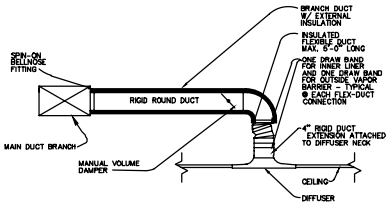
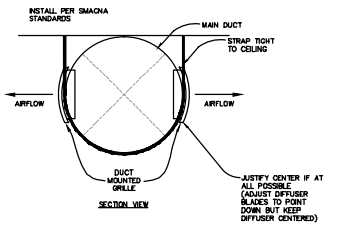


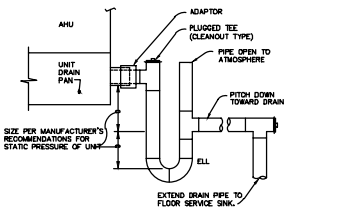
1 TYP. DIFFUSER/DUCT CONNECTIONS

NO SCALE — DIFFUSER IN CEILING



2 DUCT MOUNTED GRILLE

NO SCALE



3 FCU CONDENSATE CONNECTION

NO SCALE

CONDENSING UNIT SCHED.

(FURNISHED & INSTALLED BY LANDLORD, SHOWN FOR REFERENCE ONLY) — ACCU #

UNIT TAG	ACCU-1	ACCU-2	ACCU-3	ACCU-4
LOCATION	ROOF	ROOF	ROOF	ROOF
MANUFACTURER	TRANE	TRANE	TRANE	TRANE
MODEL NUMBER	4TTA3036	4TTA4048	TTA120F3	TTA120F3
SERVICE	FCU-1	FCU-2	FCU-3	FCU-4
REFRIGERANT TYPE	R-410A	R-410A	R-410A	R-410A
NOMINAL CAPACITY (TON)	3.0	4.0	10.0	10.0
EER (COMBINED)	11.5	11.5	11.2	11.2
CIRCUITS (DUAL, SINGLE)	SINGLE	SINGLE	SINGLE	SINGLE
COMPRESSOR				
TYPE	SCROLL	SCROLL	SCROLL	SCROLL
QUANTITY	1	1	2	2
UNLOADING %	0/100%	0/100%	0-50-100%	0-50-100%
CONDENSER				
NUMBER OF FANS	1	1	1	1
HP	1/8	1/8	1.0	1.0
MBH (OUTPUT)	36.0	45.1	107.8	107.8
AMBIENT AIR TEMP	100 0	100.0	100.0	100.0
REFR SUCTION TEMP	45°F	45°F	45°F	45°F
REFRIGERANT PIPE SIZES				
LIQUID	PER MANUF.	PER MANUF.	PER MANUF.	PER MANUF.
SUCTION	PER MANUF.	PER MANUF.	PER MANUF.	PER MANUF.
HOT GAS	PER MANUF.	PER MANUF.	PER MANUF.	PER MANUF.
ELECTRICAL				
MCA	14.0	18.0	44.6	44.6
V-PH-CY	208/3/60	208/3/60	208/3/60	208/3/60
STARTER	DIV. 15	DIV. 15	DIV. 15	DIV. 15
DISCONNECT	DIV. 16	DIV. 16	DIV. 16	DIV. 16
OPERATING WEIGHT (LBS)	150	205	440	440
REMARKS	PROVIDE UNIT WITH LOW AMB. CONTROL & CONDENSER COIL HAIL GUARDS	PROVIDE UNIT WITH LOW AMB. CONTROL & CONDENSER COIL HAIL GUARDS	PROVIDE UNIT WITH LOW AMB. CONTROL & CONDENSER COIL HAIL GUARDS	PROVIDE UNIT WITH LOW AMB. CONTROL & CONDENSER COIL HAIL GUARDS

FAN COIL UNIT SCHEDULE

(FURNISHED & INSTALLED BY LANDLORD, SHOWN FOR REFERENCE ONLY) — FCU #

UNIT TAG	FCU-1	FCU-2	FCU-3	FCU-4
AREA SERVED	FITTING	BOH	SALES	SALES
MANUFACTURER	TRANE	TRANE	TRANE	TRANE
MODEL NUMBER	8CH0036	8CH0054	TME12003	TME12003
TYPE	SPLIT	SPLIT	SPLIT	SPLIT
MIN OUTSIDE AIR	260	260	650	650
SUPPLY FAN				
CFM	960	1420	4200	4200
ESP	0.70"	0.70"	0.70"	0.70"
RPM	1202	870	991	991
HP	0.5	1.0	3.0	3.0
FILTERS				
TYPE	MERV 8	MERV 8	MERV 8	MERV 8
DX COOLING COIL				
CFM	960	1420	4200	4200
EAT DB/WB	78.0/65.3	78.1/63.1	74.8/62.0	74.8/62.0
LAT DB/WB	53.7/52.7	52.6/52.1	56.5/53.7	56.5/53.7
SENSIBLE/TOTAL MBH	26.1/35.9	36.6/46.1	96.5/107.8	96.5/107.8
REFRIGERANT TYPE	R-410A	R-410A	R-410A	R-410A
SPLIT	-	-	-	-
NUMBER OF CIRCUITS	1	1	1	1
HOT WATER HEATING COIL				
CFM	960	1420	4200	4200
ROW	1	1	2	2
EWT/LWT	180.0/150.0	180.0/150.0	180.0/150.0	180.0/150.0
EAT/LAT	56.9/103.8	61.0/99.7	62.0/104.5	62.0/104.5
MBH	48.8	69.6	193.0	193.0
GPM	3.25	4.0	13.0	13.0
APD	0.07	0.08	0.6	0.6
ELECTRICAL				
V-PH-CY	208/1/60	208/1/60	208/3/60	208/3/60
STARTER	DIV. 15	DIV. 15	DIV. 15	DIV. 15
DISCONNECT	DIV. 16	DIV. 16	DIV. 16	DIV. 16
OPERATING WEIGHT (LBS)	225	290	400	400
REMARKS	PROVIDE W/ ANGLE FILTER BOX	PROVIDE W/ ANGLE FILTER BOX	-	-

GRILLE AND DIFFUSER SCHEDULE (1) V200 (2) V200

TYPE	A	B	C	D	E	F
ITEM	SUPPLY	SUPPLY	RETURN/TRANSFER	SUPPLY	SUPPLY	EXHAUST
DESCRIPTION	SQUARE PLAQUE	DUCT MOUNT	BLADE	DUCT MOUNT	LAY-IN	DUCT MOUNT
MANUFACTURER	TITUS	TITUS	TITUS	TITUS	TITUS	TITUS
MODEL NUMBER	OMNI-24"X24"	S300FS	350RL	300RS	OMNI-12"x12"	350RL
REMARKS	STD. WHITE FINISH W/OPPOSED BLADE DAMPER & TRM PLASTER FRAME	STD. WHITE FINISH W/ AIR SCOOP DAMPER	STD. WHITE FINISH, POINT VANES UP OR TOWARD NEAREST WALL.	MILL FINISH	STD. WHITE FINISH W/OPPOSED BLADE DAMPER & TRM FRAME	MILL FINISH

EXHAUST FAN SCHEDULE — EF

UNIT TAG	EF-1	EF-2	EF-3	EF-4
AREA SERVED	TOILET ROOM	TOILET ROOM	VISUAL MERCH.	OFFICE
FUNCTION	EXHAUST	EXHAUST	EXHAUST	EXHAUST
MANUFACTURER	PENNBARRY	PENNBARRY	PENNBARRY	PENNBARRY
MODEL NUMBER	ZB1S	ZB1S	Z1215	ZBH
DRIVE (BELT, DIRECT)	DIRECT	DIRECT	DIRECT	DIRECT
FAN DATA				
CFM	200	200	900	350
ESP	0.375"	0.375"	0.375"	0.375"
RPM	1550	1550	970	1060
HP	77 WATTS	77 WATTS	370 WATTS	130 WATTS
ELECTRICAL				
V-PH-CY	115/1/60	115/1/60	115/1/60	115/1/60
STARTER	-	-	-	-
DISCONNECT	DIV. 16	DIV. 16	DIV. 16	DIV. 16
WEIGHT (LBS)	15	15	35	15
REMARKS	1,3	1,3	1,4	1,2

NOTES:
1. FAN SHALL BE FURNISHED AND INSTALLED WITH INTEGRAL (ON UNIT) SPEED CONTROLLERS FOR BALANCING PURPOSES. PENN LEK-TROL.
2. FAN SHALL BE CONTROLLED BY A PERMANENTLY ENGRAVED WALL SWITCH. SWITCH PROVIDED BY ELECTRICAL CONTRACTOR, ENGRAVED PLATE BY MECHANICAL CONTRACTOR. INSTALL HIGH OR ON FAN OUT OF EMPLOYEE REACH.
3. FAN SHALL BE INTERLOCKED WITH TOILET ROOM LIGHTS.
4. FAN SHALL BE CONTROLLED BY A WALL MOUNTED SOLID STATE SPEED CONTROL SWITCH FURNISHED BY THE MECHANICAL CONTRACTOR AND WIRED BY THE ELECTRICAL CONTRACTOR.

DUCTWORK DESIGN/ INSTALLATION REQUIREMENTS

DUCT LOCATION AND CONDITION	TYPE	DUCTWORK ORIENTATION	DIFFUSER ORIENTATION	DUCTWORK HANGING	DUCTWORK CONNECTION	DUCTWORK MATERIAL	FINISH	NOTE
ALL EXPOSED DUCTWORK-SALES	SINGLE WALL SPIRAL ROUND	AS INDICATED ON PLAN	JUSTIFY CENTER	SMACNA STRAP AND SCREW	SLIP AND DRIVE	GALVANNEALED PAINT GRIP	PAINT PER SPECIFICATION. SEE ARCH DRAWINGS.	
ALL EXPOSED DUCTWORK - BOH	RECTANGULAR	AS INDICATED ON PLAN	JUSTIFY CENTER	SMACNA STRAP AND SCREW	SLIP AND DRIVE	GALVANIZED STEEL	FACTORY - NO FIELD FINISH	
ALL CONCEALED DUCTS	RECTANGULAR	AS INDICATED ON PLAN	AS INDICATED ON PLAN	SMACNA STRAP AND SCREW	SLIP AND DRIVE	GALVANIZED STEEL	FACTORY - NO FIELD FINISH	

VENTILATION CALCULATIONS

OCCUPANCY	AREA (Az) (SQ. FT)	POPULATION (Pz)	OA RATE/PERSON (Rp)	OA RATE/SQ. FT (Ra)	ZONE DISTRIBUTION EFFECTIVENESS (Ez)
RETAIL SALES	4420	67	7.5	0.12	0.8

Voz = [(Az x Ra) + (Pz x Rp)]/.8 = 1291 CFM
TOTAL OA PROVIDED (SUM OF FCU-3,4) = 1300 CFM

OCCUPANCY	AREA (Az) (SQ. FT)	POPULATION (Pz)	OA RATE/PERSON (Rp)	OA RATE/SQ. FT (Ra)	ZONE DISTRIBUTION EFFECTIVENESS (Ez)
FITTING	1266	10	7.5	0.12	0.8

Voz = [(Az x Ra) + (Pz x Rp)]/.8 = 254 CFM
TOTAL OA PROVIDED (FCU-1) = 260 CFM

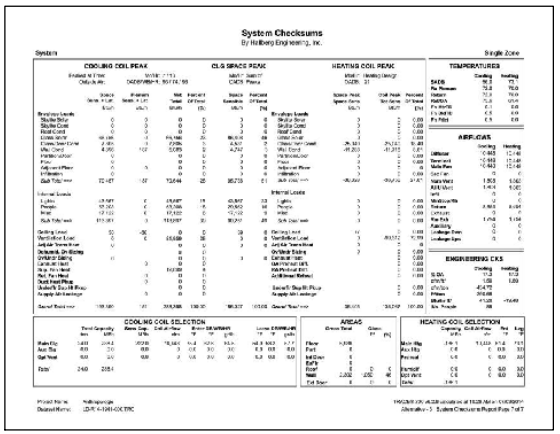
OCCUPANCY	AREA (Az) (SQ. FT)	POPULATION (Pz)	OA RATE/PERSON (Rp)	OA RATE/SQ. FT (Ra)	ZONE DISTRIBUTION EFFECTIVENESS (Ez)
STOCK	785	4	0	0.12	0.8
VISUAL ROOM	180	2	10	0.18	0.8
LOUNGE	390	4	5	0.06	0.8
OFFICE	145	2	5	0.06	0.8

Voz = [(Az x Ra) + (Pz x Rp)]/.8 = 260 CFM
Ev = 0.9
Vot = 209/0.9 = 232 CFM
TOTAL OA PROVIDED (FCU-2) = 260 CFM

MECHANICAL SYMBOLS

- EXISTING METAL DUCTWORK
- NEW SHEET METAL DUCTWORK
- DUCTWORK TRANSITION
- DUCT BRANCH TAKE-OFF
- ROUND SPIN-IN WITH DAMPER
- DUCT ELBOW WITH FIXED TURNING VANES (TO BE USED ONLY WHERE ROUND TURNS AREN'T FEASIBLE)
- REMOTELY ACCESSIBLE VOLUME DAMPER
- THERMOSTAT - MOUNT AT 4'-0"
- REMOTE TEMPERATURE SENSOR - MOUNT AT 4'-0"
- CEILING MOUNTED EXHAUST FAN
- FAN COIL UNIT (FCU)
- AIR COOLED CONDENSING UNIT (ACCU)
- RETURN GRILLE
- SUPPLY DIFFUSER
- SUPPLY/ OUTSIDE AIR DROP
- RETURN/ EXHAUST AIR RISER
- CONNECT TO EXISTING
- KEYED NOTE DESIGNATION
- FIRE DAMPER
- CO2 SENSOR
- DUCT SMOKE DETECTOR
- DIFFUSER TYPE / NECK SIZE / AIRFLOW
- REVISION DESIGNATION

AFF	ABOVE FINISHED FLOOR
CFM	CUBIC FEET PER MINUTE
EF	EXHAUST FAN
EA	EXHAUST AIR
CD	CEILING DIFFUSER
SA	SUPPLY AIR
RA	RETURN AIR
RG	RETURN GRILLE
OA	OUTSIDE AIR
TYP	TYPICAL
MC	MECHANICAL CONTRACTOR
EC	ELECTRICAL CONTRACTOR
LL	LANDLORD
GC	GENERAL CONTRACTOR



NewStudio
4431 Lake Avenue South
White Bear Lake, MN 55110
p: 651.207.5527 f: 651.207.8247

ANTHROPOLOGIE
60 Pearl Street
Portland, ME 04101

HALLBERG ENGINEERING
Redefining Mechanical Engineering
1750 Commerce Court, White Bear Lake, MN 55110
(651) 762-1100 • Fax (651) 762-1370

DRAWN BY: MJB CHECKED BY: CDS/NLL

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ISSUE / DATE:

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REVISION 1 - CITY COMMENTS	08-19-2014

REVISION :

SHEET TITLE :
MECHANICAL DETAILS, SYMBOLS & SCHEDULES

SHEET NO :
M200