MECHANICAL SYMBOLS LIST

SYMBOL	ABBR.	DESCRIPTION
		SUPPLY DUCT UP AND DOWN
		RETURN DUCT UP AND DOWN
		EXHAUST DUCT UP AND DOWN
		OUTSIDE AIR DUCT UP AND DOWN
24x12		RECTANGULAR DUCT – 1ST DIMENSION IS SIDE SHOWN
24"ø		ROUND DUCT
24x12 AL	AL	ALUMINUM DUCT
		FLEXIBLE DUCT
		FLEXIBLE DUCT CONNECTOR
		DUCT WITH INTERNAL LINER
		MAINTENANCE ACCESS AREA
125 SDC-1 6x6 – 4W		AIR FLOW (CFM) – TYPE / NECK SIZE – PATTERN
125 SDC-4 (8'#) 48x1 (4)		AIR FLOW (CFM) – TYPE (INLET SIZE) / LENGTH x SLOT WIDTH (QTY)
		DIFFUSER WITH THROW PATTERN INDICATED
		ROOM SENSOR
		ROOM THERMOSTAT
TU-1		ROOM SENSOR WITH ZONE/UNIT CONTROLLED
AC-1		THERMOSTAT WITH ZONE/UNIT CONTROLLED
		THERMOSTAT WITH GUARD
		SENSOR WITH GUARD
		AIR MONITORING STATION
DSD	DSD	DUCT SMOKE DETECTOR
		DIRECTION OF AIR FLOW
		MANUAL DAMPER
DP		DIFFERENTIAL PRESSURE SENSOR
SP		STATIC PRESSURE SENSOR
		AUTOMATIC DAMPER
		FIRE DAMPER
		OPPOSED BLADE DAMPER
2005		ROOM NUMBER
5 M-501		DETAIL & SHEET NUMBER
2 M-501		SECTION & SHEET NUMBER
5		KEYED NOTE REFERENCE
		POINT OF CONNECTION BETWEEN NEW & EXISTING WORK

SYMBOL	ABBR.	DESCRIPTION
	CW	COLD WATER PIPE
	HW	HOT WATER PIPE
	HWR	HOT WATER RECIRCULATION PIPE
NCW	NCW	NON-POTABLE COLD WATER
	W	SANITARY WASTE PIPE
OD	OFD	OVERFLOW DRAIN PIPE
SD	SD	STORM DRAIN PIPE
	V	VENT PIPE
TP	TP	TRAP PRIMER
RVG		RELIEF VALVE DISCHARGE PIPE
D	D	INDIRECT DRAIN PIPE
CD	CD	COOLING COIL CONDENSATE DRAIN
HS	HS	HEATING WATER SUPPLY PIPE
HR	HR	HEATING WATER RETURN PIPE
CHS	CHS	CHILLED WATER SUPPLY PIPE
CHR	CHR	CHILLED WATER RETURN PIPE
RL	RL	REFRIGERANT LIQUID PIPE
RS	RS	REFRIGERANT SUCTION PIPE
F	F	FIRE SPRINKLER PIPE
PCD	PCD	PUMPED CONDENSATE DRAIN PIPE
G	G	LOW PRESSURE NATURAL GAS PIPE
MG	MG	MEDIUM PRESSURE NATURAL GAS PIPE
O	O	OXYGEN PIPE
FOS	FOS	FUEL OIL SUPPLY PIPE
FOR	FOR	FUEL OIL RETURN PIPE
		PIPE ANCHOR
		PIPE GUIDE
		PIPE EXPANSION JOINT
		PIPE WELL
		STRAINER
		STRAINER WITH BLOWDOWN VALVE
		CONCENTRIC REDUCER
		ECCENTRIC REDUCER
		VERTICAL PIPE DROP OR RISER
		PIPE TAKE OFF – UP
		PIPE TAKE OFF – DOWN
		90 DEGREE ELBOW UP
		90 DEGREE ELBOW DOWN
		BRANCH TEE
		TEE UP
		TEE DOWN
	PT	PRESSURE/TEMPERATURE TEST PLUG
		DIRECTION OF FLOW
SLOPE		SLOPE PIPE DOWN IN DIRECTION OF ARROW

SYMBOL	ABBR.	DESCRIPTION
		BREAK IN LINE – SHOWN FOR CLARITY
		PIPE CAP
		PIPE UNION
		FLEXIBLE PIPE CONNECTOR
		VALVE IN RISER
		GATE VALVE
		CHECK VALVE
		BALL VALVE
		LOCKING BALL VALVE
	SGSV	SEISMIC GAS SHUTOFF VALVE
	DCVA	DOUBLE CHECK VALVE ASSEMBLY
	RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
		BUTTERFLY VALVE
		BALANCING VALVE
		DRAIN VALVE
		COMBINATION VALVE (CHECK/BALANCING)
	PRV	PRESSURE REDUCING VALVE
		RELIEF VALVE
		2-WAY CONTROL VALVE
		3-WAY CONTROL VALVE
BSV	BSV	BOILER STOP VALVE
		GAS VALVE
	SGSV	SEISMIC GAS SHUTOFF VALVE
	FCV	FLOW CONTROL VALVE
TCP	TCP	TEMPERATURE CONTROL PANEL
	AEV	AIR ELIMINATION VALVE
M	M	WATER METER
	OFM	ORIFICE FLOW METER
		PUMP
		MANUAL AIR VENT
		AUTOMATIC AIR VENT
		COMPOUND GAUGE
		TEMPERATURE GAUGE
		PRESSURE GAUGE
		WATER HAMMER ARRESTOR
	FS	FLOW SWITCH
	PS	PRESSURE SWITCH
	HB	HOSE BIBB
	YH	YARD HYDRANT
FCO	FCO	FLOOR CLEANOUT
WCO	WCO	WALL CLEANOUT
CO	CO	CLEANOUT
	FDC	FIRE DEPARTMENT CONNECTION

SYMBOL	ABBR.	DESCRIPTION
	ACU	AIR CONDITIONING UNIT
	AD	ACCESS DOOR
	AFF	ABOVE FINISHED FLOOR
	AHU	AIR HANDLING UNIT
	B-X	BOILER (W/EQUIPMENT NUMBER)
	BCP	BOILER CIRCULATION PUMP
	BT	BUFFER TANK
	CC	COOLING COIL
	CFH	CUBIC FEET PER HOUR
	CH	CHILLER
	CHWP	CHILLED WATER PUMP
	CSC	CLEANING SOLUTION CONNECTION
	CU	CONDENSING UNIT
	DET	DOMESTIC EXPANSION TANK
	DFU	DRAINAGE FIXTURE UNITS
	DP	DOMESTIC WATER PUMP
	DX	DIRECT EXPANSION COIL
	EA	EXHAUST AIR
	EAH	EXHAUST AIR HOOD
	EAL	EXHAUST AIR LOUVER
	EF	EXHAUST FAN
	EGC	EXHAUST GRILLE CEILING
	ET	EXPANSION TANK
	ERC	EXHAUST REGISTER CEILING
	EW	EMERGENCY EYEWASH
	F	FURNACE
	FA	FREE AREA
	F	FIRE
	FC	FAN COIL UNIT
	FD	FLOOR DRAIN
	F.F.E.	FINISH FLOOR ELEVATION
	FIL	FILTER
	FL	FLOW LINE ELEVATION
	FTR	FINNED TUBE RADIATION
	FS	FLOOR SINK
	HC	HEATING COIL
	HP	HEAT PUMP
	HTHW	140 DEGREE HIGH TEMPERATURE HOT WATER
	HX	HEAT EXCHANGER
	HV	HEATING AND VENTILATING
	HWP	HEATING WATER PUMP
	IBS	IN BEAM SPACE
	INV. EL.	INVERT ELEVATION
	MB	MIXING BOX

SYMBOL	ABBR.	DESCRIPTION
	MV	THERMOSTATIC MIXING VALVE
	NC	NORMALLY CLOSED
	OA	OUTSIDE AIR
	OSAL	OUTSIDE AIR LOUVER
	PSIG	POUNDS PER SQUARE INCH GAUGE
	RA	RETURN AIR
	RAI	ROOF AIR INLET
	RAL	RELIEF AIR LOUVER
	RAO	RETURN AIR OPENING
	RD	ROOF DRAIN
	RF	RETURN FAN
	RGC	RETURN GRILLE CEILING
	RGW	RETURN GRILLE WALL
	RI&C	ROUGH IN AND CONNECT
	RRW	RETURN REGISTER WALL
	SA	SUPPLY AIR
	SDC	SUPPLY DIFFUSER CEILING
	SF	SUPPLY FAN
	SGC	SUPPLY GRILLE CEILING
	SGSV	SEISMIC GAS SHUTOFF VALVE
	SGW	SUPPLY GRILLE WALL
	ST	STORAGE TANK
	TGC	TRANSFER GRILLE CEILING
	TGD	TRANSFER GRILLE DOOR
	TGW	TRANSFER GRILLE WALL
	TU	TERMINAL UNIT
	UH	UNIT HEATER
	UV	UNIT VENTILATOR
	VEF	VEHICLE EXHAUST FAN
	VFD	VARIABLE FREQUENCY DRIVE
	VTR	VENT THROUGH ROOF
	WC	WATER COLUMN
	WH	WATER HEATER

MECHANICAL SHEET INDEX

SHEET NO.	SHEET TITLE
MH-001	MECHANICAL AND PLUMBING SYMBOLS LIST & SHEET INDEX
MH-002	MECHANICAL SCHEDULES
MH-101.1	FLOOR PLAN WEST - HVAC
MH-101.2	FLOOR PLAN NORTH - HVAC
MH-101.3	FLOOR PLAN EAST - HVAC
MH-102.1	FLOOR PLAN WEST - HVAC PIPING
MH-102.2	FLOOR PLAN NORTH - HVAC PIPING
MH-102.3	FLOOR PLAN EAST - HVAC PIPING
MH-201	ROOF PLAN - MECHANICAL & PLUMBING
MH-300	MECHANICAL ROOM PLAN
MH-501	MECHANICAL DETAILS
MH-502	MECHANICAL DETAILS
MH-503	MECHANICAL CONTROLS
PL-001	PLUMBING SCHEDULES
PL-100	FOUNDATION PLAN - PLUMBING
PL-101.1	FLOOR PLAN WEST - PLUMBING
PL-101.2	FLOOR PLAN NORTH - PLUMBING
PL-101.3	FLOOR PLAN EAST - PLUMBING
PL-500	PLUMBING DETAILS

Revisions:	Date

CONSULTANTS:

BALZHISER & HUBBARD ENGINEERS
MECHANICAL ELECTRICAL CIVIL SURVEYORS
330 WEST 13TH AVENUE EUGENE, OR 97401
T 541.686.8455 F 541.345.5345
2100-031-10mh001-2.dwg

REGISTERED PROFESSIONAL ENGINEER 18,175 DIGITAL SIGNATURE OREGON JAN. 15, 1981 TIMOTHY S. ELY
EXPIRES 12/31/13

ARCHITECT/ENGINEERS:

Tina Ely architect
2915 Wingate Street / Eugene, OR 97408
541.521.2477 / Tina.Ely@comcast.net

Drawing Title: MECHANICAL AND PLUMBING SYMBOLS LIST & SHEET INDEX

Approved: Project Director

Project Title: SEISMIC REPLACEMENT BLDG 2 PHASE 1 MINOR ACUTE PSYCHIATRIC WARD

Location: ROSEBURG, OREGON

Date: 30 APR 2012 | Checked: TSE | Drawn: XXX

VA Project Number: 653-322

Building Number: 086

Sheet Number: MH-001

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

SPLIT SYSTEM AIR CONDITIONING UNITS

INDOOR								OUTDOOR								
TAG	MODEL NO.	LOCATION	SYSTEM CAPACITY (MBH)		ELECTRICAL [B]			TAG	MODEL NO.	ELECTRICAL [B]			SYSTEM SEER	REFRIGERANT PIPE SIZE (IN)		REMARKS
			TOTAL	SENS.	FLA	VOLT	PHASE			MCA	VOLT	PHASE		RS [C]	RL [C]	
ACU-1	PKA-A24HA	D113 IDF ROOM	24.0	18.5	0.36	208	1	CU-1	PUY-A24NHA3	18.0	208	1	17.0	5/8	3/8	[D]
ACU-2	PKA-A24HA	E112 MDF ROOM	24.0	18.5	0.36	208	1	CU-2	PUY-A24NHA3	18.0	208	1	17.0	5/8	3/8	[D]
ACU-3	PKA-A24HA	E109 ELECTRICAL	24.0	18.5	0.36	208	1	CU-3	PUY-A24NHA3	18.0	208	1	17.0	5/8	3/8	[D]

BASIS OF DESIGN: MITSUBISHI

[A] 95 DEGREES F AMBIENT, 75 DEGREES F DB / 50% RELATIVE HUMIDITY ENTERING AIR TEMPERATURE.

[B] DISC. BY DIV. 26

[C] RS/RL SIZE LISTED IS FOR REFERENCE. PROVIDE SIZE AS RECOMMENDED BY MANUFACTURER FOR ACTUAL INSTALLED CONDITION.

[D] MANUFACTURER TO PROVIDE BLUE DIAMOND MAXI-BLUE CONDENSATE PUMP WITH SENSING OPTION #1, INSTALL IN TRUNKING, ELECTRICAL = 240/1/60.

CIRCULATING PUMPS - HYDRONIC

TAG	MODEL NO.	LOCATION	SERVICE	TYPE	GPM	HEAD (FT)	EFF. %	BHP	MOTOR				REMARKS
									HP	RPM	VOLT	PHASE	
CHWP-1	SERIES 1510 2-1/2BB	MECH. RM.	CHILLED WATER	BASE MOUNTED	210	72	75	5.9	7.5	1750	208	3	[A]
CHWP-2	SERIES 1510 2-1/2BB	MECH. RM.	CHILLED WATER	BASE MOUNTED	210	72	75	5.9	7.5	1750	208	3	[A]
HWP-1	SERIES 1510 1-1/4BC	MECH. RM.	HEATING WATER	BASE MOUNTED	68	62	56	1.9	3	1750	208	3	[A]
HWP-2	SERIES 1510 1-1/4BC	MECH. RM.	HEATING WATER	BASE MOUNTED	68	62	56	1.9	3	1750	208	3	[A]
BCP-1	SERIES 90 1-1/2AA	MECH. RM.	BOILER CIRCULATOR	INLINE	35	12	51	0.21	1/4	1725	120	1	[A]
BCP-2	SERIES 90 1-1/2AA	MECH. RM.	BOILER CIRCULATOR	INLINE	35	12	51	0.21	1/4	1725	120	1	[A]

NOTES:

BASIS OF DESIGN: [A] BELL & GOSSETT

BOILERS

TAG	MODEL NO.	LOCATION	SERVICE	FUEL	LWT	MAX GPM	CAPACITY (BTUH)		THERMAL EFFICIENCY %	ELECTRICAL			APPROX WEIGHT (LBS)	REMARKS
							INPUT	OUTPUT		FLA	VOLT	PHASE		
B-1	MLX-606	MECH. RM.	HTG. WATER	NAT.GAS	140	55	606,000	521,000	92	2.4	120	1	575	
B-2	MLX-606	MECH. RM.	HTG. WATER	NAT.GAS	140	55	606,000	521,000	92	2.4	120	1	575	

NOTES:

TEMPERATURES ARE IN DEGREES F.

BASIS OF DESIGN: AERCO

UNIT HEATERS

TAG	MODEL NO.	LOCATION	TYPE	CFM	CAPACITY		MOTOR				CONTROL VALVE		APPROX WEIGHT (LBS)	REMARKS
					MBH	GPM	HP	RPM- Hi Speed	VOLT	PHASE	2-WAY	3-WAY		
UH-1	UHH-18	MECH. RM.	HOT WATER	400	3.0	1.3	1/30	1,550	120	1	X		25	DISC. BY UH MFR.

NOTES:

BASIS OF DESIGN: MCQUAY.

CAPACITY BASED ON ENTERING AIR TEMP OF 65 DEGREES F.

ENTERING WATER TEMPERATURE 140 DEGREES F.

FAN COIL UNITS

TAG	MODEL NO.	FAN					HEATING COIL									MIN OSA (CFM)	REMARKS
		CFM	TOTAL APD	HP	VOLT	PHASE	EAT	LAT	MBH	GPM	ROWS	WPD (FT)	APD (IN)	CONTROL VALVE 2-WAY	CONTROL VALVE 3-WAY		
FCU-1	WCC 3 58	330	0.25"	1/30	120	1	45	95	22.1	2.2	2	1.4	0.1	X		0	SEE NOTES
FCU-2	WCC 2 58	250	0.20"	1/30	120	1	45	95	12.4	1.2	2	0.7	0.1	X		0	SEE NOTES
FCU-3	WCC 3 58	330	0.25"	1/30	120	1	45	95	22.1	2.2	2	1.4	0.1	X		0	SEE NOTES

NOTES:

BASIS OF DESIGN: AIREDALE.

TOTAL APD INCLUDES INTERNAL AND EXTERNAL PRESSURE DROP PLUS MIDLIFE FILTER PRESSURE DROP.

COIL APD IS MAXIMUM ALLOWABLE COIL PRESSURE DROP.

INTEGRAL ELECTRICAL DISCONNECT BY UNIT MANUFACTURER.

180 DEGREE F ENTERING HEATING WATER TEMPERATURE, 30 DEGREE F TEMPERATURE DROP.

AIR COOLED CHILLER

TAG	MODEL NO.	LOCATION	SERVICE	CAPACITY (TONS) [A]	CHILLED WATER					STEADY STATE COP	PART LOAD IPLV	ELECTRICAL								APPROX WEIGHT (LBS)	REMARKS
					GPM MIN	GPM MAX	EWT	LWT	MAX PD (FT)			COMPRESSOR NO.	COMPRESSOR RLA (EA.)	FANS NO.	FANS FLA (EA.)	MCA	MOPD [B]	VOLT	PHASE		
CH-1	AGZ-075D	MECH. YARD	CHILLED WATER	73	90	190	54	42	15	3.0	15.3	4	26	6	3.2	363.9	---	208	3	5470	

NOTES:

TEMPERATURES ARE IN DEGREES F.

BASIS OF DESIGN: MCQUAY.

[A] AMBIENT DESIGN: 95 DEGREES F. FOULING: 0.0010

[B] MAX. FUSE SIZE

TERMINAL UNITS

TAG	BASIS OF DESIGN MODEL / SIZE [A]	MAXIMUM APD [B]	PRIMARY AIR FLOW (CFM)				NOISE CRITERIA (MAXIMUM NC)		HEATING COIL								REMARKS
			MAX COOLING	MIN. COOLING	MIN. HEATING [C]	MAX. HEATING [D]	DISCH. [F]	RAD. [F]	CFM	EAT	LAT	MBH	GPM	MAX WPD (FT)	CONTROL VALVE [G] 2-WAY	CONTROL VALVE [G] 3-WAY	
TU-01	VCWF / 14	0.25	1,370	410	410	820	35	35	820	55	90	31.1	2.20	5		X	
TU-02	VCWF / 10	0.25	530	530	530	530	35	35	530	55	85	17.3	1.20	5		X	
TU-03	VCWF / 8	0.25	500	150	150	175	35	35	175	55	90	6.6	0.60	5	X		
TU-04	VCWF / 10	0.25	550	180	180	180	35	35	180	55	90	6.8	0.50	5	X		
TU-05	VCWF / 8	0.25	400	215	215	215	35	35	215	55	90	8.2	0.60	5	X		
TU-06	VCWF / 5	0.25	260	170	170	170	35	35	170	55	90	6.5	0.50	5	X		
TU-07	VCWF / 10	0.25	530	250	250	250	35	35	250	55	90	9.5	0.70	5	X		
TU-08	VCWF / 14	0.25	1,380	420	420	560	35	35	560	55	90	21.3	1.50	5		X	
TU-09	VCWF / 14	0.25	1,380	420	420	560	35	35	560	55	90	21.3	1.50	5		X	
TU-10	VCWF / 14	0.25	1,250	1,250	1,250	1,250	35	35	1,250	55	85	40.7	2.80	5	X		
TU-11	VCWF / 10	0.25	440	440	440	440	35	35	440	55	85	14.3	1.00	5	X		
TU-12	VCWF / 10	0.25	390	250	250	250	35	35	250	55	90	9.5	0.70	5	X		
TU-13	VCWF / 5	0.25	170	170	170	170	35	35	170	55	90	6.5	0.50	5	X		
TU-14	VCWF / 5	0.25	220	195	195	195	35	35	195	55	90	7.4	0.50	5	X		
TU-15	VCWF / 5	0.25	190	125	125	125	35	35	125	55	85	4.1	0.50	5	X		
TU-16	VCWF / 8	0.25	330	250	250	250	35	35	250	55	85	8.1	0.60	5	X		
TU-17	VCWF / 14	0.25	1,440	570	570	570	35	35	570	55	90	21.6	1.50	5	X		
TU-18	VCWF / 5	0.25	260	170	170	170	35	35	170	55	90	6.5	0.50	5	X		
TU-19	VCWF / 10	0.25	490	250	250	250	35	35	250	55	90	9.5	0.70	5	X		
TU-20	VCWF / 14	0.25	1,160	690	690	970	35	35	970	55	90	36.8	2.50	5		X	
TU-21	VCWF / 10	0.25	680	680	680	680	35	35	680	55	85	22.1	1.50	5	X		
TU-22	VCWF / 8	0.25	410	250	250	250	35	35	250	55	90	9.5	0.70	5	X		
TU-23	VCWF / 5	0.25	230	170	170	170	35	35	170	55	90	6.5	0.50	5	X		
TU-24	VCWF /14	0.25	1,270	1,270	1,270	1,270	35	35	1,270	55	85	41.3	2.80	5	X		
TU-25	VCWF / 12	0.25	900	270	270	370	35	35	370	55	90	14.1	1.00	5	X		
TU-26	VCWF / 8	0.25	390	390	390	390	35	35	390	55	90	14.8	1.00	5	X		
TU-27	VCWF / 12	0.25	810	810	810	810	35	35	810	55	85	26.4	1.90	5	X		
TU-28	VCWF / 12	0.25	890	890	890	890	35	35	890	55	85	29.0	2.00	5	X		
TU-29	VCWF / 10	0.25	730	215	215	305	35	35	305	55	90	11.6	0.80	5	X		
TU-30	VCWF / 10	0.25	720	215	215	280	35	35	280	55	90	10.6	0.80	5	X		
TU-31	VCWF / 14	0.25	1,200	360	360	420	35	35	420	55	90	15.9	1.10	5	X		
TU-32	VCWF / 12	0.25	920	275	275	275	35	35	275	55	90	10.4	0.70	5	X		

[A] BASIS OF DESIGN: TRANE.

[B] TOTAL APD (IN. WC) IS TOTAL INTERNAL PRESSURE DROP ACROSS TERMINAL UNIT AND HEATING COIL WITH AIR VALVE 100% OPEN.

[C] HEATING FLOW WITH MECHANICAL COOLING ENABLED.

[D] HEATING FLOW WITH MECHANICAL COOLING DISABLED.

[E] 140 DEGREE F ENTERING HEATING WATER TEMPERATURE.

[F] MAXIMUM NOISE CRITERIA (NC) AT 1.0" WC PRESSURE DIFFERENCE ACROSS UNIT. NC VALUES IN ACCORDANCE WITH ARI 885, 2002 ADDENDUM TO REVISION 1998. RADIATED TRANSFER FUNCTION FROM APPENDIX E, TYPE 2 MINERAL FIBER INSULATION.

[G] FOR COIL PIPING SEE DETAILS SEE 2/MH-501.

AIR HANDLING UNITS

GENERAL	TAG	**AHU-1**
	MODEL NO.	ITF SERIES
	LOCATION	ROOF
	SERVICE	ACUTE PSYCH WARD
	UNIT TYPE	CUSTOM
SUPPLY FAN	CFM	25,317
	ESP (IN. W.G.) - [A]	2.0
	TSP (IN. W.G.) - [B]	5.5
	FAN WHEEL TYPE - SIZE	FANWALL PLENUM
	FAN RPM	1,740
	FAN BHP	(6) @ 5.17 HP EA
	FAN EFFICIENCY	---
	MOTOR HP	(6) @ 7.5 HP EA
	VOLT	208
	PHASE	3
RETURN FAN	CFM	20,388
	ESP (IN. W.G.) - [A]	1
	TSP (IN. W.G.) - [B]	1.35
	FAN WHEEL TYPE - SIZE	FANWALL PLENUM
	FAN RPM	1,740
	FAN BHP	(6) @ 1.08 HP EA
	FAN EFFICIENCY	---
	MOTOR HP	(6) @ 1.5 HP EA
	VOLT	208
	PHASE	3
COOLING COIL	FACE VELOCITY (FPM)	482
	ROWS	5
	EAT (DB / WB) - LAT (DB / WB)	78 / 68
	TOTAL CLG (MBH)	1055.9
	SENSIBLE CLG (MBH)	602.5
	EWT / LWT	44 / 54
	GPM	210
	MAX APD (IN. W.G.)	0.52
	MAX WPD (FT)	15.6
HEATING COIL	FACE VELOCITY (FPM)	482
	ROWS	1
	EAT (DB) / LAT (DB)	60 / 75.8
	HEATING (MBH)	422.8
	EWT / LWT	140 / 110
	GPM	28.7
	MAX APD (IN. W.G.)	0.05
	MAX WPD (FT)	4.4
PRE-FILTER	BANK FACE AREA (SQ. FT.)	59
	VELOCITY (FPM)	429
	EFFICIENCY (%) / (MERV)	30% / MERV 7
	CHANGE OUT APD (IN. W.G.)	1
PRE- FILTER	BANK FACE AREA (SQ. FT.)	59
	VELOCITY (FPM)	429
	EFFICIENCY (%) / (MERV)	30% / MERV 11
	CHANGE OUT APD (IN. W.G.)	1.5
FINAL - FILTER	BANK FACE AREA (SQ. FT.)	59
	VELOCITY (FPM)	429
	EFFICIENCY (%) / (MERV)	95% / MERV 14
	CHANGE OUT APD (IN. W.G.)	1.5
MIN OSA CFM / %		4,929 / 19.5%
APPROXIMATE UNIT WEIGHT (LBS)		36,000 (W/ VESTIBULE)

NOTES:

FULL-LENGTH MAINTENANCE VESTIBULE REQUIRED, SEE DETAIL.

TEMPERATURES ARE DEGREES F.

BASIS OF DESIGN: TEMTROL.

[A] EXTERNAL STATIC PRESSURE (ESP) IS DUCT LOSS BEYOND THE DUCT CONNECTION AT FAN OR UNIT.

[B] TOTAL STATIC PRESSURE (TSP) IS (ESP) PLUS CABINET COMPONENT LOSSES.

VARIABLE FREQUENCY DRIVES

TAG	MODEL NO.	ELECTRICAL	HP	MAX OUTPUT (AMPS)	APPLICATION	REMARKS
CHWP-1	VLT-FC-102P5K5T4	480/3/60	7.5	11	CHILLED WATER PUMP	
CHWP-2	VLT-FC-102P5K5T4	480/3/60	7.5	11	CHILLED WATER PUMP	
HWP-1	VLT-FC-102P2K2T4	480/3/60	3	4.8	HEATING WATER PUMP	
HWP-2	VLT-FC-102P2K2T4	480/3/60	3	4.8	HEATING WATER PUMP	
AHU-1	FURNISHED AND INSTALLED BY AHU MANUFACTURER					
RF-1	FURNISHED AND INSTALLED BY AHU MANUFACTURER					

NOTES:

BASIS OF DESIGN: DANFOSS.

FANS

TAG	MODEL NO.	SERVICE	CFM	TYPE	TSP (IN. W.G.)	RPM	BHP	MOTOR				OPER. WT. (LBS.)	SONES	REMARKS
								HP	RPM	VOLT	PHASE			
EF-1	CUBE-121	WEST WING	870	UPBLAST	0.5	1,081	0.14	1/4	1,725	120	1	70	7.3	STARTER / DISC. BY DIV. 26
EF-2	CUBE-121	NORTH WING	1,020	UPBLAST	0.5	1,164	0.17	1/4	1,725	120	1	70	8.4	STARTER / DISC. BY DIV. 26
EF-3	CUBE-180HP	STAFF / INTAKE	1,810	UPBLAST	0.75	949	0.41	1/2	1,725	120	1	110	10.5	STARTER / DISC. BY DIV. 26
EF-4	CUBE-101	MECH. RM.	1,000	UPBLAST	0.375	1,408	0.19	1/3	1,725	120	1	70	8.9	STARTER / DISC. BY DIV. 26

NOTES:

BASIS OF DESIGN: GREENHECK

FUEL OIL TANK

TAG	TANK DESCRIPTION	MODEL NO.	LOCATION	SERVICE	TANK CAPACITY (GAL)	TANK EXTERIOR DIMENSIONS	OPERAT. WEIGHT (LBS)	REMARKS
FT-1	UL-142, UL-2058 ABOVE GROUND BULK TANK, SECONDARY CONTAINMENT	ROUND	EQPMT YARD	GENERATOR	5,000	8'0"ø X 14'0" L	50,000	SEE NOTES

NOTES:

BASIS OF DESIGN: BROWN-MINNEAPOLIS.

REFER TO SPECIFICATIONS FOR ASSOCIATED FUEL LEAK DETECTION SYSTEM REQUIREMENTS, INCLUDING FUEL MONITORING PANEL FMT-1.

WALL LOUVERS

TAG	MODEL NO.	SERVICE	FRAME TYPE	FREE AREA (SF)	WxH (INCHES)	CFM	VELOCITY (FPM)	MAX APD (IN WTR)	MATERIAL	REMARKS
L-1	ELF15J	INTAKE	STANDARD	1.33	24" x 16"	1,000	750	0.2	ALUMINUM	[A]
L-2	ELF15J	INTAKE/EXHAUST	STANDARD	0.5	16" x 9"	-	-	-	ALUMINUM	[A]
L-3	ELF15J	INTAKE/EXHAUST	STANDARD	0.5	16" x 9"	-	-	-	ALUMINUM	[A]

NOTES:

BASIS OF DESIGN: RUSKIN.

[A] SEE ARCHITECTURAL DRAWINGS FOR LOUVER LOCATIONS. COORDINATE LOUVER OPENINGS WITH GC. SEE 7/MH-502 FOR INSTALLATION DETAILS. MANUFACTURER'S STANDARD COLOR TO BE PICKED BY ARCHITECT. PROVIDE MANUFACTURER'S STANDARD BIRD SCREEN.

EXPANSION TANKS

TAG	MODEL NO.	LOCATION	SERVICE	VOLUME (GAL)	ACCEPTANCE (GAL)	SETTING (PSIG)	DIAMETER (IN)	HEIGHT (IN)	OPERAT. WEIGHT (LBS)	REMARKS
HET-1	B-200	MECH. ROOM	HEATING WATER	53	53	15	24	37	600	
HET-2	B-200	MECH. ROOM	CHILLED WATER	53	53	15	24	37	600	

NOTES:

BASIS OF DESIGN: BELL & GOSSETT.

CHILLED WATER BUFFER TANKS

TAG	MODEL NO.	LOCATION	SERVICE	VOLUME (GAL)	DIAMETER (IN)	LENGTH (IN.)	AIR VENT SIZE (IN)	OPERAT. WEIGHT (LBS)	REMARKS
BT-1	V300CWB-300G-SL-15-I	MECH. ROOM	CHILLED WATER	300	36	72	3/4	2,900	

NOTES:

BASIS OF DESIGN: CEMLINE.

Revisions: | Date

CONSULTANTS:

BALZHISER & HUBBARD ENGINEERS 2100-031-10mh001-2.dwg

REGISTERED PROFESSIONAL ENGINEER
DIGITAL SIGNATURE
OREGON
JULY 15, 1997
TIMOTHY S. ELY
EXPIRES 12/31/13

ARCHITECT/ENGINEERS:

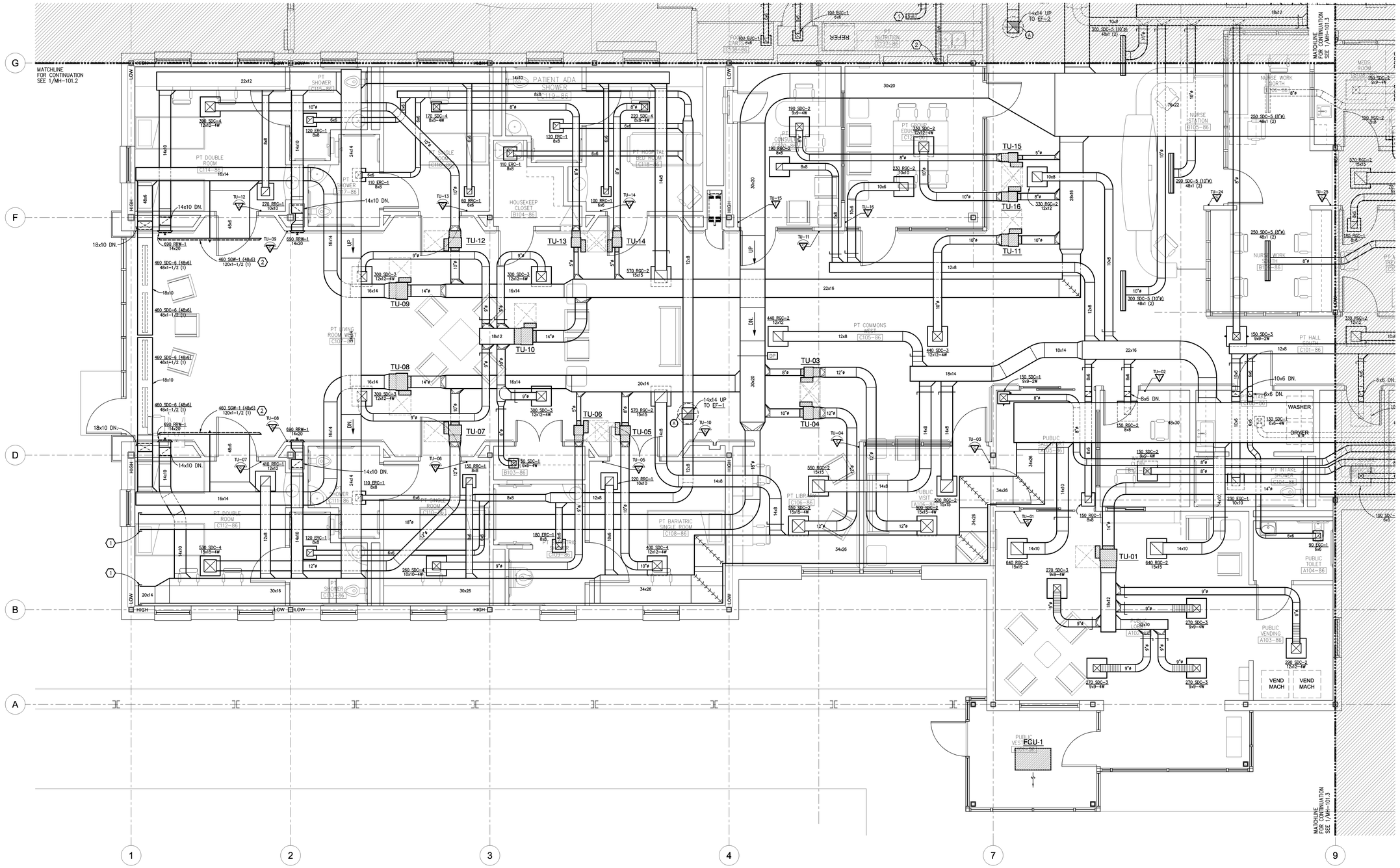
Tina Ely architect
2915 Wingate Street / Eugene, OR 97408
541.521.2477 / Tina.Ely@comcast.net

Drawing Title	MECHANICAL SCHEDULES
Approved: Project Director	
Project Title	SEISMIC REPLACEMENT BLDG 2 PHASE 1 MINOR ACUTE PSYCHIATRIC WARD
Location	ROSEBURG, OREGON
Date	30 APR 2012
Checked	TSE
Drawn	SBS
VA Project Number	653-322
Building Number	086
Sheet Number	MH-002

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



1 FLOOR PLAN WEST - HVAC

SCALE: 1/4"=1'-0"

KEYED NOTES:

1. CAP FOR FUTURE EXPANSION.
2. BLANK OFF UNUSED PORTION OF GRILLE. SUPPLY WALL GRILLE SHOWN OFFESET FROM FACE OF WALL FOR CLARITY.

Revisions:	Date

CONSULTANTS:

BALZHISER & HUBBARD ENGINEERS
MECHANICAL • ELECTRICAL • CIVIL • SURVEYORS
100 WEST 13TH AVENUE EUGENE, OR 97401
P: 541-686-8678
F: 541-345-3502
2100-031-10mh101.1-3.dwg

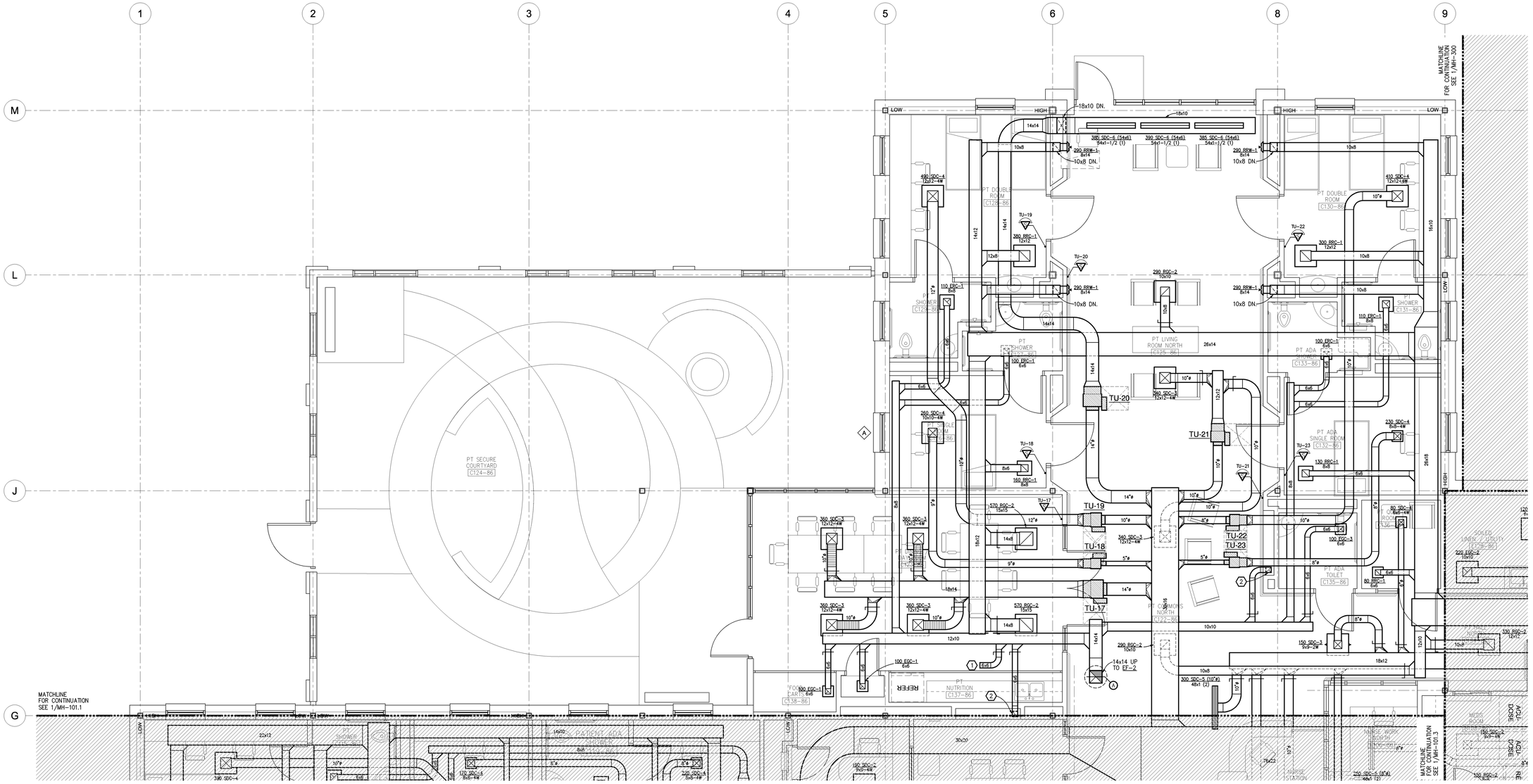
REGISTERED PROFESSIONAL ENGINEER 90,175 — DIGITAL SIGNATURE — OREGON — JULY 15, 1980 — TIMOTHY S. ELY — EXPIRES 12/31/13

ARCHITECT/ENGINEERS:

Tina Ely architect
2915 Wingate Street / Eugene, OR 97408
541.521.2477 / Tina.Ely@comcast.net

Drawing Title: FLOOR PLAN WEST - HVAC	Project Title: SEISMIC REPLACEMENT BLDG 2 PHASE 1 MINOR ACUTE PSYCHIATRIC WARD	VA Project Number: 653-322	Office of Construction and Facilities Management
Approved: Project Director	Location: ROSEBURG, OREGON	Building Number: 086	
	Date: 30 APR 2012 / Checked: TSE / Drawn: MLF	Sheet Number: MH-101.1	Department of Veterans Affairs

VA FORM 08-6231



1 FLOOR PLAN NORTH - HVAC

SCALE: 1/4"=1'-0"

KEYED NOTES:

1. TERMINATE 6x6 DUCT WITHIN PROJECTOR ENCLOSURE. COVER END WITH WIRE SCREEN. BALANCE TO 100 CFM.
2. TERMINATE 6x6 DUCT WITHIN TV ENCLOSURE. COVER END WITH WIRE SCREEN. BALANCE TO 100 CFM.

Revisions:	Date

CONSULTANTS:

BALZHISER & HUBBARD ENGINEERS
MECHANICAL ELECTRICAL CIVIL SURVEYORS
100 WEST 13TH AVENUE EUGENE, OR 97401
P: 541 686 8678
F: 541 343 5302
2100-031-10mh101.1-3.dwg

REGISTERED PROFESSIONAL ENGINEER 18,175 OREGON JULY 15, 1987 TIMOTHY S. ELY
DIGITAL SIGNATURE
EXPIRES 12/31/13

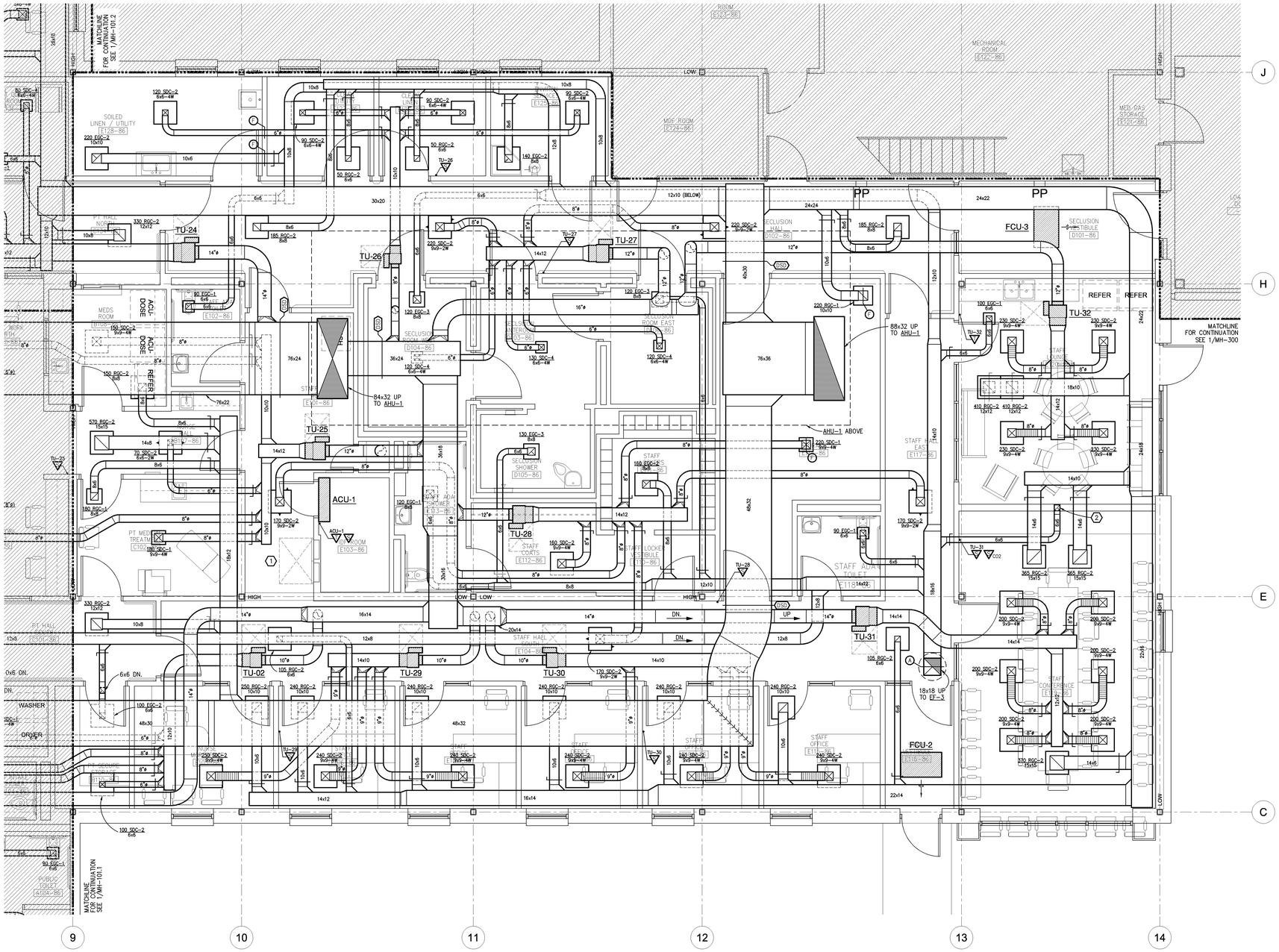
ARCHITECT/ENGINEERS:

Tina Ely architect
2915 Wingate Street / Eugene, OR 97408
541.521.2477 / TinaEly@comcast.net

Drawing Title	FLOOR PLAN NORTH - HVAC
Approved: Project Director	
Project Title	SEISMIC REPLACEMENT BLDG 2 PHASE 1 MINOR ACUTE PSYCHIATRIC WARD
Location	ROSEBURG, OREGON
Date	30 APR 2012
Checked	TSE
Drawn	MLF
VA Project Number	653-322
Building Number	086
Sheet Number	MH-101.2

Office of Construction and Facilities Management
Department of Veterans Affairs

VA FORM 08-6231



1 FLOOR PLAN EAST - HVAC

SCALE: 1/4"=1'-0"

KEYED NOTES:

1. ELECTRICAL PANELS SHOWN FOR REFERENCE ONLY. NO DUCTWORK OR PIPING TO BE ROUTED ABOVE AREA SHOWN IN FRONT OF PANELS.
2. ROUTE 6x6 DUCT IN WALL. TERMINATE DUCT IN AV CABINET. COVER END WITH WIRE SCREEN. BALANCE TO 100 CFM.

Revisions:	Date

CONSULTANTS:

BALZHISER & HUBBARD ENGINEERS
MECHANICAL ELECTRICAL CIVIL SURVEYORS
100 WEST 13TH AVENUE EUGENE, OR 97401
P: 541.485.8925
F: 541.345.5223
2100-031-10mh101.1-3.dwg

REGISTERED PROFESSIONAL ENGINEER 19,175 DIGITAL SIGNATURE OREGON JULY 15, 1987 TIMOTHY S. ELY
EXPIRES 12/31/13

ARCHITECT/ENGINEERS:

Tina Ely architect
2915 Wingate Street / Eugene, OR 97408
541.521.2477 / TinaEly@comcast.net

Drawing Title: FLOOR PLAN EAST - HVAC

Approved: Project Director

Project Title: SEISMIC REPLACEMENT BLDG 2 PHASE 1 MINOR ACUTE PSYCHIATRIC WARD

Location: ROSEBURG, OREGON

Date: 30 APR 2012 | Checked: TSE | Drawn: MLF

VA Project Number: 653-322

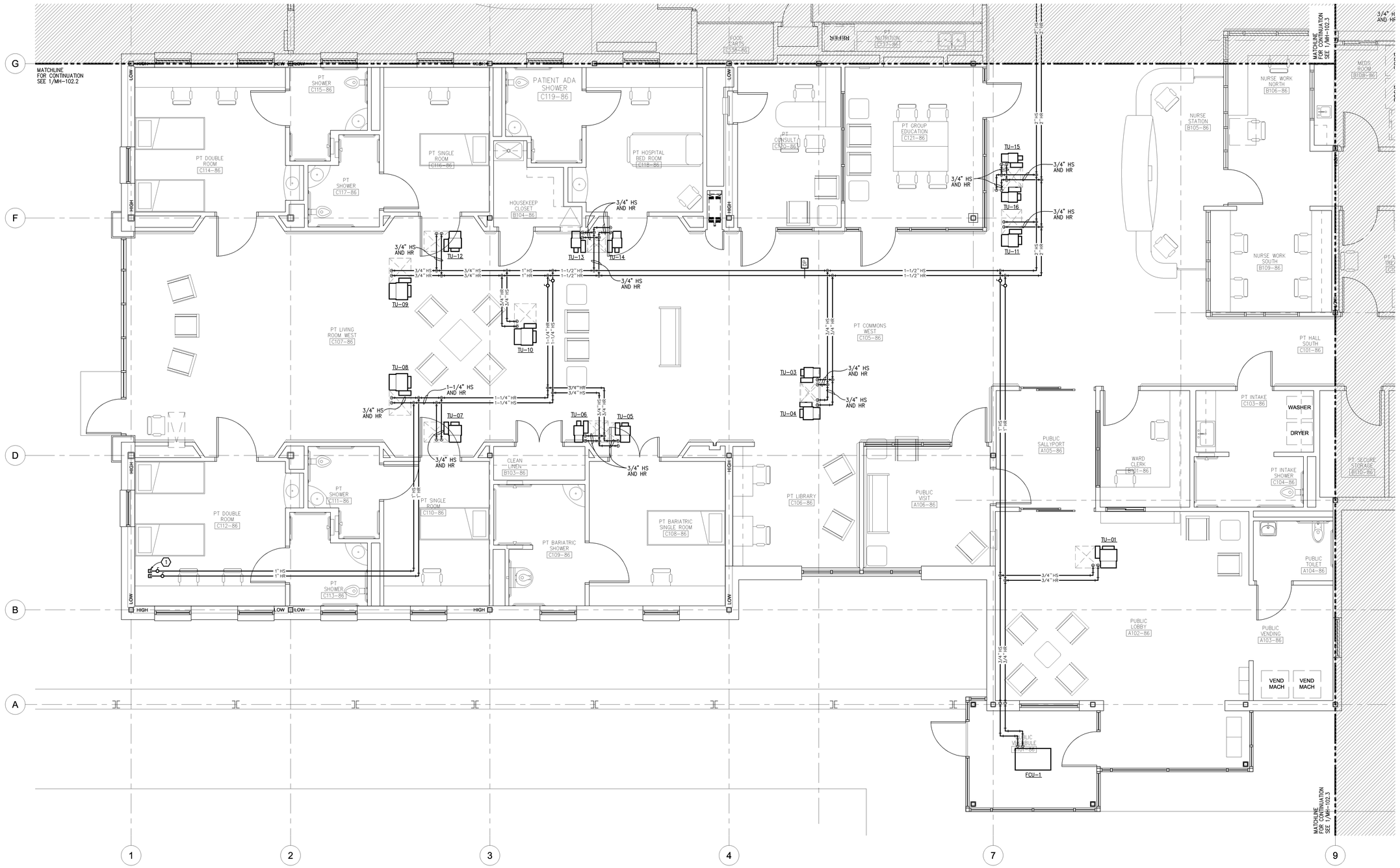
Building Number: 086

Sheet Number: MH-101.3

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



1 FLOOR PLAN WEST - HVAC PIPING

SCALE: 1/4"=1'-0"

KEYED NOTES:

1. HS AND HR CAPPED AND VALVED FOR FUTURE EXPANSION.

Revisions:	Date

CONSULTANTS:

BALZHISER & HUBBARD ENGINEERS
MECHANICAL • ELECTRICAL • CIVIL • SURVEYORS
100 WEST 13TH AVENUE EUGENE, OR 97401
P: 541-686-8678
F: 541-345-3301
2100-031-10mh102.1-3.dwg

REGISTERED PROFESSIONAL ENGINEER
DIGITAL SIGNATURE
OREGON
JULY 15, 1987
TIMOTHY S. ELY
EXPIRES 12/31/13

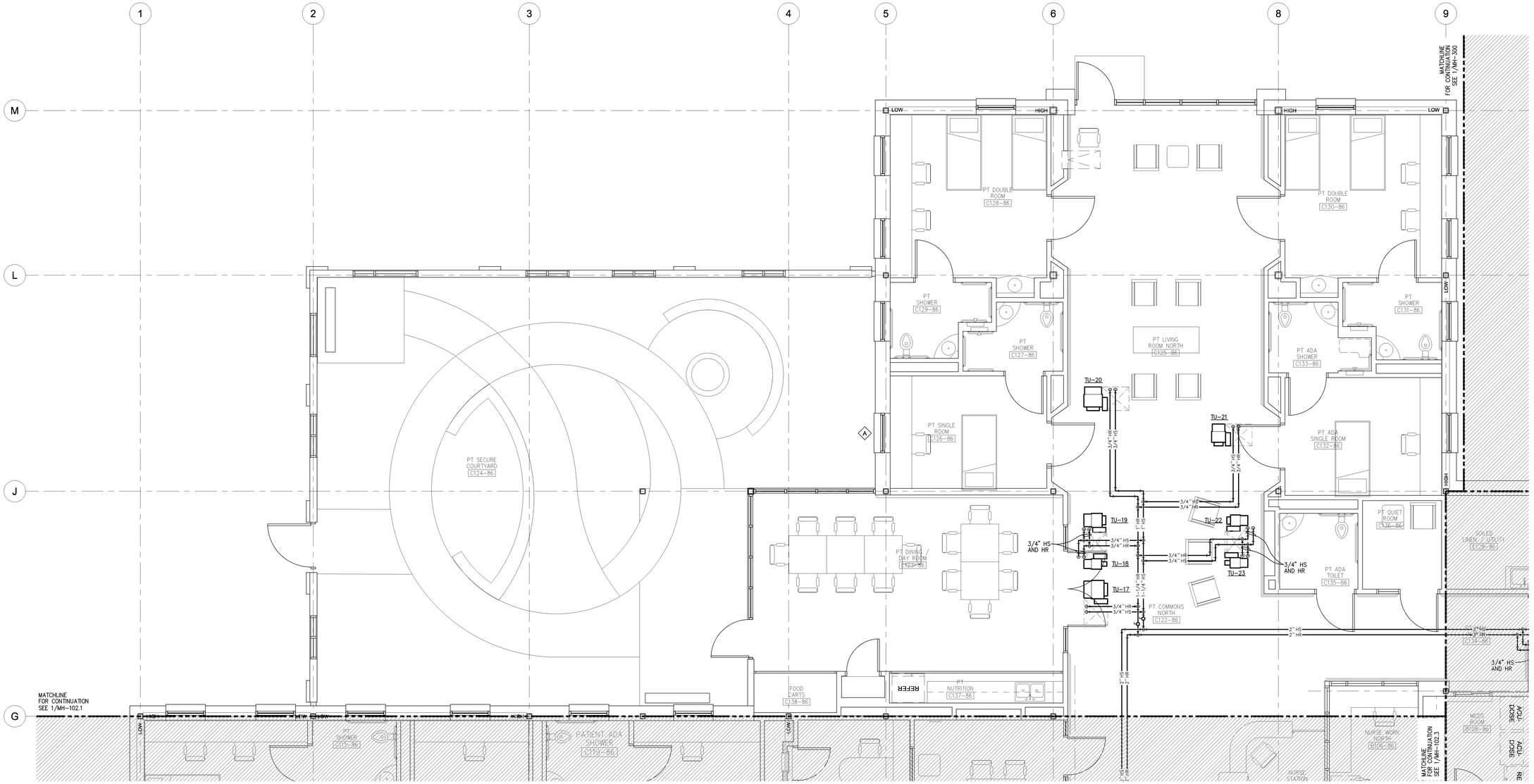
ARCHITECT/ENGINEERS:

Tina Ely architect
2915 Wingate Street / Eugene, OR 97408
541.521.2477 / TinaEly@comcast.net

Drawing Title	FLOOR PLAN WEST - HVAC PIPING
Approved: Project Director	
Project Title	SEISMIC REPLACEMENT BLDG 2 PHASE 1 MINOR ACUTE PSYCHIATRIC WARD
Location	ROSEBURG, OREGON
Date	30 APR 2012
Checked	TSE
Drawn	MLF
VA Project Number	653-322
Building Number	086
Sheet Number	MH-102.1

Office of Construction and Facilities Management
Department of Veterans Affairs

VA FORM 08-6231



1 FLOOR PLAN NORTH - HVAC PIPING

SCALE: 1/4"=1'-0"

Revisions:	Date

CONSULTANTS:

BALZHISER & HUBBARD ENGINEERS

MECHANICAL ELECTRICAL CIVIL SURVEYORS

100 WEST 13TH AVENUE EUGENE, OR 97401 P: 541 686 8678 F: 541 342 5302

2100-031-10mh102.1-3.dwg

REGISTERED PROFESSIONAL ENGINEER 18,075 DIGITAL SIGNATURE OREGON JULY 15, 1987 TIMOTHY S. ELY EXPIRES 12/31/13

ARCHITECT/ENGINEERS:

Tina Ely architect
2915 Wingate Street / Eugene, OR 97408
541.521.2477 / TinaEly@comcast.net

Drawing Title: FLOOR PLAN NORTH - HVAC PIPING

Approved: Project Director

Project Title: SEISMIC REPLACEMENT BLDG 2 PHASE 1 MINOR ACUTE PSYCHIATRIC WARD

Location: ROSEBURG, OREGON

Date: 30 APR 2012 | Checked: TSE | Drawn: MLF

VA Project Number: 653-322

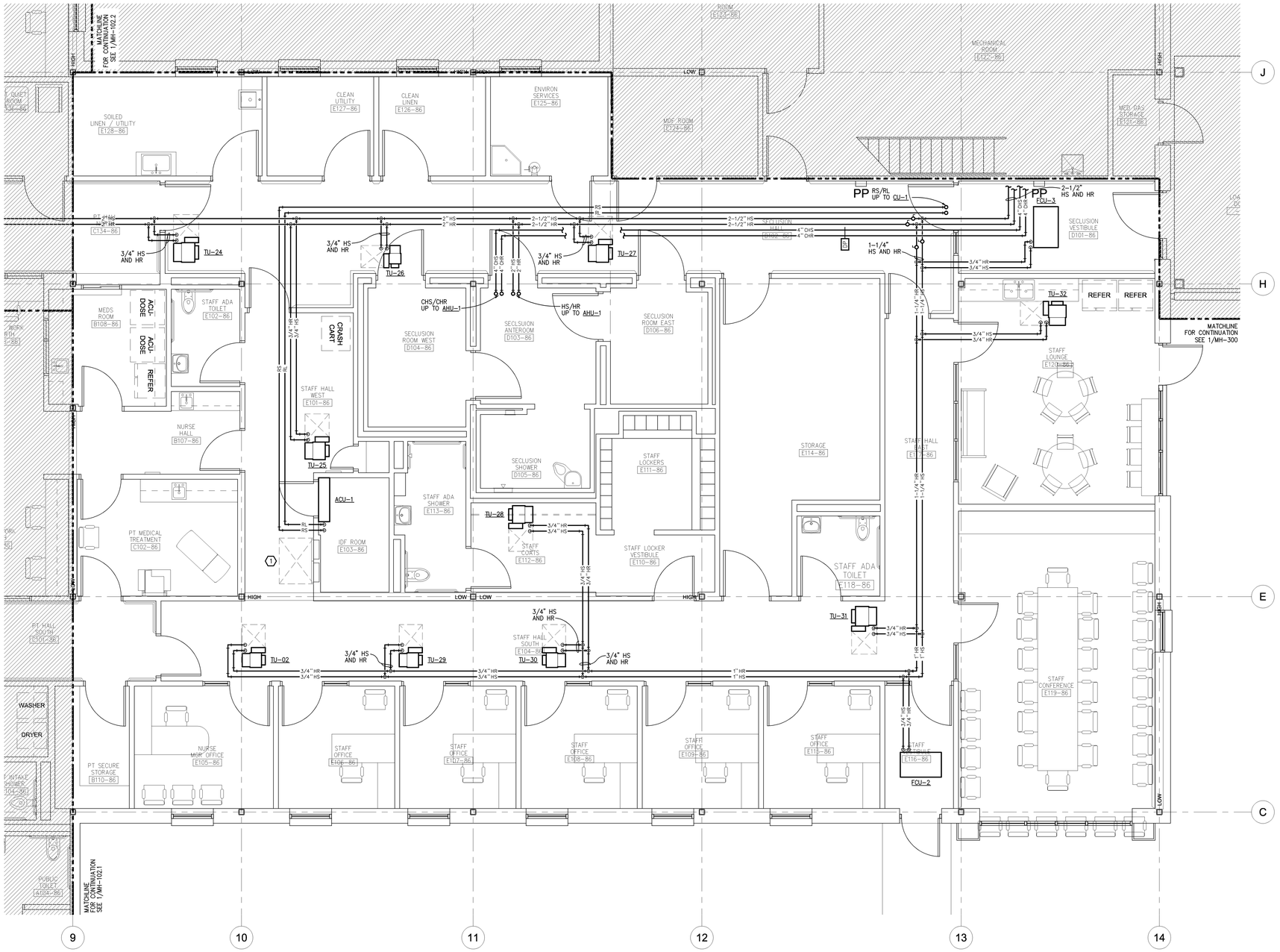
Building Number: 086

Sheet Number: MH-102.2

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



1 FLOOR PLAN EAST - HVAC PIPING

SCALE: 1/4"=1'-0"

KEYED NOTES:

1. ELECTRICAL PANELS SHOWN FOR REFERENCE ONLY. NO DUCTWORK OR PIPING TO BE ROUTED ABOVE AREA SHOWN IN FRONT OF PANELS.

Revisions:	Date

CONSULTANTS:

BALZHISER & HUBBARD ENGINEERS
MECHANICAL ELECTRICAL CIVIL SURVEYORS
100 WEST 13TH AVENUE EUGENE, OR 97401
P: 541-686-8678
F: 541-343-5303
2100-031-10mh102.1-3.dwg

REGISTERED PROFESSIONAL ENGINEER 19,175 DIGITAL SIGNATURE OREGON JULY 15, 1997 TIMOTHY S. ELY
EXPIRES 12/31/13

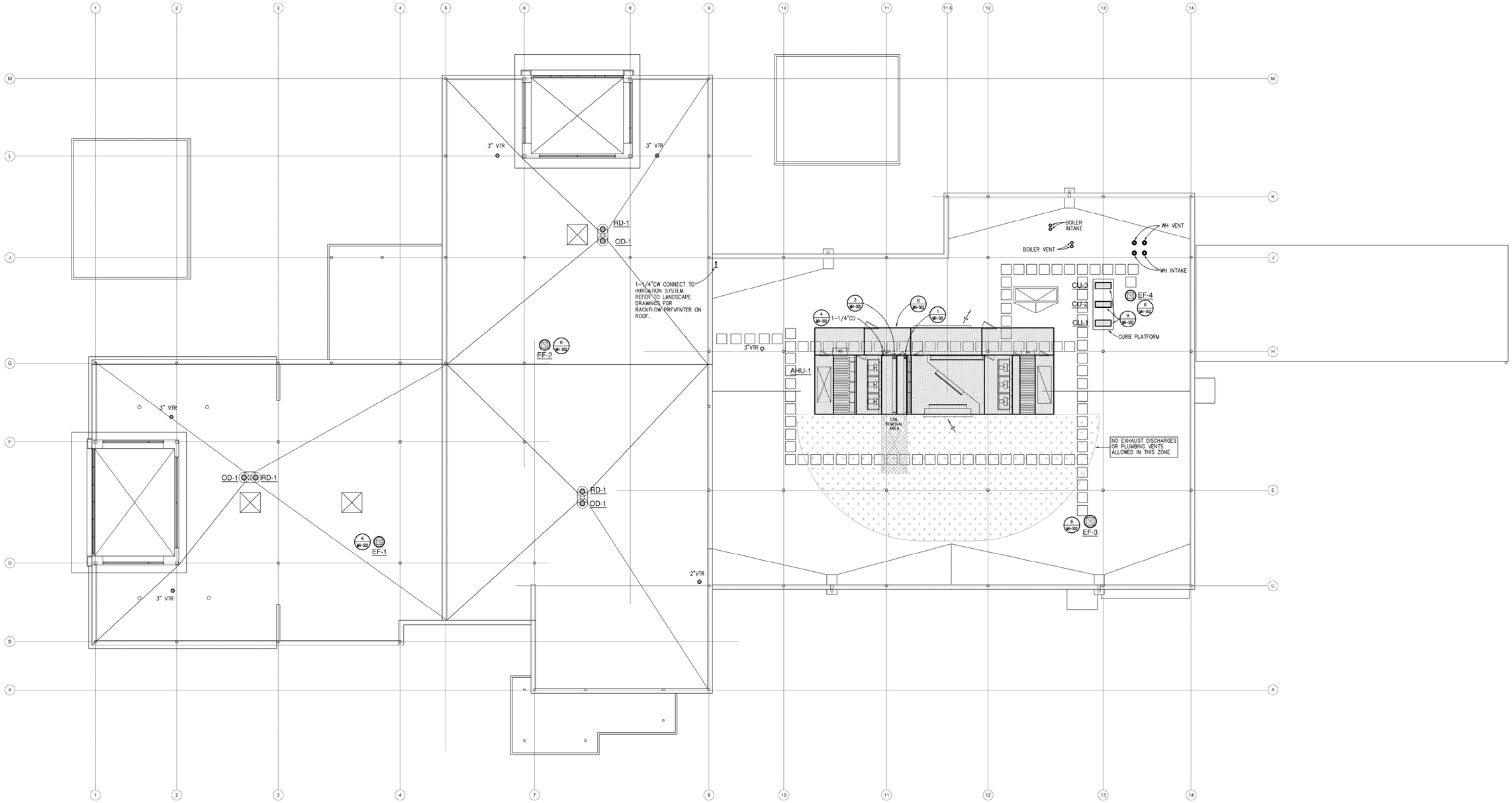
ARCHITECT/ENGINEERS:

Tina Ely architect
2915 Wingate Street / Eugene, OR 97408
541.521.2477 / TinaEly@comcast.net

Drawing Title	FLOOR PLAN EAST - HVAC PIPING
Approved: Project Director	
Project Title	SEISMIC REPLACEMENT BLDG 2 PHASE 1 MINOR ACUTE PSYCHIATRIC WARD
Location	ROSEBURG, OREGON
Date	30 APR 2012
Checked	TSE
Drawn	MLF
VA Project Number	653-322
Building Number	086
Sheet Number	MH-102.3

Office of Construction and Facilities Management
Department of Veterans Affairs

VA FORM 08-6231



1 ROOF PLAN - MECHANICAL & PLUMBING

SCALE: 1/8"=1'-0"

Revisions:	Date

CONSULTANTS:

BALZHISER & HUBBARD ENGINEERS
MECHANICAL ELECTRICAL CIVIL SURVEYORS
300 WEST 13TH AVENUE EUGENE, OR 97401
T 541.343.5243 F 541.343.5303
2100-031-10mh201.dwg

REGISTERED PROFESSIONAL ENGINEER 16,175 OREGON JULY 15, 1987 TIMOTHY S. ELY
DIGITAL SIGNATURE
EXPIRES 12/31/13

ARCHITECT/ENGINEERS:

Tina Ely architect
2915 Wingate Street / Eugene, OR 97408
541.521.2477 / TinaEly@comcast.net

Drawing Title: ROOF PLAN - MECHANICAL & PLUMBING

Approved: Project Director

Project Title: SEISMIC REPLACEMENT BLDG 2 PHASE 1 MINOR ACUTE PSYCHIATRIC WARD

Location: ROSEBURG, OREGON

Date: 30 APR 2012 | Checked: TSE | Drawn: XXX

VA Project Number: 653-322

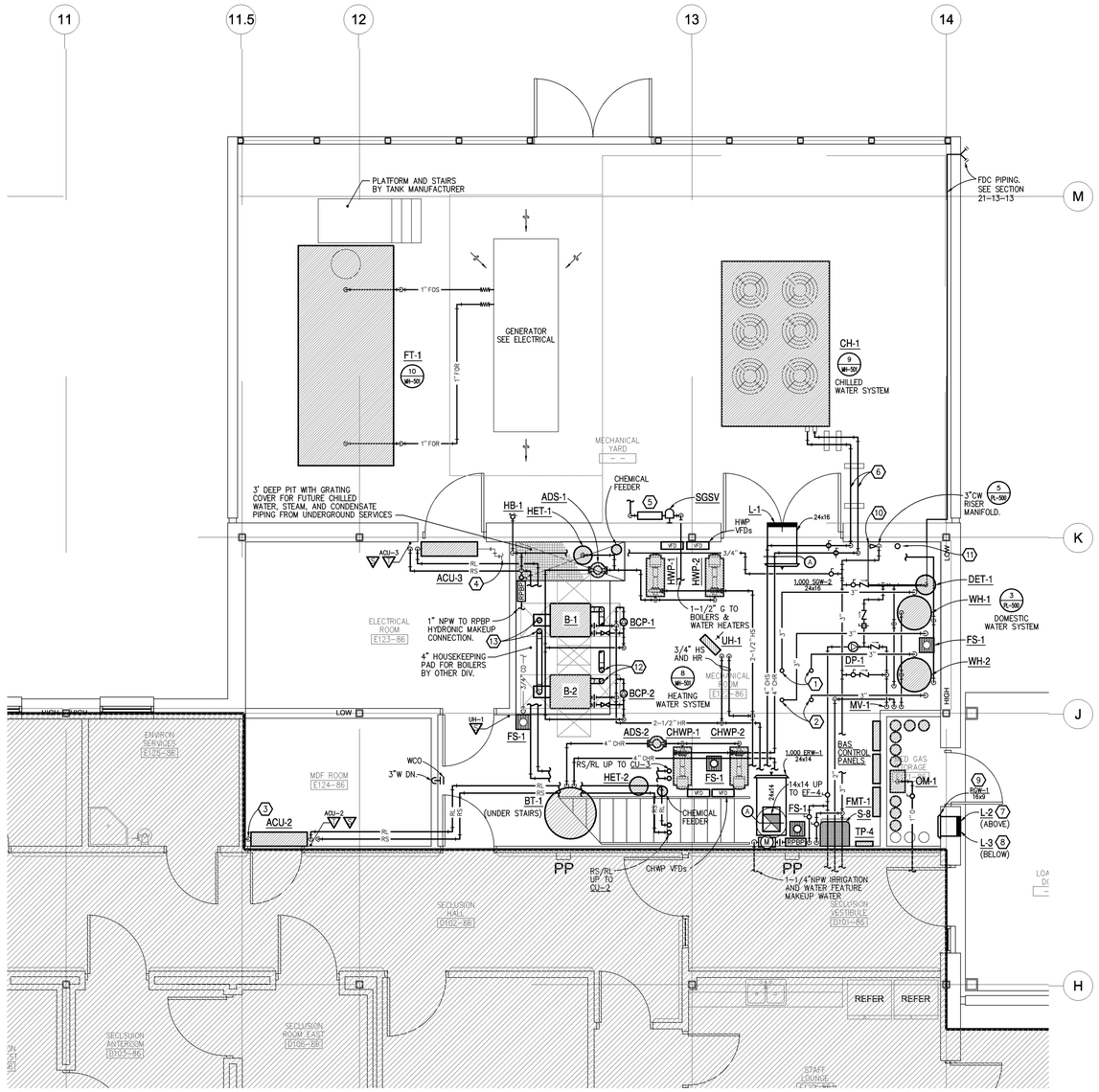
Building Number: 086

Sheet Number: MH-201

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



KEYED NOTES:

1. WATER HEATER VENT THRU ROOF.
2. WATER INTAKE THRU ROOF.
3. 3/4" CD SEE PL-101.3 FOR CONTINUATION
4. 3/4" CD TO FLOOR SINK IN MECHANICAL ROOM. DISCHARGE 1" ABOVE RIM OF FLOOR SINK.
5. NATURAL GAS METER – TOTAL CONNECTED LOAD APPROX. 2,000 CFH AT 2 PSIG DELIVERY PRESSURE.
6. HEAT TAPE ON OUTDOOR CHS/CHR PIPING FOR FREEZE PROTECTION BY DIV. 26.
7. MOUNT LOUVER WITHIN 12" OF CEILING.
8. MOUNT LOUVER WITHIN 12" OF FLOOR.
9. INSTALL RETURN GRILLE AT TWO LOUVER LOCATIONS.
10. BUILDING DOMESTIC WATER SHUTOFF: 3" BALL VALVE 36"AFF.
11. 4" F STUBBED UP THROUGH FLOOR WITH GROOVED END AND TEMPORARY CAP FOR CONNECTION TO FIRE SPRINKLER RISER. REFER TO FIRE PROTECTION DRAWINGS.
12. 4" BOILER VENT. SEE MH-201 FOR CONTINUATION.
13. 4" COMBUSTION AIR INTAKE. SEE MH-201 FOR CONTINUATION.

1 MECHANICAL ROOM PLAN

SCALE: 1/4"=1'-0"

Revisions:	Date

CONSULTANTS:

BALZHISER & HUBBARD ENGINEERS
MECHANICAL • ELECTRICAL • CIVIL • SURVEYORS
100 WEST 13TH AVENUE EUGENE, OR 97401
P: 541 686 8678
F: 541 342 5067
2100-031-10mh300.dwg

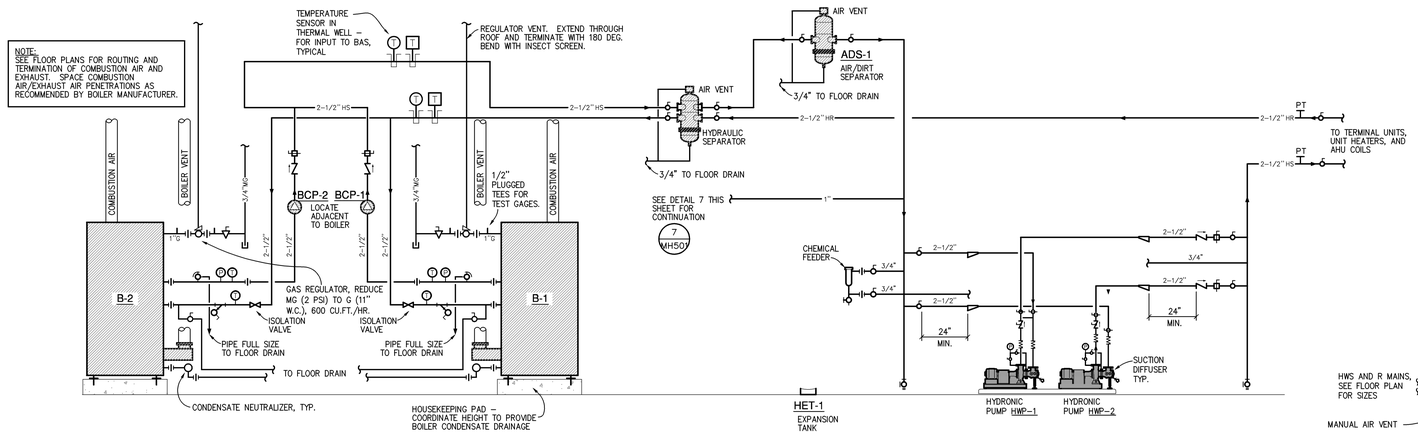
REGISTERED PROFESSIONAL ENGINEER 90,175 — DIGITAL SIGNATURE — OREGON — JULY 15, 1997 — TIMOTHY S. ELY — EXPIRES 12/31/13

ARCHITECT/ENGINEERS:

Tina Ely architect
2915 Wingate Street / Eugene, OR 97408
541.521.2477 / Tina.Ely@comcast.net

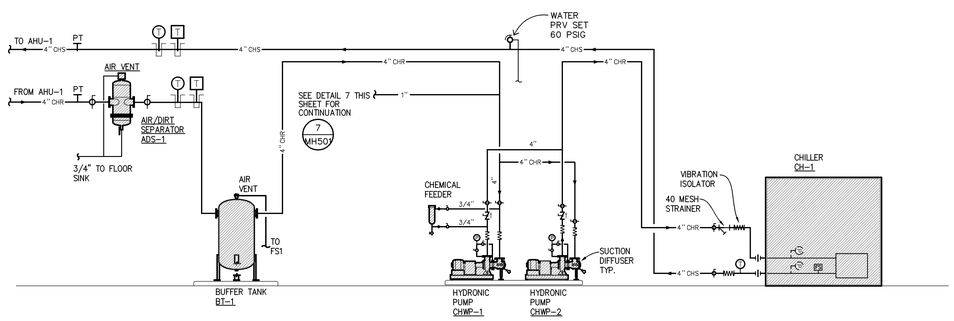
Drawing Title: MECHANICAL ROOM PLAN	Project Title: SEISMIC REPLACEMENT BLDG 2 PHASE 1 MINOR ACUTE PSYCHIATRIC WARD	VA Project Number: 653-322	Office of Construction and Facilities Management
Approved: Project Director	Location: ROSEBURG, OREGON	Building Number: 086	Department of Veterans Affairs
	Date: 30 APR 2012 / Checked: TSE / Drawn: SBS	Sheet Number: MH-300	

VA FORM 08-6231



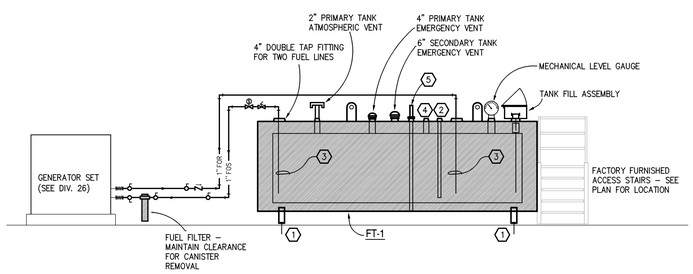
8 HEATING WATER SCHEMATIC

NO SCALE



9 CHILLED WATER SCHEMATIC

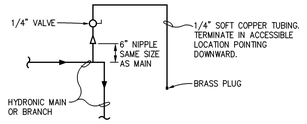
NO SCALE



KEYED NOTES FOR 10/MH-501:
1. ANCHOR TANK ASSEMBLY TO CONCRETE PAD AT EACH SUPPORT LOCATION USING EXPANSION ANCHORS, SEE STRUCTURAL.
2. 2" STICK PORT WITH THREADED PLUG AND GAUGE STICK
3. FUEL OIL SUCTION (FOS) AND FUEL OIL RETURN (FOR) PIPES TERMINATED AT 6" ABOVE TANK BOTTOM. PROVIDE FOOT VALVE ON SUCTION.
4. FUEL LEVEL MONITOR PROBES. PROVIDE CONDUIT & WIRING TO ANNUNCIATION PANEL.
5. INTERSTITIAL LEAK DETECTION PROBE. PROVIDE CONDUIT & WIRING TO ANNUNCIATION PANEL.

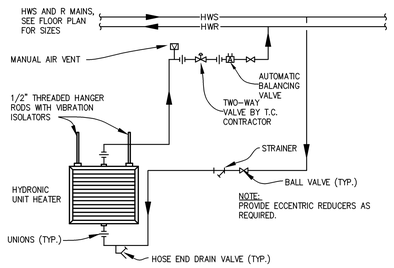
10 FUEL OIL PIPING SCHEMATIC

NO SCALE



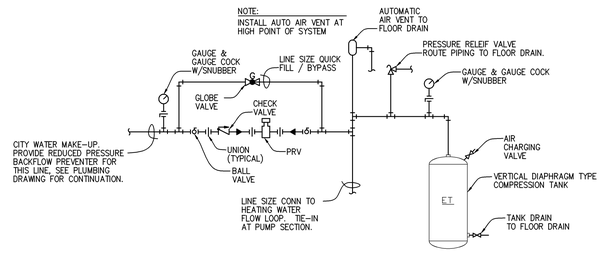
5 MANUAL AIR VENT

NO SCALE



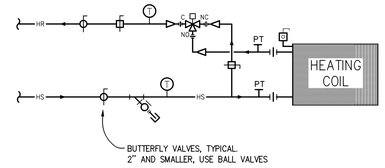
6 HOT WATER UNIT HEATER DETAIL

NO SCALE



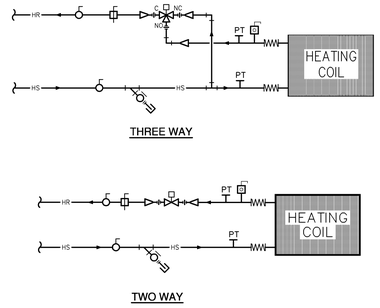
7 EXPANSION TANK FLOW DIAGRAM

NO SCALE



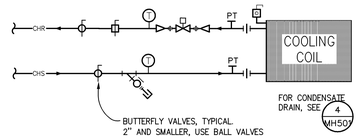
1 AIR HANDLER HEATING COIL - THREE WAY

NO SCALE



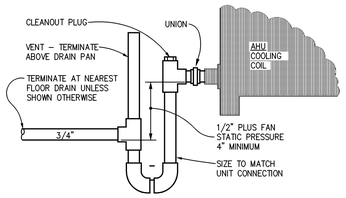
2 TERMINAL UNIT - PIPING

NO SCALE



3 AIR HANDLER COOLING COIL - TWO WAY

NO SCALE



4 CONDENSATE DRAIN

NO SCALE

Revisions:	Date

CONSULTANTS:

BALZHISER & HUBBARD ENGINEERS
MECHANICAL ELECTRICAL CIVIL & SURVEYORS
100 WEST 13TH AVENUE EUGENE, OR 97401
P: 541-686-8678
F: 541-343-5303
2100-031-10mh501-3.dwg

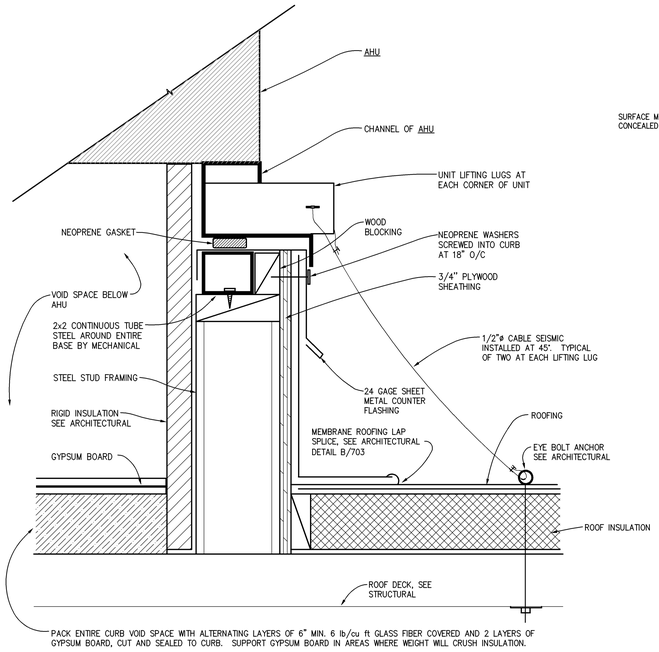
REGISTERED PROFESSIONAL ENGINEER 19,175 OREGON JULY 15, 1987 TIMOTHY S. ELY
DIGITAL SIGNATURE
EXPIRES 12/31/13

ARCHITECT/ENGINEERS:

Tina Ely architect
2915 Wingate Street / Eugene, OR 97408
541.521.2477 / TinaEly@comcast.net

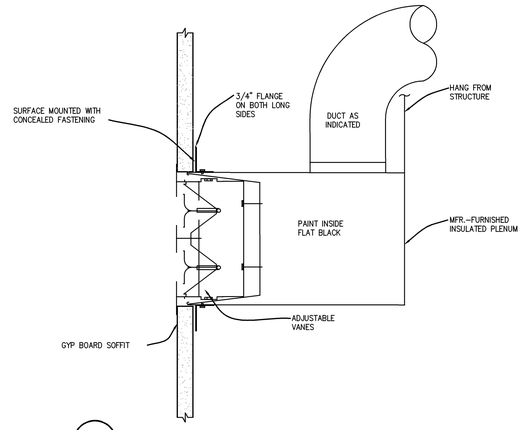
Drawing Title: MECHANICAL DETAILS	Project Title: SEISMIC REPLACEMENT BLDG 2 PHASE 1 MINOR ACUTE PSYCHIATRIC WARD	VA Project Number: 653-322	Office of Construction and Facilities Management
Approved: Project Director	Location: ROSEBURG, OREGON	Building Number: 086	
	Date: 30 APR 2012 / Checked: TSE / Drawn: SBS	Sheet Number: MH-501	Department of Veterans Affairs

VA FORM 08-6231



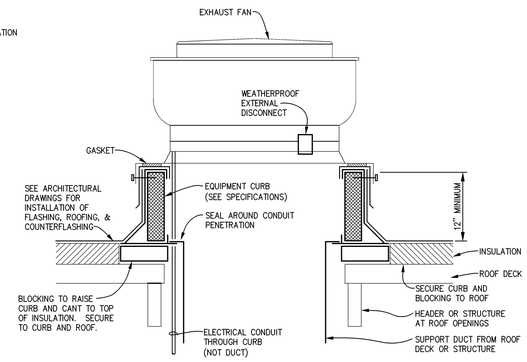
8 AIR HANDLING UNIT CURB

NO SCALE



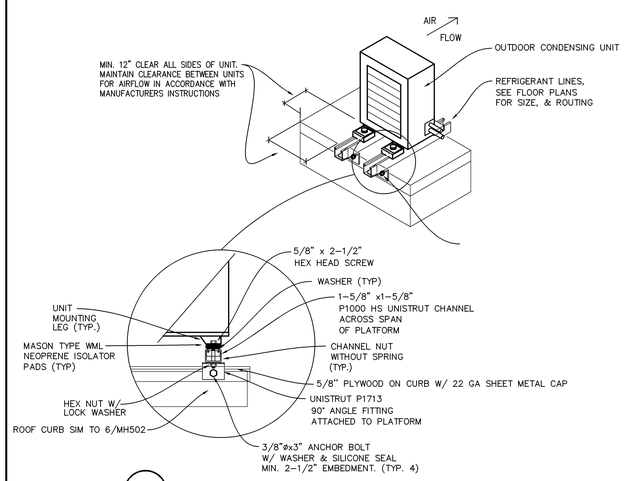
5 LINEAR DIFFUSER IN GYP SOFFIT

NO SCALE



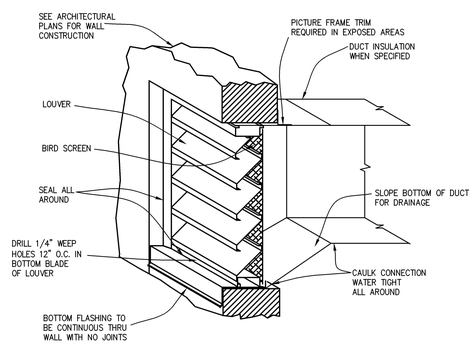
6 ROOF EXHAUST FAN

NO SCALE



9 CONDENSING UNIT MOUNTING

NO SCALE



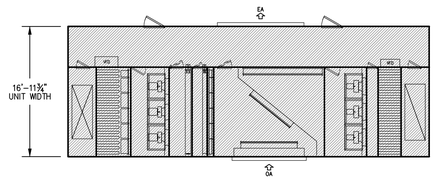
7 LOUVER INSTALLATION DETAIL

NO SCALE

DESCRIPTION	PLAN VIEW – DOUBLE LINE	DESCRIPTION	PLAN VIEW – DOUBLE LINE
RECTANGULAR TO RECTANGULAR BRANCH WITH 45° ENTRY	W1, 45°, 1/4 W2 4" MIN., W2 MIN., DAMPER, W2	RECTANGULAR TO ROUND BRANCH WITH TWIST LOCK FITTING	W, D MIN., TWIST LOCK FITTING, DAMPER, D
RECTANGULAR TO ROUND BRANCH WITH 45° ENTRY	W, 45°, 1/2 D 6" MIN., D MIN., DAMPER, D	ROUND RADIUS ELBOW	D, R=D, R, D
RECTANGULAR RADIUS ELBOW	W, R=W, R, W	ROUND TO ROUND TEE WITH 45° ENTRY – LOW LOSS (FULL BODY)	D2, D1, D2
RECTANGULAR RADIUS OFFSET	30° MAX., W, R, R=W, R, W	ROUND TO ROUND BRANCH WITH 45° ENTRY – LOW LOSS (FULL BODY)	D1, 45°, D2
RECTANGULAR MITERED ELBOW WITH TURN VANES	W, TURN VANES, W	ROUND TO ROUND CONICAL BRANCH (FULL BODY)	D1, D2
RECTANGULAR TO ROUND TRANSITION	15° MAX., W, D	ROUND TO ROUND 45° LATERAL BRANCH (FULL BODY)	D1, D2
RECTANGULAR CONCENTRIC TRANSITION	15° MAX., W1, W2	ROUND TO ROUND CONCENTRIC TRANSITION	L, D1, D2, L=D1-D2 (4" MIN.)
RECTANGULAR ECCENTRIC TRANSITION	30° MAX., W1, W2	ROUND TO ROUND ECCENTRIC TRANSITION	30° MAX., D1, D2

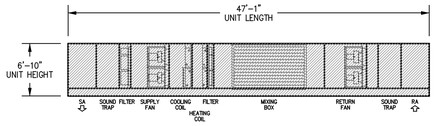
3 LOW PRES. DUCT CONSTRUCTION

NO SCALE



AHU-1 PLAN VIEW

NO SCALE



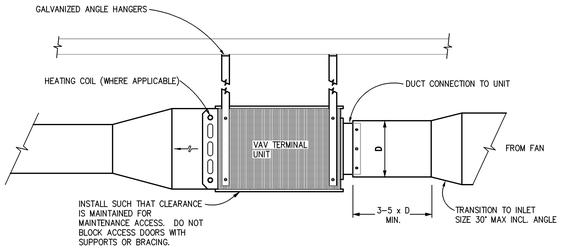
AHU-1 ELEVATION

NO SCALE

SOUND POWER – OCTAVE BAND CENTER FREQUNCIES (dB re 10^{-12} watt)								
	63	125	250	500	1,000	2,000	4,000	8,000
SUPPLY DISCHARGE MAX.	75	68	70	50	40	39	45	50
RETURN INTAKE MAX.	77	70	63	48	35	36	37	43

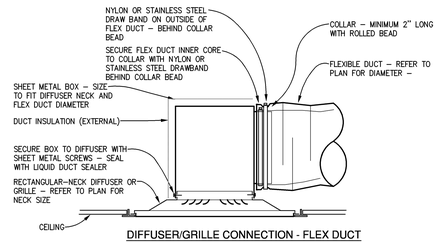
4 AIR HANDLING UNIT AHU-1

NO SCALE

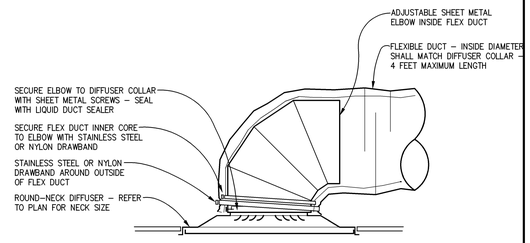


1 TERMINAL UNIT MOUNTING

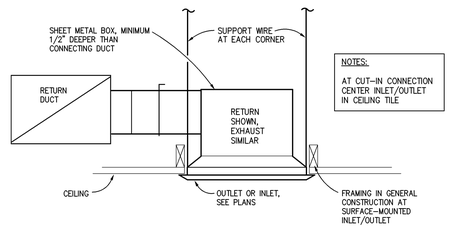
NO SCALE

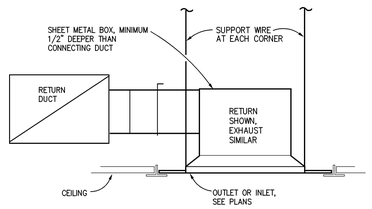


DIFFUSER/GRILLE CONNECTION - FLEX DUCT



DIFFUSER/GRILLE CONNECTION - FLEX DUCT





2 DIFFUSER/RETURN/EXHAUST CONNECTIONS

NO SCALE

Revisions:	Date

CONSULTANTS:

BALZHISER & HUBBARD ENGINEERS
MECHANICAL · ELECTRICAL · CIVIL · SURVEYORS
500 WEST 13TH AVENUE EUGENE, OR 97401
P: 541-686-8678
F: 541-345-5301
2100-031-10mh501-3.dwg

REGISTERED PROFESSIONAL ENGINEER 19,175 — DIGITAL SIGNATURE — OREGON — JULY 15, 1987 — TIMOTHY S. ELY — EXPIRES 12/31/13

ARCHITECT/ENGINEERS:

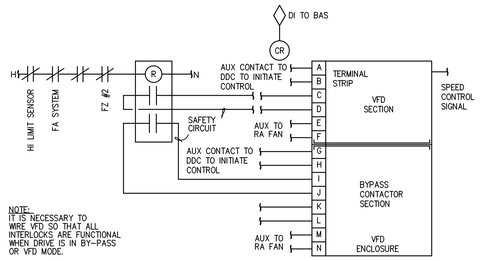
Tina Ely architect
2915 Wingate Street / Eugene, OR 97408
541.521.2477 / TinaEly@comcast.net

Drawing Title: MECHANICAL DETAILS	Project Title: SEISMIC REPLACEMENT BLDG 2 PHASE 1 MINOR ACUTE PSYCHIATRIC WARD	VA Project Number: 653-322	Office of Construction and Facilities Management
		Building Number: 086	
Approved: Project Director	Location: ROSEBURG, OREGON	Sheet Number: MH-502	Department of Veterans Affairs
	Date: 30 APR 2012 · Checked: TSE · Drawn: SBS		

VA FORM 08-6231

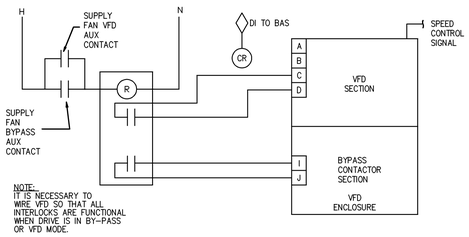
GENERAL CONTROLS NOTES:

1. LOW VOLTAGE ROOM SENSORS BY CONTROL CONTRACTOR. SEE DRAWINGS FOR LOCATION.
2. AHU SUPPLY AND RETURN DUCT SMOKE DETECTORS FURNISHED BY ELECTRICAL CONTRACTOR, INSTALLED BY M.C. SEE PLANS FOR LOCATION.
3. SEE PLANS FOR LOCATION OF DUCT STATIC PRESSURE SENSOR.
4. TSTAT MOUNTING HEIGHT PER ADA REQUIREMENTS.



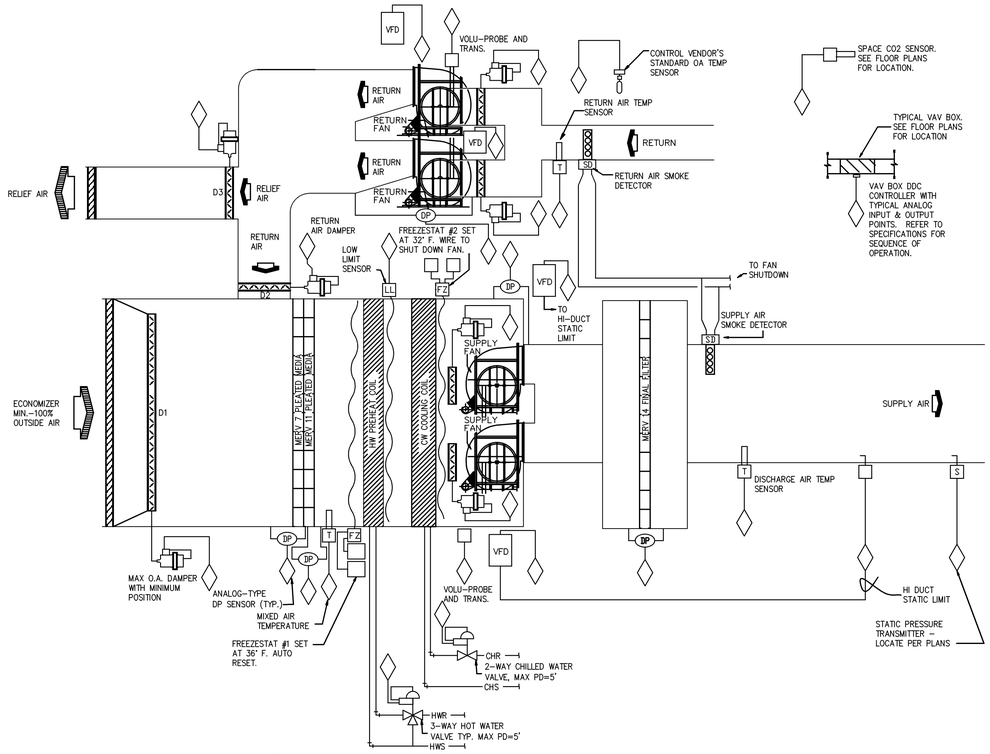
3 SUPPLY FAN VARIABLE FREQUENCY DRIVE CONTROL

NO SCALE



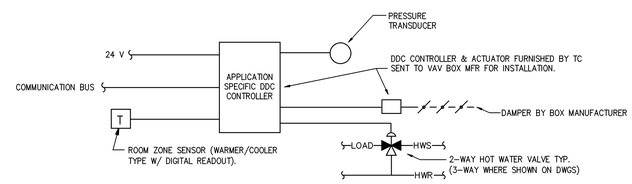
4 RETURN AIR FAN VARIABLE FREQUENCY DRIVE CONTROL

NO SCALE



1 AIR HANDLING UNIT SCHEMATIC

NO SCALE



2 TYPICAL DDC VARIABLE VOLUME BOX CONTROL

NO SCALE

Revisions:	Date

CONSULTANTS:

BALZHISER & HUBBARD ENGINEERS
MECHANICAL ELECTRICAL CIVIL SURVEYORS
100 WEST 13TH AVENUE EUGENE, OR 97401
T: 541-686-8678
F: 541-345-6203
2100-031-10mh501-3.dwg

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EXPIRES 12/31/13

ARCHITECT/ENGINEERS:

Tina Ely architect
2915 Wingate Street / Eugene, OR 97408
541.521.2477 / TinaEly@comcast.net

Drawing Title	Project Title	VA Project Number
MECHANICAL CONTROLS	SEISMIC REPLACEMENT BLDG 2 PHASE 1 MINOR ACUTE PSYCHIATRIC WARD	653-322
Approved: Project Director	Location: ROSEBURG, OREGON	Building Number: 086
	Date: 30 APR 2012 / Checked: TSE / Drawn: SBS	Sheet Number: MH-503

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

WATER PRESSURE REDUCING VALVES

TAG	LOCATION	SERVICE	TYPE	MAXIMUM FLOW (GPM)	INLET PRESSURE (PSI)	OUTLET PRESSURE AT NO FLOW (PSI)	OUTLET PRESSURE AT MAXIMUM FLOW (PSI)	VALVE SIZE (IN.)	VALVE CV FACTOR	BASIS OF DESIGN
PRV-1	MECHANICAL E122-86	BUILDING DOMESTIC WATER SERVICE	PILOT-OPERATED AUTOMATIC CONTROL VALVE	120	90	70	68	2	55	WATTS ES-F115
PRV-2	MECHANICAL E122-86	HEATING WATER MAKE-UP	DIRECT ACTING - LOW PRESSURE RANGE	N/A	70	15	N/A	3/4	N/A	WATTS U5B-LP
PRV-3	MECHANICAL E122-86	CHILLED WATER MAKE-UP	DIRECT ACTING - LOW PRESSURE RANGE	N/A	70	15	N/A	3/4	N/A	WATTS U5B-LP

NOTES:
1. WHERE PIPE SIZE INDICATED ON DRAWINGS IS LARGER THAN VALVE SIZE, PROVIDE REDUCERS.

DOMESTIC EXPANSION TANKS

TAG	MODEL NO.	LOCATION	SERVICE	VOLUME (GAL)	ACCEPTANCE (GAL)	SETTING (PSIG)	DIAMETER (IN)	HEIGHT (IN)	APPROX. WEIGHT (LBS)
DET-1	ST-42V-C	MECH RM	DOM HW	17.5	11.3	70	16	24	100

NOTES:
BASIS OF DESIGN: AMTROL.

GAS WATER HEATERS

TAG	MODEL NO.	LOCATION	SERVICE	FUEL	STORAGE CAPACITY (GALS)	RECOVERY		CAPACITY (BTUH)		THERMAL EFFICIENCY %	SIZE (INCHES)		ELECTRICAL		APPROX. OPERATING WEIGHT (LBS)	REMARKS
						GPH	TEMP RISE	INPUT	OUTPUT		HEIGHT	DIA.	VOLTS	AMPS		
WH-1	BTH-250A	MECH. RM.	HW	NAT GAS	100	320	90	250,000	237,500	95	75.5	27.75	120	NOM.	1,450	
WH-2	BTH-250A	MECH. RM.	HW	NAT GAS	100	320	90	250,000	237,500	95	75.5	27.75	120	NOM.	1,450	

NOTES:
TEMPERATURES ARE IN DEGREES F.
BASIS OF DESIGN: AO SMITH

MEDICAL GAS CONNECTIONS

TAG	DESCRIPTION	PIPE SIZE (IN) [A] [C]			NO. OUTLETS [B]				AREA SERVED
		O	MA	VAC	O	MA	VAC	SLIDE	
OS-1	WALL OUTLETS	1/2	---	---	1	---	---	---	BUILDING
SOV-1	SHUTOFF VALVE ASSEMBLY	1	---	---	N/A				BUILDING
AAP-1	AREA ALARM PANEL	1/2	---	---	N/A				BUILDING

NOTES:
[A] CONTINUE PIPE SIZE TO POINT OF CONNECTION WITH FACTORY FURNISHED SUPPLY TUBING AT OUTLETS.
[B] REFER TO ARCHITECTURAL DRAWINGS FOR OUTLET MOUNTING CONFIGURATION.

WATER METERS - PLUMBING

TAG	TYPE	SIZE	FLOW RANGE (GPM)		LOCATION	SERVICE	ELECTRICAL	BASIS OF DEISGN
			MIN.	MAX.				
WM-1	MAGNETIC FLOW METER	2-1/2"	1.6	528.0	MECHANICAL E122-86	BUILDING DOMESTIC WATER & IRRIGATION	24 VOLT	ONICON F-3200 SERIES
WM-2	MAGNETIC FLOW METER	1-1/4"	0.1	130.0	MECHANICAL E122-86	IRRIGATION	24 VOLT	ONICON F-3200 SERIES
WM-3	MAGNETIC FLOW METER	1"	0.1	79.0	MECHANICAL E122-86	MAKE-UP TO HEATING WATER SYSTEM	24 VOLT	ONICON F-3200 SERIES

MEDICAL GAS EQUIPMENT

TAG	DESCRIPTION	LOCATION	MODEL [A]	MANIFOLD CAPACITY	
				PRIMARY	RESERVE
OM-1	OXYGEN MANIFOLD	MED GAS E121	6-107010-06	6 CYLINDERS	6 CYLINDERS

NOTES:
[A] BASIS OF DESIGN: BEACON-MEDAES

BACKFLOW PREVENTERS

TAG	TYPE	SIZE	LOCATION	SERVICE	NOTES
RPBP-1	REDUCED PRESSURE PRINCIPLE	3/4"	MECHANICAL ROOM	MAKE-UP TO HYDRONIC SYSTEMS	
RPBP-2	REDUCED PRESSURE PRINCIPLE	1-1/4"	MECHANICAL ROOM	NON-POTABLE WATER	

PLUMBING PUMPS

TAG	MODEL NO.	LOCATION	SERVICE	TYPE	GPM	HEAD (FT)	MOTOR				REMARKS
							WATTS	RPM	VOLT	PHASE	
DP-1	NBF-36	MECH. RM.	DOMESTIC HW RECIRC.	BRONZE CIRCULATOR	5.5	20	270	3300	115	1	

NOTES:
BASIS OF DESIGN: BELL AND GOSSETT

HOT WATER RECIRCULATION FLOW RATES

VALVE NUMBER	LOCATION	GALLONS PER MINUTE
HWR-1	PATIENT HALLWAY E107-86	1.0
HWR-2	PATIENT CONSULT B110-86	1.0
HWR-3	PATIENT HALLWAY E106-86	0.5
HWR-4	PATIENT HALLWAY E100-86	0.5
HWR-5	PATIENT LOUNGE SEATING C103A-86	0.5
HWR-6	PATIENT HALLWAY E101-86	0.5
HWR-7	SERVICES / AGITATED PATIENT HALLWAY E102-86	0.5
HWR-8	SERVICES / AGITATED PATIENT HALLWAY E102-86	0.5
HWR-9	SERVICES / AGITATED PATIENT HALLWAY E102-86	0.5

NOTE:
1. REFER TO DETAIL 1/ PL-500 FOR PIPING REQUIREMENTS AT EACH BALANCING STATION.
2. INITIAL FOW RATES INDICATED ARE PROVIDED AS AN AID IN HOT WATER RECIRCULATION BALANCING. FINAL FLOW RATES WILL VARY. THE SYSTEM SHALL BE BALANCED IN ACCORDANCE WITH SPECIFICATION SECTION 20 91 00.

PLUMBING FIXTURE CONNECTIONS

TAG	DESCRIPTION	CONNECTION SIZE (INCHES DIAMETER)					
		TRAP	W	V	CW	HW	T
WC-1	WATER CLOSET	INTEGRAL	4	2	1	--	--
WC-2	WATER CLOSET	INTEGRAL	4	2	1	--	--
WC-3	WATER CLOSET	INTEGRAL	4	2	1	--	--
WC/L-1	WATERCLOSET AND LAVATORY COMBO	INTEGRAL	4	2	1	1/2	--
L-1	LAVATORY	1-1/4	2	1-1/2	1/2	1/2	--
L-2	LAVATORY	1-1/4	2	1-1/2	1/2	1/2	--
L-3	LAVATORY	1-1/4	2	1-1/2	1/2	1/2	--
S-1	SERVICE SINK	3	3	1-1/2	1/2	1/2	--
S-2	SERVICE SINK	3	3	1-1/2	1/2	1/2	--
S-3	SERVICE SINK	1-1/2	4	2	1/2	1/2	--
S-4	SINK	1-1/2	2	1-1/2	1/2	1/2	--
S-5	SINK	1-1/2	2	1-1/2	1/2	1/2	--
S-6	SINK	1-1/2	2	1-1/2	1/2	1/2	--
S-7	SINK	1-1/2	2	1-1/2	1/2	1/2	--
S-8	UTILITY SINK	1-1/2	2	1-1/2	1/2	1/2	--
SH-1	SHOWER	--	--	--	1/2	1/2	--
SH-2	SHOWER	--	--	--	1/2	1/2	--
SH-3	SHOWER	--	--	--	1/2	1/2	--
SH-4	SHOWER	--	--	--	--	--	1/2
FD-1	FLOOR DRAIN	2	2	1-1/2	--	--	--
FS-1	FLOOR SINK	NOTE 2	NOTE 2	NOTE 2	--	--	--
OB-1	CLOTHES WASHER OUTLET BOX	2	2	1-1/2	3/4	3/4	--
OB-2	ICE MAKER OUTLET BOX	--	--	--	1/2	--	--
HB-1	FREEZE - PROOF HOSE BIBB	--	--	--	3/4	--	--
HB-2	INDOOR HOSE BIBB	--	--	--	3/4	--	--
HB-3	FREEZE - PROOF HOSE BIBB	--	--	--	3/4	--	--
EW-1	EMERGENCY EYEWASH	--	--	--	--	--	1/2

NOTES:
1. CONNECTION SIZES SHOWN ARE FOR INDIVIDUAL FIXTURES ONLY.
2. REFER TO PLANS FOR PIPE SIZES.

DRAINAGE FIXTURE UNIT LOADS

PLUMBING FIXTURE	DFU PER FIXTURE	FIXTURES ADDED	TOTAL DFU ADDED
FV WATER CLOSETS, 1.28 GPF	4.0	4	16.0
FV WATER CLOSETS, 1.6 GPF	4.0	12	48.0
LAVATORIES	1.0	21	21.0
SINKS, 1-1/2 INCH TRAP	2.0	4	8.0
SINKS, 2 INCH TRAP	3.0	4	12.0
CLINICAL SINK 3" TRAP	6.0	1	6.0
SHOWER	2.0	16	32.0
CLOTHES WASHER	3.0	1	3.0
TOTALS		63.0	146.0

NOTES:
FIXTURE UNITS VALUES (DFU) ARE BASED ON OPSC 2008, GENERAL USE, PUBLIC.
NEGATIVE VALUES INDICATE A DECREASED LOAD.
LEGEND: GPF=GALLONS PER FLUSH; FV=FLUSH VALVE; TT= TANK TYPE.

Revisions:	Date

CONSULTANTS:

BALZHISER & HUBBARD ENGINEERS
MECHANICAL ELECTRICAL CIVIL SURVEYORS
100 WEST 13TH AVENUE EUGENE, OR 97401 P: 541-343-5325 F: 541-343-5922
2100-031-10pl001.dwg

REGISTERED PROFESSIONAL ENGINEER 19,175 OREGON JULY 15, 1987 TIMOTHY S. ELY
DIGITAL SIGNATURE
EXPIRES 12/31/13

ARCHITECT/ENGINEERS:

Tina Ely architect
2915 Wingate Street / Eugene, OR 97408
541.521.2477 / tinaely@comcast.net

Drawing Title: PLUMBING SYMBOLS LIST, SHEET INDEX & SCHEDULES

Approved: Project Director

Project Title: SEISMIC REPLACEMENT BLDG 2 PHASE 1 MINOR ACUTE PSYCHIATRIC WARD

Location: ROSEBURG, OREGON

Date: 30 APR 2012 | Checked: TSE | Drawn: SGS

VA Project Number: 653-322

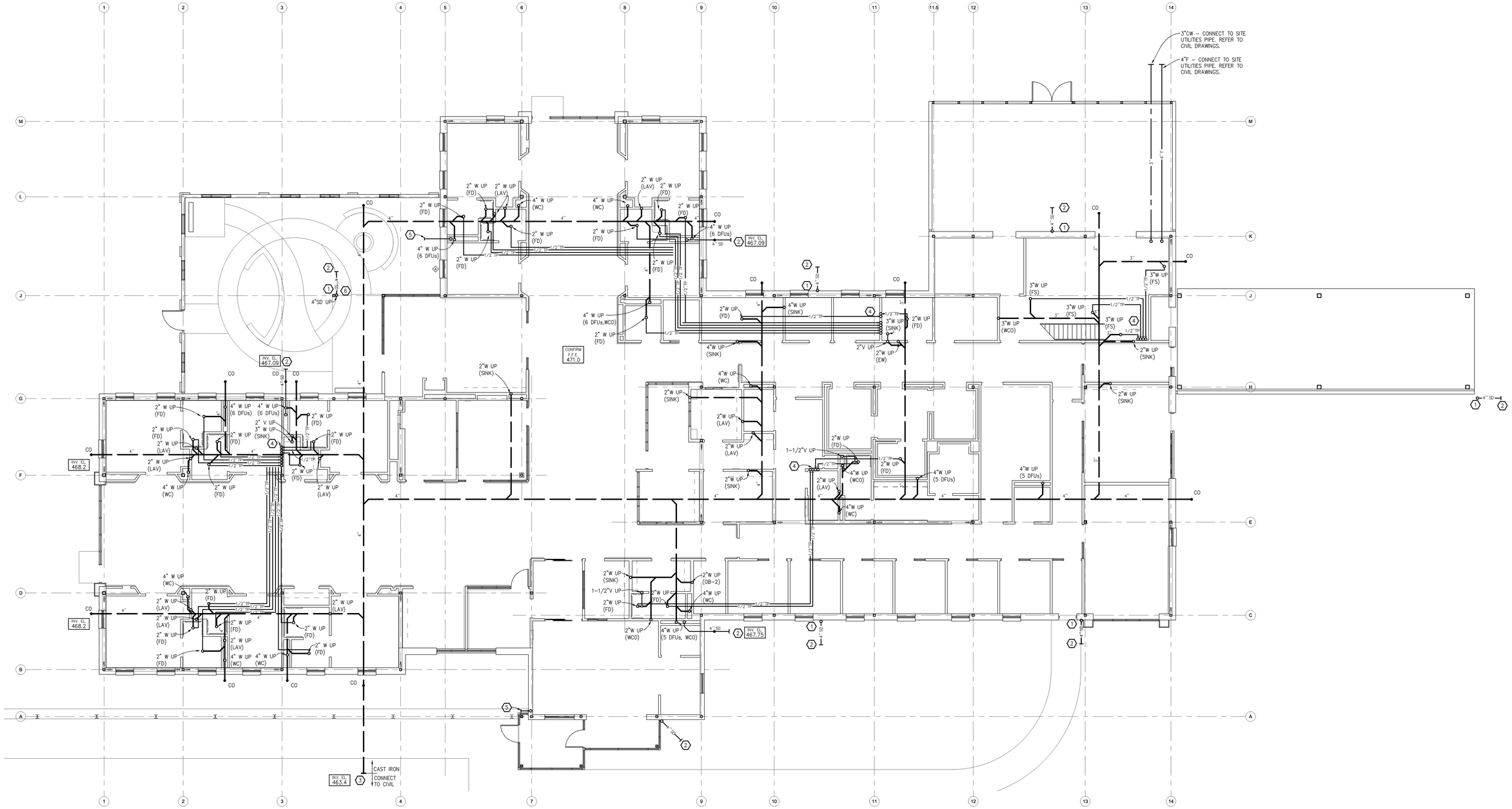
Building Number: 086

Sheet Number: PL-001

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



1 FOUNDATION PLAN - PLUMBING

SCALE: 1/8"=1'-0"

KEYED NOTES:

1. 4"SD UP TO DOWNSPOUT CONNECTION. REFER TO DETAIL 3/PL-500.
2. 4" SD CONNECT TO SITE UTILITIES. REFER TO CIVIL DRAWINGS.
3. 4" W SEE CIVIL PLANS FOR CONTINUATION.
4. TP LINES UP TO TRAP PRIMER STATION.
5. 1/2" NCW BELOW GRADE TO WATER FEATURE. SEE LANDSCAPING PLANS FOR POINT OF CONNECTION.
6. VANDAL RESISTANT FASTENERS ON CLEANOUT AND DOWNSPOUT BOOT.

Revisions:	Date

CONSULTANTS:

BALZHISER & HUBBARD ENGINEERS
MECHANICAL ELECTRICAL CIVIL SURVEYORS
100 WEST 13TH AVENUE EUGENE, OREGON 97401
T: 541-686-8278
F: 541-343-5928
2100-031-10pl100.dwg

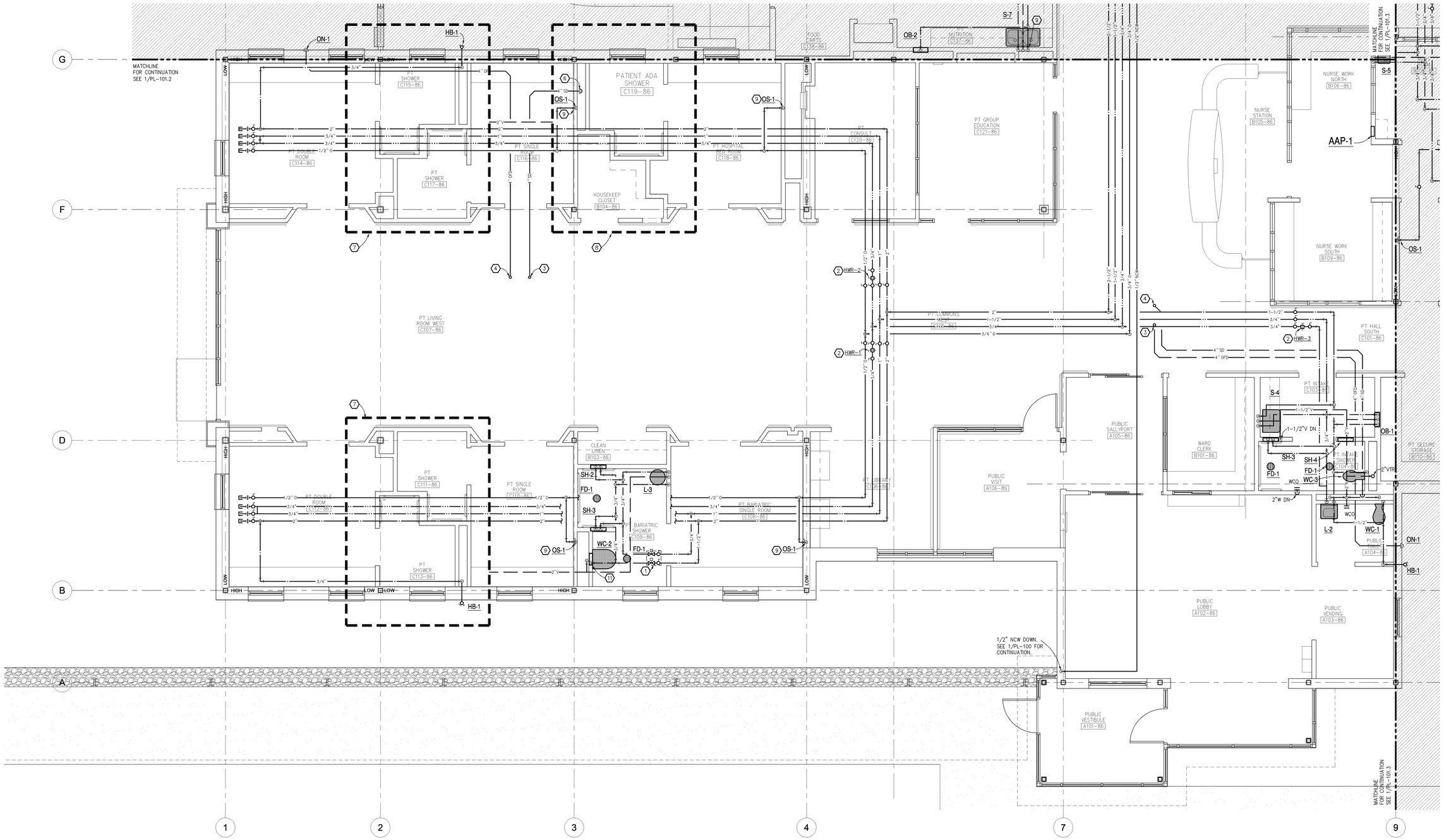
REGISTERED PROFESSIONAL ENGINEER 50,175 DIGITAL SIGNATURE OREGON JULY 15, 1981 TIMOTHY S. ELY
EXPIRES 12/31/13

ARCHITECT/ENGINEERS:

Tina Ely architect
2915 Wingate Street / Eugene, OR 97408
541.521.2477 / TinaEly@comcast.net

Drawing Title: FOUNDATION PLAN - PLUMBING	Project Title: SEISMIC REPLACEMENT BLDG 2 PHASE 1 MINOR ACUTE PSYCHIATRIC WARD	VA Project Number: 653-322	Office of Construction and Facilities Management
Approved: Project Director	Location: ROSEBURG, OREGON	Building Number: 086	
	Date: 30 APR 2012 / Checked: TSE / Drawn: SGS	Sheet Number: PL-100	Department of Veterans Affairs

VA FORM 08-6231



KEYED NOTES:

1. MANUAL BALL VALVES AND MOTORIZED BALL VALVES SERVING FIXTURES IN PATIENT ROOM. VALVES LOCATED ABOVE LOOKING CEILING ACCESS DOOR. MOTORIZED BALL VALVES CONTROLLED BY SWITCHES IN NURSE WORK NORTH ROOM B106-86. LOCATION SHOWN IS SCHEMATIC. COORDINATE MAINTENANCE ACCESS AND LOCATION WITH ELECTRICAL.
2. HWR BALANCING STATION. SEE 1/PL-500.
3. 4" SD UP TO RD-1. SEE 1/MH-201 FOR CONTINUATION.
4. 4" SD UP TO OD-1. SEE 1/MH-201 FOR CONTINUATION.
5. 4" SD UP. REFER TO DOWNSPOUT CONNECTION DETAIL 7/PL-500.

KEYED NOTES:

6. 4" SD DOWN. SEE 1/PL-100 FOR CONTINUATION.
7. SEE ENLARGED TYPICAL PATIENT ROOM PLAN 7/PL-101.3 FOR DOMESTIC WATER BRANCH PIPING, VENT PIPING, AND PLUMBING FIXTURES IN THIS AREA.
8. SEE ENLARGED FLOOR PLAN 8/PL-500 FOR DOMESTIC WATER BRANCH PIPING, VENT PIPING, AND PLUMBING FIXTURES IN THIS AREA.
9. OXYGEN OUTLET MOUNTED INSIDE RECESSED CABINET. SEE DETAIL 5/PL-500.
10. WATER SHUT OFF SWITCHES FOR PATIENT ROOMS. SEE ELECTRICAL PLANS.
11. WATER CLOSET FLUSH VALVE IN ACCESS PANEL. ACCESS PANEL LOCATED ABOVE ADA GRAB BAR. SEE ARCHITECTURAL PLANS FOR MOUNTING HEIGHT.

1 FLOOR PLAN WEST - PLUMBING

SCALE: 1/4"=1'-0"

Revisions:	Date

CONSULTANTS:

BALZHISER & HUBBARD ENGINEERS
MECHANICAL • ELECTRICAL • CIVIL • SURVEYORS
100 WEST 13TH AVENUE EUGENE, OR 97401
P: 541-686-8678
F: 541-345-3305
2100-031-10pl101.1-3.dwg

REGISTERED PROFESSIONAL ENGINEER 56,176
DIGITAL SIGNATURE
OREGON
JULY 15, 1980
TIMOTHY S. ELY
EXPIRES 12/31/13

ARCHITECT/ENGINEERS:

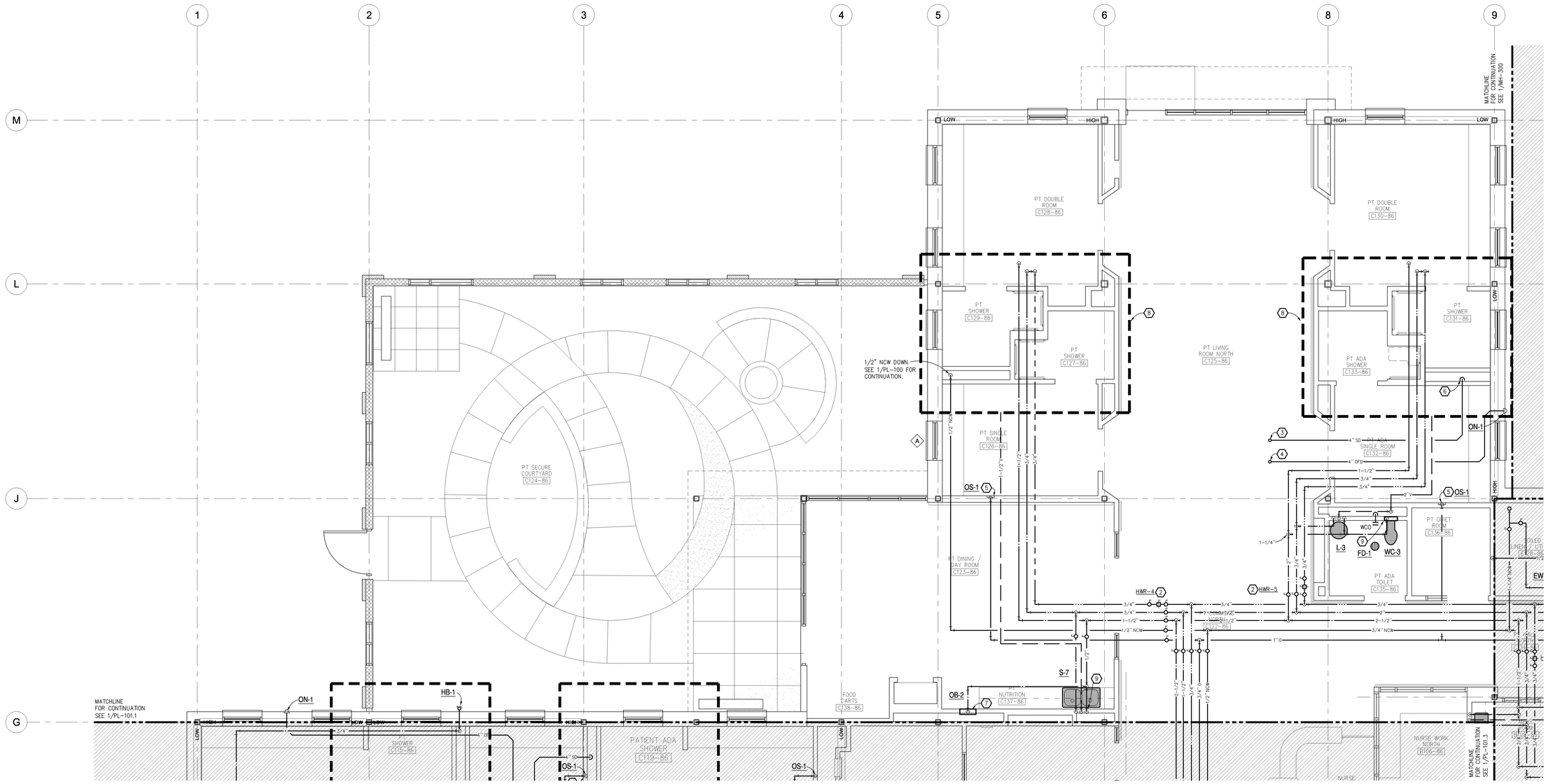
Tina Ely architect
2915 Wingate Street / Eugene, OR 97408
541.521.2477 / TinaEly@comcast.net

Drawing Title	FLOOR PLAN WEST - PLUMBING
Approved: Project Director	
Project Title	SEISMIC REPLACEMENT BLDG 2 PHASE 1 MINOR ACUTE PSYCHIATRIC WARD
Location	ROSEBURG, OREGON
Date	30 APR 2012
Checked	TSE
Drawn	SGS
VA Project Number	653-322
Building Number	086
Sheet Number	PL-101.1

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



1 FLOOR PLAN NORTH - PLUMBING

SCALE: 1/4"=1'-0"

KEYED NOTES:

1. CONNECT CW TO ICE MACHINE AND COFFEE MAKER. PROVIDE SEPARATE STOPS. CONNECT ICE MACHINE DRAIN TO SINK TAILPIECE ABOVE TRAP.
2. HWR BALANCING STATION. SEE 1/PL500.
3. 4" SD UP TO RD-1. SEE 1/MH-201 FOR CONTINUATION.
4. 4" SD UP TO OD-1. SEE 1/MH-201 FOR CONTINUATION.
5. OXYGEN OUTLET MOUNTED INSIDE RECESSED CABINET. SEE DETAIL 5/PL-500.
6. 4" SD DOWN. SEE 1/PL-100 FOR CONTINUATION.
7. CONNECT CW FROM OB-2 TO REFRIGERATOR ICE MAKER.
8. SEE ENLARGED TYPICAL PATIENT ROOM PLAN 7/PL-101.3 FOR DOMESTIC WATER BRANCH PIPING, VENT PIPING, AND PLUMBING FIXTURES IN THIS AREA.
9. WATER CLOSET FLUSH VALVE IN ACCESS PANEL. ACCESS PANEL LOCATED ABOVE ADA GRAB BAR. SEE ARCHITECTURAL PLANS FOR MOUNTING HEIGHT.

Revisions:	Date

CONSULTANTS:

BALZHISER & HUBBARD ENGINEERS
MECHANICAL ELECTRICAL CIVIL SURVEYING
100 WEST 13TH AVENUE EUGENE, OR 97401
P: 541-686-8678
F: 541-343-5102
2100-031-10pl101.1-3.dwg

REGISTERED PROFESSIONAL ENGINEER 19,175 DIGITAL SIGNATURE OREGON JULY 15, 1981 TIMOTHY S. ELY EXPIRES 12/31/13

ARCHITECT/ENGINEERS:

Tina Ely architect
2915 Wingate Street / Eugene, OR 97408
541.521.2477 / tinaely@comcast.net

Drawing Title	FLOOR PLAN NORTH - PLUMBING
Approved: Project Director	
Project Title	SEISMIC REPLACEMENT BLDG 2 PHASE 1 MINOR ACUTE PSYCHIATRIC WARD
Location	ROSEBURG, OREGON
Date	30 APR 2012
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Drawn	SGS
VA Project Number	653-322
Building Number	086
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Department of Veterans Affairs

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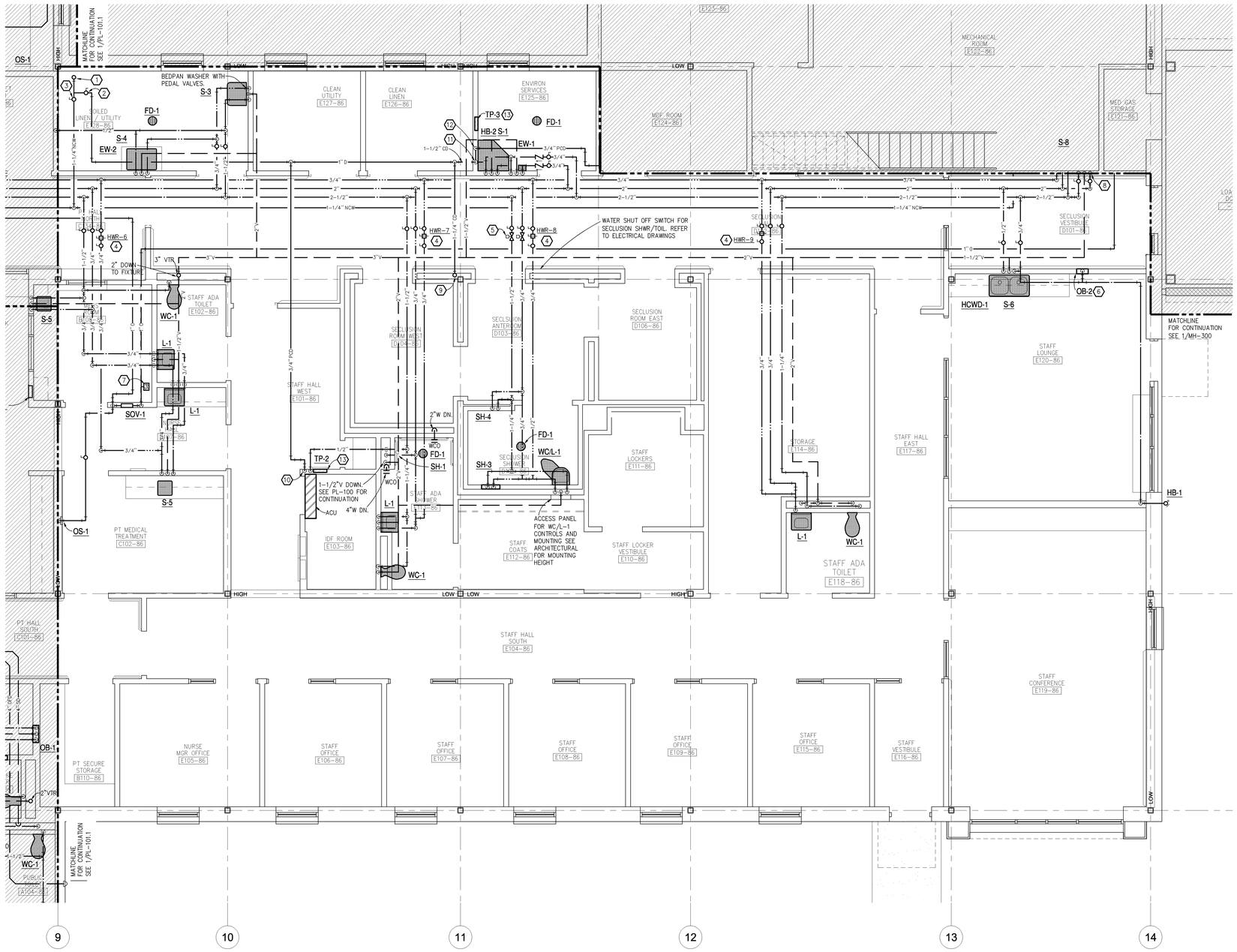


1 FLOOR PLAN EAST - PLUMBING

SCALE: 1/4"=1'-0"

KEYED NOTES:

1. 1-1/4"CW UP TO ROOF. CONNECT TO IRRIGATION SYSTEM. REFER TO LANDSCAPE DRAWINGS FOR BACKFLOW PREVENTER ON ROOF.
2. BALL VALVE OPEN TO DRAIN OUTDOOR WATER PIPING TO MOP SINK – FOR WINTERIZING IRRIGATION SYSTEM ON ROOF.
3. BALL VALVE CLOSED FOR WINTERIZING IRRIGATION SYSTEM ON ROOF.
4. HWR BALANCING STATION SEE 1/PL500.
5. MANUAL BALL VALVES AND MOTORIZED BALL VALVES SERVING FIXTURES IN SECLUSION SHOWER ROOM. MOTORIZED BALL VALVES CONTROLLED BY SWITCHES IN SECLUSION ANTEROOM. REFER TO ELECTRICAL PLANS.
6. CONNECT CW FROM OB-2 TO REFRIGERATOR ICE MAKER.
7. REMOTE OXYGEN PRESSURE SENSOR.
8. 1/2"CW, 1/2"HW, 1-1/2"V DOWN TO FIXTURE.
9. 1-1/4" CD UP TO AHU-1. SEE MH-201 FOR CONTINUATION.
10. 3/4" PCD FROM ACU-1. REFER TO MECHANICAL PLANS FOR CONNECTION DETAIL.
11. 1-1/2" CD DOWN TO S-1. SEE DETAIL 2/PL-500.
12. 3/4" CD DOWN. CONNECT TO 1-1/2" CD DOWN IN WALL.
13. TRAP PRIMER RECESSED CABINET. REFER TO ARCHITECTURAL PLANS FOR MOUNTING HEIGHT.

Revisions: | Date

CONSULTANTS:

BALZHISER & HUBBARD ENGINEERS
MECHANICAL • ELECTRICAL • CIVIL • SURVEYORS
100 WEST 13TH AVENUE EUGENE, OR 97401
P: 541-686-8678
F: 541-345-3305
2100-031-10pl101.1-3.dwg

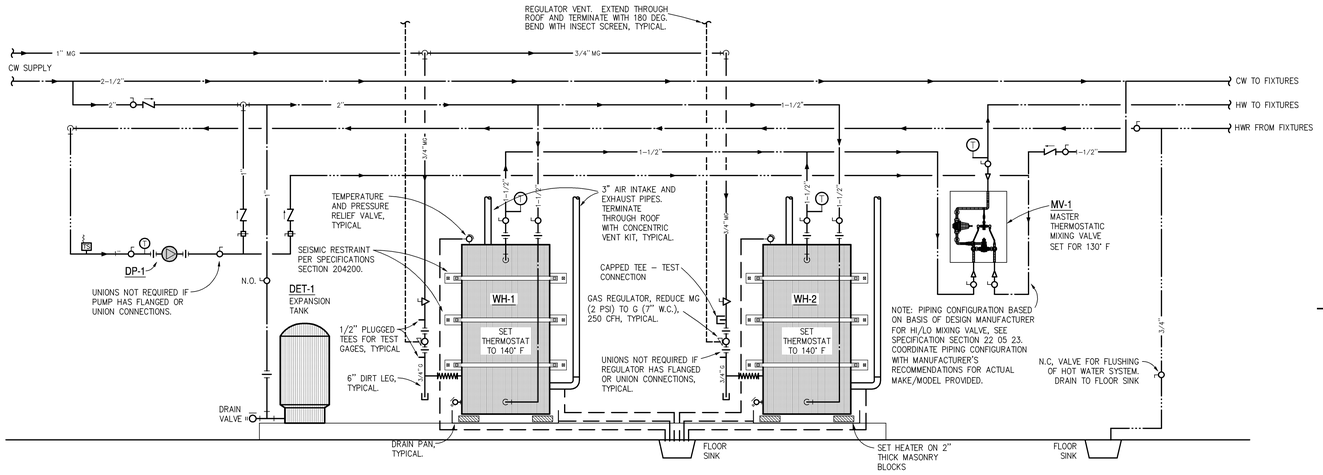
REGISTERED PROFESSIONAL ENGINEER 50,176
DIGITAL SIGNATURE OREGON JULY 15, 1983 TIMOTHY S. ELY
EXPIRES 12/31/13

ARCHITECT/ENGINEERS:

Tina Ely architect
2915 Wingate Street / Eugene, OR 97408
541.521.2477 / TinaEly@comcast.net

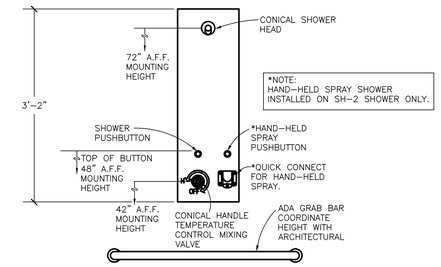
Drawing Title: FLOOR PLAN EAST - PLUMBING	Project Title: SEISMIC REPLACEMENT BLDG 2 PHASE 1 MINOR ACUTE PSYCHIATRIC WARD	VA Project Number: 653-322	Office of Construction and Facilities Management
Approved: Project Director	Location: ROSEBURG, OREGON	Building Number: 086	
	Date: 30 APR 2012 / Checked: TSE / Drawn: SGS	Sheet Number: PL-101.3	Department of Veterans Affairs

VA FORM 08-6231



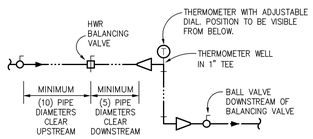
4 DOMESTIC HOT WATER PIPING SCHEMATIC

SCALE: NO SCALE



4 PATIENT SHOWER (SH-2 AND SH-3)

NO SCALE

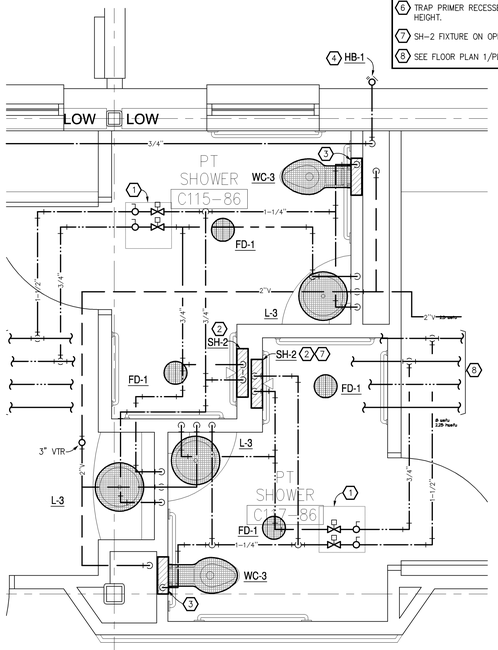


1 HWR BALANCING STATION

NO SCALE

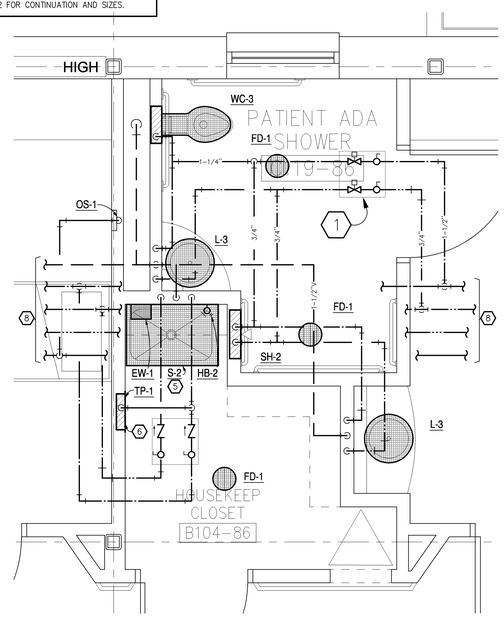
KEYED NOTES:

1. MANUAL BALL VALVES AND MOTORIZED BALL VALVES SERVING FIXTURES IN PATIENT ROOM. VALVES LOCATED ABOVE LOCKING CEILING ACCESS DOOR. MOTORIZED BALL VALVES CONTROLLED BY SWITCHES IN WORK ROOM. LOCATION SHOWN IS SCHEMATIC. COORDINATE MAINTENANCE ACCESS AND LOCATION WITH ELECTRICAL.
2. SEE PATIENT SHOWER DETAIL 4/PL-500.
3. WATER CLOSET FLUSH VALVE IN ACCESS PANEL. ACCESS PANEL LOCATED ABOVE GRAB BAR. SEE ARCHITECTURAL PLANS FOR MOUNTING HEIGHT.
4. HOSE BIBB LOCATION TYPICAL OF 3. NO HOSE BIBB LOCATED OUTSIDE NEAR PATIENT SHWR C129-86.
5. SEE DETAIL 2/PL-500 FOR TYPICAL JANITOR SINK PLUMBING.
6. TRAP PRIMER RECESSED IN CABINET. SEE ARCHITECTURAL PLANS FOR MOUNTING HEIGHT.
7. SH-2 FIXTURE ON OPPOSITE WALL IN PT ADA SHOWER ROOM C133-86.
8. SEE FLOOR PLAN 1/PL-101.1 AND 1/PL-101.2 FOR CONTINUATION AND SIZES.



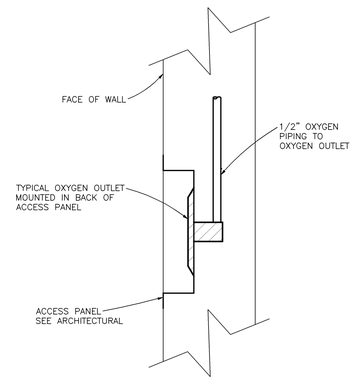
7 TYPICAL PATIENT ROOMS ENLARGED FLOOR PLAN - PLUMBING

SCALE: 1/2"=1'-0"



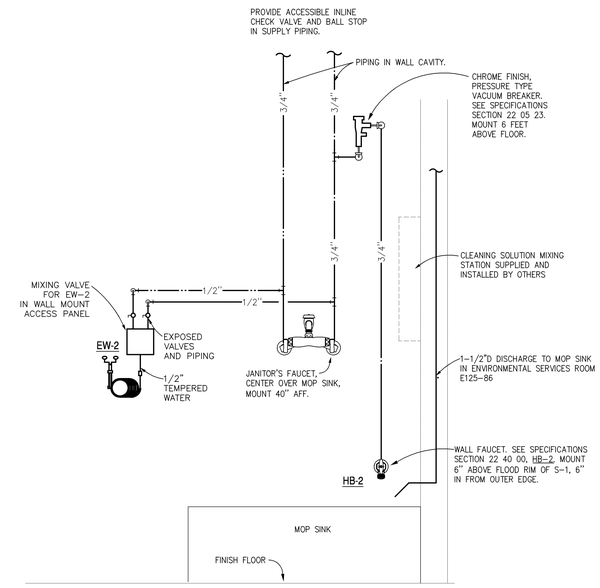
8 ENLARGED FLOOR PLAN - PLUMBING

SCALE: 1/2"=1'-0"



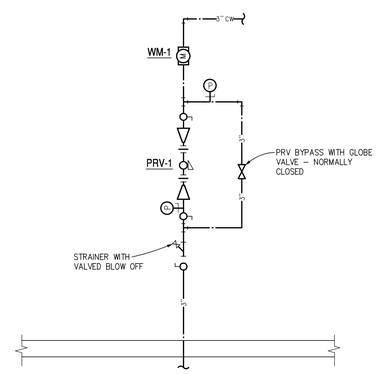
5 OXYGEN OUTLET CONNECTION

NO SCALE



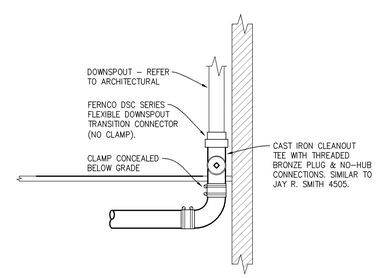
2 JANITOR'S SINK WITH CLEANING SOLUTION CONNECTION (CSC) ENVIRON SERVICES E125

NO SCALE



6 PRESSURE REDUCING VALVE PIPING

NO SCALE



3 DOWNSPOUT CONNECTION

NO SCALE

Revisions:	Date

CONSULTANTS:

BALZHISER & HUBBARD ENGINEERS
MECHANICAL • ELECTRICAL • CIVIL • SURVEYORS
100 WEST 13TH AVENUE EUGENE, OR 97401
P: 541-686-8678
F: 541-345-3305
2100-031-10pl500.dwg

REGISTERED PROFESSIONAL ENGINEER 50,176 — DIGITAL SIGNATURE — OREGON — JULY 15, 1980 — TIMOTHY S. ELY — EXPIRES 12/31/13

ARCHITECT/ENGINEERS:

Tina Ely architect
2915 Wingate Street / Eugene, OR 97408
541.521.2477 / TinaEly@comcast.net

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Approved: Project Director	
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Location	ROSEBURG, OREGON
Date	30 APR 2012
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