MECHANICAL ABBREVIATIONS AND SYMBOL LIST

AC	AIR CONDITIONING	L	LENGTH		GATE VALVE
ACCU	AIR-COOLED CONDENSING UNIT	LAT	LEAVING AIR TEMPERATURE		CHECK VALVE
AD	ACCESS DOOR	LBS	POUNDS		
AFF	ABOVE FINISHED FLOOR	LDB	LEAVING DRY BULB TEMPERATURE	Ø	AIR VENT PRESSURE GAUGE
AL	ACOUSTICALLY LINED	LIN FT	LINEAR FEET		THERMOMETER
		LWB	LEAVING WET BULB		BALL VALVE
ALU	ALUMINUM	LWT	LEAVING WATER TEMPERATURE	——————————————————————————————————————	PIPE UP
AP	ACCESS PANEL				
BDD	BACK DRAFT DAMPER	MAX	MAXIMUM		PIPE DOWN
BHP	BRAKE HORSEPOWER	MBH	THOUSAND BTU PER HOUR	X	PIPE STUB UP
BI	BLACK IRON	MCC	MOTOR CONTROL CENTER	DITCH	FLOW DIRECTION
BTU	BRITISH THERMAL UNIT	MER	MECHANICAL EQUIPMENT ROOM	PITCH	PITCH PIPE OR DUCT
BTUH	BTU PER HOUR	MHP	MOTOR HORSEPOWER	 	UNDERCUT DOOR
CHW	CHILLED WATER	MIN	MINIMUM	I⊢───₹	FLANGED END
CD	CEILING DIFFUSER	МОТ	MOTOR	<u> </u>	DEAD END, SCREWED CAP
CFM	CUBIC FEET PER MINUTE	NC	NORMALLY CLOSED	├	DIRECTION OF FLOW
CG	CEILING GRILLE	NIC	NOT IN CONTRACT	DN. ₹—⊃	DOWN
CLG	CEILING	NO	NORMALLY OPEN	<u> </u>	LINE BREAK
СО	CARBON MONOXIDE	NO.	NUMBER		
CR	CEILING REGISTER	NTS	NOT TO SCALE		
CU	COPPER	OAI	OUTSIDE AIR INTAKE		EXISTING TO BE REMOVED
CU FT	CUBIC FEET	OD	OUTSIDE DIAMETER		SUPPLY DUCT
CU IN	CUBIC INCHES	OV	OUTLET VELOCITY		RETURN OR EXHAUST DUCT
CV	CONSTANT VOLUME	PD	PRESSURE DROP		
D	DROP	PHC	PREHEAT COIL		SQUARE ELBOW WITH VANES
DB	DRY BULB	PSIA	PSI ABSOLUTE		
DIAM	DIAMETER	PSIG	PSI GAUGE	1 (47	ROUND ELBOW WITH VANES
DN	DOWN	R	RISE		
	DRAWING	RA	RETURN AIR	FD&AD	FIRE DAMPER AND ACCESS DOOR
DWG		RF	RETURN FAN	FSD&AD	
DX	DIRECT EXPANSION	RM	ROOM	- F3D&AD	FIRE SMOKE DAMPER AND ACCESS DOOR
EAT	ENTERING ANRY TEMPERATURE	RPM	REVOLUTION PER MINUTE		AND ACCESS DOOR
EDB				SD SD	DUCT SMOKE DETECTOR
EF	EXHAUST FAN	RH	RELATIVE HUMIDITY		DOCT SMOKE BETEGION
ELEC.	ELECTRIC	RHC	REHEAT COIL	SD&AD □	SMOKE DAMPER AND
ERHC	ELECTRIC REHEAT COIL	SD	SMOKE DAMPER		ACCESS DOOR
EQ	EQUAL	SDR	SMOKE DETECTOR	M	
EWB	ENTERING WET BULB	SLD	STRIPLINE LINEAR DIFFUSER		MOTORIZED DAMPER
EWT	ENTERING WATER TEMPERATURE	SP	STATIC PRESSURE	F=====1	
EXH	EXHAUST	SPEC	SPECIFICATION	<u> </u>	ACOUSTICALLY LINED DUCT BRANCH DUCT TAKE-OFF W/V.D.
EX	EXISTING	SS	STAINLESS STEEL		BRANCH DUCT TAKE-OFF W/V.D.
F	FILTER	Т	THROAT		FLEY CONNECTION
•F	DEGREE FAHRENHEIT	TEMP	TEMPERATURE	J	FLEX CONNECTION
FC	FLEXIBLE CONNECTION	TG	TOP GRILLE		FLEX CONNECTION
FD	FIRE DAMPER	TR	TOP REGISTER	12X12 CD (300 CFM)	CEILING SUPPLY DIFFUSER
FA	FREE AREA (SQ. FT.)	TRF	TRANSFER FAN	(300 CFM)	OCILING SUPPLI DIFFUSEK
F.A.	FACE AREA	Π	TOP THROAT	12X12 CR (300 CFM)	CEILING RETURN REGISTER
FLA	FULL LOAD AMPERES	TYP	TYPICAL	1 (333 31 M)	
FPM	FEET PER MINUTE	TX	TOILET EXHAUST	<u> </u>	LINEAR DIFFUSER WITH
FL.DR.	FLOOR DRAIN	UH	UNIT HEATER	<u> </u>	ACOUSTICALLY LINED PLENUM
FIN FL		V	VOLTS		MUSHROOM TYPE ROOF FAN
		W	WIDTH	 	IN-LINE FAN
FSD	FIRE SMOKE DAMPER			├	
FT	FEET SARIATION	W/	WITH		DUCT MOUNTED ELECTRIC REHEAT COIL
	FINNED TUBE RADIATION	W/0	WITHOUT	- ~~□	VARIABLE AIR VOLUME BOX
FTR		WB	WET BULB		
GPH	GALLONS PER MINUTE		WATER COLUMN	R EQPT	l ,
	GALLONS PER HOUR GALLONS PER MINUTE	WC		1	RISER TAG / EQUIPMENT TAG
GPH		WC WG	WATER GAUGE	1 XXX	RISER TAG / EQUIPMENT TAG
GPH GPM	GALLONS PER MINUTE			1	RISER TAG / EQUIPMENT TAG REQUIRED ACCESS AREA/ACCESS DOOR
GPH GPM H	GALLONS PER MINUTE HEIGHT	WG	WATER GAUGE	1 XXX	, , , , , , , , , , , , , , , , , , ,
GPH GPM H	GALLONS PER MINUTE HEIGHT HOT WATER	WG WMS	WATER GAUGE WIRE MESH SCREEN		REQUIRED ACCESS AREA/ACCESS DOOR
GPH GPM H HW	GALLONS PER MINUTE HEIGHT HOT WATER HOT WATER COILS	WG WMS VD	WATER GAUGE WIRE MESH SCREEN VOLUME DAMPER		REQUIRED ACCESS AREA/ACCESS DOOR THERMOSTAT
GPH GPM H HW HWC HR	GALLONS PER MINUTE HEIGHT HOT WATER HOT WATER COILS HOUR	WG WMS VD VAV	WATER GAUGE WIRE MESH SCREEN VOLUME DAMPER VARIABLE AIR VOLUME BOX POINT OF DISCONNECTION POINT OF CONNECTION OF NEW		REQUIRED ACCESS AREA/ACCESS DOOR THERMOSTAT REMOTE TEMPERATURE SENSOR
GPH GPM H HW HWC HR HUM	GALLONS PER MINUTE HEIGHT HOT WATER HOT WATER COILS HOUR HUMIDIFIER	WG WMS VD VAV	WATER GAUGE WIRE MESH SCREEN VOLUME DAMPER VARIABLE AIR VOLUME BOX POINT OF DISCONNECTION		REQUIRED ACCESS AREA/ACCESS DOOR THERMOSTAT REMOTE TEMPERATURE SENSOR WALL SWITCH

NOTE ALL ABBREVIATIONS AND SYMBOLS LISTED ABOVE ARE FOR REFERENCE AND NOT NECESSARILY USED IN THIS PROJECT.

LANDMARKS PRESERVATION COMMISSION ELECTRONIC APPROVAL - 08/11/2020 - SEK

GENERAL NOTES

- 1. THE CONTRACTOR SHALL VISIT THE PREMISES TO DETERMINE EXISTING CONDITIONS AND COMPARE SAME WITH CONTRACT DRAWINGS AND SPECIFICATIONS. THE CONTRACTOR IS TO SATISFY THEMSELVES OF ALL CONDITIONS PRIOR TO THE SUBMISSION OF A BID PROPOSAL. NO ALLOWANCE WILL BE MADE FOR FAILURE TO COMPLY WITH THESE REQUIREMENTS AND A BID PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THEY HAS
- 2. ALL HVAC WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AND DUCTS (INCLUDING DIVIDED DUCTS) AND TRANSITIONS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE
- 3. VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENSIONS BEFORE FABRICATION.
- 4. COORDINATE DUCTWORK WITH APPROVED SUBMISSION OF SUPPLY, RETURN & EXHAUST AIR TERMINAL UNIT SIZES AND ASSOCIATED INLET AND OUTLET CONNECTIONS.
- 5. PROVIDE ACCESS AS REQUIRED FOR DUCT SMOKE DETECTORS INSTALLED IN DUCTWORK.
- 6. DUCT SMOKE DETECTORS SHALL BE FURNISHED AND WIRED BY THE ELECTRICAL CONTRACTOR. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR MOUNTING THE SMOKE DETECTORS IN DUCTWORK AS REQUIRED AND SHOWN ON PLANS. MECHANICAL CONTRACTOR IS RESPONSIBLE TO CONDUCT AND PROVIDE THE RESULTS THE DUCT SMOKE DETECTOR PRESSURE DIFFERENTIAL TO THE ENGINEER AND ANY OTHER AUTHORITY HAVING JURISDICTION.
- 7. PROVIDE ACCESS PANELS UPSTREAM OF ALL ELBOWS WITH TURNING VANES.ALL ACCESS DOORS AND ACCESS PANELS ARE TO BE LABELED. ALL VALVES ARE TO BE LOCATED IN THE HORIZONTAL POSITION AND BE EASILY REACHABLE WITHOUT CLIMBING UP INSIDE THE CEILING OR A REMOTE METHOD OF OPERATION AT CEILING HEIGHT IS TO BE
- 8. PROVIDE ACCESS PANELS IN DUCTWORK FOR OPERATION, ADJUSTMENT AND MAINTENANCE OF ALL FANS, VALVES AND
- 9. ACCESS DOORS INTO DUCTWORK SHALL NOT BE SMALLER THAN 18"X18" UNLESS DUCT SIZE DOES NOT PERMIT. INDICATE SIZE AND LOCATIONS OF ALL ACCESS DOORS.
- 10. PROVIDE VOLUME DAMPERS IN ALL SUPPLY, RETURN AND EXHAUST BRANCH DUCTWORK. PROVIDE ONE VOLUME DAMPER FOR EACH SUPPLY DIFFUSER AND RETURN GRILLE. PROVIDE MANUAL DAMPERS IN EACH SPLIT OR TAP CONNECTION TO TRUNK DUCTS FOR BALANCING PURPOSES, EACH PROVIDED WITH OPERATOR AND LOCKING DEVICE. INSTALL DIVERTING VANES AT BRANCHES CONNECTED INTO THE MAIN WITHOUT A NECK
- 11. ALL AIR OUTLETS (DIFFUSERS, GRILLES, REGISTERS, LINEAR SLOTS, ETC.) SHALL BE COORDINATED WITH THE ARCHITECTURAL CEILING PLAN (LIGHTS, SPRINKLER HEADS, CEILING GRID), ELECTRICAL PLANS, SPRINKLER PLANS, AND WITH REVIEWED AND APPROVED AIR OUTLET SUBMITTAL.
- 12. ARCHITECT TO REVIEW AND APPROVE FACE SIZE AND EXACT LOCATION OF ALL AIR OUTLETS (DIFFUSERS, GRILLES, REGISTERS, ETC.) AND COORDINATE WITH EQUIPMENT MNFR. REQUIREMENT.
- 13. ARCHITECT & OWNER TO REVIEW AND APPROVE LOCATION OF ALL THERMOSTATS IN CONJUNCTION WITH FINAL EQUIPMENT LAYOUT.
- 14. PROVIDE FLEXIBLE DUCT CONNECTIONS AT ALL EQUIPMENT WITH ROTATING OR RECIPROCATING EQUIPMENT.
- 15. SHEET-METAL SHOP DRAWING CAN BE RELEASED FOR FABRICATION ONLY AFTER SHEET-METAL SHOP STANDARDS HAVE BEEN REVIEWED AND APPROVED.
- 16. SHEET-METAL SHOP DRAWINGS MUST BE COORDINATED WITH ALL TRADES (MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION, STRUCTURAL ETC.) BEFORE FABRICATION.
- 17. PROVIDE CEILING AND DUCT ACCESS DOORS FOR HOT WATER REHEAT COILS AND ANY OTHER EQUIPMENT REQUIRING
- 18. CONTRACTOR TO COORDINATE DUCT LOCATIONS WITH STRUCTURAL STEEL AND ARCHITECTURAL DRAWINGS OF THE AREA.
- 19. PROVIDE BRANCH CONNECTION TAPS AS INDICATED IN DETAIL ON DETAIL DRAWINGS. ANY OTHER TAP BRANCH CONNECTIONS ARE NOT ACCEPTABLE.
- 20. ALL DUCT SIZES, SHOWN ARE INSIDE CLEAR DIMENSIONS.
- 21. ALL CONDENSATE DRAIN LINES FROM EACH UNIT WILL BE PIPED FULL SIZE OF THE DRAIN OUTLET WITH P-TRAP AND TERMINATED AT THE NEAREST DRAIN OR SLOP SINK. PROVIDE A CONDENSATE PUMP SIMILAR TO LITTLE GIANT VCC-20ULS IF GRAVITY DRAINAGE CANNOT BE UTILIZED. COORDINATE WITH ELECTRICAL CONTRACTOR AS REQUIRED.
- 22. ALL EQUIPMENT, PIPING, DUCTWORK, ETC. SHALL BE INDEPENDENTLY SUPPORTED AS DETAILED AND SPECIFIED. ADDITIONAL SUPPORT SHALL BE PROVIDED AS REQUIRED TO PROVIDE VIBRATION-FREE INSTALLATION.
- 23. ALL CONTROL WIRE AND CONDUIT SHALL COMPLY WITH NEC AND ELECTRICAL PROJECT SPECIFICATIONS.
- 24. ALL FIRE AND FIRE/SMOKE DAMPERS MUST BE INSTALLED IN STRICT ACCORDANCE WITH THE LATEST UL 555/555S REQUIREMENTS. PER THE CONDITIONS OF THEIR LISTING, THE MANUFACTURER'S INSTALLATION REQUIREMENTS, AND THE REQUIREMENTS OF ALL APPLICABLE BUILDING AND MECHANICAL CODES.
- 25. PROVIDE AS REQUIRED BY CODE (LOCAL OR NATIONAL) ANY ADDITIONAL FIRE DAMPERS, SMOKE DAMPERS, ACCESS PANELS, OR SPECIAL SUPPORTS NOT SHOWN ON PLANS AT NO ADDITIONAL COST TO OWNER.
- 26. ANY ABANDONED EXISTING EQUIPMENT. DUCTWORK, ETC. WHICH IS NOT SHOWN TO BE REMOVED. BUT INTERFERES WITH THE NEW CONSTRUCTION IS TO BE REMOVED BY THE CONTRACTOR.
- 27. THE CONTRACTOR SHALL REMOVE, RELOCATE, REPLACE, ADJUST, ADAPT AND MODIFY EXISTING EQUIPMENT AND/OR SYSTEM AS REQUIRED BY THE DRAWINGS OR SPECIFICATIONS AND AS MAY BE REQUIRED WHEN SUCH WORK IS UNCOVERED AND FOUND TO INTERFERE WITH THE COMPLETION OF WORK IN THE CONTRACT WITHOUT ADDITIONAL COST
- 28. THE CONTRACTOR IS TO BALANCE ALL DUCT SYSTEMS AND PROVIDE ALL NECESSARY BELTS, PULLEYS, SHEAVES, ETC TO ACHIEVE THE DESIGN AIR QUANTITIES. NEWLY DESIGNED AREAS SHALL BE BALANCED TO THE INDICATED AIR QUANTITIES ON THE DRAWINGS. ALL EXISTING AREAS SHALL BE RE-BALANCED TO THE ORIGINAL DESIGN REQUIREMENTS. ALL BALANCED AIR QUANTITIES ARE TO BE WITHIN 5% OF DESIGN AIR QUANTITIES.
- 29. ALL SQUARE ELBOWS ON DUCTWORK ARE TO HAVE DOUBLE THICK TURNING VANES.
- 30. UL LISTED FIRESTOP ASSEMBLIES SHALL BE INSTALLED AT ALL PENETRATIONS OF FIRE RATED CONSTRUCTION.
- 31. AFTER FINAL TESTS AND ADJUSTMENTS, FULLY INSTRUCT OWNER'S OPERATING PERSONNEL IN ALL DETAILS OF OPERATION FOR EQUIPMENT INSTALLED. A SIGNED RECEIPT WHICH SHALL BE OBTAINED FROM THE OPERATOR SHALL BE CONSTRUED AS EVIDENCE THAT INSTRUCTIONS WERE SATISFACTORY.
- 32. FURNISH TWO (2) COPIES OF WRITTEN DESCRIPTIONS OF ALL SYSTEMS COVERING ALL MANUAL OPERATING PROCEDURE. AUTOMATIC CONTROL DESCRIPTIONS AND AUTOMATIC CONTROL TEMPERATURE AND PRESSURE SETTINGS. WRITTEN DESCRIPTIONS SHALL INCLUDE LUBRICATION SCHEDULES, PARTS LISTS, PERFORMANCE SERVICES FOR EQUIPMENT, FILTER SIZE / QUANTITY SCHEDULE, ETC. WHEN MANUFACTURER'S STANDARD INSTRUCTIONS, ARE UTILIZED, THEY SHALL BE CLEARLY MARKED TO INDICATE APPLICABILITY.
- 33. CONTRACTOR IS RESPONSIBLE FOR THE TESTING & COMMISSIONING OF ALL HVAC SYSTEMS IN THE PRESENCE OF UNIT MANUFACTURER.
- 34. ALL DUCTWORK & PIPING TO BE LABELED AS REQUIRED BY BUILDING STANDARDS.
- 35. PROVIDE FD/FSD ON ALL NEW DUCTWORK PENETRATING NEW OR EXISTING RATED WALLS IN/THROUGH PROJECT SPACE. PROVIDE FD/FSD ON ALL EXISTING DUCTWORK PENETRATING NEW RATED WALLS IN/THROUGH PROJECT SPACE.
- 36. ALL MECHANICAL EQUIPMENT TO BE PROVIDED WITH A PERMANENT LABEL (WEATHERPROOF IF EXTERIOR) INDICATING: THE DESIGNATION, THE SPACE IT SERVES, THE SOURCE OF POWER (PANEL NAME & LOCATION) AND THE DATE OF INSTALLATION (MONTH/YEAR).

DRAWING LIST

M-001	MECHANICAL SYMBOLS, NOTES & DRAWING LIST
M-002	LANDMARKS
M-003	FLOOD HAZARD MAP
M-004	COMCHECK
M-101	MECHANICAL PLANS
M-301	MECHANICAL RISER DIAGRAMS
M-401	MECHANICAL DETAILS
M-402	MECHANICAL DETAILS
M-501	MECHANICAL SCHEDULES
M-601	MECHANICAL SPECIFICATIONS
M-602	MECHANICAL SPECIFICATIONS
M-603	MECHANICAL SPECIFICATIONS

COORDINATION NOTES

- 1. COORDINATE ALL WORK WITH THE ARCHITECTURAL DRAWINGS. VERIFY LOCATION OF ALL VISIBLE DEVICES WITH ARCHITECT OR OWNER PRIOR TO INSTALLATION, INCLUDING THERMOSTATS, DIFFUSERS, GRILLES, REGISTERS, ETC. RECEIVE APPROVAL FROM THE ARCHITECT OR OWNER FOR FINISH COLOR AND MOUNTING FRAME PRIOR TO PURCHASE. RECEIVE APPROVAL FROM THE ARCHITECT FOR ALL DEVICES PRIOR TO PURCHASE.
- 2. VERIFY THE SIZES OF EXISTING DUCTWORK (IF ANY) TO BE REUSED PRIOR TO SUBMISSION OF SHOP DRAWINGS. NOTIFY THE ENGINEER IMMEDIATELY IF ACTUAL SIZES DIFFER FROM SIZES INDICATED ON
- 3. SHOP DRAWING NOTES:
- A. ALL MECHANICAL SHOP DRAWINGS SHALL BE SUBMITTED TO DESIGN ENGINEER B. SUBMIT CAD AS-BUILT SHEETMETAL DRAWINGS (UPDATED WITH COMMENTS) FOR THE RECORD
- AT COMPLETION OF INSTALLATION TO DESIGN ENGINEER C. SUBMIT AIR BALANCING REPORT TO DESIGN ENGINEER

MECHANICAL CONTRACTOR NOTES

- 1. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR ALL DUNNAGE, SUPPORTS, INSTALLATION, LEVELING, METHODS OF HANGING, SUPPLEMENTAL STEEL AND REINFORCEMENTS, ETC. THAT WILL BE REQUIRED FOR ALL MECHANICAL EQUIPMENT UTILIZED FOR THIS PROJECT.
- 2. SIGNED AND SEALED DOCUMENTS PROVIDED BY A LICENSED STRUCTURAL ENGINEER ARE TO BE SUBMITTED TO THE ARCHITECT OF RECORD FOR FINAL REVIEW AND APPROVAL PRIOR TO ACTUAL EQUIPMENT INSTALLATION.
- 3. COORDINATE WITH GENERAL CONTRACTOR, ARCHITECT & BUILDING MANAGER/ENGINEER.
- 4. ANY EXTRAS AND DEVIATIONS APPEARED FROM THE SUBSTITUTION OF THE ORIGINALLY DESIGNED CONCEPTS OR UTILIZED EQUIPMENT, WILL HAVE TO BE THE RESPONSIBILITY OF THIS CONTRACTOR AND DONE AT NO ADDITIONAL COST TO THE CLIENT.

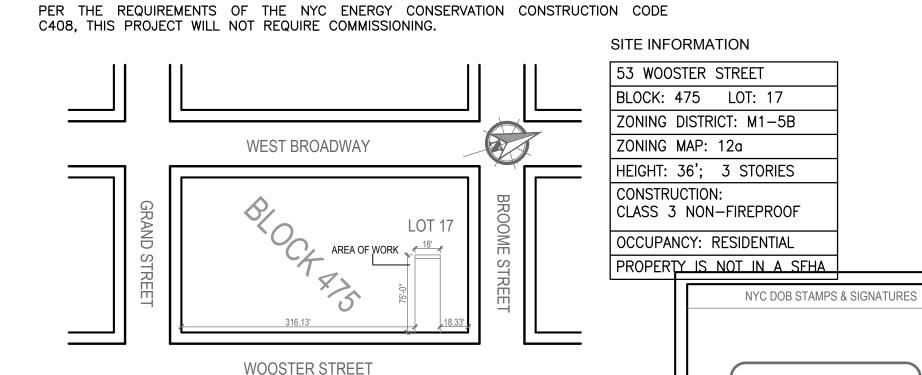
SPECIAL INSPECTIONS

1.	MECHANICAL SYSTEMS	BC 1704.16
2.	HEATING SYSTEMS	BC 1704.25
3.	FIRE RESISTANT PENETRATIONS AND JOINTS	BC 1704.27
4.	ENERGY CODE COMPLIANCE INSPECTIONS	BC 110.3.5
5.	FINAL	28-116.2.4.2, BC 110.5 DIRECTIVE 14 OF 1975 AND 1 RCNY 101-10

ENERGY CODE PROGRESS INSPECTIONS

		COMMERCIAL	RESIDENTIAL
1.	HVAC AND SERVICE WATER HEATING EQUIPMENT	(IIB3)	(IB3)
2.	HVAC AND SERVICE WATER HEATING SYSTEM CONTROLS	(IIB4)	(IB4)
3.	INSULATION AND SEALING	(IIB5)	(IB5)
4.	MAINTENANCE INFORMATION	(IID1)	(ID1)

COMMISSIONING NOTE



DOB NOW APPLICATION

#M00350247-I1

ACCEPTED Date: 09/28/2020

DISCLAIMER NOTE THE ENTIRE CONTENTS OF THIS DOCUMENT, INCLUDING ALL SKETCHES, PLANS, STUDIES, DRAWINGS, SCHEDULES, AND SPECIFICATIONS, AND LANDMARKS PRESERVATION WOUNDERSHALL REMAIN THE

ELECTRONIC APPROVAL CONSTRUCTION CONSULTANTS, INC. THE DOCUMENTS AND THE DOCUMENTS A USED, PHOTOCOPIED, OR REPRODUCED DIGITALLY. ELECTRONICALLY, OR IN ANY OTHER MANNER WITHOUT THE EXPRESS WRITTEN CONSENT OF R.I.P CONSTRUCTION CONSULTANTS, INC. 2. THE CONTRACTOR SHALL CHECK AND VERIFY ALL CONDITIONS AND DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO START OF WORK. 3. IT IS A VIOLATION OF NYS EDUCATION DEPT. LAW

FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ARCHITECT OR ENGINEER, TO ALTER THIS PLAN IN ANY WAY. 4. THIS LAYOUT COMPLIES WITH THE 2010 E.C.C.C. NYS LOCAL LAW 48/2010 & LOCAL LAW 1/2011

REVISIONS:

LANDLORD'S / OWNER'S INFORMATION:

NEW YORK CITY EXPEDITOR

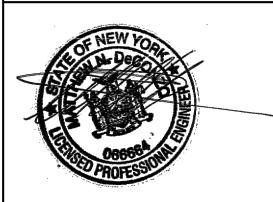
R.I.P. C.C. INC. 325 BROADWAY SUITE 304 NEW YORK, NY 10007 TEL: 212-334-7400

ARCHITECT / ENGINEER OF RECORD:

EDWARD GUTERMAN P.E. #061893-1 325 BROADWAY SUITE 304 NEW YORK, NY 10007 212-334-4114

CONSULTING ENGINEERS

GUTH-DECONZO CONSULTING ENGINEERS 242 30TH STREET, SUITE 301 NEW YORK, NY 10001 212-967-4306



MATTHEW N. DeCONZO, PE LICENSE NO. 066664

PROJECT ADDRESS:

HEAT ME 53 WOOSTER STREET NEW YORK, NEW YORK

MECHANICAL SYMBOLS & NOTES

03-23-20 PROJECT# 4264-G04 DRAWN BY: WH SCALE: NYC DOB BSCAN

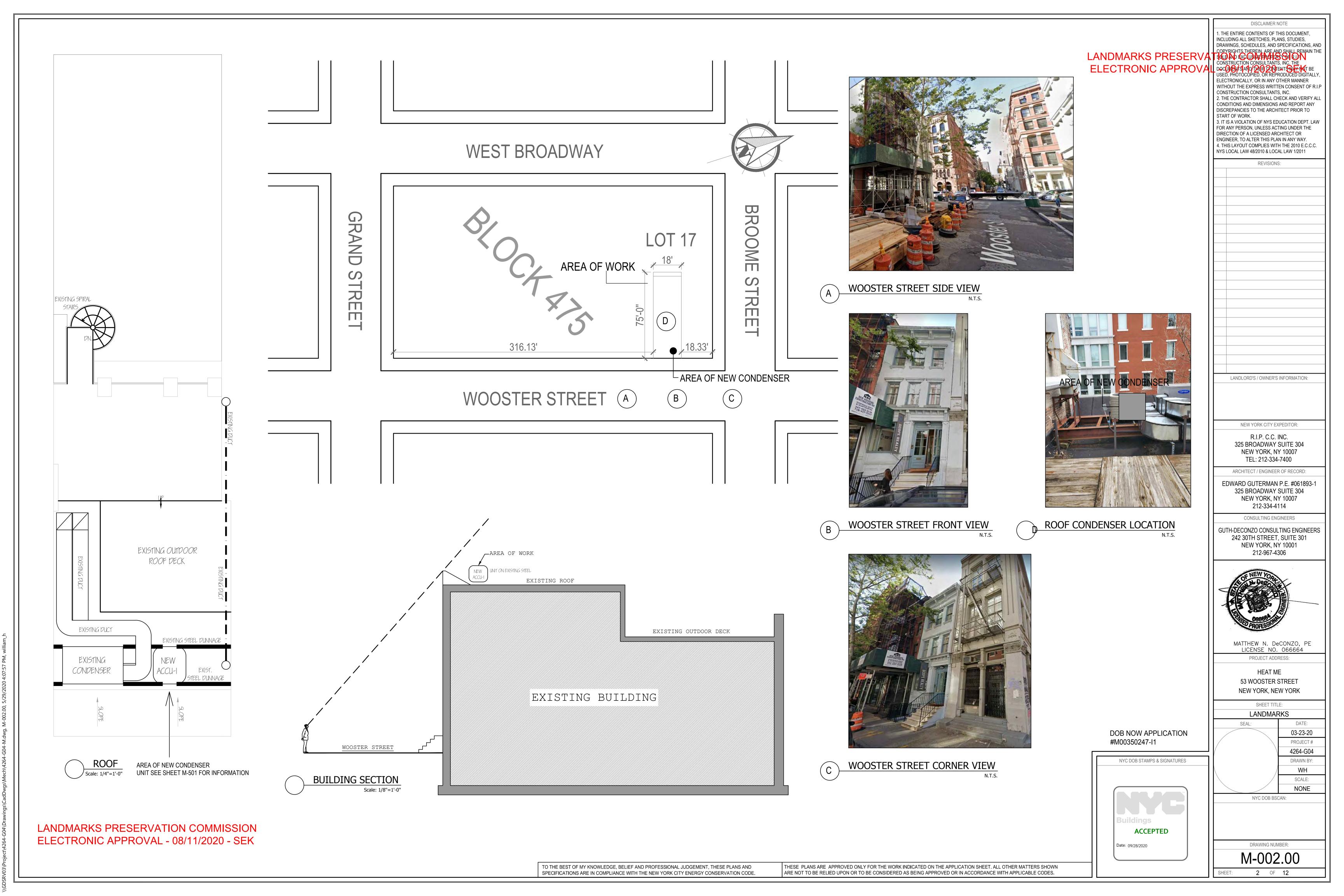
NONE

1 OF 12

DRAWING NUMBER:

TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

THESE PLANS ARE APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.



NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where Base Flood Elevations (BFEs) and/or floodways have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations (BFEs) shown on this map apply only landward of 0.0' National Geodetic Vertical Datum of 1929 (NGVD 29). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this

The projection used in the preparation of this map was New York State Plane FIPSZONE 3104. The horizontal datum was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the National Geodetic Vertical Datum of 1929. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services NOAA, N/NGS12 National Geodetic Survey SSMC-3, #9202 1315 East-West Highway Silver Spring, Maryland 20910-3182

To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at http://www.ngs.noaa.gov.

Base map information shown on this FIRM was provided in digital format by the Department of Information Technology and Telecommunication, City of New York This information was derived from digital orthophotos produced at a scale of 1:1,200 with 2-foot pixel resolution from photography dated 2004.

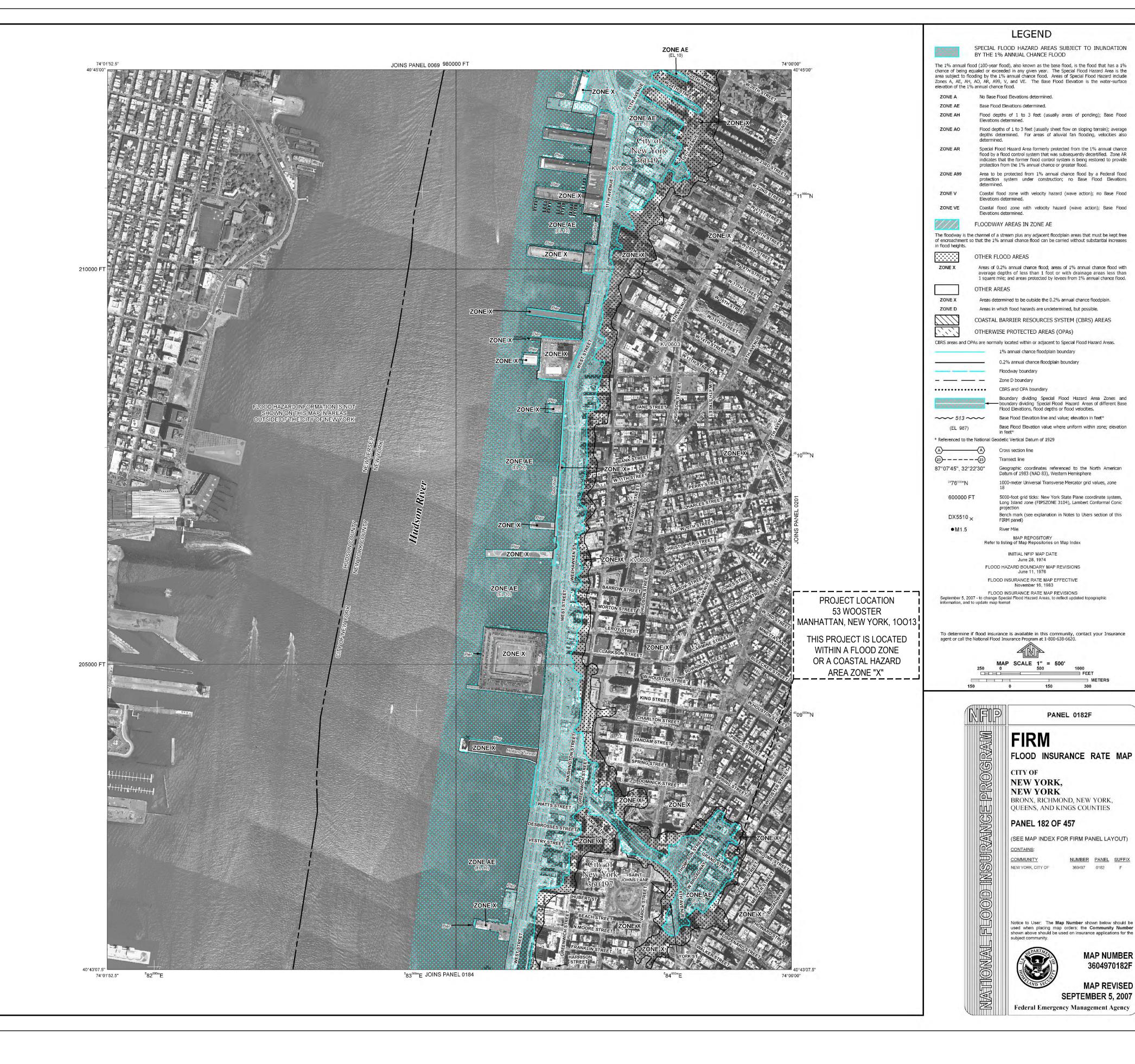
Based on updated topographic information, this map reflects more detailed and up-to-date stream channel configurations and floodplain delineations than those shown on the previous FIRM for this jurisdiction. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map. Also, the road to floodplain relationships for unrevised streams may differ from what is shown on previous maps.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed Map Index for an overview map showing the layout of map panels for this jurisdiction.

Contact the FEMA Map Service Center at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at http://msc.fema.gov.

you have questions about this map or questions concerning the National Floor Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov.



ELECTRONIC APPROVAL CONSTRUCTION CONSULTANTS, INC. THE DOCUMENTS OF THE DO

INCLUDING ALL SKETCHES, PLANS, STUDIES, DRAWINGS, SCHEDULES, AND SPECIFICATIONS, AND LANDMARKS PRESERVATION WOUNTERS SHOUL REMAIN THE

DISCLAIMER NOTE

THE ENTIRE CONTENTS OF THIS DOCUMENT,

ELECTRONICALLY, OR IN ANY OTHER MANNER WITHOUT THE EXPRESS WRITTEN CONSENT OF R.I.P CONSTRUCTION CONSULTANTS, INC. 2. THE CONTRACTOR SHALL CHECK AND VERIFY ALL CONDITIONS AND DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO

START OF WORK. 3. IT IS A VIOLATION OF NYS EDUCATION DEPT. LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ARCHITECT OR ENGINEER, TO ALTER THIS PLAN IN ANY WAY. 4. THIS LAYOUT COMPLIES WITH THE 2010 E.C.C.C. NYS LOCAL LAW 48/2010 & LOCAL LAW 1/2011

REVISIONS:

LANDLORD'S / OWNER'S INFORMATION:

R.I.P. C.C. INC. 325 BROADWAY SUITE 304 NEW YORK, NY 10007 TEL: 212-334-7400

NEW YORK CITY EXPEDITOR:

ARCHITECT / ENGINEER OF RECORD: EDWARD GUTERMAN P.E. #061893-1 325 BROADWAY SUITE 304 NEW YORK, NY 10007

CONSULTING ENGINEERS

212-334-4114

GUTH-DECONZO CONSULTING ENGINEERS 242 30TH STREET, SUITE 301 NEW YORK, NY 10001 212-967-4306



MATTHEW N. DeCONZO, PE LICENSE NO. 066664

> PROJECT ADDRESS HEAT ME

53 WOOSTER STREET NEW YORK, NEW YORK

SHEET TITLE:

FLOOD HAZARD MAP

DOB NOW APPLICATION

NYC DOB STAMPS & SIGNATURES

ACCEPTED

Date: 09/28/2020

#M00350247-I1

SCALE: NONE

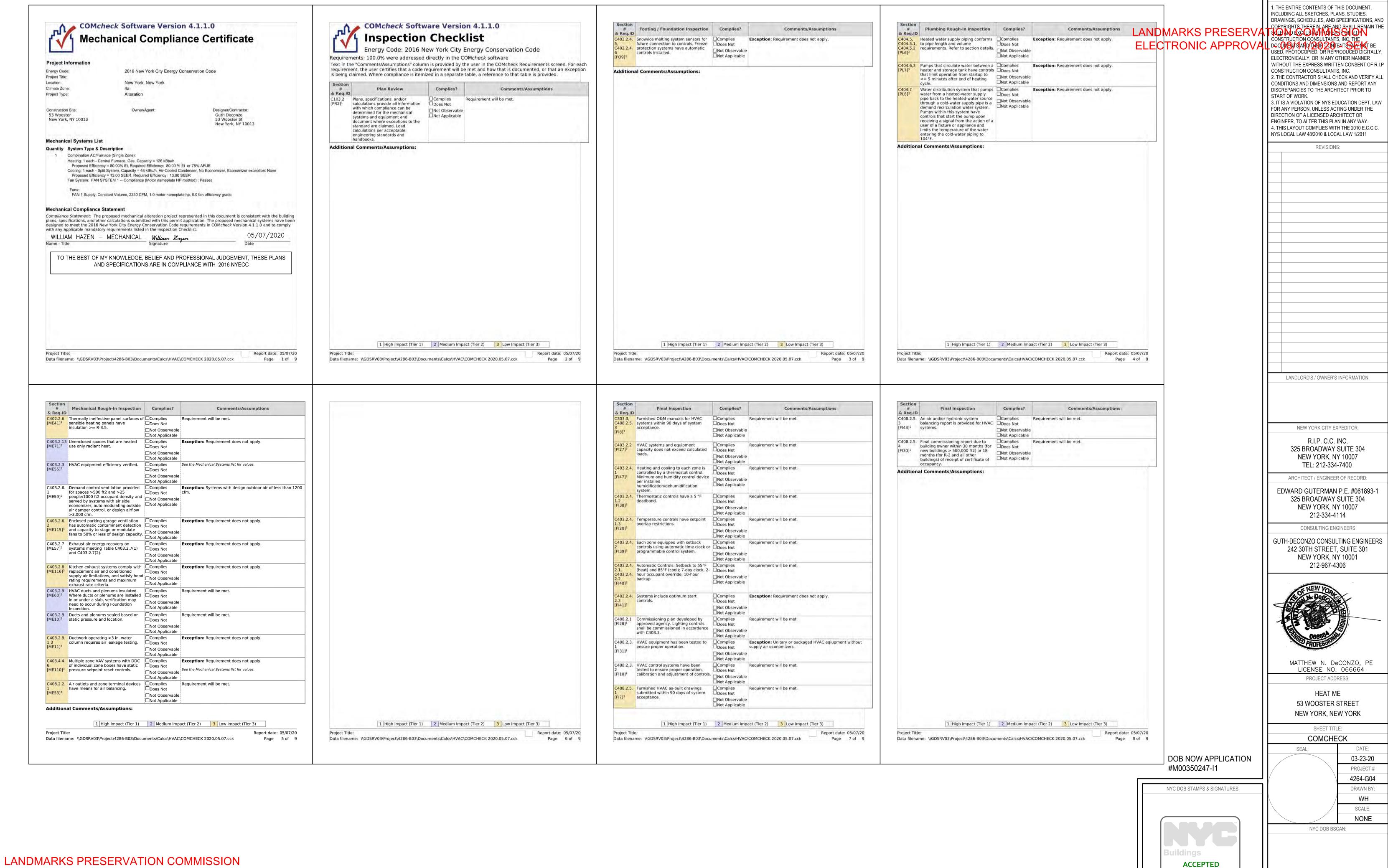
03-23-20

4264-G04

NYC DOB BSCAN

DRAWING NUMBER: M-003.00

LANDMARKS PRESERVATION COMMISSION ELECTRONIC APPROVAL - 08/11/2020 - SEK



ELECTRONIC APPROVAL - 08/11/2020 - SEK

TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

THESE PLANS ARE APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION SHEET, ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.

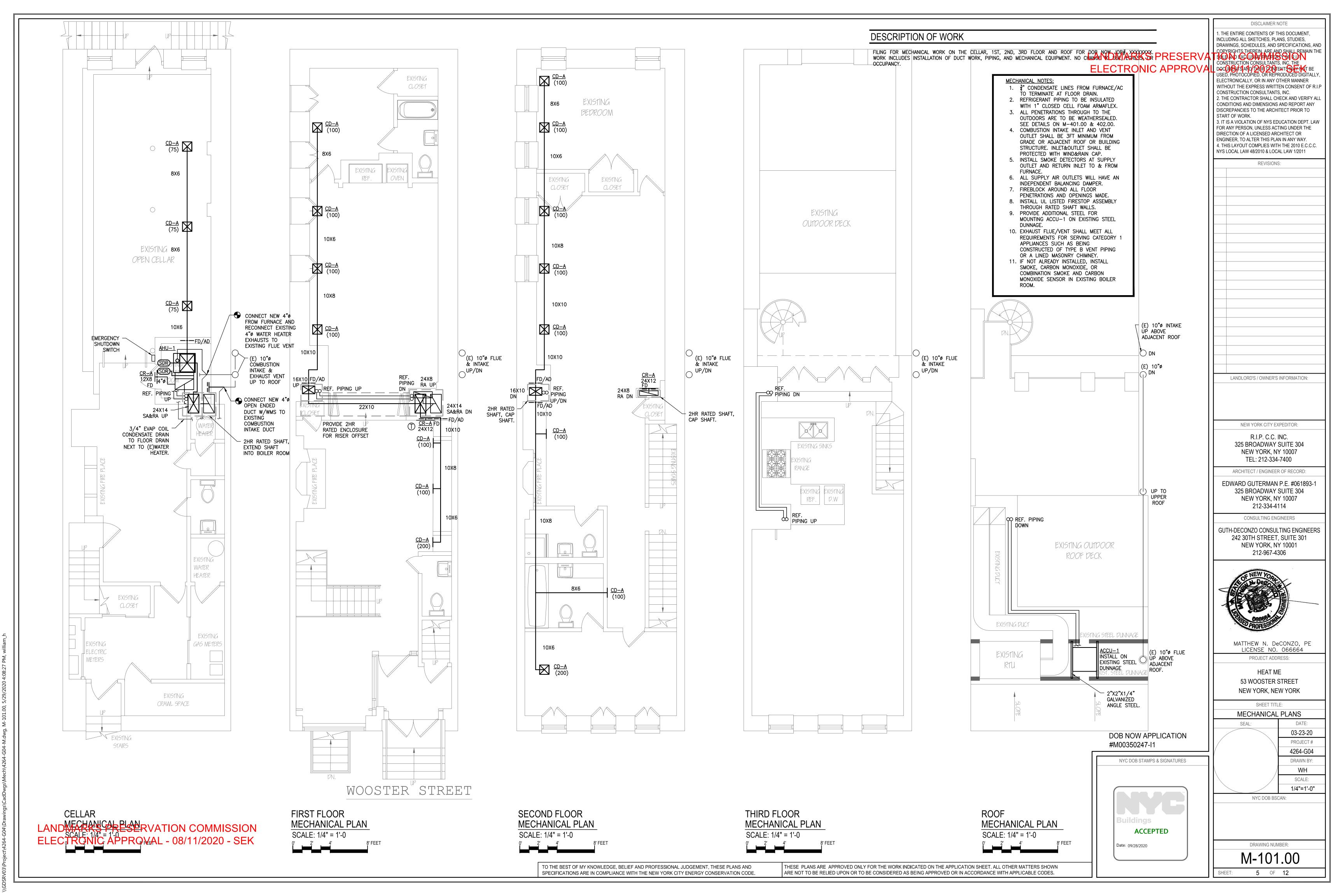
DRAWING NUMBER:

M-004.00

4 OF 12

Date: 09/28/2020

DISCLAIMER NOTE



LANDMARKS PRESERVATION OF REPRODUCED DIGITALLY,

COPYRIGHTS THEREIN, ARE AND SHALL REMAIN THE

CONSTRUCTION CONSULTANTS, INC. THE

DOCUMENTS AND TREE

USED, PHOTOCOPIED, OR REPRODUCED DIGITALLY, ROOF 3RD FLOOR 10X10 TO FLOOR 10X10 TO FLOOR FD/AD

2ND FLOOR

1 ST FLOOR

CELLAR

16X10

10X6 TO FLOOR

FD/AD

AIR RISER DIAGRAM

COMBINATION AC/FURNACE

10X10 TO FLOOR FD/AD

<u>CR-A</u> →> |

 $\frac{\text{CR-A}}{24\text{X}12} \longrightarrow \left| \frac{1}{24\text{X}14} \right|$

ROOF

3RD FLOOR

2ND FLOOR

1 ST FLOOR

CELLAR

DOB NOW APPLICATION #M00350247-I1

NYC DOB STAMPS & SIGNATURES

ACCEPTED Date: 09/28/2020

NEW YORK, NEW YORK SHEET TITLE: MECHANICAL RISER DIAGRAM 03-23-20 4264-G04

MATTHEW N. DeCONZO, PE LICENSE NO. 066664

PROJECT ADDRESS:

HEAT ME 53 WOOSTER STREET

DISCLAIMER NOTE

1. THE ENTIRE CONTENTS OF THIS DOCUMENT, INCLUDING ALL SKETCHES, PLANS, STUDIES, DRAWINGS, SCHEDULES, AND SPECIFICATIONS, AND

ELECTRONICALLY, OR IN ANY OTHER MANNER WITHOUT THE EXPRESS WRITTEN CONSENT OF R.I.P

2. THE CONTRACTOR SHALL CHECK AND VERIFY ALL CONDITIONS AND DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO

3. IT IS A VIOLATION OF NYS EDUCATION DEPT. LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ARCHITECT OR ENGINEER, TO ALTER THIS PLAN IN ANY WAY. 4. THIS LAYOUT COMPLIES WITH THE 2010 E.C.C.C. NYS LOCAL LAW 48/2010 & LOCAL LAW 1/2011

REVISIONS:

LANDLORD'S / OWNER'S INFORMATION:

NEW YORK CITY EXPEDITOR:

R.I.P. C.C. INC. 325 BROADWAY SUITE 304 NEW YORK, NY 10007 TEL: 212-334-7400

ARCHITECT / ENGINEER OF RECORD:

EDWARD GUTERMAN P.E. #061893-1

325 BROADWAY SUITE 304 NEW YORK, NY 10007 212-334-4114

CONSULTING ENGINEERS

GUTH-DECONZO CONSULTING ENGINEERS 242 30TH STREET, SUITE 301 NEW YORK, NY 10001 212-967-4306

CONSTRUCTION CONSULTANTS, INC.

START OF WORK.

NONE NYC DOB BSCAN:

DRAWING NUMBER:

M-301.00

6 OF 12

LANDMARKS PRESERVATION COMMISSION ELECTRONIC APPROVAL - 08/11/2020 - SEK

> TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

THESE PLANS ARE APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.

SINGLE LINE

CONVERGING

→ AIR DIVERGING

ELBOW

→ (BRANCH AIR FLOW)

SPLIT OR

TAKE-OFF

25% OR HIGHER)

T (BRANCH TAP 25% OR

OR LESS AIR FLOW)

TAP TAKE-OFF

RISE OR DROP

HORIZONTAL

———— PLENUM

TRAPEZE PIPE HANGER DETAIL

1/2" TO 1-1/4" | 6 FT. O.C.

PIPING SUPPORTS SHALL BE SPACED ACCORDING TO TABLE 305.4 OF THE 2014 NYCMC.

COPPER TUBING - 2015 IMC

NOTE: THE ABOVE HANGER SPACING APPLY TO STRAIGHT RUNS OF PIPE ONLY.

SPACING

MAX. HANGER | MIN. ROD

SIZE

ADJUSTABLE U-BOLT-

ሞ

16 GAUGE GALVANIZED

SHEET METAL SHIELD,

12" LONG ---

VAPOR BARRIER -

INSULATION

WATER PIPING -

OVER

DIFFUSER

OFFSET

DIFFUSER PLENUM

WHERE DUCTWORK IS SHOWN SINGLE LINE, FOLLOWING SHALL APPLY FOR ACTUAL DUCT CONSTR.

ACTUAL CONSTRUCTION

-TURNING VANE (EITHER TYPE ELBOW AT CONTR. OPTION-SUBJECT TO SPACE

VANES SHALL BE WELDED TO RUNNERS.

USE LARGE RADIUS VANES. MAXIMUM

UNSUPPORTED VANE LENGTH SHALL

CONDITIONS).

A,B SHALL BE PROPORTIONAL

TO AIR QUANTITY, 4" (10cm)

MIN. IF A or B IS LESS THAN

4" (10cm), USE TAP DETAIL.

VOLUME DAMPER IN SHORTER

SIDE TAP BRANCH SHALL BE

LIMITED TO 25% OF MAIN AIR FLOW

OFFSET IN VERTICAL PLANE SHALL BE MADE WITH

CROSS SECTIONAL AREAS.

OFFSET IN HORIZONTAL PLANE SHALL BE MADE WITH SMOOTH

SECTIONAL AREAS.

FITTINGS AND HAVE EQUAL CROSS

DIFFUSER OR GRILLE

-CONICAL FITTINGS

SMOOTH FITTINGS AND HAVE EQUAL

-PLENUM OVER LINEAR SUPPLY OR RETURN

REGULATION OF VOLUME DAMPER SHALL BE

ACCESSIBLE THROUGH THE FACE OF DIFFUSER

SECURE TO DECK W/HILTI KB-TZ

- 3/8"ø ADJUSTABLE HANGER RODS –

REFER TO SPEC FOR VIBRATION

ISOLATOR HANGER

P1000 UNISTRUT 1-5/8" X 1-5/8"

47

TP

SUPPORT NUT-

REQUIREMENTS

OR SIMILAR CONCRETE WEDGE

ANCHORS. 1/2-5/8"ø

MIN. EMBEDMENT 1-1/2"

Ŧ

12GA., GALVANIZED, SLOTTED

TP

BRANCH.

ELEVATION

NOT EXCEED 36".

NOT TO SCALE

TURNING VANES -

SPRING WASHER

1/2" NEOPRENE

FOR BOLT THROUGH FLANGE, MIN.

1" OFFSET FROM WEB EDGE.

ACOUSTIC PAD

CONDITIONS AND DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO START OF WORK. 3. IT IS A VIOLATION OF NYS EDUCATION DEPT. LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ARCHITECT OR ENGINEER, TO ALTER THIS PLAN IN ANY WAY. 4. THIS LAYOUT COMPLIES WITH THE 2010 E.C.C.C.

NYS LOCAL LAW 48/2010 & LOCAL LAW 1/2011

REVISIONS:

DISCLAIMER NOTE

1. THE ENTIRE CONTENTS OF THIS DOCUMENT INCLUDING ALL SKETCHES, PLANS, STUDIES, DRAWINGS, SCHEDULES, AND SPECIFICATIONS, AND

LANDLORD'S / OWNER'S INFORMATION:

NEW YORK CITY EXPEDITOR R.I.P. C.C. INC.

NEW YORK, NY 10007 TEL: 212-334-7400

ARCHITECT / ENGINEER OF RECORD:

325 BROADWAY SUITE 304

EDWARD GUTERMAN P.E. #061893-1 325 BROADWAY SUITE 304 NEW YORK, NY 10007 212-334-4114

CONSULTING ENGINEERS

GUTH-DECONZO CONSULTING ENGINEERS 242 30TH STREET, SUITE 301 NEW YORK, NY 10001 212-967-4306



MATTHEW N. DeCONZO, PE LICENSE NO. 066664

PROJECT ADDRESS:

HEAT ME 53 WOOSTER STREET

NEW YORK, NEW YORK

SHEET TITLE: MECHANICAL DETAILS

03-23-20 PROJECT# 4264-G04 DRAWN BY: WH SCALE: NONE

NYC DOB BSCAN:

DRAWING NUMBER: M-401.00

7 OF 12

CONDENSERS GREATER THAN 5 TONS CAPCACITY

CONDENSERS LESS THAN 5 TONS CAPACITY

CONDENSING UNIT

CONDENSING UNIT

UNIT MOUNTING FOOT

UNIT MOUNTING FOOT

NOTES:

1. ALL FASTENERS TO BE GALVANIZED OR STAINLESS 2. PROVIDE ADDITIONAL SUPPORTS AT CENTER OF FRAME FOR CONDENSERS LARGER THAN 5 TONS, AS

PER MANUFACTURER INSTRUCTIONS. 3. ALL SUPPORTS UNDER UNIT MOUNTING FEET/FRAME TO HAVE A MINIMUM CONTACT WIDTH OF 4".

CONDENSING UNIT

ANTI-VIBRATION

DUNNAGE

MATERIAL

OR FRAME — LEVEL ADJUSTOR SPRING TYPE - 1/2"ø BOLT & NUT VIBRATION ISOLATORS SPRING WASHER € OF BOLT THROUGH FLANGE, MIN. H-BEAM 1" OFFSET FROM WEB EDGE.

REFRIGERANT PIPING THROUGH ROOF DETAIL

NOT TO SCALE

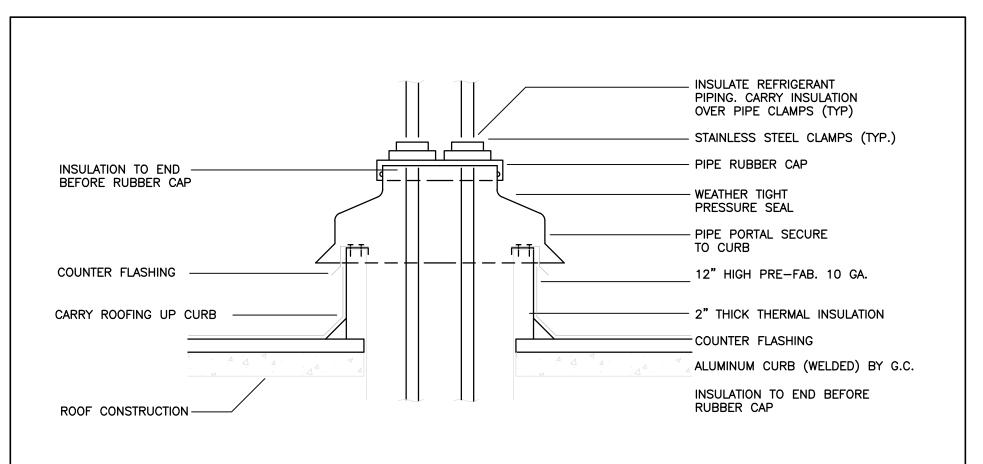
DOB NOW APPLICATION

NYC DOB STAMPS & SIGNATURES

ACCEPTED

Date: 09/28/2020

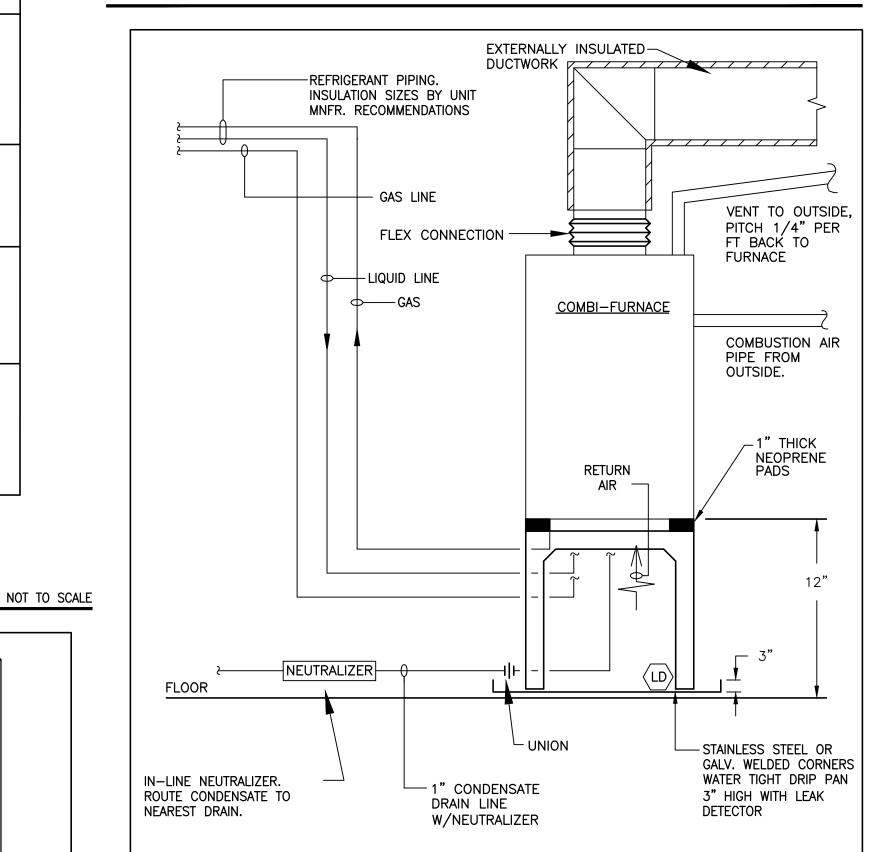
#M00350247-I1



BEND STRAP OVER ANGLE & BOLT TOP & SIDE - LAG BOLT-1-1/2"x1-1/2"x1/8"(L) TO JOIST **TRANSVERSE CONNECTION** - SELF TAPPING SCREWS 1"X 1/8" (OVER 2 SQ. FT.) 1"X 1/16" (UNDER 2 SQ. FT.) FOR DUCTS OVER 48" WIDE TURN UNDER BOTTOM OF DUCT & FASTEN PROVIDE SUPPORTS AT INTERVALS NO MORE THAN 8FT.

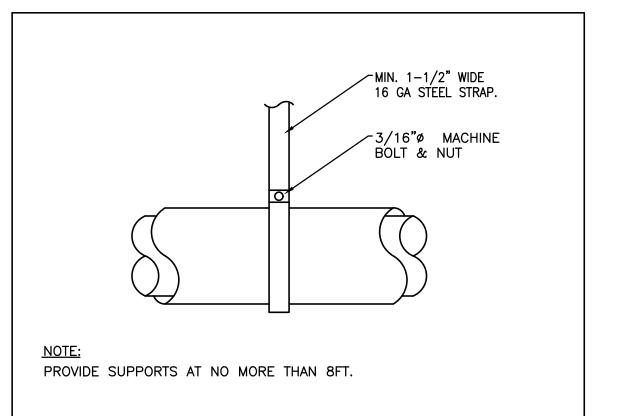
VERTICAL COMBINATION FURNACE

NOT TO SCALE



ROUND DUCT SUPPORT - HORIZONTAL

NOT TO SCALE



LANDMARKS PRESERVATION COMMISSION ELECTRONIC APPROVAL - 08/11/2020 - SEK

TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND

THESE PLANS ARE APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION SHEET. ALL OTHER MATTERS SHOWN

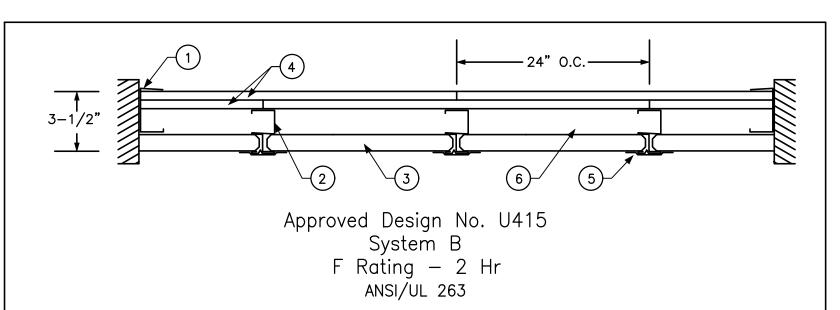
SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.

2-HOUR RATED SHAFTWALL DETAIL

NOT TO SCALE

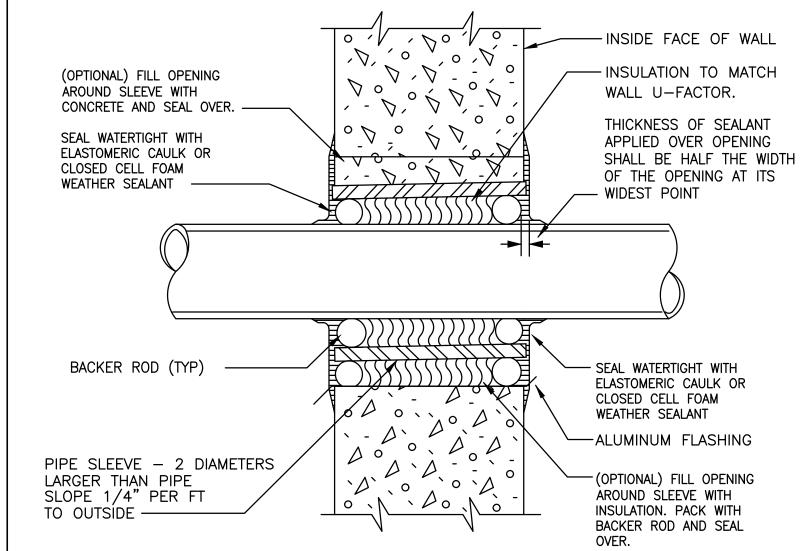
NOT TO SCALE



COMPLY WITH ALL REQUIREMENTS OF 2014 NYCMC: SECTION 603.6

- 1. FLOOR, SIDE AND CEILING RUNNERS "J" SHAPED RUNNER, MIN 2-1/2" DEEP, WITH UNEQUAL LEGS OF 1" AND 2", FABRICATED FROM MIN 24 MSG GALV. STEEL. RUNNERS ATTACHED TO STRUCTURAL SUPPORTS WITH STEEL FASTENERS LOCATED NOT GREATER THAN 2" FROM END AND NOT GREATER THAN 24" O.C.
- 2. STEEL STUDS "C-H" SHAPED STUDS, MIN 2-12" DEEP, FABRICATED FROM MIN 25 MSG GALV. STEEL. CUT TO LENGTHS 3/8 TO 1/2" LESS THAN FLOOR-TO-CEILING HEIGHT AND SPACED 24"
- GYPSUM BOARD SHAFT LINER GYPSUM LINER PANELS TYPE SLX, NOM. 1" THICK, 24" WIDE. PANELS CUT 1" LESS IN LENGTH THAN FLOOR-TO-CEILING HEIGHT. VERTICAL EDGES INSERTED IN THE "H" PORTION OF "C-H" STUDS. FREE EDGE OF PANEL ATTACHED TO LONG LEG OF THE VERTICAL "J" RUNNERS WITH 1-5/8" LONG TYPE S STEEL SCREWS SPACED NOT GREATER THAN 12" O.C. WHEN WALL HEIGHT EXCEEDS LINER PANEL LENGTH, LINER PANEL MAY BE BUTTED TO EXTEND TO THE FULL HEIGHT OF THE WALL. HORIZONTAL JOINTS NEED NOT BE BACKED BY STEEL FRAMING.
- SYSTEM B GYPSUM BOARD PANELS GYPSUM PANELS FIRECODE TYPE C OR X, WITH BEVELED, SQUARE, OR TAPERED EDGES, NOM 1/2" OR 5/8" THICK, 48" WIDE, APPLIED VERTICALLY OR HORIZONTALLY IN TWO LAYERS. INNER OR BASE LAYER ATTACHED TO STUDS WITH 1" LONG TYPE S STEEL SCREWS SPACED 24" O.C. WHEN INSTALLED VERTICALLY OR 16" O.C. WHEN INSTALLED HORIZONTALLY. OUTER OR FACE LAYER ATTACHED TO STUDS WITH 1-5/8" LONG TYPE S STEEL SCREWS SPACED 12" O.C. WHEN INSTALLED HORIZONTALLY AND STAGGERED 8" FROM BASE LAYER SCREWS. HORIZONTAL JOINTS BETWEEN INNER AND OUTER LAYERS STAGGERED A MIN. OF 12" HORIZONTAL JOINTS NEED NOT BE BACKED BY STEEL FRAMING. VERTICAL JOINTS CENTERED OVER STUDS AND STAGGERED 24".
- JOINT TAPE AND COMPOUND JOINTS ON OUTER LAYERS OF GYPSUM BOARDS COVERED WITH PAPER TAPE AND JOINT COMPOUND. PAPER TAPE AND JOINT COMPOUND MAY BE OMITTED WHEN GYPSUM BOARDS ARE SUPPLIED WITH SQUARE EDGES. EXPOSED SCREW HEADS COVERED WITH JOINT COMPOUND.
- BATTS & BLANKETS (OPTIONAL, NONE SHOWN) MINERAL WOOL OR GLASS FIBER BATTS PARTIALLY OR COMPLETELY FILLING STUD CAVITIY. ANY MINERAL WOOL OR GLASS FIBER MINERAL BEARING THE UL CLASSIFICATION MARKING AS TO FIRE RESISTANCE, UL263, ASTM E 136.

LANDMARKS PRESERVATION COMMISSION ELECTRONIC APPROVAL - 08/11/2020 - SEK



SLEEVE DETAIL APPLIES EQUALLY TO INSTALLATIONS BELOW OR ABOVE GRADE

SLEEVES AND ESCUTCHEONS

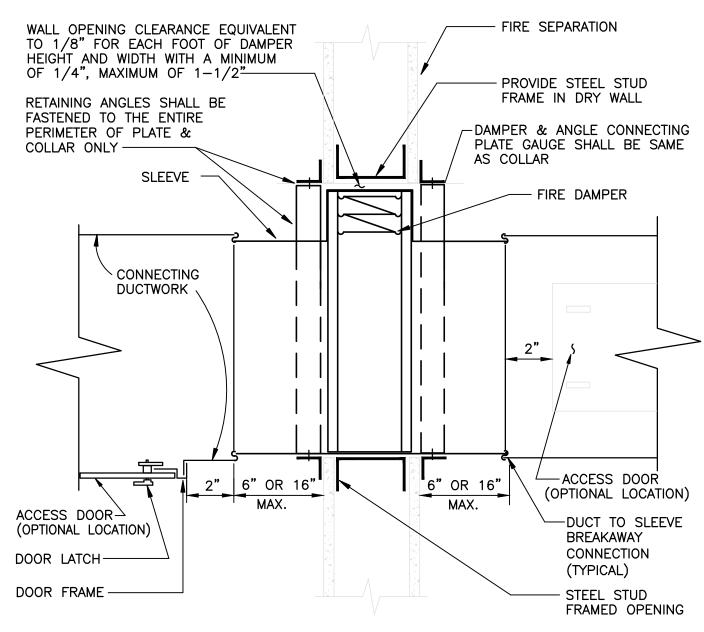
- SLEEVES FOR PIPING THROUGH MASONRY WALLS SHALL BE SCHEDULE 40, STANDARD GALVANIZED STEEL PIPE; IN FRAMED PARTITIONS SLEEVES SHALL BE 20. GAUGE SHEETMETAL. THE SPACE BETWEEN THE PIPE AND ITS SLEEVE SHALL NOT EXCEED ONE-HALF INCH. THE SLEEVE SHALL HAVE A SUFFICIENT LENGTH TO BE FLUSH WITH THE FINISHED WALL SURFACE.
- EXPOSED PIPING PASSING THROUGH WALLS, FLOORS, OR CEILINGS SHALL BE FITTED WITH CHROMIUM-PLATED CAST BRASS ESCUTCHEONS WITH FASTENING SET SCREWS.

CUTTING AND PATCHING

- OPENINGS CUT OR DRILLED THROUGH WALLS OR FLOORS SHALL BE NO GREATER THAN ONE HALF INCH LARGER THAN THE SLEEVE BEING INSTALLED.
- PATCHING OF CONCRETE WALLS OR FLOORS ARE PERMITTED TO HAVE CONCRETE POURED AND CURED DIRECTLY TO THE SLEEVE.

WEATHERPROOFING

- A. FLASH THE EXTERIOR OPENING WITH ALUMINUM OR APPROVED MOISTURE BARRIER MATERIALS.
- FILL CAVITY AROUND PIPE AND/OR SLEEVE WITH INSULATION TO MATCH OR EXCEED THE R-VALUE OR U-FACTOR OF THE EXISTING WALL. WEDGE CLOSED CELL FOAM BACKER ROD INTO PERIMETER OPENING TO A DEPTH NOT LESS THAN HALF THE WIDEST POINT OF THE OPENING. SEAL OVER WITH ELASTOMERIC CAULK OR EXPANDING CLOSED CELL FOAM WEATHER SEALANTS.
- SEAL OVER THE JOINT BETWEEN THE EXISTING WALL AND THE FILLED OPENINGS WITH ELASTOMERIC CAULK. TOOL INTO ALL CREVICES AND JOINTS 1/2" OUT FROM OPENING.
- IF THE WALL IS FIRE RATED, REFER TO THE UL LISTED FIRESTOP ASSEMBLY REQUIREMENTS.



FIRE DAMPER NOTES:

- 1. FIRE RESISTANCE RATING OF FIRE DAMPERS SHALL COMPLY WITH NFPA 90A, UL 555 AND NYBC REFERENCE STANDARD RS 13. FIRE DAMPERS SHALL BE RATED TO MAINTAIN THE RATING OF THE FIRE SEPARATION
- 2. FIRE DAMPERS SHALL BE APPROVED FOR THIS INSTALLATIO BY ALL AUTHORITIES WITH JURISDICTION AND LABELED BY UNDERWRITERS LABORATORIES (UL). THE DAMPER SHALL BE SUBMITTED TO ENGINEER FOR FOR REVIEW.
- 3. FIRE DAMPERS MUST BE DYNAMIC RATED TYPE 4. FIRE DAMPERS PLACED IN VERTICAL POSITION SHALL BE GRAVITY-OPERATED. FIRE DAMPERS PLACED IN HORIZONTAL POSITION
- SHALL BE PROVIDED WITH ALL NECESSARY SPRINGS AND LATCHES. TEMPERATURE RATING OF FUSIBLE LINK SHALL BE 165°F FOR MOST AIR SYSTEMS AND 285°F FOR SPILL AIR DUCTS SERVING
- THE CONCOURSE AND PLAZA LEVELS, UNLESS OTHERWISE NOTED ON THE CONTRACT DRAWINGS. 6. FOR WALL/PARTITIONS HAVING A FIRE RESISTANCE RATING OF LESS THAN 2 HOURS: FIRE DAMPERS SHALL BE RUSKIN MODEL D-1BD2: STYLE A, B & C, GREENHECK MODEL DFD-150, TYPE A, B, C & CR, DFD-155, TYPE C & CR, IMPERIAL IDL MODEL FD 110, FD 150, TYPE A, B, C & CR, PREFCO/HUGH RICHARDS INC. MODEL UL 75A, OR APPROVED EQUAL. THEY SHALL BE
- INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS APPROVED INSTALLATION INSTRUCTIONS. SEE ARCHITECTURAL DWG. 7. FOR WALL/PARTITIONS HAVING A FIRE RESISTANCE RATING OF 2 HOURS: FIRE DAMPERS SHALL BE RUSKIN MODEL D-1BD23: STYLE A, B & C, GREENHECK MODEL DFD-350, TYPE A, B, C & CR, DFD-355, TYPE C & CR, IMPERIAL IDL MODEL FD 310, FD 350, TYPE A, B, C & CR, PREFCO/HUGH RICHARDS INC. MODEL UL 75L, OR APPROVED EQUAL. THEY SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS APPROVED INSTALLATION
- 8. FIRE DAMPER SLEEVE SHALL BE 16 GAUGE FOR DAMPERS WITH DIMENSIONS NOT EXCEEDING 24 IN. IN HEIGHT OR 36 IN. IN WIDTH, AND 14 GAUGE FOR LARGER SIZES. SLEEVE THICKNESS MUST NOT BE LESS THAN THE GAUGE OF THE CONNECTING DUCT. FIRE DAMPER SLEEVES THROUGH HOLLOW FIRE-RATED CONSTRUCTION BE MADE OF AT LEAST 14 GAUGE SHEET METAL
- 9. DUCT TO DAMPER SLEEVE CONNECTIONS SHALL BE BREAKAWAY STYLE. RECTANGULAR DUCTS MUST USE ONE OR MORE OF THE FOLLOWING CONNECTIONS: "S" SLIP, OR OTHER SLIP TYPE, MODIFIED DUCTMATE TYPES (PLASTIC CLEATS, NO CORNER BOLTS), OF MODIFIED PROPRIETARY TDC BY LOCKFORMER, OR TDF BY EAGLE FLANGE SYSTEM (NO CORNER BOLTS). ROUND AND OVAL DUCTS MUST USE A 4 IN. WIDE DRAWBAND CONNECTION. ALL THE CONNECTIONS SHALL BE LISTED IN UL 555 AND DEPICTED
- THE SMACNA FIRE, SMOKE AND RADIATION DAMPER INSTALLATION GUIDE. 10. DAMPER SLEEVES SHALL NOT EXTEND MORE THAN 6 IN. BEYOND THE FIRE WALL OR PARTITION UNLESS FIRE DAMPER IS EQUIPPED WITH A FACTORY INSTALLED ACCESS DOOR. SLEEVE MAY EXTEND UP TO 16 IN. BEYOND THE FIRE WALL OR PARTITION
- ON SIDES EQUIPPED WITH FACTORY INSTALLED ACCESS DOOR. 11. MOUNTING ANGLES SHALL BE A MINIMUM OF 1-1/2"x1-1/2"x14 GAUGE AND FASTENED TO SLEEVE WITH NO. 10 SHEET METAL SCREWS, 1/4" BOLTS AND NUTS, 1/2" LONG WELDS, OR 3/16" STEEL POP RIVETS. SECURE SLEEVES BY PERIMETER ANGLES
- ON FOUR SIDES OF THE SLEEVE ON BOTH SIDES OF OPENING. 12. THE CONTRACTOR SHALL SEAL ALL JOINTS OF THE SLEEVE WITH SEALANT. THE JOINT BETWEEN TAPS AND DUCTS SHALL BE MADE AIRTIGHT AND SECURED BY USS. NO. 10 SHEET METAL SCREWS (ONE PER SIDE OF RECTANGULAR DUCT, OR THREE PER ROUND DUCT), SEALED WITH SEALANT AND THEN TAPED. FIRE RATED SEALANT SHALL BE DOW CORNING SILICON #999, #732
- RTV. GE RTV SILICON RUBBER. OR AN APPROVED EQUAL. 13. PROVIDE ACCESS DOORS ON EITHER SIDE OF THE SLEEVE ONLY TO PERMIT INSPECTING, TESTING AND RESETTING THE DAMPERS. 14. CEILING FIRE DAMPERS SHALL BE SUITABLE FOR INSTALLATION INSIDE DUCT AND SURFACE MOUNTING OF DIFFUSERS OR GRILLES. CEILING FIRE DAMPERS SHALL BE RUSKIN CFD, CFDR, GREENHECK MODEL CRD-1, CRD-2, IMPERIAL IDL MODEL 410, 420, 420R, PREFCO MODEL 5600, 5660 OR APPROVED EQUAL FOR WALL/PARTITIONS HAVING A FIRE RESISTANCE RATING OF LESS THAN 3 HOURS. CEILING FIRE DAMPERS SHALL BE RUSKIN CFD, CFDR, GREENHECK MODEL CRD-1, CRD-2, IMPERIAL IDL MODEL 410, 420, 420R, PREFCO MODEL 5610, 5680, OR APPROVED EQUAL FOR WALL/PARTITIONS.

LANDMARKS PRESERVA

DRAWINGS, SCHEDULES, AND SPECIFICATIONS, AND ELECTRONIC APPROVAL DO ONE AND DO

ELECTRONICALLY, OR IN ANY OTHER MANNER WITHOUT THE EXPRESS WRITTEN CONSENT OF R.I.P CONSTRUCTION CONSULTANTS, INC. THE CONTRACTOR SHALL CHECK AND VERIFY ALL CONDITIONS AND DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO

DISCLAIMER NOTE

. THE ENTIRE CONTENTS OF THIS DOCUMENT NCLUDING ALL SKETCHES, PLANS, STUDIES,

START OF WORK. 3. IT IS A VIOLATION OF NYS EDUCATION DEPT. LAW FOR ANY PERSON. UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ARCHITECT OR ENGINEER, TO ALTER THIS PLAN IN ANY WAY 4. THIS LAYOUT COMPLIES WITH THE 2010 E.C.C.C. NYS LOCAL LAW 48/2010 & LOCAL LAW 1/2011

REVISIONS:

NEW YORK CITY EXPEDITOR

LANDLORD'S / OWNER'S INFORMATION:

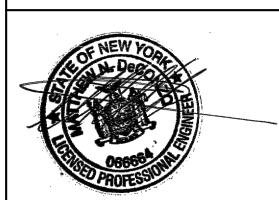
R.I.P. C.C. INC. 325 BROADWAY SUITE 304 NEW YORK, NY 10007 TEL: 212-334-7400

ARCHITECT / ENGINEER OF RECORD:

EDWARD GUTERMAN P.E. #061893-1 325 BROADWAY SUITE 304 NEW YORK, NY 10007

> 212-334-4114 CONSULTING ENGINEERS

GUTH-DECONZO CONSULTING ENGINEERS 242 30TH STREET, SUITE 301 NEW YORK, NY 10001 212-967-4306



MATTHEW N. DeCONZO, PE LICENSE NO. 066664

> PROJECT ADDRESS: HEAT ME

53 WOOSTER STREET NEW YORK, NEW YORK

SHEET TITLE: MECHANICAL DETAILS

03-23-20 PROJECT# 4264-G04 DRAWN BY: WH SCALE:

NONE

ACCEPTED Date: 09/28/2020

DOB NOW APPLICATION

NYC DOB STAMPS & SIGNATURES

#M00350247-I1

NYC DOB BSCAN

DRAWING NUMBER: M-402.00

8 OF 12

TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND

THESE PLANS ARE APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.

SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

(H/L)

2240/1345

ACCU-1

KG7SA-126C

1/2

7/8

3/8

NOTES:

DESIGNATION

AHU-1

1. PROVIDE COMBINATION FURNACE/AC SYSTEM FROM GIBSON.

LOCATION

CELLAR

CONTRACTOR TO FURNISH AND INSTALL ELECTRICAL DISCONNECT AND EMERGENCY SHUTOFF. 3. ALL CONTROL WIRING TO BE DONE BY MECHANICAL CONTRACTOR, UNLESS OTHERWISE NOTED BY CONSTRUCTION MANAGEMENT.

COOLING

CAPACITY (BTUH)

48,000

NOMINAL

TONS

- REFRIGERANT PIPE SIZING SHALL BE BY MANUFACTURE RECOMMENDATION.
- ALL REFRIGERANT PIPING TO BE INSULATED WITH MINIMUM 1 INCH ARMAFLEX TYPE INSULATION. EXACT HEIGHT & LOCATION OF ALL THERMOSTATS TO BE COORDINATED WITH ARCHITECT.
- PROVIDE EVAPORATOR PORTION WITH ALTERNATE DRAIN LEAK DETECTION INTERLOCKED WITH UNIT FOR AUTOMATIC SHUTDOWN.
- 8. PROVIDE SMOKE DETECTOR AND/OR CARBON MONOXIDE SENSOR, OR COMBINATION SMOKE & CO SENSOR IN AREA OF UNIT INSTALLATION IF ONE IS NOT ALREADY INSTALLED.

OPERATING

WEIGHT, LBS

VOLTS/PHASE/H

115/1/60

(A)

13.75

9. COMBINATION FURNACE/AC SYSTEM SHALL BE FACTORY TESTED AND LISTED TO BE IN COMPLIANCE WITH THE STANDARDS PUT FORTH BY AHRI 210/240, AND ETL-ANSI Z21.47.

AIR COOLED CONDENSING UNIT

HEATING CAPACITY

INPUT (BTUH)

126,000

ESP EFFICIENCY

80

(IN. WG.) | AFUE (%)

0.1-0.8

MANUFACTURER BY "GIBSON"

34-1/2 X 28-3/4 X 17-1/2

DESIGNATION	SERVICE	MODEL	COOLING CAPACITY (TONS)	MOP (A)	MCA (A)	VOLTS/PHASE/HZ	SHIPPING WEIGHT, LBS	EFFICIENCY RATINGS COOLING/HEATING IEER(SEER)/COP(HSPF)	DIMENSIONS H"xW"xD"
ACCU-1	FURNACE/AC	JS4BD-060KB	5	60	34.2	208/1/60	219	(13)/NA	43 X 30-3/4 X 30-3/4

- 1. INSTALL WITH FUSED DISCONNECT SWITCH.
- 2. REFRIGERANT PIPE SIZE SHALL BE PER UNIT MANUFACTURER'S RECOMMENDATION BASED ON ACTUAL LENGTH OF RUN AND NUMBER OF ELBOWS, DATA SHALL BE PROVIDED BY THE
- MECHANICAL CONTRACTOR. 3. STARTUP AND COMMISSIONING OF SYSTEM TO BE TO BE PERFORMED OR OVERSEEN BY UNIT
- MANUFACTURER. 4. INSTALL ON RUBBER VIBRATION ISOLATION PADS.

AIR OUTLET SCHEDULE

FINISH

SIZE

FINISH FRAME TYPE

SIZE

COPYRIGHTS THEREIN, ARE AND SHALL REMAIN THE COPYRIGHTS THEREIN, ARE AND SHALL REMAIN THE CONSTRUCTION CONSULTANTS, INC. THE CONSULTANTS, INC.

SQUARE SUPPLY DIFFUSERS

(DESIGNATED "CD-A" ON PLAN).

MANUFACTURER TITUS MODEL NO. 300RL

 AS PER ARCHITECTURAL REQUIREMENTS.

FRAME TYPE TO COORDINATE WITH LATEST ARCHITECTURAL REFLECTING CEILING AND CEILING GRID PLANS.

 FOR DIMENSIONS AND AIRFLOW CAPACITY SEE DESIGN DRAWINGS. NECK TO MATCH CONNECTED DUCTWORK

SQUARE RETURN DIFFUSERS

(DESIGNATED "CR-A" ON PLAN).

MANUFACTURER 350 RL WITH 45° BLADES MODEL NO.

 AS PER ARCHITECTURAL REQUIREMENTS. TO COORDINATE WITH LATEST

ARCHITECTURAL REFLECTING CEILING AND CEILING GRID PLANS. - FOR DIMENSIONS, AND AIRFLOW

CAPACITY SEE DESIGN DRAWINGS.

ELECTRONICALLY, OR IN ANY OTHER MANNER WITHOUT THE EXPRESS WRITTEN CONSENT OF R.I.P CONSTRUCTION CONSULTANTS, INC. 2. THE CONTRACTOR SHALL CHECK AND VERIFY ALL CONDITIONS AND DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO START OF WORK. 3. IT IS A VIOLATION OF NYS EDUCATION DEPT. LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ARCHITECT OR ENGINEER, TO ALTER THIS PLAN IN ANY WAY. 4. THIS LAYOUT COMPLIES WITH THE 2010 E.C.C.C.

NYS LOCAL LAW 48/2010 & LOCAL LAW 1/2011

REVISIONS:

DISCLAIMER NOTE

1. THE ENTIRE CONTENTS OF THIS DOCUMENT, INCLUDING ALL SKETCHES, PLANS, STUDIES, DRAWINGS, SCHEDULES, AND SPECIFICATIONS, AND

LANDLORD'S / OWNER'S INFORMATION:

NEW YORK CITY EXPEDITOR:

R.I.P. C.C. INC.

325 BROADWAY SUITE 304 NEW YORK, NY 10007 TEL: 212-334-7400

ARCHITECT / ENGINEER OF RECORD:

EDWARD GUTERMAN P.E. #061893-1 325 BROADWAY SUITE 304 NEW YORK, NY 10007 212-334-4114

CONSULTING ENGINEERS

GUTH-DECONZO CONSULTING ENGINEERS 242 30TH STREET, SUITE 301 NEW YORK, NY 10001 212-967-4306



MATTHEW N. DeCONZO, PE LICENSE NO. 066664

PROJECT ADDRESS:

HEAT ME 53 WOOSTER STREET NEW YORK, NEW YORK

SHEET TITLE:

03-23-20

4264-G04

MECHANICAL SCHEDULES

NONE

NYC DOB BSCAN

M-501.00

9 OF 12

NYC DOB STAMPS & SIGNATURES ACCEPTED Date: 09/28/2020

#M00350247-I1

DOB NOW APPLICATION

LANDMARKS PRESERVATION COMMISSION ELECTRONIC APPROVAL - 08/11/2020 - SEK

TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND

THESE PLANS ARE APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.

SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

- A. THE APPLICABLE PROVISIONS OF THE GENERAL CONSTRUCTION SPECIFICATIONS SHALL
- B. THE BASE BUILDING GENERAL PROVISIONS AND BIDDING REQUIREMENTS ARE PART OF THIS SECTION AND CONTRACT. ALL WORK PERFORMED HEREUNDER SHALL BE SUBJECT
- C. ALL APPLICABLE CODES, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE PART OF THESE SPECIFICATIONS. THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER. PRIOR TO SUBMITTING THE PROPOSAL. OF ANY WORK OR MATERIALS WHICH VIOLATE ANY OF THE ABOVE LAWS AND REGULATIONS. THE CONTRACTOR, AT NO ADDITIONAL COST TO THE OWNER, SHALL CORRECT ANY WORK DONE BY HIM CAUSING SUCH VIOLATION
- D. THE CONTRACT DRAWINGS ARE GENERALLY DIAGRAMMATIC AND DO NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS FOR DUCTS & PIPING. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING OF DUCTS AND PIPING TO AVOID OBSTRUCTIONS. EXACT LOCATIONS ARE SUBJECT TO APPROVAL OF THE ARCHITECT/ENGINEER. THIS CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE ALL NEW WORK WITH THE EXISTING SERVICES, INCLUDING THOSE OF OTHER TRADES.
- E. IT IS THE INTENTION OF THESE DRAWINGS AND SPECIFICATION TO CALL FOR FINISHED WORK, TESTED AND READY FOR OPERATION. ALL MATERIALS, WORK, INCIDENTAL ACCESSORIES OR OTHER DETAILS NOT SHOWN BUT NECESSARY TO MAKE THE WORK COMPLETE AND PERFECT IN ALL RESPECTS AND READY FOR OPERATION, EVEN IF NOT PARTICULARLY SPECIFIED, SHALL BE PROVIDED BY THE CONTRACTOR WITHOUT ADDITIONAL COST TO THE AUTHORITY.
- F. THE CONTRACTOR SHALL PROVIDE ALL ITEMS OF LABOR OR MATERIALS NOT SPECIFICALLY INDICATED, BUT REQUIRED TO COMPLETE THE INTENDED INSTALLATIONS.
- G. REMOVAL AND RELOCATION OF CERTAIN EXISTING WORK MAY BE NECESSARY FOR THE PERFORMANCE OF THE NEW WORK. ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE AND INCLUDE ALL CHANGES IN MAKING UP THE WORK PROPOSAL.
- H. CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AT THE JOB SITE PRIOR TO STARTING WORK. CONTRACTOR SHALL VERIFY SIZES AND LOCATIONS OF EXISTING PIPING AND OTHER EQUIPMENT THAT AFFECTS THE SCOPE OF WORK. CONTRACTOR SHALL SUBMIT A PHASING PLAN, AS REQUIRED. THE PHASING PLAN MUST BE APPROVED BY THE FACILITY'S REPRESENTATIVE PRIOR TO THE START OF ANY WORK.
- INVESTIGATE EACH SPACE THROUGH WHICH EQUIPMENT MUST BE MOVED. WHERE NECESSARY, EQUIPMENT SHALL BE SHIPPED FROM THE MANUFACTURER IN SECTIONS OF SIZE SUITABLE FOR MOVING THROUGH AVAILABLE RESTRICTIVE SPACES. ASCERTAIN FROM BUILDING OWNER AND TENANT AT WHAT TIMES OF DAY EQUIPMENT MAY BE MOVED THROUGH ALL AREAS. ALL WALLS, DOORS, SLABS AND OTHER BUILDING COMPONENTS THAT MUST BE REMOVED FOR ACCESS MUST BE REBUILT AND COORDINATED WITH THE ARCHITECT. EQUIPMENT MUST THEN BE ASSEMBLED IN PLACE UNDER DIRECT FIELD SUPERVISION BY A MANUFACTURERS REPRESENTATIVE AND MUST BE FIELD TESTED AND A LETTER OF ACCEPTANCE BE PROVIDED BY THE MANUFACTURER FOR THE FIELD INSTALLATION OF THE EQUIPMENT.
- J. SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT A CAREFUL EXAMINATION OF THE PORTIONS OF THE EXISTING BUILDING, EQUIPMENT, ETC., WHICH EFFECT THIS WORK, AND THE ACCESS TO SUCH SPACES, HAS BEEN MADE AND THAT THE CONTRACTOR IS FAMILIAR WITH EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK. LATER CLAIMS SHALL NOT BE MADE FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN DURING SUCH AN EXAMINATION. THE ON-SITE INSPECTION SHALL VERIFY EXISTING DUCTS (SIZES, CLEARANCES, ETC.) AND CONDITIONS. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS AND HIS PERFORMANCE AND WORK QUALIFICATIONS SHALL COMPLY WITH THE LATEST NEW YORK CITY BUILDING CODE, NFPA, THE APPLICABLE STANDARDS OF THE AMERICAN SOCIETY OF HEATING AND AIR CONDITIONING ENGINEERS, THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION, AND THE REGULATION OF ANY OTHER AUTHORITY HAVING
- <. THE CONTRACTOR'S PROPOSAL TO BE DONE FOR ALL WORK PERFORMANCE DURING</p> REGULAR WORKING HOURS. HOWEVER, WHEN DIRECTED BY THE CLIENT OR OWNER THIS CONTRACTOR CAN PERFORM WORK DURING OVERTIME HOURS. PRIOR TO DO SO CONTRACTOR TO OBTAIN WRITTEN AUTHORIZATION INDICATING DAYS, HOURS AND METHODS OF THE COMPENSATION FOR SUCH SERVICES.
- INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM THE DESIGN DOCUMENTS MAY BE MADE TO ACCOMPLISH THIS AT NO ADDITIONAL COST TO THE CLIENT OR OWNER. ANY CHANGES TO THE DESIGN DOCUMENTS, THAT INVOLVE ADDING EXTRA COST TO THE PROJECT, CAN BE MADE ONLY AFTER APPROVAL FROM THE ENGINEER OF RECORD, ARCHITECT OR OWNER/CLIENT. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS AND HIS PERFORMANCE AND WORK QUALIFICATIONS SHALL COMPLY WITH THE LATEST NEW YORK CITY BUILDING CODE, NFPA, THE APPLICABLE STANDARDS OF THE AMERICAN SOCIETY OF HEATING AND AIR CONDITIONING ENGINEERS. THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION, AND THE REGULATION OF ANY OTHER AUTHORITY HAVING JURISDICTION.
- M. CEILING HEIGHTS INDICATED ON DRAWINGS MUST BE MAINTAINED. THIS CONTRACTOR MUST RISE AND DROP DUCTWORK/PIPING BETWEEN EXISTING FRAMING AND UTILITIES AS REQUIRED. CHANGES IN THE CROSS-SECTIONAL DIMENSIONS OF A DUCT ARE PERMISSIBLE WHEN REQUIRED TO MEET JOB CONDITIONS AND SHALL MAINTAIN AT LEAST THE SAME EQUIVALENT CROSS-SECTIONAL DUCT AREA IN ACCORDANCE WITH THE LATEST EDITION OF THE ASHRAE GUIDE.
- N. THE WORK UNDER THIS CONTRACT SHALL BE PERFORMED SIMULTANEOUSLY WITH WORK OF OTHER TRADES, SO AS NOT TO DELAY THE OVERALL PROGRESS OF WORK.
- O. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR HIS WORK WITH ITS COMPLETION AND FINAL ACCEPTANCE AND SHALL REPLACE ANY OF SAME WHICH MAY BE DAMAGED, LOST OR STOLEN, WITHOUT ADDITIONAL COSTS TO THE OWNER.
- P. ALL MECHANICAL WORK SHALL BE FREE FROM DEFECTS IN BOTH WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE (1) YEAR FROM DATE OF FINAL ACCEPTANCE AND SHALL MEET ALL LOCAL AND STATE CODES. ALL DEFECTS, WHICH DEVELOP OR ARE DISCOVERED WITHIN THIS PERIOD SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COSTS.
- Q. EXISTING DUCTS, PIPES, INSULATION, ETC., THAT ARE DAMAGED DURING CONSTRUCTION PERIOD, WHETHER OR NOT DUE TO THE CONTRACTOR'S NEGLIGENCE, SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AND LEFT IN A CONDITION SATISFACTORY TO THE BUILDING ENGINEER.
- R. ALL WORK AND MATERIAL TO BE IN ACCORDANCE WITH BASE BUILDING SPECIFICATIONS, LEASE REQUIREMENT AND TENANT WORK LETTER UNLESS NOTED OTHERWISE ON PLANS. ALL MATERIALS AND EQUIPMENT ARE TO BE NEW AND FIRST CLASS QUALITY, UNLESS OTHERWISE NOTED, AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.
- S. ALL WORK IS TO BE CONDUCTED IN ACCORDANCE WITH THE BUILDING'S RULE AND REGULATIONS. A COPY OF THE REGULATIONS CAN BE OBTAINED AT THE BUILDING
- T. THE WORK IN THE BUILDING SHALL BE DONE WHEN AND AS DIRECTED, AND IN A MANNER SATISFACTORY TO THE OWNER. THE WORK SHALL BE PERFORMED SO AS TO CAUSE THE LEAST POSSIBLE INCONVENIENCE AND DISTURBANCE TO THE PRESENT OCCUPANTS.
- U. ALL PRESENT MATERIALS AND CONSTRUCTION DEBRIS TO BE REMOVED UNDER THIS CONTRACT SHALL BECOME RESPONSIBILITY OF THE CONTRACTOR. ALL REMOVED EXISTING EQUIPMENT TO BE RETURNED BACK TO THE BUILDING OR TO THE CLIENT/OWNER FOR THE DIRECTIONS AND/OR SAFE KEEPING.

LAND MINIOR INTERFERENCE WITH REGULAR OPERATION OF EXISTING FACILITIES. INSTALL ELECTIFORTION CALVESTAD THE ROUNT OF CONNECTIONS TO MINIMIZE SHUTDOWN TIME.

- W. CONNECT NEW WORK TO EXISTING WORK IN NEAT AND AN APPROVED MANNER. RESTORE EXISTING WORK DISTURBED WHILE INSTALLING NEW WORK TO ACCEPTABLE CONDITION AS DETERMINED BY ENGINEER.
- X. DISCONNECT, REMOVE AND/OR RELOCATE EXISTING MATERIAL, EQUIPMENT AND OTHER WORK AS NOTED OR REQUIRED FOR PROPER INSTALLATION OF NEW SYSTEM.
- Y. ALL EXISTING SUPPLY, RETURN AND OUTSIDE AIR DUCTWORK AS WELL AS STEAM, HOT WATER AND CHILLED WATER PIPING WHERE INSULATION IS MISSING OR DAMAGED SHALL 5 APPROVALS AND SUBSTITUTIONS BE FULLY INSULATED WITH 1-1/2" THICK THERMAL INSULATION BY THIS CONTRACTOR AS PART OF THE SCOPE OF WORK AT NO ADDITIONAL COST TO THE CLIENT.
- Z. PROVIDE SMOKE DETECTORS AT SUPPLIES AND RETURNS FOR ALL AIR DISTRIBUTION SYSTEMS HAVING A CAPACITY OVER 2000 CFM. FOR SUPPLIES, DETECTORS SHALL BE INSTALLED DOWNSTREAM OF AIR FILTERS AND AHEAD OF ANY BRANCH CONNECTIONS. FOR RETURNS, DETECTORS SHALL BE INSTALLED UPSTREAM OF ANY FILTERS, EXHAUST AIR, OUTDOOR AIR CONNECTIONS, OR DECONTAMINATION EQUIPMENT AND APPLIANCES.
- AA. WHERE RETURN AIR RISERS SERVE TWO OR MORE STORIES AS PART OF A RETURN AIR SYSTEM HAVING A DESIGN CAPACITY GREATER THAN 15,000 CFM, SMOKE DETECTORS SHALL BE INSTALLED AT EACH STORY AND UPSTREAM OF THE DUCT OR PLENUM CONNECTIONS TO THE RISERS.
- AB. PROVIDE REMOVABLE ACCESS TILE AND/OR ACCESS DOORS IN HUNG CEILINGS, SHAFTS AND WALLS FOR VOLUME DAMPERS AND ALL OTHER BASE BUILDING MECHANICAL EQUIPMENT AND DEVICES THAT ARE LOCATED INSIDE THE TENANT SPACES. HVAC CONTRACTOR SHALL FURNISH ACCESS LOCATION REQUIREMENTS TO A GENERAL CONTRACTOR. ACCESS TILE IDENTIFICATION: PROVIDE BUTTONS, TABS, AND MARKERS TO IDENTIFY LOCATION OF CONCEALED VALVES, DAMPERS AND EQUIPMENT.
- AC. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROLLED INSPECTION AS PART OF THIS CONTRACT. MECHANICAL CONTRACTOR SHALL PROVIDE THE NAME OF A LICENSED PROFESSIONAL ENGINEER TO ARCHITECT WHEN AWARDED CONTRACT.
- AD. THE FINAL ACCEPTANCE WILL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, BALANCED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL REQUIRED CERTIFICATES OF INSPECTION AND APPROVAL.
- AE. ALL OPENINGS RESULTING FROM REMOVAL OF EXISTING DUCTWORK, CEILING DIFFUSERS AND CEILING REGISTERS SHALL BE BLANKED-OFF AND CAPPED AIR TIGHT, AS PER
- AF. UNLESS OTHERWISE SPECIFIED, INCLUDE ALL CUTTING AND PATCHING OF EXISTING FLOORS. WALLS, PARTITIONS AND OTHER MATERIALS IN THE EXISTING BUILDING. THE CONTRACTOR SHALL RESTORE THESE AREAS TO A CONDITION SATISFACTORY TO THE BUILDING MANAGER.
- AG. DESIGN AND PERFORMANCE OF COMPONENTS AND METHODS SPECIFIED HEREIN SHALL COMPLY WITH THE APPLICABLE PROVISIONS OF THE CODES, STANDARDS, AND MANUFACTURER'S RECOMMENDATIONS OF THE ENTITIES LISTED BELOW:

NEW YORK CITY BUILDING CODE ASHRAE AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING

ENGINEERS NEW YORK CITY ENERGY CONSERVATION CONSTRUCTION CODE NYCECCC

ASTM AMERICAN SOCIETY FOR TESTING MATERIALS

AMERICAN NATIONAL STANDARDS INSTITUTE

UNDERWRITER'S LABORATORIES, INC NATIONAL FIRE PROTECTION ASSOCIATION

SHEET METAL AND AIR CONDITIONING CONTRACTOR'S NATIONAL 8. COORDINATION ASSOCIATION

ASME AMERICAN SOCIETY OF MECHANICAL ENGINEERS

AIR MOVING AND CONTROL ASSOCIATION AMCA

ARI AMERICAN REFRIGERATION INSTITUTE.

MSS MANUFACTURER'S STANDARDIZATION SOCIETY OF THE VALVE AND FITTING INDUSTRY

2. OPERATING & MAINTENANCE INSTRUCTIONS

- A. AFTER FINAL TESTS AND ADJUSTMENTS, FULLY INSTRUCT OWNER'S OPERATING PERSONNEL IN ALL DETAILS OF OPERATION FOR EQUIPMENT INSTALLED.
- B. PROVIDE TO THE OWNER OPERATION AND MAINTENANCE MANUALS.
- C. GUARANTEE AND SERVICE. 1. THE CONTRACTOR SHALL GUARANTEE THE ENTIRE INSTALLATION FOR A PERIOD OF ONE YEAR FROM THE DATE OF THE FINAL ACCEPTANCE OF THE INSTALLATION BY THE OWNER.
- 2. THE CONTRACTOR SHALL DURING THE PERIOD OF GUARANTEE REPLACE OR REPAIR AT HIS OWN EXPENSE ANY PIECE OF EQUIPMENT AND/OR MATERIAL WHICH IS FOUND TO BE DEFECTIVE. THE CONTRACTOR SHALL ALSO REPAIR ALL DAMAGE TO 9. NOISE CONTROL SURROUNDING WORK CAUSED BY THE FAILURE, REPAIR OR REPLACEMENT OF DEFECTIVE EQUIPMENT AT HIS OWN EXPENSE.

3. SHOP DRAWINGS & EQUIPMENT SUBMISSIONS

- A. SIX (6) COPIES OF DUCTWORK AND PIPING AND CERTIFIED EQUIPMENT MANUFACTURER'S DATA SHALL BE SUBMITTED FOR APPROVAL PRIOR TO FABRICATION, ERECTION OR PURCHASE.
- PRODUCT DATA SUBMIT MANUFACTURER'S PRINTED LITERATURE, CATALOG CUTS. CERTIFIED EQUIPMENT PERFORMANCE DATA, WIRING DIAGRAMS AND INSTALLATION INSTRUCTIONS.
- C. SHOP DRAWINGS SUBMIT PLANS, SECTIONS, DETAILS, SCHEDULES AND CALCULATIONS. LAYOUTS SHALL BE DOUBLE LINE, SCALE: 3/8"=1'-0" COORDINATED WITH OTHER TRADES AND WITH BUILDING CONSTRUCTION ELEMENTS. SUBMIT ONE REPRODUCIBLE AND FIVE (5) PRINTS OF EACH DRAWING.
- D. <u>MAINTENANCE MANUALS</u> PREPARE OPERATING AND MAINTENANCE MANUAL INCLUDING HE FOLLOWING: MANUFACTURER'S LITERATURE DESCRIBING EACH PIECE OF EQUIPMENT.
- COPIES OF PRODUCT WARRANTIES AND GUARANTIES. 3. OPERATING AND MAINTENANCE PROCEDURES, SERVICING INSTRUCTIONS.
- ALL SHOP DRAWINGS MUST BE APPROVED BY THE BUILDING MANAGEMENT OFFICE BEFORE CONSTRUCTION PROCEEDS, INCLUDING THE FOLLOWING:
 - CATALOG CUTS AND PERFORMANCE OF PROPOSED MECHANICAL EQUIPMENT (6 SETS) 2. CONTRACTOR 3/8"=1'-0" SCALE SHEET METAL SHOP DRAWINGS (6 SETS) SHOP DRAWINGS MUST BE APPROVED BY BUILDING MANAGEMENT OFFICE BEFORE CONSTRUCTION PROCEEDS.
 - 3. PRESSURE TEST REPORTS AND WATER PURITY TEST REPORTS (6 SETS).
 - 4. AIR AND WATER BALANCE REPORTS (2 SETS). WHEN BALANCING REPORT IS SUBMITTED TO THE BUILDING, INCLUDE 1/16" SCALE HVAC DRAWING NOTING DIFFUSERS NOS. AND COLUMN NOS. REPORT MUST BE SUBMITTED WITHIN 2 WEEKS AFTER BALANCING IS COMPLETED.

4. RECORD DRAWINGS

- A. REPRODUCIBLE RECORD DRAWINGS SHALL BE SUPPLIED UPON WHICH CORRECTIONS SHALL BE MADE TO PROVIDE AN ACCURATE AND COMPLETE RECORD OF THE WORK AS
- B. AS-BUILT INFORMATION SHALL BE SUBMITTED AS FOLLOWS: 1. CAD DRAWING FILES ON DISKS IN AUTOCAD VERSION 12 FORMAT ONE (1) SET OF REPRODUCIBLE DRAWINGS. TWO (2) SETS OF BLUEPRINTS.

- A. IT IS THE INTENT OF THESE SPECIFICATIONS THAT WHEREVER A MANUFACTURER IS SPECIFIED AND SUBSTITUTIONS ARE MADE, THEY SHALL CONFIRM IN ALL RESPECTS TO THE SPECIFIED ITEM. CRITERIA AS DELINEATED FOR EQUIPMENT HALL BE INTERPRETED AS MINIMUM PERFORMANCE REQUIREMENTS.
- SUBSTITUTED EQUIPMENT WHERE PERMITTED MUST CONFORM TO SPACE REQUIREMENTS. ANY SUBSTITUTED EQUIPMENT THAT CANNOT MEET SPACE REQUIREMENTS, WHETHER APPROVED OR NOT, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. ANY MODIFICATION OF RELATED SYSTEMS OR ADDITIONAL COSTS THAT RESULT FROM SUBSTITUTED EQUIPMENT SHALL BE BORNE BY THIS CONTRACTOR.

6. ELECTRICAL WIRING & WIRING DIAGRAMS

- A. ELECTRICAL WIRING FOR POWER AND MOTOR STARTERS SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR UNDER ANOTHER DIVISION OF CONTRACT WORK.
- B. THE MECHANICAL CONTRACTOR SHALL PREPARE AND SUBMIT FOR APPROVAL TERMINAL POINT TO TERMINAL POINT, COMPLETELY COORDINATED AND INTEGRATED WIRING DIAGRAMS FOR ALL WIRING REQUIRING FIELD INSTALLATIONS BY THE ELECTRICAL
- C. SPECIFIC WIRING DIAGRAMS OF FACTORY INSTALLED EQUIPMENT WIRING SHALL ALSO BE SUBMITTED FOR APPROVAL AND FURNISHED TO THE ELECTRICAL CONTRACTOR FOR HIS INSTALLATION REQUIREMENTS AND OTHER USES.
- D. ALL CONTROL SHALL BE ELECTRIC, ALL ELECTRICAL WORK TO BE IN ACCORDANCE WITH NEW YORK STATE ELECTRICAL CODE. PROVIDE REQUIRED TRANSFORMER SWITCHES, SENSORS, RELAYS AND ALL WIRING REQUIRED TO ACCOMPLISH FULL CONTROL.
- E. ALL WIRING, STARTERS, SWITCHES, ETC. SHALL BE IN FULL ACCORDANCE WITH ALL LOCAL AND INSURANCE UNDERWRITERS' CODE REQUIREMENT.
- FURNISH DETAILED COMPOSITE WIRING DIAGRAMS FOR THOSE INSTALLING THE ELECTRICAL WORK AND FURNISH SUCH OTHER INFORMATION NECESSARY TO ASSURE THE PROPER CONNECTION. OPERATION AND CONTROL OF MOTORIZED EQUIPMENT, INCLUDING INTERLOCKS, AUTOMATIC OR SAFETY CONTROLS AND AUXILIARY CIRCUITS.

7. CODES, PERMITS AND INSPECTIONS

- A. ALL WORK SHALL MEET OR EXCEED LATEST REQUIREMENTS OF THE N.Y. CITY CODE, MRI MNFR., BLDG. STANDARDS AND OTHER AUTHORITIES, EXERCISING JURISDICTION OF THE WORK OF THIS PROJECT.
- B. ANY PORTION OF WORK WHICH IS NOT SUBJECT TO THE APPROVAL OF AN AUTHORITY HAVING JURISDICTION SHALL BE PROVIDED IN ACCORDANCE WITH NATIONAL FIRE PROTECTION ASSOCIATION REQUIREMENTS.
- C. SECURE PERMITS AND INSPECTION CERTIFICATES AND TRANSMIT SAME TO THE OWNER AT THE COMPLETION OF THE WORK.
- D. CONTRACTOR SHALL BE RESPONSIBLE FOR FILING ALL DOCUMENTS WITH ALL CITY AND STATE AGENCIES. CONTROLLED INSPECTION SHALL BE DONE BY CONTRACTOR IN THE PRESENCE OF A REPRESENTATIVE.

- A. ALL NEW DUCTWORK SHALL BE KEPT AS HIGH AS POSSIBLE TO MAINTAIN CEILING HEIGHTS SHOWN ON ARCHITECTURAL DRAWINGS.
- B. MECHANICAL CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL OTHER TRADE.
- C. WHERE PIPING, LIGHTS AND DUCTWORK CONFLICT, DUCTWORK SHALL BE. COORDINATED TO SITE CONDITIONS.
- D. CONNECT NEW WORK TO EXISTING AS SHOWN ON THE DRAWING.
- E. CONTRACTOR SHALL COORDINATE EXACT LOCATION OF ALL AIR OUTLETS THERMOSTATS AND SWITCHES WITH ARCHITECT'S REFLECTED CEILING PLANS.
- COORDINATE LOCATION OF MECHANICAL EQUIPMENT. PIPING AND DUCTWORK WITH THE WORK OF OTHER TRADES, PROVIDING CLEARANCES FOR INSULATION SERVICING, REMOVAL OF COMPONENTS AND EQUIPMENT DISASSEMBLY.
- G. COORDINATE PROVISION OF OPENINGS IN WALLS AND SLABS, POURING OF CONCRETE PADS. SETTING OF SLEEVES AND CURBS.
- H. VERIFY ALL DIMENSIONS BY FIELD MEASUREMENT
- I. SEQUENCE PHASES OF MECHANICAL WORK WITH THE WORK OF OTHER TRADES.

- A. PROVIDE ACOUSTIC DUCT LINER FOR THE FOLLOWING DUCTS: 1. ALL DUCTS UPSTREAM AND DOWNSTREAM FROM ALL FANS AND AIR CONDITIONING UNITS FOR A LENGTH OF NOT LESS THAN 15 FT. ALL AIR TRANSFER DUCTS.
- 3. DOWNSTREAM AND UPSTREAM OF ALL VARIABLE AIR VOLUME AND CONSTANT VOLUME BOXES FOR A MINIMUM OF 10 FT.
- 4. ALL MIXED AIR PLENUMS, EXCEPT WHERE MOISTURE CARRYOVER FROM OUTDOOR AIR LOUVER WILL OCCUR. 5. WHERE NOTED ON THE CONTRACT DRAWINGS.
- B. MATERIAL SHALL BE FIBERGLASS, MINIMUM 3 LB. DENSITY, 1 IN. THICKNESS, MAXIMUM 0.26 K FACTOR AT 75° F MEAN TEMPERATURE WITH NEOPRENE COATED FINISH AND STENCILED IN ACCORDANCE WITH NFPA 90 MAXIMUM FLAME SPREAD SHALL BE 25, AND MAXIMUM SMOKE DEVELOPED SHALL BE 50. IT SHALL BE SIMILAR TO JOHNS-MANVILLE LINACOUSTIC. OR AN APPROVED EQUAL.
- C. ALL SOUND-LINING, ADHESIVES, FACES AND ACCESSORIES TO BE APPLIED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS, EXCEPT AS OTHERWISE NOTED.
- D. PROVIDE RESILIENT SUPPORTS (ISOLATORS) FOR METAL PIPING UP STREAM AND DOWNSTREAM FROM ALL POWER DRIVEN EQUIPMENT FOR A LENGTH OF 10 FT, OR 50 PIPE DIAMETERS. WHICHEVER IS GREATER.
- RESILIENT ISOLATORS SHALL HAVE THE FOLLOWING MINIMUM STATIC DEFLECTIONS: 1. 1 INCH FOR PIPING WITH OUTSIDE DIAMETERS 4 INCHES AND LARGER. 2. 1 INCH FOR PIPING WITH OUTSIDE DIAMETERS LESS THAN 4 INCHES.
- SIMILAR EQUIPMENT THAT IS NOT POWER DRIVEN, WITHIN 50 PIPE DIAMETERS OF POWER DRIVER EQUIPMENT SHALL ALSO BE RESILIENTLY SUPPORTED. UNLESS THE EQUIPMENT IS MOUNTED ON A GRADE LEVEL FLOOR. 1. ISOLATORS WILL HAVE 1 INCH STATIC DEFLECTION AND SHALL INCORPORATE APPROVED PADS WITH & INCH STATIC DEFLECTION.

EQUIPMENT SUCH AS HEAT EXCHANGERS, ABSORPTION REFRIGERATION MACHINES, OR

10. VIBRATION ISOLATION SYSTEMS

- A. ALL ROTATING, REVOLVING OR RECIPROCATING EQUIPMENT, SHALL BE FURNISHED WITH SEISMICALLY DESIGNED VIBRATION ISOLATORS, TO PREVENT THE TRANSMISSION OF OBJECTIONABLE NOISES, SOUND OR VIBRATIONS TO THE OCCUPIED SPACES AND TO THE BUILDING STRUCTURES.
- B. VIBRATION ISOLATORS FOR CEILING SUPPORTED EQUIPMENT SHALL HAVE A MAXIMUM LATERAL MOTION UNDER EQUIPMENT START-UP OR SHUTDOWN CONDITIONS OF 1/4". MOTIONS IN EXCESS SHALL BE RESTRAINED BY SPRING TYPE MOUNTINGS.
- C. VIBRATION ISOLATOR SHALL BE PROVIDED BY EITHER OF THE FOLLOWING MANUFACTURERS:
- MASON INDUSTRIES VIBRATION ELIMINATOR CO.
- 3. CONSOLIDATED KINETICS CO.
- D. MOUNTING OF CEILING SUPPORTED FANS AND AC UNITS:
- 1. ALL SUCH UNITS SHALL BE HUNG BY MEANS OF VIBRATION ISOLATOR HANGERS MADE OF A STEEL HOUSING OR RETAINER INCORPORATING A STEEL SPRING AND NEOPRENE MOUNTING.
- 2. IF THE EQUIPMENT TO BE MOUNTED IS NOT FURNISHED WITH INTEGRAL STRUCTURAL FRAMES AND EXTERNAL MOUNTING LUGS (BOTH OF SUITABLE STRENGTH AND RIGIDITY), APPROVED STRUCTURAL SUB-BASE SHALL BE INSTALLED IN THE FIELD. INSTALLED STRUCTURAL SUB-BASE SHALL SUPPORT THE EQUIPMENT TO BE HUNG, INCLUDING ADDITIONAL LOAD DUE TO FLUIDS AND OTHER COMPONENTS WITHIN THE UNIT DURING OPERATION, WHICH SHALL BE SUPPORTED BY SPECIFIED HANGERS AND HANGER SECUREMENTS.
- ISOLATORS SHALL BE ONE OF THE FOLLOWING OR AS APPROVED: a. FANS - TYPE HD - M.I.I. AND SUPPLY/OUTSIDE AIR FANS. AIR HANDLING UNITS - TYPE 30N M.I.I. - MAXIMUM 1.75".
- STATIC DEFLECTION AT INSTALLED OPERATING WEIGHTS. 4. DIAGONAL HANGER ROD ISOLATORS SHALL BE PROVIDED AS REQUIRE TO LIMIT HORIZONTAL MOTION TO 1/4 INCH MAXIMUM UNDER FAN OPERATING CONDITIONS.
- E. MOUNTING OF FLOOR MOUNTED AC UNITS: 1. FLOOR MOUNTED AC UNITS SHALL BE MOUNTED ON 3/4"WAFFLE NEOPRENE PADS WITH SUITABLE TOP BEARING PLATE SIZE FOR 0.08" STACK DEFLECTION.

11. LEAK TESTING OF REFRIGERANT SYSTEMS

- A. TESTING OF ALL FORCED AIR AND REFRIGERANT CONTAINING HVAC SYSTEMS WILL BE PERFORMED AS REQUIRED BY THE NEW YORK CITY BUILDING CODE (OR OTHER AUTHORITIES HAVING JURISDICTION). TESTS WILL BE PERFORMED IN THE PRESENCE OF A BUILDING REPRESENTATIVE AND WITNESSED BY NYC SPECIAL INSPECTOR WHEN REQUIRED BY CHAPTER 17.
- WORK IN THIS SECTION INCLUDES THE PROVIDING OF LABOR, MATERIALS, EQUIPMENT AND SERVICES NECESSARY FOR THE COMPLETE TESTING OF ALL HVAC SYSTEMS IN ACCORDANCE WITH THE NEW YORK CITY BUILDING CODE, CONTRACT DOCUMENTS, PROCEDURES, AND STANDARDS DESCRIBED IN THE LATEST MANUALS AS PUBLISHED BY AMERICAN SOCIETY FOR TESTING & MATERIALS (ASTM), AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR CONDITIONING ENGINEERS (ASHRAE) THE SHEET METAL AND AIR CONDITIONING CONTRACTOR'S NATIONAL ASSOCIATION, INC. (SMACNA) FOR THE FOLLOWING: 1. FORCED AIR SYSTEMS INSTALLED IN PART OR COMPLETELY OUTSIDE OF THE
- BUILDING'S THERMAL ENVELOPE AND/OR WITHIN UNCONDITIONED SPACES. 2. REFRIGERATION HVAC SYSTEMS INCLUDING BUT NOT LIMITED TO SPLIT AC UNITS, VARIABLE REFRIGERANT, HEAT PUMPTS, ETC.
- C. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY SERVICES, ALL TEST APPARATUS, ALL TEMPORARY SEALS, AND ALL QUALIFIED PERSONNEL SERVICES NECESSARY TO CONDUCT THE SPECIFIED TESTING.
- D. ALL MEASURING INSTRUMENTATION USED SHALL BE CALIBRATED, UNEXPIRED, AND MAINTAINED IN GOOD WORKING ORDER. ALL INSTRUMENTATION SHALL BE CALIBRATED BY AN ISO 17025 ACCREDITED AGENCY.
- E. ALL SYSTEMS REQUIRING TESTING SHALL BE TESTED AND DEMONSTRATED AS ACCEPTABLE BEFORE A NYC SPECIAL INSPECTOR. TESTING SHALL BE PERFORMED AND WITNESSED BEFORE ANY PORTION IS TO BE CONCEALED. ANY PORTION THAT IS NOT ABLE TO BE VISUALLY INSPECTED ON ALL SIDES DUE TO SHAFT WALLS, SHEETROCK CEILINGS, COATINGS, WRAPS OR OTHER FORMS OF CONSTRUCTION IS CONSIDERED TO BE CONCEALED.
- I. THE CONTRACTOR SHALL MAKE AND KEEP A RECORD OF, AND REPORT FOR, EACH TEST PERFORMED ON THESE SYSTEMS. THE REPORT WILL RECORD SUCH DETAILS AS SYSTEM TYPE TESTED, MATERIALS INSTALLED, TIMES THE TEST STARTED AND ENDED, PERSONS IN ATTENDANCE AND RESPECTIVE COMPANIES, IN ADDITION TO THE INITIAL AND FINAL RESULTS AS WELL AS PARAMETERS OF THE TEST(S).

REFRIGERATION SYSTEMS

- E. WORK AND TESTING IN THIS SECTION SHALL APPLY TO EVERY REFRIGERANT-CONTAINING PART OF EVERY SYSTEM THAT IS ERECTED ON-SITE FOR HEATING, VENTILATION, AND AIR-CONDITIONING SYSTEMS, EXCEPT COMPRESSORS, CONDENSERS, VESSELS, EVAPORATORS, SAFETY DEVICES, PRESSURE GAUGES AND CONTROL MECHANISMS LISTED AND FACTORY TESTED.
- F. THE TEST APPARATUS SHALL BE A TEMPORARY CONNECTION MADE TO THE TESTED PIPING CONSISTING OF A PRESSURIZED TANK OF AN INERT DRY GAS, REGULATOR VALVE SET 15 PSI ABOVE TEST PRESSURE, CALIBRATED PRESSURE GAUGE (OR OTHER PRESSURE INDICATOR), ONE OR MORE ISOLATING VALVES BETWEEN THE GAUGE, APPARATUS AND THE SYSTEM, AND OTHER ACCESSORIES NECESSARY TO CONNECT THE APPARATUS TO THE TESTED SYSTEM.
- G. LEAK TESTING OF REFRIGERANT SYSTEMS SHALL BE PERFORMED WITH AN INERT DRY GAS SUCH AS NITROGEN, OR CARBON DIOXIDE. GASES SUCH AS OXYGEN, AIR, FLAMMABLES GASES OR MIXTURES CONTAINING SUCH GASES SHALL NOT BE USED.
- H. BOTH THE HIGH AND LOW SIDE OF EACH SYSTEM SHALL BE TESTED AT NOT LESS THAN THE LOWER OF THE DESIGN PRESSURES OR THE PRESSURE RELIEF DEVICE(S) INSTALLED. THE DESIGN PRESSURES SHALL BE THOSE LISTED ON THE CONDENSING UNIT, COMPRESSOR, OR COMPRESSOR UNIT NAME-PLATE.
- I. LEAK TESTING SHALL BE PERFORMED FOR NO LESS THAN: 1. 4 HOURS — SYSTEMS WITH TOTAL CAPACITIES 10 TONS OR LESS.
- 2. 24 HOURS SYSTEMS WITH TOTAL CAPACITIES GREATER THAN 10 TONS.

LANDMARKS PRESERVATION WORK ARE AND SHALL REMAIN THE ELECTRONIC APPROVAL CONSTRUCTION CONSULTANTS, INC. THE DOCUMENTS OF THE DO

USED, PHÓTOCOPIED, OR REPRODUCED DIGITALLY ELECTRONICALLY, OR IN ANY OTHER MANNER WITHOUT THE EXPRESS WRITTEN CONSENT OF R.I.P. CONSTRUCTION CONSULTANTS, INC. 2. THE CONTRACTOR SHALL CHECK AND VERIFY ALL CONDITIONS AND DIMENSIONS AND REPORT ANY

DISCI AIMER NOTE

DRAWINGS, SCHEDULES, AND SPECIFICATIONS, AND

. THE ENTIRE CONTENTS OF THIS DOCUMENT NCLUDING ALL SKETCHES, PLANS, STUDIES,

START OF WORK. 3. IT IS A VIOLATION OF NYS EDUCATION DEPT. LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ARCHITECT OR ENGINEER, TO ALTER THIS PLAN IN ANY WAY. 4. THIS LAYOUT COMPLIES WITH THE 2010 E.C.C.C. NYS LOCAL LAW 48/2010 & LOCAL LAW 1/2011

REVISIONS:

DISCREPANCIES TO THE ARCHITECT PRIOR TO

LANDLORD'S / OWNER'S INFORMATION:

R.I.P. C.C. INC. 325 BROADWAY SUITE 304 NEW YORK, NY 10007 TEL: 212-334-7400

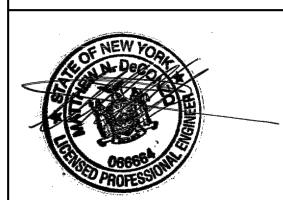
NEW YORK CITY EXPEDITOR

ARCHITECT / ENGINEER OF RECORD

EDWARD GUTERMAN P.E. #061893-1 325 BROADWAY SUITE 304 NEW YORK, NY 10007 212-334-4114

CONSULTING ENGINEERS

GUTH-DECONZO CONSULTING ENGINEERS 242 30TH STREET, SUITE 301 NEW YORK, NY 10001 212-967-4306



MATTHEW N. DeCONZO, PE LICENSE NO. 066664

PROJECT ADDRESS

NEW YORK, NEW YORK

03-23-20

PROJECT#

4264-G04

DRAWN BY:

WH

SCALE:

NONE

HEAT ME 53 WOOSTER STREET

SHEET TITLE MECHANICAL SPECIFICATIONS

DOB NOW APPLICATION

NYC DOB STAMPS & SIGNATURES

ACCEPTED

Date: 09/28/2020

#M00350247-I1

NYC DOB BSCAN

DRAWING NUMBER: M-601.00

10 OF 12

TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND THESE PLANS ARE APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION SHEET. ALL OTHER MATTERS SHOWN SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE. ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.

ALL OF THE AIR SYSTEMS.
 ALL SUPPLEMENTARY TENANT AIR CONDITIONING UNITS.

3. ALL RETURN, TRANSFER AND EXHAUST AIR SYSTEMS.

- B. BALANCE AND ADJUST AIR DISTRIBUTION SYSTEM TO QUANTITIES INDICATED ON DRAWINGS IN ACCORDANCE WITH ASSOCIATED AIR BALANCE COUNCIL (AABC) MANUAL, LATEST FDITION.
- C. BALANCING AND TESTING SHALL BE PERFORMED AND SUPERVISED BY A CERTIFIED INDEPENDENT FIRM SPECIALIZING IN TESTING AND BALANCING. FIRM SHALL BE A MEMBER OF AABC. TEST REPORTS SHALL BE SUBMITTED IN BOUND FOLDERS AND ON AABC TYPE REPORT FORMS. ALL DIFFUSERS SHALL BE IDENTIFIED BY DESIGNATIONS ON
- D. ALL INSTRUMENTS USED SHALL HAVE AN UNEXPIRED CALIBRATION, AND WILL BE MAINTAINED IN GOOD WORKING ORDER.
- E. THE TESTING SHALL BE PERFORMED IN THE PRESENCE OF A BUILDING REPRESENTATIVE.
- F. THE CONTRACTOR SHALL PROVIDE ALL ADDITIONAL BALANCING DAMPERS, PRESSURE TAPS, GAUGES AND OTHER SIMILAR APPURTANCES AS REQUIRED FOR A PROPERLY BALANCED SYSTEM AND AT NO ADDITIONAL COST TO THE OWNER.
- G. ALL BALANCING WORK SHALL BE PERFORMED IN STRICT ACCORDANCE TO THE PROCEDURES AND STANDARDS DESCRIBED IN THE "MANUAL FOR THE BALANCING AND ADJUSTMENT OF THE AIR DISTRIBUTION SYSTEMS" AS PUBLISHED BY THE SHEET METAL AND AIR CONDITIONING CONTRACTOR'S NATIONAL ASSOCIATION, INC. (SMACNA)
- H. THE TEST AND AIR BALANCE PROCEDURE SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:

 1. TEST AND ADJUST SYSTEM FOR THE DESIGN SUPPLY, RETURN AND EXHAUST AIR
- QUANTITIES.
 2. TEST AND RECORD SUPPLY AIR TEMPERATURES.
- 3. TEST AND RECORD ROOM AIR TEMPERATURES.

 4. ADJUST ALL MAIN SUPPLY EXHAUST AND RETURN AIR DUC
- 4. ADJUST ALL MAIN SUPPLY, EXHAUST AND RETURN AIR DUCTS TO PROPER DESIGN CFM.
- 5. ADJUST ALL ZONES TO PROPER DESIGN CFM SUPPLY, RETURN AND EXHAUST.
 6. TEST AND ADJUST EACH DIFFUSER, GRILLE AND REGISTER TO DESIGN REQUIREMENTS.
- I. THE CONTRACTOR SHALL HAVE THE TESTING AND BALANCING SPECIALIST COORDINATE ALL WORK OF THIS SECTION WITH THE RESPECTIVE MANUFACTURERS OF THE EQUIPMENT INVOLVED. BALANCING WORK SHALL NOT INTERFERE WITH NORMAL JOB PROGRESS SO AS TO PREVENT COMPLETION WITHIN THE SPECIFIED TIME.
- J. THE CONTRACTOR SHALL HAVE THE TESTING AND BALANCING SPECIALIST REVIEW HIS WORK WITH THE RESPECTIVE MANUFACTURERS, AND SHALL COORDINATE AND SCHEDULE ALL CORRECTIVE WORK
- K. IN THE EVENT THAT THE EQUIPMENT CANNOT BE PROPERLY BALANCED DUE TO LACK OF FINAL CONNECTION, THE CONTRACTOR SHALL HAVE THE TESTING AND BALANCING SPECIALIST ADVISE THE ENGINEER, IN WRITING, OF THE OMISSION PRIOR TO THE SUBMISSION OF THE FINAL BALANCING REPORT.
- L. ADJUSTMENT OR REPLACEMENT OF PARTS REQUIRED BY THE RESULTS OF THE TESTING AND BALANCING WORK SHALL BE MADE BY THE CONTRACTOR IN STRICT ACCORDANCE WITH THE RESPECTIVE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
- M. UPON COMPLETION OF WORK SPECIFIED ABOVE, ALL INFORMATION SHALL BE INSERTED ON A SHEET LISTING ALL ITEMS REQUIRED TO BE INCLUDED IN THE COMPLETE TESTING AND BALANCING REPORT. ALL SHEETS SHALL BE NEATLY TYPED. THREE (3) COPIES OF THE BALANCING REPORT MUST BE SUBMITTED TO THE ENGINEER FOR REVIEW.
- N. ALL OPENING IN DUCTS PLENUMS AND OTHER SIMILAR ITEMS, NECESSARY TO THE BALANCING WORK, SHALL BE REPAIRED BY THE CONTRACTOR IN A SUITABLE MANNER. ALL PATCHING MUST BE SUITABLE TO THE SERVICE OF THE SYSTEM SUCH AS MAINTAINING VAPOR SEALS IN COLD DUCTWORK AND OTHER SIMILAR SERVICES.
- O. RECOMMENDATIONS AND RESULTS OF THE TESTING AND BALANCING WORK WHICH ARE NECESSARY FOR THE PROPER OPERATION OF THE SYSTEMS, SHALL BE SUBMITTED IN WRITING TO THE ENGINEER. THE SUBMITTAL SHALL INCLUDE A SCHEMATIC DIAGRAM LOCATING ALL AIR INLETS AND OUTLETS.
- P. ALL AIR TERMINAL DEVICES SHALL BE BALANCED TO WITHIN FIVE PERCENT OF THEIR DESIGN REQUIREMENTS.
- Q. ALL FANS AND AIR HANDLING UNITS SHALL BE BALANCED TO WITHIN TEN PERCENT OF THEIR DESIGN CAPACITIES.
- R. THE TEMPERATURE CONDITIONS, BOTH D.B. AND W.B. AND SOUND LEVELS SHALL BE READ AND RECORDED.
- S. AFTER TESTING AND BALANCING WORK IS COMPLETE, THE CONTRACTOR SHALL INSTALL A NEW SET OF AIR FILTERS AND CLEAN UNIT COILS.

13. SHEET METAL DUCTWORK

ELECTRONIC APPROVA PECIO 1/2020 - SEK

- A. ALL DUCTWORK, DAMPERS AND ALL AUXILIARY DEVICES AND WORK NECESSARY TO MAKE THE VARIOUS AIR CONDITIONING AND VENTILATING SYSTEMS COMPLETE AND READY FOR SATISFACTORY OPERATION SHALL BE FURNISHED AND INSTALLED.
- B. IN ACCORDANCE WITH SMACNA STANDARDS PROVIDE DUCTWORK CASING ACCESS AIR CONNECTION AND BRANCH DUCT TO AIR OUTLETS FOR BALANCING PURPOSES, DOORS TO ALL CONCEALED CONTROLS, FUSIBLE LINKS OF DAMPERS, ETC.
- C. DUCTWORK LAYOUTS AND ROUTES AS SHOWN ON THE DRAWINGS ARE SCHEMATIC THEREFORE CHANGES IN DUCT SIZES AND/OR LOCATIONS SHALL BE MADE WHERE NECESSARY TO CONFORM TO SPACE CONDITIONS OR OBTAIN MAXIMUM HEADROOM CONDITIONS; WITHOUT ADDITIONAL COSTS TO THE OWNER.
- D. EXCEPT AS OTHERWISE SHOWN OR NOTED, ALL DUCTS AND OTHER SHEET METAL WORK SHALL BE PRIME SHEETS OF GALVANIZED STEEL AND SHALL COMPLY WITH NFPA 90A AND ASTM STANDARDS A525 AND A527.
- E. DUCTS SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH THE LATEST EDITIONS OF SMACNA AND ASHRAE. FOR DUCTWORK DOWNSTREAM OF AIR CONDITIONING UNITS A PRESSURE CLASSIFICATION OF 4" W.G. STATIC PRESSURE MAY BE USED. FOR DUCTWORK UPSTREAM OF THE AC UNIT A PRESSURE CLASSIFICATION OF 3" W.G. STATIC PRESSURE MAY BE USED. U.S. STANDARD GAUGES FOR DUCTWORK ARE TO CONFORM TO THE FOLLOWING REQUIREMENTS:
 1. UP TO 30" WIDE 24 GAUGE.
- H. MATERIALS FOR HANGERS & SUPPORTS, INCLUDING FASTENERS, ANCHORS, RODS, STRAPS TRIM AND ANGLES SHALL MATCH THE DUCT FURNISHED. HORIZONTAL DUCTS CAN BE SUPPORTED WITH HANGERS SECURED TO THE EXISTING CONCRETE SLAB ABOVE. THE EXISTING TABS THAT ARE EMBEDDED IN THE CONCRETE ARE TO BE INSPECTED AND USED IN LIEU OF NEW EXPANSION BOLTS WHEREVER POSSIBLE. REFER TO DETAILS SHOWN ON CONTRACT DRAWINGS.
- I. SHEETMETAL DUCTWORK SHALL BE SUPPORTED WITH APPROVED HANGERS AT NOT LESS THAN 8FT INTERVALS FROM BUILDING STRUCTURE, OR BY OTHER APPROVED SUPPORT SYSTEMS DESIGNED IN ACCORDANCE WITH NEW YORK CITY BUILDING CODE.
- J. FLEXIBLE DUCTWORK, WHERE APPROVED, SHALL BE SUPPORTED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
- K. ALL DUCTWORK INSTALLED EXPOSED TO VIEW SHALL BE FABRICATED WITH SLIP-ON TRANSVERSE JOINTS AND COMPONENTS CONSTRUCTED USING MANUFACTURER'S LANDMARKS SUPERIOR MATERIAL HICKNESS MENTOR CONFORMING TO SECTION "NOISE

- H. MATERIALS FOR HANGERS & SUPPORTS, INCLUDING FASTENERS, ANCHORS, RODS, STRAPS TRIM AND ANGLES SHALL MATCH THE DUCT FURNISHED. HORIZONTAL DUCTS CAN BE SUPPORTED WITH HANGERS SECURED TO THE EXISTING CONCRETE SLAB ABOVE. THE EXISTING TABS THAT ARE EMBEDDED IN THE CONCRETE ARE TO BE INSPECTED AND USED IN LIEU OF NEW EXPANSION BOLTS WHEREVER POSSIBLE. REFER TO DETAILS SHOWN ON CONTRACT DRAWINGS.
- I. SHEETMETAL DUCTWORK SHALL BE SUPPORTED WITH APPROVED HANGERS AT NOT LESS THAN 8FT INTERVALS FROM BUILDING STRUCTURE, OR BY OTHER APPROVED SUPPORT SYSTEMS DESIGNED IN ACCORDANCE WITH NEW YORK CITY BUILDING CODE.
- J. FLEXIBLE DUCTWORK, WHERE APPROVED, SHALL BE SUPPORTED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
- K. ALL DUCTWORK INSTALLED EXPOSED TO VIEW SHALL BE FABRICATED WITH SLIP-ON TRANSVERSE JOINTS AND COMPONENTS CONSTRUCTED USING MANUFACTURER'S GUIDELINES FOR MATERIAL THICKNESS, REINFORCEMENT SIZE AND SPACING, AND JOINT REINFORCEMENT. PROVIDE INTERNAL INSULATION CONFORMING TO SECTION "NOISE CONTROL" OF THIS SPECIFICATION.
- L. ALL DUCT SIZES SHOWN ON THE CONTRACT DRAWINGS ARE CLEAR INSIDE DIMENSIONS. WHERE INTERNAL ACOUSTICAL LINING IS REQUIRED, DUCT SIZES SHALL BE CORRESPONDINGLY INCREASED TO ACCOMMODATE THE LINER THICKNESS SO THAT NET CROSS—SECTIONAL AREAS WILL NOT BE REDUCED.
- M. RADIUS ELBOWS SHALL HAVE A CENTERLINE RADIUS EQUAL TO 1-1/2 TIMES DUCT WIDTH. PROVIDE SPLITTER VANES IN RADIUS ELBOWS WHERE INDICATED ON DRAWINGS SQUARE ELBOWS SHALL HAVE DOUBLE THICKNESS TURNING VANES MAXIMUM 4 IN. ON CENTER UNLESS SINGLE THICKNESS VANES ARE CLEARLY INDICATED ON THE DRAWINGS.
- N. TRANSITIONS IN DUCTWORK SHALL BE MADE WITH A SLOPE NOT TO EXCEED A RATIO OF 1 TO 5. A 1 TO 7 SLOPE RATIO IS PREFERRED.
- O. FOR DUCTS WITH A CROSS-SECTIONAL AREA 4 SQUARE FEET OR LESS, HANGERS SHALL BE NO MORE THAN 8 FEET APART; THE DISTANCES BETWEEN HANGERS SHALL BE MEASURED LINEAL ALONG THE DUCT.
- P. VOLUME DAMPERS CONSTRUCTION SHALL BE QUADRANT TYPE, MINIMUM 16 GAUGE, GALVANIZED STEEL, IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF THE SMACNA MANUAL, EXCEPT PROVIDE BEARING AT ONE END OF DAMPER ROD AND QUADRANT. INCLUDE APPROVED LEVER OPERATING AND LOCK—SCREW LOCKING DEVICES, MOUNTED AT OTHER END, AND INSTALLED IN ACCESSIBLE LOCATIONS. FOR INSULATED DUCTS. QUADRANTS SHALL BE MOUNTED ON A COLLAR TO CLEAR INSULATION.
- Q. UNLESS OTHERWISE NOTED, ALL NEW AND EXISTING LOW VELOCITY DUCTS SHALL BE SEALED TO MEET THE DUCT SEALING REQUIREMENT OF SEAL CLASS A4 W.G. OF SMACNA. THE FIRE HAZARD CLASSIFICATION OF THE SEALANT SHALL BE CLASS 1 (MAXIMUM FLAME SPREAD RATE OF 25, MAXIMUM SMOKE DEVELOPED RATE OF 50).
- R. HARD DUCT CONNECTIONS TO SUPPLY AIR DIFFUSER COLLARS AND DUCTS SHALL BE SEALED WITH 3M CO. 800 SEALANT AND CLAMPED WITH STAINLESS STEEL "IDEAL" TYPE 52 CLAMP.

14. GRILLES, REGISTERS AND DIFFUSERS

- A. FURNISH AND INSTALL ALL METAL DIFFUSERS, GRILLES AND REGISTERS AS INDICATED ON THE CONTRACT DRAWINGS. ALL SIZES, AIR DISTRIBUTION PATTERNS AND AIR VOLUME CAPACITIES SHALL BE AS SPECIFIED ON THE CONTRACT DRAWINGS.
- B. ALL DIFFUSERS AND REGISTERS SHALL BE PRIME COATED STEEL OR EXTRUDED ALUMINUM FINISHED, UNLESS OTHERWISE NOTED.
- C. ALL CEILING TYPE AIR DIFFUSERS SHALL BE PROVIDED WITH AIR EQUALIZING DEFLECTORS, FULLY ADJUSTABLE FOR HORIZONTAL TO VERTICAL AIR FLOW. ALL RETURN REGISTERS SHALL ALSO HAVE VOLUME DAMPERS. DAMPER OPERATING LEVERS SHALL BE ACCESSIBLE AT THE FACE OF AIR OUTLET.
- D. MARGIN TYPES AND METHODS OF ATTACHMENT FOR ALL DIFFUSERS, GRILLES AND REGISTERS SHALL BE COORDINATED WITH ARCHITECTURAL CEILING DETAILS, SPECIFICATIONS AND CEILING GRID.
- E. SUITABLE FOR OPERATION AT 20% EXCESS AND 20% LESS THAN NOTED CAPACITY FOR CONSTANT VOLUME SYSTEMS AND AT 20% EXCESS AND 60% LESS THAN NOTED CAPACITY FOR VARIABLE VOLUME SYSTEMS.
- F. UNLESS OTHERWISE SHOWN ON THE CONTRACT DRAWINGS, NOISE CRITERIA FOR ALL AIR TERMINAL DEVICES SHALL NOT EXCEED NOISE CRITERIA (NC)35, OR SOUND METER READING 40 DBA, MEASURED AT A LOCATION 42 IN. BELOW THE CENTER OF THE DEVICES. MANUFACTURER IS RESPONSIBLE FOR EXAMINING APPLICATION OF EACH OUTLET AND GUARANTEE THAT EACH WILL PROVIDE REQUIRED NC LEVELS AND COMFORT SPACE CONDITIONS WITHOUT DRAFTS THROUGHOUT OPERATING RANGE.
- G. ALL AIR TERMINAL DEVICES SHALL BE TITUS, KRUEGER, TUTTLE & BAILEY, OR AN APPROVED EQUAL.
- H. EXACT LOCATION FOR ALL DIFFUSERS, GRILLES AND REGISTERS SHALL BE COORDINATED WITH THE ARCHITECT. ARCHITECT'S DECISION SHALL PREVAIL.

15. INSULATION REQUIREMENTS

- A. INSULATION SHALL BE APPLIED TO DUCTWORK AND PIPING OF MATERIALS AS SPECIFIED
- B. NOTE THAT DUCTWORK THAT IS INTERNALLY AND ACOUSTICALLY INSULATED/LINED NEED NOT BE INSULATED ON THE EXTERIOR.
- C. INSULATION/LINING SHALL HAVE COMPOSITE (INSULATION OR FACING AND ADHESIVE USED TO ADHERE THE FACING TO THE INSULATION) FIRE AND SMOKE HAZARD RATINGS AS TESTED BY PROCEDURE ASTM E.84, NFPA 255 OR UL 723 NOT EXCEEDING:

FLAME SPREAD 25 SMOKE DEVELOPED 50

a. ACCESSORIES SUCH AS ADHESIVES, MASTICS, CEMENTS AND TAPES FOR FITTINGS SHALL HAVE THE SAME COMPONENT RATING AS LISTED ABOVE. ALL PRODUCTS OR THEIR SHIPPING CARTONS SHALL BEAR A LABEL INDICATING THAT FLAME AND SMOKE RATINGS DO NOT EXCEED REQUIREMENTS. TREATMENT OF FACINGS TO IMPART FLAME AND SMOKE—SAFETY SHALL BE PERMANENT THE USE OF WATERSOLUBLE TREATMENTS IS PROHIBITED.

D. DUCTWORK INSULATION MATERIAL 1. INSULATE INDOOR SHEET METAL AS FOLLOWS:

- a. ALL INDOOR AIR CONDITIONED AND/OR HEATED LOW PRESSURE SUPPLY DUCTWORK FROM FAN DISCHARGE AS WELL AS GENERAL EXHAUST, TO DIFFUSERS, GRILLES AND REGISTERS INCLUDING DIFFUSER PLENUMS 1-1/2" INSULATION, WITH A MINIMUM R-6 WITHIN UNCONDITIONED SPACES.
- b. INDOOR DUCT INSULATION SHALL BE 1-1/2 LB. PER CU. FT. DENSITY GLASS FIBER WITH A MAXIMUM K FACTOR OF 0.25 AT 75F MEAN TEMPERATURE, WITH REINFORCED FOIL—FACED, FLAME RESISTANT KRAFT VAPOR BARRIER.
- c. INSULATION SHALL BE SECURED WITH DUCT ADHESIVE. ALL JOINTS SHALL BE SEALED BY ADHERING A 2" SEALING LAP AT ALL JOINTS WITH VAPOR BARRIER ADHESIVE OR 3" STRIPS OF VAPOR BARRIER JACKET APPLIED WITH VAPOR BARRIER ADHESIVE. INSULATION SHALL THEN BE FASTENED WITH 16 GAUGE COPPER—CLAD WIRE OR FIBERGLASS CORD ON 12" CENTERS. ON DUCTS OVER 24" WIDE, WELDED PINS AND CLIPS SHALL BE USED ON THE UNDERSIDE.
- d. EXPOSED ROUND SHALL HAVE A WHITE VINYL REINFORCED FOIL VAPOR BARRIER. APPLICATION SAME EXCEPT WIRES SHALL BE OMITTED AND BLANKET SHALL BE SECURED BY STAPLING 2" LONGITUDINAL LAP. STAPLES SHALL BE COATED WITH VAPOR BARRIER COATING.
- 4. EXTENT OF DUCTWORK INSULATION FOR NEW DUCTWORK
- b. ALL SUPPLY DUCTWORK.c. ALL RETURN DUCTWORK.
- d. INSULATION SHALL BE IMPALED OVER WELDED PINS APPLIED TO DUCT SURFACE ON 12" TO 18" CENTERS. USE A MINIMUM OF TWO ROWS OF FASTENERS ON EACH SIDE OF DUCT. SECURE INSULATION WITH SUITABLE SPEED WASHERS OR CLIPS FIRMLY IMBEDDED INTO INSULATION.

- f. EXPOSED DUCT WORK SHALL HAVE A WHITE REINFORCED FOIL VAPOR BARRIER FACING. CARE SHALL BE TAKEN IN SEALING JOINTS SPEED WASHERS, ETC. WITH MATCHING STRIPS OF VAPOR BARRIER TO INSURE GOOD APPEARANCE.
- g. INSULATION SHALL BE SECURED WITH DUCT ADHESIVE. ALL JOINTS SHALL BE SEALED BY ADHERING A 2" SEALING LAP AT JOINTS WITH VAPOR BARRIER ADHESIVE OR 3" STRIPS OF VAPOR BARRIER JACKET APPLIED WITH VAPOR BARRIER ADHESIVE. INSULATION SHALL THEN BE FASTENED WITH 16 GAUGE COPPER—CLAD WIRE OR FIBER GLASS CORD ON 12" CENTERS ON DUCTS OVER 24" WIDE, WELDED PINS AND CLIPS SHALL BE USED ON THE UNDERSIDE.
- E. PIPE INSULATION1. INSULATE ALL PIPING, FITTINGS, AND VALVES IN ACCORDANCE WITH INSULATION

SCHEDULE FROM NYCECC, EXCEPT AS OTHERWISE NOTED.								
MINIMUM PIPE INSULATION THICKNESS								
FLUID OPERATION	INSULATION C	NOMINAL PIPE OR TUBE SIZE (IN)						
TEMP. RANGE & USEGE (F')	CONDUCTIVITY BTU*IN/(H*FR²*F*)	MEAN RATING TEMPERATURE, (F)	< 1	1 TO < 1 ½"	1 ½" TO < 4	4 < 8	> 8	
> 350	0.32 - 0.34	250	4.5	5.0	5.0	5.0	5.0	
215 - 350	0.29 - 0.32	200	3.0	4.0	4.5	4.5	4.5	
201 - 250	0.27 - 0.30	150	2.5	2.5	2.5	3.0	3.0	
141 - 200	0.25 - 0.29	125	1.5	1.5	2.0	2.0	2.0	
105 - 140	0.21 - 0.28	100	1.0	1.0	1.5	1.5	1.5	
40 - 60	0.21 - 0.27	75	0.5	0.5	1.0	1.0	1.0	
< 40	0.20 - 0.26	75	0.5	1.0	1.0	1.0	1.5	

- 2. INSULATION SHALL BE MINIMUM 6 LB DENSITY MOLDED FIBERGLASS INSULATION, MAXIMUM 0.23 K-FACTOR AT 75 DEG. F MEAN TEMPERATURE WITH FACTORY-APPLIED ALL PURPOSED (AP) FACING OR ALUMINUM JACKET.
- 3. FITTINGS, VALVES AND FLANGES SHALL ALSO BE INSULATED WITH COMPRESSED FIBERGLASS AND WIRED IN PLACE WITH 18 GAUGE GALVANIZED STEEL WIRE. PREMOLDED PVC INSULATION COVERS FOR FITTINGS ARE NOT ALLOWED.
- 4. BEFORE APPLYING INSULATION, ALL PRESSURE AND LEAK TESTS SHALL BE COMPLETED AND APPROVED.
 5. ALL INSULATION SHALL BE BUTTED FIRMLY TOGETHER. PROVIDE 2 IN. LAMP STRIPS
- AT ALL SEAMS SECURED WITH ADHESIVE. USE VAPOR BARRIER TAPE AND VAPOR—SEAL ADHESIVE WHERE REQUIRED. STAPLES ARE NOT PERMITTED.

 6. ALL INSULATION AND VAPOR BARRIERS SHALL BE CONTINUOUS PASSING THROUGH SLEEVES, HANGERS, ETC., OR OTHER OPENINGS. PROVIDE SADDLES OR SHIELDS FOR PROTECTION.

16. PIPING SYSTEMS - PIPING AND ACCESSORIES

- A. PROVIDE PIPING SYSTEMS SHOWN ON DRAWINGS COMPLETE INCLUDING PIPE, FITTINGS, VALVES, STRAINERS, MOTORIZED VALVES OPERATORS, HANGERS, SUPPORTS, SLEEVES, AND ACCESSORIES.
- B. CONDENSATE DRAIN PIPING SHALL BE COPPER HARD TEMPER TYPE "L", CONFORMING TO ASTM B-88 WITH WROUGHT COPPER SOLDER JOINT, CONFORMING TO ANSI B 16.18.
- C. INSTALL DRAIN VALVES AT ALL LOW POINTS OF PIPING AND AIR VENTS AT ALL HIGH
- D. ALL PIPING CONNECTIONS TO EQUIPMENT SHALL BE INSTALLED WITH UNION FOR EASY REMOVAL. UNIONS FOR 3 IN. OR LESS SHALL BE SIMILAR AND EQUAL TO MALLEABLE IRON WITH BRASS SEATS, CLASS 300, AS MANUFACTURED BY STOCKHAM, GRINNEL, OR AN APPROVED EQUAL.
- E. USE TEFLON TAPE ON MALE THREADS OF SCREWED PIPE.
- F. WHERE CHANGES OF SIZE OCCUR IN HORIZONTAL PIPING, PROVIDE ECCENTRIC TYPE REDUCING FITTINGS TO ATTAIN PROPER DRAINAGE AND VENTING OF PIPELINE.
- G. PROVIDE DIELECTRIC COUPLINGS AT JUNCTIONS OF DIFFERING METALS SUCH AS COPPER AND STEEL OR GALVANIZED PIPING.
- H. PROVIDE FOR EXPANSION AND CONTRACTION OF PIPING SYSTEMS IN THE INSTALLED SYSTEM
- PITCH WATER PIPING UNLESS OTHERWISE NOTED BACK TO PUMP, RISER, OR DRAIN:
 UP to 1 IN. DIA. 1 IN. PER 40 FT.
 1-1/2 IN. DIA. AND LARGER 1 IN. PER 100 FT..

SHALL BE USED ON ALL PIPE CLAMPS.

EACH TWENTY (20) FEET OF RISER.

17. REFRIGERANT PIPING

- A. UNLESS OTHERWISE SPECIFIED, ALL REFRIGERATION PIPING SHALL BE REFRIGERATION GRADE TYPE L OR TYPE K HARD DRAWN, DEGREASED SEALED COPPER TUBING. TYPE L SOFT COPPER TUBING, MAY BE USED FOR UNDERFLOOR RUNS PROVIDING THE PIPE IS STRAIGHT AND KEPT FREE FROM KINKS AND BENDS. NO UNDERFLOOR JOINTS ARE PERMITTED EXCEPT WHERE THE LENGTH OF THE RUN EXCEEDS THE LENGTH OF A FULL TUBING COIL.
- B. FITTINGS SHALL BE WROUGHT COPPER OR FORGED BRASS AND ONLY LONG RADIUS ELBOWS SHALL BE USED. ALL CHANGES IN LINE SIZE AND DIRECTION SHALL BE ACCOMPLISHED WITH FITTINGS ONLY. ABSOLUTELY NO "STAB-INS" OR FORMED LONG SWEEP ELBOWS ARE PERMITTED.
- C. TUBING SHALL BE INSTALLED IN A NEAT, WORKMAN LIKE MANNER WITH HORIZONTAL RUNS SLOPED TOWARD THE COMPRESSOR AT A RATE OF ONE (1) INCH PER TWENTY (20) FOOT. HANGERS OR STRAPS SHALL BE INSTALLED SO AS TO PROPERLY PREVENT VIBRATION OR UNDUE STRAIN ON ANY PIPE OR FITTING. CLAMP LINES WITH "UNISTRUT" OR EQUIVALENT AT LEAST EVERY TEN (10) FEET. CUSHION ALL PIPES WITH CURVED SHEET METAL SECTIONS AROUND THE ARMAFLEX, ON THE INTERMEDIATE SUPPORTS WHERE PIPE IS NOT CLAMPED. WHERE THE CLAMPS ARE APPLIED DIRECTLY ONTO THE COPPER LINES, HYDROZORB CUSHION CLAMP ASSEMBLIES SHALL BE USED WITH 1-5/8" WIDTH STEEL CHANNEL. STEEL CLAMPING COMPONENTS PARTS MUST NOT TOUCH OR RUB THE COPPER PIPE.
- ALL PIPING TO BE INSTALLED IN SUCH A MANNER AS TO COMPLETELY PREVENT ANY TYPE OF RUBBING AGAINST OTHER OBJECT.
 ALL PIPING SHALL BE INSTALLED SO THAT NORMAL SERVICING OF THE COMPRESSOR

1. CADMIUM PLATED OR GALVANIZED NUTS AND BOLTS WITH SELF LOCKING TYPE NUT

- AND RELATED EQUIPMENT IS NOT HINDERED. DO NOT OBSTRUCT THE VIEWS OF THE CRANKCASE OIL SIGHT GLASS OR RUN PIPING SO IT INTERFERES WITH REMOVAL OF THE COMPRESSOR, CYLINDER HEADS, END BELLS, ACCESS PLATES, FANS, FAN MOTORS, COIL, FILTERS CONDENSERS, ETC.

 4. SUCTION LINE FILTERS ARE TO BE INSTALLED FOR DIRECTION OF FLOW WITHOUT
- BYPASS RELIEF. FILTER PRESSURE DROP CAN THEN BE MEASURED BETWEEN THE FILTER GAUGE FITTING AND THE FITTING ON THE SUCTION SERVICE VALVE.

 D. WHERE VERTICAL RISERS OF MORE THAN FIVE (5) FEET OCCUR IN A SUCTION LINE, THE RISER SHALL BE TRAPPED AT THE BOTTOM (INVERTED P TRAP). INSTALL AN
- ADDITIONAL TRAP FOR EACH TWENTY FEET (20') OF RISER.

 E. WHERE A BRANCH SUCTION LINE ENTERS A MAIN SUCTION LINE IT SHALL ENTER AT THE TOP. PIPING SHALL BE ARRANGED SO REFRIGERANT OR OIL CANNOT DRAIN FROM THE SUCTION LINE INTO THE COIL.

 1. VERTICAL DISCHARGE RISERS SHALL BE TRAPPED AT THE BOTTOM TO PREVENT OIL
- F. SUCTION LINES SHALL BE SIZED TO MAINTAIN ADEQUATE VELOCITIES TO PROPERLY RETURN OIL TO THE COMPRESSOR UNDER MINIMUM LOAD CONDITIONS AT THE LOWEST SATURATED SUCTION PRESSURE TO BE EXPECTED. FURTHER TOTAL PRESSURE LOSS THROUGH THE SUCTION LINES SHALL NOT EXCEED 2 DEG. F. EQUIVALENT PRESSURE REDUCTION.

FROM DRAINING BACK INTO THE COMPRESSOR. INSTALL AN ADDITIONAL TRAP FOR

LANDMARKS PRESERVA

ALL JOINTS IN THE COMPRESSOR DISCHARGE SUCTION AND LIQUID LINES— SHALL BERONIC APPROVA

BRAZED WITH A SUITABLE HIGH TEMPERATURE SILVER SOLDER ALLOY CONTAINING OF RONIC APPROVA

- BRAZED WITH A SUITABLE HIGH TEMPERATURE SILVER SOLDER ALLOY CONTAINING AND LIQUID LINES FOR THE LESS THAN FIFTEEN PERCENT (15 SILVER). AT ANY COPPER TO BRASS JOINT WHERE DAMAGE COULD OCCUR FROM EXCESS HEAT USE 95/5 SOLDER. USE A SOLDER WITH AT LEAST THIRTY FIVE (35) PERCENT SILVER CONTENT ON ALL COPPER TO STEEL, BRASS TO STEEL, OR STEEL TO STEEL JOINTS. DURING THE BRAZING OPERATION DRY NITROGEN MUST BE BLED THROUGH THE PIPING AT VERY LOW PRESSURE TO PREVENT OXIDATION AND SCALING.
- H. IN ORDER TO AVOID DAMAGE TO THE INTERNAL SILFOS JOINTS IN VIBRATION ELIMINATORS, LINE CONNECTIONS TO VIBRATION ELIMINATORS ARE TO BE MADE WITH A SILVER SOLDER ALLOY SUCH AS EASY—FLO HAVING A MELT TEMPERATURE OF 900 DEG. F. TO 1,200 DEG. F. (WELL BELOW THE 1,300 DEG. F. MELTING POINT OF SILFOS).
- I. TO PREVENT CONTAMINATION OF THE LINE INTERNALLY, LIMIT THE SOLDERING PASTE OR FLUX TO THE MINIMUM REQUIRED. FLUX ONLY THE MALE PORTION OF THE CONNECTION, NEVER THE FEMALE.
- J. PROTECTION OF THE PIPING SYSTEMS SHALL BE THE CONTRACTOR'S RESPONSIBILITY. TEMPORARY PROTECTION SHALL BE PROVIDED UNTIL THE JOB IS IN SATISFACTORY CONDITION, AND PERMANENT PROTECTION SHALL BE PROVIDED BY THE BUILDING CONTRACTOR AS REQUIRED TO PROTECT THE PIPING, FITTINGS, ETC., FROM DAMAGE.
- K. INSTALL SCHRADER TYPE VALVES AT THE EVAPORATOR OUTLET AT EACH FIXTURE OR IN THE LAST COIL OF EACH SYSTEM TO FACILITATE ADJUSTMENT OF SUPERHEAT SETTINGS
- L. LIQUID LINES CAN BE AFFIXED TO THE SUCTION INSULATION VIA APPROVED DUCT TAPE.
- M. CONTRACTOR SHALL VERIFY THAT ALL EQUIPMENT INSTALLED BY HIM HAS PROPER PRESSURE RELIEF PROTECTION, AND THAT RELIEF PORT ARE DIRECTED DOWNWARD OR PIPED TO RELIEVE DOWNWARD.
- N. INSULATION SHALL BE ARMSTRONG ARMAFLEX II, RUBATEX R-180-FS, OR HALSTEAD INDUSTRIES INSUL-TUBE. ALL LINES SHALL BE INSULATED WITH 1/2 IN WALL THICKNESS INSULATION.
- O. ALL INSULATION JOINTS SHALL BE SEALED WITH RUBBER CEMENT TO INSURE A "DRIP-TIGHT" SEAL. INSULATION SHALL BE SLIPPED ON TUBING PRIOR TO JOINT BRAZING WHERE POSSIBLE AS AN ALTERNATE TO SPLITTING AND THEN SEALING THE
- P. ALL OPENINGS FOR REFRIGERANT LINES FROM PIPE CHASES SHALL BE CLOSED OFF ON OUTSIDE WITH PLYWOOD HAVING HOLES DRILLED FOR LINES AND SEALED FROM INSIDE USING UL LISTED FIRESTOP SEALANTS IN COMPLIANCE WITH ASTM E84(UL 723) AND ASTM E814(UL1479).
- Q. ANY ARMAFLEX INSULATION WHICH IS LOCATED OUTDOORS, MUST INCORPORATE A WEATHER RESISTANT PROTECTIVE FINISH, SUCH AS ARMSTRONG ARMAFLEX FINISH.
- R. ALL REFRIGERATION LINES WITH RUN THROUGH PLENUMS SPACE MUST BE INSULATED WITH AP ARMAFLEX ELASTOMETRIC FOAM INSULATION WITH A 25/50 FLAME—SPREAD AND SMOKE DEVELOPED RATINGS.

20. PENETRATIONS, SLEEVES, AND ESCUTCHEONS

AND TO ESTABLISH PRESSURE DROP.

- A. INSTALLATION OF PIPING, DUCTWORK, AND OTHER MECHANICAL EQUIPMENT OR ACCESSORIES SUBJECT TO VIBRATION, TEMPERATURE CHANGES, OR EXPANSION AND CONTRACTION SHALL BE PROVIDED WITH A CLEARANCE OR SLEEVE THROUGH RIGID CONSTRUCTION PER THE REQUIREMENTS OUTLINED IN THIS SECTION.
- B. PIPE PENETRATIONS THROUGH MASONRY/CONCRETE WALLS OR FLOORS AND FRAMED PARTITIONS SHALL HAVE A TRIM OPENING CUT NOT GREATER THAN NECESSARY FOR THE INSTALLATION OF A SLEEVE SECURED THEREIN. THE SPACE BETWEEN THE PIPE, ITS INSULATION, AND ITS SLEEVE SHALL NOT EXCEED ONE—HALF INCH.
- C. DUCT PENETRATIONS THROUGH MASONRY/CONCRETE WALLS OR FLOORS AND FRAMED PARTITIONS SHALL HAVE AN OPENING CUT TO PROVIDE ROOM FOR INSTALLATION OF MATERIALS, EXPANSION AND CONTRACTION. THE SPACE BETWEEN THE DUCT AND THE CONSTRUCTION SHALL NOT EXCEED ONE—HALF INCH.
- D. PIPING SLEEVES SHALL BE FLUSH WITH THE FINISHED WALL OR PARTITION SURFACE.
- F. SLEEVES FOR PIPING THROUGH MASONRY WALL SHALL BE SCHEDULE 40 STANDARD GALVANIZED STEEL PIPE; IN FRAMED PARTITIONS SHALL BE 20 GAUGE SHEET METAL. THE SPACE BETWEEN THE PIPE AND ITS SLEEVE SHALL NOT EXCEED ONE—HALF INCH. THE SLEEVE SHALL BE FLUSH WITH THE FINISHED WALL SURFACES.
- G. PIPING IN EXPOSED AREAS, PASSING THROUGH WALLS, FLOORS, OR CEILINGS SHALL BE FITTED WITH CHROMIUM—PLATED CAST BRASS ESCUTCHEONS WITH FASTENING SET SCREWS.
- H. ALL PENETRATIONS THROUGH EXTERIOR WALLS SHALL BE FLASHED AND SEALED IN A WEATHERPROOF MANNER AGAINST THE INTRUSION AND HARBORING OF WATER AS WELL AS INFILTRATION OF AIR.
 4. THE EXTERIOR SIDE SHALL BE FLASHED WITH ALUMINUM OR APPROVED WATER BARRIER MATERIALS. THE OPENING SHALL BE SEALED WITH WATERPROOF CAULK OR
- 5. INSULATION MATERIALS INSTALLED IN THE WALL CAVITY SHALL MATCH OR EXCEED THE R-VALUE OR U-FACTOR OF THE EXISTING WALL, SHALL BE RESISTANT TO THE
- GROWTH OF MOLD, AND RETARD THE PASSAGE OF AIR AND WATER.

 6. THE INTERIOR SIDE OF THE OPENING SHALL BE SEALED WITH CAULK OR FOAM IN AN AIRTIGHT MANNER. IF IN AN EXPOSED AREA, THE PRODUCT SHALL BE LABELED TO BE PAINTABLE.

21. PIPE HANGERS, SUPPORTS, ANCHORS AND GUIDES

- A. ALL REQUIRED SUPPORTS, HANGERS, ANCHORS AND GUIDES SHALL BE PROVIDED AND INSTALLED BY THIS CONTRACTOR AND SHALL BE SEISMICALLY DESIGNED.
- B. ALL SUPPORTS AND PARTS SHALL CONFORM TO THE REQUIREMENTS OF THE NEW YORK CITY BUILDING CODE, ANSI B 31.9 AS APPLICABLE FOR PRESSURE PIPING, AND MSS STANDARD PRACTICE SP-58 SP-69.
- C. INSTALL HANGERS AND SUPPORTS TO ALLOW CONTROLLED THERMAL AND SEISMIC MOVEMENT OF PIPING SYSTEMS, TO PERMIT FREEDOM OF MOVEMENT BETWEEN PIPE ANCHORS, AND TO FACILITATE ACTION OF EXPANSION JOINTS, EXPANSION LOOPS, EXPANSION BENDS, AND SIMILAR UNITS.
- D. DO NOT HANG PIPING FROM OTHER PIPING.
- E. WHEN REMOVAL OF EXISTING FIRE PROOFING IS REQUIRED FOR NEW INSTALLATION
 PURPOSES, SUCH REMOVAL SHALL BE PERFORMED BY THE CONTRACTOR AND SHALL BE
 KEPT TO A MINIMUM. THE CONTRACTOR SHALL REPLACE ALL REMOVED FIREPROOFING
 WITH NEW FIREPROOFING TO THE SATISFACTION OF THE ENGINEER AND AT NO
 ADDITIONAL COST TO THE AUTHORITY.

 DOB NOW APPLICATION
- F. SUPPORT HANGERS FROM BUILDING STEEL FRAMING WITH AN APPROVED TYPE CLAMP INSERT. PROVIDE ANY ADDITIONAL STEEL SUPPORTS BETWEEN EXISTING FRAMING MEMBERS AS MAY BE REQUIRED. WELDING TO THE BUILDING STRUCTURE MEMBERS WILL NOT BE PERMITTED UNLESS APPROVED BY THE BUILDING MANAGEMENT.
- G. PIPE HANGERS RODS, INSERTS AND CLAMPS SHALL BE UL APPROVED FOR THEIR RESPECTIVE USES
- H. UNLESS OTHERWISE SPECIFICALLY APPROVED, HANGER SIZE AND SPACING SHALL BE AS FOLLOWS:

 COPPER TUBING

_0113.	COPPER TUBING					
	PIPE SIZE	MAX. HANGER SPACING	MIN. ROD SIZE			
	1/2" TO 1-1/4"	6 FT. O.C.	3/8"			
	NOTE: THE ABOVE HANGER SPACING APPLY TO STRAIGHT RUNS OF PIPE ONLY.					

#M00350247-I1

NYC DOB STAMPS & SIGNATURES



INCLUDING ALL SKETCHES, PLANS, STUDIES, DRAWINGS, SCHEDULES, AND SPECIFICATIONS, AND COPYRIGHTS THEREIN, ARE AND SHALL REMAIN THE SOLE AND EXCLUSIVE HRV HEST SITE OF THE CONSTRUCTION CONSULTANTS, INC. THE

DISCLAIMER NOTE

. THE ENTIRE CONTENTS OF THIS DOCUMENT

CONSTRUCTION CONSULTANTS, INC. THE DOCUMENTS AND THEIR CONTENTS MAY NOT BE USED, PHOTOCOPIED, OR REPRODUCED DIGITALLY, ELECTRONICALLY, OR IN ANY OTHER MANNER WITHOUT THE EXPRESS WRITTEN CONSENT OF R.I.P CONSTRUCTION CONSULTANTS, INC.

2. THE CONTRACTOR SHALL CHECK AND VERIFY ALL

CONDITIONS AND DIMENSIONS AND REPORT ANY

REVISIONS:

DISCREPANCIES TO THE ARCHITECT PRIOR TO START OF WORK.

3. IT IS A VIOLATION OF NYS EDUCATION DEPT. LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ARCHITECT OR ENGINEER, TO ALTER THIS PLAN IN ANY WAY.

4. THIS LAYOUT COMPLIES WITH THE 2010 E.C.C.C. NYS LOCAL LAW 48/2010 & LOCAL LAW 1/2011

NEW YORK CITY EXPEDITOR:

R.I.P. C.C. INC.

325 BROADWAY SUITE 304

EDWARD GUTERMAN P.E. #061893-1

212-334-4114

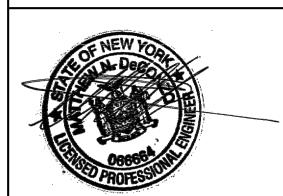
212-967-4306

LANDLORD'S / OWNER'S INFORMATION:

NEW YORK, NY 10007 TEL: 212-334-7400 ARCHITECT / ENGINEER OF RECORD:

325 BROADWAY SUITE 304 NEW YORK, NY 10007

GUTH-DECONZO CONSULTING ENGINEERS
242 30TH STREET, SUITE 301
NEW YORK, NY 10001



MATTHEW N. DeCONZO, PE LICENSE NO. 066664

PROJECT ADDRESS

SHEET TITLE:

HEAT ME 53 WOOSTER STREET NEW YORK, NEW YORK

MECHANICAL SPECIFICATIONS

SEAL:

DATE:

03-23-20

PROJECT #

4264-G04

DRAWN BY:

WH

NYC DOB BSCAN:

SCALE

DRAWING NUMBER:

M-602.00

11 OF 12

TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

THESE PLANS ARE APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.

MECHANICAL SPECIFICATIONS

22. EQUIPMENT SCHEDULE

A. FURNISH AND INSTALL ALL ITEMS AS HEREIN SPECIFIED OR SHOWN ON DRAWINGS AND THOSE ITEMS OF LABOR OR MATERIALS NOT SPECIFICALLY INDICATED, BUT REQUIRED TO COMPLETE THE INTENDED INSTALLATIONS.

29. SEQUENCE OF OPERATION

COMBINATION FURNACE/AC SYSTEM

- A. THERMOSTAT SHALL START CONDENSER AND EVAPORATOR UNIT FOR THE FOLLOWING CONDITION.
- 1. WHEN THERMOSTAT MEASURES THE ROOM TEMPERATURE AS ABOVE THE SETPOINT THE COMPRESSOR SHALL START AND EVAPORATOR ENERGIZE. THEY SHALL REMAIN ON UNTIL THERMOSTAT'S TEMPERATURE SETTING IS SATISFIED. WHEN THERMOSTAT SETTING IS SATISFIED THE COMPRESSOR SHALL BE TURNED OFF, EVAPORATOR FAN SHALL KEEP RUNNING FOR A MINIMUM OF 5 MINUTES BEFORE TURNING OFF.
- B. FURNACE SHALL FIRE FOR THE FOLLOWING CONDITION. WHEN THE THERMOSTAT MEASURES THE ROOM TEMPERATURE AS BELOW THE SETPOINT THE FURNACE SHALL ACTIVATE THE BURNER AND FAN. THE FURNACE SHALL REMAIN ON UNTIL THERMOSTAT'S TEMPERATURE SETTING IS SATISFIED. WHEN THERMOSTAT SETTING IS SATISFIED THE FURNACE SHALL STOP THE BURNER AND
- C. THE FURNACE SHALL BE INTERLOCKED WITH THE EMERGENCY SHUTOFF LOCATED OUTSIDE THE BOILER ROOM. IF THE SWITCH IS PLACED IN THE OFF POSITION, POWER TO THE FURNACE SHALL BE TURNED OFF.

LANDMARKS PRESERVATION COPYRIGHTS THEREIN ARE AND SHALL REMAIN THE COPYRIGHTS THEREIN ARE AND SHALL REMAIN THE CONSTRUCTION CONSULTANTS, INC. THE CONSTRUCTION CONSULTANTS, INC. THE DOCUMENTS AND THE CONSTRUCTION OR REPRODUCED DIGITALLY,

DISCLAIMER NOTE 1. THE ENTIRE CONTENTS OF THIS DOCUMENT, INCLUDING ALL SKETCHES, PLANS, STUDIES, DRAWINGS, SCHEDULES, AND SPECIFICATIONS, AND

ELECTRONICALLY, OR IN ANY OTHER MANNER WITHOUT THE EXPRESS WRITTEN CONSENT OF R.I.P CONSTRUCTION CONSULTANTS, INC. 2. THE CONTRACTOR SHALL CHECK AND VERIFY ALL CONDITIONS AND DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO START OF WORK.

3. IT IS A VIOLATION OF NYS EDUCATION DEPT. LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ARCHITECT OR ENGINEER, TO ALTER THIS PLAN IN ANY WAY. 4. THIS LAYOUT COMPLIES WITH THE 2010 E.C.C.C. NYS LOCAL LAW 48/2010 & LOCAL LAW 1/2011

REVISIONS:

LANDLORD'S / OWNER'S INFORMATION:

NEW YORK CITY EXPEDITOR:

R.I.P. C.C. INC. 325 BROADWAY SUITE 304 NEW YORK, NY 10007 TEL: 212-334-7400

ARCHITECT / ENGINEER OF RECORD:

EDWARD GUTERMAN P.E. #061893-1 325 BROADWAY SUITE 304 NEW YORK, NY 10007 212-334-4114

CONSULTING ENGINEERS

GUTH-DECONZO CONSULTING ENGINEERS 242 30TH STREET, SUITE 301 NEW YORK, NY 10001 212-967-4306



MATTHEW N. DeCONZO, PE LICENSE NO. 066664

PROJECT ADDRESS:

HEAT ME 53 WOOSTER STREET NEW YORK, NEW YORK

MECHANICAL SPECIFICATIONS 03-23-20 4264-G04

NONE

NYC DOB BSCAN:

M-603.00

12 OF 12

LANDMARKS PRESERVATION COMMISSION ELECTRONIC APPROVAL - 08/11/2020 - SEK

> TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

THESE PLANS ARE APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION SHEET. ALL OTHER MATTERS SHOWN

ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.

DOB NOW APPLICATION

NYC DOB STAMPS & SIGNATURES

ACCEPTED

#M00350247-I1

Date: 09/28/2020