PIPING LEGEND

- PIPE UP
- PIPE DOWN
- TEE UP
- TEE DOWN
- CAP
- UNION
- DIRECTION OF FLOW
- BALL/BUTTERFLY VALVE
- 2-WAY CONTROL VALVE
- 3-WAY CONTROL VALVE
- SELF CONTAINED THERMOSTATIC CONTROL VALVE
- CHECK VALVE
- BALANCE/SHUT-OFF VALVE
- FUSIBLE VALVE
- REDUCED PRESSURE BACKFLOW PREVENTER
- PRESSURE REDUCING VALVE
- FLEXIBLE PIPING CONNECTOR
- GAS SHUT-OFF VALVE
- PRESSURE/TEMPERATURE RELIEF VALVE
- HOSE BIBB
- PUMP
- CLEANOUT
- FILTER
- METER
- PIPE GUIDE
- PIPE ANCHOR
- THERMOMETER
- PRESSURE GAUGE W/ ISOLATION COCK
- STRAINER W/ BLOWDOWN
- FLOOR CLEANOUT
- FLOOR DRAIN

DUCTWORK LEGEND

- THERMOSTAT OR SENSOR
- HUMIDISTAT OR SENSOR
- WALL SWITCH
- SUPPLY AIR UP & DOWN
- RETURN AIR UP & DOWN
- EXHAUST AIR UP & DOWN
- ROUND DUCT UP & DOWN
- VOLUME DAMPER
- MOTORIZED CONTROL DAMPER
- SOUND LINED DUCTWORK
- DUCT SIZE (FIRST FIGURE - SIDE SHOWN) (SECOND FIGURE - SIDE NOT SHOWN) — 12/24
- INSULATED DUCTWORK
- TURNING VANES
- FLEXIBLE DUCT CONNECTION
- VAV BOX
- COIL IF REQUIRED
- FIRE DAMPER — FD
- FIRE SMOKE DAMPER — FSD
- FLEXIBLE DUCT
- SUPPLY DIFFUSER IN EXPOSED CEILING
- SUPPLY DIFFUSER IN FINISHED CEILING
- RETURN GRILLE IN FINISHED CEILING
- EXHAUST GRILLE IN FINISHED/EXPOSED CEILING

ABBREVIATIONS

A	AIR
AAV	AUTOMATIC AIR VENT
ADA	AMERICAN WITH DISABILITIES ACT GUIDELINES
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHAP	AS HIGH AS POSSIBLE
AHU-X	AIR HANDLING UNIT DESIGNATOR
AL	ALUMINUM
APD	AIR PRESSURE DROP
B-X	BOILER DESIGNATOR
BDD	BACKDRAFT DAMPER
BTUH	BRITISH THERMAL UNIT/HOUR
CLG	CEILING
CP-X	CIRCULATING PUMP DESIGNATOR
E/A	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
ENT	ENTERING
ESP	EXTERNAL STATIC PRESSURE
ET-X	EXPANSION TANK DESIGNATOR
FC	FORWARD CURVE
FD	FIRE DAMPER
FPF	FINS PER FOOT
FSD	FIRE SMOKE DAMPER
FT	FEET
FT-X	FINNED TUBE RADIATION DESIGNATOR
G	GAS
GA	GAUGE
GAL	GALLONS
H-X	HUMIDIFIER DESIGNATOR
HD	HEAD
HGS	HEATING GLYCOL SUPPLY
HGR	HEATING GLYCOL RETURN
HWC	HOT WATER CIRCULATED
LAT	LEAVING AIR TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
MBH	THOUSAND BTUH
M/A	MAKEUP AIR
MTRZD	MOTORIZED
NC	NOISE CRITERIA
N.C.	NORMALLY CLOSED
NO.	NUMBER
N.O.	NORMALLY OPEN
NTS	NOT TO SCALE
O/A	OUTSIDE AIR
PD	PRESSURE DROP
PG	PROPYLENE GLYCOL
PSIG	POUNDS PER SQUARE INCH GAUGE
R/A	RETURN AIR
S/A	SUPPLY AIR
SCFM	STANDARD CUBIC FEET PER MINUTE
SP	STATIC PRESSURE
SQ	SQUARE
T/A	TRANSFER AIR
TEMP	TEMPERATURE
TYP	TYPICAL
VEL	VELOCITY
VFD	VARIABLE FREQUENCY DRIVE
VTR	VENT THRU ROOF
WC	WATER COLUMN
WG	WATER GAUGE

LOGIC

- DETAIL NUMBER / SHEET LOCATED ON — 5 / M2
- DIRECTION OF VIEW / SECTION NUMBER / SHEET LOCATED ON — 5 / M2
- RADIATION DESIGNATOR — FT1 / 12 / 0.5
- GPM
- LENGTH
- SHEET NOTES — TAG
- CONNECTION — NECK SIZE — X
- CFM
- DIFFUSER OR GRILLE TYPE
- VAV DUCT RUN DESIGNATOR — XXX

BOILER SCHEDULE

SYMBOL	MFGR/MODEL	HEATED MEDIUM	FUEL	GROSS INPUT MBH	GROSS I-B-R OUTPUT (MBH)	DUAL POWER BURNER VOLTS/PH/CY	LABEL	VENT SIZE	GAS SIZE	REMARKS
B-1, 2	CLEAVER BROOKS CFC-1000	50% PG	NATURAL GAS	1,000	930	208/1/315W 120V/1/1.0A	UL, ASME	6"	1-1/4"	1, 2, 3, 4

1. COMBUSTION AIR SIZE 6" PVC
2. PROVIDE LOW TEMP COMBUSTION AIR CONTROL DAMPER
3. PROVIDE BOILER SEQUENCING PANEL
4. PROVIDE CONDENSATE NEUTRALIZING CHAMBER FOR EACH BOILER FLUE.

PUMP SCHEDULE

SYMBOL	MFGR/MODEL	FUNCTION	PUMPED MEDIUM	GPM	HEAD FT.	RPM	MOTOR DATA HP	MOTOR DATA VOLTS/PH	REMARKS
CP-1/1A	ARMSTRONG/4300-2X2X8	HEATING LOOP	50% PG	140	46	1800	3	460/3	VSD BY ELECTRICAL
SMP-1	GRUNDFOS/UP43-75	SNOWMELT #1	50% PG	8	22	–	1/12	120/1	
SMP-2	GRUNDFOS/UP43-75	SNOWMELT #2	50% PG	7	22	–	1/12	120/1	
SMP-3	GRUNDFOS/UP43-75	SNOWMELT #3	50% PG	7	22	–	1/12	120/1	
BLP-1, 2	ARMSTRONG 4360-2B	BOILER LOOP PUMP 1	50% PG	59	26	1800	1	460/3	STARTERS BY ELECTRICAL
PCP-1	PENTAIR WHISPERFLOW	POOL CIRC PUMP	WATER	87	60	1800	1	240/1	STARTERS BY ELECTRICAL. COORDINATE POWER WIRING AND CONTROL OF PUMP WITH POOL CONTROL PANEL. PROVIDE PUMP STATUS TO BUILDING EMCS.

EXPANSION TANK SCHEDULE

SYMBOL	MFGR/MODEL	FUNCTON	MEDIUM	TANK VOLUME MATERIAL	TANK VOLUME TOTAL (GAL)	TANK VOLUME ACCEPTANCE (GAL)	DIMENSIONS	LABEL	REMARKS
ET-1	AMTROL/165LBC	HEATING	50% PG	STEEL	44	44	20" (DIA) x 40"	ASME	1,2

1. REPLACEABLE BLADDER
2. MAINTAIN MINIMUM 30 PSI STATIC PRESSURE ON SYSTEM

TANK SCHEDULE

SYMBOL	MFGR/MODEL	FUNCTION	MEDIUM	MATERIAL	TANK CAPACITY (GAL)	DIMENSIONS DIA	DIMENSIONS HEIGHT	LABEL	REMARKS
GT-1	AXIOM/SF100	GLYCOL MAKEUP	50% PG	TRANSLUCENT PLASTIC	48	24"		UL 73	WITH BUILT-IN PUMP SYSTEM

UNIT HEATER SCHEDULE

SYMBOL	MFGR/MODEL	CAPACITY MBH	GPM	MEDIUM	EGT DEG F	LGT DEG F	WPD FT HD	CFM	RPM	MOTOR DATA HP	MOTOR DATA VOLT/PH	REMARKS
UH-1	MODINE/HS-24	11	2.0	50% PG	160	130	0.8	370	1550	1/60	115/1	
UH-2	MODINE/V-42	30.1	3.0	50% PG	160	130	0.6	950	1050	1/30	115/1	
UH-3	MODINE/V-59	42.6	4.5	50% PG	160	130	0.5	950	1050	1/30	115/1	3-WAY CONTROL VALVE
UH-4	MODINE/HS-86	45	6.5	50% PG	160	130	1.0	1340	1625	1/8	115/1	3-WAY CONTROL VALVE
CUH-1	BEACON MORRIS/FSI-1045-02	12.6	1.5	50% PG	160	130		230	–	1/15	115/1	CABINET UNIT HEATER, WALL MOUNTED, INVERTED FLOW, COLOR SELECTED BY ARCH.

RADIATION SCHEDULE

SYMBOL	MFGR/MODEL	# ROWS	ELEMENT	FPF	ENCLOSURE	GPM	MEDIUM	EGT DEG F	LGT DEG F	EAT DEG F	BTUH/LF	REMARKS
FT-1	STERLING/JVA-S	1	3/4" CU	50	14" H	PER PLANS	50% PG	160	130	65	490	3-1/4"X 3-1/4" FINS
FT-2	STERLING/JVA-AR-18LI	1	1" CU	50	18-7/16"H	PER PLANS	50% PG	160	130	65	1000	4-1/4"X 3-5/8" FINS, 3-WAY CONTROL VALVE

HUMIDIFIER SCHEDULE

SYMBOL	MFGR/MODEL	LOCATION	CAPACITY	GROSS INPUT (KW)	VOLTS/PH	CONNECTIONS	REMARKS
H-1	NORTEC/NHMC-010	ROOM 124	10 LBS/HR	3.8	480/1	1/2" CW, 3/4" DRAIN	W/ BLOWER PACK
H-2	NORTEC/NHMC-010	ROOM 136	10 LBS/HR	3.8	480/1	1/2" CW, 3/4" DRAIN	W/ BLOWER PACK
H-3	NORTEC/NHMC-010	ROOM 137	10 LBS/HR	3.8	480/1	1/2" CW, 3/4" DRAIN	W/ BLOWER PACK
H-4	NORTEC/NHMC-010	ROOM 137	10 LBS/HR	3.8	480/1	1/2" CW, 3/4" DRAIN	W/ BLOWER PACK

REGISTERED PROFESSIONAL ENGINEER 15093PE OREGON JULY 25, 1990 JACK M. KIRK

EXP. 06-30-2009

176th WING

NO	DATE	DSGN	DR	CHK	DESCRIPTION
		J KIRK	R COWAN	W GIFFORD	REVISION
				APVD	BY
				APVR	N
					J ALTO

ALASKA AIR NATIONAL GUARD
176th WING RELOCATION
PARARESCUE OPERATIONS
PROJECT DO 2Z01 ANG 1

CH2MHILL

PARARESCUE OPERATIONS
MECHANICAL
LEGEND, ABBREVIATIONS, AND SCHEDULES

VERIFY SCALE
BAR IS 25mm ON ORIGINAL DRAWING.
0 25mm

DATE	APRIL 2008
PROJ	351441
DWG	M-001
SHEET	165

ISSUED FOR TYPE B FINAL

RADIANT PANEL SCHEDULE

SYMBOL	MFGR/MODEL	EGT	LGT	GPM	BTU/LF	PANEL SIZE	REMARKS
RP-1	AIRTEX/HEF-2	160	130	PER PLAN	389	24"X 8'	EXTRUDED ALUMINUM CLG PANELS W/4 TUBES 50% GLYCOL
RP-2	AIRTEX/HEF-2	160	130	PER PLAN	389	24"X 10'	EXTRUDED ALUMINUM CLG PANELS W/4 TUBES 50% GLYCOL

GAS FIRED INFRA-RED HEATERS

SYMBOL	MFGR/MODEL	FUEL	LENGTH	MBH INPUT	MOUNTING HEIGHT AFF	MOUNTING ANGLE	MOTOR DATA AMPS/VOLTS/PH/HZ	REMARKS
IH-1	SPACE RAY LTS-100	GAS	40FT	100	18'	0 DEG	5.0/115/1/60	W/ OUTSIDE AIR COMBUSTION INTAKE AND THROUGH ROOF FLUE TERMINATION KIT
IH-2	SPACE RAY LTU-250	GAS	50FT	250	23'	0 DEG	5.0/115/1/60	W/ OUTSIDE AIR COMBUSTION INTAKE AND THROUGH WALL FLUE TERMINATION KIT

MAKE-UP AIR UNIT SCHEDULE

SYMBOL	MFGR/MODEL	AREA SERVED	MBH INPUT	FAN CFM	TSP / ESP IN. W.C.	MOTOR DATA HP	MOTOR DATA POWER	REMARKS
MAU-1	GREENHECK/DGX-112-H22	VEHICLE BAYS	399	3750	1.25/0.5	3	460/3	DOUBLE-WALL CONSTRUCTION, MOUNT TO CONCRETE SLAB, NO HK PAD
MAU-2	GREENHECK/DGX-109-H12	BOAT MAINT.	181	1700	1.21/0.5	1	460/3	DOUBLE-WALL CONSTRUCTION, MOUNT TO CONCRETE SLAB, NO HK PAD
AHU-4	HASTINGS/CF-100	CHUTE TOWER	1250	10000	1.5/0.75	7.5	460/3	STAINLESS STEEL HEAT EXCHANGER
AHU-5	HASTINGS/CF-100	CHUTE TOWER	1250	10000	1.5/0.75	7.5	460/3	STAINLESS STEEL HEAT EXCHANGER

ROOFTOP UNIT SCHEDULE

SYMBOL	MFGR/MODEL	COOLING @ 95 DEG. AMBIENT NOMINAL TON	CAPACITY MBH	EDB	EWB	HEATING OUTPUT STG1 MBH	OUTPUT STG2 MBH	SUPPLY CFM	OSA CFM	ESP IN. WC	POWER	MINIMUM CIRCUIT AMPACITY	MAXIMUM BREAKER SIZE	REMARKS
RTU-1	LENNOX/LGC156H2	13	156 (4STG)	80	67	135	208	6000	1700	0.75	460/3	34	40	STAINLESS STEEL HEAT EXCHANGER, BAROMETRIC RELIEF. PROVIDE CO2 SENSOR FOR CONTROL OF OSA DAMPER

AIR HANDLER SCHEDULE

SYMBOL	MFGR/MODEL	AREA SERVED	COIL TAG	FAN SIZE	FAN TYPE	FAN CFM	TSP / ESP IN. W.C.	OSA (CFM)	MOTOR DATA HP	MOTOR DATA POWER	REMARKS
AHU-1	MCQUAY/CAH029FHAM	FIRST FLOOR	HC-1	24.67	FC	14300	2.5/1.5	3500	10	460/3	W/VFD BY AHU MANUFACTURER, SINGLE ZONE, CONSTANT VOLUME, MERV 5 FILTERS, 3 WAY CONTROL VALVE
AHU-2	MCQUAY/CAH021FH0M	SECOND FLOOR	HC-2	24.5	PLUG	6000	2.85/2.0	920	10	460/3	W/VFD BY AHU MANUFACTURER, 3-WAY CONTROL VALVE, MERV 5 FILTERS. LIMIT MINIMUM AIRFLOW TO NO LOWER THAN MANUFACTURERS RECOMMENDATIONS WHEN MECHANICAL COOLING IS OPERATING
AHU-3	MCQUAY/CAH008FHAM	CLIMBING TOWER	HC-3	12.6	FC	3000	1.6/0.75	200	2	460/3	SINGLE ZONE, CONSTANT VOLUME, 3-WAY CONTROL VALVE, MERV 5 FILTERS

HEATING COIL SCHEDULE

SYMBOL	MFGR/MODEL	LOCATION	SIZE SQ. FT.	CFM	AIR P.D. IN. WC.	FACE VEL. FPM	EAT DEG F	LAT DEG F	GPM	MEDIUM	EGT DEG F	LGT DEG F	WPD FT HD	REMARKS
HC-1	MCQUAY	AHU-1	24.67	14300	0.2	580	17	70	38.4	50%PG	160	130	2.7	
HC-2	MCQUAY	AHU-2	11.46	6000	0.09	524	61	70	5.0	50%PG	160	130	1.5	
HC-3	MCQUAY	AHU-3	7.5	3000	0.23	410	64	85	5.0	50%PG	160	130	0.9	
DC-1	MCQUAY	RESISTANCE POOL	1.0	450	0.2	500	65	90	1.2	50%PG	160	130	1.2	DUCT COIL W/2WAY VALVE
DC-2	MCQUAY	CYLINDER ROOM	0.5	200	0.2	500	65	90	1.0	50%PG	160	130	1.5	
DC-3	MCQUAY	FLAMMABLE STORAGE	0.5	150	0.1	300	-14	65	1.0	50%PG	160	130	1	2-WAY, 2 POSITION VALVE WITH FLOW CONTROL

VAV BOX SCHEDULE

SYMBOL	MFGR/MODEL	SIZE UNIT	SIZE OUTLET	CFM MAX	CFM MIN	STATIC PRESSURE INLET	STATIC PRESSURE DOWN	STATIC PRESSURE DESIGN FLOW	NC LEVEL RAD.	NC LEVEL DISCHARGE	HOT GLYCOL HEATING COIL CFM	MBH	EAT/LAT	APD	GPM	EGT/LGT	GPD	ROWS	REMARKS
VAV-01	TITUS/ESV	06	12X8	300	150	1	0.5	0.14	16	10	150	4.9	55/86	0.07	0.75	160/116	0.1	1	NOTES 1, 2, AND 3
VAV-02	TITUS/ESV	16	24X18	3000	1500	1	0.5	0.3	22	20	1500	48.5	55/85	0.27	7.5	160/143	5.8	1	NOTES 1, 2, AND 3
VAV-03	TITUS/ESV	10	14X13	900	450	1	0.25	0.16	23	19	450	14.6	55/85	0.15	1.5	160/135	0.5	1	NOTES 1, 2, AND 3
VAV-04	TITUS/ESV	10	14X13	1050	525	1	0.25	0.21	23	20	525	17	55/85	0.2	2.5	160/140	1	1	NOTES 1, 2, AND 3
VAV-05	TITUS/ESV	06	12X8	400	200	1	0.25	0.25	23	20	200	6.5	55/85	0.12	0.75	160/129	0.2	1	NOTES 1, 2, AND 3
VAV-06	TITUS/ESV	12	16X15	1200	600	1	0.25	0.15	22	20	600	19.4	55/85	0.14	1.5	160/129	0.7	1	NOTES 1, 2, AND 3
VAV-07	TITUS/ESV	08	12X10	550	275	1	0.25	0.14	20	19	275	8.9	55/85	0.12	0.75	160/115	0.4	1	NOTES 1, 2, AND 3
VAV-08	TITUS/ESV	12	16X15	1500	750	1	0.5	0.22	23	21	750	24.3	55/85	0.21	3	160/139	2	1	NOTES 1, 2, AND 3
VAV-09	TITUS/ESV	12	16X15	1400	700	1	0.25	0.2	23	21	700	22.7	55/85	0.19	2.5	160/136	1.4	1	NOTES 1, 2, AND 3

NOTES:
1. PROVIDE INTEGRAL SOUND ATTENUATOR
2. 3-WAY CONTROL VALVE
3. COILS W/50% GLYCOL

ROOF HOOD SCHEDULE

SYMBOL	MFGR/MODEL	SERVICE	MATERIAL	FINISH	THROAT SIZE (IN.)	HOOD SIZE (IN.)	APD IN WC	CFM	REMARKS
RH-1	GREENHECK/FHR	RELIEF	STEEL	BAKED ENAMEL	48X90	72X120	0.025	12,600	
RH-2	GREENHECK/FHR	RELIEF	STEEL	BAKED ENAMEL	48X72	72X96	0.025	10,000	
RH-3	GREENHECK/FHR	RELIEF	STEEL	BAKED ENAMEL	30X36	45X48	0.025	3,000	
RH-4	GREENHECK/FHR	RELIEF	STEEL	BAKED ENAMEL	48X72	72X96	0.025	10,000	
RH-5	GREENHECK/FHR	RELIEF	STEEL	BAKED ENAMEL	48X72	72X96	0.025	10,000	
RH-6	GREENHECK/FHR	INTAKE	STEEL	BAKED ENAMEL	10X10	20X22	0.025	150	

CONDENSING UNITS

SYMBOL	LOCATION	AREA SERVED	CHARACTERISTICS CAPACITY TONS	CAPACITY (KW)	STAGES (CIRCUIT)	ELECTRICAL (V:PH)/MIN CIRCUIT AMPACITY	EAT DB DEG C (DEG F)	BASIS OF DESIGN	NOTES
CU-1	SECOND FLOOR ROOF NEAR MECHANICAL ROOM	AHU-2	10	70	1 (1)	(480 : 3)/45.6 AMPS	35 (95)	MCQUAY: ACZ 10B (R-407C)	PROVIDE FIELD INSTALLED HEAD PRESSURE CONTROL, ANTI SHORT CYCLE TIMER, SPRING ISOLATORS. UNIT SHALL EXCEED ASHRAE 90.1-2004 FOR OPERATIONAL EFF.

REGISTERED PROFESSIONAL ENGINEER 15093PE OREGON JULY 25, 1990 JACK M. KIRK

EXP. 06-30-2009

NO	DATE	DSGN
		J KIRK

DESCRIPTION	DR	CHK	APVD
REVISION	R COWAN	W GIFFORD	APVD

APVR	BY	APVD
N	J ALTO	

ALASKA AIR NATIONAL GUARD
176th WING RELOCATION
PARARESCUE OPERATIONS
PROJECT DO 22O1 ANG 1

CH2MHILL

PARARESCUE OPERATIONS
MECHANICAL
SCHEDULES

ISSUED FOR TYPE B FINAL

VERIFY SCALE
BAR IS 25mm ON ORIGINAL DRAWING.
0 25mm

DATE	APRIL 2008
PROJ	351441
DWG	M-002
SHEET	166

FILENAME: 351441PO-M-002.dgn PLOT DATE: 3/27/2008 PLOT TIME: 12:26:04 PM

OZONATOR									
SYMBOL	MFR/MODEL	OZONE GENERATED(GR/HR)	dT(DEGREES F)	FLOW(GPM)	PRESSURE DROP AT INJECTOR(PSI)	ELECTRICAL(V/PH/WATTS)	PIPING CONN (INCHES)	TYPE OF CONN	NOTES
OZ-1	PUREZONE/CD 4500 W/AD20 AIR DRYER	1.0	0.25	8.0	0.5	120/1/200	1/4	TUBING	INTERLOCK WITH POOL PUMP TO PREVENT OZONATOR OPERATION UNLESS PUMP IS RUNNING. INSTALL WITH AIR DRYER AND TUBING.

ELECTRIC POOL CHILLER										
SYMBOL	MFR/MODEL	HEAT REJECTION(MBH)	dT(DEGREES F)	FLOW(GPM)	PRESSURE DROP(PSI)	ELECTRICAL(V/PH/AMPS)	MOCP	PIPING CONN (INCHES)	TYPE OF CONN	NOTES
PCH-1	AFFINITY/FAA032C WITH PUMP PACKAGE	27	6.75	8	10	208/1/28.1	60	1.5	MALE THREADED	POOL TEMPERATURE WILL FALL 10F IN 14.5 HOURS. MOUNT ON 1" WAFFLE PAD AND BOLT TO FLOOR. PROVIDE WALL MOUNTED DISCONNECT

POOL CARTRIDGE FILTER							
SYMBOL	MFR/MODEL	MEDIA AREA (SQ FT)	FLOW(GPM)	PRESSURE DROP(PSI)	PIPING CONN (INCHES)	TYPE OF CONN	NOTES
PCF-1	PENTAIR CCP-320	320	87	3	2	GLUED PVC	MONITOR AND ALARM PRESSURE THROUGH EMCS

ELECTRIC POOL HEATER								
SYMBOL	MFR/MODEL	POWER(kW)	ELECTRICAL(V/PH)	FLOW(GPM)	PRESSURE DROP(PSI)	PIPING CONN (INCHES)	TYPE OF CONN	NOTES
EPH-1	COATES/34815CE	19	460/3	65	10	1.5	MALE THREADED	POOL TEMPERATURE WILL RISE 10F IN 6 HOURS. MOUNT ON INSULATED RUBBER MAT.

1. POOL TEMPERATURE WILL RISE 10F IN 6 HOURS MOUNT ON INSULATED RUBBER MAT.
2. VESSEL: 304LSS
3. ELEMENT: INCOLOY
4. CASING: ELECTROGALV W/BAKED POLYESTER FINISH
5. TESTING: FACTORY HI-POT
6. PIPE CONNECTIONS: 1 1/2" WELDED SS MPT NIPPLES
7. ELECTRICAL: POWER DISTRIBUTION BLOCK, PADDLE TYPE FLOW SWITCH, HI-TEMP LIMIT SWITCH W/MANUAL RESET, CONTROL CIRCUIT FUSING
8. 4 - 1000# RUBBER FEET
9. WARRANTY:
   VESSEL: 2 YRS
   ELEMENTS: 90 DAYS
   COMPONENTS: 1 YR

KITCHEN HOOD SCHEDULE

SYMBOL	MFGR/MODEL	AREA SERVED	CFM	RPM	MOTOR DATA AMPS/VOLTS/PH	SONES	REMARKS
KH-1	BROAN/40000	MISSION STANDBY	160	2795	2.0/120/1	5.5	PROVIDE BACKDRAFT DAMPER, DUCTED VERTICALLY, 2-SPEED FAN

AIR INLET/OUTLET SCHEDULE

SYMBOL	MFGR/MODEL	TYPE	USE	MATERIAL	FINISH	CFM	FACE SIZE (IN.)	NC	THROW	REMARKS
A	TITUS/TMSA	CEILING	S/A	STEEL	WHITE	PER PLANS	24X24	<28	4-WAY	PROVIDE FRAME TYPE AS REQUIRED, EARTHQUAKE TABS
B	TITUS/TMSA	CEILING	S/A	STEEL	WHITE	PER PLANS	12X12	<28	4-WAY	PROVIDE FRAME TYPE AS REQUIRED, EARTHQUAKE TABS
C	TITUS/FT-10-HT	CEILING	S/A	STEEL	WHITE	PER PLANS	48	<28	ADJ.	2-SLOT
D	TITUS/122RL	WALL	S/A	STEEL	WHITE	10,000	72X36	<28	ADJ.	DOUBLE DEFLECTION
E	TITUS/S300FL	DUCT	S/A	ALUMINUM	*34 CLEAR	PER PLANS	PER PLANS	<28	ADJ.	DOUBLE DEFLECTION
F	TITUS/50F	CEILING	R/A	ALUMINUM	WHITE	PER PLANS	PER PLANS	<28	–	PROVIDE FRAME TYPE AS REQUIRED, EARTHQUAKE TABS. SEE 5-M503 FOR ACOUSTICAL BOOT TYPICAL ALL CEILING RETURN GRILLES
G	TITUS/272 RL	WALL	S/A	STEEL	WHITE	PER PLANS	PER PLANS	<28	ADJ.	
H	TITUS/3FL	WALL	T/A	ALUMINUM	WHITE	–	8X6	–	–	
I	TITUS/TMRA	DUCT	S/A	STEEL	WHITE	PER PLANS	–	<28	ADJ.	SET FOR DOWN FLOW

EXHAUST/SUPPLY FAN SCHEDULE

SYMBOL	MFGR/MODEL	TYPE	SERVICE	CFM	TSP IN W.C.	FRPM	MOTOR DATA HP	MOTOR DATA VOLTS/PH	DRIVE	SONES	REMARKS
EF-1	GREENHECK/CSP-A1410	INLINE EXHAUST	LOCKER RM	800	0.5	1002	822W	120/1	DIRECT	1.7	W/SPEED CONTROL ACTIVATE VIA EMCS
EF-2	GREENHECK/BCF-108-4	INLINE EXHAUST	ELECTRICAL RM	1000	0.4	896	1/4	120/1	BELT	6.1	W/SPEED CONTROL T-STAT ACTIVATED ON TEMP RISE
EF-3	GREENHECK/GB-300-3	ROOF EXHAUST	VEHICLE BAYS	3750	0.25	341	1/3	120/1	BELT	5.5	W/SPEED CONTROL & TIMER INTERLOCK WITH MAU1
EF-4	GREENHECK/BSQ-160-HP-3	INLINE EXHAUST	BOAT MAINT.	1700	0.5	1061	1/3	120/1	BELT	7.9	NONSPARKING WHEEL, AL HOUSING, STATIC FREE BELTS, WITH SPEED CONTROL & TIMER INTERLOCK WITH MAU2
EF-5	GREENHECK/GB-091-4	ROOF EXHAUST	SCUBA DRYING RM	500	0.4	915	1/6	120/1	BELT	6.8	W/SPEED CONTROL, SEPARATE WALL SWITCH W/PILOT
EF-6	GREENHECK/GB-091-4	ROOF EXHAUST	WOMEN'S SHOWER	600	0.5	1243	1/4	120/1	BELT	7.9	INTERLOCK W/RTU1
EF-7	GREENHECK/GB-101-4	ROOF EXHAUST	MEN'S SHOWER	850	0.5	1349	1/4	120/1	BELT	7.3	INTERLOCK W/RTU1
EF-8	GREENHECK/SP-A900	CEILING EXHAUST	PARCHUTE WASH	850	0.25	950	285W	120/1	DIRECT	6.1	W/SPEED CONTROL, WALL SWITCH W/PILOT
EF-9	GREENHECK/BSQ-70-4	INLINE EXHAUST	FLAMMABLE STOR.	150	0.5	1344	1/4	120/1	BELT	9.6	EXPLOSION RESISTANT MOTOR AND DISCONNECT, NONSPARKING WHEEL, AL HOUSING, STATIC FREE BELTS CONTROL, RUN CONTINUOUS
EF-10	GREENHECK/G-065-D	ROOF EXHAUST	JANITOR/RESTROOM	150	0.4	1302	1/20	120/1	DIRECT	6.0	W/SPEED CONTROL T-STAT ACTIVATED ON TEMP RISE
EF-11	GREENHECK/G-081-6	ROOF EXHAUST	ELEV. MACH. RM	250	0.25	850	1/6	120/1	BELT	3.3	W/SPEED CONTROL, PROVIDE T-STAT TO ACTIVATE ON RISE
EF-12	GREENHECK/SP-B150	CEILING EXHAUST	COMM ROOM	150	0.15	1050	129W	120/1	DIRECT	3.4	W/SPEED CONTROL, SEPARATE WALL SWITCH W/PILOT
EF-13	GREENHECK/GB-081-6	ROOF EXHAUST	MEDICAL CLEANING	350	0.5	1199	1/6	120/1	BELT	6.0	W/MTRZD BDD AND SPEED CONTROLLER ACTIVATE VIA EMCS
EF-14	GREENHECK/G-080-D	ROOF EXHAUST	WEAPONS CLEANING	200	0.4	1369	1/20	120/1	DIRECT	6.3	W/SPEED CONTROL, MTRZD BDD ACTIVATE VIA EMCS
EF-15	GREENHECK/GB-091-4	ROOF EXHAUST	RESISTANCE POOL	600	0.375	1153	1/4	120/1	BELT	7.3	W/SPEED CONTROL, BACK DRAFT DAMPER AND HUMIDISTAT FOR CONTROL
EF-16	GREENHECK/BSQ-80-4	INLINE EXHAUST	GOGGLE TESTING	150	0.375	1027	1/4	120/1	BELT	7.1	W/SPEED CONTROL, 1" SOUND LINING IN FAN HOUSING, ACTIVATE VIA EMCS
VF-1	GREENHECK/SBS-1H24-4	SIDEWALL SUPPLY	BOILER ROOM	2300	0.25	740	1/3	120/1	BELT	11.4	W/SPEED CONTROL, W/WIRE GUARD, WALL SLEEVE, FAN MOUNT FRAME, AND SPRING RETURN MOTORIZED DAMPER. PROVIDE VFD TO CONTROL FAN SPEED FROM INPUT BY EMCS. CONTROL FAN SPEED TO MAINTAIN SPACE TEMPERATURE SET POINT.
VF-2	GREENHECK/SS1-14-440-BG	SIDEWALL SUPPLY	FAN ROOM	600	0.3	1015	1/6	120/1	DIRECT	6.8	W/SPEED CONTROL, W/WIRE GUARD, WALL SLEEVE, FAN MOUNT FRAME, AND SPRING RETURN MOTORIZED DAMPER. PROVIDE VFD TO CONTROL FAN SPEED FROM INPUT BY EMCS. CONTROL FAN SPEED TO MAINTAIN SPACE TEMPERATURE SET POINT.
FEF-1	NEDERMAN/N24	CENTRIFUGAL	FUME EXHAUST	1000	3	3400	1	460/3	DIRECT	7.2	NONSPARKING WHEEL, W/2 FUME ARMS, PROVIDE SWITCH DAMPER AND TASKLIGHT ON EACH HOOD.
FEF-2	NEDERMAN/N24	CENTRIFUGAL	FUME EXHAUST	500	2.5	2800	0.5	460/3	DIRECT	7.2	NONSPARKING WHEEL, W/2 FUME ARMS, PROVIDE SWITCH DAMPER AND TASKLIGHT ON EACH HOOD.

176TH WING

NO	DATE	DSGN

APV/R	BY	APV'D
N	APV'D	J ALTO

DESCRIPTION	REVISION	CHK	APV'D
		W GIFFORD	
		R COWAN	DR
		J KIRK	

ALASKA AIR NATIONAL GUARD
176th WING RELOCATION
PARARESCUE OPERATIONS
PROJECT DO 2201 ANG 1

CH2MHILL

PARARESCUE OPERATIONS
MECHANICAL SCHEDULES

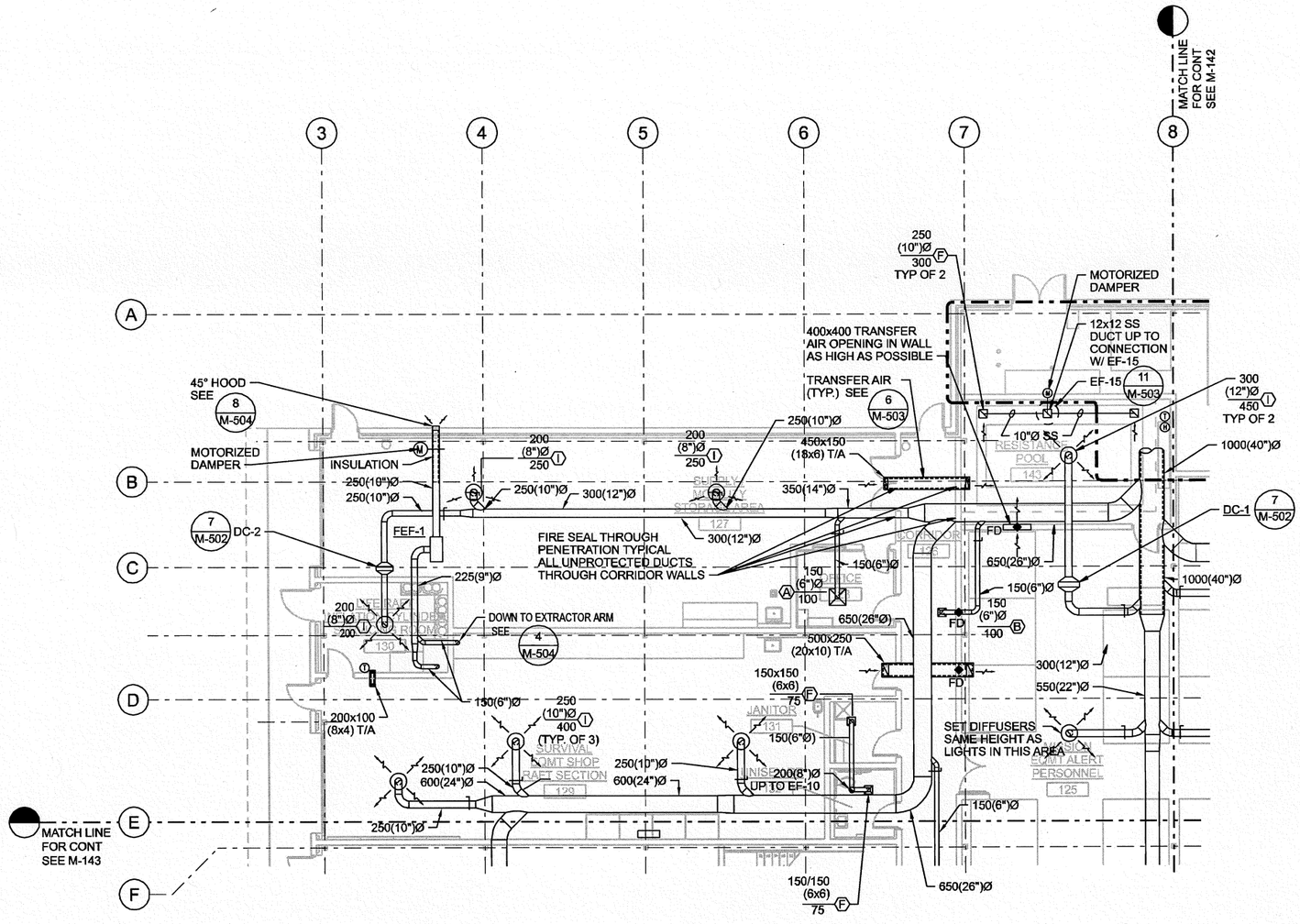
REGISTERED PROFESSIONAL ENGINEER
15093PE
OREGON
MAY. 25, 1990
JACK M. KIRK
EXP. 06-30-2009

ISSUED FOR TYPE B FINAL

VERIFY SCALE
BAR IS 25mm ON ORIGINAL DRAWING.
0 25mm

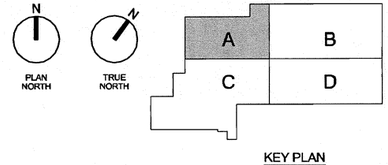
DATE	APRIL 2008
PROJ	351441
DWG	M-003
SHEET	167

FILENAME: 351441PO-M-003.dgn PLOT DATE: 4/1/2008 PLOT TIME: 11:14:24 AM



FIRST FLOOR PLAN - AREA A

1:100



KEY PLAN

REGISTERED PROFESSIONAL ENGINEER 15093PE OREGON JULY 25, 1990 JACK M. KIRK

EXP. 06-30-2009

NO	DATE	DESCRIPTION	APVR
NO.	DATE	REVISION	BY
DSGN	J KIRK	DR R COWAN	CHK W GIFFORD
			APVD J ALTO

ALASKA AIR NATIONAL GUARD
176th WING RELOCATION
PARARESCUE OPERATIONS
PROJECT DO 22O1 ANG 1

CH2MHILL

PARARESCUE OPERATIONS
MECHANICAL
FIRST FLOOR PLAN
AREA A

VERIFY SCALE
BAR IS 25mm ON ORIGINAL DRAWING.
0 25mm

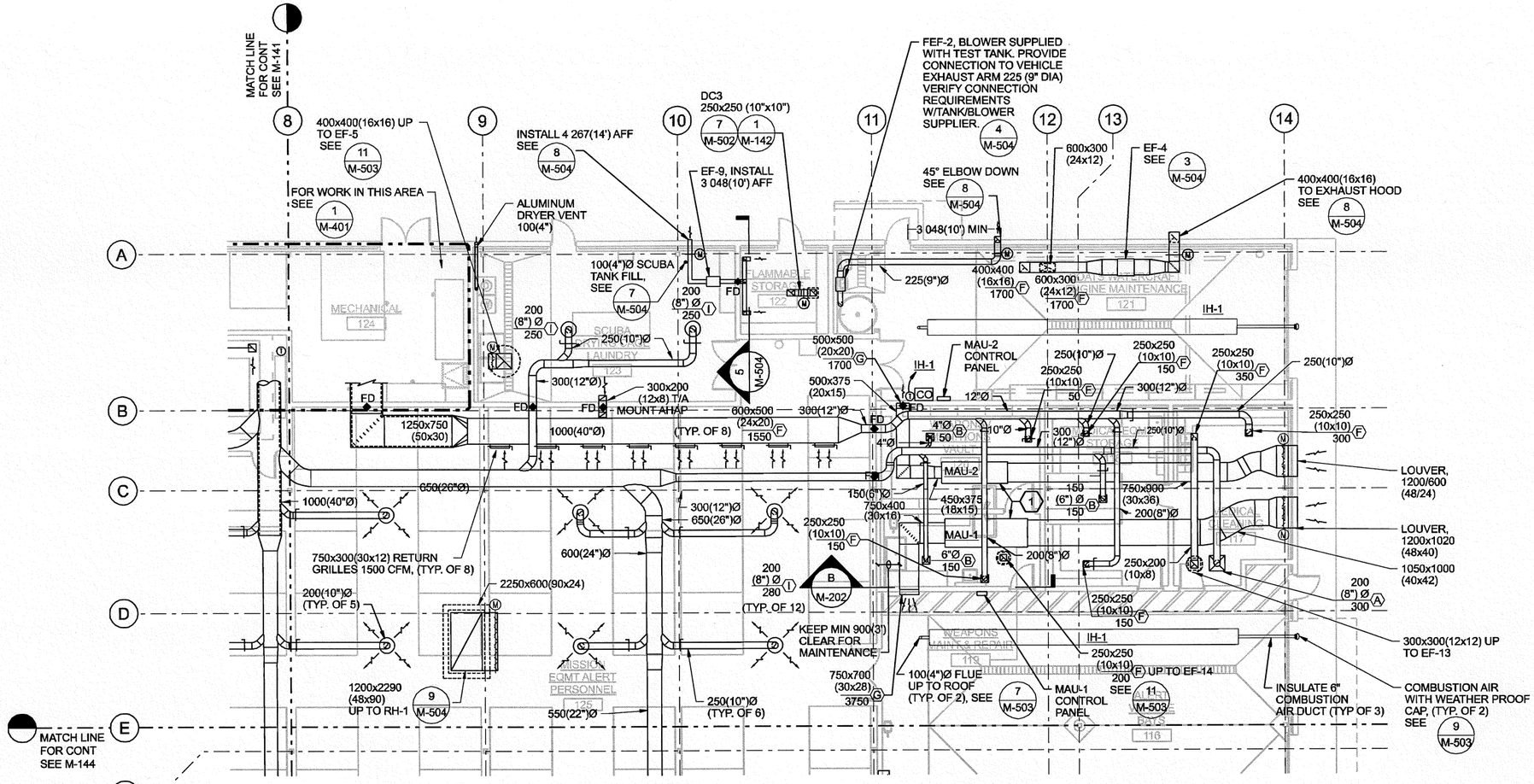
DATE	APRIL 2008
PROJ	351441
DWG	M-141
SHEET	168

ISSUED FOR TYPE B FINAL

FILENAME: 351441PO-M-141.dgn PLOT DATE: 3/27/2008 PLOT TIME: 1:42:38 PM

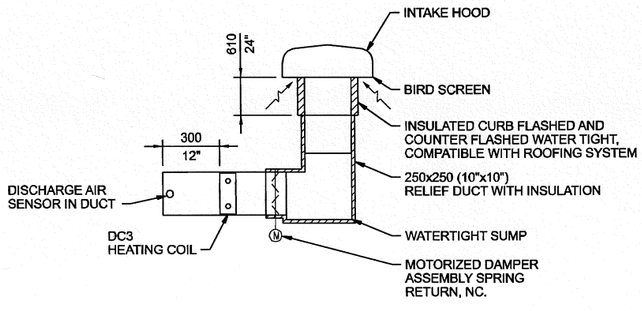
KEYED NOTES

1. MOUNT MAU 1&2 ON CONCRETE FLOOR OF MECHANICAL MEZZANINE, NO HOUSEKEEPING PAD DUE TO SPACE CONSTRAINTS. PROVIDE SEISMIC RESTRAINT FOR BOTH UNITS. SEE STRUCTURAL AND MECHANICAL SPECIFICATIONS SEE B / M-202



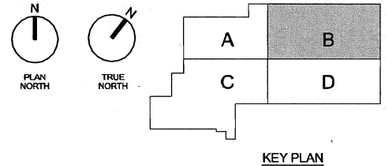
FIRST FLOOR PLAN - AREA B

1:100



1 INTAKE HOOD DETAIL

NTS



KEY PLAN

REGISTERED PROFESSIONAL ENGINEER 15093PE OREGON JULY 25, 1980 JACK M. KIRK

EXP. 06-30-2009

NO	DATE	DSGN	DR	DESCRIPTION	CHK	APVD	APVR	BY	APVD
		J KIRK	R COWAN	REVISION	W GIFFORD		N		J ALTO

ALASKA AIR NATIONAL GUARD
176th WING RELOCATION
PARARESCUE OPERATIONS
PROJECT DO 22O1 ANG 1

CH2MHILL

PARARESCUE OPERATIONS
MECHANICAL
FIRST FLOOR
AREA B

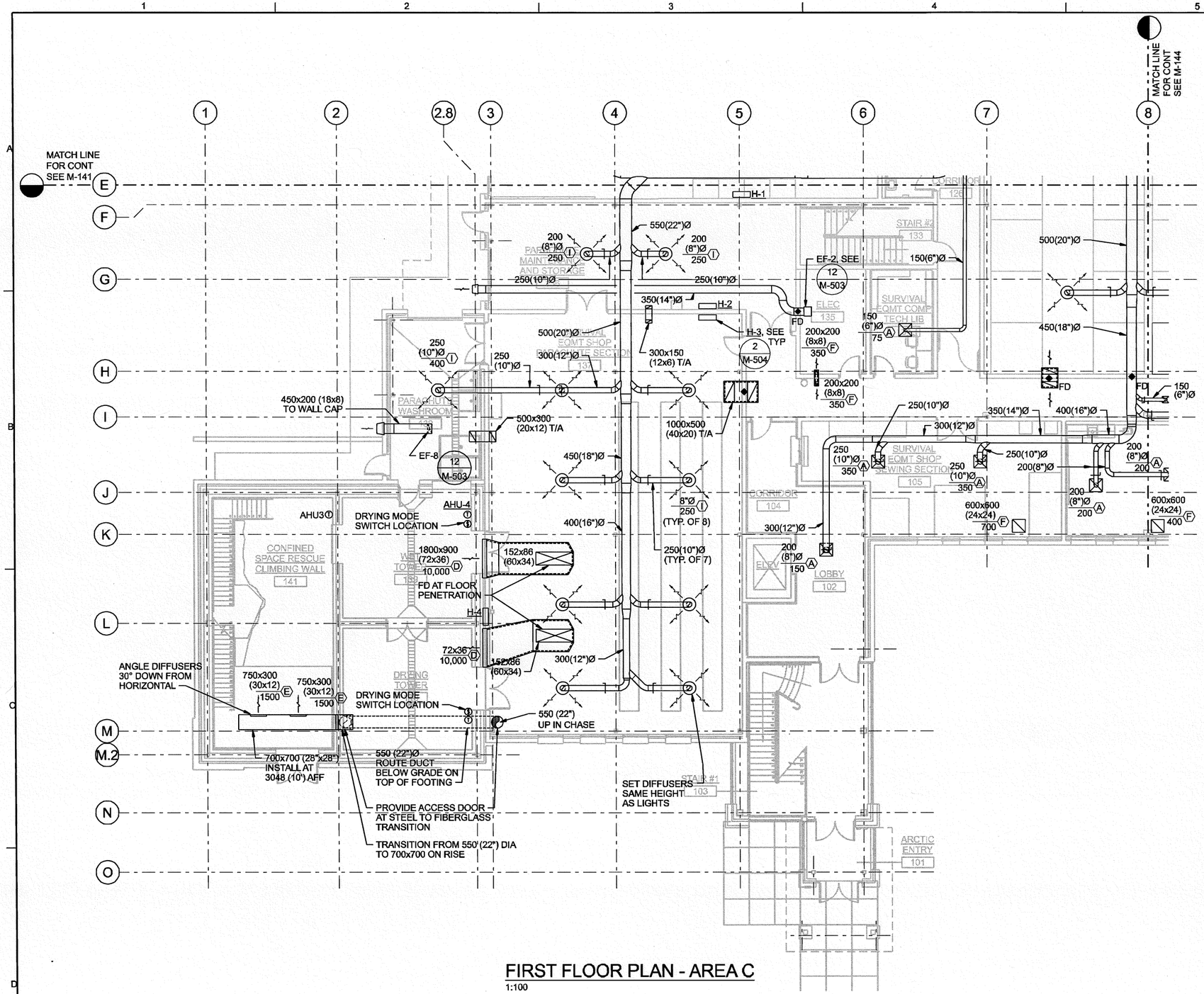
VERIFY SCALE

BAR IS 25mm ON ORIGINAL DRAWING.
0 25mm

DATE	APRIL 2008
PROJ	351441
DWG	M-142
SHEET	169

ISSUED FOR TYPE B FINAL

FILENAME: 351441PO-M-142.dgn PLOT DATE: 3/27/2008 PLOT TIME: 1:43:03 PM



FIRST FLOOR PLAN - AREA C

1:100

PLAN NORTH

TRUE NORTH

KEY PLAN

A | B
C | D

REGISTERED PROFESSIONAL ENGINEER 15093PE OREGON JULY 25, 1990 JACK M. KIRK

EXP. 06-30-2009

NO	DATE	DESCRIPTION	APVR
DSGN	DATE	REVISION	BY
J KIRK	DR	R COWAN	CHK
		W GIFFORD	APVD
			J ALTO

CH2MHILL

ALASKA AIR NATIONAL GUARD
176th WING RELOCATION
PARARESCUE OPERATIONS
PROJECT DO 2201 ANG 1

PARARESCUE OPERATIONS
MECHANICAL
FIRST FLOOR PLAN
AREA C

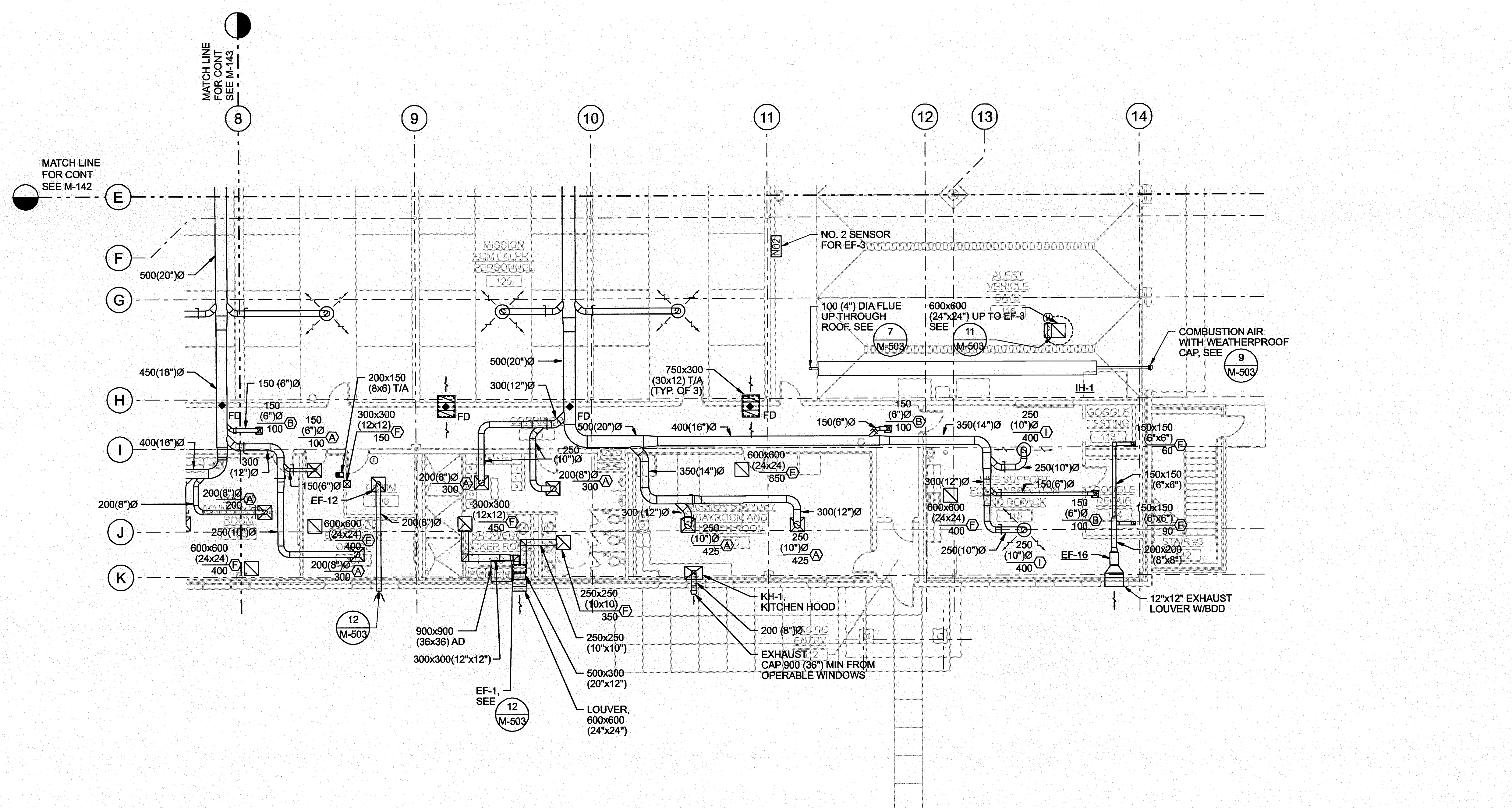
ISSUED FOR TYPE B FINAL

VERIFY SCALE

BAR IS 25mm ON ORIGINAL DRAWING. 0 25mm

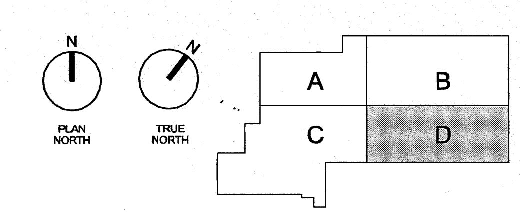
DATE	APRIL 2008
PROJ	351441
DWG	M-143
SHEET	170

FILENAME: 351441PO-M-143.dgn PLOT DATE: 3/27/2008 PLOT TIME: 1:43:28 PM


MATCH LINE FOR CONT SEE M-143
MATCH LINE FOR CONT SEE M-142
8
9
10
11
12
13
14
E
F
G
H
I
J
K
500(20")Ø
450(18")Ø
400(16")Ø
200(8")Ø
150 (6")Ø
150 (6")Ø 100 B
150 (6")Ø 100 A
200x150 (8x6) T/A
300x300 (12x12) 150 F
FD
300 (12")Ø
150(6")Ø
EF-12
200(8")Ø 200 A
250(10")Ø
600x600 (24x24) 400 F
200(8")Ø 300 A
600x600 (24x24) 400 F
200(8")Ø
12 M-503
MISSION EQMT ALERT PERSONNEL 125
500(20")Ø
300(12")Ø
FD
200(8")Ø 300 A
300x300 (12x12) 450 F
250 (10")Ø
200(8")Ø 300 A
FD 500(20")Ø
400(16")Ø
750x300 (30x12) T/A (TYP. OF 3)
FD
350(14")Ø
600x600 (24x24) 850 F
300 (12")Ø
250 (10")Ø 425 A
300(12")Ø
250 (10")Ø 425 A
250x250 (10x10) 350 F
900x900 (36x36) AD
300x300(12"x12")
EF-1, SEE 12 M-503
250x250 (10"x10")
500x300 (20"x12")
LOUVER, 600x600 (24"x24")
KH-1, KITCHEN HOOD
200 (8")Ø
EXHAUST CAP 900 (36") MIN FROM OPERABLE WINDOWS
NO. 2 SENSOR FOR EF-3
N02
100 (4") DIA FLUE UP THROUGH ROOF. SEE 7 M-503
600x600 (24"x24") UP TO EF-3 SEE 11 M-503
ALERT VEHICLE BAYS
COMBUSTION AIR WITH WEATHERPROOF CAP, SEE 9 M-503
IH-1
150 (6")Ø 100 B
150(6")Ø
350(14")Ø
250 (10")Ø 400 I
GOGGLE TESTING 113
150x150 (6"x6") 60 F
250(10")Ø
150(6")Ø
300(12")Ø
600x600 (24x24) 400 F
150x150 (6"x6")
150 (6")Ø 100 B
150x150 (6"x6") 90 F
250(10")Ø
250 (10")Ø 400 I
EF-16
200x200 (8"x8")
STAIR #3
12"x12" EXHAUST LOUVER W/BDD

FIRST FLOOR PLAN - AREA D

1:100



KEY PLAN

REGISTERED PROFESSIONAL ENGINEER 15093PE OREGON JULY 25, 1990 JACK M. KIRK

EXP. 06-30-2009

NO	DATE	DESCRIPTION	APVR	N
NO.	DATE	REVISION	BY	APVD
DSGN	J KIRK	DR R COWAN	CHK W GIFFORD	APVD J ALTO

ALASKA AIR NATIONAL GUARD
176th WING RELOCATION
PARARESCUE OPERATIONS
PROJECT DO 2ZO1 ANG 1

CH2MHILL

PARARESCUE OPERATIONS
MECHANICAL
FIRST FLOOR PLAN
AREA D

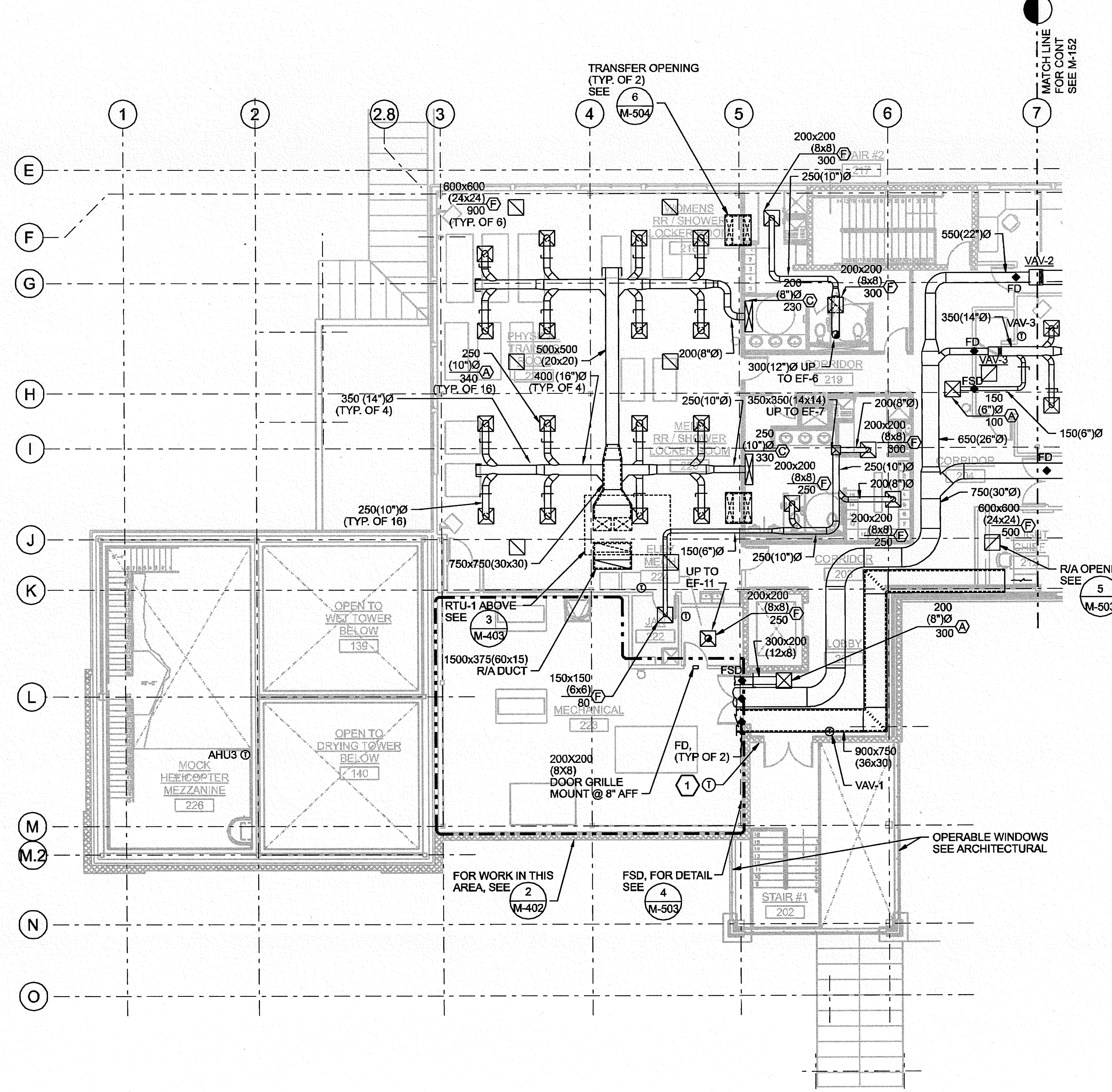
VERIFY SCALE
BAR IS 25mm ON ORIGINAL DRAWING.
0 ▬ 25mm

DATE	APRIL 2008
PROJ	351441
DWG	M-144
SHEET	171

ISSUED FOR TYPE B FINAL

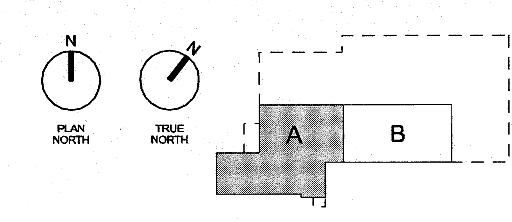
KEYED NOTES:

1. PROVIDE HEATING/COOLING T-STAT TO CONTROL FINTUBE AND POWER WINDOWS FOR NATURAL CONVECTION COOLING DDC SYSTEM TO ENABLE/DISABLE WINDOWS AUTOMATIC CONTROL BY THERMOSTAT. OPEN WINDOWS ON RISE ABOVE TEMPERATURE SET POINT. BASE ON PROPORTIONAL OFFSET. LOCKING THERMOSTAT GUARD TYPICAL.



SECOND FLOOR PLAN - AREA A

1:100



KEY PLAN

REGISTERED PROFESSIONAL ENGINEER 15093PE OREGON JULY 25, 1990 JACK M. KIRK

EXP. 06-30-2009

176TH WING

NO	DATE	DESCRIPTION	APVR	N
NO.	DATE	REVISION	BY	APVD
DSGN J KIRK	DR R COWAN	CHK W GIFFORD	APVD J ALTO	

ALASKA AIR NATIONAL GUARD
176th WING RELOCATION
PARARESCUE OPERATIONS
PROJECT DO 2ZO1 ANG 1

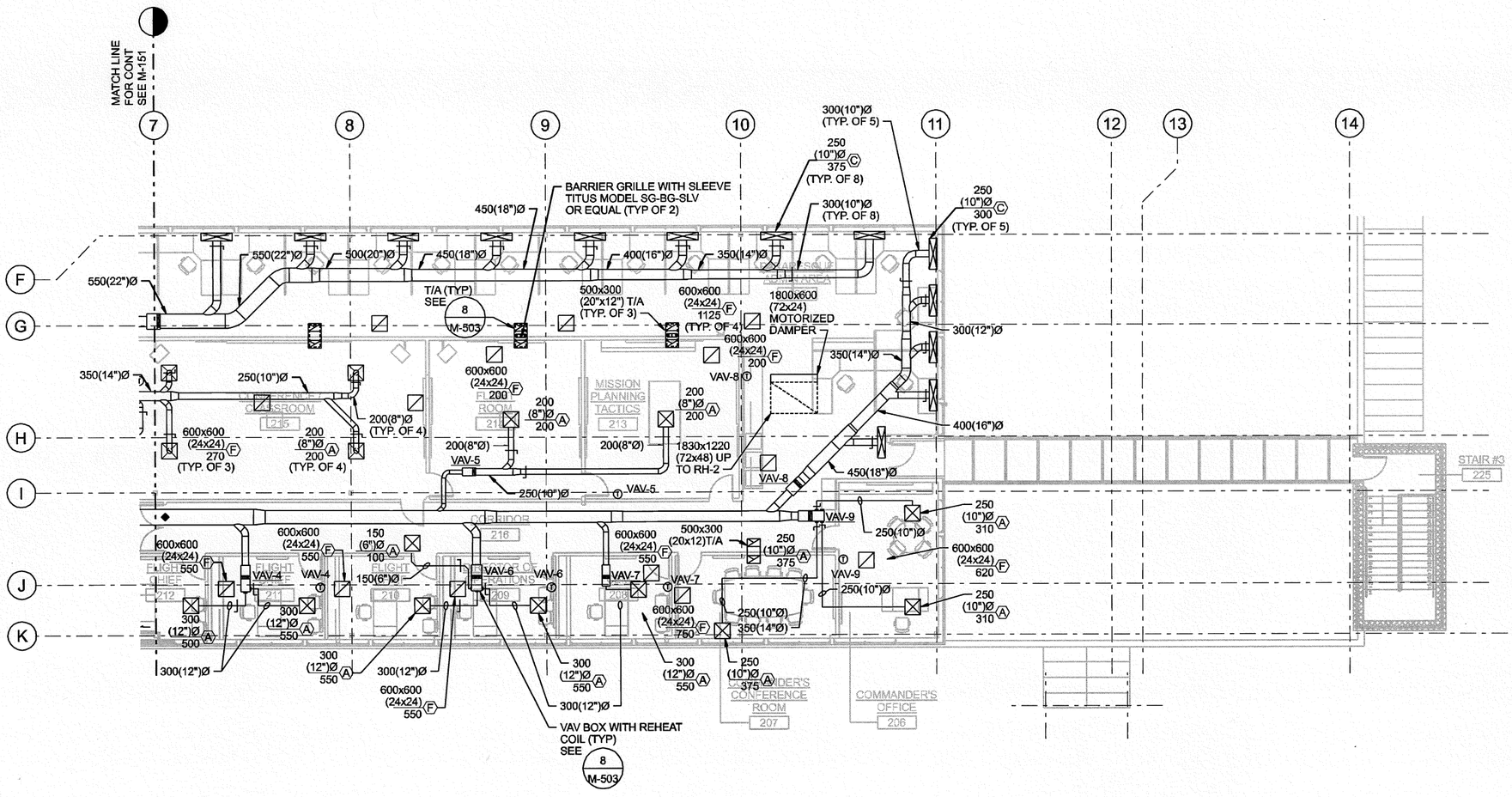
CH2MHILL

PARARESCUE OPERATIONS
MECHANICAL
SECOND FLOOR PLAN
AREA A

VERIFY SCALE
BAR IS 25mm ON ORIGINAL DRAWING.
0 25mm

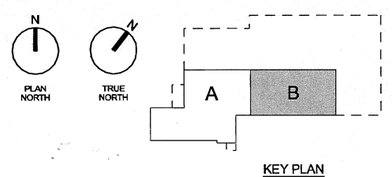
DATE	APRIL 2008
PROJ	351441
DWG	M-151
SHEET	172

ISSUED FOR TYPE B FINAL



SECOND FLOOR PLAN - AREA B

1:100



REGISTERED PROFESSIONAL ENGINEER 15093PE OREGON JULY 25, 1980 JACK M. KIRK

EXP. 06-30-2009

NO	DATE	DESCRIPTION	DSGN	DR	CHK	APVD
		REVISION	J KIRK	R COWAN	W GIFFORD	

APVR	N
BY	APVD
	J ALTO

ALASKA AIR NATIONAL GUARD
176th WING RELOCATION
PARARESCUE OPERATIONS
PROJECT DO 2201 ANG 1

PARARESCUE OPERATIONS
MECHANICAL
SECOND FLOOR PLAN
AREA B

CH2MHILL

VERIFY SCALE

BAR IS 25mm ON ORIGINAL DRAWING.
0 25mm

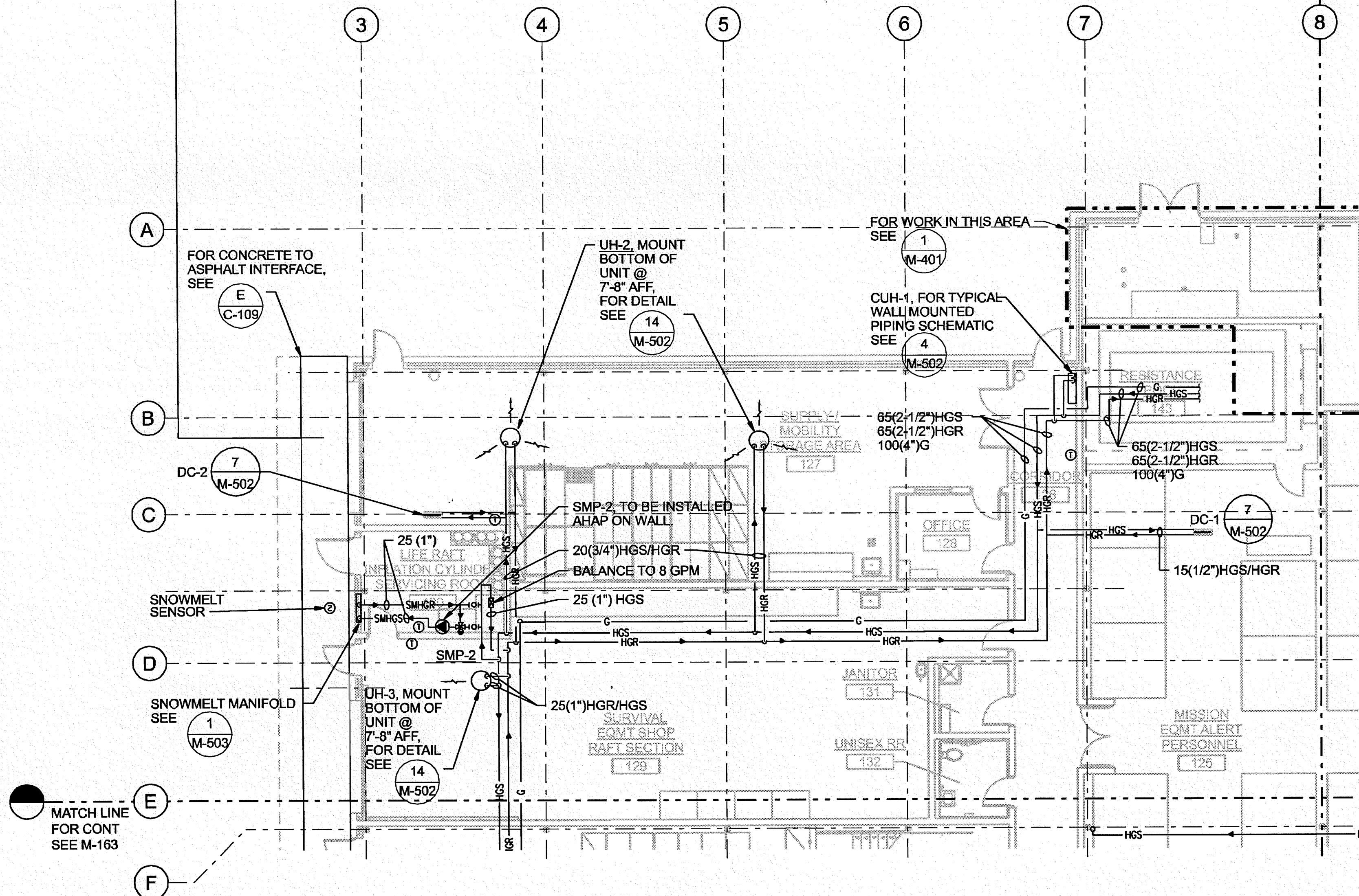
DATE	APRIL 2008
PROJ	351441
DWG	M-152
SHEET	173

ISSUED FOR TYPE B FINAL

REUSE OF DOCUMENTS: THIS DOCUMENT AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2MHILL.

FILENAME: 351441PO-M-152.dgn PLOT DATE: 3/27/2008 PLOT TIME: 1:44:18 PM

SNOWMELT ZONE #2	
AREA SERVED:	543 SQFT
REQUIRED OUTPUT:	150 BTU/SQFT
SUPPLY TEMPERATURE:	160°F
TEMPERATURE DROP:	25°F
FLOWRATE:	7 GPM
MAX. PRESSURE DROP:	15' HEAD



3
4
5
6
7
8
MATCH LINE FOR CONT SEE M-162
A
B
C
D
E
F
FOR CONCRETE TO ASPHALT INTERFACE, SEE E C-109
UH-2, MOUNT BOTTOM OF UNIT @ 7'-8" AFF, FOR DETAIL SEE 14 M-502
FOR WORK IN THIS AREA SEE 1 M-401
CUH-1, FOR TYPICAL WALL MOUNTED PIPING SCHEMATIC SEE 4 M-502
DC-2 7 M-502
SUPPLY / MOBILITY STORAGE AREA 127
65(2-1/2")HGS
65(2-1/2")HGR
100(4")G
RESISTANCE 143
CORRIDOR
OFFICE 128
DC-1 7 M-502
15(1/2")HGS/HGR
SMP-2, TO BE INSTALLED AHAP ON WALL
25 (1")
LIFE RAFT INFLATION CYLINDER SERVICING ROOM
20(3/4")HGS/HGR
BALANCE TO 8 GPM
25 (1") HGS
SNOWMELT SENSOR
SMHGR
SMHGS
SMP-2
HGS
HGR
G
SNOWMELT MANIFOLD SEE 1 M-503
UH-3, MOUNT BOTTOM OF UNIT @ 7'-8" AFF, FOR DETAIL SEE 14 M-502
25(1")HGR/HGS
SURVIVAL EQMT SHOP RAFT SECTION 129
JANITOR 131
UNISEX RR 132
MISSION EQMT ALERT PERSONNEL 125
MATCH LINE FOR CONT SEE M-163

FIRST FLOOR HYDRONIC PIPING - AREA A

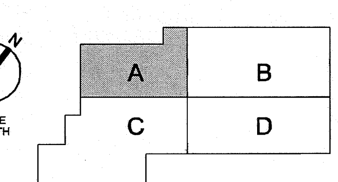
1:100

GENERAL NOTES:

A. TERMINAL CONNECTIONS TO BE 20(3/4") UNLESS OTHERWISE NOTED.

PLAN NORTH

TRUE NORTH



KEY PLAN

REGISTERED PROFESSIONAL ENGINEER 15093PE OREGON JULY 25, 1990 JACK M. KIRK

EXP. 06-30-2009

176TH WING

NO	DATE	DESCRIPTION	APVR	N
NO.	DATE	REVISION	BY	APVD
DSGN J KIRK	DR R COWAN	CHK W GIFFORD	APVD J ALTO	

ALASKA AIR NATIONAL GUARD
176th WING RELOCATION
PARARESCUE OPERATIONS
PROJECT DO 2ZO1 ANG 1

CH2MHILL

PARARESCUE OPERATIONS
MECHANICAL
FIRST FLOOR HYDRONIC PIPING
AREA A

VERIFY SCALE

BAR IS 25mm ON ORIGINAL DRAWING.
0 25mm

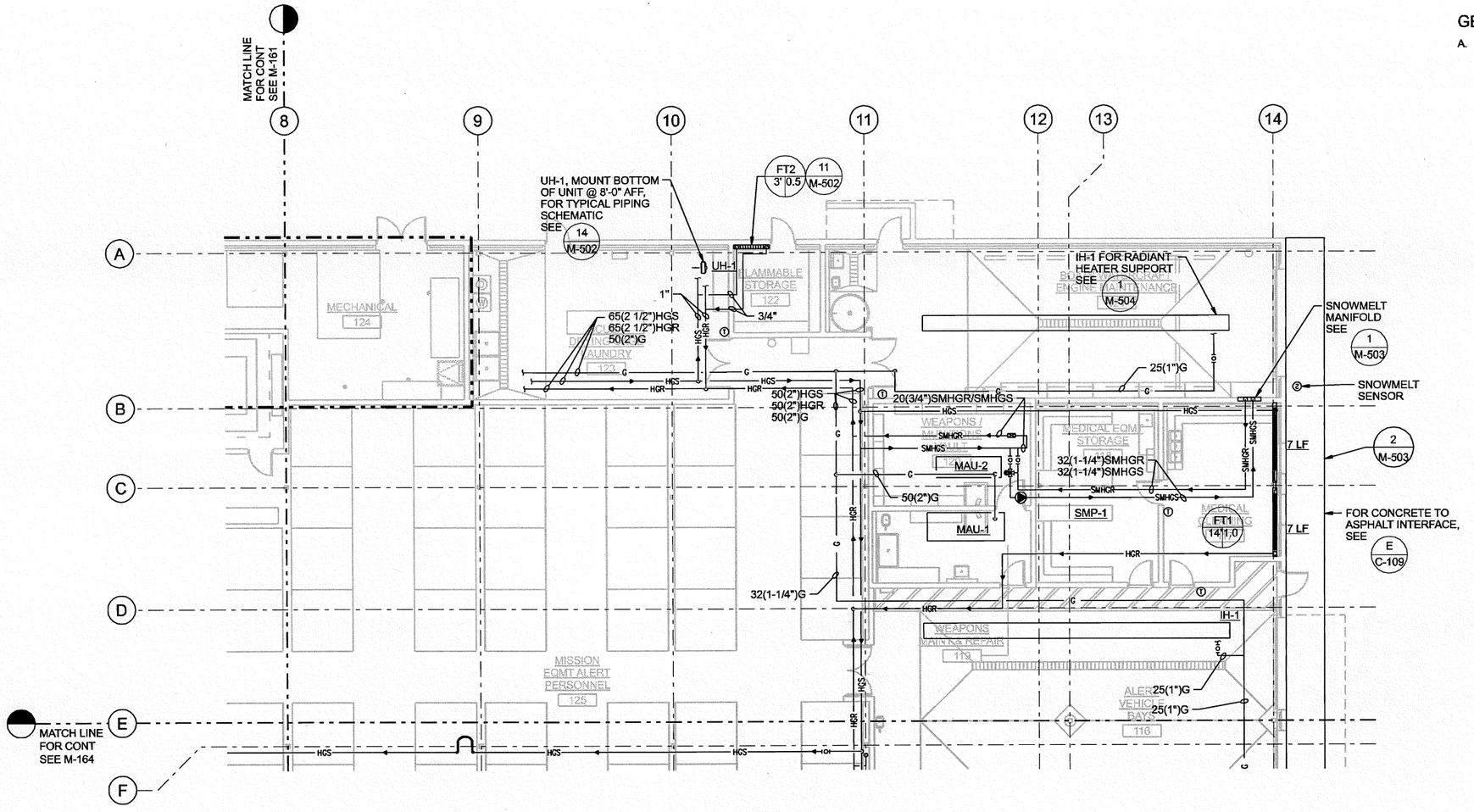
DATE	APRIL 2008
PROJ	351441
DWG	M-161
SHEET	174

ISSUED FOR TYPE B FINAL

FILENAME: 351441PO-M-161.dgn PLOT DATE: 3/27/2008 PLOT TIME: 2:33:31 PM

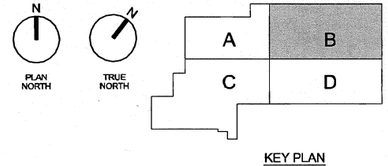
GENERAL NOTES:

A. TERMINAL CONNECTIONS TO BE 20(3/4") UNLESS OTHERWISE NOTED.



FIRST FLOOR HYDRONIC PIPING - AREA B

1:100



KEY PLAN

REGISTERED PROFESSIONAL ENGINEER 15093PE OREGON JULY 25, 1980 JACK M. KIRK

EXP. 06-30-2009

NO	DATE	DSGN
		J KIRK

APVR	N
BY	APVD
	J ALTO

DESCRIPTION: REVISION | CHK: R COWAN | APVD: W GIFFORD | DR:

ALASKA AIR NATIONAL GUARD
176th WING RELOCATION
PARARESCUE OPERATIONS
PROJECT DO 22O1 ANG 1

CH2MHILL

PARARESCUE OPERATIONS
MECHANICAL
FIRST FLOOR HYDRONIC PIPING
AREA B

VERIFY SCALE
BAR IS 25mm ON ORIGINAL DRAWING.
0 25mm

DATE	APRIL 2008
PROJ	351441
DWG	M-162
SHEET	175

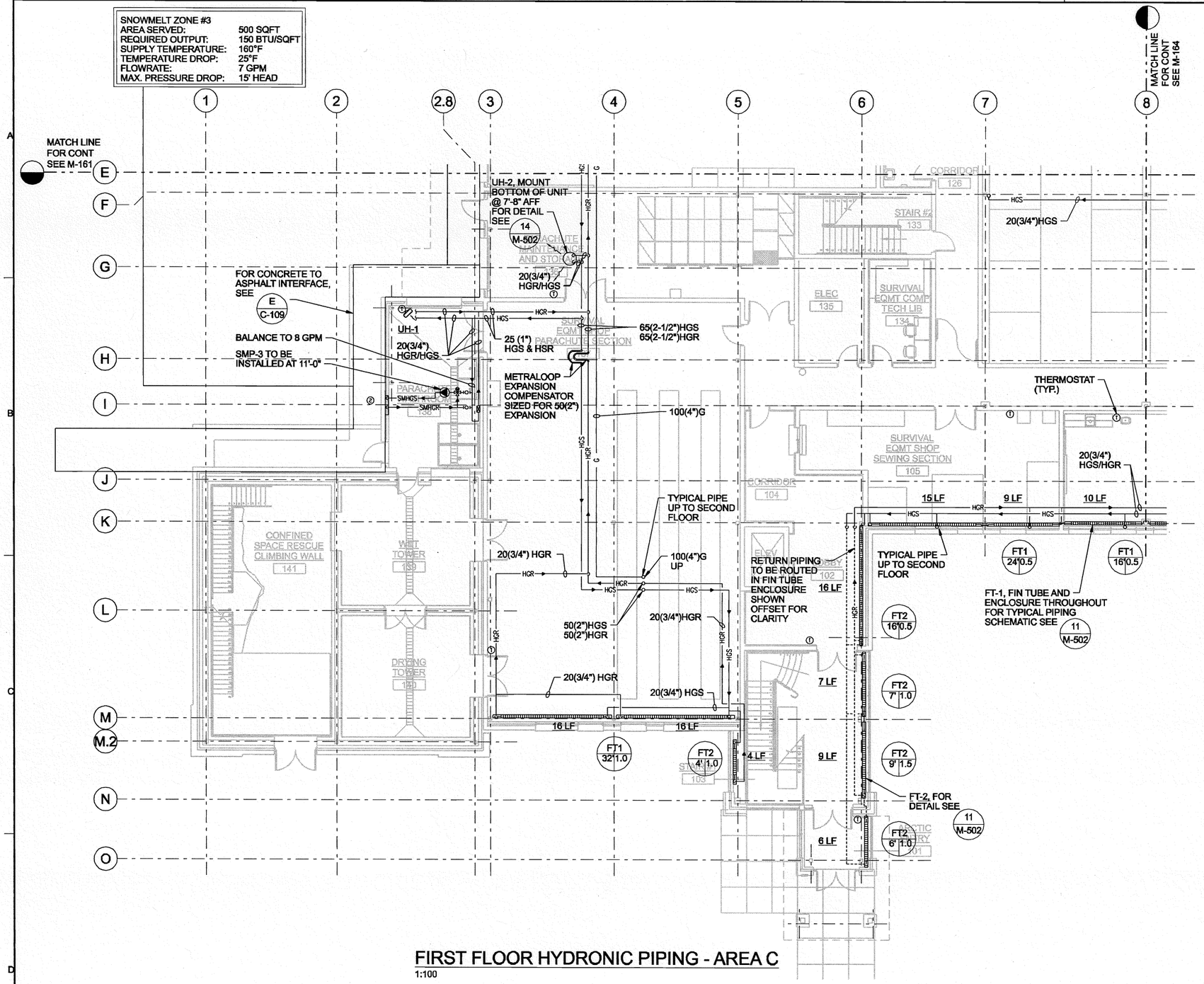
FILENAME: 351441PO-M-162.dgn PLOT DATE: 3/27/2008 PLOT TIME: 2:34:11 PM

ISSUED FOR TYPE B FINAL

SNOWMELT ZONE #3	
AREA SERVED:	500 SQFT
REQUIRED OUTPUT:	150 BTU/SQFT
SUPPLY TEMPERATURE:	160°F
TEMPERATURE DROP:	25°F
FLOWRATE:	7 GPM
MAX. PRESSURE DROP:	15' HEAD

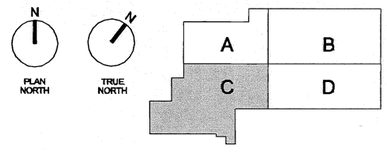
GENERAL NOTES:

A. TERMINAL CONNECTIONS TO BE 20(3/4") UNLESS OTHERWISE NOTED.



FIRST FLOOR HYDRONIC PIPING - AREA C

1:100



KEY PLAN

REGISTERED PROFESSIONAL ENGINEER 15093PE OREGON MAY 25, 1990 JACK M. KIRK

EXP. 06-30-2009

NO	DATE	DSGN
		J KIRK

APVR	N
BY	APVD
	J ALTO

DESCRIPTION

REVISION	DR
CHK	R COWAN
APVD	W GIFFORD

ALASKA AIR NATIONAL GUARD
176th WING RELOCATION
PARARESCUE OPERATIONS
PROJECT DO 2201 ANG 1

CH2MHILL

PARARESCUE OPERATIONS
MECHANICAL
FIRST FLOOR HYDRONIC PIPING
AREA C

VERIFY SCALE
BAR IS 25mm ON ORIGINAL DRAWING.
0 25mm

DATE	APRIL 2008
PROJ	351441
DWG	M-163
SHEET	176

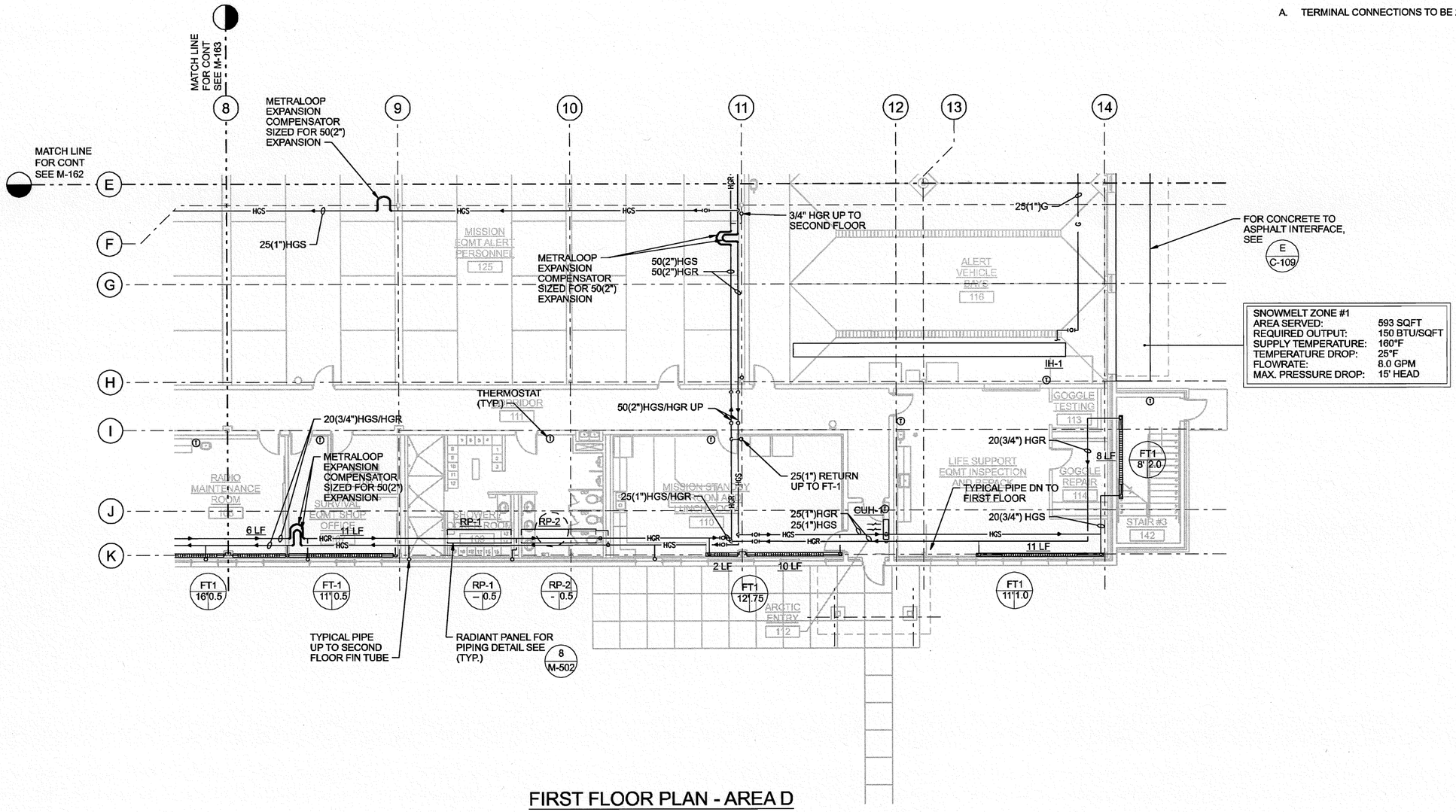
ISSUED FOR TYPE B FINAL

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2MHILL.

FILENAME: 351441PO-M-163.dgn PLOT DATE: 4/1/2008 PLOT TIME: 11:23:36 AM

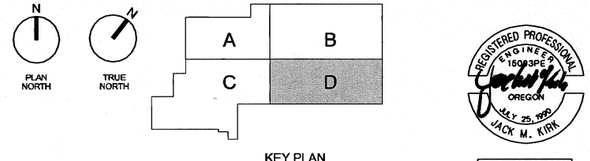
GENERAL NOTES:

A. TERMINAL CONNECTIONS TO BE 20(3/4") UNLESS OTHERWISE NOTED.



FIRST FLOOR PLAN - AREA D

1:100



KEY PLAN

REGISTERED PROFESSIONAL ENGINEER 15093PE OREGON JULY 25, 1980 JACK M. KIRK

EXP. 06-30-2009

NO	DESCRIPTION	DATE	DSGN	DR	CHK	APVD
NO.	REVISION	DATE	J KIRK	R COWAN	W GIFFORD	J ALTO

APVR N APVD BY

ALASKA AIR NATIONAL GUARD
176th WING RELOCATION
PARARESCUE OPERATIONS
PROJECT DO 22O1 ANG 1

CH2MHILL

PARARESCUE OPERATIONS
MECHANICAL
FIRST FLOOR HYDRONIC PIPING
AREA D

VERIFY SCALE

BAR IS 25mm ON ORIGINAL DRAWING.
0 25mm

DATE	APRIL 2008
PROJ	351441
DWG	M-164
SHEET	177

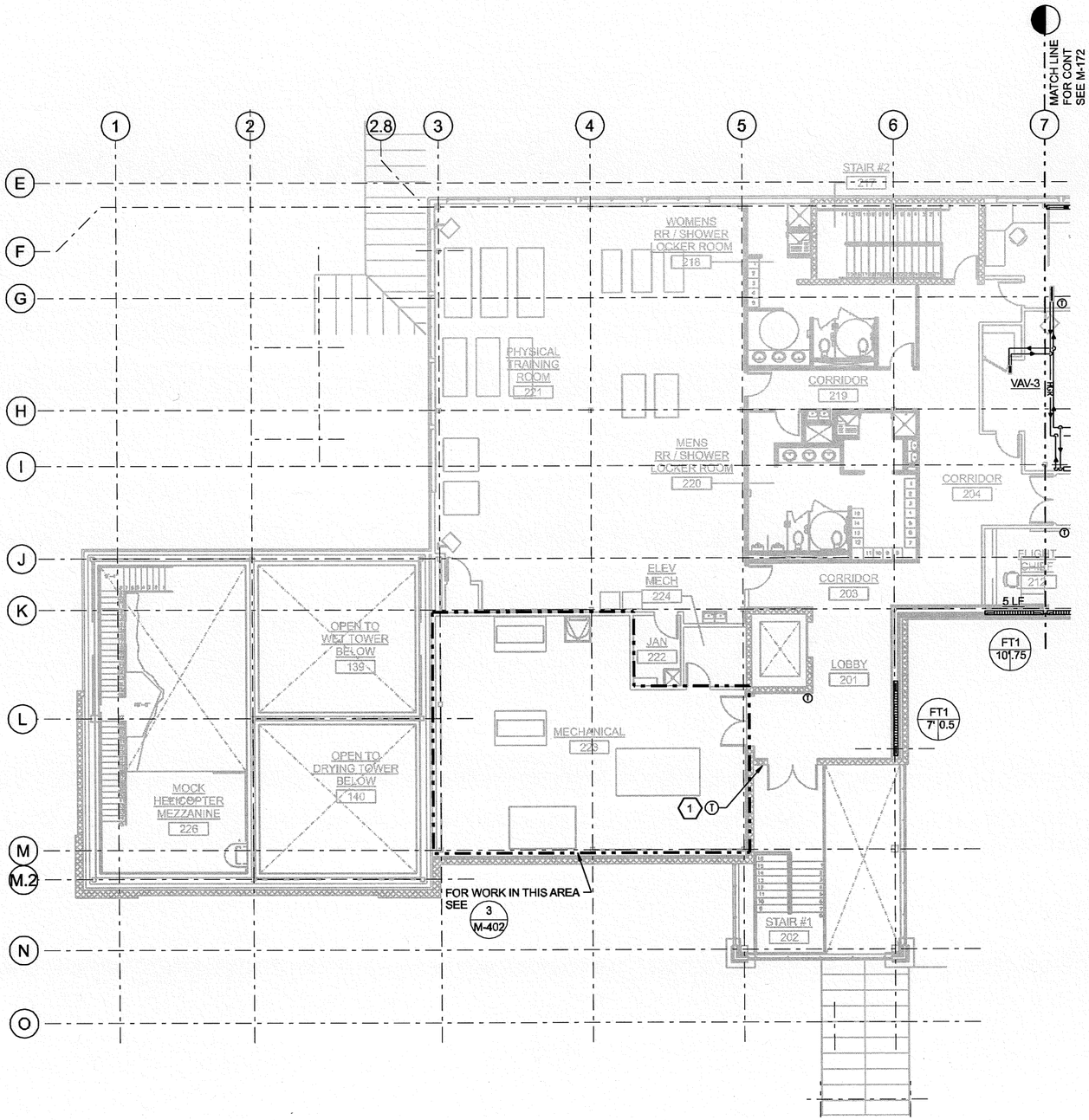
ISSUED FOR TYPE B FINAL

GENERAL NOTES:

A. TERMINAL CONNECTIONS TO BE 20(3/4") UNLESS OTHERWISE NOTED.

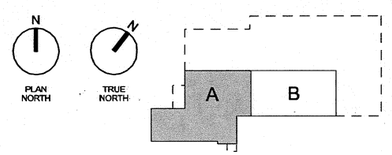
KEYED NOTES:

1. PROVIDE HEATING/COOLING T-STAT TO CONTROL FINTUBE AND POWER WINDOWS FOR NATURAL CONVECTION COOLING DDC SYSTEM TO ENABLE/DISABLE WINDOWS AUTOMATIC CONTROL BY THERMOSTAT. OPEN WINDOWS ON RISE ABOVE TEMPERATURE SET POINT. BASE ON PROPORTIONAL OFFSET. LOCKING THERMOSTAT GUARD TYPICAL.



SECOND FLOOR HYDRONIC PIPING - AREA A

1:100



KEY PLAN

REGISTERED PROFESSIONAL ENGINEER 15093PE OREGON JULY 25, 1990 JACK M. KIRK

EXP. 06-30-2009

NO	DATE	DSGN	J KIRK
NO.	DATE	DR	R COWAN
		CHK	W GIFFORD
		APVD	
	DESCRIPTION	APVD	J ALTO
	REVISION	BY	
		APVR	N

CH2MHILL

ALASKA AIR NATIONAL GUARD
176th WING RELOCATION
PARARESCUE OPERATIONS
PROJECT DO 2ZO1 ANG 1

PARARESCUE OPERATIONS
MECHANICAL
SECOND FLOOR HYDRONIC PIPING
AREA A

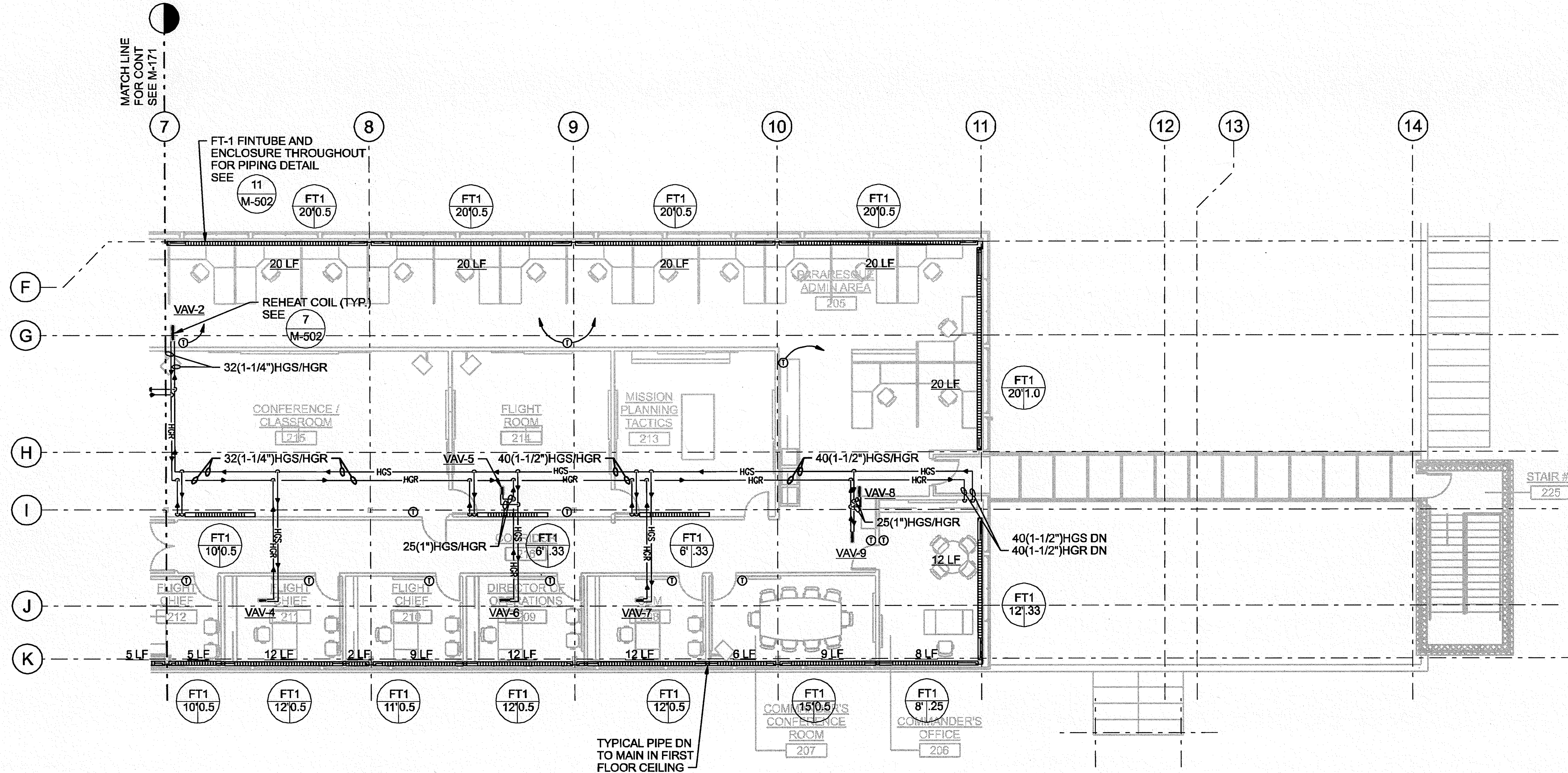
VERIFY SCALE
BAR IS 25mm ON ORIGINAL DRAWING.
0 25mm

DATE	APRIL 2008
PROJ	351441
DWG	M-171
SHEET	178

FILENAME: 351441PO-M-171.dgn PLOT DATE: 3/27/2008 PLOT TIME: 2:35:57 PM

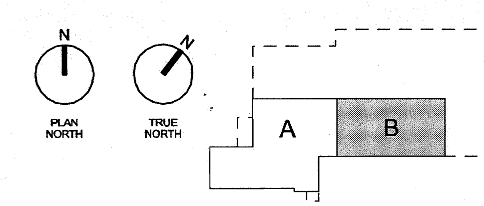
GENERAL NOTES:

A. TERMINAL CONNECTIONS TO BE 20(3/4") UNLESS OTHERWISE NOTED.



SECOND FLOOR HYDRONIC PIPING - AREA B

1:100



KEY PLAN

REGISTERED PROFESSIONAL ENGINEER 15093PE OREGON JULY 25, 1990 JACK M. KIRK

[illegible]

EXP. 06-30-2009

NO	DATE	DESCRIPTION	APVR	N
NO.	DATE	REVISION	BY	APVD
DSGN	DR	CHK	APVD	
J KIRK	R COWAN	W GIFFORD	J ALTO	

ALASKA AIR NATIONAL GUARD
176th WING RELOCATION
PARARESCUE OPERATIONS
PROJECT DO 2ZO1 ANG 1

CH2MHILL

PARARESCUE OPERATIONS
MECHANICAL
SECOND FLOOR HYDRONIC PIPING
AREA B

VERIFY SCALE

BAR IS 25mm ON ORIGINAL DRAWING.
0 25mm

DATE	APRIL 2008
PROJ	351441
DWG	M-172
SHEET	179

ISSUED FOR TYPE B FINAL