUM BREAKER, 3/4" TOP SPUD, ANGLE VALVE SCREWDRIVER STOP, VANDAL RESISTANT STOP CAP, BUMPER.
D & HC	LAVATORY  COUNTERTOP  DROP IN  ACCESSIBLE	AMERICAN STD. "RONDALYN" #0491019.020	1/2	1/2	1-1/2	1-1/2	DROP-IN COUNTERTOP SINL, VITREOUS CHINA, UNGLAZED RIM, REAR OVERFLOW, OVERALL DIMENSIONS 19-1/8", MOUNTING KIT AND TEMPLATE. 3-HOLE DRILLING, 4" CENTERS, COORDINATE WITH ARCHITECT. COLOR: WHITE MEETS ANSI A117.1 AND A.D.A. REQUIREMENTS  FAUCET TO BE DELTA, MODEL #523LF-TGMHDF, SINGLE LEVER HANDLE, 4" CENTERS WITH DECK PLATE, 1/2"I.P. ADAPTERS, BRUSHED NICKEL FINISH. 1.2 GPM AERATOR (0.5 GPM AERATOR FOR PUBLIC FAUCETS). #BDT THERMOSTATIC MIXING VALVE.  TRIM: CHROME PLATED CAST BRASS OFFSET TAILPIECE AND 1-1/2" CHROME PLATED P-TRAP, MINIMUM 17ga CONSTRUCTION. 3/8" N.P.T. ANGLE SUPPLY CONNECTION AND FOUR ARM HANDLE STOP  TRUEBRO INSULATION KIT FOR DRAIN AND WATER PIPING.
WCO	CLEANOUT WALL TYPE	SMITH MODEL #4450, WITH COVER SCREW LENGTH VERIFIED IN THE FIELD			4		CAST IRON CLEANOUT TEE AND COUNTERSUNK PLUG WITH CHROME PLATED, BRONZE ROUND FRAME AND SECURED COVER. PROVIDE WITH VANDAL PROOF SCREWS AND POLISHED BRONZE FRAME AND COVER. SIZE AS INDICATED ON FLOOR PLANS. MODEL 4550S: FACE OF WALL — TILE, MASONRY, DRY WALL MODEL 4555S: FLUSH WITH WALL — PLASTER, WET WALL
FCO	CLEANOUT FLOOR TYPE	SMITH MODEL #4120 SERIES			VERIFY IN FIELD		CAST IRON CLEANOUT WITH ROUND, ADJUSTABLE CORRUGATED SECURED NICKEL BRONZE TOP. GASKET TYPE SEAL WITH BRONZE CLOSURE PLUG. SUPPLY WITH FLASHING FLANGE WITH FLASHING CLAMP, VANDAL PROOF, POLISHED BRONZE TOP.SIZE AS INDICATED ON FLOOR PLANS

# GENERAL CONDITIONS OF THE CONTRACT

PLUMBING SPECIFICATIONS

IT IS THE INTENT OF THE SPECIFICATIONS AND DRAWINGS TO PROVIDE FOR FINISHED WORK, TESTED AND READY FOR OPERATION.

WORK OF THIS SECTION SHALL BE GOVERNED BY THE CONTRACT DOCUMENTS. PROVIDE MATERIALS, LABOR, EQUIPMENT AND SERVICES NECESSARY TO FURNISH, DELIVER AND INSTALL ALL WORK AS SPECIFIED AND AS REQUIRED BY JOB CONDITIONS. WHERE A CONFLICT EXISTS BETWEEN THESE NOTES, THE DRAWINGS AND THE FOLLOWING SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT SHALL APPLY.

ITEMS AND SERVICES NOT SHOWN ON THE DRAWINGS OR STATED IN THE SPECIFICATIONS, BUT REQUIRED TO RENDER THE WORK COMPLETE AND READY FOR OPERATION, SHALL BE PROVIDED WITHOUT ADDITIONAL COST.

DRAWINGS ARE DIAGRAMMATIC AND ARE NOT TO BE SCALED. DRAWINGS INDICATE A GENERAL ARRANGEMENT OF WORK AND ARE NOT TO BE CONSIDERED SUB-CONTRACTOR DOCUMENTS. IT IS THE INTENT OF THESE DOCUMENTS TO INCLUDE THE PROVISION AND INSTALLATION OF ALL NECESSARY WORK AND MATERIALS FOR COMPLETE, OPERATIONAL AND CODE COMPLIANT SYSTEMS BY THE CONTRACTOR.

GENERAL DESIGN CONCEPTS INDICATED MUST BE FOLLOWED OR BETTERED.

THE BID SHALL INCLUDE OFFSETS, ADDITIONAL PIPING, VALVES, EQUIPMENT AND COMPONENTS AS REQUIRED TO MEET CONSTRUCTION CONDITIONS FOR PROPER OPERATION.

THE CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED AND PAY ALL APPLICABLE FEES. INCLUDED SHALL BE ANY UTILITY COST ASSOCIATED WITH ANY NEW OR MODIFIED SERVICES.

CONSULT ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR SPACE CONDITIONS AND ADDITIONAL REQUIREMENTS.

PERFORM THE WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT'S GENERAL CONDITIONS AND IN COORDINATION WITH ALL OTHER TRADES. ALL WORK SHALL BE DONE IN CONFORMANCE AND PROVISIONS OF ALL APPLICABLE LOCAL, STATE AND FEDERAL CODES AND LAWS AS REFERENCED OR STATED.

**CONNECTICUT CODES AND STANDARDS:** 2021 INTERNATIONAL BUILDING CODE

2021 INTERNATIONAL ENERGY CONSERVATION CODE WITH AMENDMENTS

2021 INTERNATIONAL EXISTING BUILDING CODE

2021 INTERNATIONAL MECHANICAL CODE

2021 INTERNATIONAL PLUMBING CODE

2020 NATIONAL ELECTRICAL CODE (NFPA 70) ICC/ANSI A117.1-2009 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES

WORK SHALL INCLUDE ALL INCIDENTALS, LABOR, MATERIAL, EQUIPMENT, APPLIANCES, SERVICES, HOISTING, SCAFFOLDING, SUPPORTS, TOOLS, CONSUMABLE ITEMS, AND ADMINISTRATIVE TASKS/DUTIES REQUIRED TO COMPLETE AND MAKE OPERABLE WORK SHOWN ON THE DRAWINGS OR SPECIFIED HEREIN.

STORE MATERIALS INSIDE AND PROTECTED FROM DEBRIS, WEATHER AND MOISTURE.

CONTRACTOR IS REQUIRED TO OBTAIN COMPLETE SETS OF THE CONTRACT DOCUMENTS FOR

# SHOP DRAWINGS

CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER INITIAL REVIEW AND APPROVAL REVISED IF REQUIRED AND RESUBMITTED AS PER ENGINEER'S COMMENTS PRIOR TO CONSTRUCTION.

ACCEPTANCE OF DEVIATIONS OR SUBSTITUTIONS FROM BASE SPECIFIED ITEMS OR EQUIPMENT SHALL BE AT THE ENGINEERS DISCRETION. ANY CHANGES REQUIRED FOR ACCOMMODATION SHALL BE AT NO ADDITIONAL COST.

# OWNER'S MANUAL AND AS BUILT DRAWINGS

COORDINATION WITH ALL OTHER TRADES.

UPON COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL PROVIDE AN OWNER'S MANUAL WITH AS-BUILT DRAWINGS REFLECTING INSTALLED CONDITIONS.

THE OWNER'S MANUAL SHALL CONSIST OF ALL DOCUMENTATION PROVIDED AS SHOP DRAWINGS, MANUALS PACKED WITH EQUIPMENT AND COMPLETE PARTS BREAKDOWN WITH PART NUMBERS AND DIAGRAMS. THE OWNER'S MANUALS SHALL BE IN A THREE RING BINDER. PROVIDE NAMES AND PHONE NUMBERS OF SUPPLY HOUSES WHERE PARTS MAY BE PURCHASED.

AS-BUILT DRAWINGS SHALL CONSIST OF FIELD MARK-UPS TO THE CONSTRUCTION DRAWINGS AND INCLUDE ANY ADDITIONAL DETAILS TO CLEARLY REFLECT INSTALLED CONDITIONS. ANY ISSUED OR SUPPLEMENTAL SKETCHES OR DIRECTIVES SHALL BE INCORPORATED INTO THE FINAL CONSTRUCTION MARK-UPS.

CONTRACTOR SHALL MAINTAIN, ON-SITE, A FIELD MARK-UP SET OF DOCUMENTS WHICH SHALL BE KEPT CURRENT WITH ANY CHANGES FROM THE ORIGINAL CONTRACT DOCUMENTS. THESE MARK-UPS ARE TO BE PROVIDED AS AS-BUILT DRAWINGS FOR COMPARISONS.

# BASES, HANGERS AND SUPPORTS

THE CONTRACTOR SHALL PROVIDE, OR CAUSE TO BE PROVIDED BY ANOTHER CONTRACTOR. ALL REQUIRED BASES AND SUPPORTS FOR PIPING AND EQUIPMENT PROVIDED UNDER THESE SPECIFICATIONS.

PROVIDE ADJUSTABLE CLEVIS HANGERS FOR ALL SINGLE RUN PIPING. WHERE REQUIRED, OVERSIZE TO ACCOMMODATE INSULATION TO PASS THROUGH. PROVIDE INSULATION SHIELDS. WHERE POSSIBLE, GROUP PIPING TO ALLOW TRAPEZE HANGERS TO BE USED.

PROVIDE ALL ANCHORS, INSERTS AND BEAM CLAMPS REQUIRED FOR HANGERS AND SUPPORTS. IF ADDITIONAL STRUCTURAL MEMBERS OR SUPPORTS ARE REQUIRED, THE CONTRACTOR IS TO COORDINATE WITH THE STRUCTURAL CONTRACTOR FOR PROVISION OF THESE MEMBERS. ALL PIPING AND EQUIPMENT IS TO BE SECURELY FASTENED TO THE BUILDING STRUCTURE IN AN ACCEPTABLE MANNER.

ALL PIPING PASSING THROUGH WALLS AND FLOORS SHALL BE SLEEVED. THE SLEEVES SHALL HAVE AN INSIDE DIAMETER 1" LARGER THAN THE PIPE AND INSULATION, IF INSULATED. INSULATION SHALL PASS CONTINUOUS THROUGH THE SLEEVE.

#### PIPE SEALS AND FIRE-STOPS

SEAL ALL PIPING PASSING THROUGH FIRE AND/OR SMOKE RATED PARTITIONS, WALLS AND FLOORS WITH A UL LISTED, APPROVED AND TESTED FIRE AND/OR SMOKE SEALING MATERIAL EQUIVALENT TO THE RATING OF THE WALL, PARTITION OR FLOOR. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR COMPATIBILITY WITH WALL AND FLOOR CONSTRUCTION.

FOR INTERIOR PARTITIONS, WALLS AND FLOORS, SLEEVES SIZED TO ALLOW INSULATION TO PASS THROUGH CONTINUOUS WITH A MAXIMUM 1" ANNULAR SPACE BETWEEN THE INSULATION AND SLEEVE. SLEEVES TO BE CUT SMOOTH AND INSTALLED FLUSH WITH FINISHED WALLS AND 2" ABOVE FINISHED FLOORS. FILL THE ANNULAR SPACE WITH UL SEALING MATERIAL.

CLEANING AND PROTECTION AGAINST FOREIGN MATTER

THE JOBSITE SHALL BE KEPT CLEAN AT ALL TIMES. CAP EXPOSED PIPING AND COVER FLOOR DRAINS TO INSURE ADEQUATE PROTECTION AGAINST THE ENTRANCE OF FOREIGN MATTER.

AT COMPLETION OF THE PROJECT, ALL EQUIPMENT, FIXTURES, ETC. SHALL BE CLEANED.

#### OPERATING INSTRUCTIONS

UPON THE COMPLETION OF ALL WORK, TESTING AND ADJUSTING THE CONTRACTOR SHALL FURNISH PERSONNEL TO INSTRUCT THE OWNER'S REPRESENTATIVES IN THE OPERATION. ADJUSTMENT AND MAINTENANCE OF THE EQUIPMENT AND SYSTEMS FURNISHED.

IN ADDITION TO THE CONTRACTOR'S GUARANTEE, PROVIDE ALL APPLICABLE EXTENDED GUARANTEES FOR EQUIPMENT.

#### PLUMBING PIPING INSULATION

PROVIDE 1" GLASS FIBER INSULATION FOR ALL NEW COPPER PIPING (HOT AND COLD WATER), INCLUDES INSULATION FOR FITTINGS AND VALVES. INSULATION TO BE AS MANUFACTURED BY KNAUF, MANVILLE, OWENS-CORNING OR CERTAIN-TEED.

INSULATION TO HAVE A "K" VALUE OF 0.24 AT 75°F, FLAME SPREAD/SMOKE OF 5/50, MAX. 850°F RATING, VAPOR BARRIER WHITE KRAFT PAPER WITH GLASS FIBER YARN BONDED TO ALUMINIZED FILM.

AT ALL FITTINGS AND VALVES PROVIDE PRE-MOLDED PVC JACKET BY ZESTON.

BEFORE INSTALLING INSULATION, ALL REQUIRED PIPING IS TO BE TESTED AND APPROVED.

INSULATION IS TO PASS CONTINUOUSLY THROUGH HANGERS, WALLS, SLEEVES AND OTHER PIPE PENETRATIONS.

#### PLUMBING PIPING

PIPING MATERIAL SHALL BE AS FOLLOWS:

SANITARY/WASTE PIPING ABOVE AND BELOW FLOOR SLAB - CAST IRON, HUBLESS, NEOPRENE GASKET, STAINLESS STEEL HEAVY DUTY CLAMP AND SHIELD COUPLING. CISPI 301.

VENT PIPING ABOVE AND BELOW FLOOR SLAB - CAST IRON, HUBLESS, NEOPRENE GASKET, STAINLESS STEEL HEAVY DUTY CLAMP AND SHIELD COUPLING, CISPI 301.

WATER PIPING - COPPER, TYPE L, ASTM B88, SOLDER OR PRESS CONNECTIONS.

BALL VALVES SHALL BE BRONZE, TWO PIECE, FULL PORT, EXTENDED LEVER HANDLE FOR INSULATION, CLASS 150-400 PSI WOG, AS MANUFACTURED BY MILWAUKEE, NIBCO OR APOLLO.

INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE,

NO PIPING SHALL BE COVERED UNTIL TESTED AND APPROVED BY THE AUTHORITIES HAVING

JOINTS OR CONNECTED EQUIPMENT. CONCEALED PIPING AND ACCESSORIES SHALL BE ARRANGED TO USE THE MINIMUM AMOUNT

OF ACCESS DOORS AND PANELS. PIPING SHALL BE RUN CONCEALED IN FURRED SPACES, CHASES, WALLS, ETC. CONTRACTOR SHALL OBTAIN PERMISSION TO RUN EXPOSED PIPING.

PROVIDE ISOLATION AND SHUT-OFF VALVES AT ALL BRANCH LINES AND EQUIPMENT.

PROVIDE LISTED AND APPROVED DIELECTRIC FITTINGS WHEN JOINING DISSIMILAR METALS.

RUN ALL SANITARY AND WASTE PIPING AT A MINIMUM OF 1/8" PER FOOT FOR PIPING. SLOPE VENT PIPING TO DRAIN.

PIPE HANGERS SHALL BE PLACED ADJACENT TO MOTOR DRIVEN EQUIPMENT. HANGERS AND SUPPORTS SHALL BE AS FOLLOWS:

# COPPER PIPING

1/2" TO 1-1/4" AT MAXIMUM 6'-0" SPACING 1-1/2" TO 3" AT MAXIMUM 10'-0" SPACING

# CAST IRON PIPING

1-1/2" TO 2" AT MAXIMUM 10'-0" SPACING 2-1/2" AND ABOVE AT MAXIMUM 5'-0" SPACING

WATER PIPING IS TO BE FLUSHED AND DISINFECTED IN ACCORDANCE WITH LOCAL AND STATE HEALTH REGULATIONS. AFTER FLUSHING AND DISINFECTING, THE WATER IS TO BE TESTED BY THE CONTRACTOR THROUGH AN INDEPENDENT LAB WITH A WRITTEN REPORT.

ALL NEW WATER, SANITARY, WASTE, AND VENT PIPING SHALL BE PRESSURE TESTED AS FOLLOWS:

SANITARY, WASTE, AND VENT PIPING - HYDROSTATIC TEST AT 10 FT HEAD FOR A MINIMUM 4 HOURS. SUBMIT WRITTEN/SIGNED TEST RESULTS.

WATER PIPING - HYDROSTATIC TEST AT 125 PSI OR 1-1/2 TIMES OPERATING PRESSURE (WHICHEVER IS GREATER)FOR A MINIMUM 4 HOURS WITH MAXIMUM LOSS OF 2 PSI. SUBMIT WRITTEN/SIGNED TEST RESULTS. AIR TESTING WILL NOT BE ACCEPTABLE.

#### PLUMBING PIPING SPECIALTIES

CLEANOUTS IN INTERIOR FINISHED FLOORS SHALL HAVE A CAST IRON BODY WITH ANCHOR FLANGE, THREADED TOP ASSEMBLY AND ROUND GASKETED SCORED COVER. FOR FINISHED FLOORS PROVIDE DEPRESSED COVER TO ACCEPT FLOOR FINISH.

WATER HAMMER ARRESTORS SHALL BE STAINLESS STEEL CONSTRUCTION, BELLOWS TYPE, PRECHARGED. AIR CHAMBERS ARE NOT ACCEPTABLE. INSTALL WATER HAMMER ARRESTORS AT ALL QUICK CLOSING VALVES, ON HOT AND/OR COLD WATER SUPPLIES TO NEW INDIVIDUAL FIXTURES OR IN BANKS OF FIXTURES.

#### PLUMBING EQUIPMENT AND FIXTURES

ALL PLUMBING EQUIPMENT AND FIXTURES SHALL BE NEW, COMPLETE WITH ALL TRIM AS

FOR ALL EQUIPMENT AND FIXTURES, INSTALL AS PER MANUFACTURER'S INSTRUCTIONS, AS REQUIRED BY CODE, AND IN COMPLIANCE WITH CONDITIONS FOR CERTIFICATION (IF ANY). RETAIN ALL INFORMATION. MANUALS AND PARTS DIAGRAMS PACKAGED WITH THE UNITS.

COORDINATE ALL RELATED ELECTRICAL WORK AND REQUIRED CONNECTIONS TO ACHIEVE AN OPERATIONAL SYSTEM. VERIFY THAT ELECTRICAL POWER HAS PROPER CHARACTERISTICS.

ALL EQUIPMENT SHALL BE UL TESTED AND APPROVED AND IF APPLICABLE SHALL HAVE NSF

PLUMBING FIXTURES SHALL BE INSTALLED WITH TRIM, INCLUDING BUT NOT LIMITED TO, FAUCETS, CARRIERS, WATER SUPPLIES, SUPPLY STOPS, TRAPS, TAILPIECES, HARDWARE, HANGERS/SUPPORTS, AND FASTENING DEVICES.

PLUMBING FIXTURES AND TRIM SHALL BE OF THE MANUFACTURER LISTED ON THE DRAWINGS OR AN APPROVED EQUAL MEETING THE OPERATIONAL CHARACTERISTICS, FUNCTION, SIMILAR APPEARANCE AND QUALITY OF THE SPECIFIED ITEMS.

FOR ALL EXPOSED PIPING TO FIXTURES, PROVIDE CHROME PLATED PIPES, ESCUTCHEONS AT WALLS, SUPPLY TUBES AND SUPPLY STOPS. DRAIN PIPING SHALL BE MINIMUM 17 GA, CHROME PLATED CAST BRASS, P-TRAPS SHALL HAVE CLEANOUT PLUGS.

SEAL FIXTURES TO WALLS AND FLOOR WITH APPROVED SILICONE SEALANT, COLOR TO MATCH FIXTURE COLOR OR CLEAR.

UPON COMPLETION OF INSTALLATION OF PLUMBING EQUIPMENT AND FIXTURES, TEST TO DEMONSTRATE CAPABILITY AND COMPLIANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND CODES. FOR ALL EQUIPMENT, REPAIR OR REPLACE ANY MALFUNCTIONING EQUIPMENT OR FIXTURES AND RETEST.

ADJUST WATER PRESSURES THROUGH VALVES OR STOPS TO OBTAIN PROPER FLOW RATES AND PRESSURES REQUIRED.

UPON COMPLETION OF INSTALLATION OF EQUIPMENT OR FIXTURES, THOROUGHLY CLEAN ALL EXPOSED SURFACES, TRIM AND PIPING, FLUSH STRAINERS AND VERIFY FINAL OPERATION.

ESTABLISHED DATES, AND ANY ADDITIONAL INFORMATION REQUIRED FOR ENFORCEMENT.

PROVIDE ALL WARRANTIES AND GUARANTEES TO THE OWNER WITH ALL NAMES.

# odificat

**Plans PLUMBING SPECIFICATIONS** 

•

2022-10.22

AS NOTED DRAWN BY: CHECKED BY: