

GENERAL MECHANICAL NOTES

1. ENTIRE INSTALLATION SHALL COMPLY WITH ALL LOCAL AND STATE CODES, INCLUDING ENERGY CODES, AND ALL OTHER AUTHORITIES HAVING JURISDICTION.
2. CONTRACTOR SHALL SECURE AND PAY FOR ALL REQUIRED PERMITS AND APPROVALS. ALL REQUIRED SPECIAL AND CONTROLLED INSPECTIONS SHALL BE BY THIS CONTRACTOR.
3. PROVIDE SEISMIC BRACING AND ANCHORING OF MECHANICAL EQUIPMENT, PIPING, AND DUCTWORK IN ACCORDANCE WITH THE GOVERNING CODES. THE STRUCTURAL DESIGN AND APPLICATION OF SEISMIC RESTRAINTS SHALL MEET THE CODE CRITERIA LISTED "DESIGN CRITERIA". THE CONTRACTORS SHALL RETAIN AN INDEPENDENT PROFESSIONAL ENGINEER TO DESIGN SEISMIC RESTRAINTS, PREPARE INSTALLATION DETAILS, SUPERVISE INSTALLATION, AND CERTIFY THAT THE INSTALLATION MEETS THE CODE CRITERIA LISTED HEREIN. SIGNED AND SEALED INSTALLATION DETAILS AND CALCULATIONS SHALL BE SUBMITTED AS SHOP DRAWINGS.
4. ALL SUPPORT SYSTEMS (SUPPORTS AND HANGERS) FOR EQUIPMENT AND SYSTEMS INSTALLED OR REVISED AS PART OF THIS CONTRACT SHALL BE DESIGNED, SELECTED AND INSTALLED BY THE CONTRACTOR TO RESIST ALL SEISMIC, WIND AND GRAVITY LOADS. UNDER CERTAIN CONDITIONS, THE APPLICABLE CODES REQUIRE THESE LOADS, OR A COMBINATION OF THESE LOADS, BE CONSIDERED AS "COINCIDENTAL". THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR CONFIRMING THAT THE COMPONENT OF THE BUILDING STRUCTURE WHERE THESE SUPPORT SYSTEMS ARE ATTACHED IS ABLE TO RESIST THE DESIGN LOADS TRANSFERRED TO THIS BUILDING COMPONENT.
5. ALL PENETRATIONS OF FLOORS (WHETHER OR NOT FIRE RESISTANCE RATED) AND ALL PENETRATIONS OF FIRE RATED WALLS AND FLOORS SHALL BE PROVIDED WITH A THROUGH-PENETRATION PROTECTION SYSTEM (FIRESTOPPING). EACH THROUGH-PENETRATION PROTECTION SYSTEM SHALL BE TESTED IN ACCORDANCE WITH ASTM E814 AND BE LISTED FOR THE TYPE OF FLOOR OR WALL ASSEMBLY PENETRATED AND THE TYPE OF PROTECTION SYSTEM.
6. DRAWINGS ARE INTENDED TO SHOW THE PROPER SIZE AND GENERAL LOCATIONS OF THE EQUIPMENT, PIPING, DUCTWORK, ETC. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN CONTRACT. DEVIATIONS FROM LAYOUT SHOWN MUST BE APPROVED BY THE ARCHITECT.
7. SHOP DRAWINGS SHALL BE PREPARED WITH COMPLETE DIMENSIONAL INFORMATION, INCLUDING COORDINATES TO BRANCH DUCT AND DIFFUSERS STUBS. ELEVATIONS TO THE UNDERSIDE OF DUCTS, SHALL BE CLEARLY INDICATED ON THE DRAWING SUBMITTED AND SHALL BE CAREFULLY CHECKED FOR CONFORMANCE WITH CEILING HEIGHT REQUIREMENTS. ALL CONFLICTS MUST BE FLAGGED ON THE SHOP DRAWINGS.
8. THE SHEET METAL SHOP DRAWINGS SHALL INDICATE ALL HUNG CEILING STARTING POINTS, ELEVATIONS AND BREAK LINES. WHERE PIPING, LIGHTS AND DUCTWORK CONFLICTS, DUCTWORK SHALL BE SET UP OR DOWN.
9. CONTRACTOR SHALL COORDINATE HIS WORK WITH THE WORK OF ALL OTHER TRADES.
10. CONTRACTOR SHALL COORDINATE WITH ALL ARCHITECTURAL DRAWINGS.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING OF WALLS AS A RESULT OF HIS WORK.
12. DUCTWORK AND PIPING LAYOUTS ARE SCHEMATIC DIAGRAMS AND ARE INTENDED TO SHOW GENERAL ARRANGEMENT, SIZE AND CAPACITY AND DO NOT NECESSARILY INDICATE WHICH PIPE OR DUCT IS ABOVE OR BELOW THE OTHER. ALL OFFSETS ARE NOT NECESSARILY SHOWN. CONTRACTOR SHALL ARRANGE AND COORDINATE THE WORK, FURNISH NECESSARY OFFSETS TO AVOID CONFLICT WITH OTHER MECHANICAL, ELECTRICAL SERVICES, STRUCTURAL AND ARCHITECTURAL ELEMENTS WITHOUT ADDITIONAL COST TO THE OWNER. IF AREAS OF CONFLICT ARE ENCOUNTERED, THE ARCHITECT SHALL BE NOTIFIED AND CONTRACTOR'S RECOMMENDATIONS SHALL BE SUBMITTED TO THE ARCHITECT FOR APPROVAL BEFORE WORK HAS BEGUN.
13. ALL MECHANICAL CONTROLS (THERMOSTATS, SENSORS, ETC.) SHALL BE INSTALLED AT A HEIGHT OF 5'-0" ABOVE FLOOR. COORDINATE EXACT LOCATION & MOUNTING HEIGHT WITH ARCHITECT PRIOR TO INSTALLATION.
14. ALL ACCESS DOORS IN FINISHED WALLS AND CEILINGS SHALL BE SUPPLIED BY THIS CONTRACTOR AND SHALL BE FRAMELESS TYPE SUITABLE FOR THE CONSTRUCTION TYPE INDICATED ON THE ARCHITECTURAL DRAWINGS. COORDINATE ALL LOCATIONS OF ACCESS DOORS WITH ARCHITECTURAL DRAWINGS. LOCATE VOLUME DAMPERS SO AS TO BE WITHIN ONE (1) FOOT OF AN ACCESS DOOR.
15. EXACT LOCATION OF DIFFUSERS, GRILLES AND REGISTERS TO BE COORDINATED WITH ARCHITECTURAL PLANS.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR BALANCING OF AIR QUANTITIES AT ALL AIR CONDITIONING OUTLETS AND INLETS (SUPPLY, RETURN & EXHAUST).
17. DUCT SIZES SHOWN ARE CLEAR INSIDE DIMENSIONS.
18. PROVIDE DOUBLE THICKNESS TURNING VANES IN ALL SQUARE ELBOWS.
19. PROVIDE VOLUME DAMPER ON EACH BRANCH TAKE OFF FROM DUCT MAIN, AND ON EACH DIFFUSER TAKE OFF FROM BRANCH DUCT OR MAIN.
20. PROVIDE AND INSTALL COMBINATION FIRE AND SMOKE DAMPERS AND ACCESS DOORS IN ALL DUCTWORK PENETRATING FIRE RATED WALLS (2 HOURS OR MORE). FIRE DAMPERS AND ACCESS DOORS SHALL BE PROVIDED AND INSTALLED IN ALL DUCTWORK PENETRATING FIRE RATED WALLS 1-1/2 HOUR OR LESS. ALL ACCESS DOORS SHALL BE A MINIMUM OF 12"x 12" UNLESS OTHERWISE NOTED.
21. ALL WORK TO COMPLY WITH BASE BUILDING DESIGN STANDARDS, SPECIFICATIONS AND CONCEPTS. ALL CONNECTIONS TO MEP SYSTEMS AND SERVICES SHOULD MATCH EXISTING INSTALLATION. ALL WORK OUTSIDE OF BUILDING STANDARDS AND CONCEPTS SHALL BE COORDINATED AND APPROVED WITH BUILDING MANAGEMENT.

ABBREVIATION

°F	DEGREES FAHRENHEIT
AC	AIR CONDITIONING
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AP	ACCESS PANEL
BTU	BRITISH THERMAL UNIT
BTUH	BTU PER HOUR
CD	CEILING DIFFUSER
CG	CEILING GRILLE
CLG	CEILING
CR	CEILING REGISTER
D	DROP
DN	DOWN
DWG	DRAWING
EAT	ENTERING AIR TEMPERATURE
EQ	EQUAL
FA	FREE AREA (SQ.FT.)
FC	FLEXIBLE CONNECTION
FD	FIRE DAMPER
IN	INCH OR INCHES
KW	KILOWATT
MBH	THOUSAND BTU PER HOUR
NK	NECK
NIC	NOT IN CONTRACT
NO.	NUMBER
NTS	NOT TO SCALE
R	RISE
RA	RETURN AIR
RF	RETURN FAN
RM	ROOM
RPM	REVOLUTIONS PER MINUTE
SP	STATIC PRESSURE
TX	TOILET EXHAUST
TYP	TYPICAL
WMS	WIRE MESH SCREEN

BASIS OF DESIGN: INDEECO "QUA"

ELECTRIC HEATING COIL SCHEDULE

COIL NO.	INPUT KW	NO. OF STEPS	CFM	DUCT SIZE		MAX. P.D. (IN.W.G.)	ELECT. DATA VOLT/PH	REMARKS
				WIDTH (IN.)	HEIGHT (IN.)			
EDH 2-1	5.0	4	990	14	12	-	480/1/60	OPTION "G"
EDH 2-2	2.0	2	310	12	10	-	277/1/60	OPTION "G"

NOTE: ACTUAL DUCT SIZE FOR EACH HEATER COORDINATED W/SHEET METAL SUBMITTED SHOP DRAWINGS.

NYC BUILDING CODE - VENTILATION TABLE (BASED ON TABLE 403.3 - 2008)

ROOM NAME	ROOM #	AREA (FT^2)	OCC/1000 FT^2	# OCC (TABLE)	# OCC (DESIGN)	OA CFM/PERSON	OA CFM	SUPPLY CFM	SUPPLY CFM/FT^2	XROOM
EXAM ROOM (TYP)	214	135	20	2.7	2	15	30	150	1.11	0.200
OFFICE (TYP)	215	86	7	0.6	1	20	20	150	1.74	0.133
CONSULT	218	97	7	0.7	1	20	20	120	1.24	0.167
WAITING ROOM	201	350	60	21.0	21	15	315	1400	4.00	0.225
REGISTRATION OFFICE	202	116	7	0.8	5	15	75	600	5.17	0.125
TOTALS --->		784		25.8	30	15	460	2420	3.09	0.190

EQUATION 4-1	WHERE:	CORRECTION RESULTS
$Y = \frac{X}{(1 + X - Z)}$	Y = CORRECTED FRACTION OF OUTDOOR AIR IN SYSTEM SUPPLY X = UNCORRECTED FRACTION OF OUTDOOR AIR IN SYSTEM SUPPLY Z = FRACTION OF OUTDOOR AIR IN CRITICAL SPACE	$Y = \frac{0.190}{(1 + 0.190 - 0.225)} = 0.197$

AIR OUTLETS SCHEDULE

DATA BASED ON "TITUS"

UNIT NO. TYPE	CFM RANGE	SERVICE	NECK SIZE (IN.)	FACE OVERALL DIMENSION	NECK SIZE (IN.)	MANUF.	MODEL	REMARKS
CD	0-100	SEE PLAN	6"ø	12x12	-	TITUS	OMNI	SEE NOTE
CD	101-200	SEE PLAN	8"ø	12x12	-	TITUS	OMNI	SEE NOTE
CD	0-200	SEE PLAN	8"ø	24x24	-	TITUS	OMNI	SEE NOTE
CD	301-400	SEE PLAN	12ø	24x24	-	TITUS	OMNI	SEE NOTE
RG	501-1000	SEE PLAN	22x22	24x24	-	TITUS	23 RL	RETURN (NO DAMPER)
CR	01-100	SEE PLAN	-	8x8	-	TITUS	23 RL	W/ OBD (ALUM. CONST'N)
CR	101-200	SEE PLAN	-	10x10	-	TITUS	23 RL	W/ OBD (ALUM. CONST'N)

NOTE: "OMNI" DIFFUSERS ALSO USED FOR RETURN AIR. PROVIDE DAMPER FOR BOTH SUPPLY AND RETURN.

DUCTWORK SYMBOLS

	POSITIVE PRESSURE DUCT (SUPPLY) UP
	NEGATIVE PRESSURE DUCT (RETURN OR EXHAUST) UP
	POSITIVE PRESSURE DUCT (SUPPLY) DOWN
	NEGATIVE PRESSURE DUCT (RETURN OR EXHAUST) DOWN
	SLOPING RISE IN DUCTWORK
	SLOPING DROP IN DUCTWORK
	DUCT SIZE (CLEAR INSIDE DIMENSION) FIRST FIGURE INDICATES PLAN DIMENSION
	FLEXIBLE CONNECTION
	VOLUME DAMPER
	FIRE DAMPER WITH DUCT ACCESS DOOR
	FIRE SMOKE DAMPER WITH DUCT ACCESS DOOR
	SQUARE DUCT ELBOW WITH TURNING VANE
	RADIUS ELBOW
	DUCT SPLIT
	BRANCH TAKE-OFF WITH VOLUME DAMPER
	CEILING DIFFUSER 4 WAY, 3 WAY, 2 WAY, 1 WAY
	RETURN REGISTER OR GRILLE
	LOUVERED DOOR
	UNDERCUT DOOR

CONTROL SYMBOLS

	THERMOSTAT AND WIRING
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MISCELLANEOUS SYMBOLS

	EXISTING WORK
	EXISTING WORK TO BE REMOVED
	NEW WORK

BUILDING DEPARTMENT NOTES

1. A TEST OR TESTS WILL BE CONDUCTED UNDER DIRECTION OF A SPECIAL INSPECTOR SUPERVISING THE INSTALLATION OF THE MECHANICAL SYSTEMS. THE TEST(S) WILL SHOW COMPLIANCE WITH BUILDING CODE REQUIREMENTS AND CHAPTER 17 OF THE NEW YORK CITY BUILDING CODE.
2. THE FOLLOWING SPECIAL INSPECTIONS SHALL BE REQUIRED:

MECHANICAL SYSTEMS

HEATING SYSTEMS

BC 1704.15

BC 1704.23
3. THE SPECIAL INSPECTOR SUPERVISING THE INSTALLATION OF MECHANICAL SYSTEMS AND CONDUCTING SUCH TESTS WILL FILE A CERTIFICATE AND REPORT OF TEST THAT THE SYSTEM COMPLIES WITH APPLICABLE LAWS.
4. A STATEMENT WILL BE FILED BY THE OWNER (OR TENANT) IN POSSESSION THAT THE VENTILATING SYSTEM WILL BE KEPT IN CONTINUOUS OPERATION DURING NORMAL OCCUPANCY OF THE PREMISES.
5. ALL FIRE DAMPERS ARE TO BE OF TYPE APPROVED BY THE BOARD OF FIRE UNDERWRITERS. WHERE ENTERING OR LEAVING SHAFTS. FIRE DAMPERS ARE TO BE EQUIVALENT TO 1½ FIRE WALL RATING.
6. VENTILATION RULES OF DEPARTMENT OF BUILDINGS ADOPTED JULY 1, 2008, TO BE COMPLIED WITH.
7. SMOKE AND FIRE DETECTION TO BE INSTALLED IN ACCORDANCE WITH BUILDING CODE REQUIREMENTS AND SECTION BC 907 OF THE NEW YORK CITY BUILDING CODE.

APPLICABLE HEALTHCARE CODE GUIDELINES

1. NEW YORK STATE HEALTHCARE BUILDING CODE
2. NFPA (90A AND 90B)
3. 1996-97 AIA HOSPITAL AND HEALTHCARE GUIDELINES
4. ASHRAE STANDARD GUIDELINES
5. INTERNATIONAL MECHANICAL CODE
6. BUILDING CODE OF NEW YORK STATE
7. NEW YORK STATE ENERGY CONSERVATION CODE

LEGEND NOTES

1. THE SYMBOL LIST AND ABBREVIATIONS ARE FOR GENERAL REFERENCE ONLY. THE PRESENCE OF A SYMBOL OR ABBREVIATION DOES NOT IMPLY ITS USE ON THIS PROJECT. REFER TO DRAWINGS FOR SPECIFIC SYMBOLS AND ABBREVIATIONS USED.

HVAC DRAWING LIST

M-001.00	MECHANICAL NOTES, SYMBOLS AND ABBREVIATIONS
M-100.00	MECHANICAL DEMOLITION PLAN
M-101.00	SECOND FLOOR MECHANICAL PLAN
M-200.00	MECHANICAL DETAILS

WATER HEATING COILS SCHEDULE SELECTION BASED: ON "AEROFIN" OR EQUAL.

HTG COIL No.	CFM	DUCT SIZE	FACE VEL. FPM	HTG COIL H ₂ O						CAPACITY MBH	WPD ftH ₂ O (MAX)	REMARKS
				EAT °F	LAT °F	EWI °F	LWT °F	GPM	ROWS/ FINS			
RHC-2-1	1400	20x16	636	55	75.0	180	160	3.0	1/6	30.0	2.0	-
RHC-2-2	850	16x14	548	55	75.0	180	160	2.0	1/6	20.0	2.0	-
RHC-2-3	370	12x8	560	55	75.0	180	160	1.0	1/6	10.0	2.0	-

HEATING COIL SEQUENCE OF OPERATION

HEATING COIL CONTROL VALVE SHALL BE CONTROLLED BY A WALL MTD T'STAT SET @ 75° F (ADJ.) (TYPICAL FOR RHC-2-1, 2-2 & 2-3).

VENTILATION FAN SCHEDULE

DATA BASED ON "GREENHECK"

UNIT NO.	SERVICE	MODEL #	LOCATION OF UNIT	FAN DATA						MOTOR DATA			FAN INTERLOCKED WITH	APPROX. WEIGHT LBS	NOTES
				CAPACITY C.F.M.	STATIC PRESSURE IN.	OUTLET VELOCITY F.P.M	R.P.M.	BRAKE H.P.	TYPE OF DRIVE	RATED H.P./W	VOLTAGE	PHASE			
VF 2-1	ELEC. CL	SP-B-110-OD	SEE FL PLAN	100	.25	—	—	—	DIRECT	80W	115	1	—	28	W/T'STAT

NOTE: PROVIDE SPRING ISOLATORS & DISCONNECT SWITCH, CONTROLLED BY WALL MTD T'STAT.

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

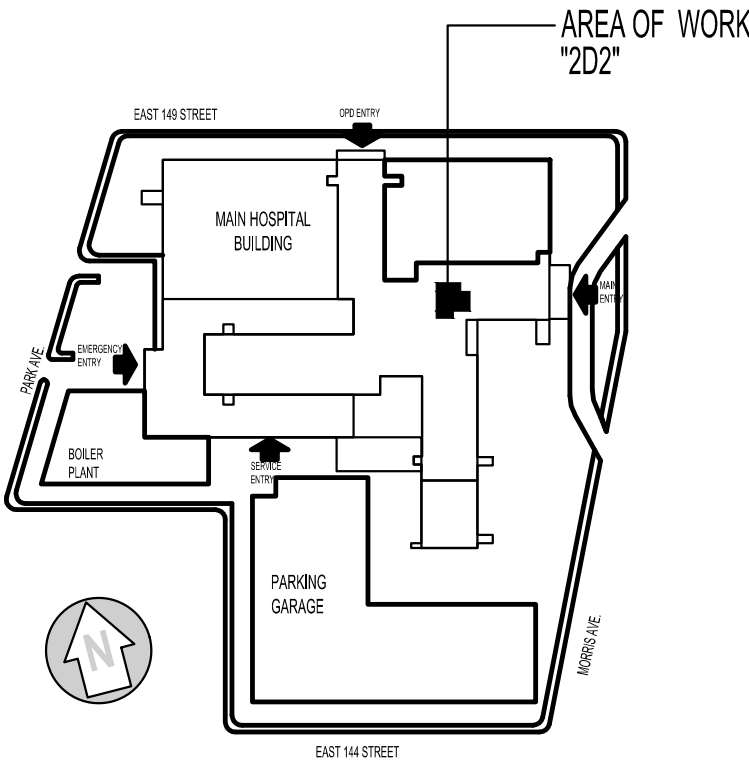
DOB EMPLOYEE STAMPS AND SIGNATURES:

DOB BSCAN STICKER:

06-25-2012
REVISION
DATE

ISSUED TO DOB
REASON FOR ISSUE

KEY PLAN :



CLIENT:



CLIENT:



ARCHITECT:



ENVIRONMENTAL ENGINEERING CONSULTANT:



PROJECT:

NEW CLINIC RENOVATION AT SECOND FLOOR
234 East 149 Street Bronx, NY 10451

DRAWING:

MECHANICAL NOTES,
SYMBOLS AND ABBREVIATIONS

SCALE: NONE

DRAWN BY: AL

CHECKED BY: FB

DATE: 09-06-2011

JOB #: 21115.00

DRAWING #:

M-001.00

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