

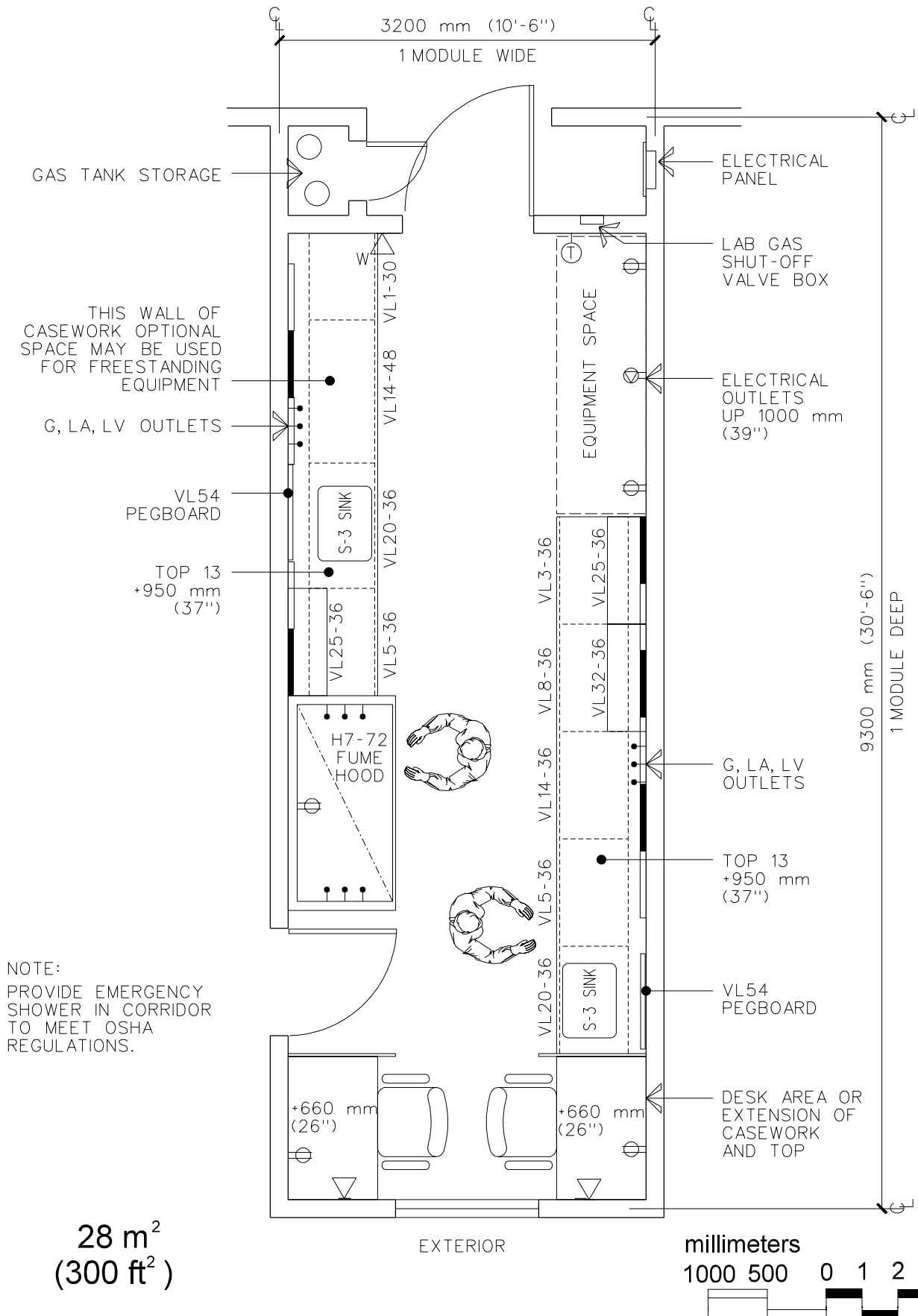
## Section 4

# Design Guide Plates: Laboratories

Guide  
Plate  
Series

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  - Equipment & Utility Plan
  - Reflected Ceiling Plan
  - Design Standards
  - Equipment Guide List
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  - Reflected Ceiling Plan
  - Design Standards
  - Equipment Guide List (same as 4-1)
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  - Equipment & Utility Plan
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  - Design Standards
  - Equipment Guide List (same as 4-1)
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  - Equipment & Utility Plan
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# Equipment & Utility Plan Single Module Laboratory





# Design Standards

## Single Module Laboratory

### ARCHITECTURAL

Floor Area	28 m <sup>2</sup> (300 ft <sup>2</sup> )	Wall Finish	gwb
Ceiling	at	Base	rb
Ceiling Height	2700 mm (9'-0") min*	Floor Finish	vct
RFI Shielding	-	Slab Depression	-
Soundproofing	-	Floor Load	-

\*2850 mm (9'-6") preferred

### SPECIAL EQUIPMENT

H7-72 Fume Hood			
	Lighting	ELECTRICAL	Power
General	550 lx(50 fc)	General	-
Special	1100 lx (100 fc) task	Special	**
Emergency	-	Emergency	fume hood(s)***
Louvered deep cell parabolic fixtures, T-8 lamps		**Recep: 5000 W, 208 V, 1Ø; Recep: 3000 W, 120 V	
		***Fume hood recep: 1200 W, 120 V dedicated circuit	

### COMMUNICATIONS

Telephone	yes	ADP	yes
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### HEATING, VENTILATING AND AIR CONDITIONING

AC Load Lights	1050 W	Dry Bulb Temp Cooling	24°C (76°F)
AC Load Equipment	52 W/m <sup>2</sup> (4.8 W/ft <sup>2</sup> )	Dry Bulb Temp Heating	22°C (72°F)
Number of People	3	Relative Humidity - Cooling	50%
Noise Criteria	NC-45	Relative Humidity - Heating	30%
Room Pressure	negative	Minimum % Outside Air	100
Min Air Changes per Hour	12	100% Exhaust Air	yes
Steam	-	Special Exhaust	yes****

\*\*\*\*H7: 0.65 m<sup>3</sup>/s (1375 cfm), 60 Pa (0.24 inches of water), 724 mm (28½") sash opening

### PLUMBING AND LABORATORY GASES

Sanitary Drain	-	Cold Water	yes
Acid Waste	yes	Hot Water	yes
Other	-	Reagent Grade Water	yes
Fuel Gas	yes	Laboratory Air	yes
Nitrogen	-	Laboratory Vacuum	yes

# Equipment Guide List

## Laboratories, General

qty	symbol	ai	description
			NOTE: IN ADDITION TO VL (FIXED) CASEWORK SHOWN ON THE EQUIPMENT GUIDE LIST; MODULAR CASEWORK MAY ALSO BE SELECTED.
1	H7-72	CC	FUME HOOD, AIR BY-PASS, 1829 MM X 787 MM X 2438 MM, (72" X 31" X 96") WITH CUP SINK, LAB AIR, FUEL GAS, LAB VACUUM, AND COLD WATER OUTLETS, 120 VOLT, 20 AMP, RECEPTACLES (DEDICATED CIRCUIT) (PG-08-1 & PG-08-6, MCS 11610)
AR	H12B2-48	CC	CABINET, BIOLOGICAL SAFETY (LAMINAR FLOW), CLASS II, TYPE B2, 100% DIRECT EXHAUSTED AIR THROUGH THE WORKSPACE, WITH FUEL GAS, LAB AIR AND LAB VACUUM OUTLET, 120 VOLT, 20 AMP, RECEPTACLE (PG-08-1 & PG-08-6, MCS 11604)
			NOTE: THE TYPE (A, B1, B2 OR B3) OF CLASS II BIOLOGICAL SAFETY CABINET REQUIRED FOR ANY GENERAL LABORATORY MODULE WILL BE DETERMINED ON AN INDIVIDUAL PROJECT BASIS BY RESEARCH SERVICE AT THE MEDICAL CENTER. REFER TO GENERAL INFORMATION 16.
AR		CC	CONNECTIONS, PLUMBING, ELECTRICAL OR MECHANICAL AS REQUIRED
AR	TOP 13/13A	CF	COUNTER TOP, EPOXY, RESIN, WITH DRIP GROOVE, 25 MM (1") THICK, 762 MM (30") DEEP ALONG WALL (PG-08-1 & PG-08-6, MCS 11602)
AR	S-3	CF	SINK, MOLDED, RESIN WITH END OR CORNER DRAIN OUTLET, 635 MM X 457 MM X 406 MM (25" X 18" X 16") (PG-08-1 & PG-08-6, MCS 11602)
AR	VL1/1A	CF	CABINET, UNDERCOUNTER, WITH 4/3 DUST SEAL DRAWERS, WIDTH - 762 MM (30"); DEPTH - 559 MM (22"); HEIGHT - 787 MM (31"); FOR FLOOR MOUNTED ADD 127 MM (5") TOE BASE (PG-08-1 & PG-08-6, MCS 12345)
AR	VL3/3A	CF	CABINET, UNDERCOUNTER, WITH 5/4 DUST SEAL DRAWERS, WIDTH - 914 MM (36"); DEPTH - 559 MM (22"); HEIGHT - 787 MM (31"); FOR FLOOR MOUNTED ADD 127 MM (5") TOE BASE (PG-08-1 & PG-08-6, MCS 12345)
AR	VL4/4B	CF	CABINET, UNDERCOUNTER, WITH 2 DUST SEAL DRAWERS, 2 HINGED DOORS AND 1 ADJUSTABLE SHELF, AVAILABLE WIDTHS - 762 MM, 914 MM, 1219 MM (30", 36", 48"); DEPTH - 559 MM (22"); HEIGHTS - 787 MM, 635 MM (31", 25"); FOR FLOOR MOUNTED ADD 127 MM (5") TOE BASE (PG-08-1 & PG-08-6, MCS 12345)
AR	VL5/5B	CF	CABINET, UNDERCOUNTER, WITH 4/3 DUST SEAL DRAWERS, 1 HINGED DOOR AND 2/1 ADJUSTABLE SHELVES, WIDTH - 914 MM (36"); DEPTH - 559 MM (22"); HEIGHT - 635 MM (25"); FOR FLOOR MOUNTED ADD 127 MM (5") TOE BASE (PG-08-1 & PG-08-6, MCS 12345)
AR	VL8/8A	CF	CABINET, UNDERCOUNTER, WITH 1 DRAWER, 1 DOOR AND 1 ADJUSTABLE SHELF, WIDTH - 914 MM (36"); DEPTH - 559 MM (22"); HEIGHT - 787 MM (31"); FOR FLOOR MOUNTED ADD 127 MM (5") TOE BASE (PG-08-1 & PG-08-6, MCS 12345)

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## Equipment Guide List

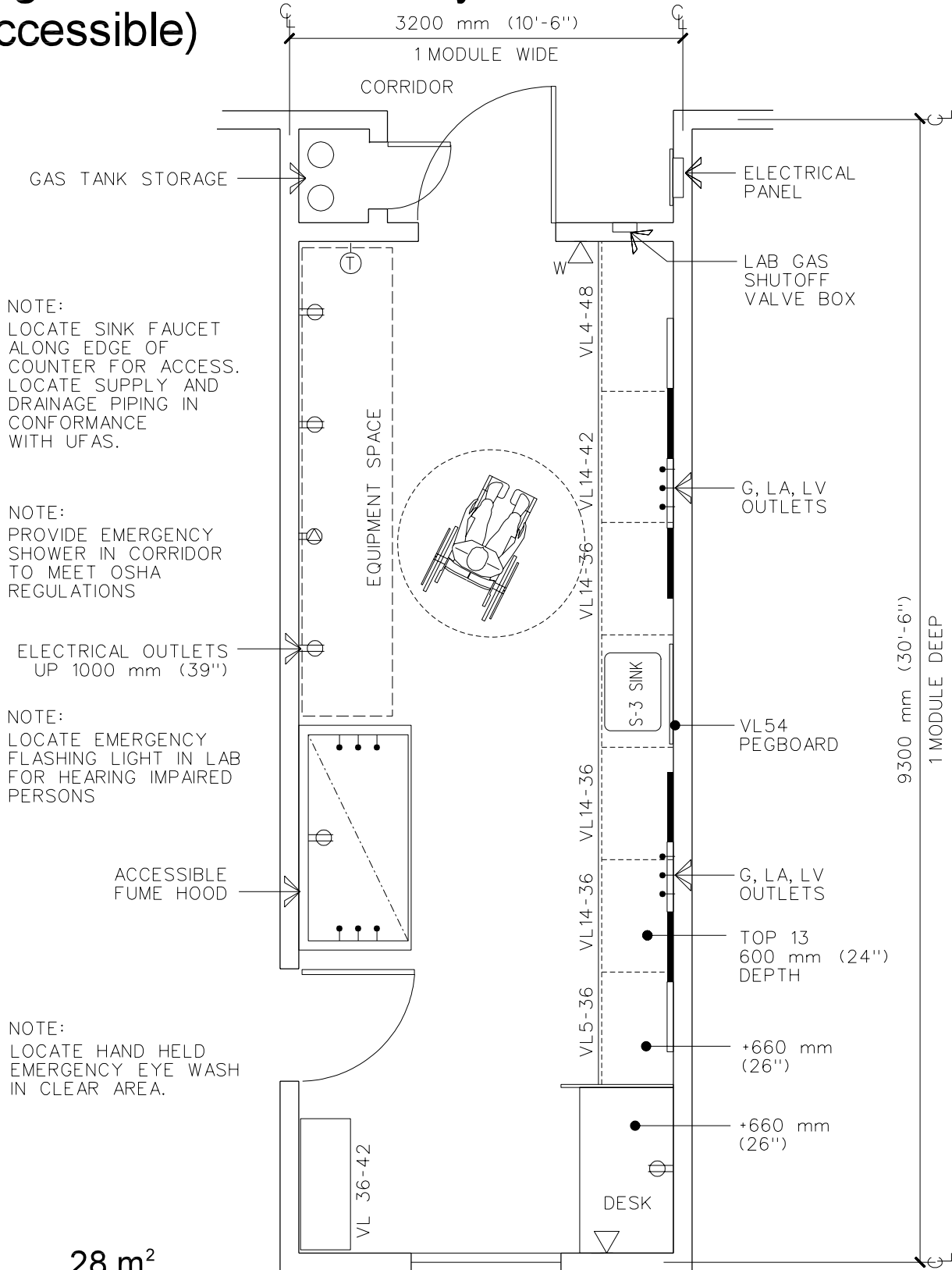
### Laboratories, General

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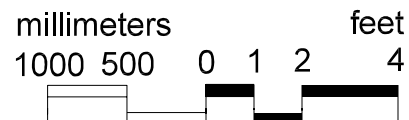
qty	symbol	ai	description
AR	VL14	CF	TABLE FRAME, WITH DRAWER(S), KNEE SPACE UNIT, WIDTHS - 914 MM, 1067 MM (36", 42"); DEPTH - 559 MM (22"); HEIGHT - 635 MM (25") (PG-08-1 & PG-08-6, MCS 12345)
AR	VL20/ 20B	CF	CABINET, UNDERCOUNTER, SINK UNIT, 2 HINGED PANEL DOORS, WIDTH - 914 MM (36"); DEPTH - 559 MM (22"); HEIGHT - 635 MM (25"); FOR FLOOR MOUNTED ADD 127 MM (5") TOE BASE (PG-08-1 & PG-08-6, MCS 12345)
AR	VL25	CF	CABINET, WALL, WITH SLOPING TOP, 2 GLAZED SLIDING DOORS AND 2 ADJUSTABLE SHELVES, WIDTH - 914 MM (36"); DEPTH - 330 MM (13"); HEIGHT - 762 MM (30") (PG-08-1 & PG-08-6, MCS 12345)
AR	VL32	CF	CABINET, WALL, OPEN WITH SLOPING TOP AND 2 ADJUSTABLE SHELVES, WIDTH - 914 MM (36"); DEPTH - 330 MM (13"); HEIGHT - 762 MM (30") (PG-08-1 & PG-08-6, MCS 12345)
AR	VL54	CF	PEGBOARD, EPOXY, 53 PEGS, 813 MM X 762 MM (32" X 30") (PG-08-1 & PG-08-6, MCS 11602)
AR		CC	OUTLETS, ONE EACH, LAB AIR, FUEL GAS AND LAB VACUUM GROUPED OVER COUNTER (PG-08-1 & PG-08-6, MCS 11602)
AR		CC	FAUCET, REAGENT GRADE OR MINERAL FREE WATER (PG-08-1, MCS 11602)
1		CC	OUTLET, ADP (EMPTY CONDUIT SYSTEM) (SEE ELECTRICAL ENGINEERING SERVICE GUIDE LINES)
AR		CC	RECEPTACLE, ELECTRICAL, 208 VOLT, 20 AMP, 1 PHASE, ON WALL, WEATHERPROOF (PG-08-1, MCS 16140; H-08-3, CS 801-3)
AR		CC	RECEPTACLE, ELECTRICAL, DUPLEX, 120 VOLT, 20 AMP, 610 MM (24") ON CENTERS ON FREE WALLS (PG-08-1, MCS 16140; H-08-3, CS 801-3)
AR		CC	RECEPTACLE, ELECTRICAL, DUPLEX, 120 VOLT, 20 AMP, STRIP MOLD WITH OUTLETS ON 610 MM (24") CENTERS, 229 MM (9") ABOVE COUNTER (PG-08-1, MCS 16140; H-08-3, CS 801-3)
AR		CC	RECEPTACLE, ELECTRICAL, DUPLEX, 120 VOLT, 30 AMP, DEDICATED CIRCUIT (PG-08-1, MCS 16140)
AR		CC	RECEPTACLE, ELECTRICAL, DUPLEX, 120 VOLT, 20 AMP (PG-08-1, MCS 16140; H-08-3, CS 801-3)

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# Equipment & Utility Plan Single Module Laboratory (Accessible)



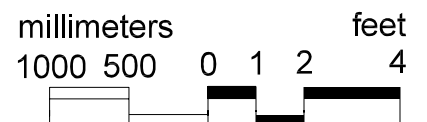
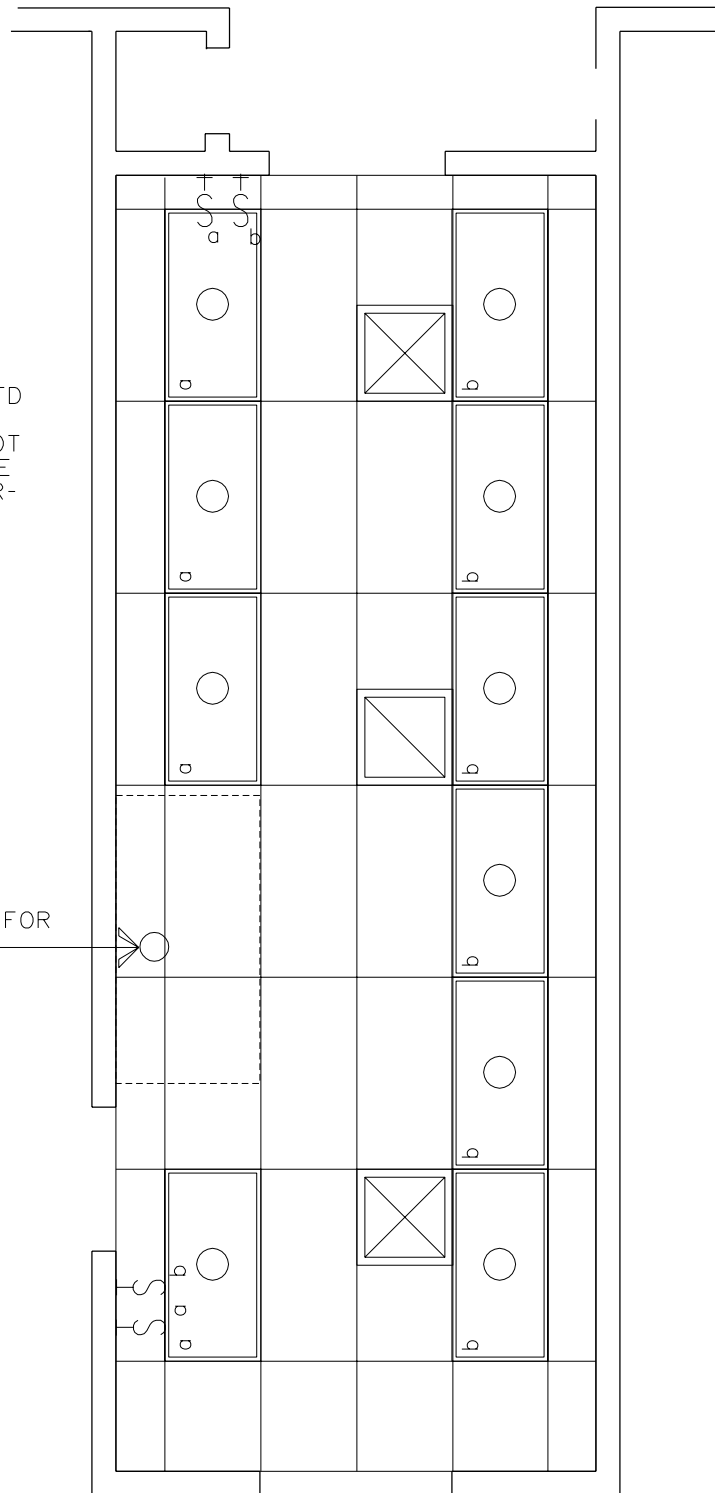
28 m<sup>2</sup>  
(300 ft<sup>2</sup>)



# Reflected Ceiling Plan Single Module Laboratory (Accessible)

NOTE:  
USE ALL SURFACE MTD  
LIGHTING FIXTURES IF  
CEILING GRID WILL NOT  
ALLOW LIGHTS TO BE  
PLACED WITH CENTER-  
LINE OVER EDGE OF  
WORK SURFACE

CONNECTION FOR  
FUME HOOD





# Design Standards

## Laboratory (Accessible)

### ARCHITECTURAL

Floor Area	28 m <sup>2</sup> (300 ft <sup>2</sup> )	Wall Finish	gwb
Ceiling	at	Base	rb
Ceiling Height	2700 mm (9 ft) min*	Floor Finish	vct
RFI Shielding	-	Slab Depression	-
Soundproofing	-	Floor Load	-

\*2850 mm (9'-6") preferred

### SPECIAL EQUIPMENT

H7-72 Fume Hood			
	Lighting	ELECTRICAL	Power
General	550 lx (50 fc)	General	-
Special	1100 lx (100 fc) task	Special	**
Emergency	-	Emergency	fume hood(s)***
Louvered deep cell parabolic fixtures, T-8 lamps		**Recep: 5000 W, 208 V, 1Ø; Recep: 3000 W, 120 V	
		***Fume hood recep: 1200 W, 120 V dedicated circuit	

### COMMUNICATIONS

Telephone	yes	ADP	yes
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### HEATING, VENTILATING AND AIR CONDITIONING

AC Load Lights	1050 W	Dry Bulb Temp Cooling	24°C (76°F)
AC Load Equipment	52 W/m <sup>2</sup> (4.8 W/ft <sup>2</sup> )	Dry Bulb Temp Heating	22°C (72°F)
Number of People	2	Relative Humidity - Cooling	50%
Noise Criteria	NC-45	Relative Humidity - Heating	30%
Room Pressure	negative	Minimum % Outside Air	100
Min Air Changes per Hour	12	100% Exhaust Air	yes
Steam	-	Special Exhaust	yes****

\*\*\*\*H7: 0.65 m<sup>3</sup>/s (1375 cfm), 60 Pa (0.24 inches of water),, 724 mm (28½") sash opening

### PLUMBING AND LABORATORY GASES

Sanitary Drain	-	Cold Water	yes
Acid Waste	yes	Hot Water	yes
Other	-	Reagent Grade Water	yes
Fuel Gas	yes	Laboratory Air	yes
Nitrogen	-	Laboratory Vacuum	yes

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# Equipment Guide List Laboratories, General

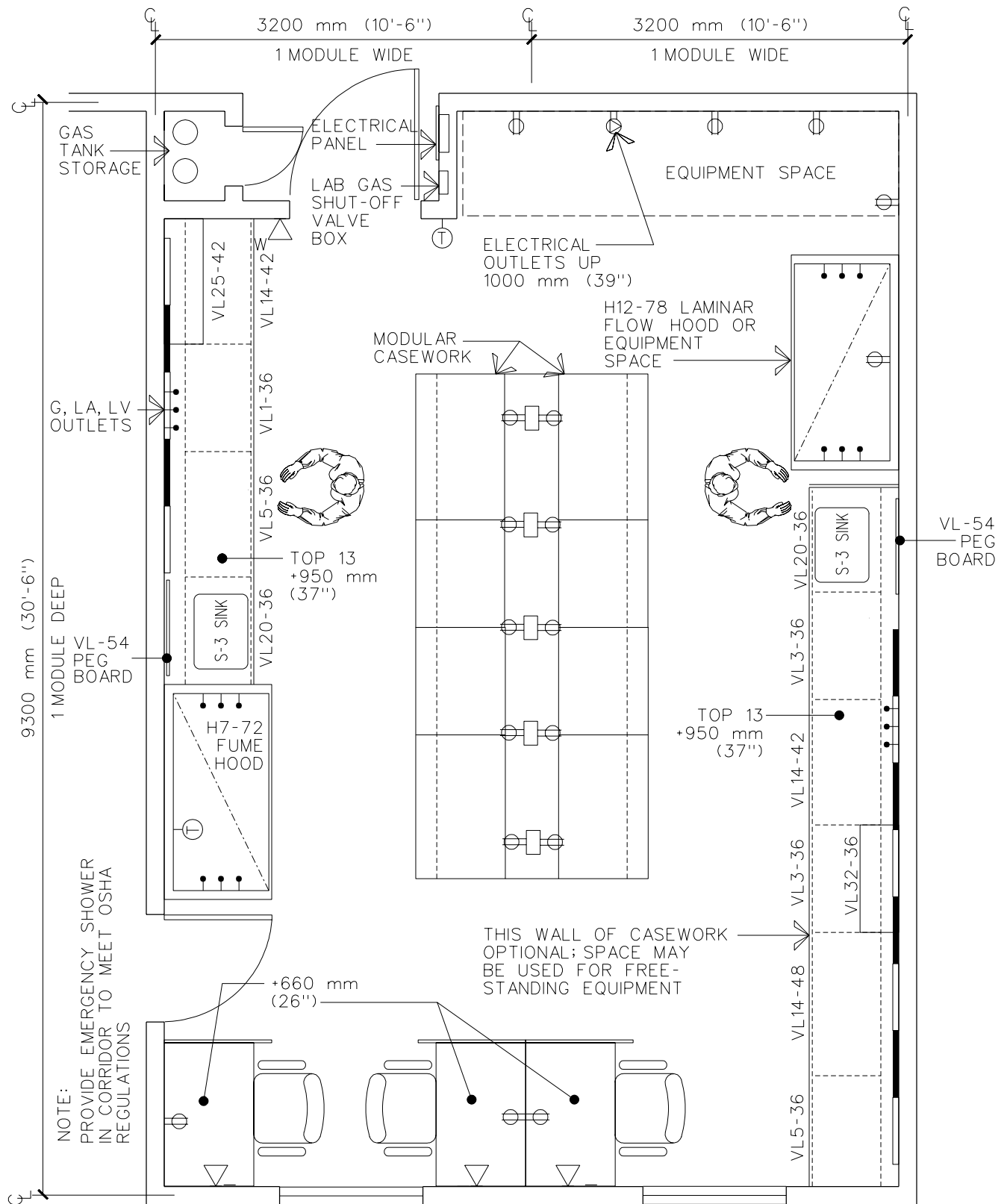
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qty	symbol	ai	description
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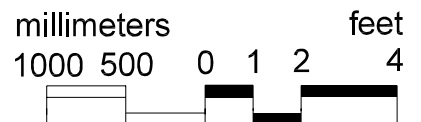
See Guide Plate 4-1.

# Equipment & Utility Plan Double Module Laboratory I

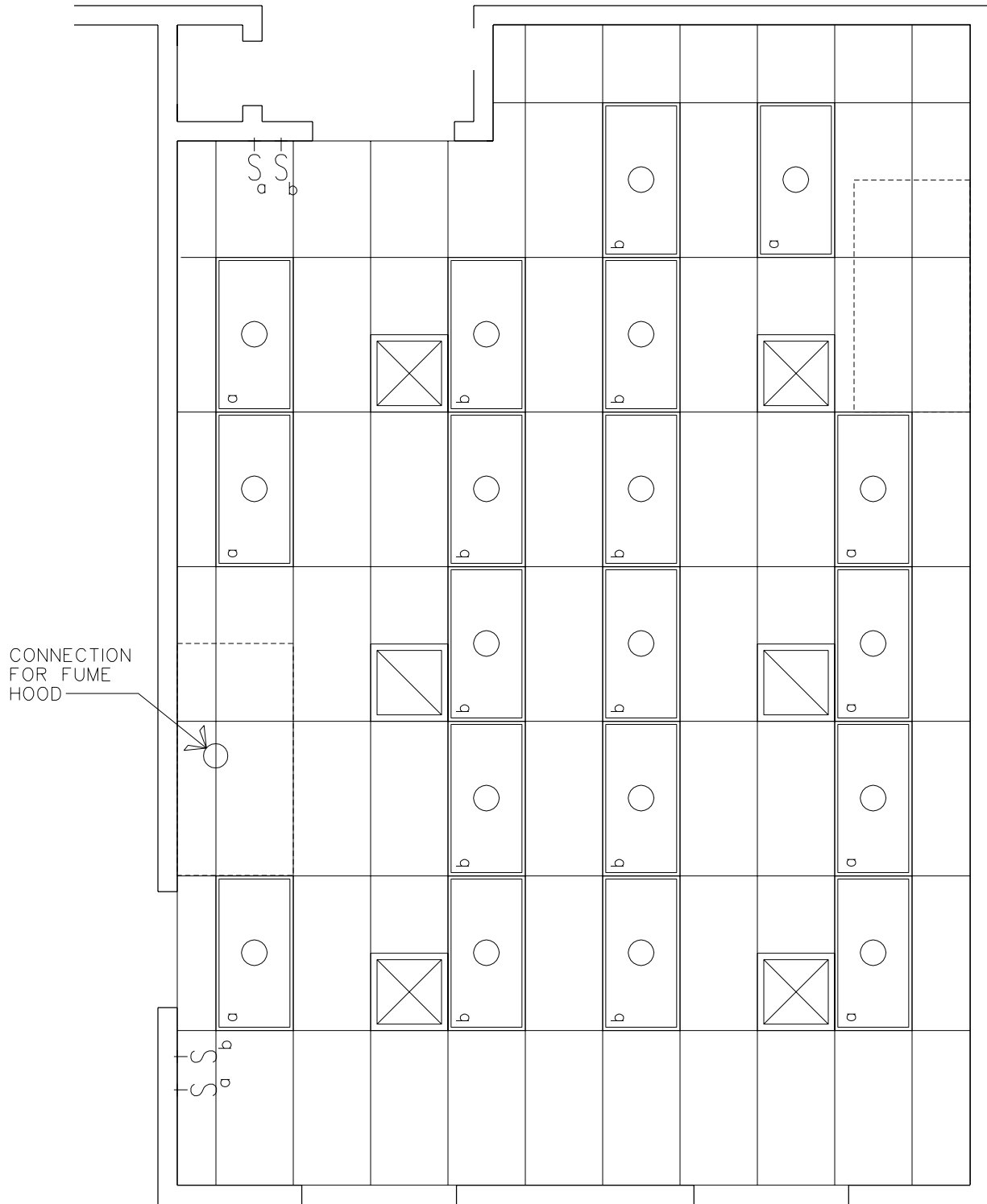


57 m<sup>2</sup>  
(615 ft<sup>2</sup>)

EXTERIOR



# Reflected Ceiling Plan Double Module Laboratory I



CONNECTION  
FOR FUME  
HOOD

NOTE:  
USE ALL SURFACE MTD LIGHTING FIXTURES  
IF CEILING GRID WILL NOT ALLOW LIGHTS  
TO BE PLACED WITH CENTERLINE OVER  
EDGE OF WORK SURFACE.



# Design Standards

## Double Module Laboratory I

### ARCHITECTURAL

Floor Area	58 m <sup>2</sup> (615 ft <sup>2</sup> )	Wall Finish	gwb
Ceiling	at	Base	rb
Ceiling Height	2700 mm (9 ft) min*	Floor Finish	vct
RFI Shielding	-	Slab Depression	-
Soundproofing	-	Floor Load	-

\*2850 mm (9'-6") preferred

### SPECIAL EQUIPMENT

H7-72 Fume Hood

H12 B2-48 Laminar Flow Hood

	Lighting	ELECTRICAL	Power
General	550 lx (50 fc)	General	-
Special	1100 lx (100 fc) task	Special	**
Emergency	-	Emergency	fume hood(s)***
Louvered deep cell parabolic fixtures, T-8 lamps		**Recep: 5000 W, 208 V, 1Ø; Recep: 8000 W, 120 V	
		***Fume, flow hoods: 1200 W, 120 V dedicated circuit each	

### COMMUNICATIONS

Telephone	yes	ADP	yes
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### HEATING, VENTILATING AND AIR CONDITIONING

AC Load Lights	1995 W	Dry Bulb Temp Cooling	24°C (76°F)
AC Load Equipment	75 W/m <sup>2</sup> (7.0 W/ft <sup>2</sup> )	Dry Bulb Temp Heating	22°C (72°F)
Number of People	6	Relative Humidity - Cooling	50%
Noise Criteria	NC-45	Relative Humidity - Heating	30%
Room Pressure	negative	Minimum % Outside Air	100
Min Air Changes per Hour	12	100% Exhaust Air	yes
Steam	-	Special Exhaust	yes****

\*\*\*\*H7: 0.65 m<sup>3</sup>/s (1375 cfm), 60 Pa (0.24 inches of water), 724 mm (28½") sash opening

H12 B2: 0.40 m<sup>3</sup>/s (840 cfm), 523 Pa (2.10 inches of water), requires dedicated exhaust system

### PLUMBING AND LABORATORY GASES

Sanitary Drain	-	Cold Water	yes
Acid Waste	yes	Hot Water	yes
Other	-	Reagent Grade Water	yes
Fuel Gas	yes	Laboratory Air	yes
Nitrogen	-	Laboratory Vacuum	yes

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# Equipment Guide List Laboratories, General

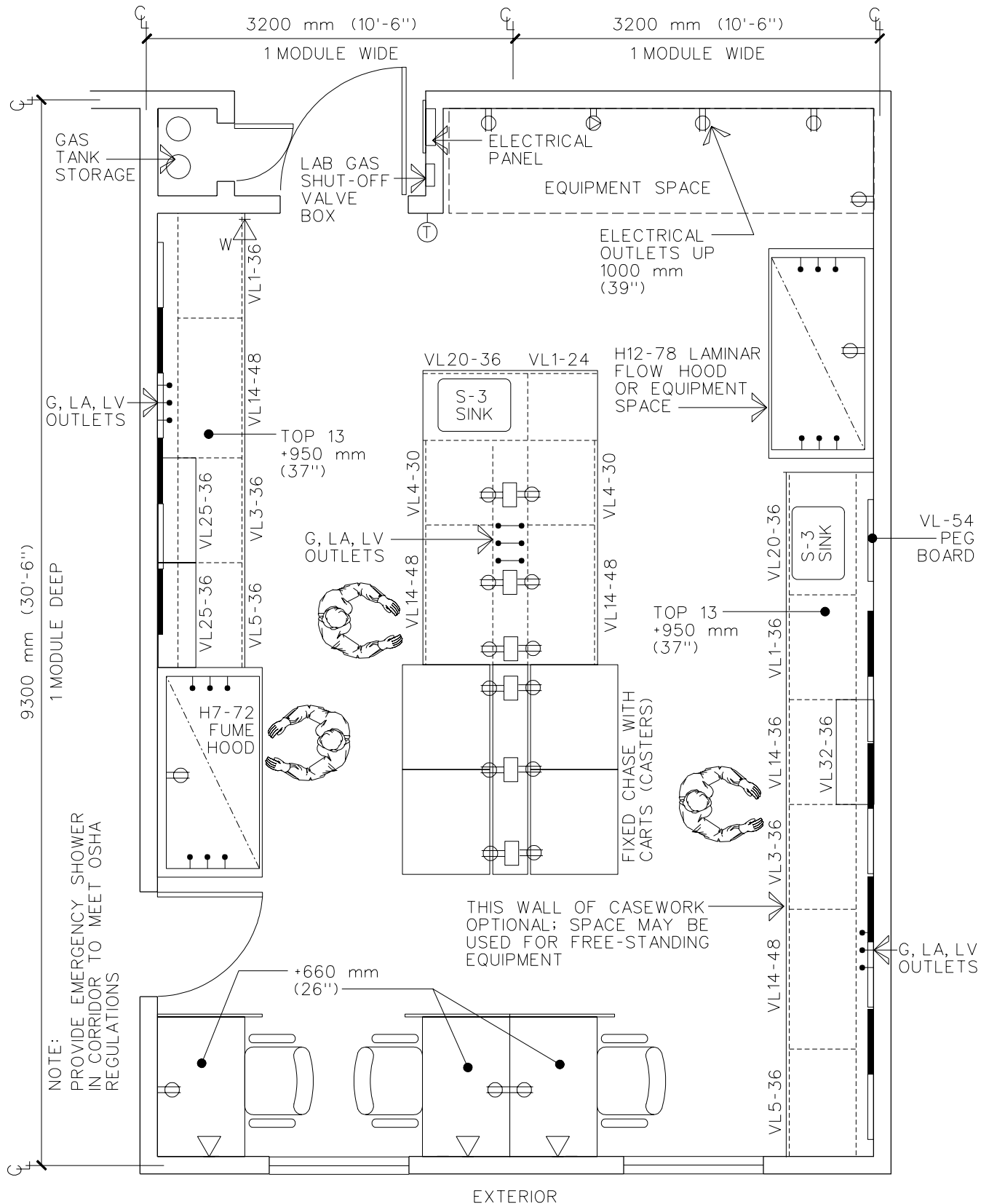
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qty	symbol	ai	description
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See Guide Plate 4-1.

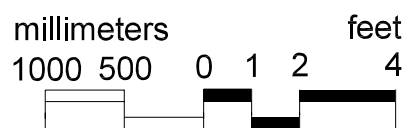
# Equipment & Utility Plan Double Module Laboratory II



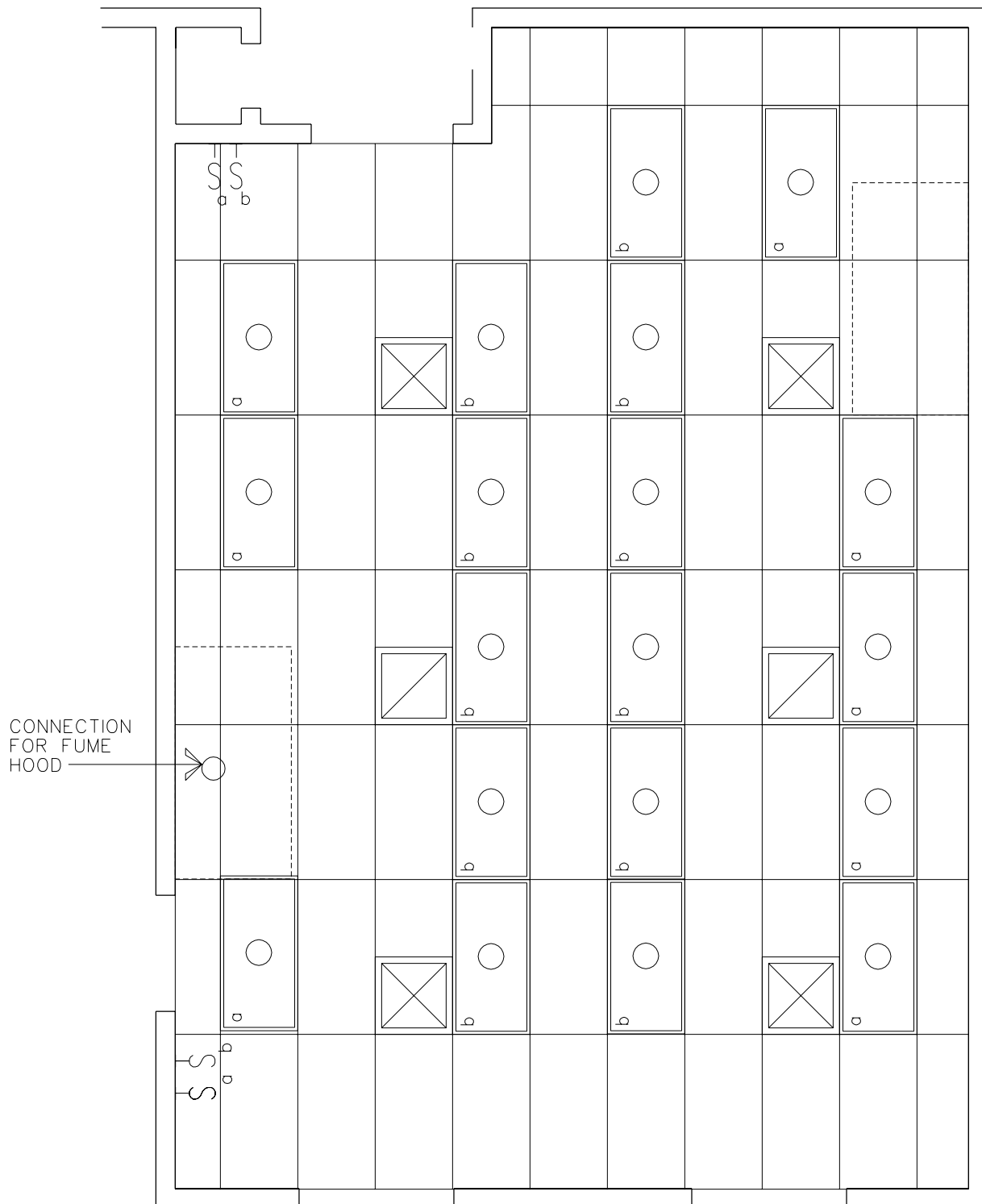
NOTE:  
PROVIDE EMERGENCY SHOWER  
IN CORRIDOR TO MEET OSHA  
REGULATIONS

THIS WALL OF CASEWORK  
OPTIONAL; SPACE MAY BE  
USED FOR FREE-STANDING  
EQUIPMENT

57 m<sup>2</sup>  
(615 ft<sup>2</sup>)

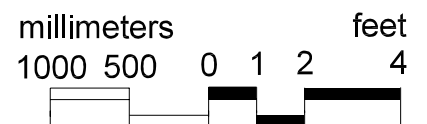


# Reflected Ceiling Plan Double Module Laboratory II



CONNECTION FOR FUME HOOD

NOTE:  
USE ALL SURFACE MTD LIGHTING FIXTURES  
IF CEILING GRID WILL NOT ALLOW LIGHTS  
TO BE PLACED WITH CENTERLINE OVER  
EDGE OF WORK SURFACE.





# Design Standards

## Double Module Laboratory II

### ARCHITECTURAL

Floor Area	58 m <sup>2</sup> (615 ft <sup>2</sup> )	Wall Finish	gwb
Ceiling	at	Base	rb
Ceiling Height	2700 mm (9 ft) min*	Floor Finish	vct
RFI Shielding	-	Slab Depression	-
Soundproofing	-	Floor Load	-

\*2850 mm (9'-6") preferred

### SPECIAL EQUIPMENT

H7-72 Fume Hood

H12 B2-48 Laminar Flow Hood

	Lighting	ELECTRICAL	Power
General	550 lx (50 fc)	General	-
Special	1100 lx (100 fc) task	Special	**
Emergency	-	Emergency	fume hood(s)***
Louvered deep cell parabolic fixtures, T-8 lamps		**Recep: 5000 W, 208 V, 1Ø; Recep: 8000 W, 120 V	
		***Fume, flow hoods: 1200 W, 120 V dedicated circuit each	

### COMMUNICATIONS

Telephone	yes	ADP	yes
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### HEATING, VENTILATING AND AIR CONDITIONING

AC Load Lights	1995 W	Dry Bulb Temp Cooling	24°C (76°F)
AC Load Equipment	75 W/m <sup>2</sup> (7.0 W/ft <sup>2</sup> )	Dry Bulb Temp Heating	22°C (72°F)
Number of People	6	Relative Humidity - Cooling	50%
Noise Criteria	NC-45	Relative Humidity - Heating	30%
Room Pressure	negative	Minimum % Outside Air	100
Min Air Changes per Hour	12	100% Exhaust Air	yes
Steam	-	Special Exhaust	yes****

\*\*\*\*H7: 0.65 m<sup>3</sup>/s (1375 cfm), 60 Pa (0.24 inches of water), 724 mm (28½") sash openingH12 B2: 0.40 m<sup>3</sup>/s (840 cfm), 523 Pa (2.10 inches of water), requires dedicated exhaust system

### PLUMBING AND LABORATORY GASES

Sanitary Drain	-	Cold Water	yes
Acid Waste	yes	Hot Water	yes
Other	-	Reagent Grade Water	yes
Fuel Gas	yes	Laboratory Air	yes
Nitrogen	-	Laboratory Vacuum	yes

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# Equipment Guide List Laboratories, General

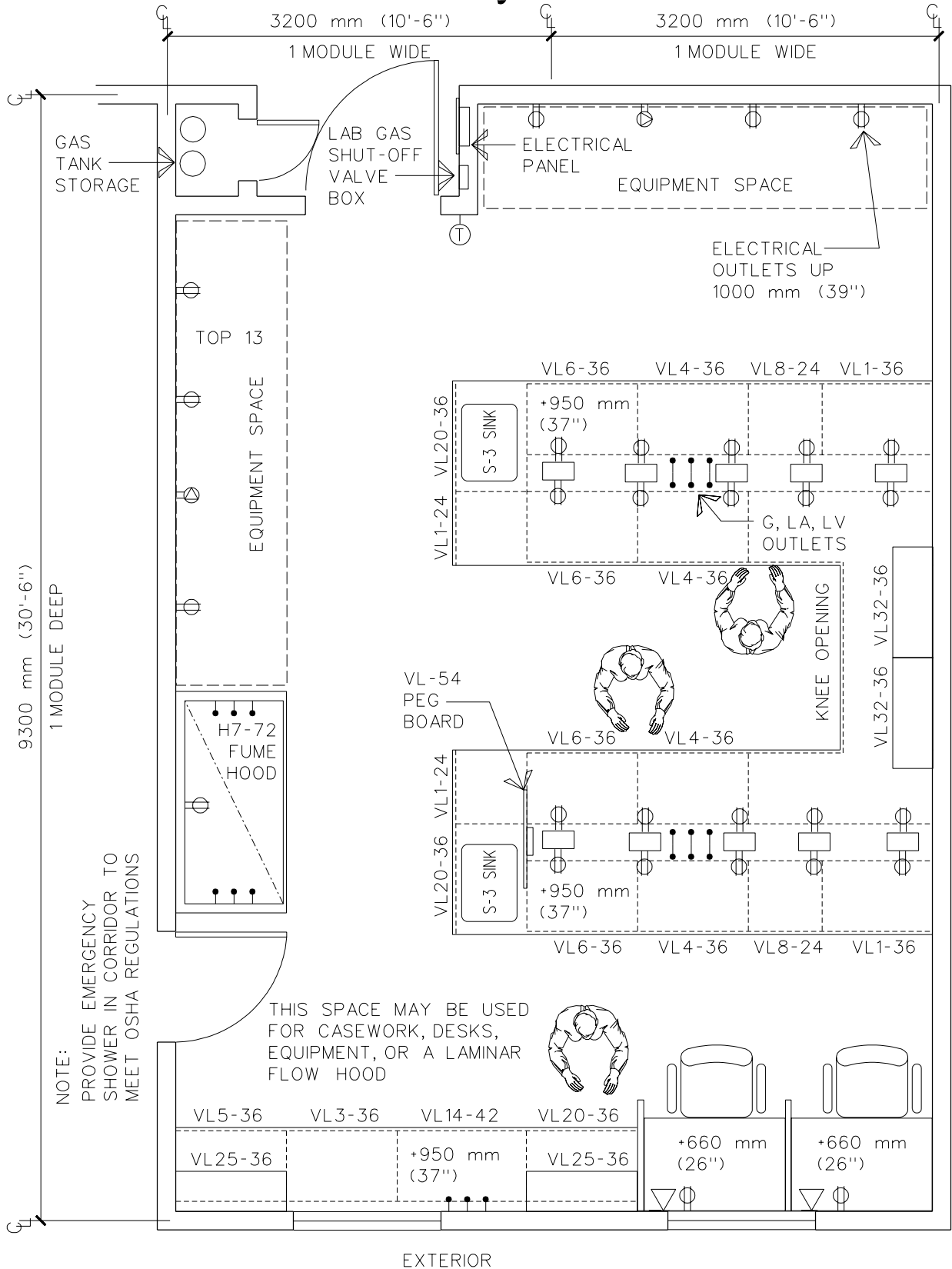
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qty	symbol	ai	description
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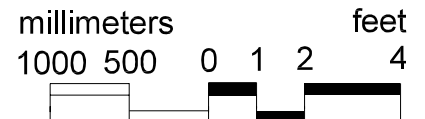
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See Guide Plate 4-1.

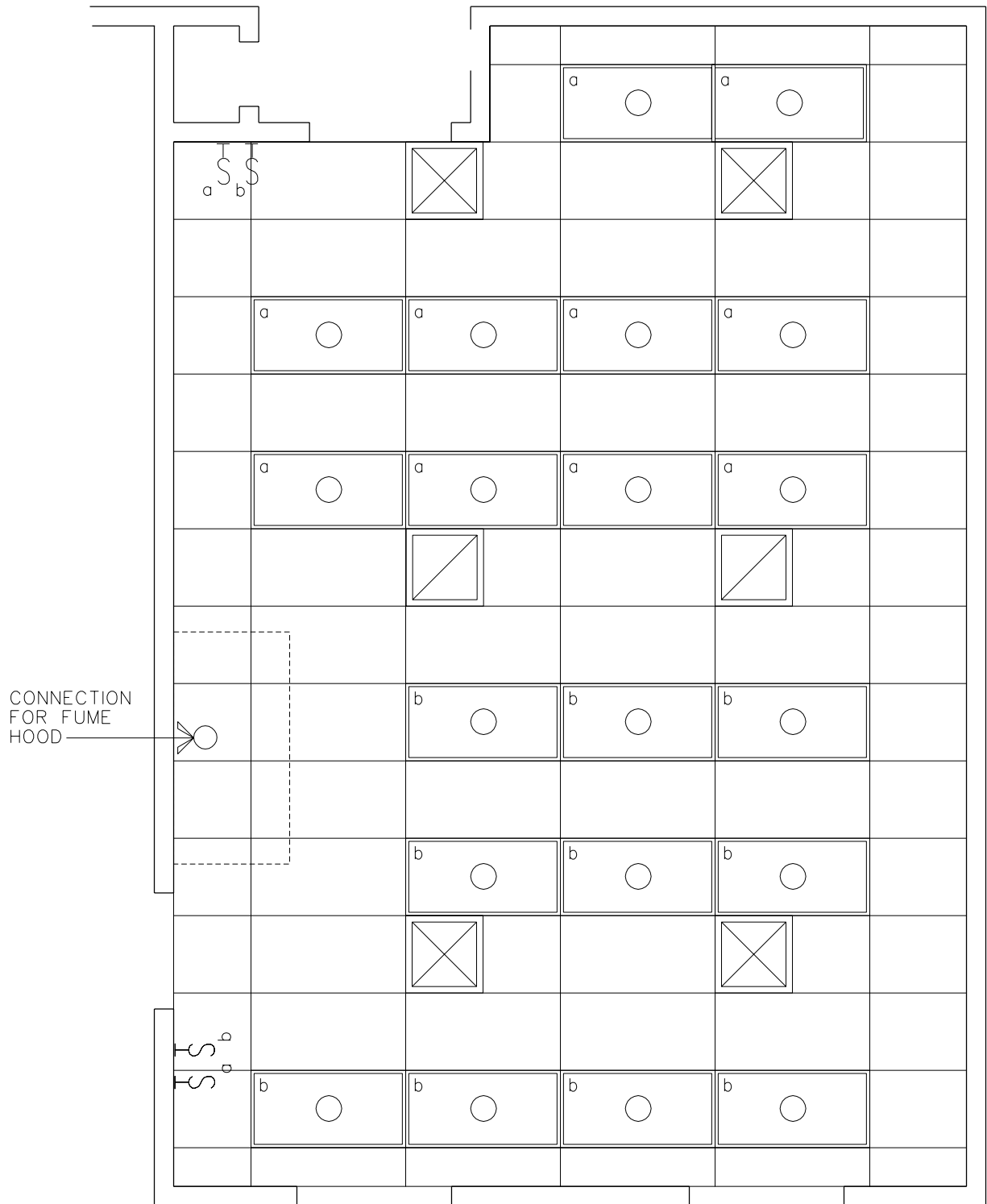
# Equipment & Utility Plan Double Module Laboratory III



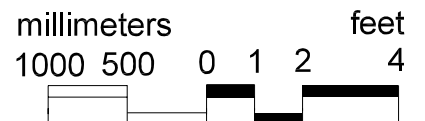
57 m<sup>2</sup>  
(615 ft<sup>2</sup>)



# Reflected Ceiling Plan Double Module Laboratory III



NOTE:  
USE ALL SURFACE MTD LIGHTING FIXTURES  
IF CEILING GRID WILL NOT ALLOW LIGHTS  
TO BE PLACED WITH CENTERLINE OVER  
EDGE OF WORK SURFACE



# Design Standards

## Double Module Laboratory III

### ARCHITECTURAL

Floor Area	58 m <sup>2</sup> (615 ft <sup>2</sup> )	Wall Finish	gwb
Ceiling	at	Base	rb
Ceiling Height	2700 mm (9 ft) min*	Floor Finish	vct
RFI Shielding	-	Slab Depression	-
Soundproofing	-	Floor Load	-

\*2850 mm (9'-6") preferred

### SPECIAL EQUIPMENT

H7-72 Fume Hood

	Lighting	ELECTRICAL	Power
General	550 lx (50 fc)	General	-
Special	1100 lx (100 fc) task	Special	**
Emergency	-	Emergency	fume hood(s)***
Louvered deep cell parabolic fixtures, T-8 lamps		**Recep: 5000 W, 208 V, 1Ø; Recep: 3000 W, 120 V	
		***Fume hood recep: 1200 W, 120 V dedicated circuit	

### COMMUNICATIONS

Telephone	yes	ADP	yes
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### HEATING, VENTILATING AND AIR CONDITIONING

AC Load Lights	2100 W	Dry Bulb Temp Cooling	24°C (76°F)
AC Load Equipment	75 W/m <sup>2</sup> (7.0 W/ft <sup>2</sup> )	Dry Bulb Temp Heating	22°C (72°F)
Number of People	6	Relative Humidity - Cooling	50%
Noise Criteria	NC-45	Relative Humidity - Heating	30%
Room Pressure	negative	Minimum % Outside Air	100
Min Air Changes per Hour	12	100% Exhaust Air	yes
Steam	-	Special Exhaust	yes****

\*\*\*\*H7: 0.65 m<sup>3</sup>/s (1375 cfm), 60 Pa (0.24 inches of water), 724 mm (28½") sash opening

### PLUMBING AND LABORATORY GASES

Sanitary Drain	-	Cold Water	yes
Acid Waste	yes	Hot Water	yes
Other	-	Reagent Grade Water	yes
Fuel Gas	yes	Laboratory Air	yes
Nitrogen	-	Laboratory Vacuum	yes

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# Equipment Guide List Laboratories, General

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qty	symbol	ai	description
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See Guide Plate 4-1.