Revision A October 2001—First Printing (ECN released)

2300™ Process Module

Facility

PM BOM Version 571-800096-002

2300 Software Version 1.4.3

System Version 2300

PUBLISHED BY
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Part Number: 405-240309-001

Revision A
October 2001

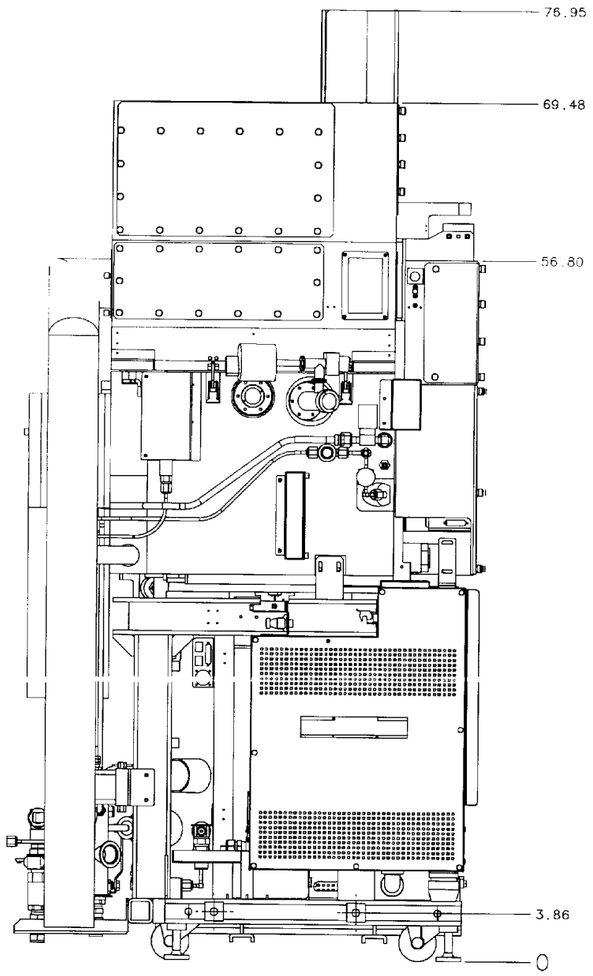
2300 Process Module Facility Legend:

This manual combines into one manual the process module facility information from the following process module types: 2300 Metal, Silicon, and Exelan. This manual replaces all previous process module type manuals.

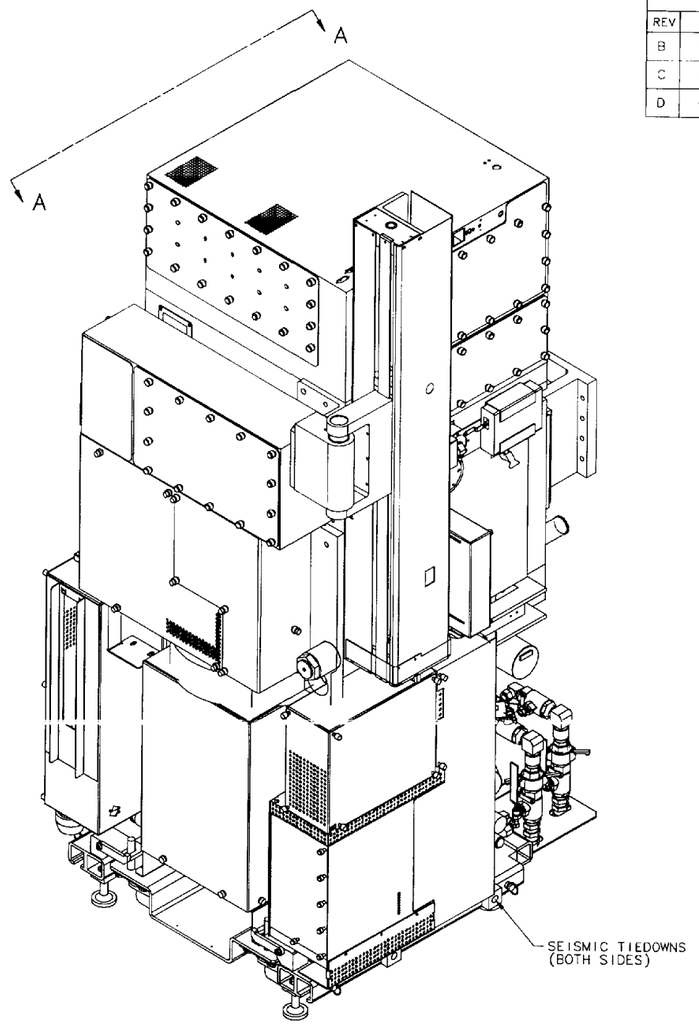
Contents

CAD SOFTWARE: I-DEAS

REVISIONS						
REV	ZONE	DESCRIPTION	INC BY	CHECK	APVD	DATE
B	---	REVISED WITH EXTENSIVE CHANGES	RJJ 2-15-00	BD 2-17-00	BD	2-17-00
C	---	REVISED DRAWING	KN 6-23-00	BD 7-5-00	BD	7-5-00
D	---	SH 3 & 4: ADDED DFC MODULE	DG 6-28-01			



VERTICAL DIMENSIONS
(VIEW A-A)



NOTES (UNLESS OTHERWISE SPECIFIED):

1. WORKMANSHIP STANDARDS PER LAM 0QA-1018.

2300 VERSYS, POLY/METAL
SH: 1 & 2

ITEM NO.	LAM / MFR PART NO.	DESCRIPTION	-001 QTY

BILL OF MATERIAL

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
FRACTIONS ± ---
DECIMALS .XX± ---, .XXX± ---
ANGLES ± ---
MACHINED SURFACES √
DEBURR & BREAK SHARP EDGES
MATERIAL ---
FINISH ---
INTERPRET DRAWING PER ASME Y14.5M-1994. DIMENSIONS IN [ ] ARE MILLIMETERS.

	INITIAL	DATE
DRAWN B DENIY	---	3-22-99
CHECKED W YEE	WY	4-30-99
ELECT. ENGINEER		
MECH. ENGINEER W YEE	WY	4-30-99

THIRD ANGLE PROJECTION
DO NOT SCALE DRAWING

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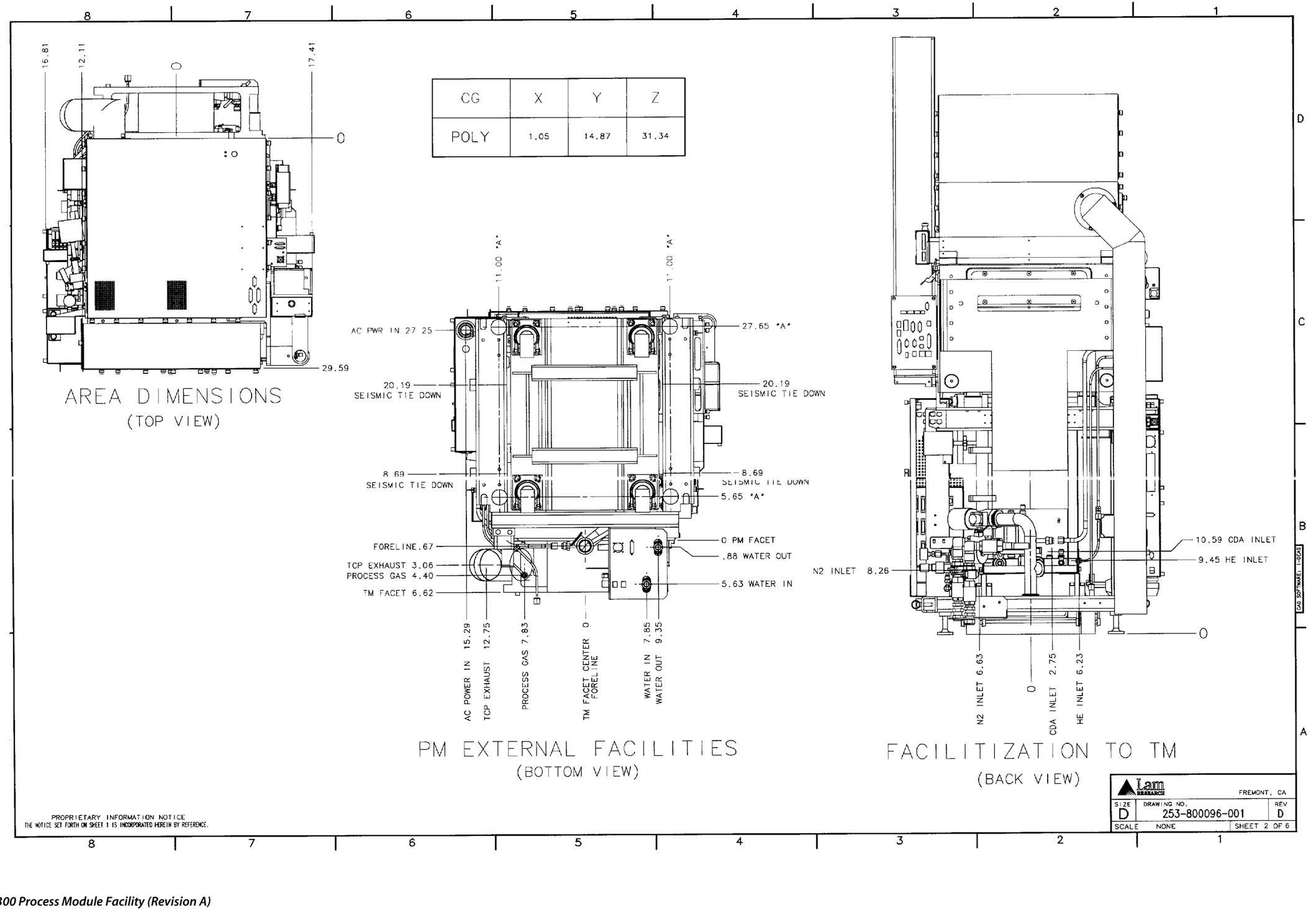
TITLE (40 CHAR. MAX)
SPEC,FACIL,2300 PM FACILITY

SIZE	DRAWING NO.	REV
D	253-800096-001	D

SCALE NONE SHEET 1 OF 6


16.81
12.11
17.41
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29.59
AREA DIMENSIONS
(TOP VIEW)
CG | X | Y | Z
POLY | 1.05 | 14.87 | 31.34
11.00 "A"
11.00 "A"
AC PWR IN 27.25
27.65 "A"
20.19
SEISMIC TIE DOWN
20.19
SEISMIC TIE DOWN
8.69
SEISMIC TIE DOWN
8.69
SEISMIC TIE DOWN
5.65 "A"
FORELINE.67
0 PM FACET
.88 WATER OUT
TCP EXHAUST 3.06
PROCESS GAS 4.40
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9.45 HE INLET
N2 INLET 8.26
0
N2 INLET 6.63
0
CDA INLET 2.75
HE INLET 6.23
FACILITIZATION TO TM
(BACK VIEW)
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THE NOTICE SET FORTH ON SHEET 1 IS INCORPORATED HEREIN BY REFERENCE.
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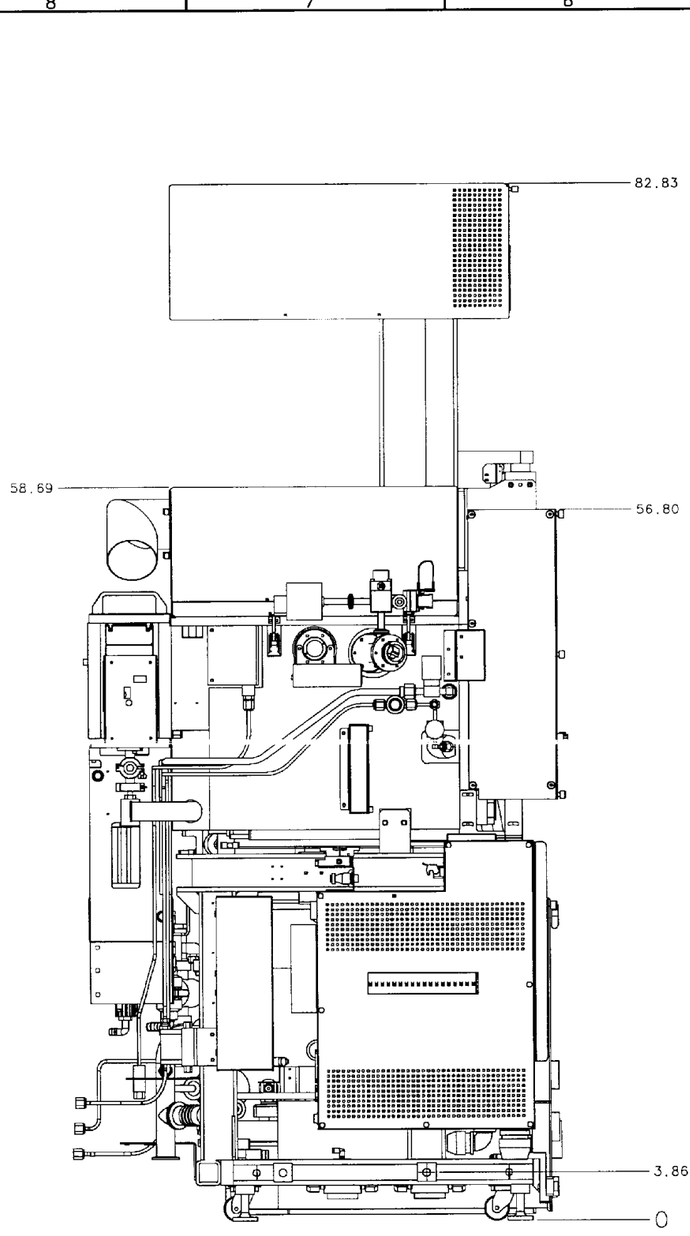
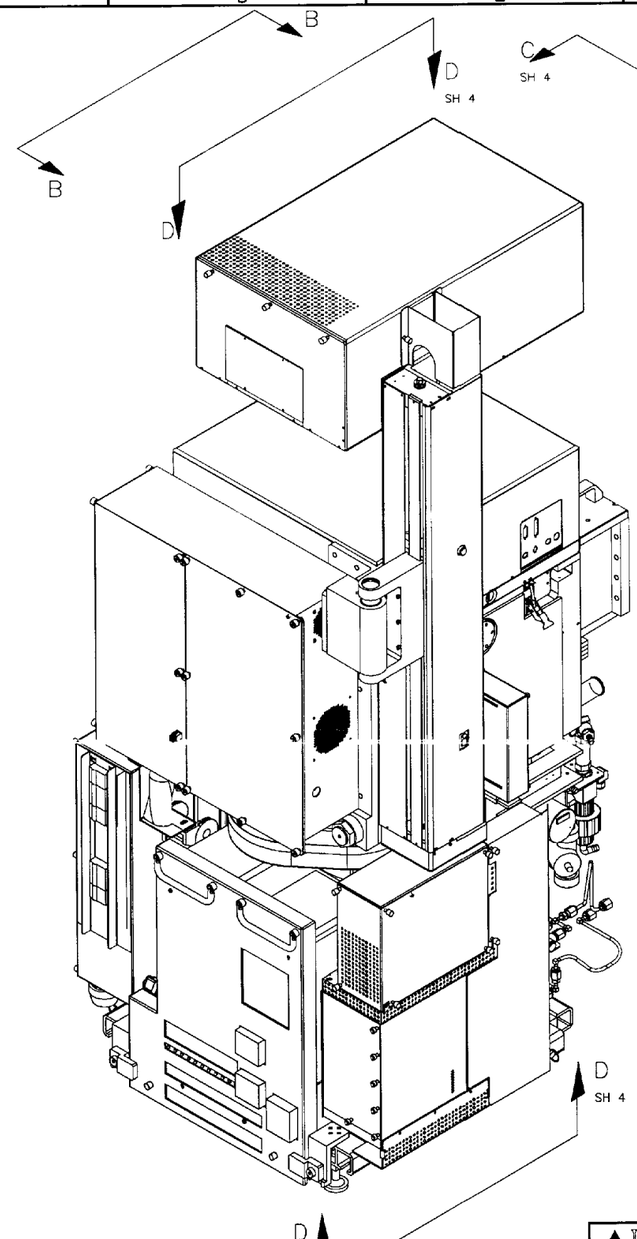
SIZE D
DRAWING NO. 253-800096-001
REV D
SCALE NONE
SHEET 2 OF 6
CAD SOFTWARE: I-DEAS



VIEW B-B



ISO VIEW

2300 EXELAN
SH: 3 & 4

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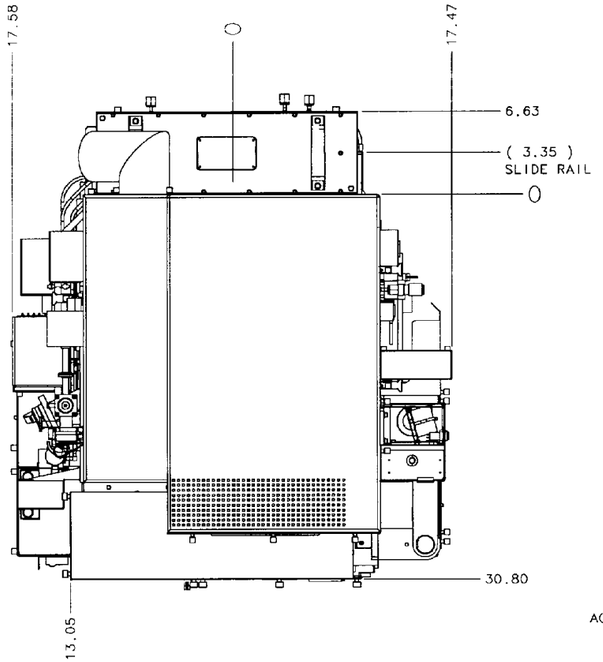
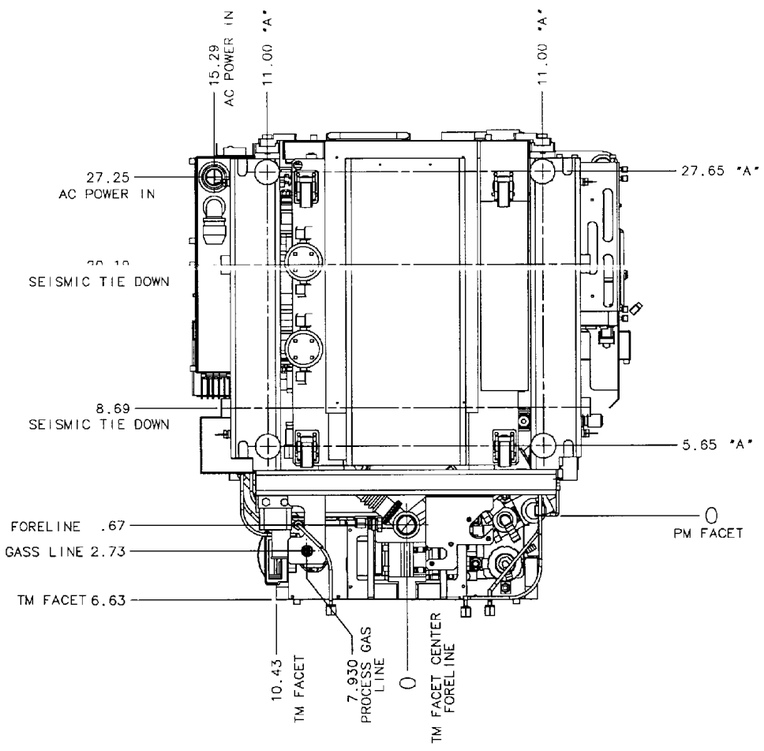
SIZE	DRAWING NO.	REV
D	253-800096-001	D
SCALE NONE		SHEET 3 OF 6

CAD SOFTWARE: I-DEAS

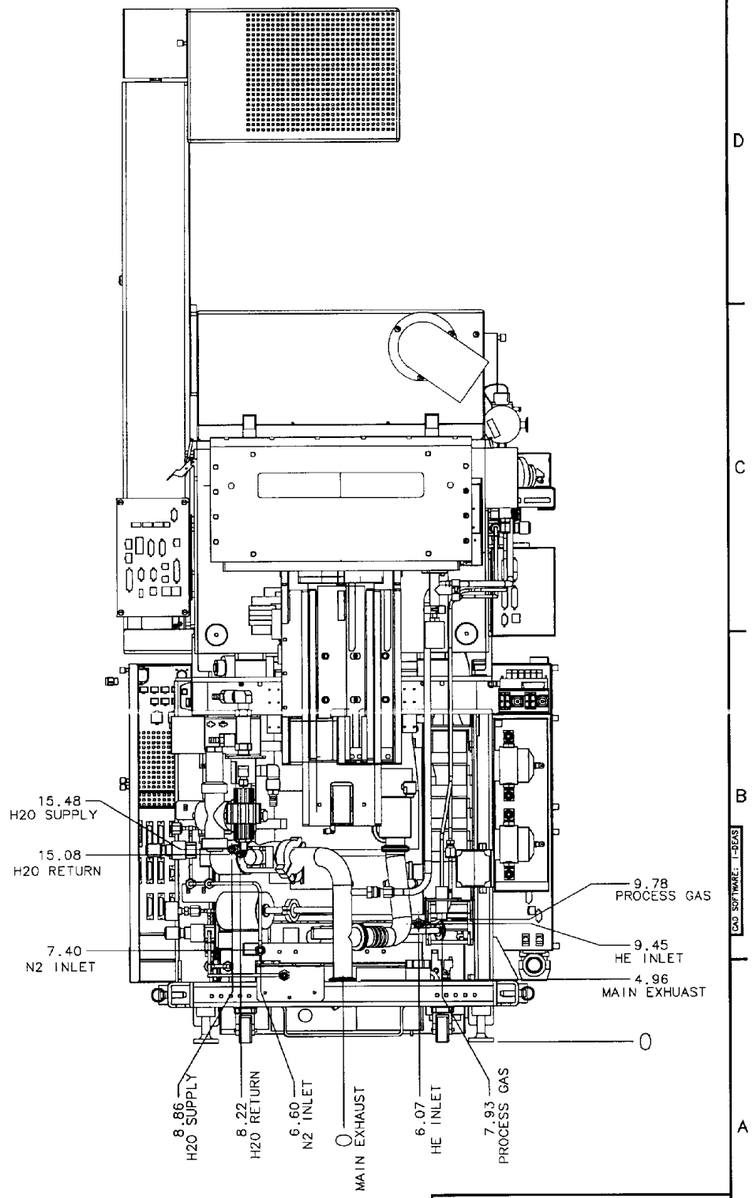
CG	X	Y	Z
DFC	x	x	x



VIEW D–D
TOP VIEW
SH 3



VIEW E–E
BOTTOM VIEW
CASTER NOT SHOWN FOR CLARITY
SH 3



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SIZE	DRAWING NO.	REV
D	253-800096-001	D
SCALE NONE		SHEET 4 OF 6

CHART #1 GAS BOX TO PM PLUMBING		
DESCRIPTION	GAS LINE FITTING	DBL CONTAINMENT FITTING
PROCESS GAS DELIVERY LINE	1/4 MVCR	1.0" OD TUBE (FOR CONNECTION OF 1.0" ID CORRUGATED HOSE W/HOSE CLAMP)
PROCESS GAS DELIVERY LINE	1/4 MVCR	1.0" OD TUBE (FOR CONNECTION OF 1.0" ID CORRUGATED HOSE W/HOSE CLAMP)

TABLE 1 ENVIRONMENT					
DESCRIPTION	TEMPERATURE		HUMIDITY	VIBRATION	
	°C	±	%	SENSITIVE	EMISSION
PROCESS MODULE	25	5	<50	SLIGHT	NO

TABLE 2 THERMAL OUTPUT				
DESCRIPTION	(BTU/hr)			
	CARRIED BY WATER	CARRIED BY EXHAUST	DISPERSED TO ENVIRONMENT	TOTAL OUTPUT
PROCESS MODULE	9K	8K	20K	37.4K

TABLE 3 PROCESS COOLING WATER FLOW SPECIFICATIONS							
DESCRIPTION	FLOW		FITTING	PRESSURE		TEMP	TEMP
	GPM	L/MIN	SIZE	△PSI	MAX		
PROCESS MODULE 2300 VERSYS	4.5	17.04	1/2" HOSE BARB	40	100	15-25°C	
2300 EXELAN	9	34.07					

TABLE 4 CDA								
DESCRIPTION	PRESSURE		FITTING		SOURCE	USAGE	FLOW (LPM)	FILTER (μ)
	PSI	±	SIZE	TYPE				
PROCESS MODULE	90	5	3/8"	COMPRESSION	TM	INTER-MITTENT	10	.05

TABLE 5 HOUSE N2								
DESCRIPTION	PRESSURE		FITTING		SOURCE	USAGE	FLOW	FILTER (μ)
	PSI	±	SIZE	TYPE				
TURBOMOLECULAR PUMP PURGE & FORELINE BALLAST	50	2	1/4"	VCR (MALE)	TM	CONT	100 SCCM (MIN)	.05

TABLE 6 SYSTEM EXHAUST REQUIREMENTS									
DESCRIPTION	DRAW (CFM)	H20 IN	SYSTEM	HAZARD	DUCT	SIZE	FLANGE TYPE	OIL CONTENT	REMOVABLE CONNECTION
UPPER ENCLOSURE	150	.50	SCRUBBER	POSSIBLE *	4.0	10.2	TUBE	NO	YES
DUCT MATERIAL	FLEXIBLE MATERIAL OR SPIRAL WIRE REINFORCED PVC FUME DUCT (WITH V-Ø FLAMMABLITY RATING UNDER UL-94 AND UL RECOGNITION)								

*ONLY IN THE EVENT OF A PRIMARY CONTAINMENT FAILURE. EXHAUST PROVIDES SECONDARY BACKUP CONTAINMENT.
*IT IS RECOMMENDED THAT THE DRAW BE MEASURED AT A POINT FOUR DUCT DIAMETERS DOWNSTREAM OF THE EXHAUST PORT.

TABLE 7 POWER REQUIREMENTS								
DESCRIPTION	VOLTS (AC)	Hz	PHASE	WIRE	TYPE	AMPS		CONDUIT REQUIRED
MAIN POWER	$208^{+10\%}_{-10\%}$	50/60	3	4	DELTA	VERSYS	50	1 1/4"
						2300 EXELAN	70	

SINGLE POWER INPUT FOR SYSTEM. REQUIRES AN 8-FOOT EARTH GROUND COPPER-CLAD ROD.

TABLE 8 HELIUM							
DESCRIPTION	PRESSURE		FITTING		FLOW	SOURCE	USAGE
	PSI	±	SIZE	TYPE			
WAFER COOLING	10	2	1/4"	VCR (MALE)	50 SCCM MIN	TM	INTER-MITTENT

TABLE 16 WEIGHT	
TOTAL WEIGHT LBS (KG)	1500 (680)
LOAD PER LEVELING PAD "A" LBS (KG)	375 (170)

TABLE 16 PHYSICAL DIMENSIONS									
DESCRIPTION	WIDTH IN	WIDTH MAX CM	DEPTH IN	DEPTH MAX CM	HEIGHT IN	HEIGHT MAX CM	CENTER OF GRAVITY x,y,z FROM 0,0
300mm PM	34.22	86.9	29.59	75.1	76.95	195.3	1.05, 15.87, 31.34

TABLE 16 SEISMIC TIE DOWN	
ATTACHMENT FEATURE	1/2-13 UNC X .68 MAX

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TABLE 9	ENVIRONMENT			
DESCRIPTION	TEMP	HUMIDITY	VIBRATION SENSITIVITY	EMISSION
CHILLER (EDWARDS 40/80*)	10-26°C	NON-CONDENSING	NONE	SLIGHT
ROUGHING PUMP (iH 600)	5-40°C	NON-CONDENSING 90% RA	NONE	YES

TABLE 10	THERMAL OUTPUT (BTU/HR)			
DESCRIPTION	WATER	EXHAUST	ENVIROMENT	TOTAL
CHILLER (EDWARDS 40/80*)	12.5K	N/A	2.5K	15K
ROUGHING PUMP (iH 600)	3.2K	3K	7K	16K

TABLE 11	PROCESS COOLING WATER FLOW SPECIFICATION				
DESCRIPTION	FLOW	PRESSURE △ AT COMPONENT	MAX PRESSURE	FILTRATION	CONNECTION
CHILLER (EDWARDS 40/80*)	3-6 GPM (11.5-23 LPM)	40 PSI (MIN)	100 PSI	<200 μ	1/2" BARBED FITING
ROUGHING PUMP (iH 600)	4 LPM MIN	15 PSI	100 PSI	<200 μ	3/8" BSP FEMALE OUTLET 3/8" BSP MAL INLET

TABLE 12	HOUSE N2			
DESCRIPTION	FLOW	PRESSURE	FILTRATION	CONNECTION
ROUGHING PUMP (iH 600)	60 LPM MAX. 44 TYP	20-100 PSI	<30 μ	1/4" TUBE COMPRESSION FTG (MULTIPLE LOCATION ON THE PUMP)

TABLE 13	SCRUBBED EXHAUST REQUIREMENTS FOR BACKING PUMP		
DESCRIPTION	FLOW	CONNECTION	EXHAUST HAZARDS
ROUGHING PUMP (iH 600)	40 CFM BURST (ON PUMP DOWN) 1 LPM SCCM AVG	NW40	TOXIC, CORROSIVE, CONDENSABLE

TABLE 14	ELECTRICAL POWER REQUIREMENTS	
DESCRIPTION	POWER	HOOKUP CONNECTION
CHILLER (EDWARDS 40/80*)	208 $^{+10\%}_{-15\%}$ VAC 3ø 50/60 HZ 30 AMP	FITTED WITH 10' POWER CORD WITH 5 PIN TWIST LOCK (L21-30 P) PLUG
ROUGHING PUMP (iH 600)	208 $^{+10\%}_{-10\%}$ VAC 3ø 50/60 HZ 26 AMP	TERMINAL BLOCK

TABLE 15	BACKING PUMP & PUMPLINE SPECIFICATIONS	
DESCRIPTION	PUMPING SPEED REQUIRED PM (OUTLET & TURBO)	PUMPLINE CONDUCTANCE- PM TO ROUGHING PUMP
BACKING PUMP (iH 600)	20 CFM 1 TORR	≥50 CFM 1 TORR

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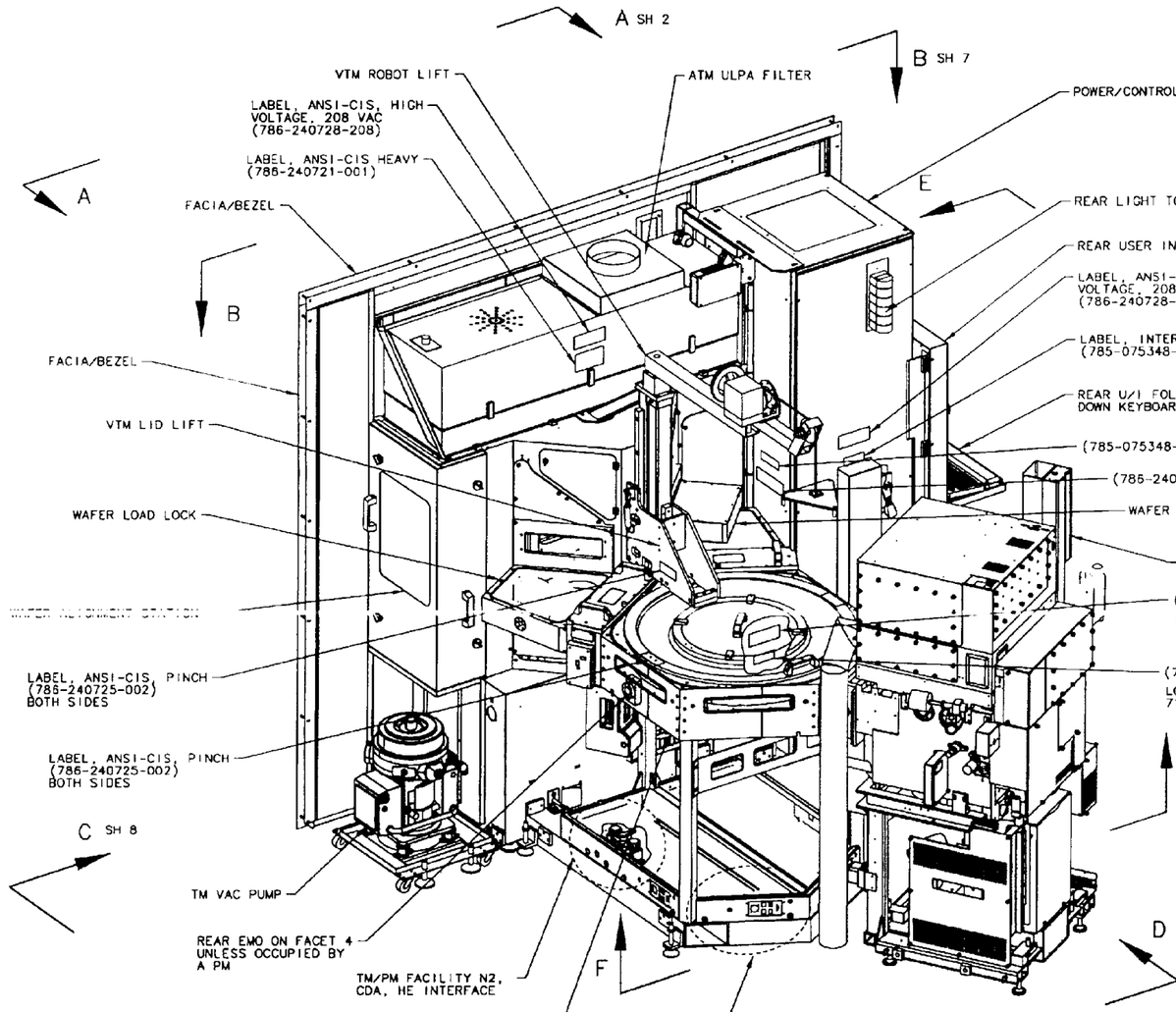
SCALE NONE		SHEET 6 OF 6

CAD SOFTWARE: I-DEAS

REVISIONS						
ZONE	REV.	DESCRIPTION	INC BY	CHECK	APVD	DATE
	J	SH 7: ADDED SYSTEM CONFIG TABLE	LB 5-30-01			6-5-01



NOTES (UNLESS OTHERWISE SPECIFIED):

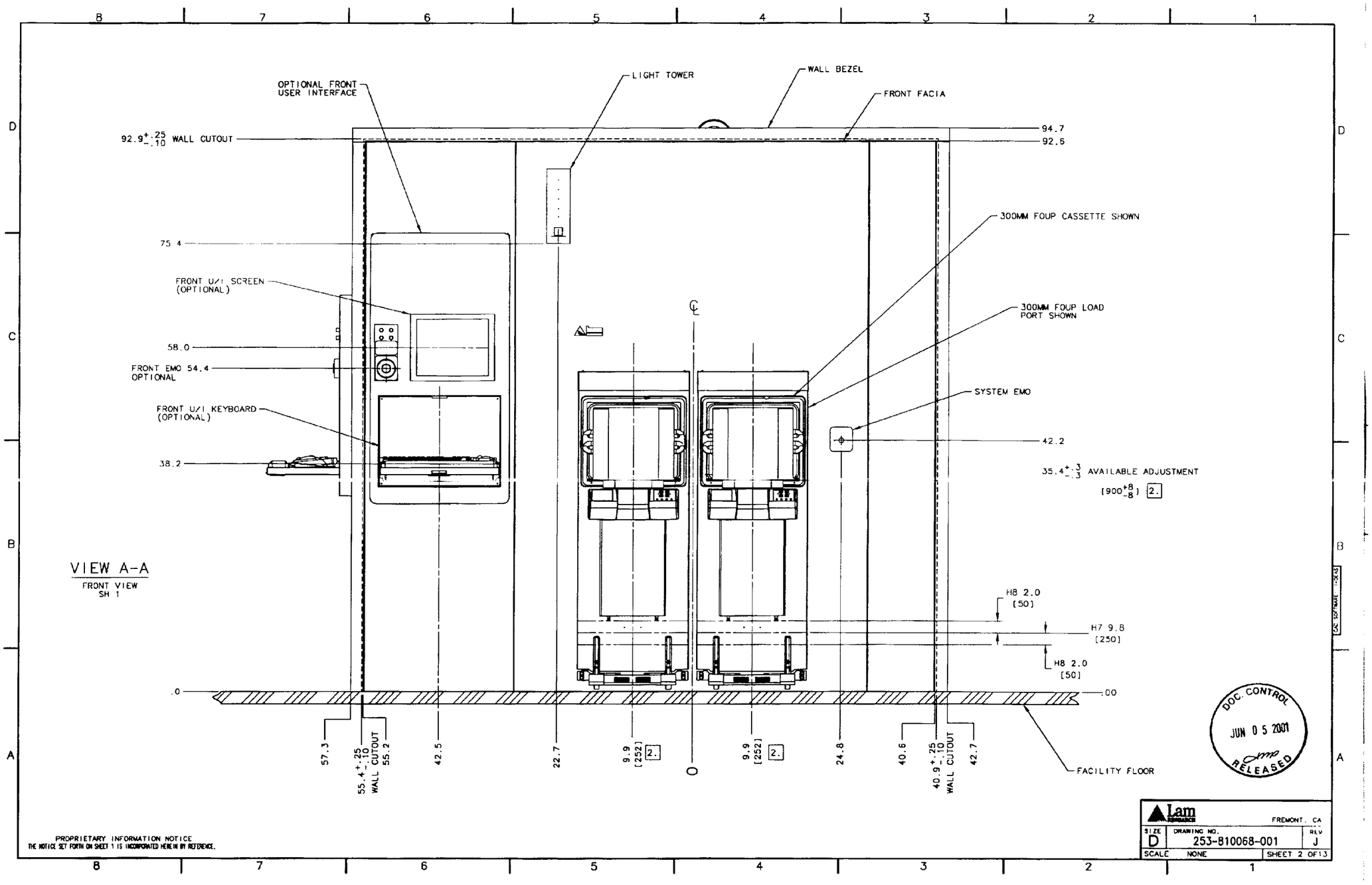
1. UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE NOMINAL AND FOR REFERENCE ONLY.
2. DIMENSIONS APPLY FOR ALL FRONT END OPTIONS.
3. FOR FACILITY INSTALLATION AND CALIBRATION INSTRUCTIONS SEE 202-810068-001.
4.

-002	FACIL,REQT,DWG,RPDB

-002 -001	ITEM NO.	LAM / MFR PART NO.	DESCRIPTION
QTY REQD			

BILL OF MATERIAL

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS ± — DECIMALS .XX ± — .XXX ± — ANGLES ± 1° MACHINED SURFACES 63 DEBURR & BREAK SHARP EDGES	DRAWN C ZIEMAN	DATE 9-28-99	Lam RESEARCH FREMONT, CA
	CHECKED H WONG	10-14-99	
	ENGINEER C ZIEMAN	10-11-99	TITLE FACILITY REQUIREMENTS, DRAWING, 300MM
MATERIAL -----	APPROVED		ABBREVIATED TITLE (30 CHAR. MAX) FACIL REQT,DWG,300MM
	MFG ENGR		
FINISH -----	THIRD ANGLE PROJECTION		SIZE D DRAWING NO. 253-810068-001 REV J
	DO NOT SCALE DRAWING		SCALE NONE SHEET 1 OF 13


OPTIONAL FRONT USER INTERFACE
LIGHT TOWER
WALL BEZEL
FRONT FACIA
92.9 +.25 -.10 WALL CUTOUT
94.7
92.6
75.4
300MM FOUP CASSETTE SHOWN
FRONT UI SCREEN (OPTIONAL)
300MM FOUP LOAD PORT SHOWN
58.0
FRONT EMO 54.4 OPTIONAL
SYSTEM EMO
FRONT UI KEYBOARD (OPTIONAL)
42.2
38.2
35.4 +.3 -.3 AVAILABLE ADJUSTMENT
[900 +8 -8] 2.
VIEW A-A
FRONT VIEW
SH 1
H8 2.0
[50]
H7 9.8
[250]
H8 2.0
[50]
.0
.00
57.3
55.4 +.25 -.10 WALL CUTOUT
55.2
42.5
22.7
9.9 [252] 2.
0
9.9 [252] 2.
24.8
40.6
40.9 +.25 -.10 WALL CUTOUT
42.7
FACILITY FLOOR
DOC. CONTROL
JUN 0 5 2001
RELEASED
Released
Printed: Wed Aug 8 17:05:53 GMT 2001
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SIZE D
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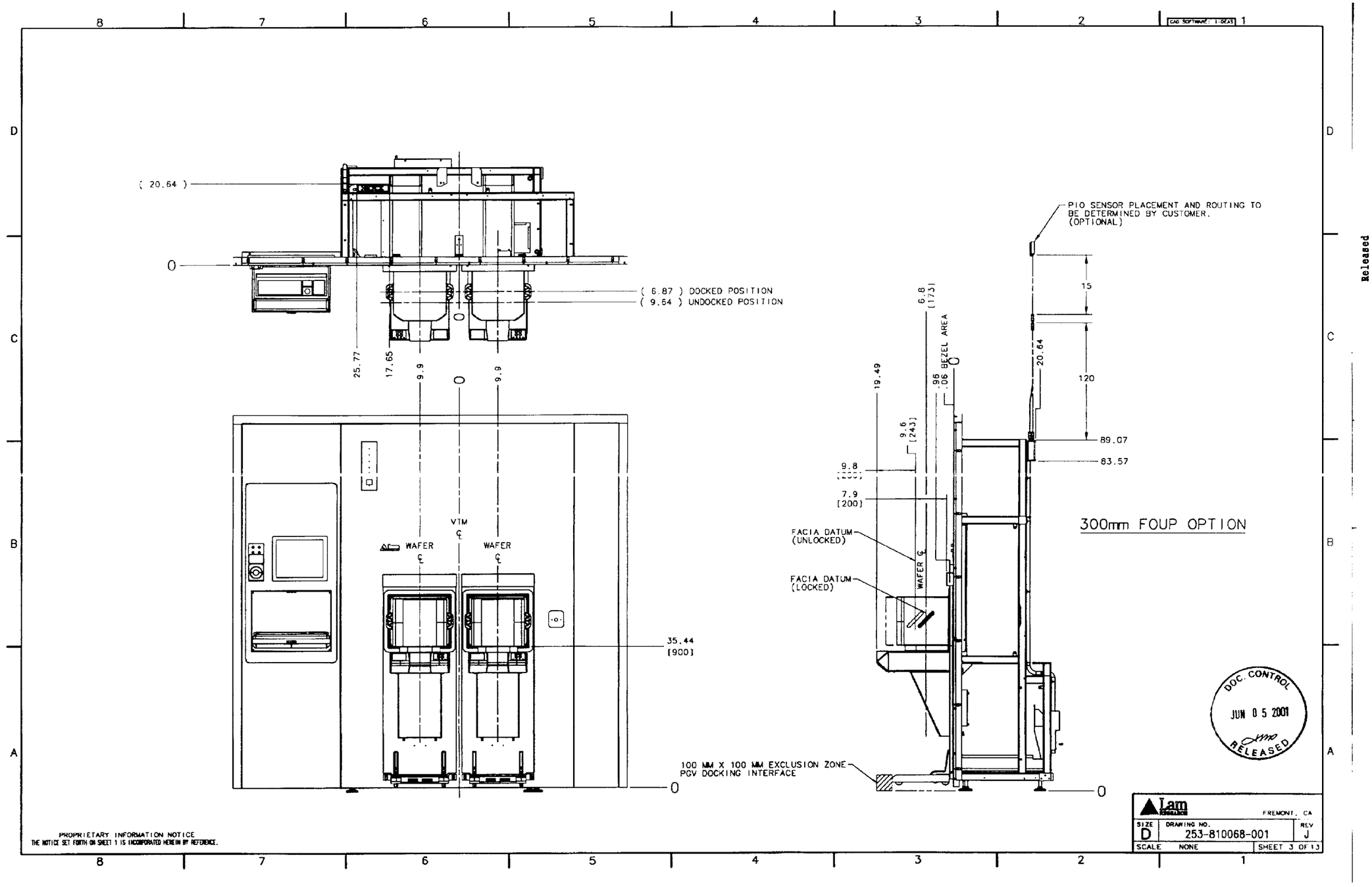
REV J
SCALE NONE
SHEET 2 OF 13


(20.64)
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(6.87) DOCKED POSITION
(9.84) UNDOCKED POSITION
25.77
17.65
9.9
9.9
VTM
WAFER
WAFER
35.44
[900]
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PIO SENSOR PLACEMENT AND ROUTING TO BE DETERMINED BY CUSTOMER. (OPTIONAL)
15
20.64
120
89.07
83.57
19.49
6.8
(173)
.96
.06
BEZEL AREA
9.6
[243]
9.8
7.9
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FACIA DATUM (UNLOCKED)
FACIA DATUM (LOCKED)
WAFER
300mm FOUP OPTION
100 MM X 100 MM EXCLUSION ZONE
PGV DOCKING INTERFACE
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JUN 05 2001
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REV J
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SHEET 3 OF 13
Released
Printed: Wed Aug 8 17:06:15 GMT 2001
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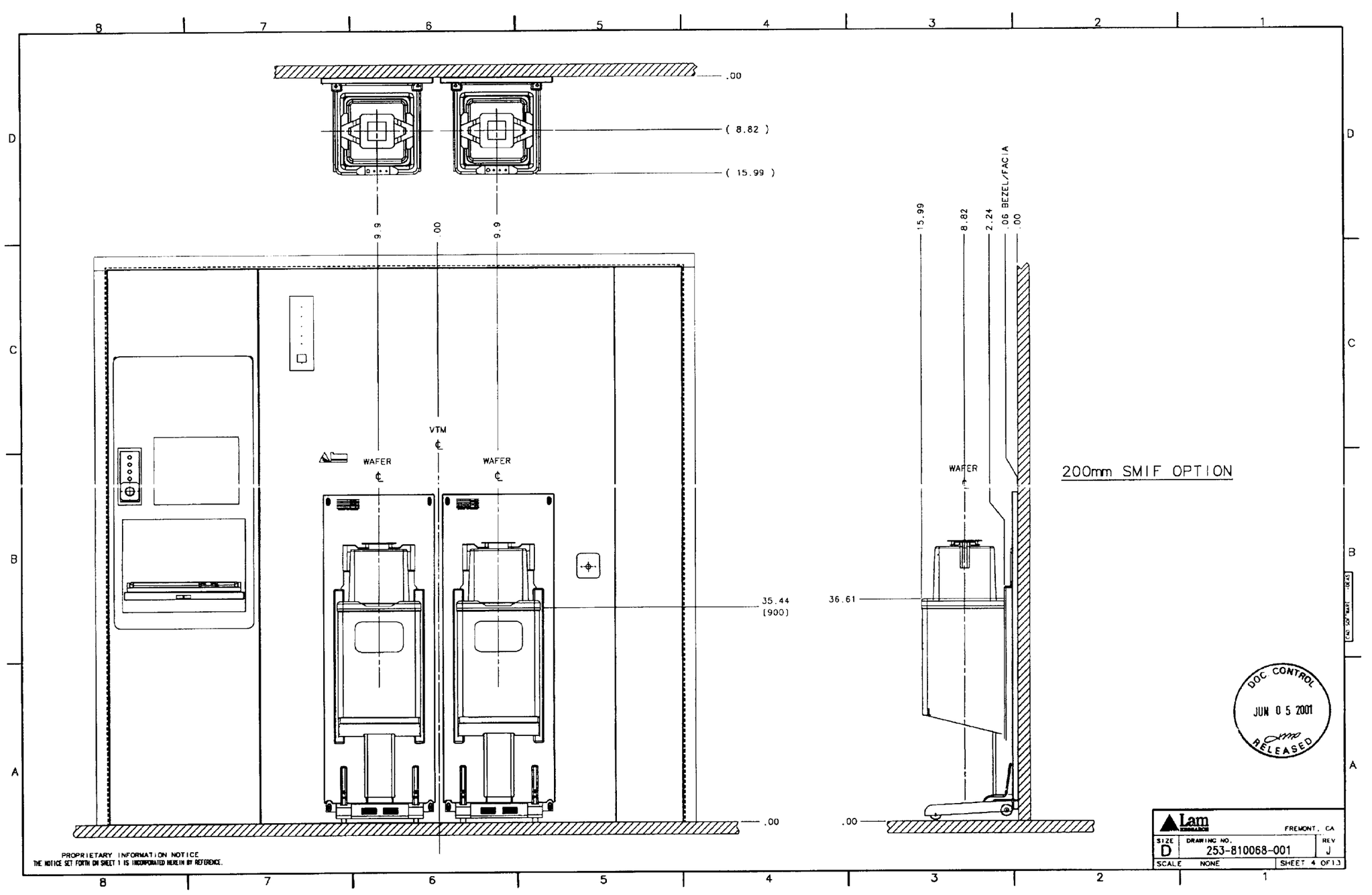
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(15.99)
9.9
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VTM
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2.24
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36.61
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200mm SMIF OPTION
Released
Printed: Wed Aug 8 17:06:00 GMT 2001
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JUN 05 2001
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RESERVED FOR 200mm
AGV CONFIGURATION

200mm AGV OPTION

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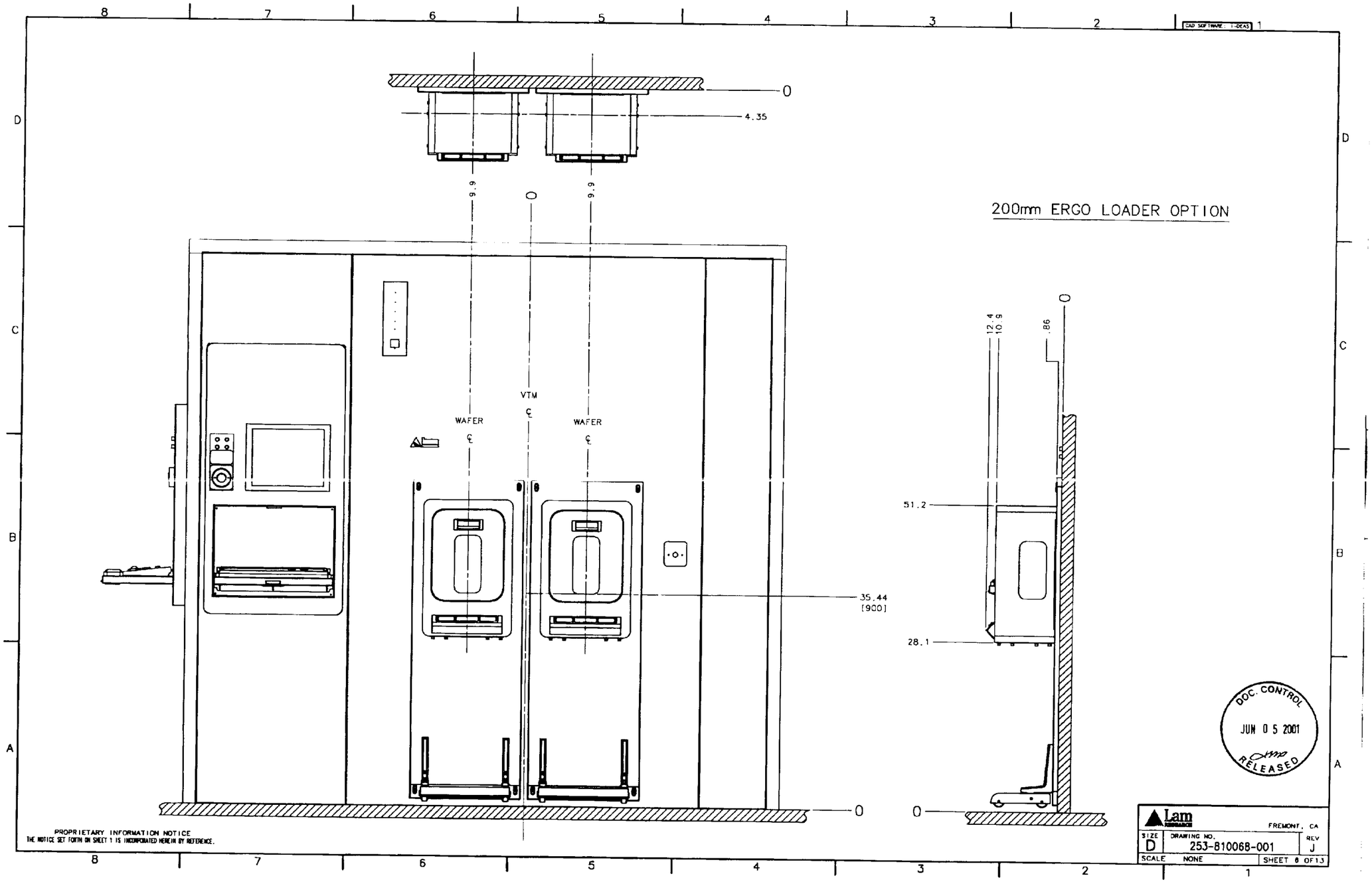
200mm ERGO LOADER OPTION
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9.9
VTM
WAFER
WAFER
35.44
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12.4
10.9
.86
0
51.2
28.1
0
Released
Printed: Wed Aug 8 17:06:22 CDT 2001
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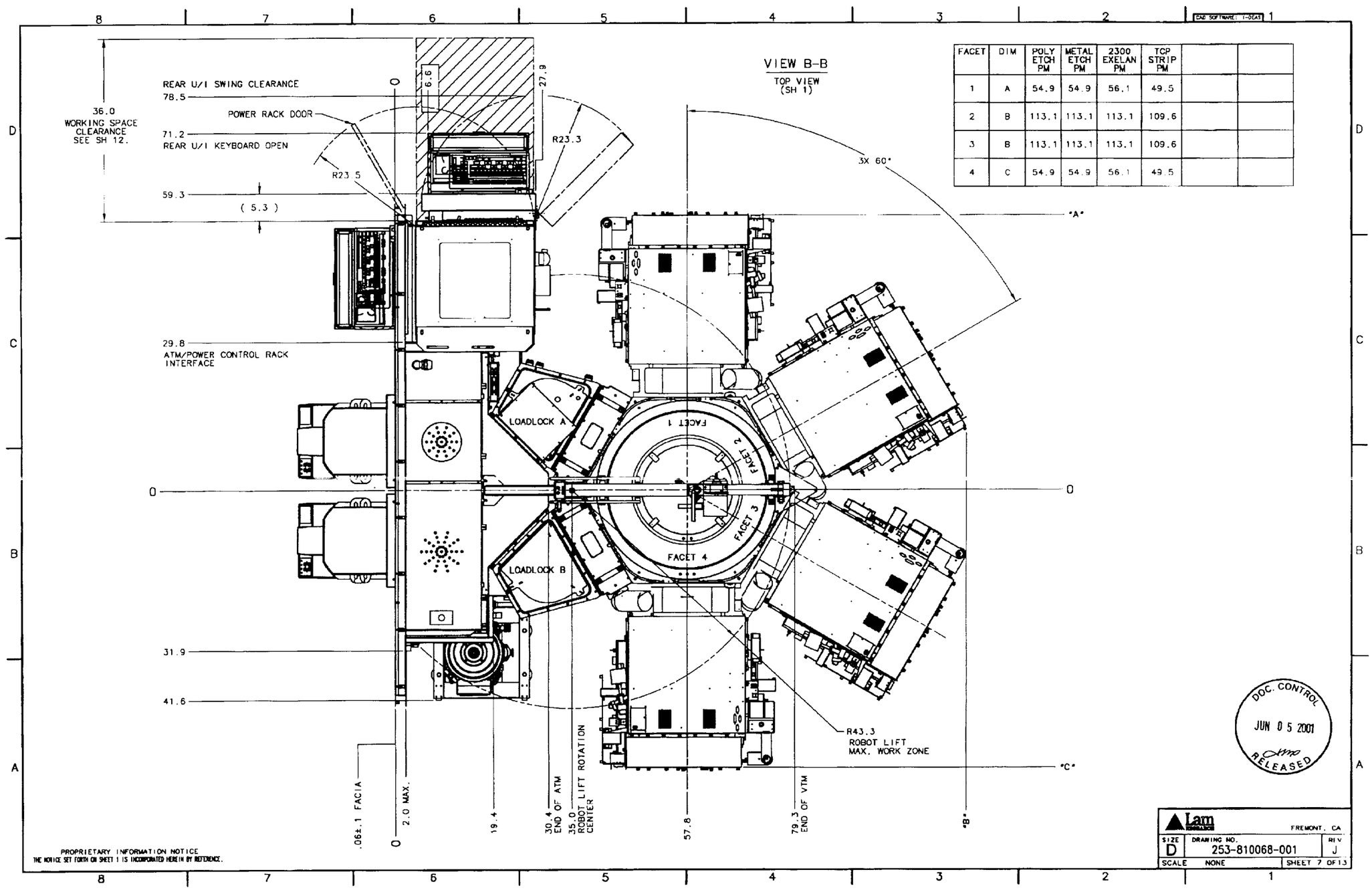

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2	B	113.1	113.1	113.1	109.6		
3	B	113.1	113.1	113.1	109.6		
4	C	54.9	54.9	56.1	49.5		

Released
Printed: Wed Aug 8 17:06:29 GMT 2001
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JUN 05 2001
RELEASED

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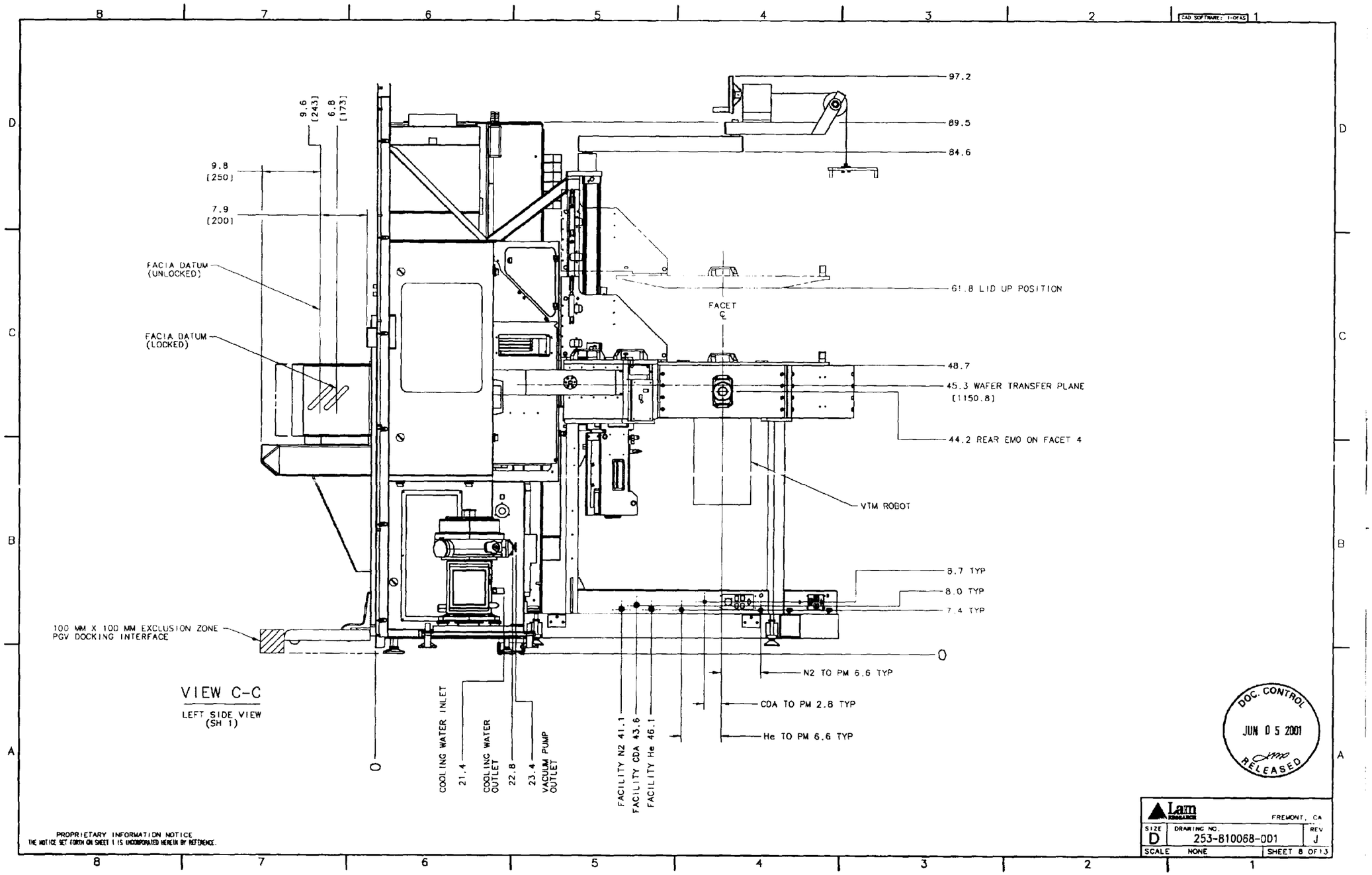
97.2
89.5
84.6
9.6 [243]
6.8 [173]
9.8 [250]
7.9 [200]
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FACIA DATUM (LOCKED)
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FACET ℄
48.7
45.3 WAFER TRANSFER PLANE [1150.8]
44.2 REAR EMO ON FACET 4
VTM ROBOT
8.7 TYP
8.0 TYP
7.4 TYP
100 MM X 100 MM EXCLUSION ZONE PGV DOCKING INTERFACE
0
N2 TO PM 6.6 TYP
CDA TO PM 2.8 TYP
He TO PM 6.6 TYP
COOLING WATER INLET
21.4
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22.8
23.4
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LEFT SIDE VIEW (SH 1)
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Released
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REV J
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PROPRIETARY INFORMATION NOTICE
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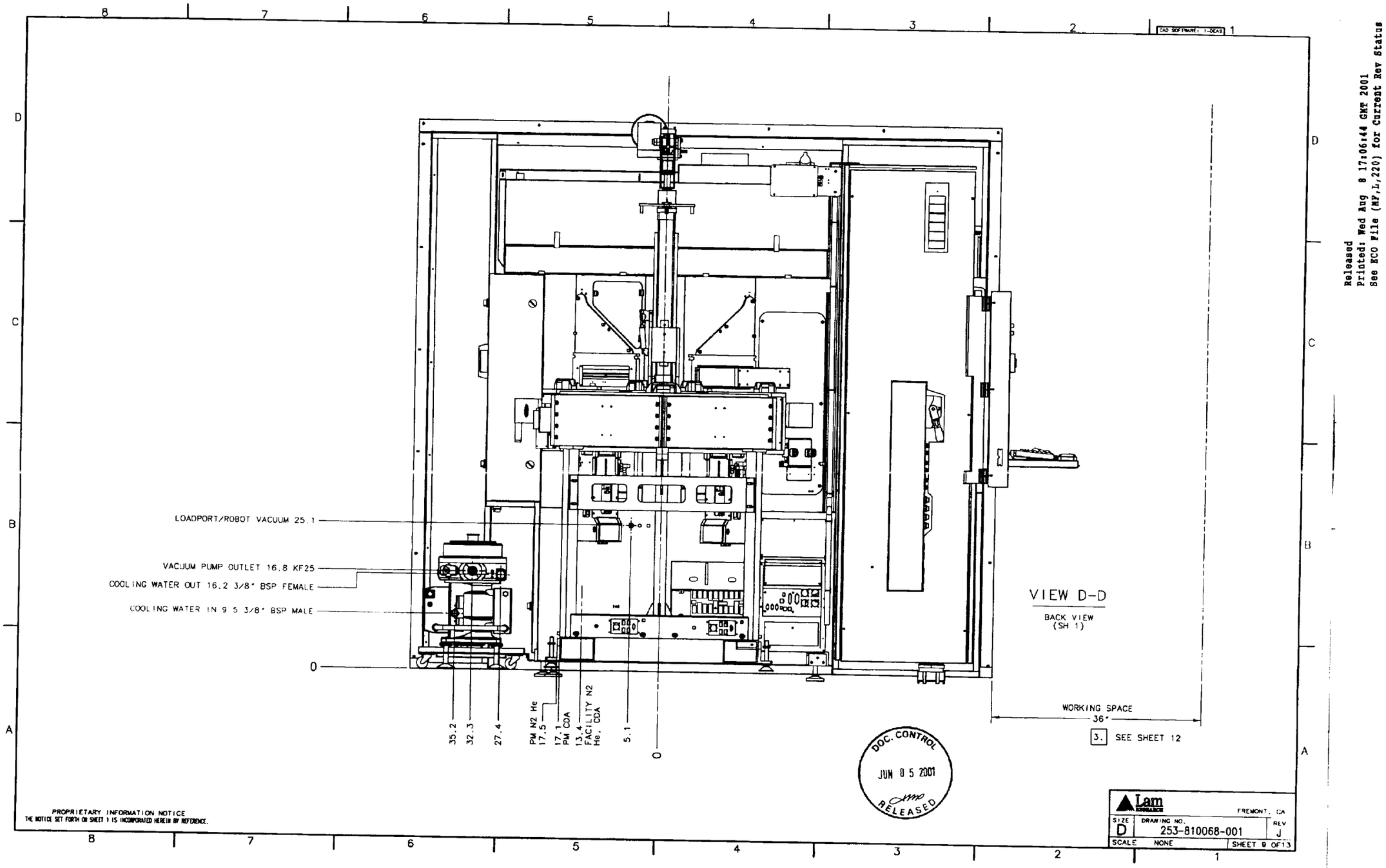
CAD SOFTWARE: I-DEAS
Released
Printed: Wed Aug 8 17:06:44 GMT 2001
See ECO File (MP,L,220) for Current Rev Status
LOADPORT/ROBOT VACUUM 25.1
VACUUM PUMP OUTLET 16.8 KF25
COOLING WATER OUT 16.2 3/8" BSP FEMALE
COOLING WATER IN 9.5 3/8" BSP MALE
0
35.2
32.3
27.4
PM N2 He 17.5
17.1 PM CDA
13.4 FACILITY N2 He, CDA
5.1
0
VIEW D-D
BACK VIEW (SH 1)
WORKING SPACE 36"
3. SEE SHEET 12
DOC. CONTROL JUN 05 2001 RELEASED
PROPRIETARY INFORMATION NOTICE
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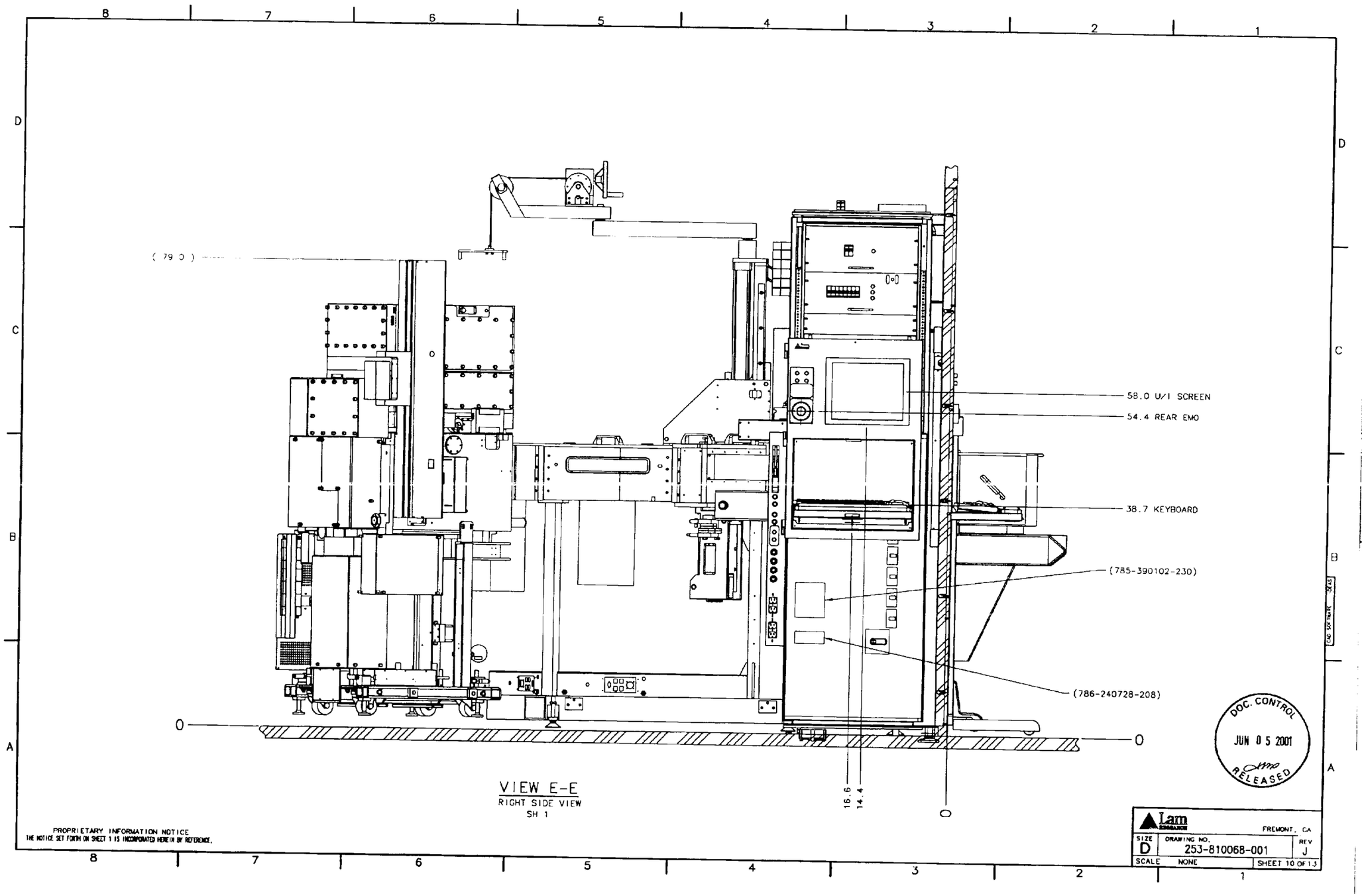
Lam RESEARCH FREMONT, CA
SIZE D
DRAWING NO. 253-810068-001
REV J
SCALE NONE
SHEET 9 OF 13


58.0 U/I SCREEN
54.4 REAR EMO
38.7 KEYBOARD
(785-390102-230)
(786-240728-208)
16.6
14.4
0
VIEW E-E
RIGHT SIDE VIEW
SH 1
Released
Printed: Wed Aug 8 17:06:51 GMT 2001
See ECO File (MF,L,220) for Current Rev Status
DOC. CONTROL
JUN 05 2001
RELEASED
PROPRIETARY INFORMATION NOTICE
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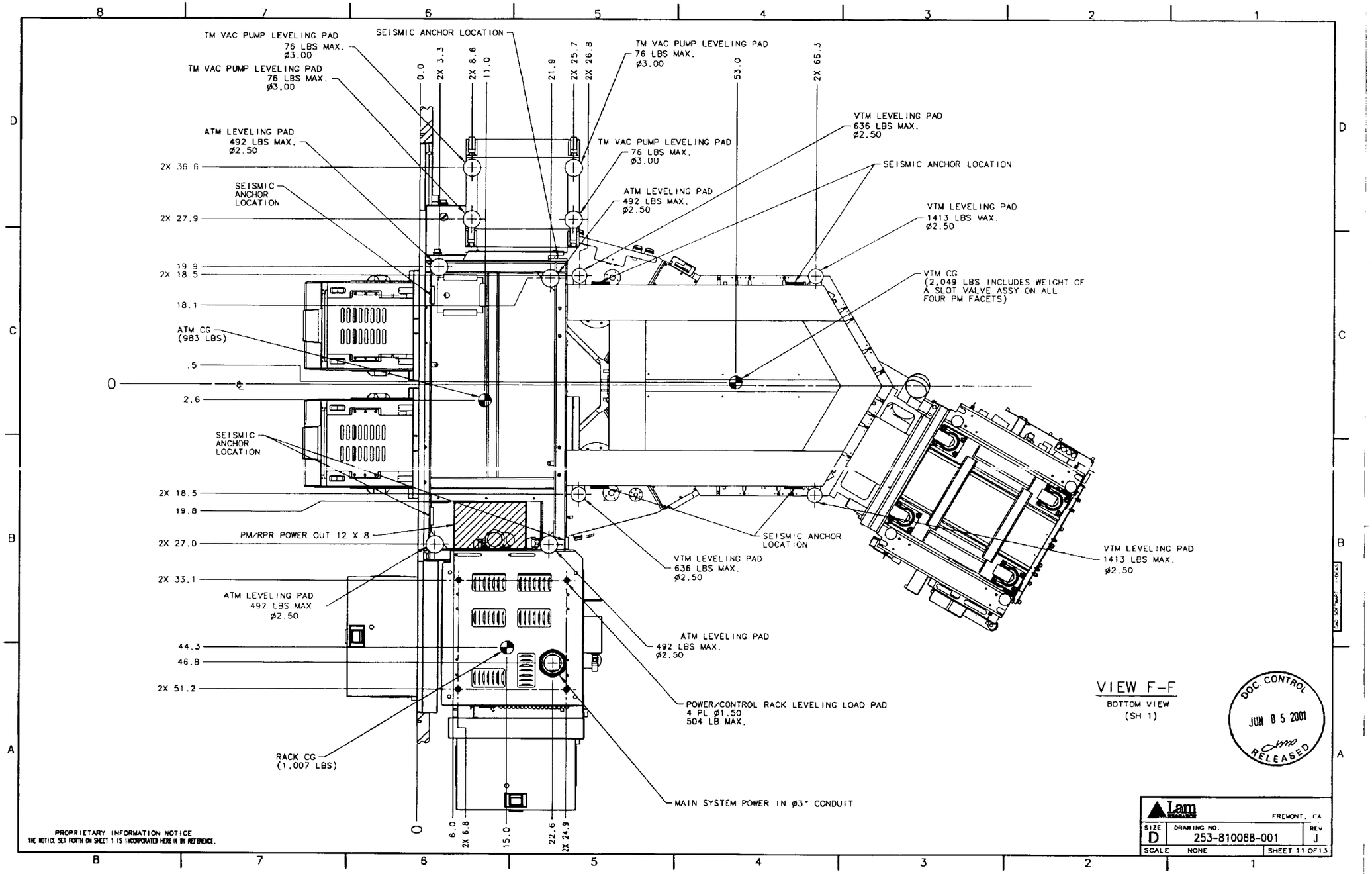
Lam
FREMONT, CA
SIZE D
DRAWING NO. 253-810068-001
REV J
SCALE NONE
SHEET 10 OF 13


TM VAC PUMP LEVELING PAD
76 LBS MAX.
ø3.00
TM VAC PUMP LEVELING PAD
76 LBS MAX.
ø3.00
SEISMIC ANCHOR LOCATION
0.0
2X 3.3
2X 8.6
11.0
21.9
2X 25.7
2X 26.8
TM VAC PUMP LEVELING PAD
76 LBS MAX.
ø3.00
53.0
2X 66.3
VTM LEVELING PAD
636 LBS MAX.
ø2.50
ATM LEVELING PAD
492 LBS MAX.
ø2.50
2X 36.6
TM VAC PUMP LEVELING PAD
76 LBS MAX.
ø3.00
SEISMIC ANCHOR LOCATION
SEISMIC ANCHOR LOCATION
2X 27.9
ATM LEVELING PAD
492 LBS MAX.
ø2.50
VTM LEVELING PAD
1413 LBS MAX.
ø2.50
19.9
2X 18.5
18.1
VTM CG
(2,049 LBS INCLUDES WEIGHT OF A SLOT VALVE ASSY ON ALL FOUR PM FACETS)
ATM CG
(983 LBS)
.5
0
℄
2.6
SEISMIC ANCHOR LOCATION
2X 18.5
19.8
PM/RPR POWER OUT 12 X 8
2X 27.0
SEISMIC ANCHOR LOCATION
VTM LEVELING PAD
636 LBS MAX.
ø2.50
VTM LEVELING PAD
1413 LBS MAX.
ø2.50
2X 33.1
ATM LEVELING PAD
492 LBS MAX
ø2.50
ATM LEVELING PAD
492 LBS MAX.
ø2.50
44.3
46.8
2X 51.2
POWER/CONTROL RACK LEVELING LOAD PAD
4 PL ø1.50
504 LB MAX.
RACK CG
(1,007 LBS)
MAIN SYSTEM POWER IN ø3" CONDUIT
0
6.0
2X 6.8
15.0
22.6
2X 24.9
VIEW F-F
BOTTOM VIEW
(SH 1)
DOC. CONTROL
JUN 05 2001
RELEASED
PROPRIETARY INFORMATION NOTICE
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Lam RESEARCH
FREMONT, CA
SIZE D
DRAWING NO. 253-810068-001
REV J
SCALE NONE
SHEET 11 OF 13
Released
Printed: Wed Aug 8 17:06:58 GMT 2001
See ECO File (MF,L,220) for Current Rev Status

TRANSPORT MODULE FACILITY REQUIREMENTS

TABLE 1. SYSTEM POWER REQUIREMENTS									
DESCRIPTION	SUPPLY POINT INTERCONNECT	VOLTS (AC)	Hz	PHASE	WIRE	TYPE	AMPS (MAX)	MAIN CB RATING	CONDUIT REQUIRED
MAIN SYSTEM POWER	----	208 +10% -10%	50/60	3	4	DELTA	350	400 AMPS	ø3"

NOTE: 1. SINGLE POWER INPUT FOR SYSTEM. REQUIRES AN 8-FOOT EARTH GROUND COPPER-CLAD ROD.

2. MAIN POWER CABLE IS PROVIDED BY A CUSTOMER.

3. DEPTH OF WORKING SPACE SHALL NOT BE LESS THAN 36".

4. MAIN CB IS INSTALLED WITH LINE TERMINALS DOWN AND LOAD TERMINALS UP.

TABLE 3. FACILITY GAS REQUIREMENTS											
REF.	GAS REQUIRED	SUPPLY POINT INTERCONNECT	PRESSURE (PSIG)	INLET TEMPERATURE (°F)	REGULATOR REQUIRED	CLEANLINESS REQUIREMENT (QUALITY)	MAX FLOW	FITTING MATERIAL	FITTING SIZE (IN)	FITTING TYPE	MIN. FILTRATION (μ)
FOR TM/PM	CDA	TBD	90 ±5	AMBIENT	NO	NONE	10 LPM + 10 LPM/PM	BRASS	3/8	COMPRESSION	0.05
FOR TM/PM	N2	TBD	50 ±2	AMBIENT	NO	PROCESS GRADE	30 LPM	SST	1/4	MALE VCR	0.05
FOR WAFER COOLING	He	TBD	50 ±2	AMBIENT	NO	PROCESS GRADE	*50 SCCM MIN	SST	1/4	MALE VCR	0.05

*MULTIPLY FLOW BY NUMBER OF PMS FOR SYSTEM HE CONSUMPTION.

TABLE 5. COOLING WATER REQUIREMENTS									
DESCRIPTION	LIQUID REQUIRED	SUPPLY POINT INTERCONNECT	SUPPLY TEMPERATURE	FLOW (GPM)	PRESSSURE Δ	PRESSURE MAX	FILTER (μ)	CONNECTION	THERMAL OUTPUT
TM VAC PUMP (EDWARDS IPX 100)	H2O	TBD	35°C MAX	0.528 TO 0.793	30 PSI MIN	100 PSIG	<46	QUICK RELEASE: OUTLET 3/8" BSP FEMALE INLET 3/8" BSP MALE	6824 BTU/HR TYPICAL

TABLE 6. FACILITY VACUUM REQUIREMENTS							
DESCRIPTION	SUPPLY POINT INTERCONNECT	DRAW (scfm)	VACUUM (in H_2O)	AVG. FLOW (LPM)	CONNECTION	MATERIAL	EXHAUST HAZARDS
TM VAC PUMP (EDWARDS IPX 100)	TBD	47	≤.7	18	NW 25	SST	TOXIC, CORROSIVE, CONDENSABLE
LOAD PORT/ROBOT	TBD	---	321	CLAMP ONLY	3/8 PUSH TO CONNECT	BRASS	NONE

NOTE: THE DRAW REQUIREMENT IS SPECIFIED AT THE VACUUM PUMP INTERFACE CONNECTING POINT (I.E. WITHOUT 90° ADAPTER OR FLEX SECTION).

TABLE 8. ENVIRONMENTAL REQUIREMENTS				
DESCRIPTION	TEMPERATURE (°C)	HUMIDITY (%)	VIBRATION	
			SENSITIVITY	EMISSION
TRANSPORT MODULE	25 ±5	<50	SLIGHT	NONE

TABLE 9. TM WEIGHT	
DESCRIPTION	WEIGHT LBS (KG)
TRANSPORT MODULE	4,039 (1,832)
LOAD PER LEVELING PAD	1,413 (641) MAX

TABLE 10. TM DIMENSIONS			
DESCRIPTION	WIDTH IN (CM)	DEPTH IN (CM)	HEIGHT IN (CM)
TRANSPORT MODULE	113 (287)	80 (203)	92.6 (235)

TABLE 11. THERMAL OUTPUT		
DESCRIPTION	DISPERSED TO ENVIRONMENT	TOTAL
TRANSPORT MODULE	10.2 kBTU/hr	10.2 kBTU/hr

DOC. CONTROL APR 2 2001 RELEASED

TM TO PM & RPDB CONNECTIONS

TABLE 12. POWER REQUIREMENTS FROM TM POWER CONTROL RACK							
DESCRIPTION	VOLTS (AC)	Hz	PHASE	WIRE	TYPE	AMPS (MAX)	CONDUIT REQUIRED
PROCESS MODULE	208 +10% -10%	50/60	3	4	DELTA	50	ø1.25"
REMOTE POWER DISTRIBUTION BOX	208 +10% -10%	50/60	3	4	DELTA	200 AMP CB	ø2"

NOTE: POWER CABLE FROM POWER CONTROL RACK TO RPDB IS PROVIDED BY A CUSTOMER.

TABLE 13. TM TO PM GAS CONNECTIONS	
DESCRIPTION	CONNECTION
HELIUM	1/4 MALE VCR
HOUSE N2	1/4 MALE VCR
CDA	3/8 COMPRESSION

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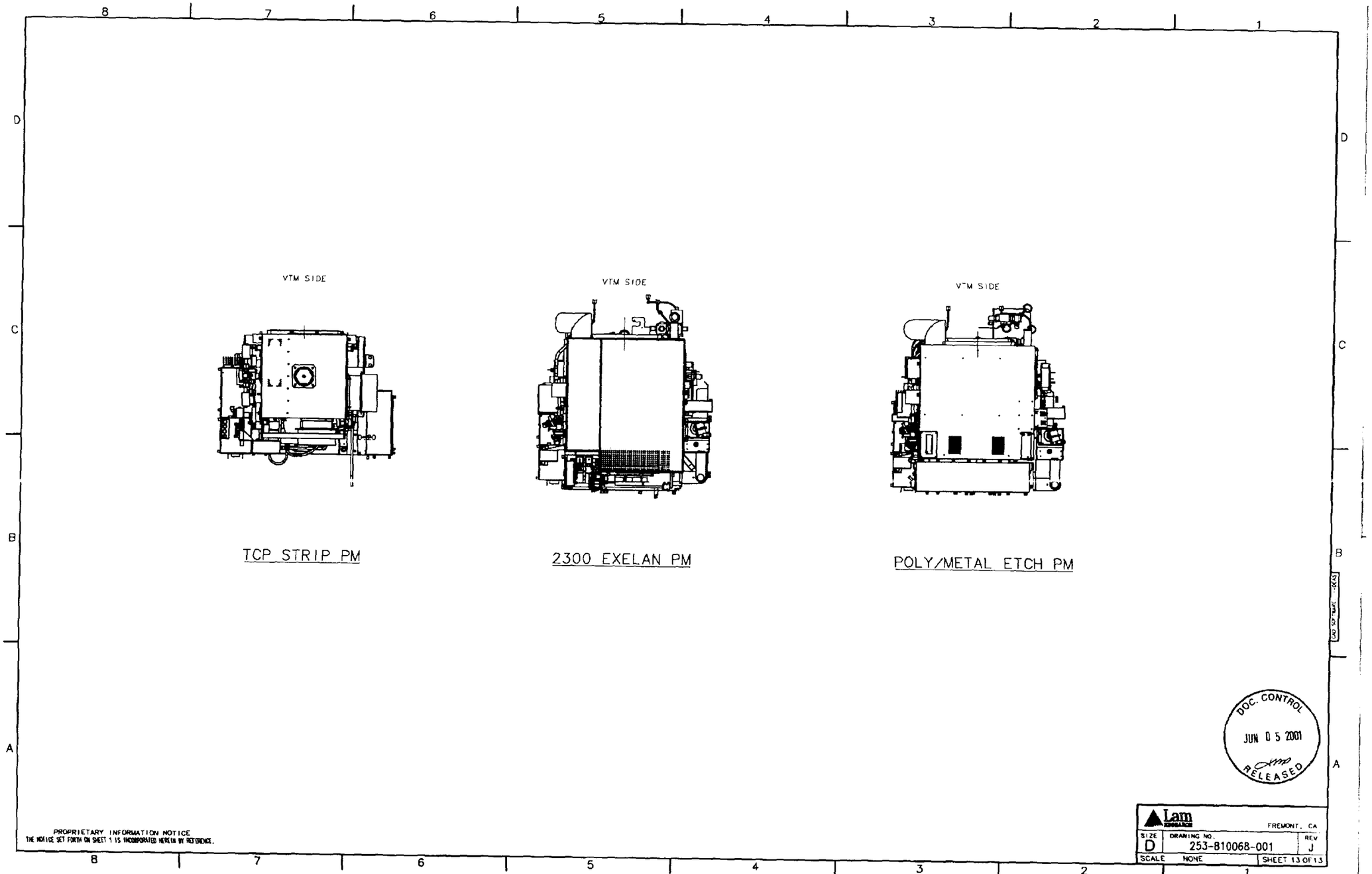
SIZE	DRAWING NO.	REV
D	253-810068-001	G
SCALE NONE		SHEET 12 OF12


VTM SIDE
VTM SIDE
VTM SIDE
TCP STRIP PM
2300 EXELAN PM
POLY/METAL ETCH PM
Released
Printed: Wed Aug 8 17:07:12 GMT 2001
See ECO File (MF,L,220) for Current Rev Status
DOC. CONTROL
JUN 05 2001
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Lam RESEARCH
FREMONT, CA
SIZE D
DRAWING NO. 253-810068-001
REV J
SCALE NONE
SHEET 13 OF 13

TABLE I - LEGEND

DESCRIPTION	SYMBOL	LABEL
2-WAY AIR OPERATED VALVE	NORMALLY OPEN / NORMALLY CLOSED	AOV
HAND/MANUAL SHUT OFF VALVE		HV
BALL VALVE		BV
RIGHT ANGLE FORELINE VALVE	N.C.	AOV
3-WAY AIR OPERATED VALVE	IN EX N.O. / IN EX N.C.	AOV
PRESSURE REGULATOR		PR
PRESSURE GAUGE		PG
CHECK VALVE		CV
FLOW RESTRICTOR		FR
H_2O DELIVERY/RETURN		
AIR MUFFLER		
PNEUMATIC LINE		
GAS DELIVERY/RETURN		
ELECTRICAL SIGNAL		
RF POWER		
PIPE PLUG		
FAN		
QUICK DISCONNECT		
INTERLOCK, HARD	I	
INTERLOCK, SOFT	S	
REDUCER		
ELECTRIC MOTOR	MTR	
HEATER ELEMENT		
MASS FLOW	MFCx	

TABLE I - LEGEND

DESCRIPTION	SYMBOL	LABEL
CAPACITANCE MANOMETER W/ SWITCH SETPOINTS	CMx Sx/Sy	
PRESSURE SWITCH	PSx	
PRESSURE CONTROLLER	PCx	
FLOW SWITCH	FSx	
THERMOCOUPLE J TYPE	TC x	
THERMOCOUPLE E TYPE	xx	
FILTER		F
FLOW CONTROLLER		FC
AIR CYLINDER		
2 PORT, 2 POSITION, DIRECT AIR OPERATED, SPRING RETURN, N.C.		
3 PORT, 2 POSITION, DIRECT SOLENOID OP, SPRING RETURN, N.C.	A/B P R	
3 PORT, 2 POSITION, DIRECT AIR OP, SPRING RETURN, N.C.	Z A P1 R1	
4 PORT, 2 POSITION, DOUBLE SOLENOID PILOT OPERATED	B A P R	
QUICK EXHAUST VALVE	R A P	

TABLE II - DEVICES

DEVICE	DESCRIPTION	IO POINTS	RANGE/SET PT	XXXXX
CM1	PROCESS MANOMETER	AI3F	100 mTORR POLY 1 TORR EXELAN	POLY EXELAN
CM2 CM2S1 CM2S2	CHAMBER PRESSURE MANOMETER/ PRESSURE SWITCH/ PRESSURE SWITCH	AII0 DII0 DII1	0-10 TORR 500 mTORR 100 mTORR	
CM3 CM3S1	FORELINE PRESSURE MANOMETER/ PRESSURE SWITCH	AII1 DII2	0-10 TORR 750 mTORR	
CM4	HELIUM BACKSIDE PRESSURE MANOMETER	AI20	0-50 TORR	
PS1	CHAMBER VACUUM SWITCH	DI13	75 TORR	
PS2	CHAMBER ATMOSPHERE SWITCH	DI14	5 TORR DIFF.	
PS3	PNEUMATIC LOW PRESSURE SWITCH	DI17	80 PSIG	
PS4	SCRUBBER EXHAUST	DI05	0.1" OF H_2O	
PC1	HELIUM PRESSURE CONTROLLER	AI21 AO20	0-50 SCCM	
PR-1	PRESSURE REGULATOR, He		30 PSIG/10 PSIG	
PR-2	PRESSURE REGULATOR, N2		30 PSIG/ 7 PSIG	
F-1	FILTER, TMP N2			
F-2	FILTER, HELIUM			
F-3	FILTER, GAS LINE			
FR-1	FIXED ORIFICE, N2, BIAS ELECTRODE ENCLOSURE			
FR-2	FLOW RESTRICTOR			
FR-3	FLOW RESTRICTOR TMP N2			
FR-4	FLOW RESTRICTOR, PIN LIFT DOWN			
FR-5	FLOW RESTRICTOR, PIN LIFT UP			
FS-1	RF GEN COOLANT FLOW SWITCH, BIAS	DI15	.8GPM	POLY
FS-2	RF GEN COOLANT FLOW SWITCH, TCP	DI18	.8GPM	POLY
FS-3	BIAS MATCH FLOW SWITCH UPPER CHAMBER		.2GPM 1.25GPM	POLY EXELAN
FS-4	TCU FLOW SWITCH			
FS-5	UPPER SOURCE FLOW SWITCH		.8GPM	ADP
SW1	GAS RING CLOSED SWITCH			
SW3	BIAS ELECTRODE CLOSED SWITCH			

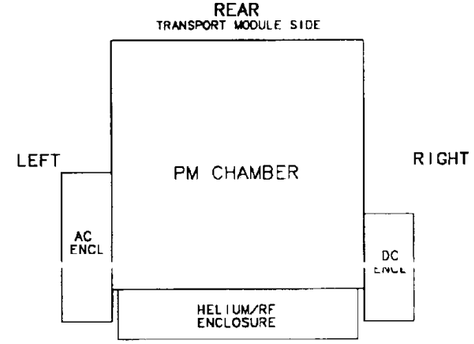
CAD SOFTWARE: I-DEAS

REVISIONS

REV	ZONE	DESCRIPTION	INC BY	CHECK	APVD	DATE
E1		ENGINEERING PROTOTYPE	WY 4-16-98	BD 4-20-98	WY	4-20-98
E2		REVISED PER DCN D22179	BLT 3-16-99	WY 3-24-99	WY	3-24-99
A		REVISED DWG	KN 3-13-00	BD	BD	7-13-00
B		REVISED DWG	BLT 11-30-00			

NOTES (UNLESS OTHERWISE SPECIFIED):

1. REFER TO FACILITIES DRAWING, 253-800096-001.
2. REFER INTERCONNECT DIAGRAM, 224-800096-XXX.
3. REFER TO GAS BOX P&ID.
4. REFER TO SIGNAL LIST 227-800096-001
5. REFER TO TM P & ID FOR TM DETAILS OF INTERFACE, 251-810271-001.



VIEWING ORIENTATION FOR HEATER, THERMOCOUPLE AND OVERTEMP LOCATIONS.

TABLE IV PNEUMATICS LINES

COLOR	TUBE SIZE O.D.	TUBE SIZE I.D.	DISTRIBUTION
RED	5/32	5/64	ISOLATION VALVES
ORANGE	5/32	5/64	MANOMETERS
BLUE/GREEN	5/32	5/64	3 PIN WAFER LIFTER
YELLOW	5/32	5/64	He, N2, & GAS LINES
WHITE	1/4	1/8	CDA PRESSURE

DOC. CONTROL DEC 07 2000 RELEASED

	INITIAL	DATE
DRAWN W. YEE	—	4-16-98
CHECKED B DENTY		4-20-98
ELECT. ENGINEER W. YEE		4-20-98
MECH. ENGINEER		

ALL DIMENSIONS ARE IN INCHES DIMENSIONS IN ( ) ARE MILLIMETERS.

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TITLE (40 CHAR. MAX) DIAG,P &ID,300MM,PM

SIZE	DRAWING NO.	REV
D	251-800096-001	B
	SCALE NONE	SHEET 1 OF 6

Released
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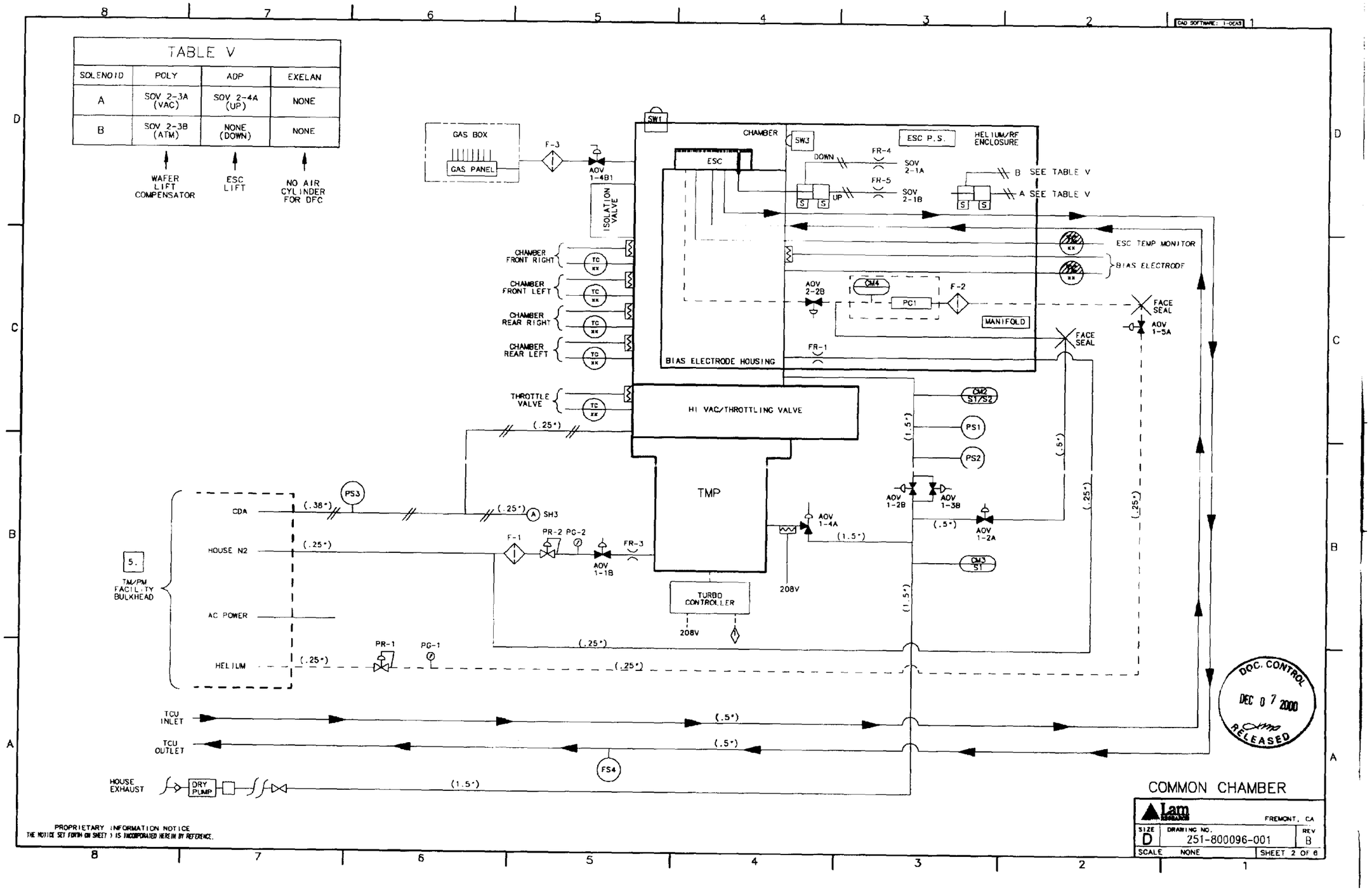
TABLE V
SOLENOID | POLY | ADP | EXELAN
A | SOV 2-3A (VAC) | SOV 2-4A (UP) | NONE
B | SOV 2-3B (ATM) | NONE (DOWN) | NONE
WAFER LIFT COMPENSATOR
ESC LIFT
NO AIR CYLINDER FOR DFC
CAD SOFTWARE: I-DEAS
Released
Printed: Wed Apr 25 22:04:38 GMT 2001
See ECO File (MF,L,220) for Current Rev Status
GAS BOX
GAS PANEL
F-3
AOV 1-4B1
ISOLATION VALVE
SW1
CHAMBER
SW3
ESC P.S.
HELIUM/RF ENCLOSURE
ESC
DOWN
FR-4
SOV 2-1A
FR-5
SOV 2-1B
UP
B SEE TABLE V
A SEE TABLE V
ESC TEMP MONITOR
BIAS ELECTRODE
CHAMBER FRONT RIGHT
CHAMBER FRONT LEFT
CHAMBER REAR RIGHT
CHAMBER REAR LEFT
AOV 2-2B
CM4
PC1
F-2
MANIFOLD
FACE SEAL
AOV 1-5A
FR-1
BIAS ELECTRODE HOUSING
THROTTLE VALVE
HI VAC/THROTTLING VALVE
(.25")
CM2 S1/S2
PS1
PS2
(1.5")
(.5")
TMP
AOV 1-2B
AOV 1-3B
AOV 1-2A
AOV 1-4A
208V
CM3 S1
TURBO CONTROLLER
PS3
CDA
(.38")
(.25")
A SH3
HOUSE N2
F-1
PR-2 PG-2
AOV 1-1B
FR-3
5.
TM/PM FACILITY BULKHEAD
AC POWER
HELIUM
PR-1
PG-1
TCU INLET
TCU OUTLET
FS4
HOUSE EXHAUST
DRY PUMP
DOC. CONTROL
DEC 07 2000
RELEASED
COMMON CHAMBER
Lam RESEARCH
FREMONT, CA
SIZE D
DRAWING NO. 251-800096-001
REV B
SCALE NONE
SHEET 2 OF 6
PROPRIETARY INFORMATION NOTICE
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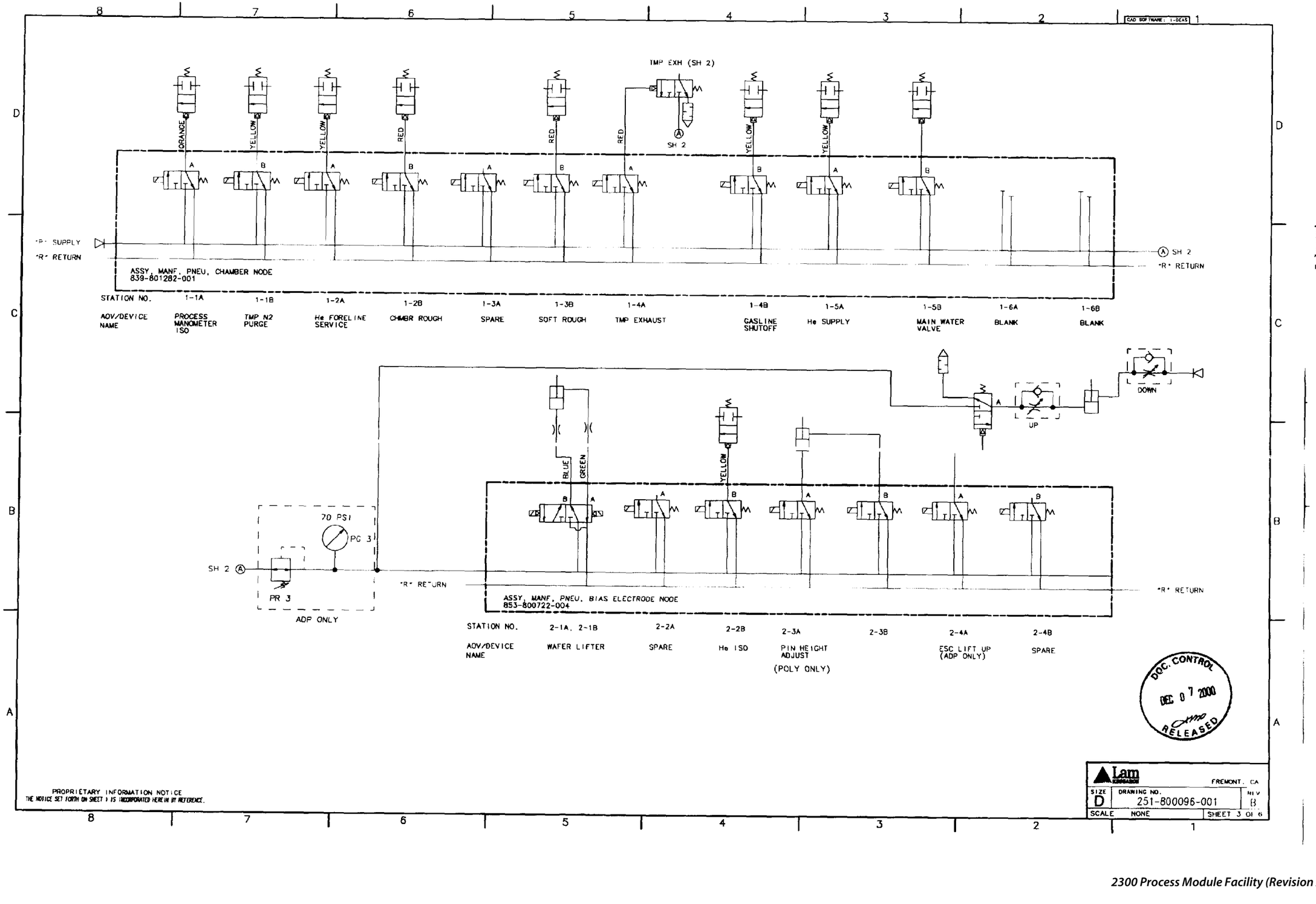
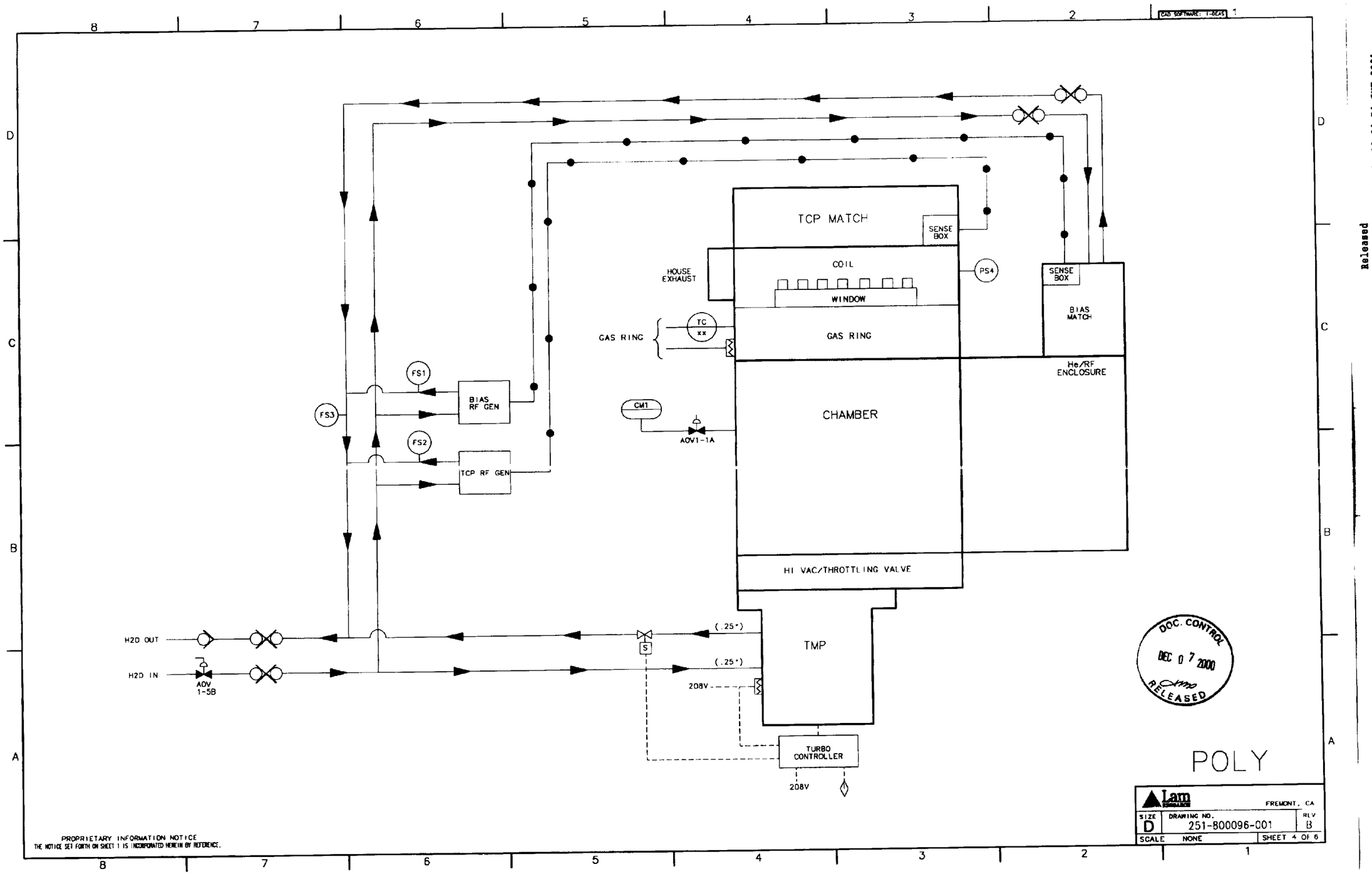
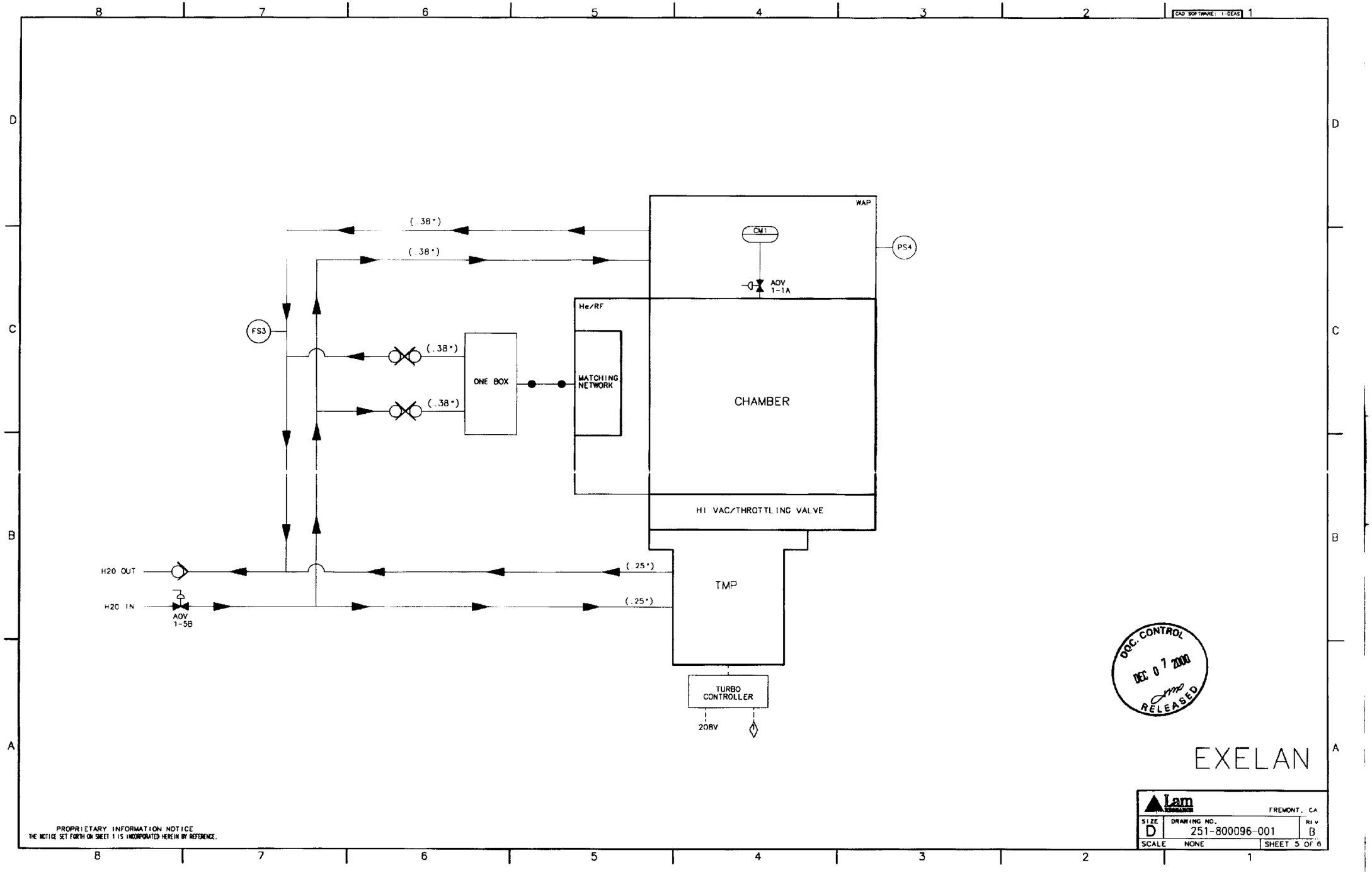


Released
Printed: Wed Apr 25 22:04:46 GMT 2001
See ECO File (MF,1,220) for Current Rev Status


CAD SOFTWARE: I-DEAS
Released
Printed: Wed Apr 25 22:04:54 GMT 2001
See ECO File (MF,L,220) for Current Rev Status
TCP MATCH
SENSE BOX
COIL
WINDOW
HOUSE EXHAUST
PS4
SENSE BOX
BIAS MATCH
GAS RING
TC xx
GAS RING
He/RF ENCLOSURE
FS1
BIAS RF GEN
FS3
CM1
AOV1-1A
CHAMBER
FS2
TCP RF GEN
HI VAC/THROTTLING VALVE
H2O OUT
(.25")
S
H2O IN
AOV 1-5B
(.25")
208V
TMP
TURBO CONTROLLER
208V
DOC. CONTROL
DEC 07 2000
RELEASED
POLY
PROPRIETARY INFORMATION NOTICE
THE NOTICE SET FORTH ON SHEET 1 IS INCORPORATED HEREIN BY REFERENCE.
Lam
FREMONT, CA
SIZE D
DRAWING NO. 251-800096-001
REV B
SCALE NONE
SHEET 4 OF 6


8
7
6
5
4
3
2
1
CAD SOFTWARE: I-DEAS
D
C
B
A
Released
Printed: Wed Apr 25 22:05:02 GMT 2001
See ECO File (MF,L,220) for Current Rev Status
WAP
CM1
PS4
AOV
1-1A
He/RF
FS3
(.38")
(.38")
(.38")
(.38")
ONE BOX
MATCHING NETWORK
CHAMBER
HI VAC/THROTTLING VALVE
H20 OUT
H20 IN
AOV
1-5B
(.25")
(.25")
TMP
TURBO CONTROLLER
208V
DOC. CONTROL
DEC 07 2000
RELEASED
EXELAN
Lam RESEARCH
FREMONT, CA
SIZE D
DRAWING NO. 251-800096-001
REV B
SCALE NONE
SHEET 5 OF 8
PROPRIETARY INFORMATION NOTICE
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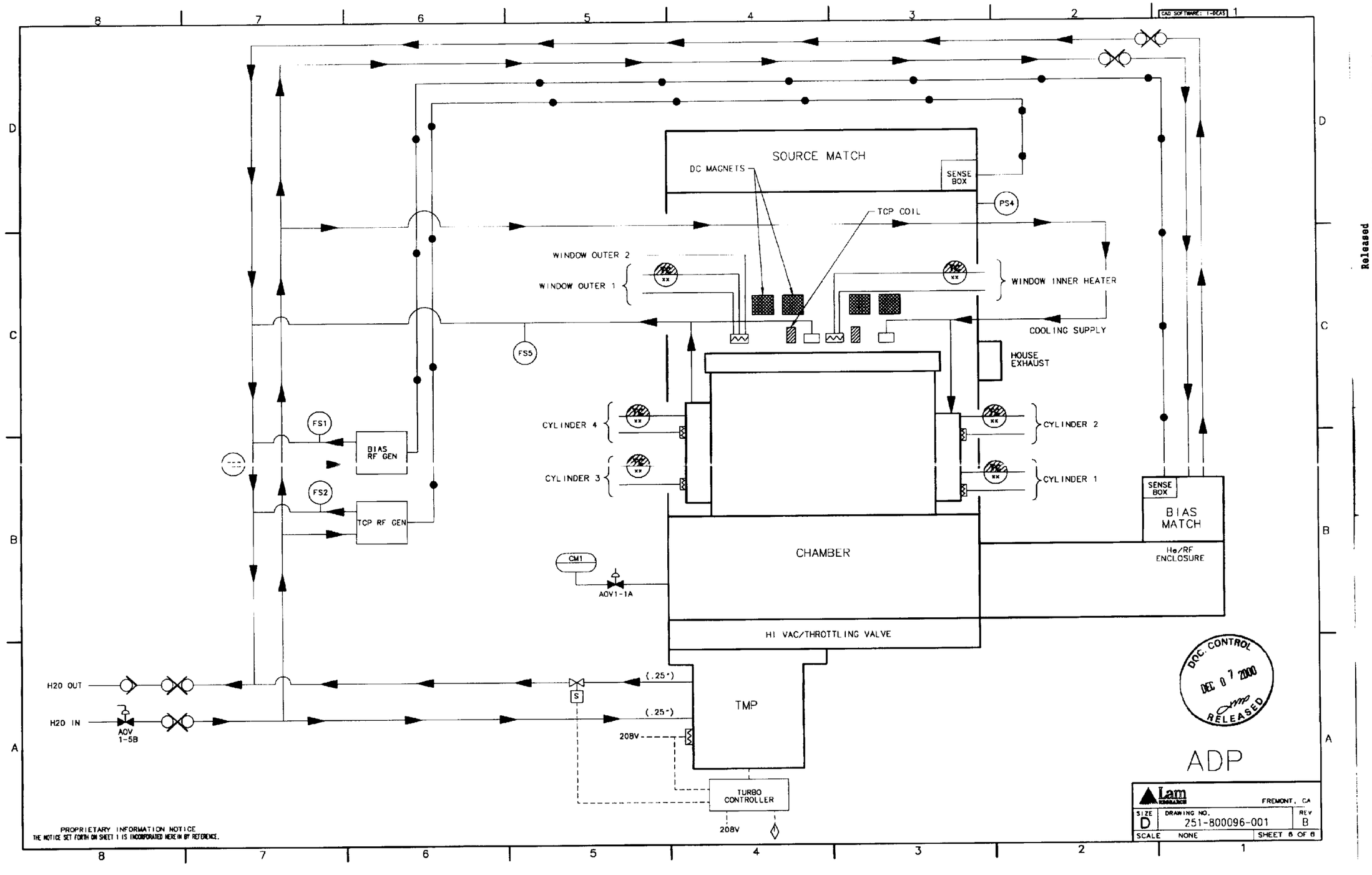

CAD SOFTWARE: I-DEAS
Released
Printed: Wed Apr 25 22:05:10 GMT 2001
See ECO File (MF,L,220) for Current Rev Status
SOURCE MATCH
DC MAGNETS
SENSE BOX
PS4
TCP COIL
WINDOW OUTER 2
WINDOW OUTER 1
WINDOW INNER HEATER
COOLING SUPPLY
FS5
HOUSE EXHAUST
CYLINDER 4
CYLINDER 3
CYLINDER 2
CYLINDER 1
FS1
BIAS RF GEN
FS2
TCP RF GEN
SENSE BOX
BIAS MATCH
CHAMBER
He/RF ENCLOSURE
CM1
AOV1-1A
HI VAC/THROTTLING VALVE
H2O OUT
H2O IN
AOV 1-5B
(.25")
(.25")
S
208V
TMP
TURBO CONTROLLER
208V
DOC. CONTROL
DEC 07 2000
RELEASED
ADP
Lam RESEARCH
FREMONT, CA
SIZE D
DRAWING NO. 251-800096-001
REV B
SCALE NONE
SHEET 8 OF 8
PROPRIETARY INFORMATION NOTICE
THE NOTICE SET FORTH ON SHEET 1 IS INCORPORATED HEREIN BY REFERENCE.

ETCHER ASSEMBLIES		
ASSY REF DES	ASSEMBLY	DASH NO.
A1	VME CONTROL ENCLOSURE	002,006,007,009,306,309,406,409,506,509
A2	AC CONTROL ENCLOSURE	002,003,004,005,006,302,303,304,305,306,402,406,502,503,504,505,506
A3	DC CONTROL ENCLOSURE	002,302,402,502
A4	HELIUM BOX/RF ENCL	002,006,302,303,304,305,306,307,309,402,406,407,409,502,503,504,505,506,507,508,509
A5	REACTION CHAMBER	008,303,304,305,309,503,504,505,509
A6	GAS RING	303,304,305
	SOURCE ENCLOSURE	502,503,504,505
A7	TCP MATCH BOX/ UPPER CHAMBER	002,302,303,304,305,309,502,503,504,505,509
	TOP PLATE	402,408,409
A8	BIAS MATCH BOX	309,509
A16	VACUUM SYSTEM	008
A17	PNEUMATIC MANIFOLD	008
A21	CHAMBER SIGNAL ENCLOSURE	002,006,007,008,306,308,406,408,506,508
A30	OES	309,409,509

ETCHER MISCELLANEOUS		
ASSY REF DES	ASSEMBLY	DASH NO.
A40	MISCELLANEOUS FRAME	008,302,308,309,408,409,508,509
A41	PM INTERFACE BRACKET	002,006,007,008,306,406,506
A42	EMO	002
A44	PENDULUM VALVE	009,303,503
A46	HARDWARE INTERLOCK ENCL	002,007,307,407,507
A47	RF GENERATOR 1 TCP	302,309,502,509
	RF GENERATOR ONEBOX	402,408,409
A48	RF GENERATOR 2 BIAS	302,309,502,509
A49/ A53A1	TMP CONTROLLER	002,006,302,303,306,402,406,502,503,506
A53	TMP/RF CONTROL ENCLOSURE	402,409
A54	DC POWER SUPPLY ENCLOSURE	502,508
A71	GENERATOR CART	308,508

REMOTE EQUIPMENT		
ASSY REF DES	ASSEMBLY	DASH NO.
A7A4	TM/PM INTERFACE BRACKET (TRANSPORT MODULE)	002,006

SIMILAR TO

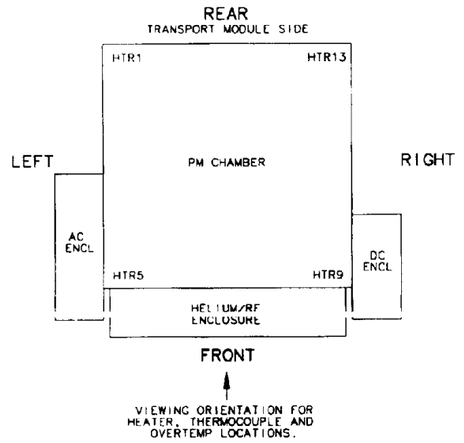
REVISIONS						
ZONE	REV	DESCRIPTION	INC BY	CHECK	APVD	DATE
	E3	REVISED WITH CHANGES D22181	BLT 3-12-99	BT	CL	4-8-99
	A	INITIAL RELEASE	BLT 8-16-99	BT	CL	8-27-99
	B	ZONE 7D ADDED -002 TO A7	BLT 2-24-00	BT	CL	2-25-00
	C	REF DES A40 AND A41 CHGD DASH NO.	BLT 4-25-00	AT	CL	4-28-00
	D	ADDED -302 THRU -309,-402,-405,-407,-408,-409,-502 THRU 509 AND POLY,DFC,ADP INDEXES	BLT 11-2-00	JWR	CL	11/15/00

NOTES

1. P/O DENOTES "PART OF".
2. ZONE LOCATING SYMBOL.

   DASH NO -002 | 6 HORIZONTAL ZONE | B VERTICAL ZONE
3. PARTIAL REFERENCE DESIGNATION:

   A2 — ASSEMBLY; 2J2 — CONNECTOR DESIGNATION
4. CONNECTOR DESIGNATION TO BE PREFIXED WITH ASSEMBLY REFERENCE DESIGNATION NUMBER ONLY. LETTER "A" NOT REQUIRED.



ADP INDEX	
DASH NO.	TITLE
-509	PROCESS MODULE, ADP, VME CONTROLLER, NODE 5
-508	PROCESS MODULE, ADP, NODE 1 & NODE 2
-507	PROCESS MODULE, ADP, HARDWARE INTERLOCK
-506	PROCESS MODULE, ADP, COMMUNICATION SIGNAL
-505	PROCESS MODULE, ADP, OVERTEMP DISTRIBUTION
-504	PROCESS MODULE, ADP, TC DISTRIBUTION
-503	PROCESS MODULE, ADP, HEATER DISTRIBUTION
-502	PROCESS MODULE, ADP, AC/DC DISTRIBUTION

DFC INDEX	
DASH NO.	TITLE
-409	PROCESS MODULE, DFC, VME CONTROLLER, NODE 5
-408	PROCESS MODULE, DFC, CHAMBER, NODE 1
-407	PROCESS MODULE, DFC, HARDWARE INTERLOCK
-406	PROCESS MODULE, DFC, COMMUNICATION SIGNAL
-402	PROCESS MODULE, DFC, AC/DC DISTRIBUTION

POLY INDEX	
DASH NO.	TITLE
-309	PROCESS MODULE, POLY, VME CONTROLLER, NODE 5
-308	PROCESS MODULE, POLY, CHAMBER, NODE 1
-307	PROCESS MODULE, POLY, HARDWARE INTERLOCK
-306	PROCESS MODULE, POLY, COMMUNICATION SIGNAL
-305	PROCESS MODULE, POLY, OVERTEMP DISTRIBUTION
-304	PROCESS MODULE, POLY, TC DISTRIBUTION
-303	PROCESS MODULE, POLY, HEATER DISTRIBUTION
-302	PROCESS MODULE, POLY, AC/DC DISTRIBUTION

COMMON INDEX	
DASH NO.	TITLE
-009	PROCESS MODULE, 300MM, VME CONTROLLER, NODE 5
-008	PROCESS MODULE, 300MM, CHAMBER, NODE 1
-007	PROCESS MODULE, 300MM, HARDWARE INTERLOCK
-006	PROCESS MODULE, 300MM, COMMUNICATION SIGNAL
-005	PROCESS MODULE, 300MM, OVERTEMP DISTRIBUTION
-004	PROCESS MODULE, 300MM, TC DISTRIBUTION
-003	PROCESS MODULE, 300MM, HEATER DISTRIBUTION
-002	PROCESS MODULE, 300MM, AC/DC DISTRIBUTION
-001	COVER, NOTES, TABLES, ETC

DRAWN	BLT	DATE	8-3-97
CHECKED	E SOUSA		5-21-98
ENGINEER	M WALZ		11-12-97
APPROVED			
MFG ENGR			

Lam RESEARCH FREMONT, CA

TITLE: DIAGRAM, INTERCONNECT, 300MM PROCESS MODULE

ABBREVIATED TITLE (30 CHAR. MAX): DIAG, INTCON, 300MM PM

SIZE D | DRAWING NO. 224-800096-001 | REV D

DO NOT SCALE DRAWING | SCALE NONE | SHEET 1 OF 1

REVISIONS						
ZONE	REV	DESCRIPTION	INC BY	CHECK	APVD	DATE
	E3	REVISED WITH CHANGES 022181	BLT 3-12-99	BT	CL	4-8-99
	A	INITIAL RELEASE	BLT 8-16-99	BT	CL	8-27-99
	B	ADDED 2.2K TURBO OPTION AND CHGD CABLE PART NUMBERS	BLT 2-24-00	BT	CL	2-25-00
	C	SH 2 CHGD CABLE P/N AND CHGD XENON LAMP AS OPTIONAL	BLT 4-23-00	AT	CL	4-28-00
	D	CHGD FOR POLY, DFC AND ADP	BLT 11-2-00	JLR	CL	11/15/00
	E	EXTENSIVE CHANGE	AT 03/08/01	AT		3/29/01

SIMILAR TO:

DOC. CONTROL MAR 21 2001 RELEASED

Released
Printed: Wed Apr 25 22:07:48 GMT 2001
See ECO File (MF,1,220) for Current Rev Status

A2
ASSY, ENCL,
AC CONTROL
224-800096-302 POLY
224-800096-402 DFC
224-800096-502 ADP

-302 5 D | -402 5 D | SH 1 -502 5 D

-302 5 D | SH 1 -502 5 D

J3 2P3 -302 5 C | -402 5 C

A49
TMP 1600 ALCATEL CONTROLLER
796-099223-002
49P-POWER POWER | PUMP CABLE 49P-PUMP CABLE

-302 3 C | -402 3 C

A49B2
TMP 1600 ALCATEL
796-900675-001
49B2P1 J1

P/O AC CONTROL RACK

208 VAC
3 ø, 4 WIRE
XX AMPS

853-802727-XXX
ASSY, CA, PWR, MAIN,
AC RACK/AC ENCL

A49
TMP 2.2K CONTROLLER
796-900372-002

J3 2P3 -302 5 C | -402 5 C | SH 1 -502 5 B

49P-X2 AC POWER | X2 AC POWER | X4 MOTOR | 49P-X4 MOTOR

-302 3 C | -402 3 C | SH 1 -502 3 C

A49B2
TMP 2.2K
796-900373-002
49B2P1 J1

NOT USED

2.2K TURBO OPTION

A3
ASSY, ENCL,
DC CONTROL
224-800096-302 POLY
224-800096-402 DFC
224-800096-502 ADP

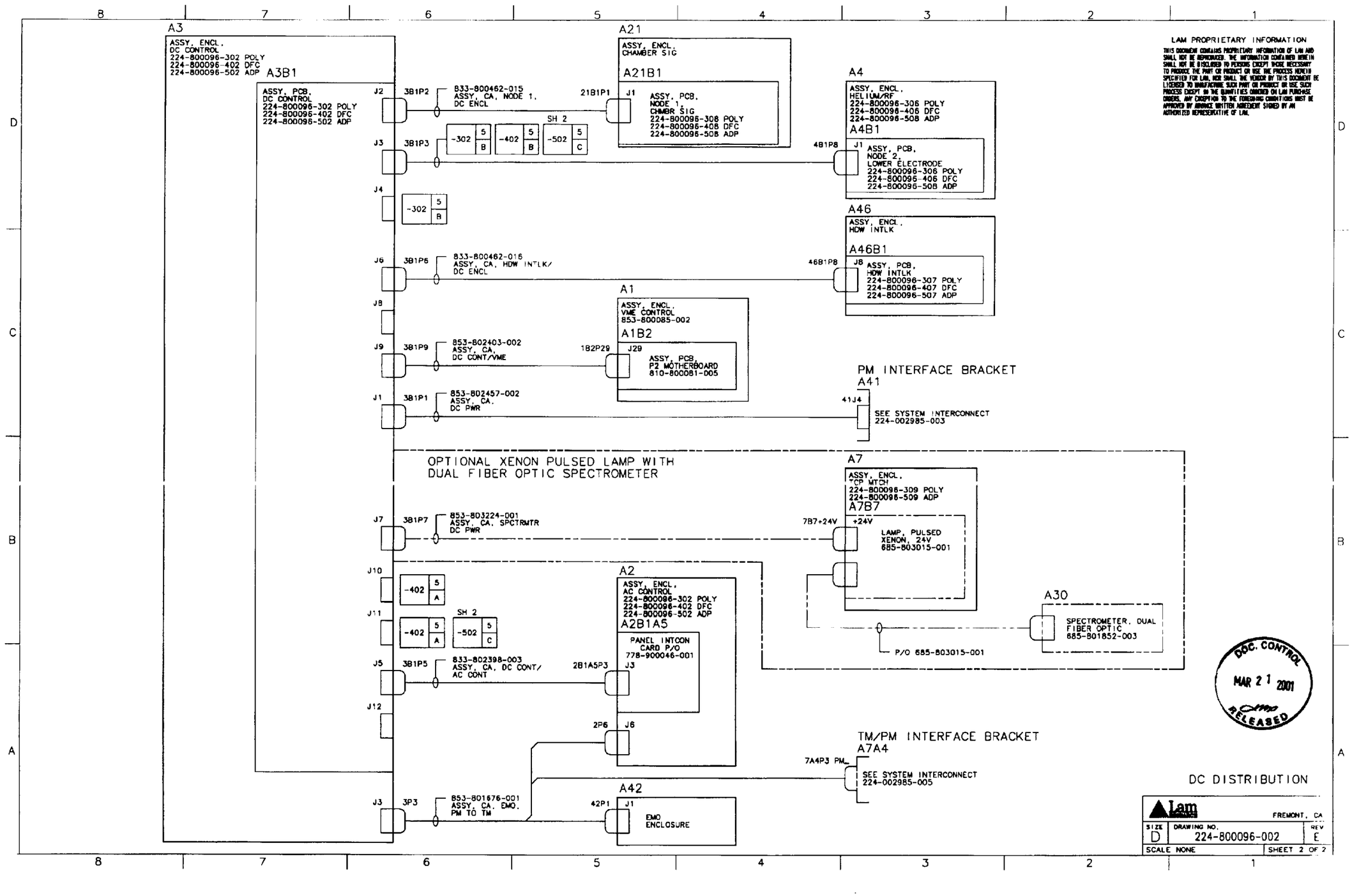
J12 2P12 833-802344-002
ASSY, CA, PWR,
DC ENCL
3P1 J1

J13 ADP ONLY SH 1 -502 5 C

J14 ADP ONLY SH 1 -502 5 C

AC DISTRIBUTION

DRAWN BLT	DATE 8-5-97	Lam Research FREMONT, CA	
CHECKED E SOUSA	5-21-98	TITLE DIAGRAM, INTERCONNECT, 300MM PM, AC/DC	
ENGINEER M WALE	11-12-97		
APPROVED			
MFG ENGR		ABBREVIATED TITLE (30 CHAR. MAX) DIAG, INTCON, 300MM PM, AC/DC	
		SIZE D	DRAWING NO. 224-800096-002 REV E
DO NOT SCALE DRAWING		SCALE NONE	SHEET 1 OF 2


A3
ASSY, ENCL,
DC CONTROL
224-800096-302 POLY
224-800096-402 DFC
224-800096-502 ADP
A3B1
ASSY, PCB,
DC CONTROL
224-800096-302 POLY
224-800096-402 DFC
224-800096-502 ADP
A21
ASSY, ENCL,
CHAMBER SIG
A21B1
ASSY, PCB,
NODE 1,
CHMBR SIG
224-800096-308 POLY
224-800096-408 DFC
224-800096-508 ADP
A4
ASSY, ENCL,
HELIUM/RF
224-800096-306 POLY
224-800096-406 DFC
224-800096-508 ADP
A4B1
ASSY, PCB,
NODE 2,
LOWER ELECTRODE
224-800096-306 POLY
224-800096-406 DFC
224-800096-508 ADP
A46
ASSY, ENCL,
HDW INTLK
A46B1
ASSY, PCB,
HDW INTLK
224-800096-307 POLY
224-800096-407 DFC
224-800096-507 ADP
A1
ASSY, ENCL,
VME CONTROL
853-800085-002
A1B2
ASSY, PCB,
P2 MOTHERBOARD
810-800081-005
PM INTERFACE BRACKET
A41
SEE SYSTEM INTERCONNECT
224-002985-003
OPTIONAL XENON PULSED LAMP WITH
DUAL FIBER OPTIC SPECTROMETER
A7
ASSY, ENCL,
TOP MTCH
224-800096-309 POLY
224-800096-509 ADP
A7B7
LAMP, PULSED
XENON, 24V
685-803015-001
A30
SPECTROMETER, DUAL
FIBER OPTIC
685-801852-003
P/O 685-803015-001
A2
ASSY, ENCL,
AC CONTROL
224-800096-302 POLY
224-800096-402 DFC
224-800096-502 ADP
A2B1A5
PANEL INTCON
CARD P/O
778-900046-001
TM/PM INTERFACE BRACKET
A7A4
SEE SYSTEM INTERCONNECT
224-002985-005
A42
EMO
ENCLOSURE
853-802457-002
ASSY, CA,
DC PWR
853-802403-002
ASSY, CA,
DC CONT/VME
833-800462-015
ASSY, CA, NODE 1,
DC ENCL
833-800462-016
ASSY, CA, HDW INTLK/
DC ENCL
833-802398-003
ASSY, CA, DC CONT/
AC CONT
853-803224-001
ASSY, CA, SPCTRMTR
DC PWR
853-801676-001
ASSY, CA, EMO,
PM TO TM
SH 2
LAM PROPRIETARY INFORMATION
THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF LAM AND SHALL NOT BE REPRODUCED. THE INFORMATION CONTAINED HEREIN SHALL NOT BE DISCLOSED TO PERSONS EXCEPT THOSE NECESSARY TO PRODUCE THE PART OR PRODUCT OR USE THE PROCESS HEREIN SPECIFIED FOR LAM, AND SHALL THE VENDOR BY THIS DOCUMENT BE LICENSED TO MANUFACTURE SUCH PART OR PRODUCT OR USE SUCH PROCESS EXCEPT ON THE QUANTITIES ORDERED ON LAM PURCHASE ORDERS. ANY EXCEPTION TO THE FOREGOING CONDITIONS MUST BE APPROVED BY ADVANCE WRITTEN AGREEMENT SIGNED BY AN AUTHORIZED REPRESENTATIVE OF LAM.
Released
Printed: Wed Apr 25 22:07:55 GMT 2001
See ECO File (MF,L,220) for Current Rev Status
DOC. CONTROL
MAR 21 2001
RELEASED
DC DISTRIBUTION
Lam
FREMONT, CA
SIZE D
DRAWING NO. 224-800096-002
REV E
SCALE NONE
SHEET 2 OF 2

REVISIONS						
ZONE	REV	DESCRIPTION	INC BY	CHECK	APVD	DATE
	E3	REVISED WITH CHANGES D22181	BLT 3-12-99	BT	CL	4-8-99
	A	INITIAL RELEASE	BLT 8-16-99	BT	CL	8-27-99
	B	ZONE 7B-C,2B AND 5D CHGD PART NO.	BLT 2-24-00	BT	CL	2-25-00
	C	CHGD FOR POLY, DFC AND ADP	BLT 10-23-00	JMR	CL	11/15/00
	D	CHGD FOR POLY, DFC AND ADP	JMR 3/15/01			3/21/01

SIMILAR TO:

Released
Printed: Wed Apr 25 22:08:09 GMT 2001
See ECO File (MF,L,220) for Current Rev Status

A2

ASSY, ENCL,
AC CONTROL
224-800096-302 POLY
224-800096-402 DFC
224-800096-502 ADP

J7 -303 8/C -503 8/C

J8 -303 8/B -503 8/B

J9 -303 8/B -503 8/B

DOC. CONTROL MAR 21 2001 RELEASED

CAD SOFTWARE: I-DEAS (PROJECT)

HEATER POWER DISTRIBUTION

DRAWN BLT	DATE 8-3-97	Lam RESEARCH	FREMONT, CA
CHECKED SOUSA	5-21-98	TITLE	DIAGRAM, INTERCONNECT, 300MM PM, HEATERS
ENGINEER M WALZ	11-12-97		
APPROVED		ABBREVIATED TITLE (30 CHAR. MAX)	DIAG,INTCON,300MM PM,HTRS
MFG ENGR		SIZE D	DRAWING NO. 224-800096-003 REV D
DO NOT SCALE DRAWING		SCALE NONE	SHEET 1 OF 1

ZONE	REV	DESCRIPTION	INC BY	CHECK	APVD	DATE
	E3	REVISED WITH CHANGES D22181	BLT 3-12-99	BT	CL	4-8-99
	A	INITIAL RELEASE	BLT 8-16-99	BT	CL	8-27-99
	B	ZONE 5D CHGD PART NO.	BLT 2-24-00	BT	CL	2-25-00
	C	CHGD FOR POLY, DFC AND ADP	BLT 10-23-00	BT	CL	11/15/01
	D	CHGD FOR POLY, DFC AND ADP	AR 3/13/01	AR	CL	3/14/01

SIMILAR TO:

A2

ASSY, ENCL,
AC CONTROL
224-800096-302 POLY
224-800096-402 DFC
224-800096-502 ADP

J1

-304 7 8

-504 7 8

THERMOCOUPLE DISTRIBUTION

DRAWN BLT	DATE 8-5-97	Lam RESEARCH	FREMONT, CA
CHECKED SCUILA	5-21-98	TITLE	DIAGRAM, INTERCONNECT, 300MM PM, THERMOCOUPLES
ENGINEER M WALZ	11-12-97		
APPROVED			
MFG ENGR		ABBREVIATED TITLE (30 CHAR. MAX)	DIAG, INTCON, 300MM PM, TC
		SIZE D	DRAWING NO. 224-800096-004 REV D
DO NOT SCALE DRAWING		SCALE NONE	SHEET 1 OF 1

CAD SOFTWARE: I-DEAS PROJECT:

SIMILAR TO:

REVISIONS

ZONE	REV	DESCRIPTION	INC BY	CHECK	APVD	DATE
	E3	REVISED WITH CHANGES D22181	BLT 3-12-99	BT	CL	4-8-99
	A	INITIAL RELEASE	BLT 8-16-99	BT	CL	8-27-99
	B	ZONE 5D AND 7C CHGD PART NO.	BLT 2-24-00	BT	CL	2-25-00
	C	CHGD FOR POLY, DFC AND ADP	BLT 10-23-00	BT	CL	3/15/01
	D	CHGD FOR POLY, DFC AND ADP	MP 3/15/01	AC	CL	3/19/01

A2

ASSY, ENCL.
AC CONTROL
224-800096-305 POLY
224-800096-402 DFC
224-800096-505 ADP

J5

-305 7 8

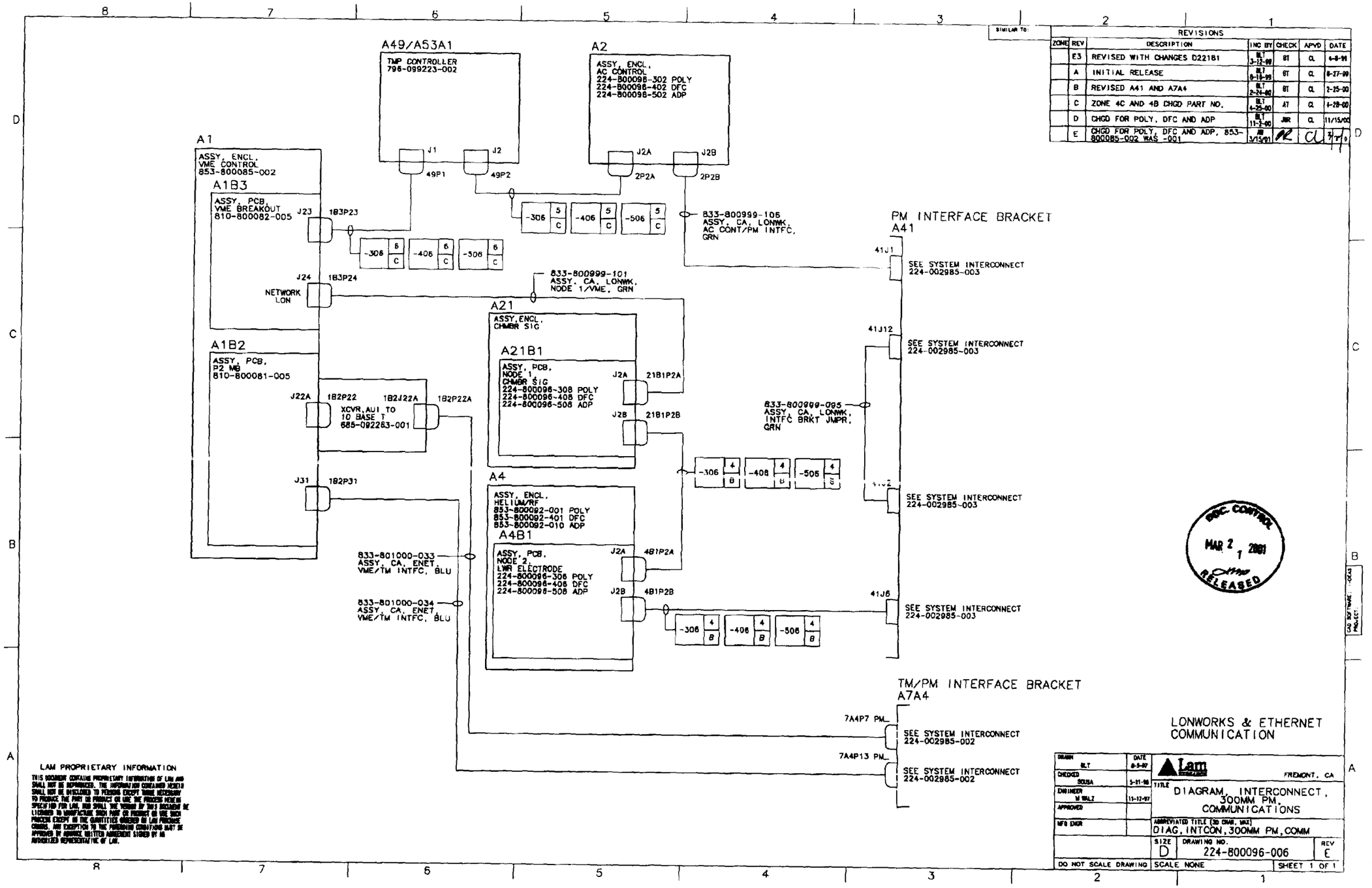
-505 7 8

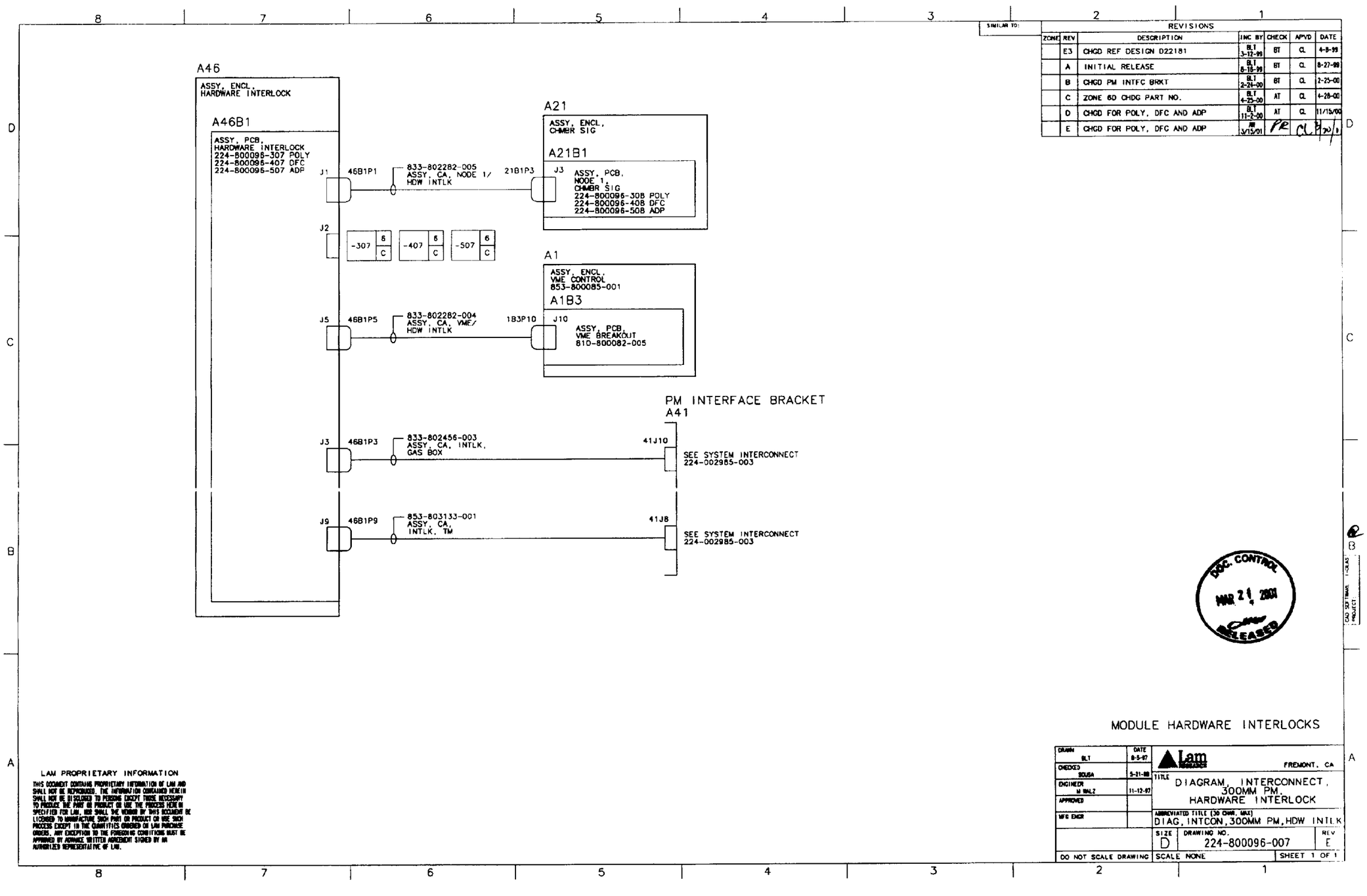
DOC. CONTROL MAR 21 2001 RELEASED

OVERTEMP DISTRIBUTION

DRAWN BLT	DATE 8-3-97	Lam	FREMONT, CA
CHECKED SOUSA	9-21-98	TITLE	DIAGRAM, INTERCONNECT, 300MM PM, OVERTEMP
ENGINEER M WALZ	11-12-97		
APPROVED			
MFG ENGR		ABBREVIATED TITLE (30 CHAR. MAX)	DIAG, INTCON, POLY 300MM PM, OT
		SIZE D	DRAWING NO. 224-800096-005 REV D
DO NOT SCALE DRAWING		SCALE NONE	SHEET 1 OF 1

Released
Printed: Wed Apr 25 22:08:33 GMT 2001
See ECO File (MF,L,220) for Current Rev Status


SIMILAR TO:
REVISIONS
ZONE REV DESCRIPTION INC BY CHECK APVD DATE
E3 REVISED WITH CHANGES D22181 BLT 3-12-99 BT CL 4-8-99
A INITIAL RELEASE BLT 8-16-99 BT CL 8-27-99
B REVISED A41 AND A7A4 BLT 2-24-00 BT CL 2-25-00
C ZONE 4C AND 4B CHGD PART NO. BLT 4-25-00 AT CL 4-28-00
D CHGD FOR POLY, DFC AND ADP BLT 11-2-00 JMR CL 11/15/00
E CHGD FOR POLY, DFC AND ADP, 853-800085-002 WAS -001 JMR 3/15/01 CL
Released
Printed: Wed Apr 25 22:08:46 GMT 2001
See ECO File (MP,L,220) for Current Rev Status
A49/A53A1
TMP CONTROLLER
796-099223-002
A2
ASSY, ENCL,
AC CONTROL
224-800096-302 POLY
224-800096-402 DFC
224-800096-502 ADP
A1
ASSY, ENCL,
VME CONTROL
853-800085-002
A1B3
ASSY, PCB,
VME BREAKOUT
810-800082-005
A1B2
ASSY, PCB,
P2 MB
810-800081-005
A21
ASSY,ENCL,
CHMBR SIG
A21B1
ASSY, PCB,
NODE 1
CHMBR SIG
224-800096-308 POLY
224-800096-408 DFC
224-800096-508 ADP
A4
ASSY, ENCL,
HELIUM/RF
853-800092-001 POLY
853-800092-401 DFC
853-800092-010 ADP
A4B1
ASSY, PCB,
NODE 2,
LWR ELECTRODE
224-800096-308 POLY
224-800096-408 DFC
224-800096-508 ADP
XCVR,AUI TO
10 BASE T
685-092283-001
833-800999-105
ASSY, CA, LONWK,
AC CONT/PM INTFC,
GRN
833-800999-101
ASSY, CA, LONWK,
NODE 1/VME, GRN
833-800999-095
ASSY, CA, LONWK,
INTFC BRKT JMPR,
GRN
833-801000-033
ASSY, CA, ENET,
VME/TM INTFC, BLU
833-801000-034
ASSY, CA, ENET,
VME/TM INTFC, BLU
PM INTERFACE BRACKET
A41
TM/PM INTERFACE BRACKET
A7A4
SEE SYSTEM INTERCONNECT
224-002985-003
SEE SYSTEM INTERCONNECT
224-002985-002
LONWORKS & ETHERNET
COMMUNICATION
DOC. CONTROL
MAR 2 1 2001
RELEASED
LAM PROPRIETARY INFORMATION
Lam
FREMONT, CA
DRAWN BLT 8-5-97
CHECKED SOUSA 5-21-98
ENGINEER M WALZ 11-12-97
APPROVED
MFG ENGR
TITLE DIAGRAM, INTERCONNECT, 300MM PM, COMMUNICATIONS
ABBREVIATED TITLE (30 CHAR. MAX.) DIAG, INTCON, 300MM PM, COMM
SIZE D DRAWING NO. 224-800096-006 REV E
DO NOT SCALE DRAWING SCALE NONE SHEET 1 OF 1



SIMILAR TO:

REVISIONS

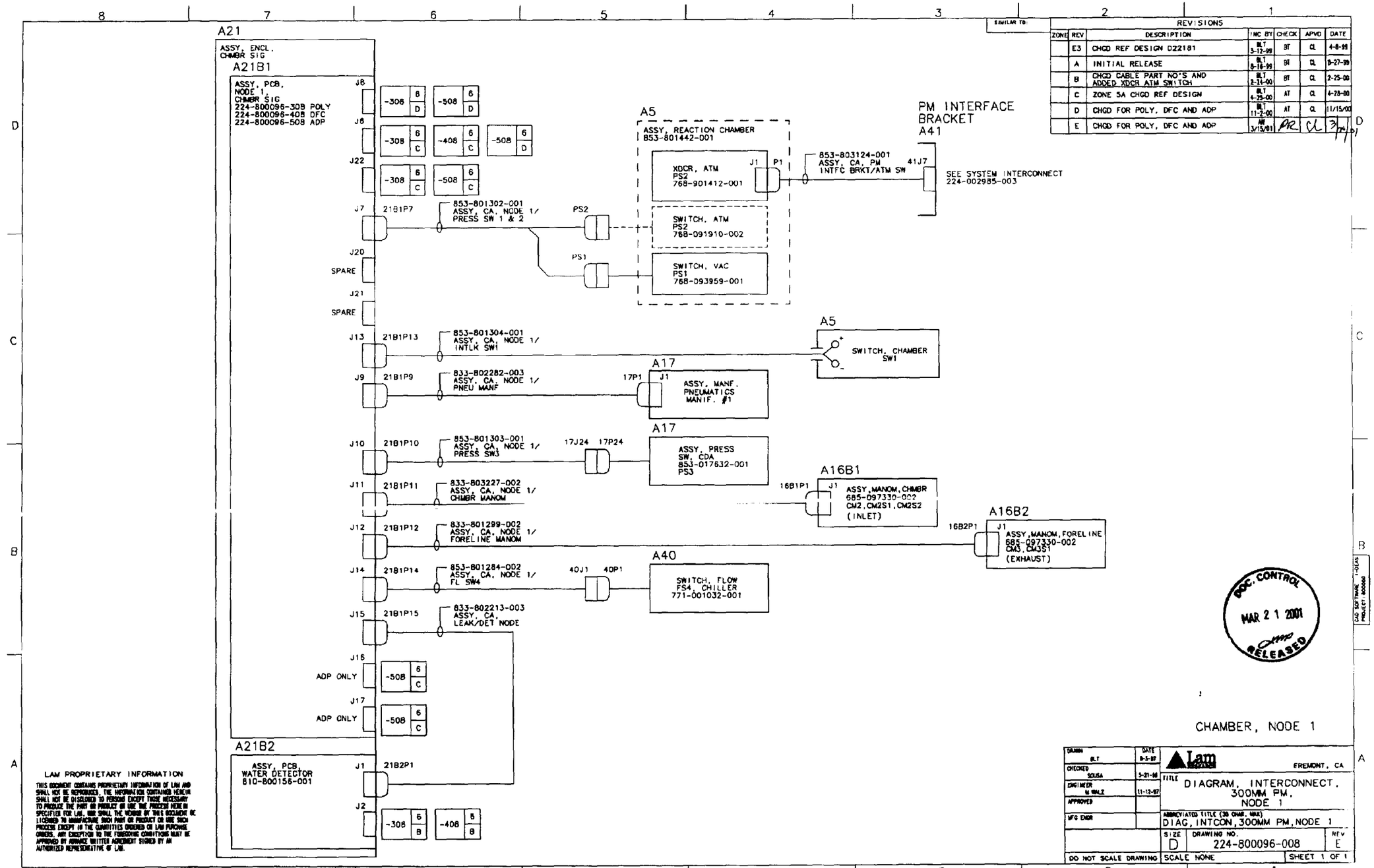
ZONE	REV	DESCRIPTION	INC BY	CHECK	APVD	DATE
	E3	CHGD REF DESIGN D22181	BLT 3-12-99	BT	CL	4-8-99
	A	INITIAL RELEASE	BLT 8-18-99	BT	CL	8-27-99
	B	CHGD PM INTFC BRKT	BLT 2-24-00	BT	CL	2-25-00
	C	ZONE 6D CHDG PART NO.	BLT 4-25-00	AT	CL	4-28-00
	D	CHGD FOR POLY, DFC AND ADP	BLT 11-2-00	AT	CL	11/15/00
	E	CHGD FOR POLY, DFC AND ADP	RM 3/15/01	PR	CL	3/20/01

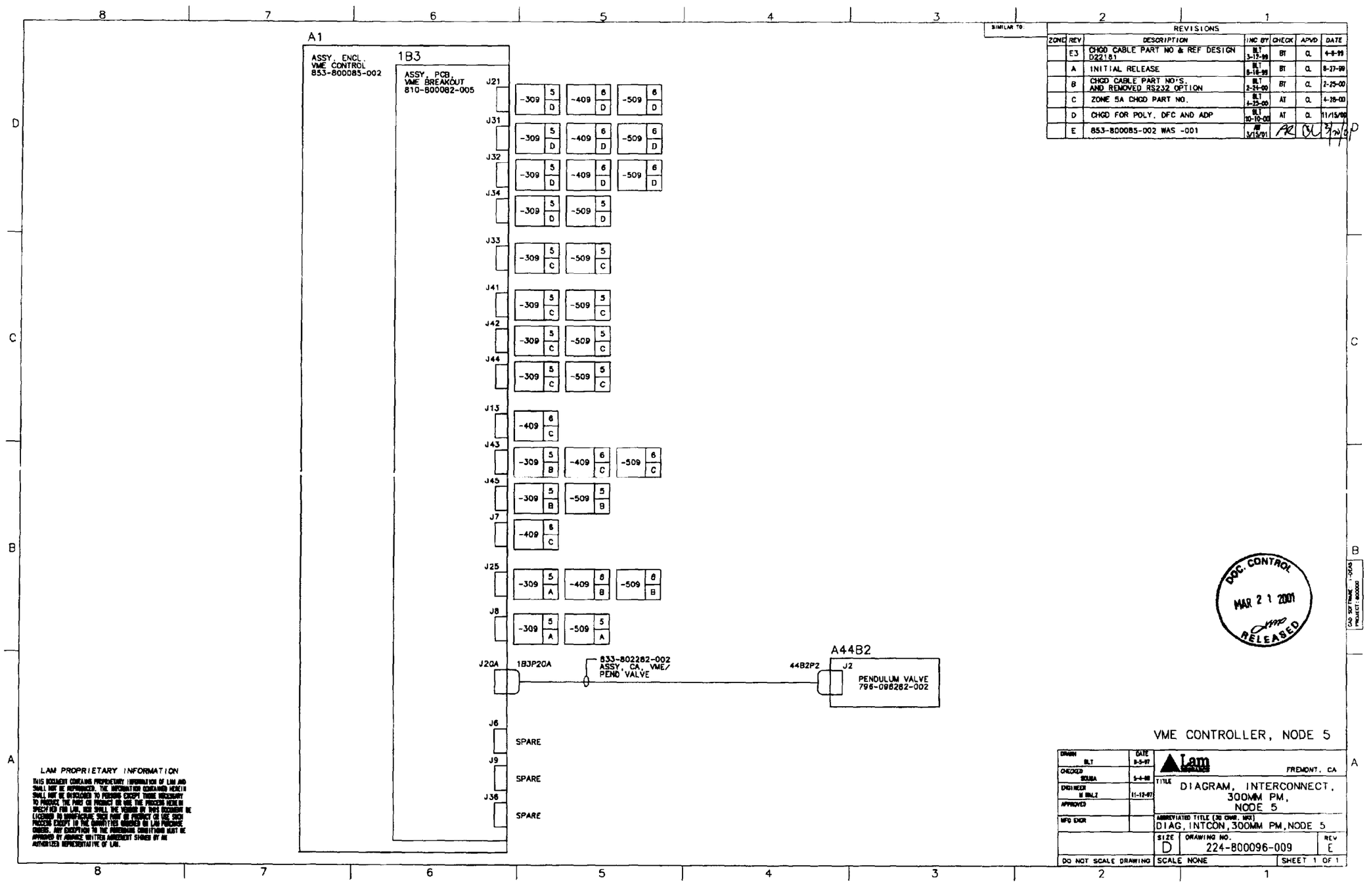
Released
Printed: Wed Apr 25 22:09:00 GMT 2001
See ECO File (MF,L,220) for Current Rev Status

DOC. CONTROL MAR 21 2001 RELEASED

MODULE HARDWARE INTERLOCKS

DRAWN BLT	DATE 8-3-97	Lam RESEARCH	FREMONT, CA
CHECKED SOUSA	8-21-98	TITLE	DIAGRAM, INTERCONNECT, 300MM PM, HARDWARE INTERLOCK
ENGINEER M WALZ	11-12-97		
APPROVED		ABBREVIATED TITLE (30 CHAR. MAX)	DIAG, INTCON, 300MM PM, HDW INTLK
MFG ENGR		SIZE D	DRAWING NO. 224-800096-007 REV E
DO NOT SCALE DRAWING		SCALE NONE	SHEET 1 OF 1


A21
ASSY, ENCL. CHMBR SIG
A21B1
ASSY, PCB, NODE 1, CHMBR SIG
224-800096-30B POLY
224-800096-40B DFC
224-800096-50B ADP
J8
J6
J22
J7
21B1P7
853-801302-001
ASSY, CA, NODE 1/
PRESS SW 1 & 2
PS2
PS1
J20
SPARE
J21
SPARE
J13
21B1P13
853-801304-001
ASSY, CA, NODE 1/
INTLK SW1
J9
21B1P9
833-802282-003
ASSY, CA, NODE 1/
PNEU MANF
J10
21B1P10
853-801303-001
ASSY, CA, NODE 1/
PRESS SW3
J11
21B1P11
833-803227-002
ASSY, CA, NODE 1/
CHMBR MANOM
J12
21B1P12
833-801289-002
ASSY, CA, NODE 1/
FORELINE MANOM
J14
21B1P14
853-801284-002
ASSY, CA, NODE 1/
FL SW4
J15
21B1P15
833-802213-003
ASSY, CA, LEAK/DET NODE
J16
ADP ONLY
J17
ADP ONLY
A21B2
ASSY, PCB, WATER DETECTOR
810-800156-001
J1
21B2P1
J2
A5
ASSY, REACTION CHAMBER
853-801442-001
XDCR, ATM PS2
768-901412-001
J1
P1
SWITCH, ATM PS2
768-091910-002
SWITCH, VAC PS1
768-093959-001
853-803124-001
ASSY, CA, PM INTFC BRKT/ATM SW
41J7
PM INTERFACE BRACKET
A41
SEE SYSTEM INTERCONNECT
224-002985-003
A5
SWITCH, CHAMBER SW1
A17
17P1
J1
ASSY, MANF, PNEUMATICS MANIF. #1
A17
17J24
17P24
ASSY, PRESS SW, CDA
853-017632-001
PS3
A16B1
16B1P1
J1
ASSY, MANOM, CHMBR
685-097330-002
CM2, CM2S1, CM2S2
(INLET)
A16B2
16B2P1
J1
ASSY, MANOM, FORELINE
685-097330-002
CM3, CM3S1
(EXHAUST)
A40
40J1
40P1
SWITCH, FLOW FS4, CHILLER
771-001032-001
SIMILAR TO:
REVISIONS
ZONE REV DESCRIPTION INC BY CHECK APVD DATE
E3 CHGD REF DESIGN D22181 BLT 3-12-99 BT CL 4-8-99
A INITIAL RELEASE BLT 6-16-99 BT CL 8-27-99
B CHGD CABLE PART NO'S AND ADDED XDCR ATM SWITCH BLT 2-24-00 BT CL 2-25-00
C ZONE 5A CHGD REF DESIGN BLT 4-28-00 AT CL 4-28-00
D CHGD FOR POLY, DFC AND ADP BLT 11-2-00 AT CL 11/15/00
E CHGD FOR POLY, DFC AND ADP MF 3/15/01 AR CL 3/21/01
Released
Printed: Wed Apr 25 22:09:13 GMT 2001
See ECO File (MF,L,220) for Current Rev Status
DOC. CONTROL
MAR 21 2001
RELEASED
CHAMBER, NODE 1
DRAWN BLT 8-3-97
CHECKED SOUSA 3-21-98
ENGINEER M WALZ 11-12-97
APPROVED
MFG ENGR
Lam FREMONT, CA
TITLE DIAGRAM, INTERCONNECT, 300MM PM, NODE 1
ABBREVIATED TITLE (30 CHAR. MAX) DIAG, INTCON, 300MM PM, NODE 1
SIZE D DRAWING NO. 224-800096-008 REV E
DO NOT SCALE DRAWING SCALE NONE SHEET 1 OF 1
CAD SOFTWARE: T-DXAS PROJECT: 800000
LAM PROPRIETARY INFORMATION
THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF LAM AND SHALL NOT BE REPRODUCED. THE INFORMATION CONTAINED HEREIN SHALL NOT BE DISCLOSED TO PERSONS EXCEPT THOSE NECESSARY TO PRODUCE THE PART OR PRODUCT OR USE THE PROCESS HERE IN SPECIFIED FOR LAM, AND SHALL THE HOLDER BY THIS DOCUMENT OR LICENSED TO MANUFACTURE SUCH PART OR PRODUCT OR USE SUCH PROCESS EXCEPT IN THE QUANTITIES ORDERED OR LAM PURCHASE ORDERS. ANY EXCEPTION TO THE FOREGOING CONDITIONS MUST BE APPROVED BY ADVANCE WRITTEN AGREEMENT SIGNED BY AN AUTHORIZED REPRESENTATIVE OF LAM.


A1
ASSY, ENCL, VME CONTROL 853-800085-002
1B3
ASSY, PCB, VME BREAKOUT 810-800082-005
J21
J31
J32
J34
J33
J41
J42
J44
J13
J43
J45
J7
J25
J8
-309 5 D
-409 6 D
-509 6 D
-309 5 C
-509 5 C
-409 6 C
-309 5 B
-409 6 C
-509 6 C
-309 5 A
-409 6 B
-509 6 B
J20A
1B3P20A
833-802282-002 ASSY, CA, VME/ PEND VALVE
A4482
44B2P2
J2
PENDULUM VALVE 796-098282-002
J6
J9
J36
SPARE
SIMILAR TO:
REVISIONS
ZONE REV DESCRIPTION INC BY CHECK APVD DATE
E3 CHGD CABLE PART NO & REF DESIGN D22181 BLT 3-12-99 BT CL 4-8-99
A INITIAL RELEASE BLT 8-18-99 BT CL 8-27-99
B CHGD CABLE PART NO'S, AND REMOVED RS232 OPTION BLT 2-24-00 BT CL 2-25-00
C ZONE 5A CHGD PART NO. BLT 4-25-00 AT CL 4-28-00
D CHGD FOR POLY, DFC AND ADP BLT 10-10-00 AT CL 11/15/00
E 853-800085-002 WAS -001 AR 3/19/01 AR CL 3/20/01
LAM PROPRIETARY INFORMATION
THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF LAM AND SHALL NOT BE REPRODUCED. THE INFORMATION CONTAINED HEREIN SHALL NOT BE DISCLOSED TO PERSONS EXCEPT THOSE NECESSARY TO PRODUCE THE PARTS OR PRODUCT OR USE THE PROCESS HEREIN SPECIFIED FOR LAM, NOR SHALL THE VENDOR BY THIS DOCUMENT BE LICENSED TO MANUFACTURE SUCH PART OR PRODUCT OR USE SUCH PROCESS EXCEPT TO THE QUANTITIES ORDERED BY LAM PURCHASE ORDERS. ANY EXCEPTION TO THE FOREGOING CONDITIONS MUST BE APPROVED BY ADVANCE WRITTEN AGREEMENT SIGNED BY AN AUTHORIZED REPRESENTATIVE OF LAM.
DOC. CONTROL MAR 21 2001 RELEASED
VME CONTROLLER, NODE 5
DRAWN BLT DATE 8-3-97
CHECKED SCUBA 5-4-98
ENGINEER M WALZ 11-12-97
APPROVED
MFG ENGR
Lam FREMONT, CA
TITLE DIAGRAM, INTERCONNECT, 300MM PM, NODE 5
ABBREVIATED TITLE (30 CHAR. MAX) DIAG, INTCON, 300MM PM, NODE 5
SIZE D DRAWING NO. 224-800096-009 REV E
DO NOT SCALE DRAWING SCALE NONE SHEET 1 OF 1
Released
Printed: Wed Apr 25 22:09:28 GMT 2001
See ECO File (MF,L,220) for Current Rev Status

REVISIONS						
REV	ZONE	DESCRIPTION	INC BY	CHECK	APVD	DATE
A		INITIAL RELEASE	BLT 12-4-00			

CAD SOFTWARE: I-DEAS

Released
Printed: Mon Apr 30 17:02:44 GMT 2001
See ECO File (MF,I,220) for Current Rev Status

AC DISTRIBUTION

A2
ASSY, ENCL,
AC CONTROL
853-800083-401

SH 1 -002 5 C
853-002336-001
CA, PWR, RF GEN, DFC
47A1P40

A47A1
J40 MDL, ELEC, AC DISTR, 2/27MHZ GEN
685-002302-00
J5 47A1P5
J6 47A1P6

684-004974-001
CA, AC PWR,
AC BOX/UN CONT

684-004975-001
CA, CONT/INTLK,
AC/UN CONT

A53A2
MDL, ELEC,
UN CONT/DC BOX
685-002301-001
53A2P7 J7 AC POWER
53A2P8 J8 CONTRL/INTLK

SH 1 -002 5 C
853-803188-003
ASSY, CA, PWR,
AC ENCL/TMP CONT
J3 2P3

A53A1
TMP 1600 ALCATEL
CONTROLLER
796-099223-002
53A1P-POWER
POWER
PUMP CABLE
53A1P-PUMP CABLE

SH 1 -002 3 C
684-099225-004
CA, TMP CONTROLLER

A49B2
TMP 1600 ALCATEL
796-900675-001
49B2P1 J1

SH 1 -002 5 B
853-802770-003
ASSY, CA, AC, TMP
CONT 2.2K SIEKO
J3 2P3

A53A1
TMP 2.2K
CONTROLLER
796-900372-002
53A1P-X2
X2
AC POWER
X4
MOTOR
53A1P-X4
MOTOR

SH 1 -002 3 B
CA, INTCON, CONT
2.2K TMP
684-900373-004
NOT USED

A49B2
TMP 2.2K
796-900373-002
49B2P1 J1

2.2K TURBO OPTION

DC DISTRIBUTION

A3
ASSY, ENCL,
DC CONTROL
853-800087-401

A3B1
ASSY, PCB,
DC CONTROL
810-800086-001
J3 3B1P3
J10 3B1P10
J11 3B1P11

SH 2 -002 6 D
833-800462-039
ASSY, CA, LWR ELEC/
DC ENCL

A4
ASSY, ENCL,
HELIUM/RF
853-800092-401
A4B1
4B1P1 J1
ASSY, PCB,
NODE 2,
LWR ELECTRODE
810-802902-002

SH 2 -002 6 B
833-002306-002
CA, PWR, DC CONT/
WAP MOTOR DRIVE

A7
7P4 J4
ASSY, WAP
DRIVE
853-803107-001

SH 2 -002 6 B
833-004693-002
CA, PWR, DC ENCL/
HOIST ENCL

A40
ASSY, HOIST
853-802298-001
A40B1
40B1P6 J6
ASSY, PCB,
HOIST CONTROLLER
810-802205-002

DOC. CONTROL
DEC 07 2000
RELEASED

	INITIAL	DATE
DRAWN B. TAJII	---	BLT
CHECKED C. LAM	CL	11/6/00
ELECT. ENGINEER J. RASNICK	JWR	12/6/00
MECH. ENGINEER		

ALL DIMENSIONS ARE IN INCHES. DIMENSIONS IN [ ] ARE MILLIMETERS.

Lam RESEARCH FREMONT, CA

TITLE (40 CHAR. MAX) DIAG, INTCON, DFC PM, AC/DC DISTR

SIZE	DRAWING NO.	REV
D	224-800096-402	A
	SCALE NONE	SHEET 1 OF 1

CAD SOFTWARE: I-DEAS

REVISIONS					
REV	ZONE	DESCRIPTION	INC BY	CHECK	APVD	DATE
A		INITIAL RELEASE	EAB 11-2-00			

Released
Printed: Mon Apr 30 17:02:56 GMT 2001
See ECO File (MF,L,220) for Current Rev Status

A53A1
TMP CONTROLLER
796-099223-002
J1
J2
49P1
49P2

A2
ASSY, ENCL,
AC CONTROL
853-800083-401
J2A
2P2A

833-800999-203
ASSY, CA, LONWK,
TMP CONT/AC ECNL,
GRN
-006 | 5 | D

A1
ASSY, ENCL,
VME CONTROL
853-800085-001
A1B3
ASSY, PCB,
VME BREAKOUT
810-800082-005
J23
183P23

833-800999-202
ASSY, CA, LONWK,
VME/TMP CONT, GRN
-006 | 6 | C

A21
ASSY,ENCL,
CHMBR SIG
A21B1
ASSY, PCB,
NODE 1,
CHMBR SIG
810-800459-002
J2A
J2B
21B1P2B

833-800999-205
ASSY, CA, LONWK,
NODE 1/NODE 2, GRN
-006 | 4 | B

A4
ASSY, ENCL,
HELIUM/RF
853-800092-401
A4B1
ASSY, PCB,
NODE 2,
LWR ELECTRODE
810-802902-002
J2A
J2B
4B1P2A
4B1P2B

006 | 4 | B
833-800999-204
ASSY, CA, LONWK,
HE RF/PM INTFC, GRN

PM INTERFACE BRACKET
A41
41J6
SEE SYSTEM INTERFACE
224-002985-003

DOC. CONTROL
DEC 07 2000
RELEASED

LONWORKS & ETHERNET
COMMUNICATION

	INITIAL	DATE
DRAWN: E. BRACA	---	1-11-00
CHECKED: C. Lim	CL	12/6/00
ELECT. ENGINEER: J. KASNICK	JK	12/6/00
MECH. ENGINEER		

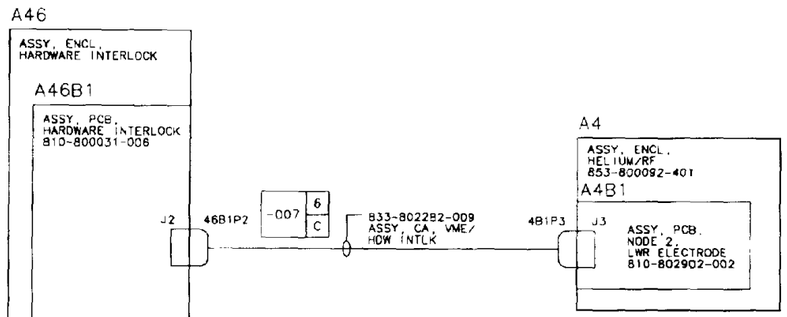
ALL DIMENSIONS ARE IN INCHES.
DIMENSIONS IN ( ) ARE MILLIMETERS.

Lam RESEARCH FREMONT, CA

TITLE (40 CHAR. MAX)
DIAG, INTCON, DFC PM, COMM

SIZE	DRAWING NO.	REV
D	224-800096-406	A
	SCALE NONE	SHEET 1 OF 1

REVISIONS						
REV	ZONE	DESCRIPTION	INC BY	CHECK	APVD	DATE
A		INITIAL RELEASE	EAB 10-23-00	CJ JUR		11/15/00



MODULE HARDWARE INTERLOCKS

	INITIAL	DATE
DRAWN: E. BRAGA	---	1-12-00
CHECKED: C. Lam	CL	11/6/00
ELECT. ENGINEER: J. RASNICK	JUR	11/6/00
MECH. ENGINEER		

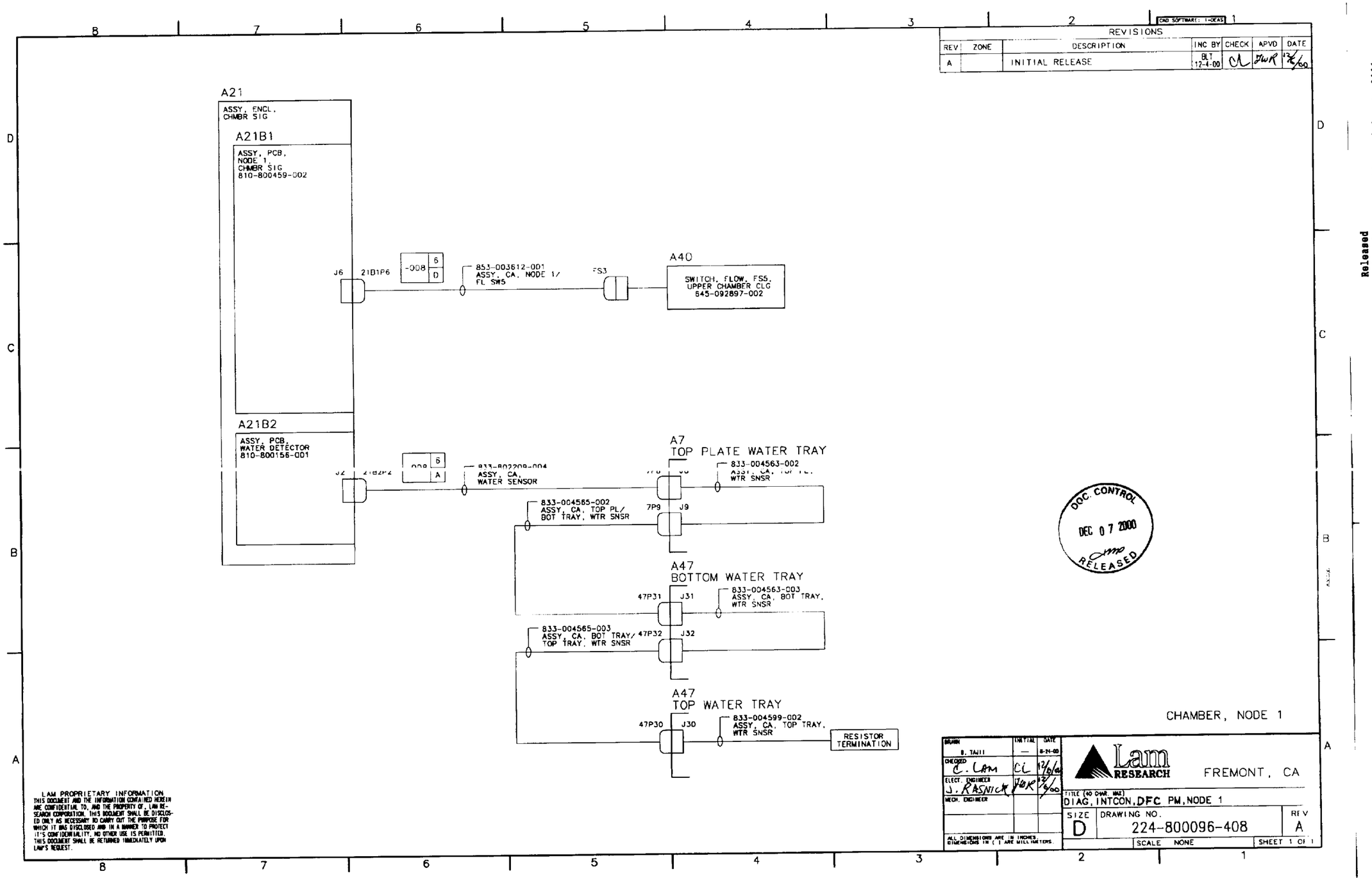
ALL DIMENSIONS ARE IN INCHES
DIMENSIONS IN ( ) ARE MILLIMETERS.

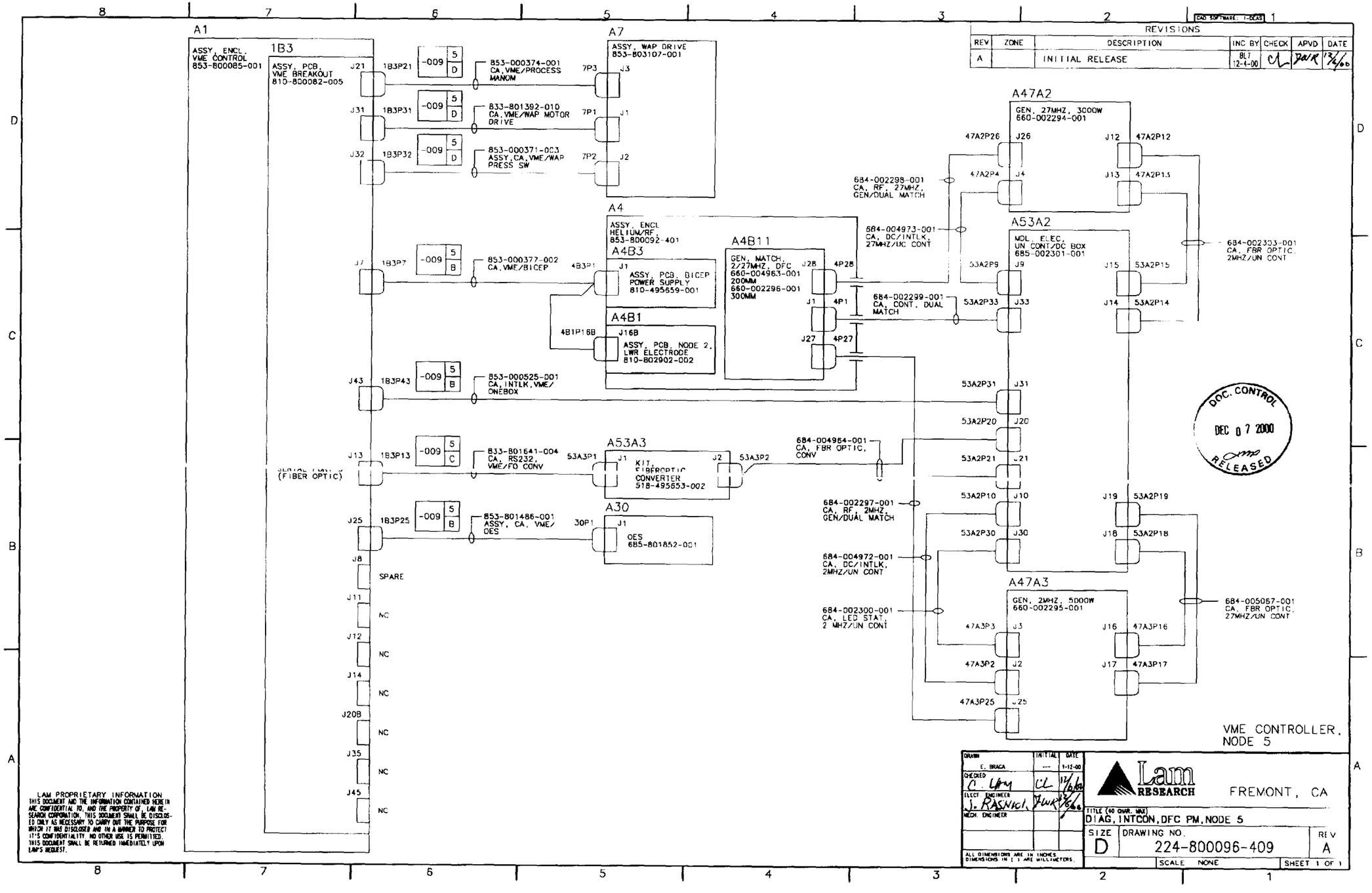
Lam RESEARCH FREMONT, CA

TITLE (40 CHAR. MAX)
DIAG, INTCON, DFC PM, INTLK

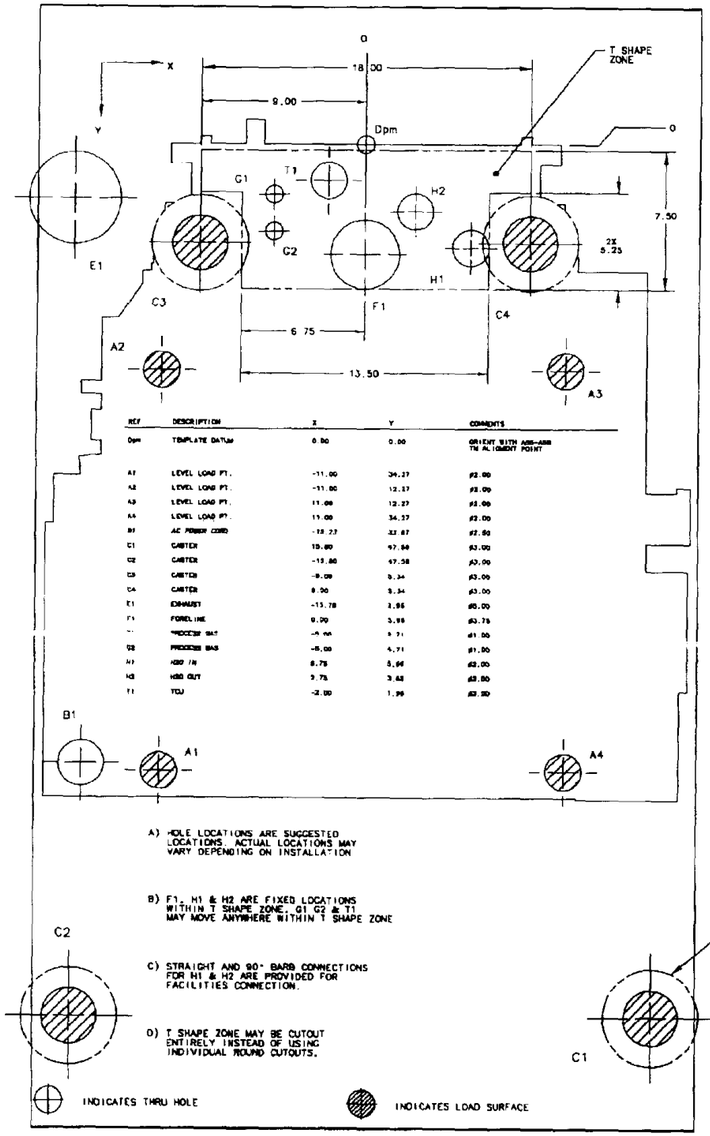
SIZE	DRAWING NO.	REV
D	224-800096-407	A

SCALE NONE | SHEET 1 OF 1


CAD SOFTWARE: I-DEAS
REVISIONS
REV | ZONE | DESCRIPTION | INC BY | CHECK | APVD | DATE
A | | INITIAL RELEASE | BLT 12-4-00 | CL | DWR | 12/6/00
Released
Printed: Mon Apr 30 17:03:25 GMT 2001
See ECO File (MF,1,220) for Current Rev Status
A21
ASSY, ENCL, CHMBR SIG
A21B1
ASSY, PCB, NODE 1 CHMBR SIG 810-800459-002
A21B2
ASSY, PCB, WATER DETECTOR 810-800156-001
J6
21B1P6
-008 6 D
833-003612-001 ASSY, CA, NODE 1/FL SWS
FS3
A40
SWITCH, FLOW, FS5, UPPER CHAMBER CLG 645-092897-002
J2
21B2P2
-008 6 A
833-802209-004 ASSY, CA, WATER SENSOR
A7
TOP PLATE WATER TRAY
833-004563-002 ASSY, CA, TOP PL/WTR SNSR
833-004565-002 ASSY, CA, TOP PL/BOT TRAY, WTR SNSR
7P9
J9
A47
BOTTOM WATER TRAY
47P31
J31
833-004563-003 ASSY, CA, BOT TRAY, WTR SNSR
833-004565-003 ASSY, CA, BOT TRAY/TOP TRAY, WTR SNSR
47P32
J32
A47
TOP WATER TRAY
47P30
J30
833-004599-002 ASSY, CA, TOP TRAY, WTR SNSR
RESISTOR TERMINATION
DOC. CONTROL
DEC 07 2000
RELEASED
CHAMBER, NODE 1
LAM PROPRIETARY INFORMATION
THIS DOCUMENT AND THE INFORMATION CONTAINED HEREIN ARE CONFIDENTIAL TO, AND THE PROPERTY OF, LAM RESEARCH CORPORATION. THIS DOCUMENT SHALL BE DISCLOSED ONLY AS NECESSARY TO CARRY OUT THE PURPOSE FOR WHICH IT WAS DISCLOSED AND IN A MANNER TO PROTECT IT'S CONFIDENTIALITY. NO OTHER USE IS PERMITTED. THIS DOCUMENT SHALL BE RETURNED IMMEDIATELY UPON LAM'S REQUEST.
DRAWN B. TAITT INITIAL — DATE 8-24-00
CHECKED C. Lam CL 12/6/00
ELECT. ENGINEER J. RASNICK JRK 12/6/00
MECH. ENGINEER
ALL DIMENSIONS ARE IN INCHES. DIMENSIONS IN ( ) ARE MILLIMETERS.
Lam RESEARCH FREMONT, CA
TITLE (40 CHAR. MAX) DIAG, INTCON, DFC PM, NODE 1
SIZE D
DRAWING NO. 224-800096-408
REV A
SCALE NONE
SHEET 1 OF 1



Released
Printed: Mon Apr 30 17:03:54 GMT 2001
See ECO File (MF,L,220) for Current Rev Status



REV	DESCRIPTION	X	Y	COMMENTS
Dpm	TEMPLATE DATUM	0.00	0.00	ORIENT WITH ARS-ARM TM ALIGNMENT POINT
A1	LEVEL LOAD PT.	-11.00	34.27	Ø2.00
A2	LEVEL LOAD PT.	-11.00	12.27	Ø2.00
A3	LEVEL LOAD PT.	11.00	12.27	Ø2.00
A4	LEVEL LOAD PT.	11.00	34.27	Ø2.00
B1	AC POWER CORD	-18.27	32.87	Ø2.50
C1	CASTER	10.80	97.58	Ø3.00
C2	CASTER	-10.80	97.58	Ø3.00
C3	CASTER	-8.00	9.34	Ø3.00
C4	CASTER	8.00	9.34	Ø3.00
E1	EXHAUST	-13.78	3.86	Ø5.00
F1	FORELINE	0.00	3.98	Ø3.75
--	*PROCESS GAS	-4.00	9.71	Ø1.00
G2	PROCESS GAS	-8.00	9.71	Ø1.00
H1	H2O IN	6.75	5.86	Ø2.00
H2	H2O OUT	9.75	3.48	Ø2.00
T1	TCU	-2.00	1.99	Ø2.00

REVISIONS

REV	ZONE	DESCRIPTION	INC BY	CHECK	APVD	DATE
A		INITIAL RELEASE	FG 4-14-00	WY 7-14-00	WY	7-14-00
B		CORRECTED TABLE:A1 X DIM WAS: 11.00, A2 Y DIM WAS : 34.27, A3 X DIM WAS: -11.00, A4 Y DIM WAS: 12.27, G1 X DIM WAS: 5.00, G2 WAS: G1, G2 X DIM WAS: -5.00, T1 X DIM WAS: 2.00, H1 & H2 HOLE WAS:Ø1.00, H2 Y DIM WAS: 2.75, E1 HOLE WAS: Ø3.75, F1 HOLE WAS: Ø2.00, C1, C2, C3, C4 WAS: Ø5.25	FG 11-28-00	11/30/00	11/30/00	

NOTES (UNLESS OTHERWISE SPECIFIED)

1. WORKMANSHIP STANDARDS PER LAM OQA-1018.
2. USE THIS GEOMETRY TO GENERATE A FULL SIZE DXF FILE THAT CAN BE PLOTTED FULL SCALE ON MYLAR, REFERENCE 214-802968-002. THE MYLAR PLOT WILL THEN BE USED AT THE FAB TO EXPEDITE INSTALLATION. DRAWING FORMAT SHOULD NOT BE INCLUDED IN THE DXF FILE FOR THE FULL SCALE MYLAR PLOT.
3. MUST REV TRACK WITH 214-802968-002.

ITEM NO.	LAM / MFR PART NO.	DESCRIPTION	QTY

BILL OF MATERIAL

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS ± DECIMALS ± ANGLES ± MACHINED SURFACES DEBURR & BREAK SHARP EDGES	DRAWN	INITIAL: F CALAVIZ — DATE: 7-14-00	Lam RESEARCH FREMONT, CA
	CHECKED	W YEE WY 7-14-00	TITLE (40 CHAR. MAX) SPEC, TMPLT, INSTALL, PM, 2300
MATERIAL ---	ELECT. ENGINEER		
FINISH ---	MECH. ENGINEER	W YEE WY 7-14-00	SIZE D — DRAWING NO. 253-802968-002 — REV B
	THIRD ANGLE PROJECTION	DO NOT SCALE DRAWING	SCALE NONE — SHEET 1 OF 1