

UNIT NO. COMMERCIAL TENANT HEATING SYSTEM GENERAL SERVICE BASEMENT LOCATION 91.5CC DUPLEX MODEL PUMP IMPELLER SIZE 6-3/16 CAPACITY SQ. FT. EDR 9000 WATER GPM DISCH PRESS PSIG (EACH) MOTOR HP EA 1750 RPM 115/1/60 VOLTS PH HZ CONDENSATE TANK CAP GAL <u>1</u> F "B&G" AS STANDARD OR APPROVED EQUAL

PROVIDE:

1. NEMA 2 TYPE CONTROL PANEL UNIT MOUNTED AND WIRED.

2. CSA LABEL.

3. MAGNETIC STARTERS WITH FUSED DISCONNECT W/FUSES AUXILIARY CONTACTORS ON STARTER.

4. VENT TO THE ATMOSPHERE.

5. PIPING HOOK—UP AS PER DETAIL.

6. CONCRETE PAD.

7. ALARM W/SILENCING RELAY, ALARM PILOT LIGHT.

8. SELECTOR SWITCHES — OFF—HAND—LEAD—LAG.

9. CONTROL POWER TRANSFORMER.

10. POWER CONTROL SWITCHING RELAY.

11. PUMP PILOT LIGHT.

12. SINGLEW POWER CONNECTION.

13. NEMA 1 HIGH LEVEL FLOAT SWITCH.

14. MOUNTING PLATE.

15. PUSH TO TEST BOTTON.

16. U.L. LISTING.

17. DIAL THERMOMETER.

18. 2" INLET BASKET STRAINER.

19. DISCHARGE PRESSURE GAUGE.

COMMERCIAL SPACE HOT WATER PUMP 49 끌로 165 MOTOR 1.5 3500 208/3/60 END SUCTION JYYT OPER. WEIGHT LBS. 1535, SIZE 355 IMPELLER DIAMETER IN. 5.0 "BELL 80 FRAME SIZE GOSSETT" ONE IS STAND-B ASREMARKS STAND.

PROVIDE:

1. AUTO LEAD/LAG SEQUENCE.
2. DISCONNECT SWITCHES.
3. PIPE FLEXIBLE CONNECTION.
4. MOTOR STARTER.

NO.

2

)–BY				DARD												
CONN SIZE, IN.	FPI	CIR	ROWS	WPD, FT. W.G.	WATER FLOW, GPM	LWT, * F	EWT, · F	HEATING CAPACITY, MBH	APD, "W.G.	LAT-DB, • F	EAT-DB, · F	FACE VELOCITY, FPM	AIR FLOW, CFM	DRY WEIGHT, Ibs	FIN HEIGHT, IN.	FIN LENGTH, IN.	FIN THICKNESS, IN.	FIN MAT'L	CASING MAT'L	TUBE WALL THK, IN.
1-1/2	10	HALF	1	0.2	8.0	178.4	200	85.6	0.09	85	60	406	3170	79	22.5	50	0.0075	ALUMINUM WAVE	GALVANIZED STEEL	0.02 COPPER
1-1/2	10	HALF	1	0.1	6.0	179.5	200	61.1	0.1	85	60	417	2260	64	19.5	40	0.0075	ALUMINUM WAVE	GALVANIZED STEEL	0.02 COPPER
1-1/2	10	HALF	1	0.2	9.0	180.6	200	86.4	0.09	85	60	410	3200	79	22.5	50	0.0075	ALUMINUM WAVE	GALVANIZED STEEL	0.02 COPPER

														"BH	"BELL &
	LOCATION	MODEL	SIZE	No.	неат	HS	SHELL SIDE	DE		TUI	TUBE SIDE				
NO.		NO.	LENGTH x DIA.	OF PASSES	LOAD MBH	LBS/ HR	PD PSIG	PRESS. PSIG	EWT °F	LWT °F	GPM	PD PSIG	SURFACE AREA SQ. FT.	ACE EA FT.	WEIGHT ACE LBS. FT.
HE-1	BASEMENT	SU 84-4	48" L x 8" dia.	4	490	506	-	_	180	200	49	0.63	3;	32.3	2.3 1.5" NTP STEAM NOZZLE, 1" NPT -

ET-1	UNIT NO.	CLOS	
HOT WATER HEATING SYSTEM	SERVICE	OSED	
BASEMENT	LOCATION		EXPA
52	HEIGHT INCHES	() - N	
24	DIA. INCHES	IN 	
79	TANK VOLUME (GALS.)		
17	MIN. OPER. PRESS. PSIG	K S	
30	MAX. OPER. PRESS. PSIG	CHE	
B-300	MANUFACTURER AND MODEL NO.		DULE
897	OPER. WEIGHT LBS. EACH		
523 GAL. SYSTEM APPROX.	REMARKS		"ITT BELL & GOSSETT" AS STANDARD

CB-1	FTR-2	FTR-1		TYPE	
GOVERNALE	SLANT/FIN	SLANT/FIN		MANUFACTURER	
GOV-BOARD	MULTI/PAK 90-14	MULTI/PAK 90-21		MODEL	
CAST IRON	COPPER- ALUMINUM	COPPER- ALUMINUM	MATERIAL		
	[" C-340	[" C-340	PIPE	EL:	
	40	40	NO OF FINS PER FT.	ELEMENT	
	4-1/4"	4-1/4"	FIN SIZE	4	FZ
2	1	2	NO OF TIERES		TUBE
190	190	190	BASED ON 20°F △T	AWT	TUBE RADIATION SCHEDULE
65	65	65	H.	EAT	TION
640/LF	1435	2200	PER LIN. FT.	втин	SCHE
2	2	2	GPM		
0	4-1/4	4-1/4	FLOOR TO BOTTOM BOTTOM TO TOP	MTG. HTIN.	М
	18-3/4	25-3/4	BOTTOM TO TOP	TIN.	
SEE PLANS	SEE PLANS	SEE PLANS	LENGTH		
				REMARKS	

SPACE HEATING SYSTEM GENERAL

1. PROVIDE PIPING HOOK-UP AS PER DETAIL AND ACCESS DOOR FOR EACH VALVE.

_		
	BASIS OF DESIGN: ROSEN	CABINET UNIT HEATERS
•	1EX	% UNIT
		HEATE
		FRS.

VESTIBULE	F-600-B VESTIBULI	2.2	5.13	058	505	1/1	51.3	FLOOR MOUNT FULLY EXPOSED IRW-2	1—HNO
		FT W.G.		RPM	CFM	₩	MBH*	ARRANG.	NO.
LOCATION	MODEL LOCATION	P.D.	8		FAN		HEATING	CABINET	TA 6

* BASED ON 60° F EAT, 200° F EWT.

PROVIDE FOR EACH UNIT HEATER:

1. SHUT-OFF, BALANCING, DRAIN AND AIR VENT VALVE.

2. BUILT IN THERMOSTAT AND STARTER.

3. TWO-WAY HOT WATER CONTROL VALVE.

SCHEDULES.

M-4

S.B.

MEP ENGINEERS	NEVILLE ENGINEERING GR	
RS	GROUP	

305 SEVENTH AVE., NEW YORK, NY 10001 TEL. 212-367-8262, FX: 212 367 8462

TUBE DIAMETER, IN.

MODEL

W-10AW-22.5 X 50.0-1-0.5

W-10AW-19.5 X 40.0-1-0.5

W-10AW-22.5 X 50.0-1-0.5

5/8

RHC-6

5/8

RHC-5.2

5/8

RHC-5.1

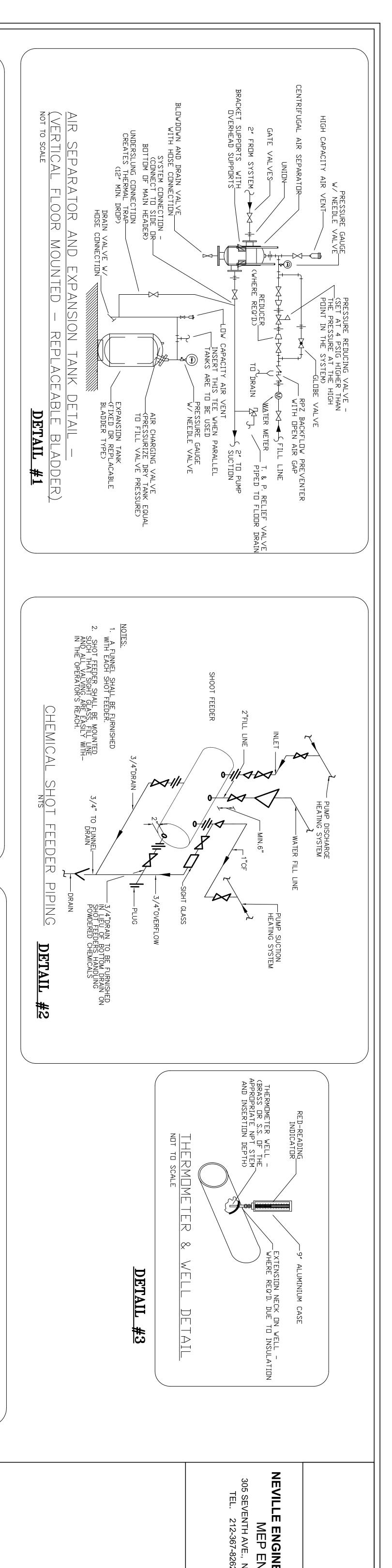
COIL TAG.

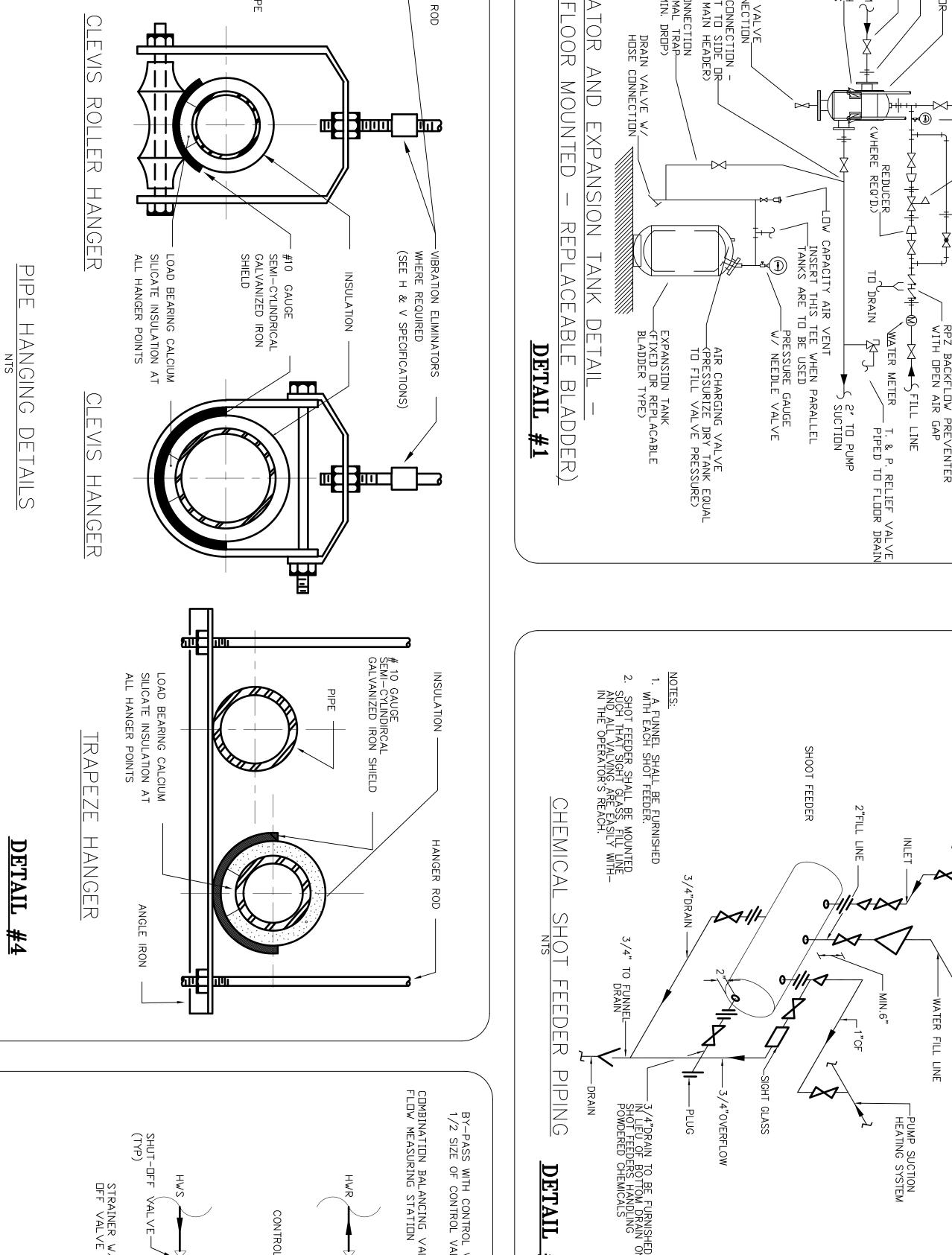
HOT WATER COIL SCHEDULE

MANUFACTURER: AEROFIN

COIL TYPE: W

92nd S 92nd S Makor/ Center 200 Hudso New York,			2	No.	
92nd Street Y Makor/Steinhardt Center 200 Hudson Street New York, NY 10013			07/21/09	Date 04/10/09	
ďt			LANDLORD COMMENTS	Revisions LANDLORD COMMENTS	





CLEVIS

HANGER

RADIATOR SHUT-OFF VALVE

-AUTO CONTROL W/AD (TYP.)

VALVE

1/8"

₽R

RADIATOR VALVE

SHUT-OFF

AUTO CONTROL VALVE W/AD (TYP.)

-FIN-TUBE ELEMENT

COMBINATION
BALANCING &
SHUT-OFF VALVE
W /AD (TYP.)

COMBINATION
BALANCING &
SHUT-OFF VALVE
W /AD (TYP.)

FLOOR LEVEL

FIN-TUBE ELEMENT

NOTE:

HEIGHT 'H'

AS

REQUIRED

70

ACCOMODATE ENCLOSURE

 \bigvee

FINNE

RADIA

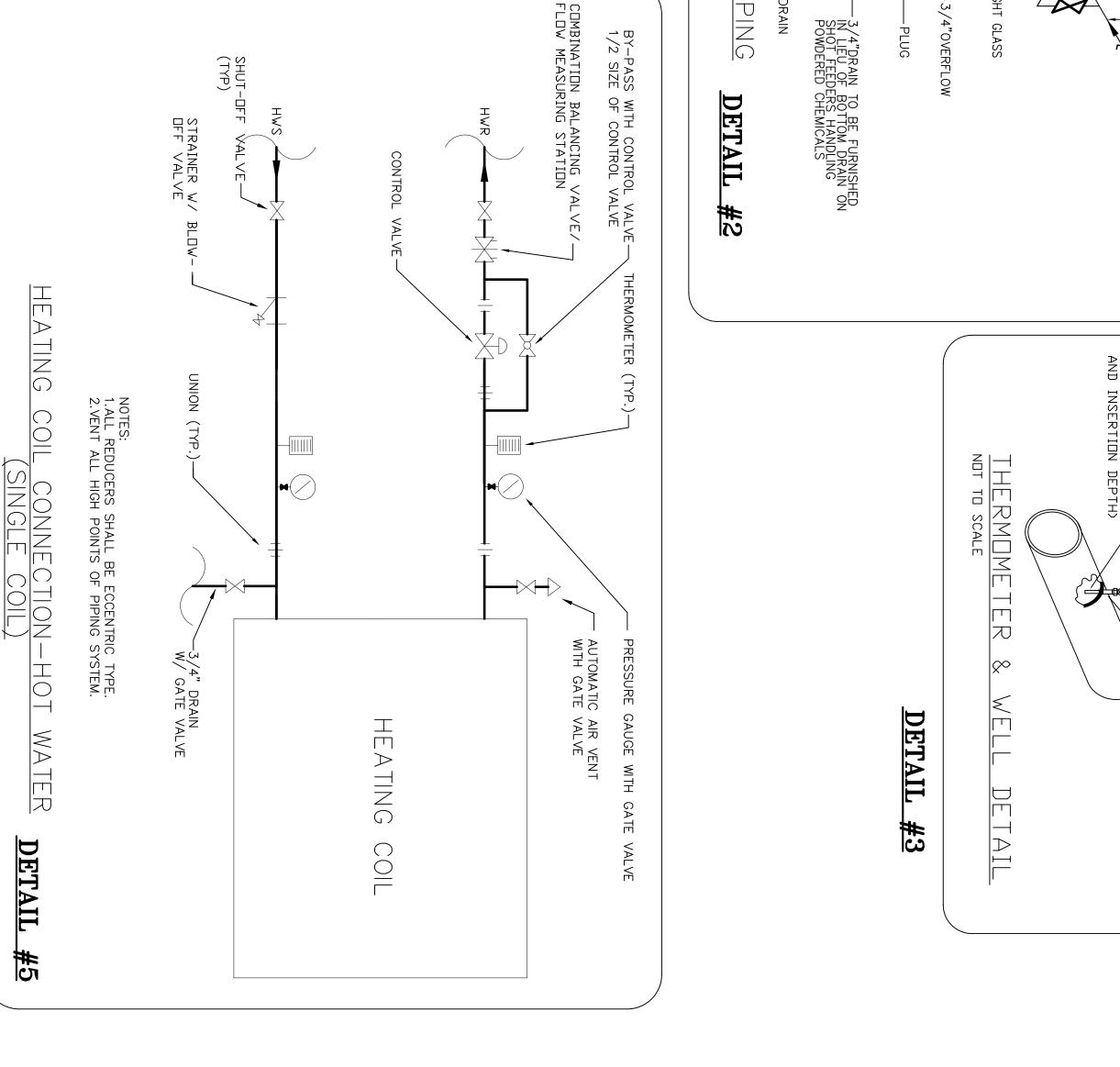
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DETAIL

#6

NOT TO SCALE

SWH

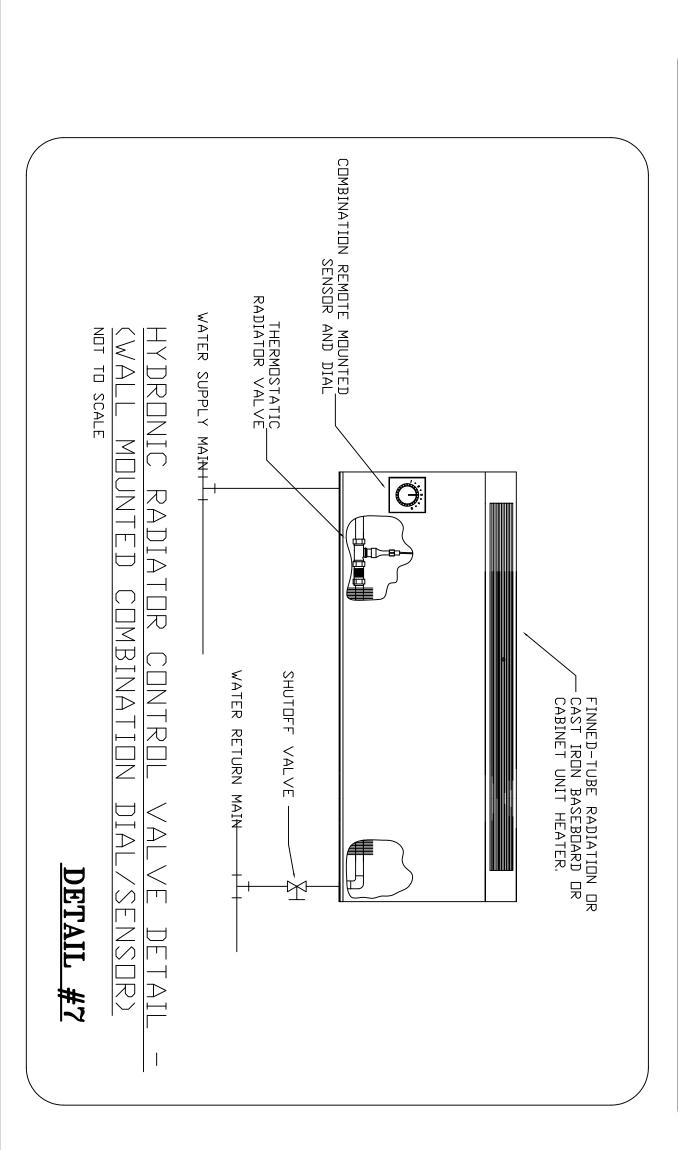


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07/21/09

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04/10/09



NEVILLE ENGINEERING GROUP

305 SEVENTH AVE., NEW YORK, NY 10001 TEL. 212-367-8262, FX: 212 367 8462

New York, NY 10013	200 Hudson Street	Center	Makor/Steinhardt	92nd Street Y	Project Name	

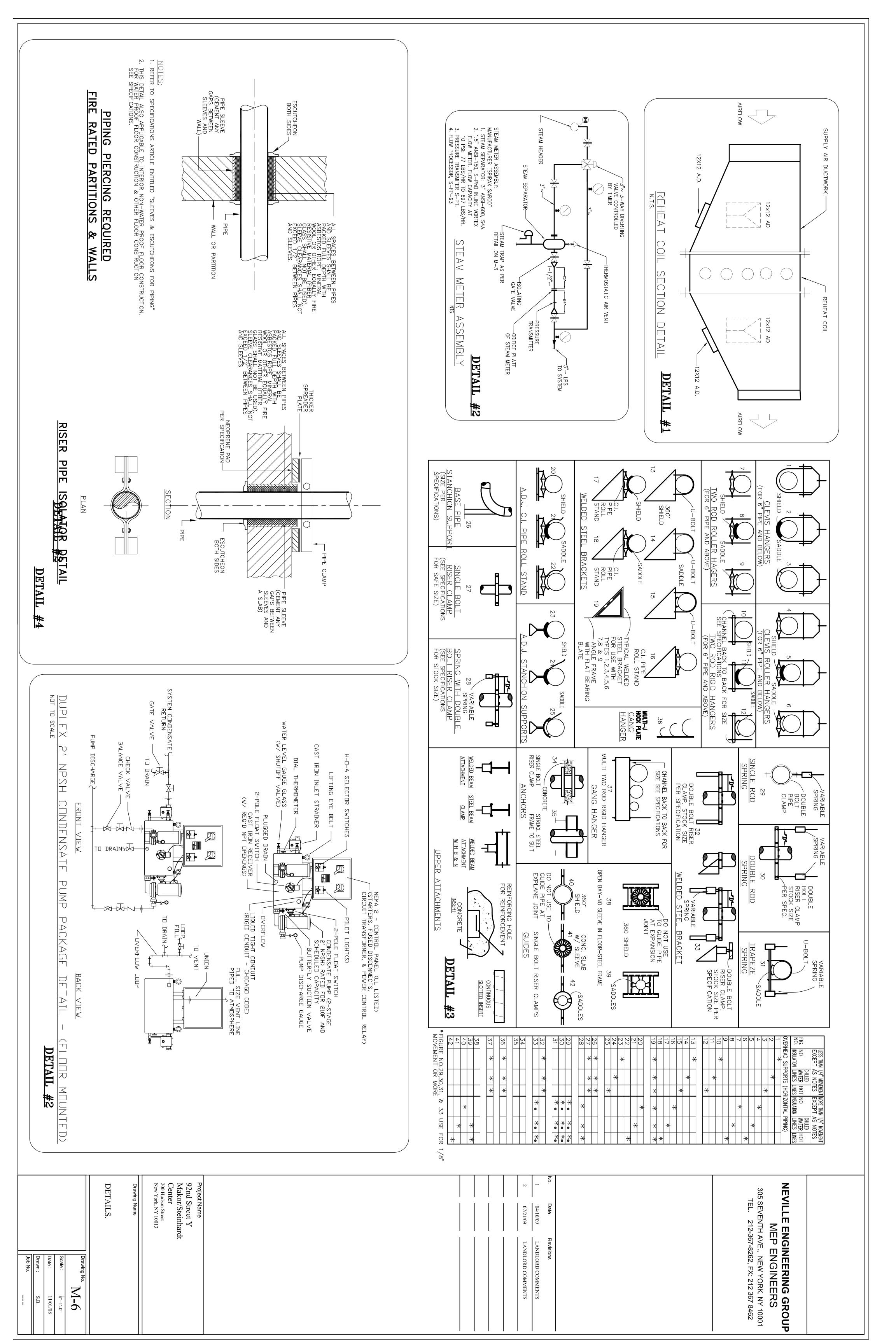
PIPING DIAGRAMS

DETAILS.

DETAIL

#5

Job No.	Drawn:	Date :	Scale :	Drawing No.
	S.B.	11/01/08	$\frac{1}{8}$ "=1'-0"	M-5



EXCEPT AS OTHERWISE SPECIFIED, THE WORK UNDER THIS CONTRACT SHALL CONSIST OF PROVIDING ALL LABOR, MATERIALS, EQUIPMENT, AND APPLIANCES NECESSARY AND REQUIRED FOR A COMPLETE AND SAFE INSTALLATION OF THE FOLLOWING IN CONFORMANCE WITH ALL APPLICABLE CODES AND AUTHORITIES HAVING JURISDICTION.

1. PROVIDING PERIMETER HEATING BASEBOARDS, RADIATORS AND UNIT HEATERS.
2. PROVIDING REHEAT HOT WATER COILS IN EXISTING DUCTWORK AND INSULATION.
3. PROVIDING PIPING, PIPING INSULATION AND CONTROLS.
4. PROVIDING STEAM TO WATER HEAT EXCHANGER, HOT WATER PUMPS AND CONTROLS.
4. PROVIDING ALL CONTROL WIRING AND COMPONENTS. THIS CONTRACTOR SHALL HIRE AND PACONTRACTOR TO INSTALL CONTROLS AND WIRING REQUIRED FOR THE SYSTEMS UNDER THIS CONTRACTOR COMPLETE AIR (AC-5, AC-6) AND HYDRAULIC BALANCING.
5. PROVIDING HEATING/COOLING PROGRAMMABLE THERMOSTAT FOR AC-5 AND AC-6. MODIFY PAY ELECTRICAL CONTRACT.

SHOP DRAWINGS: SUBMIT FIVE (5) COPIES OF SHOP DRAWINGS OF EQUIPMENT AND LAYOUTS AS LOW. SHOP DRAWINGS OF EQUIPMENT SHALL INDICATE CONFORMANCE WITH ALL REQUIREMENTS OF 1 AWINGS AND SPECIFICATIONS, AND SHALL CLEARLY NOTE ANY DEVIATIONS FROM SAME.

SHOWING PIPING, DUCTWORK, LIGHTING

1. HOT WATER COILS.
2. 3/8" SCALE PIPING LAYOUT COORDINATED WITH AND SHO STRUCTURAL CONDITIONS, NEW AND EXISTING.
3. HEATING BASEBOARDS, RADIATORS AND UNIT HEATERS.
4. DUCTWORK CONSTRUCTION SHOP STANDARDS.
5. PIPING MATERIALS AND FITTINGS.
6. INSULATION.
7. VALVES.
8. HEAT EXCHANGER.

C. BIDDING REQUIREMENTS: BIDDERS, BEFORE SUBMITTING PROPOSALS, SHALL VISIT AND CAREFULLY EXAMINE THE AREA AFFECTED BY THIS WORK TO FAMILIARIZE THEMSELVES WITH THE EXISTING DIMENSIONS & CONDITIONS AND THE DIFFICULTIES THAT WILL ATTEND THE EXECUTION OF THIS WORK. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH EXAMINATION HAS BEEN MADE, AND LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OR MATERIALS, REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE. S. AIR ELIMINATOR, EXPANSION TANK.
ROL WIRING DIAGRAMS AND EQUIPMENT.

D. COORDINATION: THE WORK INDICATED ON THE DRAWINGS IS GENERALLY DIAGRAMMATIC AND IS INTENDED TO CONVEY THE SCOPE OF WORK AND INDICATE THE GENERAL ARRANGEMENT OF MATERIALS AND EQUIPMENT. WITH PRIOR WRITTEN APPROVAL OF THE ENGINEER, THE CONTRACTOR MAY MAKE CHANGES TO THE SYSTEMS AT NO ADDITIONAL COST TO THE OWNER. ALL WORK SHALL BE PROPERLY COORDINATED WITH OTHER TRADES AND EXISTING CONDITIONS TO AVOID CONFLICTS. CONTRACTOR SHALL VERIFY THE SPACE AVAILABLE FOR THE INSTALLATION OF MATERIALS AND EQUIPMENT AND SHALL DETERMINE THAT ACCESS TO INSTALLED EQUIPMENT WILL BE ADEQUATE FOR MAINTENANCE AND SERVICE.

E. CUTTING AND PATCHING: ALL CUTTING AND PATCHING REQUIRED FOR THE WORK OF THIS CONTRACT SHAL BE DONE BY THIS CONTRACTOR. CONTRACTOR SHALL PROVIDE ALL NECESSARY SLEEVES WHERE APPLICABLE, AND SHALL NOT DO ANY CUTTING THAT MAY IMPAIR THE STRENGTH OF THE BUILDING CONSTRUCTION WITHOUT PRIOR APPROVAL OF THE BUILDING ENGINEER.

F. CLEANING: CONTRACTOR SHALL THOROUGHLY CLEAN ALL EQUIPMENT, PIPING, ETC. BOTH INSIDE AND OUT OF ALL RUST, SCALE, FILINGS, DEBRIS, ETC. BEFORE ANY COVERING OR PAINTING IS DONE OR THE SYSTEM PUT INTO OPERATION. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL REMOVE ALL RUBBISH, DEBRIS, AND SURPLUS MATERIALS, TOGETHER WITH ALL UNUSED AND DEMOLISHED MATERIALS AND EQUIPMENT AND SHALL LEAVE HIS WORK IN A NEAT, CLEAN AND ACCEPTABLE CONDITION.

TESTING, ADJUSTING AND BALANCING:

1. PIPING: PRIOR TO CONCEALING OR COVERING PIPING PROVIDE HYDROSTATIC PRESSURE TEST AT 150% OF DESIGN WORKING PRESSURE OR 50 PSIG, WHICHEVER IS GREATER, FOR A PERIOD NOT LESS THAN 2 HOURS WITH NO LOSS OF PRESSURE. REPAIR ANY LEAKS. TESTS SHALL BE MADE IN THE PRESENCE OF ENGINEER AND ANY SUCH OTHER PARTIES HAVING JURISDICTION. ADVISE ENGINEER 48 HOURS PRIOR TO PERFORMING TEST.

2. DUCT SYSTEMS: DUCT SYSTEMS SHALL BE BALANCED TO WITHIN 95% AND 110% OF LISTED AIR QUANTITIES AT EACH GRILLE, REGISTER AND DIFFUSER BY AN ORGANIZATION CERTIFIED BY THE ASSOCIATED AIR BALANCING COUNCIL AND HAVING AT LEAST 5 YEARS EXPERIENCE IN AIR BALANCING. AIR BALANCE CONTRACTOR SHALL PROPERLY SET ALL FAN SPEEDS.

THE WORK INCLUDES SETTING SPEED AND FLOW, ADJUSTING EQUIPMENT AND DEVICES OF SHEAVES, RECORDING DATA, PREPARING AND SUBMITTING REPORTS.

PROVIDE BALANCING DAMPERS AND ANY OTHER ITEMS AND COMPONENTS AS REQUIRED FOR A PROPERLY BALANCED SYSTEM, WHETHER OR NOT SPECIFIED HEREIN OR SHOWN ON THE DRAWINGS, ALL AT NO ADDITIONAL COST TO THE OWNER. ADJUSTMENT OR REPLACEMENT OF PARTS RECOMMENDED BY THE BALANCING SPECIALIST SHALL BE MADE IN STRICT ACCORDANCE WITH THE RESPECTIVE MANUFACTURER'S RECOMMENDATIONS.

H. GUARANTEES: CONTRACTOR SHALL UNCONDITIONALLY GUARANTEE FOR ONE YEAR FROM DATE OF FINAL ACCEPTANCE, ALL MATERIALS, EQUIPMENT AND WORKMANSHIP, AND SHALL PROMPTLY RECTIFY ANY DEFICIENCIES IN SAME WITHOUT CHARGE FOR MATERIAL, SERVICE OR TRANSPORTATION. CONTRACTOR SHALL ALSO RESTORE ANY OTHER EXISTING WORK DAMAGED IN THE COURSE OF REPAIRING DEFECTIVE MATERIALS AND WORKMANSHIP.

CONTRACTOR SHALL DELIVER TO THE OWNER THE MANUFACTURER'S STANDARD GUARANTEE FOR EACH ITEM GUARANTEED EQUIPMENT; SUCH GUARANTEE SHALL IN NO WAY INVALIDATE OR MINIMIZE THE CONTRACTOR'S GUARANTEE.

1. TWO MONTHS PRIOR TO THE COMPLETION OF ALL WORK AND THE ITHE OWNER, FIVE (5) COPIES OF A COMPLETE INSTRUCTION MANUAL, INDEXED, SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. ALL MANUAL SHALL BE TYPEWRITTEN OR PRINTED. FINAL INSPECTION OF THE INSTALLATION, BOUND IN BOOKLET FORM AND SUITABL WRITTEN MATERIAL CONTAINED IN THE

THE MANUAL SHALL CONTAIN THE FOLLOWING ITEMS:

TABLE OF CONTENTS (HVAC AND ELECTRICAL)

INTRODUCTION EXPLANATION 유 MANUAL AND

DESCRIPTION OF SYSTEMS

 $\dot{\omega}$ COMPLETE SCHEMATIC DRAWINGS

FUNCTIONAL AND SEQUENTIAL DESCRIPTION OF RELATIONSHIP OF SYSTEM WHERE APPLICABLE ALL SYSTEMS.
TO THE SUPERVISORY

 \mathcal{C} OPERATION

START OUP PROCEDURES.
SHUT DOWN PROCEDURES.
RESET AND ADJUSTMENT AND B
SEASONAL OPERATION.
ALL POSTED INSTRUCTION CHAR BALANCING

CHARTS.

CLEANING AND REPLACEMENT LUBRICATION.
CHARGING AND FILLING.
PURGING AND DRAINING.
SYSTEMS TROUBLE SHOOTING CINSTRUMENTS CHECKING AND CPROCEDURES FOR CHECKING OLD

D.

RECOMMENDED LIST OF SPARE CALIBRATION.

OUT FUNCTIONS

LISTING

AND FITTING SCHEDULE

IPE, BLACK STEEL FOR STEAM AND CONDENSATE RETURN: ASTM A53 GRADE B, SEAMLESS, ALL NEW PIPING SHOULD MATCH THE EXISTING PIPING MATERIALS AND FITTING TYPE.

B. PROVIDE FITTINGS AT ALL TEES AND ELBOWS. ELBOWS SHALL BE LONG RADIUS TYPE. PROVIDE UNIONS AT CONNECTIONS TO ALL EQUIPMENT AND CONTROL VALVES. SOLDER FOR SOLDER TYPE FITTINGS SHALL BE 95% TIN AND 5% ANTIMONY.

SLEEVES AND ESCUTCHEONS: PROVIDE SLEEVES AND ESCUTCHEONS WHERE PIPES PENETRATE THE WALLS.

D. HANGERS AND SUPPORTS: FEE & MASON NO. 105 FOR STEEL PIPING. SUPPORT PIPING 1" AND LARGER NOT MORE THAN 10' O.C. AND PIPING LESS THAN 1" NOT MORE THAN 7' O.C. ADEQUATELY SUPPORT PIPING AT ALL CHANGES IN DIRECTION. PROVIDE ALL NECESSARY SUPPLEMENTARY STEEL. ATTACH PIPE SUPPORTS TO JOISTS USING BEAM CLAMPS WITH RETAINING STRAPS. PIPING SHALL BE ADEQUATELY SUPPORTED TO PREVENT SAGGING AND TO ELIMINATE PIPING STRESS OR EQUIPMENT. ALL PIPING SHALL BE HUNG FROM BUILDING STRUCTURAL MEMBERS ONLY. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED.

E. DRAINAGE: ALL PIPING SHALL BE INSTALLED FOR EASE OF DRAINING. EACH LOW POINT IN A MAIN SHALL BE PROVIDED WITH A 1" BRONZE HOSE GATE VALVE HAVING A BRONZE CAP AND CHAIN ON THE OUTLET.

FLOW VENTING: INSTALL PIPING FOR EASE OF AIR VENTING. PITCH PIPING UPWARD 1" IN 40 FEET IN DIRECTION / TOWARD AIR VENTS. PROVIDE AIR VENTS AT ALL POINTS INDICATED ON THE DRAWINGS AND WHEREVER REQUIRED TO ASSURE THE COMPLETE VENTING.

G. DIELECTRIC FITTINGS: PROVIDE DIELECTRIC FITTINGS AT CHANGES IN PIPE MATERIAL AND AS REQUIRED TO PREVENT GALVANIC ACTION.

EANING AND FLUSHING: THOROUGHLY CLEAN PIPING SYSTEM OF ALL DIRT GREASE, METAL SHAVINGS, USING A CHEMICAL CLEANING SOLUTION SPECIFICALLY DESIGNED FOR SUCH USE. AFTER CLEANING, THOROUGHLY DRAIN AND FLUSH PIPING SYSTEM WITH WATER PRIOR TO PLACING SYSTEM IN USE.

IPE INSULATION

A. INSULATION SHALL BE GLASS FIBER COMPLYING WITH ASTM C547, TYPE I WITH A MAXIMUM K FACTOR OF 0.23 AT 75 DEGREES F. MEAN TEMPERATURE WITH FACTORY—APPLIED ALL SERVICE VAPOR BARRIER JACKET SEAL LAP MEETING THE REQUIREMENT OF ASTM C—1136 TYPE I.

1. INSULATION SHALL BE HEAVY DENSITY FIBERGLASS SECTIONAL PIPE INSULATION AS MADE BY OWENS—CORNING FIBERGLASS CORP. OR JOHNS—MANVILLE MICRO—LOK FIBERGLASS INSULATION.

2. ENDS 21 FEET BF-30-3 OF PIPE INSULATION SHALL BE SEALED OFF AT ALL FLANGES, FITTINGS, VALVES AND AT INTERVALS ON CONTINUOUS RUNS OF PIPE, WITH BENJAMIN FOSTER FIRE—RESISTANT VAPOR BARRIER COATING 35 OR EQUAL.

3. ALL THICKNE WIRE AN JOHNS N FITTINGS, VALVES AND FLANGES SHALL BE INSULATED WITH MOLDED FIBERGLASS FITTINGS OF SAME SSS AS THE ADJOINING PIPE INSULATION, SECURED WITH NO. 20 GAUGE GALVANIZED ANNEALED STEEL ND COATED WITH?" THICK FINISHING CEMENT, BNZ NO. 375. ZESTON 2000 25/50 PVC AS MADE BY MANVILLE, IS APPROVED WHEN APPLIED PER MANUFACTURER?S RECOMMENDATION.

C. INS 4-POUN INSULAT B. AL SMOKE SULATION MATERIALS: ONE—PIECE MOLDED SECTIONAL FIBER GLASS INSULATION SHALL HAVE A NOMINAL ND DENSITY WITH A THERMAL CONDUCTIVITY OF NOT OVER 0.23 AT 750 F MEAN TEMPERATURE. TIONS SHALL HAVE A JACKET AND ADHESIVE USED TO ADHERE THE JACKET TO THE INSULATION. L INSULATION MATERIALS, INCLUDING JACKETS, FACING AND ADHESIVES DEVELOPED RATINGS NOT EXCEEDING 25 AND 50 RESPECTIVELY.

D. JA AND RE SPECIFIO CKETS: THE JACKETS SHALL BE OF INFORCED WITH FIBER GLASS YARN. CATION HH—B—100B TYPE 1. WHITE KRAFT PAPER OUTER SURFACE BONDED TO ALUMINUM THE JACKETS SHALL MEET THE REQUIREMENTS OF THE

E. B/ HEREIN F. INSTALL INSULATION ON PIPE SYSTEMS SUBSEQUENT TO INSTALLATION OF PAINTING, ACCEPTANCE OF TESTS. ANDS, STAPLES, TAPES, WIRES, CEMENTS, ADHESIVES, SEALERS AND PROTECTIVE FINISHES: AS SPECIFIED OR AS RECOMMENDED BY INSULATION MANUFACTURER FOR PROPER USES ON PIPING INSULATIONS. TESTING, AND

RECOMMENDED THICKNESS FOR HOT WATER: 1" MINIMUM.

H. PIPE INSULATION SHALL MEET FLAME SPREAD INDEX OF 25 AND SMOKE DENSITY OF ACCORDANCE WITH ASTM-E-84. 100 WHEN TESTED IN

SHEET METAL DUCTWORK

A. FU COMPLE JRNISH AND INSTALL ALL DUCTWORK, DAMPERS AND OTHER SHEET METAL THE AIR CONDITIONING SYSTEM.

B. ALL SMACNA I SHEETS O D L DUCTWORK IS TO BE FURNISHED AND INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE OF CONSTRUCTION STANDARDS FOR 2" PRESSURE CLASS WITH CLASS A SEALING, USING PRIME OF GALVANIZED STEEL.

D. DUCT ELBOWS SHALL BE SQUARE TURNS WITH VANES WHERE INDICATED ON THE DRAWINGS. OTHER ELBOW SHALL HAVE CENTERLINE RADIUS OF 150% OF DUCT WIDTH. WHERE THIS IS NOT POSSIBLE, PROVIDE VANE TURNS SIMILAR TO THOSE SHOWN. VANES SHALL BE ARRANGED FOR THE LOWEST PRACTICABLE FRICTION. JCTWORK LAYOUTS AND ROUTES AS SHOWN ON THE DRAWINGS ARE SCHEMATIC; MAKE CHANGES IN DUCTAND/OR LOCATIONS WHERE NECESSARY TO CONFORM TO SPACE CONDITIONS OR TO OBTAIN MAXIMUM DOMESTAND TO CONDITIONS WITHOUT ADDITIONAL COST TO THE TENANT OR THE OWNER.

≥ JPPORT HORIZONTAL DUCTS CEEDING 8 FEET. L DUCTWORK FASTENINGS AND ATTACHMENTS SHALL BE OF CORROSION RESISTANT MATERIALS WITH HANGERS SECURED TO Ħ BUILDING ABOVE

AIR CONDITIONING SUPPLY DUCTS WHICH ARE NOT ACOUSTICALLY LINED SHALL BE THICK 3/4 LB. DENSITY FIBERGLASS RIGID BOARD WITH FACTORY APPLIED VINYL FLANGE. WRAP INSULATION TIGHTLY ON DUCT AND FIRMLY BUTT ALL JOINTS WON CIRCUMFERENTIAL JOINTS. DUCT INSULATION: E INSULATED WITH 1-1/2 INCH . VAPOR BARRIER AND 2 INCH WITH 2 INCH FLANGE OVERLAP

ADHERE TO DUCT WITH 2/3 COVERAGE OF BF 8 20 (OR 1 C 225) ADHESIVE APPLIED IN 4 INCH WIDE BANDS INCHES ON CENTERS. SEAL ALL JOINTS AND SEAMS WITH MINIMUM 3 INCH WIDE VINYL TAPE APPLIED WITH SADHESIVE. ADDITIONALLY, SUPPORT INSULATION ON THE BOTTOM SIDE OF RECTANGULAR DUCTS OVER 24 INCHEMITH WELD PINS AND SPEED WASHERS 12" O.C. IN BOTH DIRECTIONS. CLIP OFF PINS FLUSH WITH VINYL TAPE AND ADHESIVE. MATERIAL: OWENS CORNING SERIES ED 100, FRK 25, JOHNS MANVILLE MICROLITE FSK, CERTAIN TEED DUCT WRAP TYPE IV.

ALL VAPOR BARRIERS SHALL BE COMPLETELY SEALED AGAINST MOISTURE PENETRATION.

2. WHEREVER EXTERNAL DUCT INSULATION IS SPECIFIED AND INTERNAL ACOUSTIC TREATMENT INSULATING EFFECT IS ALSO REQUIRED (BY DRAWINGS OR SPECIFICATIONS) OR EXIST FOR THE THE EXTERNAL INSULATION MAY BE OMITTED.

3. ALL RESISTI SHALL

INCH THICK OF ACOUSTIC LINING. LINING SHALL BE MATUFACE DUCT LINER OF A TYPE APPROVED BY INCH THICK OF ACOUSTIC LINING. LINING SHALL BE MATUFACE DUCT LINER OF A TYPE APPROVED BY PA OF 1 1/2 POUND DENSITY, "LUNACOUSTIC" AS MANUFACTURED BY JOHNSOMANVILLE, OR APPROVED DIMENSIONS OF LINED DUCTS SHOWN ON DRAWINGS ARE THE INSIDE DIMENSIONS OF THE DUCT AFTER VING HAS BEEN INSTALLED. STAPLING METHOD OF ATTACHMENT WILL NOT BE PERMITTED. MATUFACED INCERS SHALL BE ADHERED BY A FIRE RETARDANT ADHESIVE SUCH AS BENJAMIN FOSTER 81099, OR AS VED. MECHANICAL FASTENERS WHICH DO NOT PIERCE THE SHEET METAL WILL BE ON 16 INCH CENTERS SECTIONS (WHEN WIDTH EXCEEDS 12 INCHES), AND ON SIDES (WHEN WIDTH EXCEEDS 24 INCHES). ALL NIG EDGES OF ACOUSTIC LINING SHALL BE CALKED, AND ALL EXPOSED EDGES OF ACOUSTIC LINING SHALL TALLED WITH SHEET METAL NOSING.

CONTROLS

A. PROVIDE ALL NECESSARY WIRING, ACCORDANCE WITH THE CONTROL SYS CONTROLS INSTALLATION. CONTACTS, RELAYS AND SWITCHES FOR MOTOR OPERATORS IN TEM SEQUENCES AND SAFETY DEVICE OPERATION FOR A COMPLETE

1. WHEN THE OUTSIDE AIR TEMPERATURE IS BELOW 65?F., THE HOT WATER PUMP, OR ITS STANDBY, SHALL AUTOMATICALLY START, AND SHALL STOP ABOVE 68?F. B. ALL STARTERS, PUSHBUTTONS SIGNAL DEVICES AND MOTOR CONTROLLER EQUIPMENT SHALL BE NEMA STANDARD. SEQUENCE OF OPERATION FOR HOT WATER HEATING CONVERTER:

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3. THE SUBMASTER THERMOSTAT SHALL MODULATE THE HEAT EXCHANGER NORMALLY CLOSED VALVE MAINTAIN ITS SETTING. 2. THE OUTSIDE AIR MASTER THERMOSTAT SHALL RESET A SUBMASTER THERMOSTAT IN THE HOT WATER SUPPLY LINE, FROM 200?F. TO 100?F., AS THE OUTSIDE AIR TEMPERATURE VARIES FROM 0?F. TO 65?F. LEAVING WATER TEMPERATURE SCHEDULE, WITHOUT INTERRUPTING

THE CONVERTER VALVE SHALL CLOSE.

ABBREVIATION

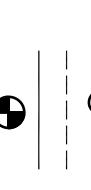
C.U.H. E.S.P. H.W.R. H.W.S. L.P.C. L.P.S. F.T.R. A.C. ≶ Ą.D. CFM ٦٠ 모 B RHC S HWP ႖ 四 DOWN. CABINET UNIT HEATER. FIN PER INCH. **₩** LOW PRESSURE EXTERNAL STATIC PRESSURE. PACKAGED AIR CONDITIONER. FINNED TUBE RADIATION. HOT ACCESS DOOR. REHEAT HOT WATER COIL CUBIC FEET OF AIR PER MINUTE. CONDENSATE PUMP. HOT WATER SUPPLY. ACOUSTIC LINING. **EXPANSION TANK** AIR SEPARATOR HOT WATER PUMP HEAT EXCHANGER. CAST IRON BASEBOARD. PRESSURE STEAM. WATER RETURN. CONDENSATE.

2

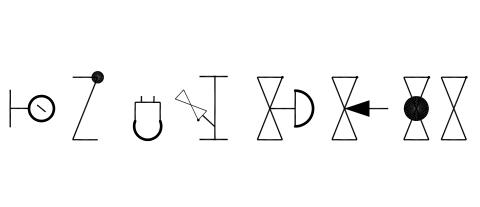
07/21/09

LANDLORD COMMENTS

LANDLORD COMMENTS



EGEND FINNED-DIRECTION OF THERMOSTAT. EXISTING DUCTWORK, EQUIPMENT. POINT OF CONNECTION NEW WORK TO EXISTING. NEW DUCTWORK, EQUIPMENT. -TUBE RADIATION. PITCH.



"DANFOSS" VALVE.

SHUT-OFF

VALVE.

DIRECTION OF FLOW.

BALANCING

VALVE.

92nd Street Y Makor/Steinhardt

Project Name

Center

200 Hudson Street New York, NY 10013

BLOW-OFF STRAINER. CONTROL VALVE

STEAM TRAP.

CHECK VALVE.

PRESSURE GAUGE.

SPECIFICATIONS

Drawing No M-7 11/01/08

S.B.

