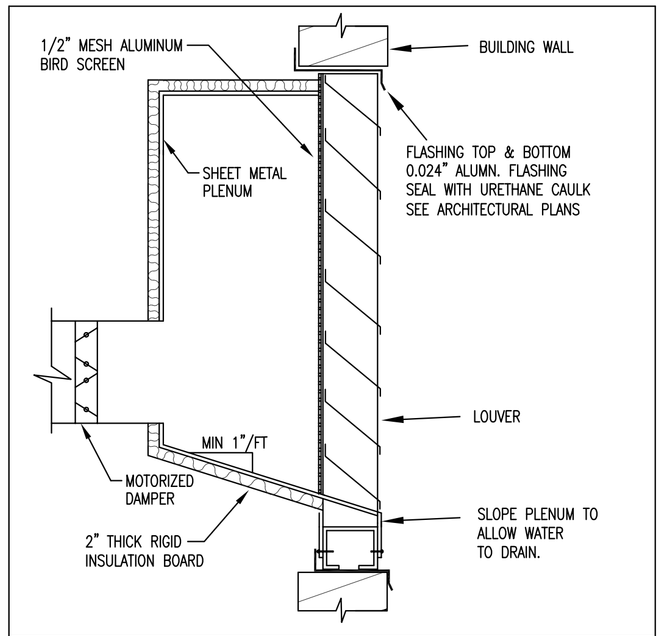
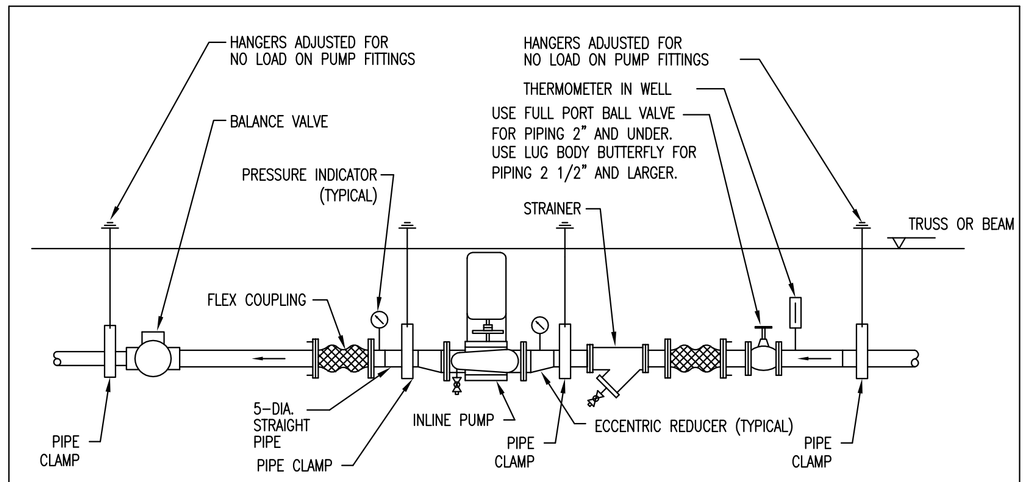


LOUVER AND PLENUM DETAIL N.T.S.



VERTICAL IN-LINE PUMP DETAIL N.T.S.

LEGEND

SYMBOL	DESCRIPTION
HWS	HOT WATER SUPPLY PIPING
HWR	HOT WATER RETURN PIPING
CWP	COLD WATER PIPING
V	VENT PIPING
AD	DUCT ACCESS DOOR
ADJ	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
AP	ACCESS PANEL
BOD	BOTTOM OF DUCT
(E)	EXISTING
FC	FLEXIBLE CONNECTION
IR	INDIRECT WASTE
LWCO	LOW WATER CUT-OFF (PROBE-TYPE)
MD	MOTORIZED DAMPER
N. C.	NORMALLY-CLOSED
N. O.	NORMALLY-OPENED
O.A.	OUTSIDE AIR
TCP	TEMPERATURE CONTROL PANEL
TOD	TOP OF DUCT
TYP.	TYPICAL
VB	VACUUM BREAKER
TS	ELECTRONIC TEMPERATURE SENSOR
S	DUCT MOUNTED SMOKE DETECTOR, MOUNTED BY HVAC CONTRACTOR SUPPLIED AND WIRED BY ELECTRICAL CONTRACTOR
T	TEMPERATURE SENSOR
PS	PRESSURE SWITCH
T	THERMOMETER W/IMMERSION WELL
P	PRESSURE GAUGE W/PETCOCK
	AUTOMATIC FLOW CONTROL VALVE
	BALL VALVE
	BUTTERFLY VALVE
	CIRCUIT BALANCE VALVE
	CHECK VALVE
	GATE VALVE
V	MANUAL AIR VENT
V	AUTOMATIC AIR VENT
	STRAINER W/BLOWDOWN, BRASS CAP AND CHAIN
	UNION
	PRESSURE REGULATING VALVE
	PIPE WITH CAP
	3-WAY CONTROL VALVE
	PIPE RISE TO ABOVE
	PIPE DROP TO BELOW
	POINT OF CONNECTION TO EXISTING
	MANUAL VOLUME DAMPER
1" THICK	ACOUSTICALLY-LINED DUCTWORK w/THICKNESS AS INDICATED

GENERAL NOTES:

1. ALL GENERAL NOTES, SYMBOL LISTS & DETAILS ARE TO BE CONSIDERED AS APPLICABLE TO ALL HVAC DRAWINGS FOR THIS PROJECT.
2. THE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND EXACT LOCATIONS AND ARRANGEMENTS OF EXIST./NEW EQUIPMENT, DUCTWORK, PIPING AND OTHER COMPONENTS SHALL BE DETERMINED IN THE FIELD WITH DUE CONSIDERATION OF STRUCTURAL, ELECTRICAL AND ARCHITECTURAL SYSTEMS. EXISTING STRUCTURAL SYSTEMS SHALL NOT BE MODIFIED WITHOUT THE EXPRESS PERMISSION OF THE ARCHITECT. EQUIPMENT, DUCTS OR PIPES INTERFERING WITH OTHER INSTALLATIONS SHALL BE RELOCATED AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER.
3. THE PROJECT SHALL BE PHASED IN ACCORDANCE WITH THE CONTRACTOR'S APPROVED PHASING PLAN. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE BUILDING OWNER/ARCHITECT FOR THE SEQUENCING AND TIMING OF OPERATIONS PRIOR TO COMMENCING WORK. SEE SPECIFICATIONS.
4. CONTRACTOR IS TO MAINTAIN HVAC AND PLUMBING SERVICE TO ROOMS OUTSIDE THE PROJECT SCOPE OF WORK AND PHASING SCHEDULE. IF INTERRUPTION OF SERVICE IS REQUIRED COORDINATE SHUTDOWN WITH THE BUILDING OWNER. NOTIFY THE BUILDING OWNER A MINIMUM OF 5 DAYS PRIOR TO SHUT-DOWN.
5. CARE SHALL BE TAKEN BY THE CONTRACTOR TO PROTECT EXISTING SYSTEMS AND SURFACES TO REMAIN. RESTORE DAMAGED AREAS THAT ARE BEYOND THE SCOPE OF THIS CONTRACT TO THEIR ORIGINAL CONDITION.
6. WHERE INDICATED ON THE DRAWINGS, REMOVE OR RELOCATE EXISTING COMPONENTS AS REQUIRED TO ACCOMMODATE THE NEW WORK. REMOVALS SHALL INCLUDE ALL ASSOCIATED OFF-SITE DISPOSAL COSTS.
7. COORDINATE REMOVALS AND RELOCATION'S INCLUDING SELECTIVE CUTTING AND PENETRATIONS WITH ARCHITECTURAL, MECHANICAL, STRUCTURAL AND ELECTRICAL.
8. COORDINATE ALL PENETRATIONS WITH GENERAL CONTRACTOR. SEE ARCHITECTURAL DRAWINGS FOR PENETRATION DETAILS.
9. COORDINATE THE LOCATIONS OF ALL WALL MOUNTED TEMPERATURE SENSORS WITH OWNERS FINAL EQUIPMENT/FURNITURE LAYOUT.
10. PROVIDE SEISMIC RESTRAINTS PER SPECIFICATION.
11. SEE DETAILS AND PIPING DIAGRAMS FOR ADDITIONAL VALVES AND FITTINGS NECESSARY FOR COMPLETE PIPING SYSTEM.
12. PROVIDE CLAMPS, OFFSETS, EXPANSION JOINTS, ANCHORS AND GUIDES AS NECESSARY TO PREVENT UNDUE STRIAN ON PIPING.
13. PERFORM ALL TESTS BEFORE INSULATING.
14. INSTALL EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND GOOD PRATICE NORMAL TO THE TRADE. INSTALLATION SHALL INCLUDE ACCESS TO NORMAL MAINTENANCE ITEMS SUCH AS BELTS, BEARINGS, FILTERS AND MOTORS. PROVIDE ACCESS PANELS WHILE NECESSARY. PROVIDE ADEQUATE STRUCTURAL SUPPORTS AND SECURE MOUNTING METHODS WITH PROVISIONS FOR VIBRATION ISOLATION AND EXPANSION WHERE REQUIRED.
15. PROVIDE VOLUME DAMPERS AT EACH BRANCH FROM MAIN DUCT AND DUCT RUNOUTS.
16. PROVIDE DUCTWORK WITH OFFSETS AND TRANSITIONS AS REQUIRED TO FIT UNDER STRUCTURAL STEEL OR OTHER OBSTRUCTIONS. FLAT OVAL OR ROUND SIZES MAY BE USED INTERCHANGEABLY BY THE CONTRACTOR. MAINTAIN DUCT CROSS SECTIONAL AREA.
17. INSTALL TURNING VANES IN ALL MITERED ELBOWS WHETHER INDICATED ON DRAWING OR NOT.
18. MANUFACTURER'S NAME AND MODEL NUMBER ARE USED FOR DESCRIPTIVE PURPOSES ONLY AND ARE INTENDED TO INDICATE THE STANDARD OF MATERIAL OR ARTICLE REQUIRED.
19. SEE SPECIFICATIONS FOR OTHER REQUIREMENTS.

SEQUENCE OF OPERATION:

-AHU-4 AND EF-5 SHALL RUN CONTINUOUSLY.

-AHU-4 HEATING COIL FREEZESTAT SHALL STOP AHU-4 SUPPLY FAN AND CLOSE OUTSIDE AIR DAMPER UPON 35'F SUPPLY AIR TEMPERATURE.

-P-1 SHALL OPERATE CONTINUOUSLY THROUGH THE HEATING SEASON. P-1 SHALL BE MANUALLY SECURED DURING SUMMER.

-P-1 CONTROL VALVE SHALL MODULATE TO MAINTAIN 75'F (ADJ.) SUPPLY AIR TEMPERATURE UPON EXHAUST AIR THERMOSTAT CALL FOR HEAT AND 55'F UPON THERMOSTAT CALL FOR COOLING.

-EXHAUST AIR THERMOSTAT CALLS FOR COOLING AND OUTSIDE AIR TEMPERATURE IS 10'F BELOW EXHAUST AIR TEMPERATURE. P-9 ON AND P-9 CONTROL VALVE MODULATES TO MAINTAIN 55'F SUPPLY AIR.

-EXHAUST AIR THERMOSTAT CALLS FOR HEATING. P-9 ON AND P-9 CONTROL VALVE MODULATES TO MAINTAIN 78'F SUPPLY AIR.

-P-9 CONTROL VALVE SHALL NOT ALLOW LIQUID TEMPERATURE TO EXHAUST AIR COIL TO FALL BELOW 30'F.

DEMOLITION GENERAL NOTES:

1. FIELD VERIFY EXISTING EQUIPMENT, DUCTWORK AND PIPING PRIOR TO REMOVAL OR REUSE. CONFIRM WITH OWNER THAT ALL EQUIPMENT, DUCTWORK AND PIPING DESIGNATED TO BE REMOVED IS NO LONGER IN SERVICE PRIOR TO ITS REMOVAL.
2. ALL EXISTING PIPING, DUCTWORK AND EQUIPMENT NOT SHOWN ON DWGS. SHALL REMAIN WITH NO CHANGE UNLESS NOTED OTHERWISE.
3. TIE-IN POINT LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL DETERMINE EXACT LOCATIONS IN THE FIELD BASED ON EXISTING CONDITIONS.
4. THE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND EXACT LOCATIONS AND ARRANGEMENTS OF EXIST./NEW EQUIPMENT, DUCTWORK, PIPING AND OTHER COMPONENTS SHALL BE DETERMINED IN THE FIELD WITH DUE CONSIDERATION OF STRUCTURAL, ELECTRICAL AND ARCHITECTURAL SYSTEMS. EXISTING STRUCTURAL SYSTEMS SHALL NOT BE MODIFIED WITHOUT THE EXPRESS PERMISSION OF THE ARCHITECT.
5. THE PROJECT SHALL BE PHASED IN ACCORDANCE WITH THE CONTRACTOR'S PHASING PLAN. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE OWNER FOR THE SEQUENCING AND TIMING OF OPERATIONS PRIOR TO COMMENCING WORK.
6. CONTRACTOR IS TO MAINTAIN HVAC AND PLUMBING SERVICE TO ROOMS OUTSIDE THE PROJECT SCOPE OF WORK AND PHASING SCHEDULE. IF INTERRUPTION OF SERVICE IS REQUIRED COORDINATE SHUTDOWN WITH OWNER. NOTIFY THE OWNER A MINIMUM OF 72 HOURS PRIOR TO SHUT-DOWN.
7. WHERE INDICATED ON THE DRAWINGS, REMOVE OR RELOCATE EXISTING COMPONENTS AS REQUIRED TO ACCOMMODATE THE NEW WORK. REMOVALS SHALL INCLUDE ALL ASSOCIATED OFF-SITE DISPOSAL COSTS.
8. CARE SHALL BE TAKEN BY THE CONTRACTOR TO PROTECT EXISTING SYSTEMS AND SURFACES TO REMAIN. RESTORE DAMAGED AREAS THAT ARE BEYOND THE SCOPE OF THIS CONTRACT TO THEIR ORIGINAL CONDITION.
9. AT THE END OF EACH WORKING DAY, THE CONSTRUCTION SITE SHALL BE LEFT IN A CLEAN AND NEAT CONDITION.

EXHAUST FAN SCHEDULE

TAG	SERVES	TYPE	CFM	S.P.(IN.W.G.)	FAN RPM	BHP	MOTOR HP	VOLTS/ø	SONES	TYP. MANUF. & MODEL NO.	NOTES
EF-5	NORTHWING EXHAUST	IN-LINE CENTRIFUGAL	4000	2.5	1517	2.9	3.0	208/3	23.0	COOK, 195SQIB	1, 2
–	–	–	–	–	–	–	–	–	–	–	–

NOTE: 1. PROVIDE WITH DISCONNECT SWITCH
2. PROVIDE WITH BELT GUARD

LOUVER SCHEDULE

ITEM	QTY	SERVICE	FREE AREA (SQ FT.)	SIZE (W"xH")	CFM	PD (IN-W.G.)	MANUFACTURER/MODEL	NOTES
L1	1	AHU-4	12.0	48 x 72	6000	.045	RUSKIN, ELF6375DXD	1, 2, 3

NOTES: 1. PROVIDE STATIONARY EXTRUDED ALUMINUM CONSTRUCTION
2. PROVIDE BIRD SCREEN
3. PROVIDE KYNAR FINISH

PUMP SCHEDULE

TAG	TYPE	GPM	HEAD (FT)	FLUID	MOTOR H.P.	VOLTS-PH	IMPELLER	RPM	SIZE	MFR/MODEL	NOTES
P-1	IN-LINE	50	20	WATER	0.75	208/3	5.5	1750	1 1/2x1 1/2	TACO 1915	–
P-9	IN-LINE	40	20	50% PROPYLENE GLYCOL	0.50	208/3	5.2	1750	1 1/2x1 1/2	TACO 1915	–
CP-1	CONDENSATE PUMP	.75	10	WATER	1/20	115/1	–	–	(2)1"x1/2"	HARTELL KTP 15	–

NOTES:

AIR HANDLING UNIT SCHEDULE

UNIT NO.	LOCATION	NOM. CFM	MIN. OA CFM	FAN DATA			ELECTRICAL			RUN AROUND COIL DATA						HEATING							WT (lb)	TYPICAL UNIT MANUF. & MODEL NO.	NOTES:
				NOM RPM	EXT. S.P.	H.P.	V.	ø	HZ	SENS MBH	O. A. TEMP 'F	LVG. TEMP 'F	P.D. (IN.)	FLUID	GPM	TOTAL MBH	TEMP 'F ENT.	TEMP 'F LVG.	P.D. (IN.)	GPM	EWT('F)	LWT('F)			
AHU-4	3rd FLOOR	6000	6000	1284	1.5	7.5	208	3	60	166.75	-20'	13.5	0.3	50% PROPYLENE GLYCOL	40	715.8	-20	90	0.20	50	180	150	2025	TRANE MCCB	1, 2, 3

NOTES: 1. LARGEST MODULE MUST FIT THROUGH 40" DOOR.
2. PROVIDE EXHAUST AIR RUN AROUND COIL 48"x30" COIL, AIR TEMP IN 75'F, 4000 CFM, 166.75 MBH, 40GPM.
3. AIR BALANCER TO ADJUST FAN SPEED TO DELIVERY 5100 CFM

☐ PRELIMINARY – NOT FOR CONSTRUCTION
☑ APPROVED FOR CONSTRUCTION
☑ SUPERSEDES ALL PREVIOUS ISSUES

BY RAN DATE 3-22-06

REFERENCE DRAWINGS

DWG. NO.	TITLE	BY
E-1	ELECTRICAL PLAN & SPECS	NGI

Released For Construction
Date: Mar 22, 2006

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0	OWNER	CONSTRUCTION
REV.	ISSUED TO	ISSUED FOR

THIS DRAWING IS THE PROPERTY OF NEILL AND GUNTER INCORPORATED AND IS TO BE USED ONLY FOR THE SPECIFIC PROJECT IDENTIFIED ON THE DRAWING. NO REVISIONS SHALL BE MADE WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEILL AND GUNTER INCORPORATED.

NO.	DATE	BY	REVISIONS	CKD.
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DESIGNED AWH	DRAWN DJL
CHECKED DESIGN DFTG.	DATE 03-22-06
RAN RAN	SCALE AS NOTED
APPROVED --	SPEC. --
PROJ. ENG. AWH	

CAD 25894H002

Neill and Gunter

BARRON CENTER
PORTLAND , MAINE 04092
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SEBAGO TECHNICS, INC

MECHANICAL
3RD FLOOR MECHANICAL ROOM
AHU-4 REPLACEMENT

JOB NO. 25894 | DWG. NO. M-2 | REV. 0