

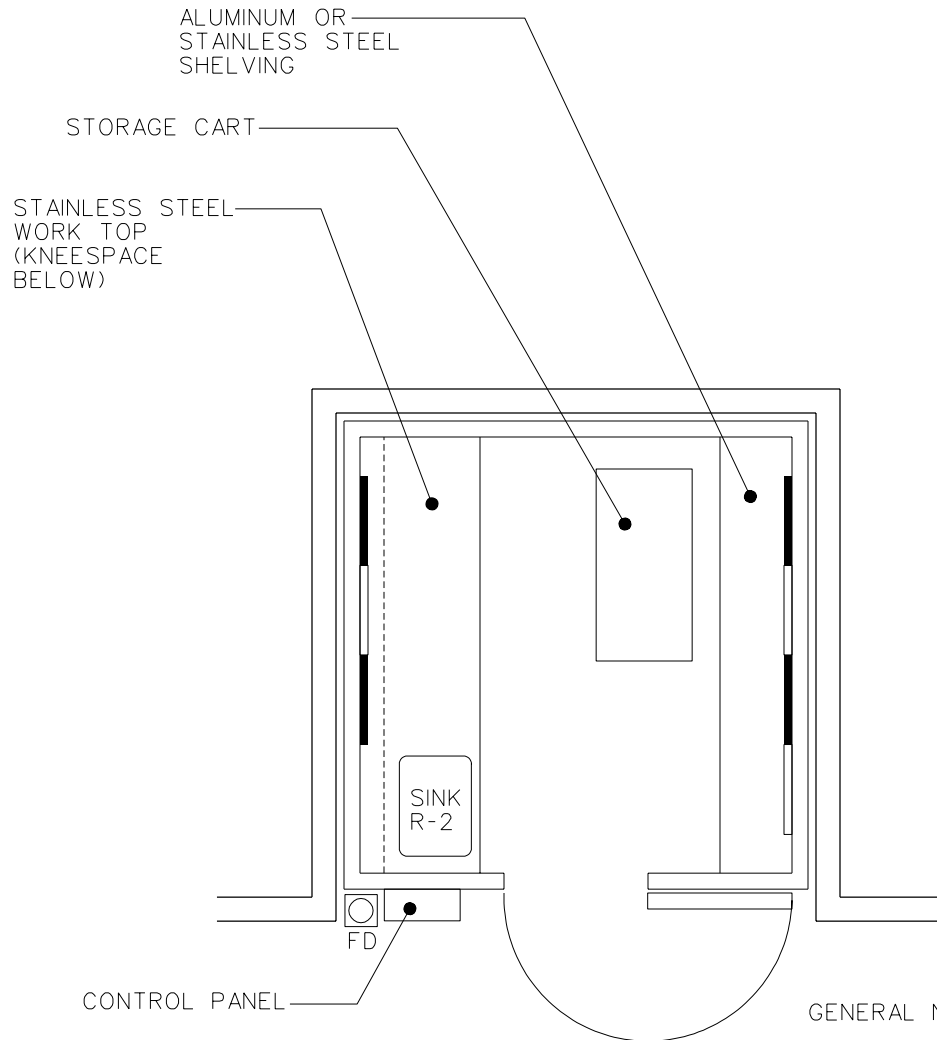
Section 6

Design Guide Plates: Laboratory Support

Guide
Plate
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Equipment & Utility Plan Cold Procedure Room



GENERAL NOTES:

PREFABRICATED COLD ROOM IS PIT MOUNTED.

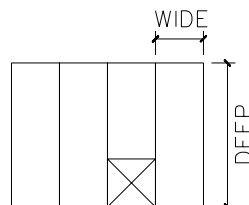
SEAL ELECTRICAL CONDUIT WITH THERMAL BREAK AT COLD ROOM PENETRATION TO AVOID CONDENSATION.

COLD ROOM WORKING TEMPERATURE IS APPROXIMATELY 4° C.

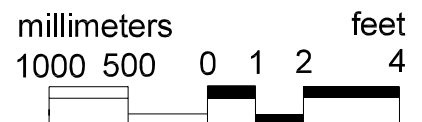
LOCATE A FLOOR DRAIN OUTSIDE COLD ROOM TO CAPTURE CONDENSATE.

PROVIDE HEAT TRACING UNDER FLOOR SLAB TO PREVENT FROST ACCUMULATION IF COLD ROOM IS LOCATED ON SLAB ON GRADE.

NOTE:
THIS ROOM IS 1/3 MODULE DEEP AND 1 MODULE WIDE.



7.5 m²
(81 ft²)



Design Standards

Cold Procedure Room

ARCHITECTURAL

Floor Area	7.5 m ² (81 ft ²)*	Wall Finish	prefab
Ceiling	prefab	Base	-
Ceiling Height	-	Floor Finish	prefab
RFI Shielding	-	Slab Depression	yes
Soundproofing	-	Floor Load	-

*Prefabricated, see PG-08-1 MCS 13062, H-08-3 CS 643-1

Lighting

ELECTRICAL

Power

General	750 lx (70 fc)	General	GFI
Special	-	Special	-
Incandescent fixtures		Emergency	-

COMMUNICATIONS

Telephone	-	ADP	-
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HEATING, VENTILATING AND AIR CONDITIONING

AC Load Lights	-	Dry Bulb Temp Cooling	4°C (40°F)
AC Load Equipment	-	Dry Bulb Temp Heating	-
Number of People	-	Relative Humidity - Cooling	- %
Noise Criteria	-	Relative Humidity - Heating	- %
Room Pressure	-	Minimum % Outside Air	-
Min Air Changes per Hour	-	100% Exhaust Air	-
Steam	-	Special Exhaust	-

Provide minimum 42 m³/s (25 cfm) supply and exhaust air.

PLUMBING AND LABORATORY GASES

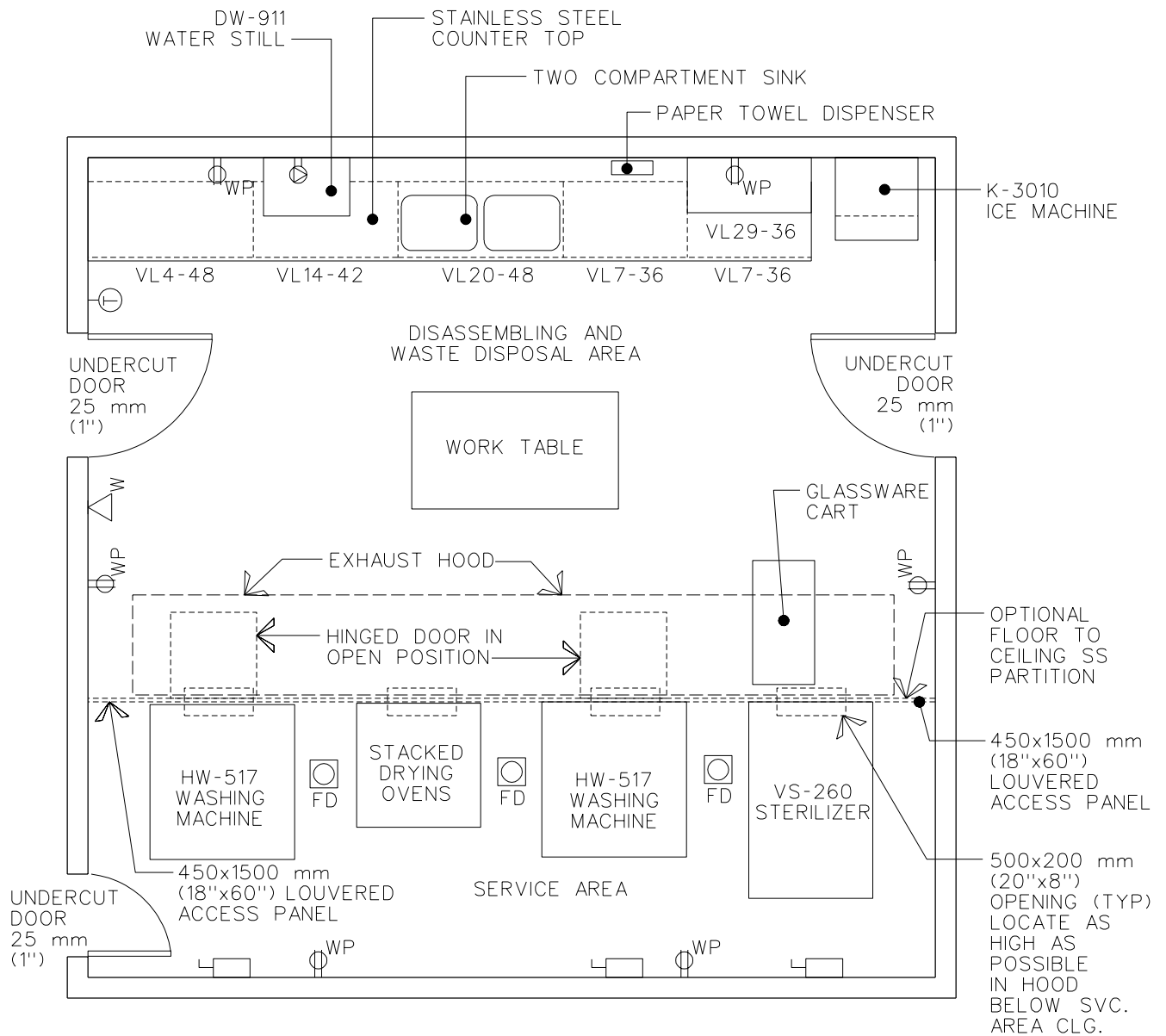
Sanitary Drain	yes	Cold Water	yes
Acid Waste	-	Hot Water	yes
Other	-	Reagent Grade Water	-
Fuel Gas	-	Laboratory Air	-
Nitrogen	-	Laboratory Vacuum	-

Equipment Guide List

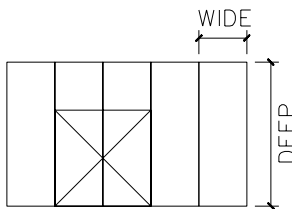
Cold Procedure Room

qty	symbol	ai	description
AR		CC	COLD PROCEDURE ROOM, PREFABRICATED WALK-IN, SIZE AS SPECIFIED BY RESEARCH SERVICE, TEMP. RANGE, 0 DEGREES C TO 4 DEGREES C (PG-08-1, MCS 11615)
AR		CC	SHELVING, ADJUSTABLE, ALUMINUM OR STAINLESS STEEL, PERFORATED, 457 MM (18") DEEP (PG-08-1, MCS 11615)
1		CC	DRAIN, FLOOR (PG-08-1, MCS 15400)
1	TOP 5	CF	COUNTER TOP, CORROSION RESISTING (STAINLESS) STEEL, RAISED RIM, WITH INTEGRAL SINK AND SPLASHBACKS (PG-08-1 & PG-08-6, MCS 11602)
1	R-2	CF	SINK, CORROSION RESISTING STEEL, WITH END OR CORNER DRAIN OUTLET, 457 MM X 457 MM X 406 MM (18" X 18" X 16") (PG-08-1 & PG-08-6, MCS 11602)
AR		CC	RECEPTACLE, ELECTRICAL, DUPLEX, 120 VOLT, 20 AMP, WITH GROUND FAULT INTERRUPTER (PG-08-1, MCS, 16140; H-08-3, CS 801-3)

Equipment & Utility Plan Glassware Washing and Sterilization Room

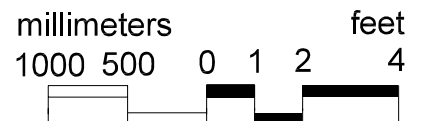


NOTE:
THIS ROOM IS 2/3 MODULE
DEEP AND 2 MODULES WIDE

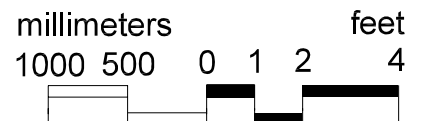
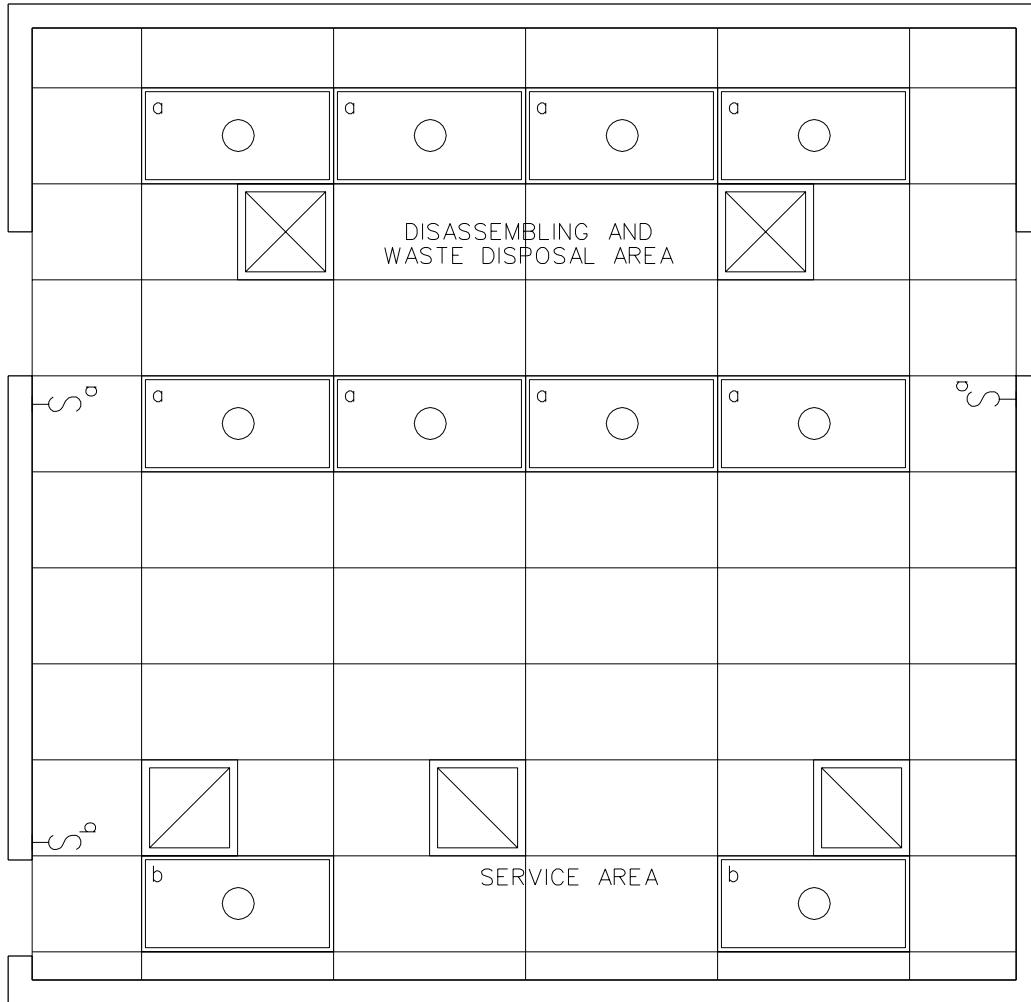


GENERAL NOTE:
PARTITION PERMITS CONTROL
OF ROOM TEMPERATURE, BUT
HINDERS REPAIR ACCESS TO
MACHINES.

38 m²
(406 ft²)



Reflected Ceiling Plan Glassware Washing and Sterilization Room



Design Standards

Glassware Washing and Sterilization Room

ARCHITECTURAL

Floor Area	38 m ² (406 ft ²)	Wall Finish	cmu/sc
Ceiling	at (sp)	Base	erf
Ceiling Height	2700 mm (9 ft)	Floor Finish	erf
RFI Shielding	-	Slab Depression	-
Soundproofing	-	Floor Load	-

SPECIAL EQUIPMENT

HW517 Glassware washing machine	VS260 Sterilizer
DW 911 Still	K3010 Ice Machine

Lighting

ELECTRICAL

Power

General	750 lx (70 fc)	General	-
Special	1100 lx (100 fc) task	Special	-
Louvered deep cell parabolic fixtures, T-8 lamps		Emergency	-

COMMUNICATIONS

Telephone	yes	ADP	yes
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HEATING, VENTILATING AND AIR CONDITIONING

AC Load Lights	1120 W	Dry Bulb Temp Cooling	27 C (80°F)
AC Load Equipment	65 W/m ² (6.0 W/ft ²)	Dry Bulb Temp Heating	21 C (70°F)
Number of People	2 to 3	Relative Humidity - Cooling	60%
Noise Criteria	NC-40	Relative Humidity - Heating	- %
Room Pressure	negative	Minimum % Outside Air	100
Min Air Changes per Hour	15	100% Exhaust Air	yes
Steam	275 kPa (40-60 psig)	Special Exhaust	yes

See PG-08-6 for steam, heat gain, & exhaust capacities. See PG-08-4 Volume 3 Section II for Type 'B' hood details.

Provide a dedicated exhaust system with liquid-tight stainless steel ductwork.

Limit temp rise in service area to 8.3°C (15°F) above disassembling area.

PLUMBING AND LABORATORY GASES

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

Equipment Guide List

Glassware Washing and Sterilization Room

qty	symbol	ai	description
1	HW517	CC	WASHING MACHINE, LABORATORY GLASSWARE AND UTENSILS, RECESSED, 660 MM X 483 MM (26" X 19"), BASKET OR SPINDLE HEADER OR PIPETTE HEADER, WITH HEADER TRANSFER DOLLY, 1143 MM X 1067 MM X 2286 MM (45" X 42" X 90") (PG-08-1 & PG-08-6, MCS 11714)
1	DW911	VV	STILL, WATER, HIGH PURITY, 19 L (5 GAL.) PER HOUR, COUNTER MOUNTED, 635 MM X 406 MM X 1143 MM (25" X 16" X 45"), 208 VOLT, 40 AMP, SINGLE PHASE (PG-08-1, MCS 11612)
1		CC	UTILITIES FOR ELECTRIC STILL, ELECTRIC OUTLET, 208 VOLT, 50 AMP, 1 PHASE, WATER AND WASTE FROM ADJACENT SINK
1	VS260	CC	STERILIZER, LABORATORY, RECESSED, CHAMBER SIZE: 610 MM X 914 MM X 1219 MM/.68 M3 (24" X 36" X 48"/24 CU. FT.), (PG-08-1 & PG-08-6, MCS 11710)
AR		CC	HOOD, EXHAUST, OVER STERILIZER DOOR (PG-08-1, MCS 15840)
AR		VV	OVEN, DRYING, FLOOR MOUNTED, 208 VOLT, 3000 WATT
1		CC	SINK, CORROSION RESISTING STEEL, 2 COMPARTMENT, EACH SINK 559 MM X 406 MM X 279 MM (22" X 16" X 11"), WITH FAUCET AND RINSE HOSE ASSEMBLY (PG-08-1, MCS 11602)
1	VL20/ 20A	CF	CABINET, UNDERCOUNTER, SINK UNIT, 2 HINGED PANEL DOORS, WIDTH - 1219 MM (48"); 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		CF	COUNTER TOP, CORROSION RESISTING STEEL, 32 MM (1-1/4") THICK
AR	VL1/1A	CF	CABINET, UNDERCOUNTER, WITH 4/3 DRAWERS, WIDTH - 914 MM (36"); DEPTH - 559 MM (22"); HEIGHTS - 787 MM (31"); FOR FLOOR MOUNTED ADD 127 MM (5") TOE BASE (PG-08-1 & PG-08-6, MCS 12345)
			-OR-
AR	VL4/4A	CF	CABINET, UNDERCOUNTER, WITH 2 DRAWERS, 2 HINGED DOORS AND 1 ADJUSTABLE SHELF, WIDTH - 1219 MM (48"); 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	VL7/7A	CF	CABINET, UNDERCOUNTER, WITH 2 HINGED DOORS AND 2/1 ADJUSTABLE SHELVES, WIDTHS - 914 MM (36"); DEPTH - 559 MM (22"); HEIGHTS - 787 MM (31"); FOR FLOOR MOUNTED ADD 127 MM (5") TOE BASE (PG-08-1 & PG-08-6, MCS 12345)
AR	VL14	CF	TABLE FRAME, WITH DRAWER(S), KNEE SPACE UNIT, WIDTH - 1067 MM (42"); DEPTH - 559 MM (22"); HEIGHT - 787 MM (31") (PG-08-1 & PG-08-6, MCS 12345)
AR	VL29	CF	CABINET, WALL, WITH SLOPING TOP, 2 GLAZED SLIDING DOORS AND 2 ADJUSTABLE SHELVES, WIDTH - 914 MM (36"); DEPTH - 406 MM (16"); HEIGHT - 762 MM (30") (PG-08-1 & PG-08-6, MCS 12345)

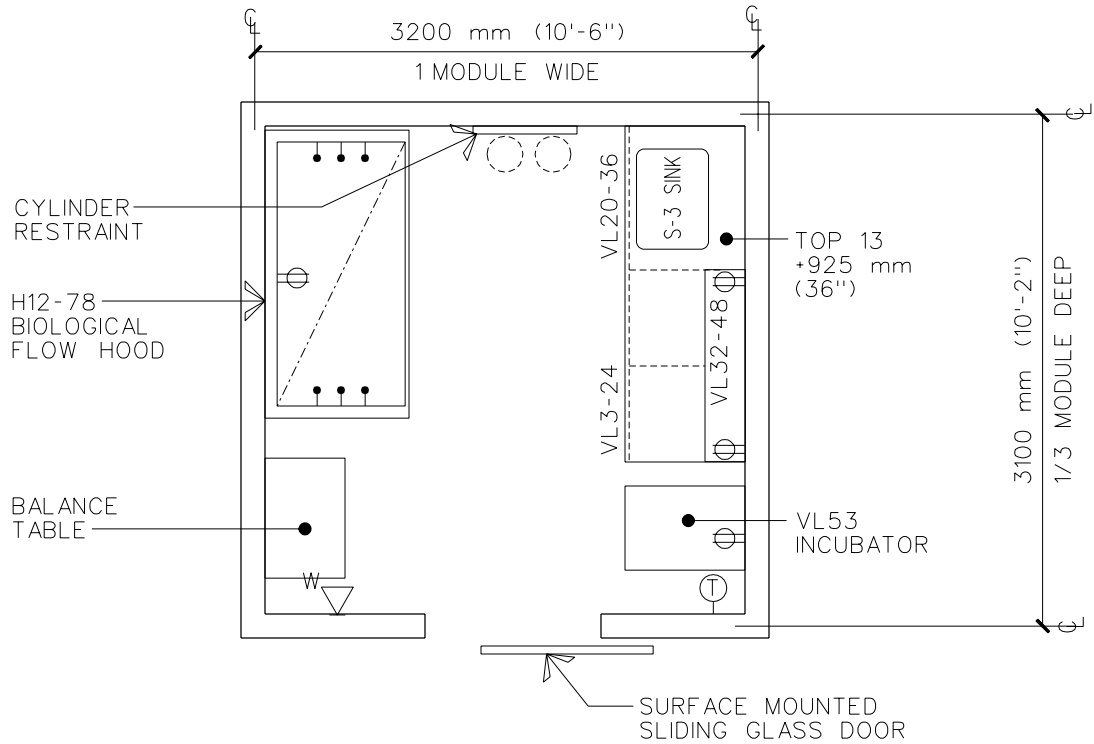
September 30, 1995

Equipment Guide List

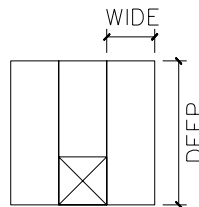
Glassware Washing and Sterilization Room

qty	symbol	ai	description
AR		VV	TABLE, WORK, 864 MM X 1524 MM X 762 MM (34" X 60" X 30")
1		VV	DISPENSER, PAPER TOWEL, SURFACE MOUNTED
1	K3010	CC	MACHINE, ICE MAKING (CRUSHED) AND DISPENSING, AUTOMATIC, FLOOR MOUNTED, 45 KG (100 LB.), BIN, 120 VOLT, 20 AMP, 710 MM X 658 MM X 2108 MM (28" X 25" X 82") (PG-08-1 & PG-08-6, MCS 11415)
1		CC	DRAIN, FLOOR (PG-08-1, MCS 15400)
1		VV	CLOCK, BATTERY OPERATED
AR		CC	RECEPTACLE, ELECTRICAL, DUPLEX, 120 VOLT, 15 AMP, STRIP MOLD WITH OUTLETS, WIRED ALTERNATELY ON SEPARATE CIRCUITS ON 610 MM (24") CENTERS ABOVE COUNTER (PG-08-1, MCS 16140; H-08-3, CS 801-3)
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 (PG-08-1, MCS 16140; H-08-3, CS 801-3)

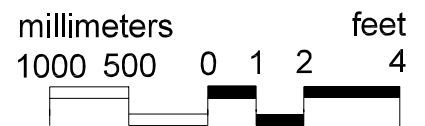
Equipment & Utility Plan Tissue Culture Laboratory



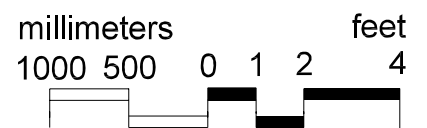
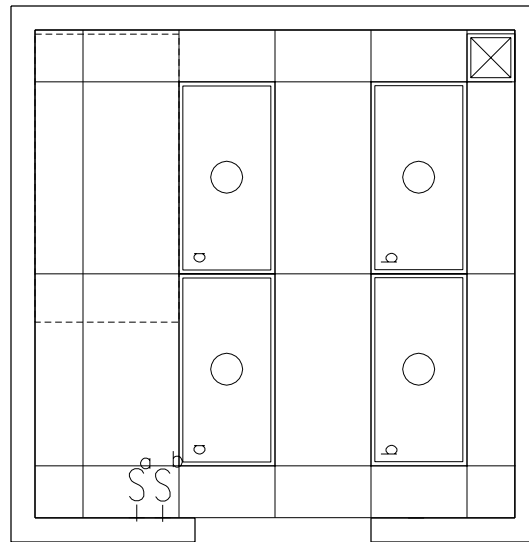
NOTE:
THIS ROOM IS 1/3 MODULE DEEP AND 1 MODULE WIDE.



9 m²
(97 ft²)



Reflected Ceiling Plan Tissue Culture Laboratory



Design Standards

Tissue Culture Laboratory

ARCHITECTURAL

Floor Area	9 m ² (97 ft ²)	Wall Finish	gwb
Ceiling	at	Base	rb
Ceiling Height	2700 mm (9 ft)	Floor Finish	vct
RFI Shielding	-	Slab Depression	-
Soundproofing	-	Floor Load	-

SPECIAL EQUIPMENT

H12-78 Laminar Flow Hood			
	Lighting	ELECTRICAL	Power
General	550 lx (50 fc)	General	-
Special	1100 lx (100 fc) task	Special	-
Louvered deep cell parabolic fixtures, T-8 lamps		Emergency	-

COMMUNICATIONS

Telephone	yes	ADP	yes
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HEATING, VENTILATING AND AIR CONDITIONING

AC Load Lights	420 W	Dry Bulb Temp Cooling	25°C (78°F)
AC Load Equipment	36 W/m ² (3.6 W/ft ²)	Dry Bulb Temp Heating	22°C (72°F)
Number of People	1	Relative Humidity - Cooling	50%
Noise Criteria	NC-45	Relative Humidity - Heating	30%
Room Pressure	positive	Minimum % Outside Air	100
Min Air Changes per Hour	12	100% Exhaust Air	yes
Steam	-	Special Exhaust	-
See PG-08-10 HVAC for exhaust requirements for specific laminar flow hood type.			

PLUMBING AND LABORATORY GASES

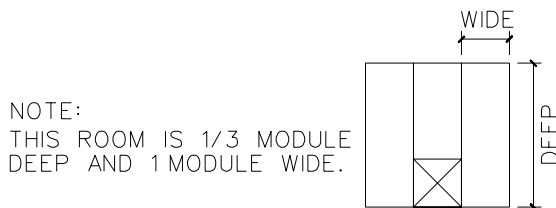
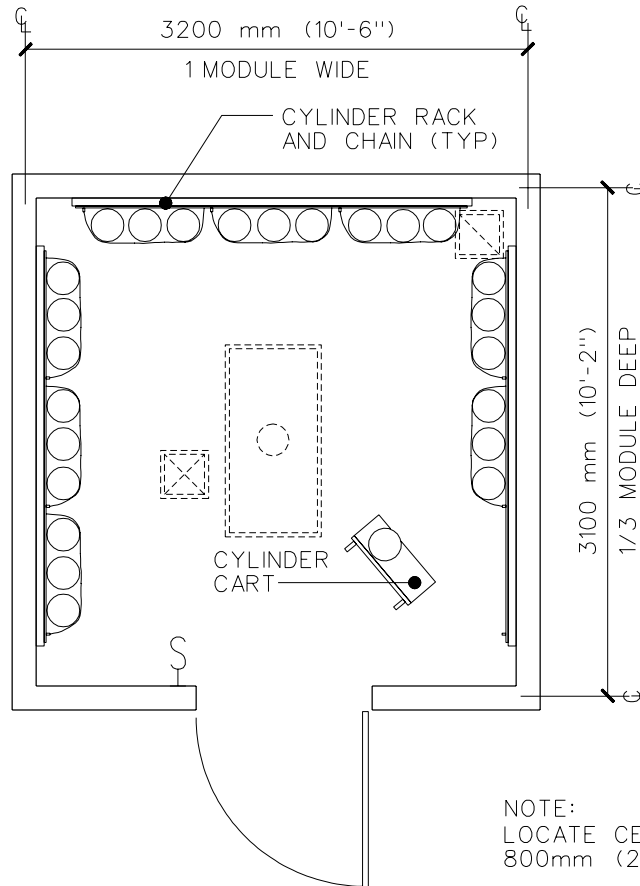
Sanitary Drain	-	Cold Water	yes
Acid Waste	yes	Hot Water	yes
Other	-	Reagent Grade Water	yes
Fuel Gas	yes	Laboratory Air	yes
Nitrogen	-	Laboratory Vacuum	yes

Equipment Guide List

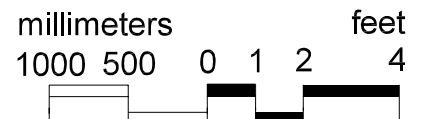
Tissue Culture Laboratory

qty	symbol	ai	description
1	H12-54/ 78	CC	CABINET, AIR FLOW, BIOLOGICAL WITH LAB AIR, FUEL GAS AND LAB VACUUM OUTLETS, 120 VOLT, 20 AMP, RECEPTACLE (PG-08-1 & PG-08-6, MCS 11604)
1	VL32	CF	CABINET, WALL, OPEN WITH SLOPING TOP AND 2 ADJUSTABLE SHELVES, WIDTHS - 1219 MM (48"); DEPTH - 330 MM (13"); HEIGHT - 762 MM (30") (PG-08-1 & PG-08-6, MCS 12345)
1	VL3/3A	CF	CABINET, UNDERCOUNTER, WITH 5/4 DUST SEAL DRAWERS, WIDTH - 610 MM (24"); DEPTH - 559 MM (22"); HEIGHTS - 787 MM (31"); FOR FLOOR MOUNTED ADD 127 MM (5") TOE BASE (PG-08-1 & PG-08-6, MCS 12345)
1	VL20/ 20A	CF	CABINET, UNDERCOUNTER, WITH 5/4 DUST SEAL DRAWERS, AVAILABLE WIDTHS - 914 MM (36"); DEPTH - 559 MM (22"); HEIGHTS - 787 MM (31"); FOR FLOOR MOUNTED ADD 127 MM (5") TOE BASE (PG-08-1 & PG-08-6, MCS 12345)
1	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)
1	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)
1		VV	TABLE, BALANCE
1	VL53	VV	INCUBATOR, BACTERIOLOGICAL, 120 VOLT, 1.5 KW
1		VV	CLOCK, BATTERY OPERATED
AR		CC	RECEPTACLE, ELECTRICAL, DUPLEX, 120 VOLT, 20 AMP (PG-08-1, MCS 16140; H-08-3, CS 801-3)

Equipment & Utility Plan Gas Cylinder Storage Room



9 m²
(97 ft²)



Design Standards

Gas Cylinder Storage Room

ARCHITECTURAL

Floor Area	9 m ² (97 ft ²)	Wall Finish	cmu
Ceiling	gwb	Base	rb
Ceiling Height	2700 mm (9 ft)	Floor Finish	c (treated)
RFI Shielding	-	Slab Depression	-
Soundproofing	-	Floor Load	-

Lighting

ELECTRICAL

Power

General	325 lx (30 fc)	General	-
Special	-	Special	-
Emergency	-	Emergency	-

COMMUNICATIONS

Telephone	-	ADP	-
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HEATING, VENTILATING AND AIR CONDITIONING

AC Load Lights	140 W	Dry Bulb Temp Cooling	26°C (78°F)
AC Load Equipment	-	Dry Bulb Temp Heating	22°C (72°F)
Number of People	-	Relative Humidity - Cooling	50%
Noise Criteria	NC-45	Relative Humidity - Heating	30%
Room Pressure	negative	Minimum % Outside Air	100
Min Air Changes per Hour *		100% Exhaust Air	yes

*Min 4 air changes per hour or 0.005 m³/s per m² (1 cfm per ft²) of floor area.

NFPA 55 requirements must be met.

Provide continuous gas detection system with ECC alarm and local alarm at continuously attended location.

PLUMBING AND LABORATORY GASES

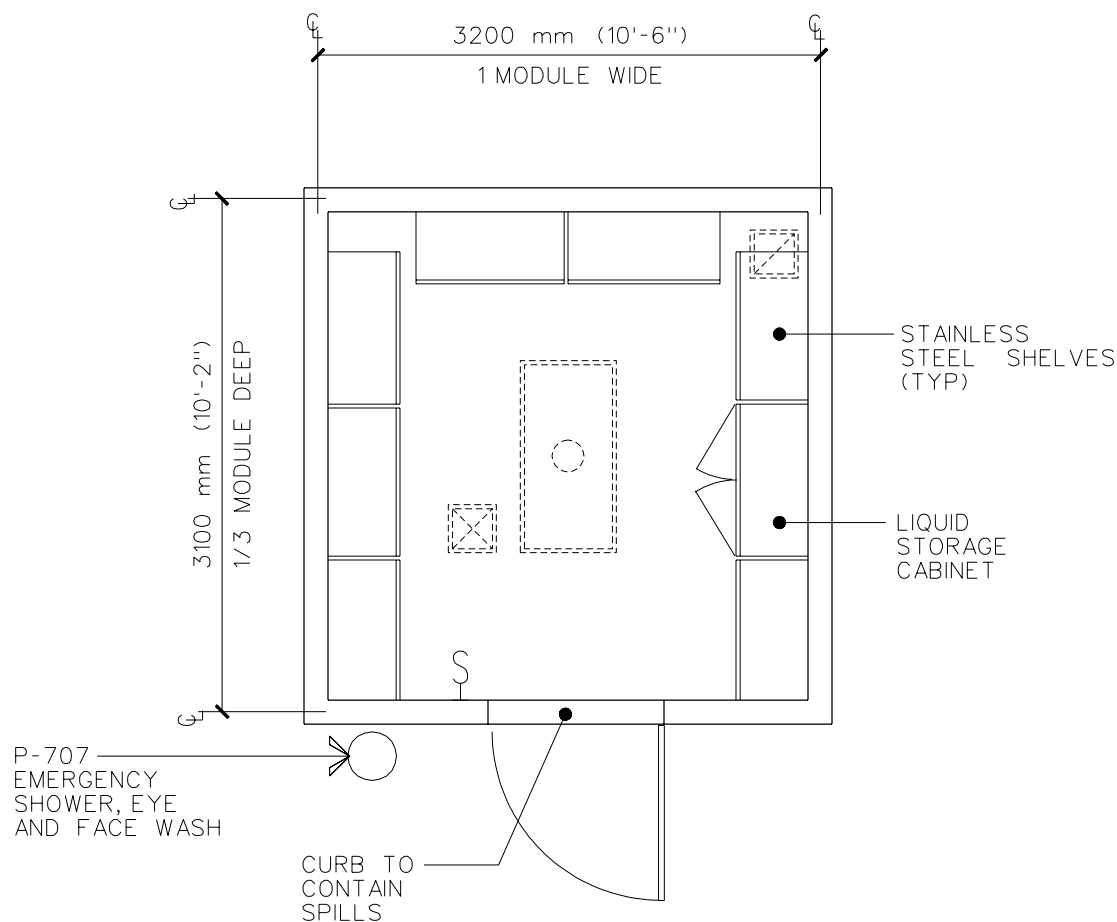
Sanitary Drain	-	Cold Water	-
Acid Waste	-	Hot Water	-
Other	-	Reagent Grade Water	-
Fuel Gas	-	Laboratory Air	-
Nitrogen	-	Laboratory Vacuum	-

Equipment Guide List

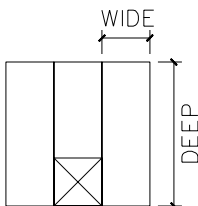
Gas Cylinder Storage Room

qty	symbol	ai	description
NOTE: CONSTRUCTION TO COMPLY WITH NFPA 68, CHAPTER 4.			
AR		CC	RACK, CYLINDER, 711 MM X 559 MM X 1930 MM (28" X 22" X 76") (PG-08-1, MCS 10360; H-08-4, SD 64C)
AR		CC	RACK, CHAIN (PG-08-1, MCS 10360; H-08-4, SD 64C)
2		VV	CART, CYLINDER, 610 MM X 762 MM (24" X 30")

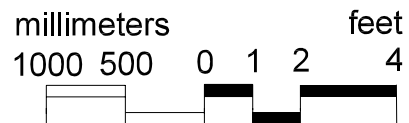
Equipment & Utility Plan Acid Storage Room



NOTE:
THIS ROOM IS 1/3 MODULE
DEEP AND 1 MODULE WIDE



9 m²
(97 ft²)



Design Standards

Acid Storage Room

ARCHITECTURAL

Floor Area	9 m ² (97 ft ²)	Wall Finish	cmu
Ceiling	gwb	Base	rb
Ceiling Height	2700 mm (9 ft)	Floor Finish	c (treated)
RFI Shielding	-	Slab Depression	-
Soundproofing	-	Floor Load	-

Lighting

ELECTRICAL

Power

General	550 lx (50 fc)	General	-
Special	-	Special	-
Emergency	-	Emergency	-

COMMUNICATIONS

Telephone	-	ADP	-
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HEATING, VENTILATING AND AIR CONDITIONING

AC Load Lights	140 W	Dry Bulb Temp Cooling	26°C (78°F)
AC Load Equipment	-	Dry Bulb Temp Heating	22°C (72°F)
Number of People	-	Relative Humidity - Cooling	50%
Noise Criteria	NC-45	Relative Humidity - Heating	30%
Room Pressure	negative	Minimum % Outside Air	100
Min Air Changes per Hour	4	100% Exhaust Air	yes
Steam	-	Special Exhaust	yes

Provide dedicated exhaust system for room, with acid resistant epoxy coating on exhaust fan.

Ductwork to be fiberglass reinforced polyester resin self-extinguishing material, or galvanized plastic coated (PVC) acid-resistant material.

PLUMBING AND LABORATORY GASES

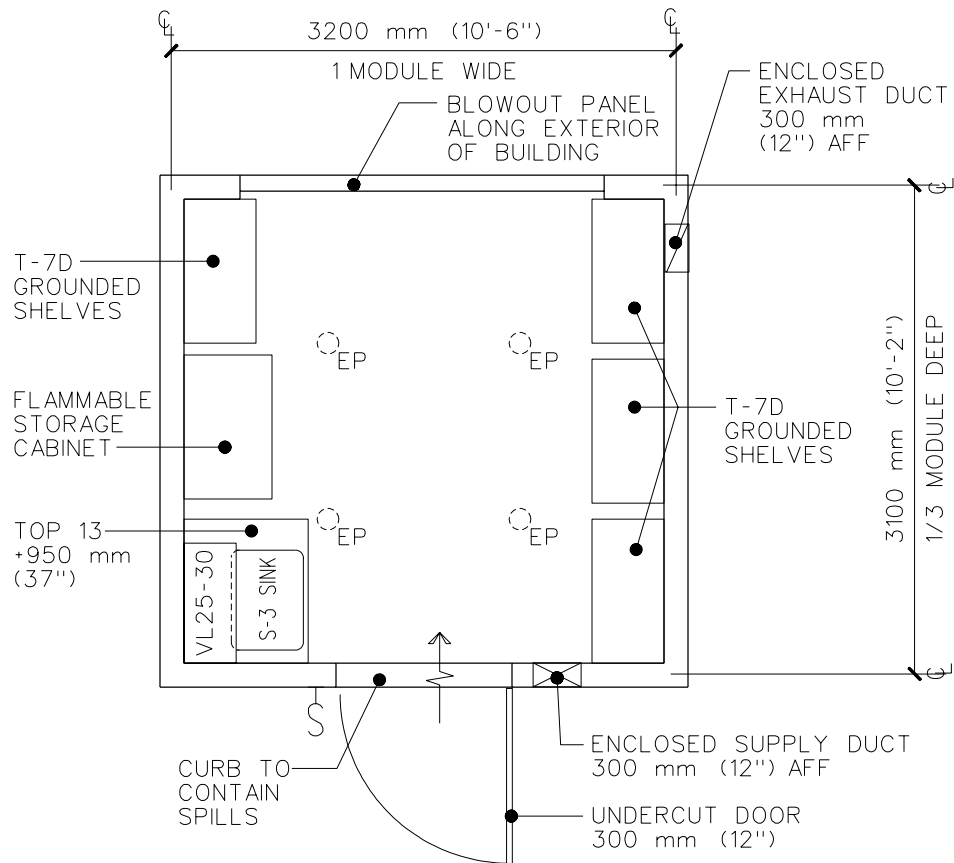
Sanitary Drain	-	Cold Water	-
Acid Waste	-	Hot Water	-
Other	-	Reagent Grade Water	-
Fuel Gas	-	Laboratory Air	-
Nitrogen	-	Laboratory Vacuum	-

Equipment Guide List

Acid Storage Room

qty	symbol	ai	description
			NOTE: PROVIDE ADEQUATE VENTILATION AND TEMPERATURE CONTROL AS REQUIRED.
AR		VV	CABINET, STORAGE, LIQUID
AR	T-7D	CC	SHELVING, WALL HUNG, STAINLESS STEEL, STANDARD AND BRACKET TYPE, 4 ADJUSTABLE SHELVES, 914 MM X 457 MM X 1219 MM (36" X 18" X 48"), WITH LIP EDGES (PG-08-1, MCS 10671; H-08-4, SD 60D)
			NOTE: P-707, EMERGENCY SHOWER, EYE AND FACE WASH TO BE LOCATED IMMEDIATELY OUTSIDE OF ACID STORAGE ROOM.

Equipment & Utility Plan Flammable Storage Room

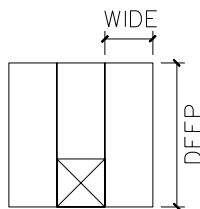


NOTE:
LOCATE THIS ROOM ALONG EXTERIOR WALL

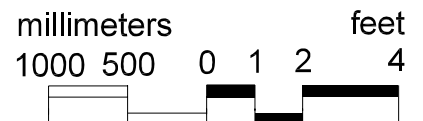
NOTE:
NEED FOR BLOWOUT PANEL IS DEPENDENT UPON CODE REQUIREMENTS, AND TYPE AND QUANTITY OF FLAMMABLE LIQUIDS.

NOTE:
TWO HOUR WALL CONSTRUCTION PER NFPA-30. COORDINATE WITH HVAC DUCT LOCATIONS.

NOTE:
THIS ROOM IS 1/3 MODULE DEEP AND 1 MODULE WIDE



9 m²
(97 ft²)



Design Standards

Flammable Storage Room

ARCHITECTURAL

Floor Area	9 m ² (97 ft ²)	Wall Finish	cmu/gwb
Ceiling	gwb	Base	rb
Ceiling Height	2700 mm (9 ft)	Floor Finish	c (treated)
RFI Shielding	-	Slab Depression	-
Soundproofing	-	Floor Load	-

Lighting

ELECTRICAL

Power

General	325 lx (30 fc)	General	-
Special	-	Special	-
Explosion proof incandescent fixtures with PAR38 halogen flood lamps on dimmer switch		Seal conduit in rigid steel	

COMMUNICATIONS

Telephone	-	ADP	-
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HEATING, VENTILATING AND AIR CONDITIONING

AC Load Lights	600 W	Dry Bulb Temp Cooling	26°C (78°F)
AC Load Equipment	-	Dry Bulb Temp Heating	22°C (72°F)
Number of People	-	Relative Humidity - Cooling	50%
Noise Criteria	NC-45	Relative Humidity - Heating	30%
Room Pressure	negative	Minimum % Outside Air	100
Min Air Changes per Hour *		100% Exhaust Air	yes
Steam	-	Special Exhaust	yes

*Min 6 air changes per hour or 0.005 m³/s per m² (1 cfm per ft²) of floor area, or 0.067 m³/s (150 cfm) exhaust.

NFPA 30 requirements must be met.

Provide a dedicated exhaust system for room.

Provide explosion-proof motor & spark-proof fan.

PLUMBING AND LABORATORY GASES

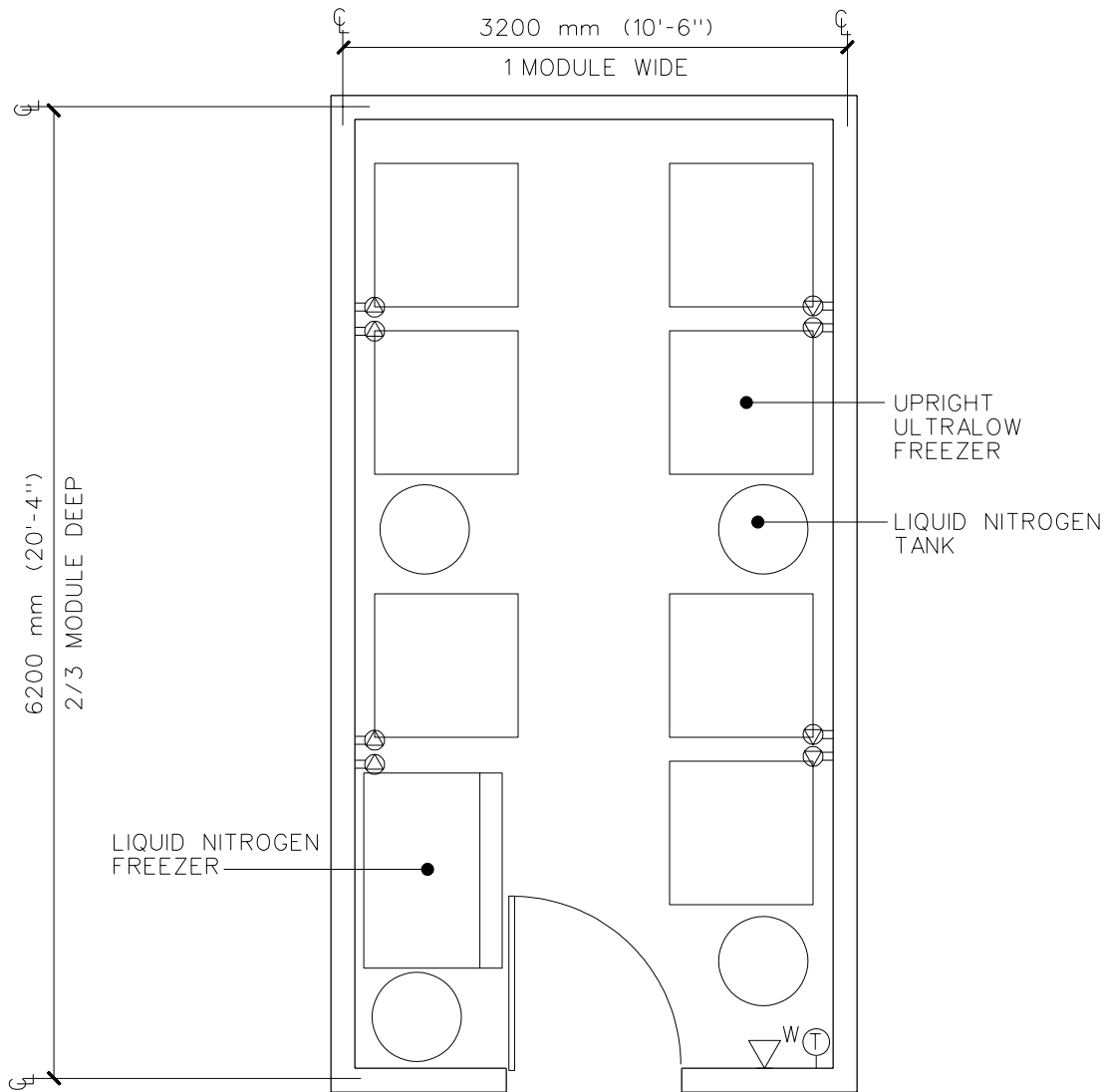
Sanitary Drain	yes	Cold Water	yes
Acid Waste	-	Hot Water	yes
Other	-	Reagent Grade Water	-
Fuel Gas	-	Laboratory Air	-
Nitrogen	-	Laboratory Vacuum	-

Equipment Guide List

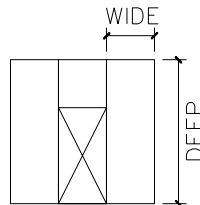
Flammable Storage Room

qty	symbol	ai	description
NOTE: PROVIDE ADEQUATE VENTILATION AND TEMPERATURE CONTROL AS REQUIRED.			
AR		VV	RECEPTACLE, ELECTRICAL, DUPLEX, 120 VOLT, 20 AMP (PG-08-1, MCS 16140; H-08-3, CS 801-3)
AR	T-7D	CC	SHELVING, WALL HUNG, STAINLESS STEEL, STANDARD AND BRACKET TYPE, 4 ADJUSTABLE SHELVES, 914 MM X 457 MM X 1219 MM (36" X 18" X 48"), WITH LIP EDGES (PG-08-1, MCS 10671; H-08-4, SD 60D)
AR	T-6A	CC	SHELVING, FLOORSTANDING, STEEL, WITH SLOPING TOP AND 4 OR 5 ADJUSTABLE SHELVES, 914 MM X 457 MM X 2134 MM (36" X 18" X 84") (PG-08-1, MCS 12301; H-08-4, SD 60B)
1	VL25	CF	CABINET, WALL, WITH SLOPING TOP, 2 GLAZED SLIDING DOORS AND 2 ADJUSTABLE SHELVES, AVAILABLE WIDTHS - 762 MM (30"); DEPTH - 330 MM (13"); HEIGHT - 762 MM (30") (PG-08-1 & PG-08-6, MCS 12345)
1	TOP 13/ 13A	CF	COUNTER TOP, EPOXY, RESIN, WITH DRIP GROOVE, 25 MM (1") THICK (PG-08-1 & PG-08-6, MCS 11602)
1	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)
1		VV	EMERGENCY EYE AND FACE WASH, MOUNTED ON GOOSENECK FAUCET

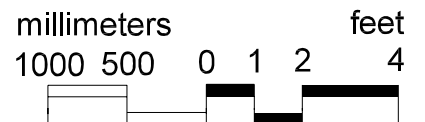
Equipment & Utility Plan Ultralow Freezer Room



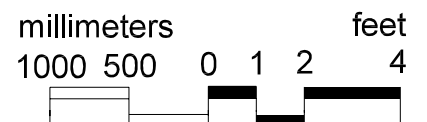
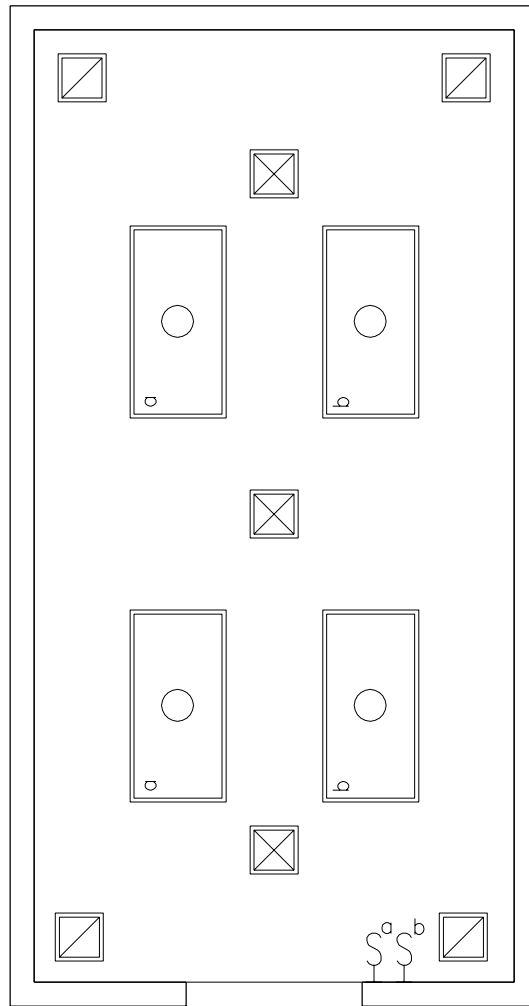
NOTE:
THIS ROOM IS 2/3 MODULE
DEEP AND 1 MODULE
WIDE.



18.5 m²
(198 ft²)



Reflected Ceiling Plan Ultralow Freezer Room



Design Standards

Ultralow Freezer Room

ARCHITECTURAL

Floor Area	18.5 m ² (198 ft ²)	Wall Finish	cmu (sc)
Ceiling	gwb	Base	rb
Ceiling Height	2700 mm (9 ft)	Floor Finish	vct
RFI Shielding	-	Slab Depression	-
Soundproofing	-	Floor Load	-

Lighting

ELECTRICAL

Power

General	550 lx (50 fc)	General	-
Special	-	Special	-
Emergency	-	Emergency	-

COMMUNICATIONS

Telephone	yes	ADP	-
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HEATING, VENTILATING AND AIR CONDITIONING

AC Load Lights	420 W	Dry Bulb Temp Cooling	22°C (72°F)
AC Load Equipment	161 W/m ² (15.0 W/ft ²)	Dry Bulb Temp Heating	-
Number of People	-	Relative Humidity - Cooling	50%
Noise Criteria	NC-45	Relative Humidity - Heating	- %
Room Pressure	negative	Minimum % Outside Air	100
Min Air Changes per Hour	30	100% Exhaust Air	yes
Steam	-	Special Exhaust	yes

Freezers have air-cooled compressors. Freezer temperature -62.2°C (-80°F).

Provide heat recovery system, if cost effective based on life cycle cost, to apply to an appropriate system in the building. See PG-08-10 HVAC for type of heat recovery system that may be employed.

PLUMBING AND LABORATORY GASES

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

Equipment Guide List

Ultralow Freezer Room

qty	symbol	ai	description
AR		VV	FREEZER, ULTRALOW, UPRIGHT
AR		VV	FREEZER, LIQUID NITROGEN, 1219 MM X 914 MM (48" X 36")
AR		VV	TANK, LIQUID NITROGEN, 610 MM (24") DIAMETER
AR		CC	RECEPTACLE, ELECTRICAL, DUPLEX, 120 VOLT, 30 AMP, DEDICATED CIRCUIT (PG-08-1, MCS 16140)
AR		CC	RECEPTACLE, ELECTRICAL, 208 VOLT, 20 AMP, 1 PHASE, ON WALL, WEATHERPROOF (PG-08-1, MCS 16140; H-08-3, CS 801-3)
NOTE: PROVIDE MONITORING SYSTEM IF CARBON DIOXIDE IS USED.			
