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## ABBREVIATIONS

&	= AND	HVAC	= HEAT/VENT/AIR COND
CL	= CENTERLINE	ID	= INSIDE DIAMETER (DIM)
Ø	= DIAMETER OR ROUND	INSUL	= INSULATION
AD	= ACCESS DOOR	IN	= INCH
AHU	= AIR HANDLING UNIT	MAX	= MAXIMUM
AFF	= ABOVE FINISH FLOOR	MB	= MIXING BOX
AL	= ALUMINUM	MD	= MOTORIZED DAMPER
ARCH	= ARCHITECTURAL	MECH	= MECHANICAL
BLDG	= BUILDING	MEP	= MECHANICAL/ELECTRICAL/PLUMBING
BOD	= BOTTOM OF DUCT	MFR	= MANUFACTURER
BOS	= BOTTOM OF STEEL	MIN	= MINIMUM
CL	= CLOSET	N.A.	= MISCELLANEOUS
CLG	= CEILING	N.A.	= NOT APPLICABLE
COL	= COLUMN	NK	= NECK SIZE
CONSTR	= CONSTRUCTION	NTS	= NOT TO SCALE
CONT	= CONTINUOUS	OA	= OUTSIDE AIR
CORR	= CORRIDOR	OC	= ON CENTER
CTR	= CENTER	OD	= OUTSIDE DIAMETER
DET	= DETAIL	OPG	= OPENING
DIA	= DIAMETER	R	= RISER
DIM	= DIMENSION	RD	= RADIUS
DN	= DOWN	RAR	= RETURN AIR REGISTER
DSD	= DUCT SMOKE DETECTOR	RM	= ROOM
DWG	= DRAWING	SAD/CD	= SUPPLY AIR DIFFUSER
EA	= EACH	SAR	= SUPPLY AIR REGISTER
EAR	= EXHAUST AIR REGISTER	SD	= SMOKE DETECTOR
EF	= EXHAUST FAN	SECT	= SECTION
ENGR	= ENGINEER (ING)	SPEC	= SPECIFICATION
EQ	= EQUAL	STD	= STANDARD
EQUIP	= EQUIPMENT	STG	= STORAGE
EXIST	= EXISTING	TOD	= TOP OF DUCT
FC	= FLEXIBLE CONNECTOR	TYP	= TYPICAL
FD	= FIRE DAMPER	VD	= VOLUME DAMPER
F.D.	= FLOOR DRAIN	VIF	= VERIFY IN FIELD
FP	= FIRE PROTECTION	W/	= WITH
FLR	= FLOOR	W/O	= WITHOUT
FSD	= FIRE/SMOKE DAMPER	WMS	= WIRE MESH SCREEN
FTR	= FINNED TUBE RADIATION	WR	= WALL REGISTER
GA	= GAUGE	WT	= WEIGHT
GALV	= GALVANIZED		

## SYMBOLS

NOT TO SCALE

	= SUPPLY AIR CEILING DIFFUSER (SAD) WITH NECK SIZE AND AND CFM INDICATED ON PLANS.
	= RETURN AIR CEILING REGISTER (RAR) WITH NECK SIZE AND CFM INDICATED ON PLANS.
	= EXHAUST AIR REGISTER (EAR); TRANSFER AIR REGISTER (TG); WITH NECK SIZE AND CFM INDICATED ON PLANS.
	= SUPPLY AIR WALL REGISTER (SAR) WITH NECK SIZE AND CFM INDICATED ON PLAN.
	= RETURN AIR WALL REGISTER (RAR) WITH NECK SIZE AND CFM INDICATED ON PLAN.
	= POINT OF CONNECTION OF NEW PIPING/DUCTWORK TO EXISTING
	= POINT OF DISCONNECTION OF EXISTING PIPING/DUCTWORK TO NEW
	= INDICATES HARD DUCT WITH INTERNAL LINING (DIMENSIONS ARE INSIDE CLEAR WIDTH & DEPTH).
	= INDICATES HARD DUCT (DIMENSIONS ARE INSIDE CLEAR WIDTH & DEPTH).
	= FIRE/DAMPER WITH ACCESS DOOR
	= VOLUME DAMPER
	= INDICATES NEW WALL MOUNTED THERMOSTAT.
	ROOM NAME ROOM NUMBER
	REVISION

## H.V.A.C. GENERAL NOTES

1. PROCURE AND PAY ALL NECESSARY PERMITS AND LICENSES REQUIRED TO CARRY OUT THE WORK SHOWN. OBTAIN AND PAY FOR ALL FEES.
2. COMPLY WITH ALL FEDERAL, STATE AND MUNICIPAL LAWS AND CODES, ORDINANCES, RULES AND REGULATIONS OF HEALTH, PUBLIC OR OTHER AUTHORITIES CONTROLLING OR LIMITING THE METHODS, MATERIALS TO BE USED OR ACTIONS OF THOSE EMPLOYED.
3. GUARANTEE H.V.A.C. SYSTEMS FOR A PERIOD OF ONE YEAR FROM OWNER'S ACCEPTANCE TO BE FREE FROM DEFECTS AND REPAIR OR REPLACE, AT NO COST TO OWNER, FAILURES OR DEFECTS.
4. H.V.A.C. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL HIS DEBRIS.
5. BALANCE AIR AND WATER SYSTEMS TO QUANTITIES INDICATED. CONTRACTOR TO SUBMIT SIX (6) SETS OF AIR, WATER AND UNIT BALANCING REPORT TO ARCH./ENGR./OWNER PRIOR TO FINAL ACCEPTANCE OF THE SYSTEM.
6. BIDDERS FOR THIS WORK SHALL VISIT THE PREMISES AND CAREFULLY EXAMINE ALL EXISTING CONDITIONS BEFORE SUBMITTING BIDS. NOT ALL EXISTING CONDITIONS HAVE BEEN IDENTIFIED ON DRAWINGS. CONTRACTOR SHALL NOTIFY ARCH. & ENGR. OF ALL DISCREPANCIES PRIOR TO SUBMITTING BID.
7. ALL BIDDERS SHALL ALSO FAMILIARIZE THEMSELVES WITH THE MEANS OF ENTRANCE AND EXIT AT THE PROPERTY AND ALL OTHER INFORMATION NECESSARY TO PROPERLY CARRY OUT THE WORK.
8. THE CONTRACTOR SHALL, WITH THE APPROVAL OF THE ENGINEER AND WITHOUT ADDITIONAL COST TO THE OWNER, MAKE ALL NECESSARY CHANGES OR MODIFICATIONS TO LOCATIONS AS MAY BE NECESSARY TO SUIT REQUIREMENTS AND CONDITIONS FOR THE PROPER AND CONVENIENTLY ACCESSIBLE LOCATIONS OF ALL PARTS OF EACH SYSTEM.
9. SMALL DETAILS ARE NOT USUALLY SHOWN OR SPECIFIED BUT NECESSARY FOR THE PROPER INSTALLATION AND OPERATION OR WORK SHALL BE FURNISHED AND INSTALLED AT NO ADDITIONAL COST.
10. THE CONTRACTOR SHALL NOTE THAT ALL SERVICE CONNECTIONS MAY NOT BE SHOWN IN TRUE POSITIONS. EACH BIDDER IS CAUTIONED, THEREFORE, TO VERIFY SAME WITH FIELD CONDITIONS.
11. CONTRACTOR SHALL CHECK FOR INTERFERENCE AND VERIFY ALL DIMENSIONS PRIOR TO FABRICATION OF INSTALLATION OF PIPING AND DUCTWORK.
12. IF AN ITEM OF EQUIPMENT OTHER THAN THE ITEM(S) SPECIFIED IS APPROVED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ADDITIONAL COST ARISING OUT OF ADDITIONAL OR CHANGED GENERAL CONSTRUCTION AND MECHANICAL WORK REQUIRED TO ACCOMMODATE THE SUBSTITUTED EQUIPMENT.
13. ALL EQUIPMENT INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURERS DIRECTIONS AND RECOMMENDATIONS.
14. CONTRACTOR TO SUBMIT EIGHT (8) SETS OF DUCT AIR LEAKAGE TESTING REPORT FOR REVIEW.
15. PROVIDE ONE YEAR MAINTENANCE SERVICE FOR ALL INSTALLED HV/HVAC/MECHANICAL SYSTEMS.
16. PROVIDE FIRE DAMPERS/ACCESS DOORS AT ALL DUCT PENETRATIONS THROUGH CORRIDORS, SLABS AND OTHER RATED PARTITIONS, IRRESPECTIVE OF WHETHER IT IS INDICATED ON THE DRAWINGS OR NOT.
17. PROVIDE FIRE STOPPING AROUND ALL OPENINGS FOR DUCT, PIPING, CONDUIT, ETC, PENETRATIONS THROUGH CORRIDORS, SLABS AND OTHER RATED PARTITIONS. FIRE STOPPING MUST BE DONE DAILY DURING CONSTRUCTION.
18. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR ALL DEMOLITION AND RESTORATION OF AREAS OF MECHANICAL REMOVALS.
19. PROVIDE EXPANSION JOINTS/LOOPS EVERY ONE HUNDRED FEET (100'-0") MINIMUM OF STRAIGHT MECHANICAL PIPING.
20. PROVIDE IDENTIFICATION TAGS FOR ALL MECHANICAL PIPING & VALVES.

## GENERAL NOTES

1. ALL WORK SHALL CONFORM WITH LATEST EDITIONS OF VA MASTER SPECIFICATIONS.
2. CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH THE EXTENT AND SCOPE OF THE WORK PRIOR TO SUBMITTING BIDS OR COMMENCING WORK.
3. CONTRACTOR SHALL REVIEW DRAWINGS AND FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES, AND ADDRESS ALL QUESTIONS TO ARCHITECT/ENGINEER PRIOR TO COMMENCING WORK.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR CUTTING, PATCHING, FILLING AND CLEANING UPON COMPLETION OF WORK.
5. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL REQUIRED PERMITS, FEES AND INSPECTIONS PRIOR TO COMMENCING WORK. UPON COMPLETION OF WORK THE CONTRACTOR SHALL SECURE CERTIFICATE OF OCCUPANCY.
6. CONTRACTOR SHALL BE RESPONSIBLE TO DISPOSE OF ALL DEMOLISHED MATERIAL OF SITE IN AN APPROVED MANNER.

## HVAC/PLUMBING MATERIALS

### DUCTWORK:

ALL SUPPLY AND RETURN DUCTWORK, EXCEPT AS INDICATED BELOW, SHALL BE GALVANIZED STEEL CONSTRUCTION. WEIGHTS AND CONSTRUCTION DETAIL SHALL BE IN ACCORDANCE WITH THE LATEST ASHRAE GUIDES AND/OR SMACNA STANDARDS.  
EXHAUST AIR DUCTWORK SHALL BE ALUMINUM CONSTRUCTION, CLASS "A" SEALED.  
LABORATORY HOOD EXHAUST AIR DUCTWORK SHALL BE ALL WELDED STAINLESS STEEL CONSTRUCTION.  
FIRE DAMPER: PHILLIPS SERIES 2 U.L. LABELED DAMPER OR APPROVED EQUAL.

### INSULATION:

EXTERNAL DUCT INSULATION: 1" THICK, MIN. 2LB. DENSITY FLEXIBLE FIBERGLASS DUCT INSULATION WITH REINFORCED FOIL FACED FLAME RESISTANT KRAFT VAPOR BARRIER, ADHERED TO DUCT W/ SEALED LAPS AND TAPED JOINTS.

### AIR DEVICES:

CEILING AIR DIFFUSER (SAD): PRICE MODEL SCD, 24x24 FACE MODULE (ROUND NECK).  
RETURN AIR REGISTER (RAR): PRICE MODEL 530.  
EXHAUST AIR REGISTER (EAR): PRICE MODEL 530.

OR APPROVED EQUAL  
MANUFACTURERS

NOTE: FOR ALL SUPPLY AIR DIFFUSERS, THE NC RATING SHALL NOT BE GREATER THAN 20.  
FOR ALL EXHAUST/RETURN AIR REGISTERS, THE NC RATING SHALL NOT BE GREATER THAN 22.

### EQUIPMENT:

REFER TO SCHEDULES FOR UNIT MANUFACTURER, SIZE, AND CAPACITY DATA.

## GENERAL CONSTRUCTION NOTES

1. GENERAL CONTRACTOR IS RESPONSIBLE TO CORE DRILL ALL WALLS, FLOORS, CEILING ETC. FOR ALL PIPE PENETRATIONS, DUCT PENETRATIONS, & ELECTRICAL CONDUIT PENETRATIONS. SEAL OPENING WITH 3HRS FIRE BARRIER CAULK. SEE MECH. & ELEC. DRAWINGS FOR APPROXIMATE LOCATIONS OF PIPE, DUCT & CONDUIT ROUTING.
2. GENERAL CONTRACTOR IS REQUIRED TO PATCH (TO MATCH EXISTING) ALL WALL, FLOOR & CLG. OPENINGS WHERE EXISTING PIPE, DUCT, ETC. ARE BEING REMOVED. SEE GENERAL LOCATIONS ON MECHANICAL DEMOLITION PLAN.
3. GENERAL CONTRACTOR TO REFER TO MECHANICAL DRAWINGS FOR PAINTING OF DUCTWORK, FURNISHING AND INSTALLING ACCESS PANELS, CUTOUT LOCATIONS, ETC.
4. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING & RELOCATING EXISTING ELECTRICAL, FIRE ALARM & COMMUNICATION DEVICES TO ACCOMMODATE THE INSTALLATION OF NEW UNITS, PIPING & DUCTWORK. CHECK IN FIELD.

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MECHANICAL NOTES

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LABORATORY RENOVATION  
100% CD SUBMISSION  
NK Job Number: 1925400 LAN Job Number 41160.03

Location

BRONX, NY

Date

03/09/11

Checked

SS

Drawn

EK

Project Number

526-09-122

Building Number

100

Drawing Number

MH 000

Dwg. of

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Facilities  
Management



Department of  
Veterans Affairs