REQUIRED SUBMITTALS

TYPE OF EQUIPMENT / SYSTEMS	DESCRIPTION	**Piping Diagrams:** Sizes, Lengths, Accessories	**Landlord Hydronic System Pre-Test:** System flowrate, pressure, and temperatures at tenant tie-in	**Landlord Air System Pre-Test:** Equipment Entering and Leaving Air Temperatures, RPM, Total and External Static Pressure, Airflow, Duct Traverses	**Ductwork:** Sizes, Lengths, Fittings, Accessories	**Control Diagrams:** Point to Point Connections, Equipment, Sensors, Safety Components	**Lighting Panel:** Provide submittal showing schedules, lighting zones, and behaviors, in accordance with Title 24. Contractor to provide a copy of the filed Title 24 compliance documentation and also document the calibrated foot candle settings indicating when the daylighting zone lights turn off and the subsequently turn back on.	**Test and Balance Report:** Refer to TAB Requirements by Equipment Type spreadsheet
AHU/ACCU	Split System or Mini-Split					X		
DUCTWORK	Ductwork System							
TAB REPORT	Test and Balance Report							X

TAB REQUIREMENTS BY EQUIPMENT TYPE

TYPE OF EQUIPMENT	DESCRIPTION	COMPONENT	TAB REQUIREMENTS
AHU/ACCU	Split System or Mini-Split	Entering Air Temp	EAT (db and wb)
		Cooling Mode	LAT (db and wb)
		Indoor Unit	Supply Air CFM
			Minimum Outside Air CFM
			RPM
			External Static Pressure (+/-)
			Voltage/Phase
			Amps
		Outdoor Unit	Voltage/Phase
			Amps
DH, WUH, UH	Electric Duct Heater, Electric Wall Unit Heater, Electric Unit Heater	Heating Mode	LAT
		Electrical	HP
			Voltage/Phase
			Amps
Ductwork		At each branch and/or fitting	Duct Size
			Duct CFM
			Duct Velocity
Diffusers		Airflow at each Diffuser with referenced Mechanical drawing(s)	CFM

NOTE TO CONTRACTOR:
REFER TO SPECIFICATION BOOK FOR ADDITIONALLY INFORMATION AND REQUIREMENTS AS IT RELATES TO TESTING AND BALANCING.

MECHANICAL SYMBOLS

- 3–POSITION SWITCH (ON–OFF–AUTO)
- 2–WAY CONTROL VALVE
- 3–WAY CONTROL VALVE
- ACCESS PANEL. SEE ARCHITECTURAL DRAWINGS
- BUTTERFLY VALVE
- CHECK VALVE
- CEILING EXHAUST FAN
- CLOSES ON PRESSURE RISE
- CLOSES ON TEMPERATURE RISE
- COMBINATION FIRE/SMOKE DAMPER (FSD)
- COMBINATION BALANCE/SHUT–OFF
- CONCENTRIC DUCT TRANSITION
- CONTROL DAMPER
- CONTROL RELAY SOLENOID (K)
- DETAIL SYMBOL
- DRAIN VALVE
- DUCT MTD. SMOKE DETECTOR (S)
- DUCT MOUNTED SUPPLY REGISTER
- DUCTWORK TRANSITION – RECTANGULAR TO ROUND
- ECCENTRIC DUCT TRANSITION
- ELECTRIC BASEBOARD HEATER (EBBH)
- EQUIPMENT SYMBOL
- FLEXIBLE DUCT CONNECTION
- FLEXIBLE DUCT
- FIRE DAMPER (F)
- FUSE
- GATE VALVE
- GLOBE VALVE
- INLINE PUMP
- INTERNALLY LINED DUCT
- MAGNETIC MOTOR STARTER COIL (M)
- MOTORIZED DAMPER (MD)
- OPENS ON PRESSURE RISE
- OPENS ON TEMPERATURE RISE
- P & T RELIEF VALVE
- PILOT LIGHT
- P.O.C.: POINT OF CONNECTION
- PRESSURE GAGE (V)
- RELAY (R)
- RETURN DUCT ELBOW UP OR DOWN
- RETURN GRILLE
- ROUND DUCT – DOWN
- ROUND DUCT – UP
- SECTION SYMBOL
- SIDEWALL MOUNTED SUPPLY REGISTER
- SUPPLY DIFFUSER – 4–WAY THROW
- SUPPLY DIFFUSER – 2–WAY THROW
- SUPPLY DUCT ELBOW UP OR DOWN
- TEMP/LTG CONTROL PANEL (TLCP)
- TEMP. SENSOR – MOUNT 48" AFF (S)
- THERMOMETER
- THERMOSTAT – MOUNT 48" AFF (T)
- AIR CURTAIN FAN SPEED CONTROLLER MOUNT 48" AFF (F)
- TRANSFORMER
- TURNING VANES
- UNION
- UNIT HEATER (UH)
- VOLUME DAMPER (VD)
- Y–STRAINER

DRAWING SCHEDULE

NUMBER	TITLE
M0-1	MECHANICAL NOTES AND LEGENDS
MD1-0	MECHANICAL DEMOLITION PLANS
M1-0	MECHANICAL PLANS
M1-1	MECHANICAL PIPING PLANS
M4-0	MECHANICAL SCHEDULES
M4-1	MECHANICAL SCHEDULES
M4-2	MECHANICAL LOAD CALCULATIONS
M5-0	MECHANICAL DETAILS
M8-0	TCS BASYS WIRING DIAGRAM
P1-0	PLUMBING FLOOR PLANS
P5-0	PLUMBING DETAILS AND RISERS
F1-0	FIRE SPRINKLER PLANS

MECHANICAL ABBREVIATIONS

AHU	AIR HANDLING UNIT	RD	RETURN DIFFUSER
AI	ANALOG INPUT	RES	RESISTOR
AO	ANALOG OUTPUT	RG	RETURN GRILLE
AUX	AUXILLIARY	RTU	ROOFTOP UNIT
AWG	AMERICAN WIRE GAUGE	RVR	REVERSING VALVE RELAY
CD	CONTROL DAMPER	SD	SUPPLY DIFFUSER
COM	COMMON	SEF	SMOKE EXHAUST FAN
CU	CONDENSING UNIT	SMD	SMOKE DETECTOR
CV	CONTROL VALVE	SR	SUPPLY REGISTER
CV	VALVE COEFFICIENT	TC	TIME CLOCK
DC	DIRECT CURRENT	TDM	TEMPERATURE DISPLAY MODULE
DI	DIGITAL INPUT	TS	TEMPERATURE SENSOR
DN	DOWN	UH	UNIT HEATER
DO	DIGITAL OUTPUT	V	VOLT
E	EXISTING	VA	VOLT AMPERE
EA	EXHAUST AIR	VAC	VOLT ALTERNATING CURRENT
EF	EXHAUST FAN	VAV	VARIABLE AIR VOLUME
EOL	END OF LINE	VD	VOLUME DAMPER
ETR	EXISTING TO REMAIN	WAP	WIRELESS ACCESS POINT
FACP	FIRE ALARM CONTROL PANEL	WSHP	WATER SOURCE HEAT PUMP
FCU	FAN COIL UNIT	WUH	WALL UNIT HEATER
FD	FIRE DAMPER	X	TRANSFORMED
FDM	FLOW DISPLAY MODULE	XMFR	TRANSFORMER
FM	FLOW METER	WMS	WIRE MESH SCREEN
FO	FLAT OVAL DUCTWORK		
FPB	FAN POWERED BOX		
FSD	FIRE SMOKE DAMPER		
GND	GROUND		
H	HOT		
HAC	HEATED AIR CURTAIN		
HOA	HAND OFF AUTO		
HR	HEATING RELAY		
L	LINE VOLTAGE		
LS	LIQUID SENSOR		
MD	MOTORIZED OR MODULATING DAMPER		
MIN	MINIMUM		
MOD	MODULATING		
N	NEUTRAL		
NC	NORMALLY CLOSED		
NO	NORMALLY OPEN		
OA	OUTDOOR AIR		
OL	OVERLOAD		
OVR	OVERRIDE		
PC	PHOTOCELL		
PT	PROGRAMMABLE THERMOSTAT		
RA	RETURN AIR		

RESPONSIBILITY MATRIX LEGEND

STOREFRONT EXTRUSION | O | GC | FACTORY FINISHED

ITEM

L = LANDLORD
O = OWNER (GAP INC.)
GC = GENERAL CONTRACTOR
E = EXISTING

FURNISHED BY

INSTALLED BY

COMMENTS

RESPONSIBILITY MATRIX

ITEM	FURNISHED BY	INSTALLED BY	COMMENTS
AIR HANDLING UNITS AND ASSOCIATED DUCT HEATERS AS SPECIFIED	O	GC	REFER TO AHU/ACCU SELECTION SCHEDULE ON SHEET M4–0 FOR FACTORY AND FIELD INSTALLED ACCESSORIES
HVAC CONTROLS PARTS	O	GC	SEE M8–0 FOR DETAILS
AHU DUCT MOUNTED SMOKE DETECTOR	GC	GC	
DAMPER, WIRING, ETC.	GC	GC	

REMARKS:
1. GENERAL CONTRACTOR TO COORDINATE SCHEDULE AND DELIVERY WITH VENDOR. STANDARD SHIPPING PROVIDED BY GAP INC. ANY EXPEDITED SHIPPING COSTS ARE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
2. FOR NATIONAL ACCOUNT PRICING FOR TRANE AND CARRIER EQUIPMENT PLEASE SEE CONTACT INFO BELOW:

NOTE:

A. THE RESPONSIBILITY MATRIX ONLY DELINEATES ITEMS SUPPLIED AND/OR INSTALLED BY OWNER AND/OR LANDLORD. ANY WORK SHOWN IN THE CONSTRUCTION DOCUMENTS NOT DEFINED AS RESPONSIBILITY OF OWNER OR LANDLORD IS FURNISHED AND INSTALLED BY THE CONTRACTOR. SEE BID CLARIFICATION LETTER FOR ANY VARIATION BY SCOPE OF WORK RESPONSIBILITY.

B.. THE CONTRACTOR IS RESPONSIBLE FOR THE UNLOADING OF ANY OWNER SUPPLIED CONSTRUCTION ITEMS.

C. G.C. IS RESPONSIBLE FOR CHECKING ALL LANDLORD FURNISHED AND/OR INSTALLED ITEMS TO ENSURE THEY MATCH THE PLANS. G.C. SHALL SUBMIT AN RFI PRIOR TO COMMENCING WORK IF ANYTHING DOES NOT MATCH PLANS. IF G.C. DOES NOT NOTIFY GAP PRIOR TO COMMENCING WORK, G.C. WILL BE LIABLE FOR CORRECTING ALL DISCREPANCIES.

FOR INFORMATION REGARDING PRICING, ORDERING AND DELIVERY INFORMATION ON THE TRANE EQUIPMENT PACKAGE CONTACT NICOLE CROFFOOT AT:

(408) 481–3600 OFFICE
E–MAIL: NICOLE.CROFFOOT@TRANE.COM

FOR GENERAL ISSUES CONTACT GARY L. RICH
GAP'S NATIONAL ACCOUNT EXECUTIVE.

(408) 481–3620 OFFICE OR (415) 317–2822 MOBILE
E–MAIL: GLRICH@TRANE.COM

CONTROLS SEQUENCE AND REQUIREMENTS

1.1 GENERAL

A. SMOKE CONTROL, FIRE AND LIFE SAFETY SEQUENCES SHALL OVERRIDE OTHER AUTOMATIC CONTROL SEQUENCES INCLUDING HARDWIRED SAFETY DEVICES.

1.2 HVAC SYSTEM

A. GENERAL:
1. THE SYSTEM CONSISTS OF THE FOLLOWING EQUIPMENT:
A. AHU-1 AND AHU-2 WITH ELECTRIC DUCT HEATER (AIR HANDLING UNIT)
B. ACCU-1 AND ACCU-2 (AIR COOLED CONDENSING UNIT)
C. DH-1 (ELECTRIC DUCT HEATER)
D. DH-2 (ELECTRIC DUCT HEATER)
E. MD-1, MD-2 - (MOTORIZED DAMPERS FOR OUTSIDE AIR/ECONOMIZER OPERATION). MD-3, MD-4, (MOTORIZED DAMPER FOR RETURN AIR/ECONOMIZER OPERATION).

B. SYSTEM OFF:
1. OUTSIDE AIR DAMPERS CLOSED.
2. SUPPLY FANS OFF.
3. ELECTRIC DUCT HEATERS OFF.

C. SYSTEM START:
1. OPERATOR ENTERED COMMAND AT THE PROGRAMMABLE THERMOSTAT.
2. AUTOMATICALLY BY THE THERMOSTAT BASED ON PREPROGRAMMED OPTIMIZED START/STOP SCHEDULE.

D. OCCUPIED MODE:
1. OCCUPIED PERIODS (NORMAL OPERATING MODE FOR AHU): OPERATE THE SYSTEM ON A PROGRAMMED OCCUPANCY SCHEDULE BASED ON STORE OPERATING HOURS. THESE PERIODS ARE CONSIDERED "OCCUPIED PERIODS". DURING OCCUPIED PERIODS, RUN THE SYSTEM IN OCCUPIED MODE.

E. UNOCCUPIED MODE:
1. UNOCCUPIED PERIODS: (NORMAL OPERATING MODE FOR AHU) ALL HOURS NOT INCLUDED IN AN OCCUPIED PERIOD ARE PART OF AN "UNOCCUPIED PERIOD". DURING THESE PERIODS, THE SYSTEM IS AVAILABLE FOR HEATING/COOLING AS NEEDED, BUT IS NOT RUNNING UNLESS COMMANDED.

F. SYSTEM SETPOINTS:
1. AHU SHALL HAVE A SETPOINT ADJUSTABLE WITHIN THE FOLLOWING RANGES:
A. OCCUPIED HEATING: 66°F TO 70°F DURING OCCUPIED HOURS. THE DEFAULT IS 68°F. SAME FOR FAN POWERED BOX.
B. OCCUPIED COOLING: 72°F TO 76°F DURING OCCUPIED HOURS. THE DEFAULT IS 74°F. C. MAINTAIN A DEADBAND OF AT LEAST 4°F BETWEEN HEATING AND COOLING SETPOINTS.
D. DURING UNOCCUPIED HOURS, SET THE HEATING SETPOINT DEFAULT TO 60°F (ADJUSTABLE) AND THE COOLING SETPOINT DEFAULT TO 80°F (ADJUSTABLE). MAINTAIN 68°F FOR HEATING AND 74°F FOR COOLING FOR FAN POWERED BOXES.

G. SYSTEM OPERATION:
1. OUTSIDE AIR DAMPERS AT AHU SHALL OPEN.
2. MOTORIZED DAMPERS SHALL OPEN FOR MINIMUM VENTILATION PER CODE TO ACHIEVE A 55°F MIXED AIR TEMPERATURE AT THE INLET OF AHU. WHEN THE MIXED AIR TEMPERATURE AT THE AHU INLET IS BELOW 55°F, OUTSIDE AIR SHALL CLOSE DAMPERS TO ACHIEVE 55°F AT MIXED AIR TEMPERATURE SENSOR AT AHU INLET.
3. SUPPLY FAN IN AHU SHALL START.
4. COOLING MODE: ACCU COMPRESSOR SHALL CYCLE TO MAINTAIN SPACE COOLING TEMPERATURE.
5. HEATING MODE: ELECTRIC DUCT HEATER TO MAINTAIN SPACE HEATING TEMPERATURE. DUCT HEATERS SHALL NOT OPERATE DURING AHU COOLING MODE.

H. SYSTEM STOP:
1. OPERATOR COMMAND AT THE THERMOSTAT BASED ON A PREPROGRAMMED OPTIMIZED SCHEDULE.
2. WHEN THE SYSTEM IS CALLED TO STOP, THE SYSTEM SHALL REVERT TO THAT "OFF" STATE AS DESCRIBED ABOVE.

I. NIGHT SETBACK/SETUP:
1. UPON SENSING A TEMPERATURE BELOW THE UNOCCUPIED HEATING SETPOINT:
A. ENERGIZE THE SUPPLY FAN FOR AHU SERVING THE ZONE
B. ENERGIZE THE ELECTRIC DUCT HEATER
2. UPON SENSING A TEMPERATURE ABOVE THE UNOCCUPIED COOLING SETPOINT:
A. ENERGIZE THE SUPPLY FAN FOR AHU SERVING THE ZONE.
B. SET AHU TO COOLING MODE
C. ENERGIZE THE COMPRESSORS

J. AIR ECONOMIZER CONTROL.
1. PROVIDE AIR-SIDE ECONOMIZER WITH DRY BULB CONTROL AND FREEZE-STAT.
2. DURING THE OCCUPIED MODE OF OPERATION, WHEN THE OUTDOOR AIR TEMPERATURE IS BETWEEN 50°F AND 68°F (BOTH SET POINTS ADJUSTABLE), THE UNIT SHALL MODULATE THE OUTSIDE AIR AND RETURN AIR DAMPERS TO MAINTAIN THE DESIRED MIXED AIR TEMPERATURE AT AIR HANDLING UNIT INLET OF 55°F (ADJUSTABLE).

NEW STORE

ATHLETA

GAP INC.
CORPORATE ARCHITECTURE
1 HARRISON STREET
SAN FRANCISCO, CA 94105

STORE NO.: 7641

STORE NAME: PORTLAND

STORE LOCATION:
152 MIDDLE STREET
PORTLAND, ME 04101

PROJ. I.D.: 0000053405

PROTOTYPE DATE: 09/4/15
PROTOTYPE VERSION 4.1

CONSULTANT INFO:

WCW Engineers, Inc.
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www.WCWengineers.com

PROFESSIONAL STAMP:

ARCHITECT INFO:

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3709 S. River Road, Suite 400
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I HEREBY CERTIFY THAT THESE PLANS HAVE BEEN PREPARED IN MY OFFICE AND UNDER MY SUPERVISION AND THAT TO THE BEST OF MY KNOWLEDGE, THE SAME COMPLY WITH ALL LAWS, RULES, REGULATIONS AND ORDINANCES OF PORTLAND, ME RELATING TO STRUCTURES AND BUILDINGS.

ISSUE TYPE:
100% CD CHECKSET 5/20/16
PERMIT / BID
LL APPROVAL

DRAWN BY: DG

A&E JOB NO.: 16–5433

SHEET TITLE:
MECHANICAL NOTES AND LEGENDS

SHEET NUMBER:
M0–1

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