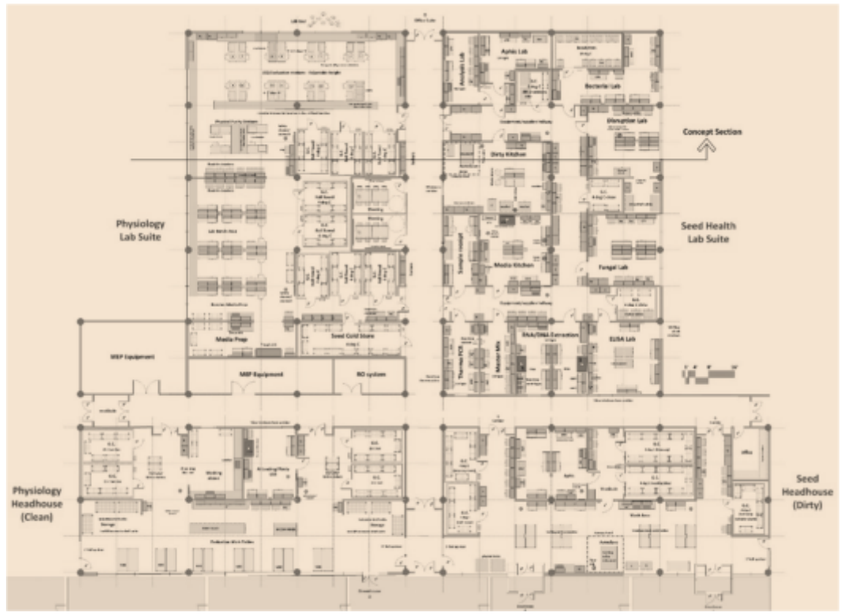
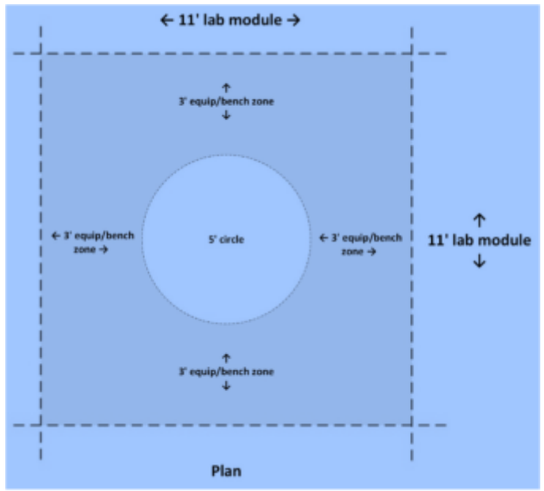
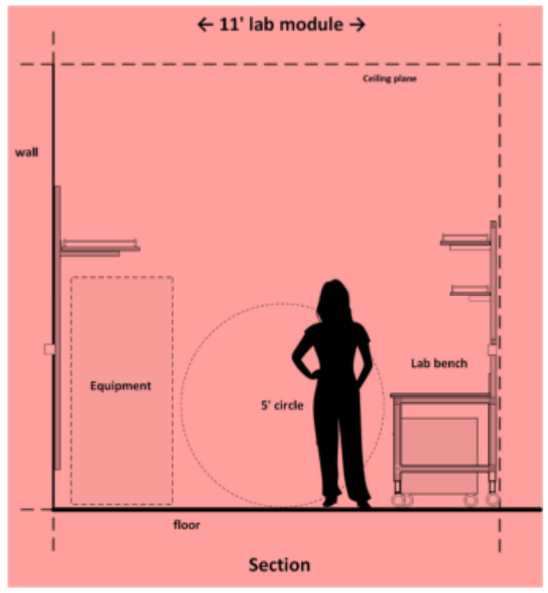




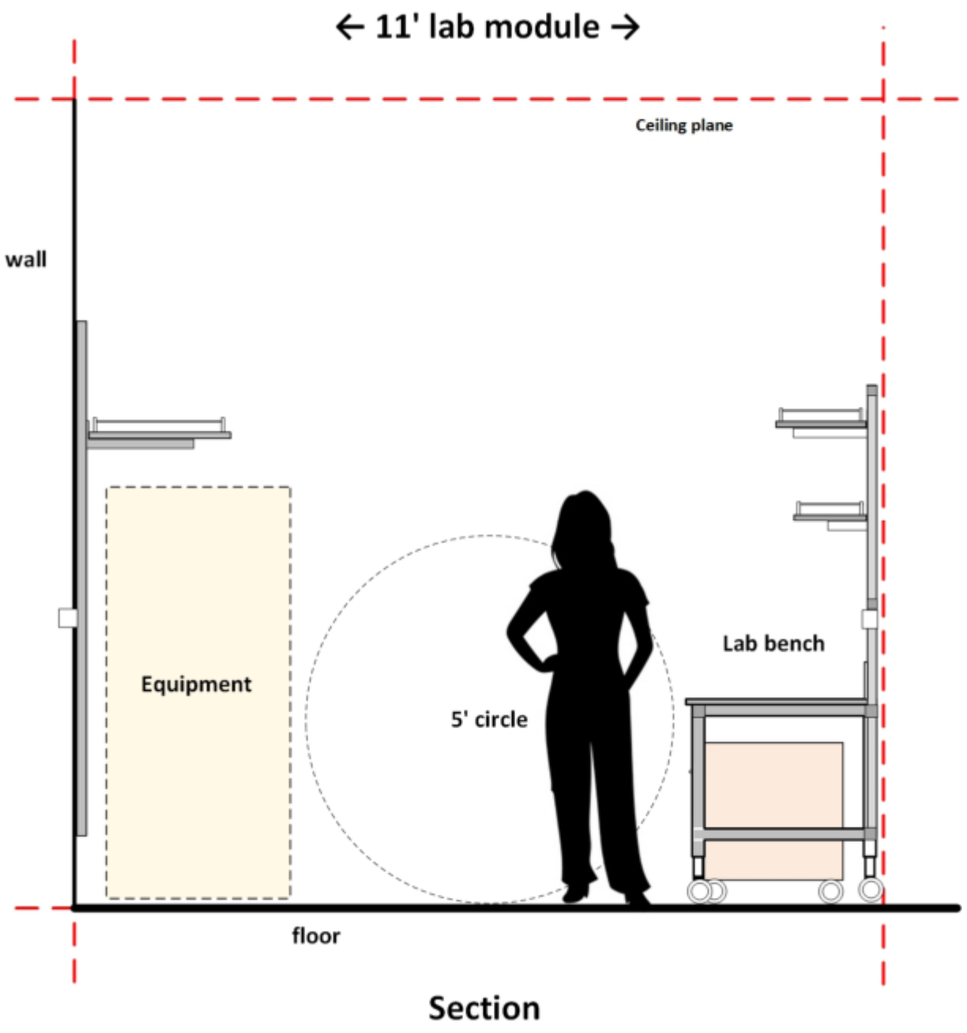


LABORATORY PROGRAM

Syngenta Leaf
Nampa, Idaho
Draft #6
2020 Jun 04

HERA laboratory planners

CONTENTS



Section

SUMMARY

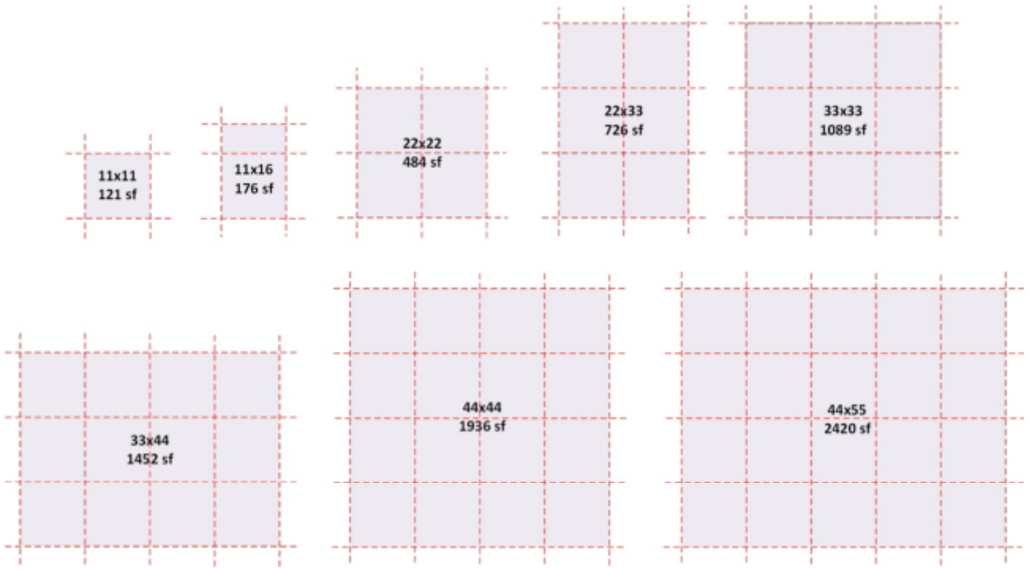
This is the sixth draft of the laboratory program/concept basis of design for the proposed new Syngenta Leaf analytical center located in Nampa, Idaho. This document includes comments received to date in conference calls, and comments received via email communication. This document includes electrical outlets and plumbing fittings/fixtures noted in the lab and work room areas.

The purpose of this report is to define the laboratory program and concept design. Many of the diagrams and illustrations contained herein may not reflect the actual building design. They are shown for discussions purposes only. The actual building design will be developed by the Hummel Architects design team, working with the Syngenta staff. From this document, the Revit lab drawings will be prepared by HERA Laboratory Planners, using the Revit architectural model provided by Hummel Architects.

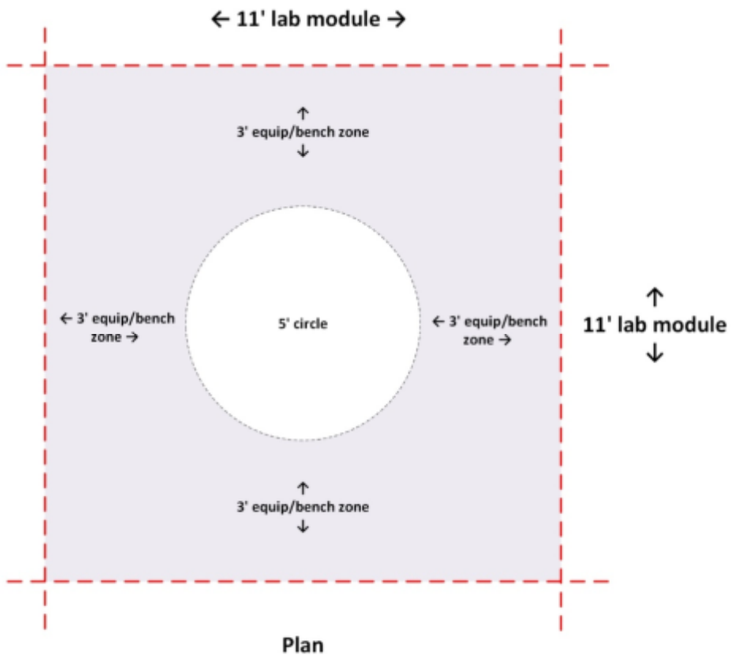
Glen Berry, AIA
Laboratory Planning Consultant
glenb@herainc.com

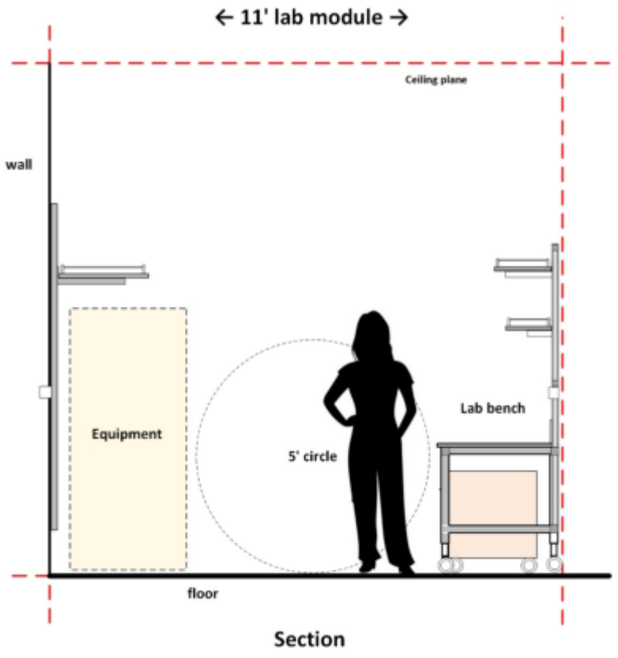
HERA laboratory planners

LAB MODULE CONCEPT



Lab module planning blocks





The lab program and design is based upon a lab module planning method which is based upon the space required in a lab workspace to accommodate lab work bench space, equipment space, and adequate aisle space for movement of lab personnel, carts, and equipment, and is compliant with ADA requirements.

Multiples of the lab planning module of 11'x11' can be arranged to create small, medium, and large lab room sizes based on lab function.

The lab planning module can also be used to define the building structural patterns, fenestration patterns, and MEP systems distribution patterns.

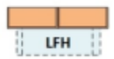
The implementation of a lab module approach provides flexibility as design options are considered; flexible systems design, and flexibilty after the building is occupied. It creates a plug-in/plug-out cabability for MEP and laboratory systems.

SYMBOL LEGEND

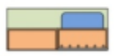
5' chemical fume hood
Variable Air Volume
700 cfm exhaust
115 v power junction box
Cold water, cup sink, gas, vaccum

Snorkel exhaust
75 cfm per Div 23

4' biological safety cabinet
Class II Type A
No external exhaust
115 v power at wall



5' laminar flow clean bench
Owner Furnished/Owner Installed
Can be located in any lab with open floor space/ equipment space
115 v power at wall

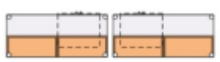


Sink work station
30"x72" (dimensions vary by location)
Hot/Cold water faucet
Eyewash drench hose
Water Polisher with RO feed where noted

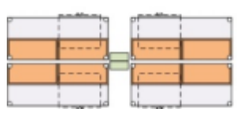
Fixed lab bench
30" deep x 30" or 36" high
Power and data
Base cabinets/shelves below
Phenolic resin or Epoxy resin in lab suites
Stainless steel in headhouse suites

Wall cabinet above fixed lab bench
36" width x 15" depth x 36" high
Metal in lab suites
Stainless steel in headhouse suites

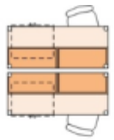
Protean Lab Bench
30"x72"x84"
Adjustable height
Mobile base cabinet below



Pair of Protean Lab Benches at wall
Power at wall



Pair of Protean Lab Benches at island or peninsula
Double Service column between with power, data, vacuum where noted



Protean Lab Work Station- desk height
30"x72"x84"
Adjustable height
2 rows adjustable shelves above
Mobile base cabinet below
115v power at wall

Protean Equipment Space
For Owner furnished equipment
Refrigerator/freezer/incubator/centrifuge/cart/ instrument bench/chemical storage cabinets
115v power at wall- dedicated circuit
Standby power where noted with "s"
208v power at wall where requred

Protean Tall Cabinet
36" wide x 24" deep x 96" high
Adjustable shelves

Shelf unit
5 tiers open shelving for lab supplies/consumables
115v power at wall for conversion to equipment space
Shelf unit may be double column or triple column wide

cart

Stainless Steel Bench
36" wide x 84" long
Adjustable height

Safety Shower/Eyewash
Tempered water
Wall recessed eyewash unit
Floor drain below

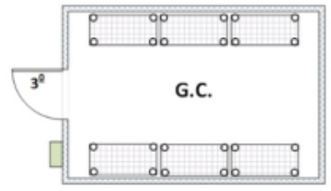
Media Prep Sink
30" W x 96" L
Hot/Cold water spray/faucet

Lab suite entry doors at corridor
36" wide x 96" high active leaf
24" wide x 96" high inactive leaf
All lab doors swing out in the direction of egress

Lab procedure room door
42" wide x 96" high single leaf
All lab doors swing out in the direction of egress where possible

Structural column
Shown as 24" diameter- actual dimension may be less
Structural grid shown at 24' x 36'
Actual grid may vary
Shown for conceptual design only

Lab planning module
11' x 11' grid
Lab module can be used as guide to define structural patterns, fenestrations patterns, MEP distribution patterns

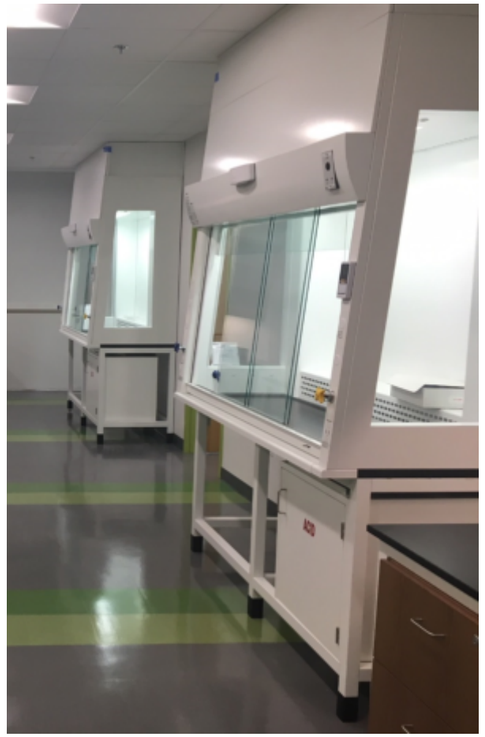


Walk-in Growth Chamber
Manufactured Room
Insulated door, wall, and ceiling panels
Manufacturer: EGC (Environmental Growth Chambers)

Industrial shelf unit- heavy duty
42"W x 72" L x 96" H

Metro Shelf Unit
24"W x 48" L x 72" H
Heavy Duty Lockable Casters at each corner

Biological Safety Cabinet



Chemical Fume Hood

Laminar Flow Clean Bench

HOOD SUMMARY

There are 3 hood types noted in the lab design.

1. Chemical Fume Hood

Sometimes referred to as fume hood, or just hood.
Required when volatile chemicals are used in procedures. Chemical fume hoods require external exhaust per Division 23.
There are 4 chemical fume hoods noted in the lab design- 1 in the Media Kitchen, 2 in RNA/DNA Lab, and 1 in the Physiology Headhouse. There are also 3 3 snorkel exhausts, which are connected to the fume hood exhaust system. 2 snorkel exhausts are located in the Media Kitchen, and one future snorkel in the Disruption Lab.

2. Biological Safety Cabinet

Sometimes referred to as BSC, or clean hood, or just hood.

Required when biological hazards are used in procedures. A BSC also acts as a laminar flow hood.
Biological Safety Cabinets in this design are designated as Class II Type A, which require no external exhaust.
There are 2 BSC's in the lab design. One in the Aphis Lab in the Seed Health Lab Suite, and one in the Aphis Lab in the Seed Health Headhouse Suite.

3. Laminar Flow Clean Bench

Sometimes referred to as clean hood, or clean bench, or just hood. These are noted with "LFH" designation in the lab program illustrations.
Required when the samples used need to be protected from outside contamination.
A laminar flow clean bench does not provide any user protection from biological hazards.
There are various locations indicated for LFH. They can be located in any lab as required.

BUILDING CONCEPT PLAN

The building is organized with 4 zones north to south:

1. **Office suite at north end.**
2. **Physiology Work Room Suite at west side. Physiology Work Room Suite does not require lab exhaust HVAC system.**
3. **Seed Health Lab Suite at east side.**
4. **Physiology and Seed Headhouses at lower center.**
5. **Greenhouses at south end.**

LAB CONCEPT PLAN

The lab suites and headhouse suites are organized using the 11'x11' lab planning module.

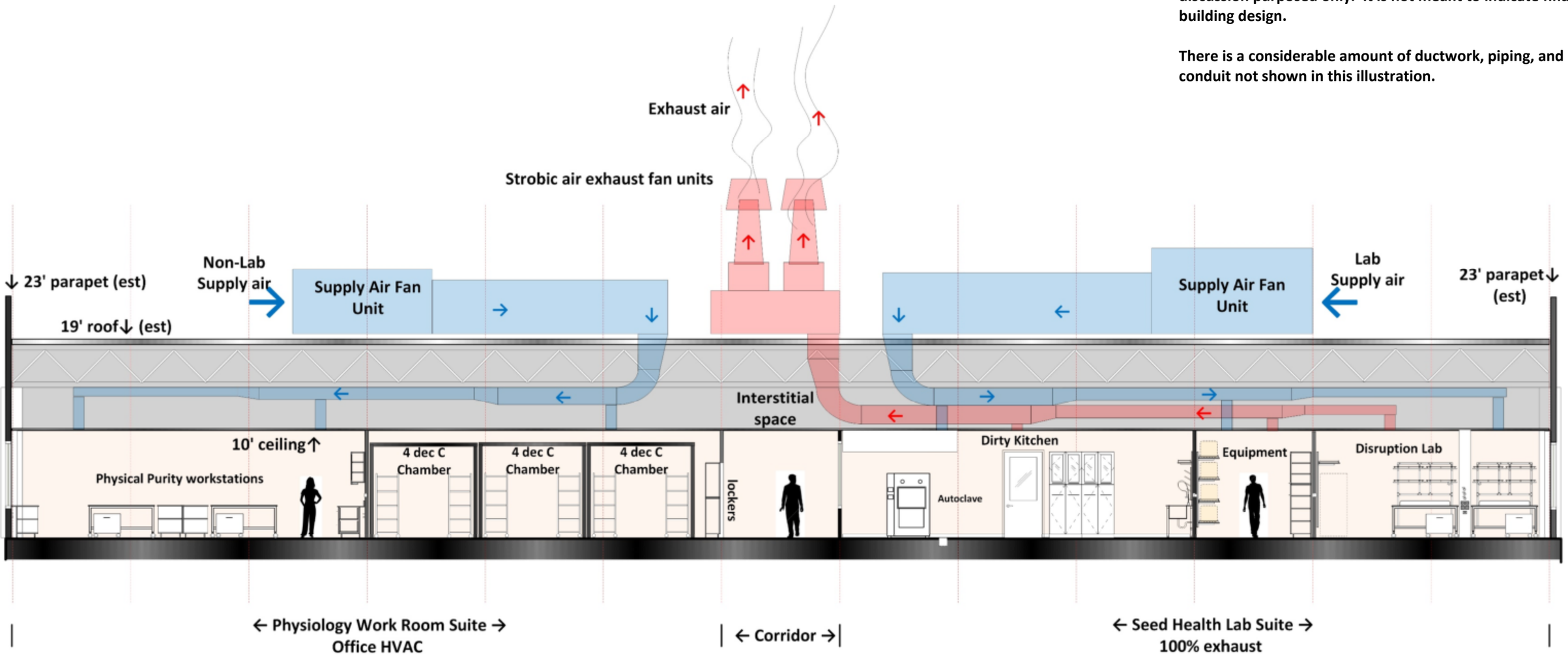
MEP systems and RO water system can be located in the MEP zone at the south side of the Physiology Lab Suite.

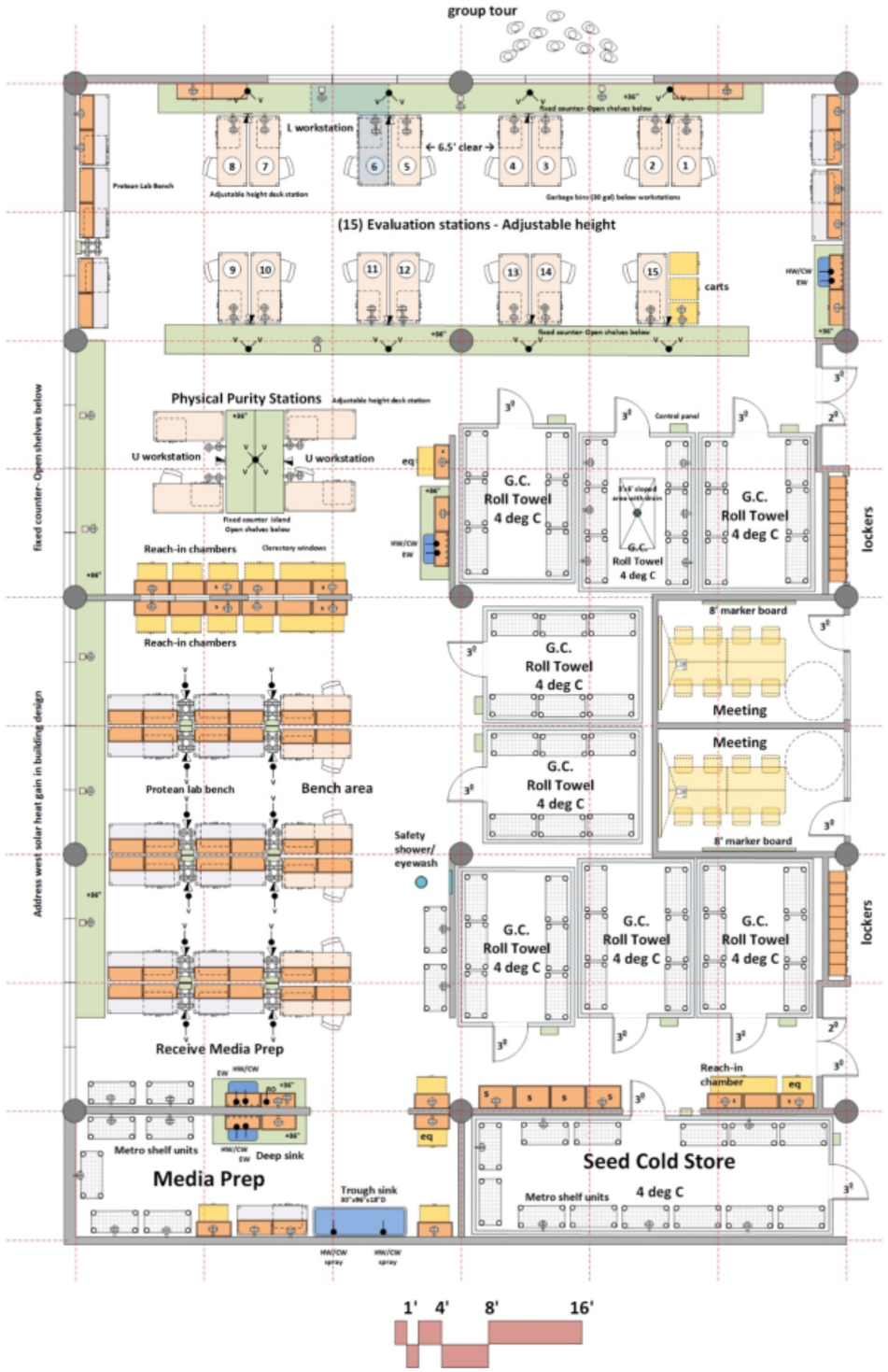
LAB CONCEPT SECTION

N+1 redundancy recommended for all MEP systems with fans, pumps, and motors that are subject to failure.

This diagram is conceptual and is submitted for discussion purposed only. It is not meant to indicate final building design.

There is a considerable amount of ductwork, piping, and conduit not shown in this illustration.





PHYSIOLOGY WORK ROOM SUITE

Program Requirements

The Physiology Work Room Suite is not a "lab" suite in the code definition of a lab. It does not require 100% exhaust, with a minimum of 6 air changes per hour. The work room areas in this suite can be designed as office space, with standard air conditioning HVAC system. There may be higher than normal heat gain from equipment, which will need to be addressed in the design of the HVAC system.

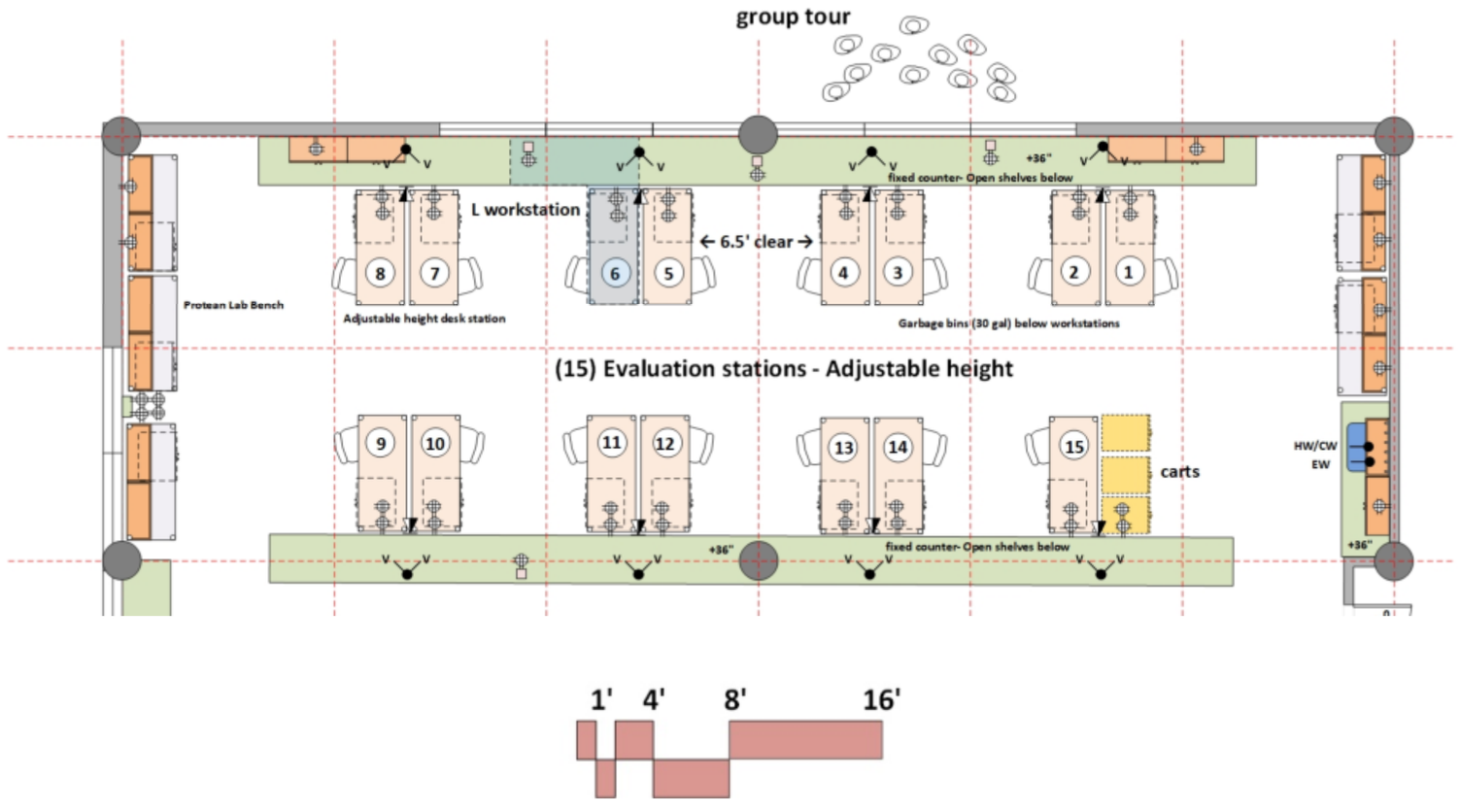
Windows at west side of lab suite will require appropriate solar/heat attenuation.

Each work room/area program requirements are noted on the following pages, starting at the Evaluation stations and proceeding clockwise.

EVALUATION STATIONS

Physiology Work Room Suite

Program Requirements



ARCHITECTURAL

Occupancy: B
Floor: sealed concrete or vinyl tile or rubber tile
Walls: metal stud with gypsum board, enamel paint
Sound attenuation: NC 40 or less

STRUCTURAL

Slab on grade

MECHANICAL

Temperature: 68-72 deg F +/- 2 deg F
Humidity: Ambient
Equipment Heat Gain: 25 btuh/sf

PLUMBING

Hot/Cold water at sink
Eyewash unit at sink
Vacuum at each evaluation work station

ELECTRICAL

115v20a1ph outlets
Hardwire and wireless data (WAP)
Lighting: LED at 500 LUX

CONTRACTOR FURNISHED EQUIPMENT

Metal casework, epoxy resin tops, sinks,
Protean lab benches

SYNGENTA FURNISHED EQUIPMENT

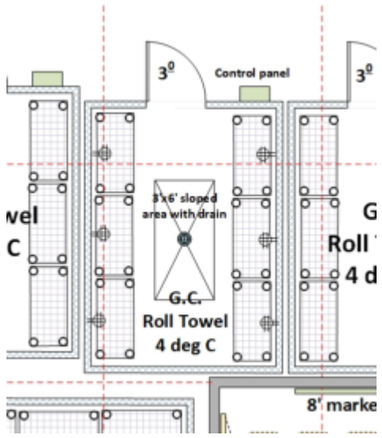
Adjustable height desk stations
Garbage bins
Carts

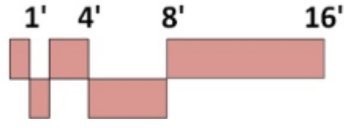
GROWTH CHAMBERS- 4°C

Physiology Work Room Suite

Typical for 8 chambers

Program Requirements





ARCHITECTURAL

Occupancy: B
Floor: insulated panels
Walls: insulated panels
Ceiling: insulated panels
Doors: 3'-0"x x7'-0" with view window
Security: card access

STRUCTURAL

Slab on grade
Slope center area of Growth Chambers with floor drain

MECHANICAL

Temperature: 4 deg C +/- 1 deg C
Humidity: Controlled
Pressure: Positive

PLUMBING

Drain for condensate
RO water feed

ELECTRICAL

115v20a1ph outlets at walls
Stand by power
Hardwire and wireless data (WAP)
Lighting: LED at 500 LUX

CONTRACTOR FURNISHED EQUIPMENT

Walk-in Growth Chamber
Metro shelf units
Rooftop condenser unit

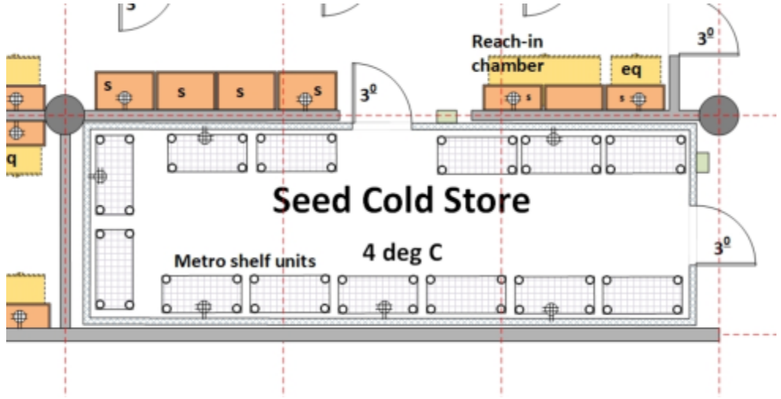
SYNGENTA FURNISHED EQUIPMENT

Instruments

SEED COLD STORE- 4°C

Physiology Work Room Suite

Program Requirements



ARCHITECTURAL
Occupancy: B
Floor: insulated panels
Walls: insulated panels
Ceiling: insulated panels
Doors: 3'-0"x 7'-0" glass panel
Security: card access

STRUCTURAL
Slab on grade

MECHANICAL
Temperature: 4 deg C +/- 1 deg C
Humidity: Controlled
Pressure: Positive

PLUMBING
Drain for condensate

ELECTRICAL
115v20a1ph outlets at walls
Stand by power
Hardwire and wireless data (WAP)
Lighting: LED at 500 LUX

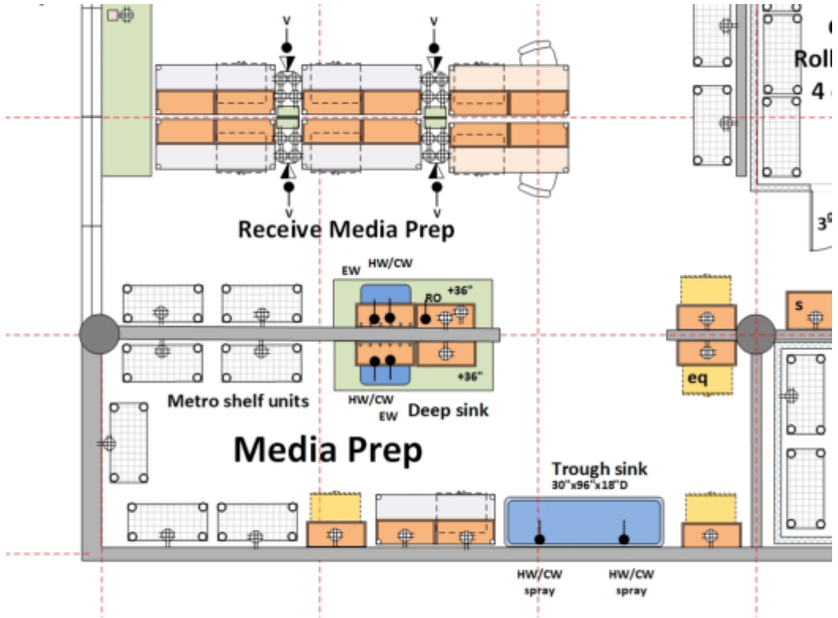
CONTRACTOR FURNISHED EQUIPMENT
Metro shelf units
Rooftop condenser unit

SYNGENTA FURNISHED EQUIPMENT
Instruments

MEDIA PREP

Physiology Work Room Suite

Program Requirements



ARCHITECTURAL

Occupancy: B
Floor: sealed concrete or vinyl tile or rubber tile
Walls: metal stud with gypsum board
Stainless steel wall guards at corridor; Stainless steel corner guards at wall corners
Sound attenuation: NC 45 or less

STRUCTURAL

Slab on grade

MECHANICAL

Temperature: 68-72 deg F +/- 2 deg F
Humidity: Ambient

PLUMBING

Hot/Cold water at sinks
Pure water at sinks via point-of-use water polishers
Eyewash unit at each sink
Vacuum at lab benches

ELECTRICAL

115v20a1ph outlets at walls
Stand by power
Hardwire and wireless data (WAP)
Lighting: recessed, sealed LED at 500 LUX

CONTRACTOR FURNISHED EQUIPMENT

Metal casework, sinks, tops
Lab benches
Tall cabinets
Metro shelf units
RO water system- locate in mechanical room

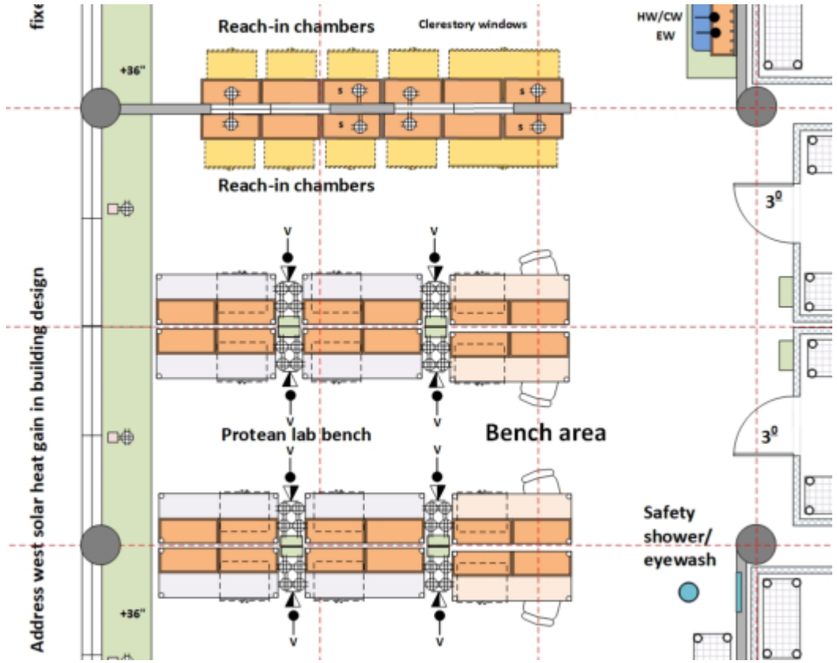
SYNGENTA FURNISHED EQUIPMENT

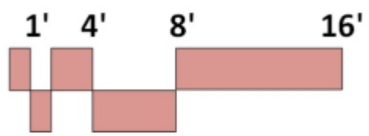
Refrigerators
Freezers
Carts

LAB BENCH AREA

Physiology Work Room Suite

Program Requirements





ARCHITECTURAL

Occupancy: B
Floor: sealed concrete or vinyl tile or rubber tile
Walls: metal stud with gypsum board
attenuation: NC 40 or less
Security: card access

STRUCTURAL

Slab on grade

MECHANICAL

Temperature: 68-72 deg F +/- 2 deg F
Humidity: Ambient

PLUMBING

Vacuum at lab benches
Tepid water feed at safety shower/eyewash
Floor drain at safety shower

ELECTRICAL

115v20a1ph outlets at walls
Hardwire and wireless data (WAP)
Lighting: recessed, sealed LED at 500 LUX

CONTRACTOR FURNISHED EQUIPMENT

Metal casework, sinks, tops
Lab benches
Service columns
Tall cabinets

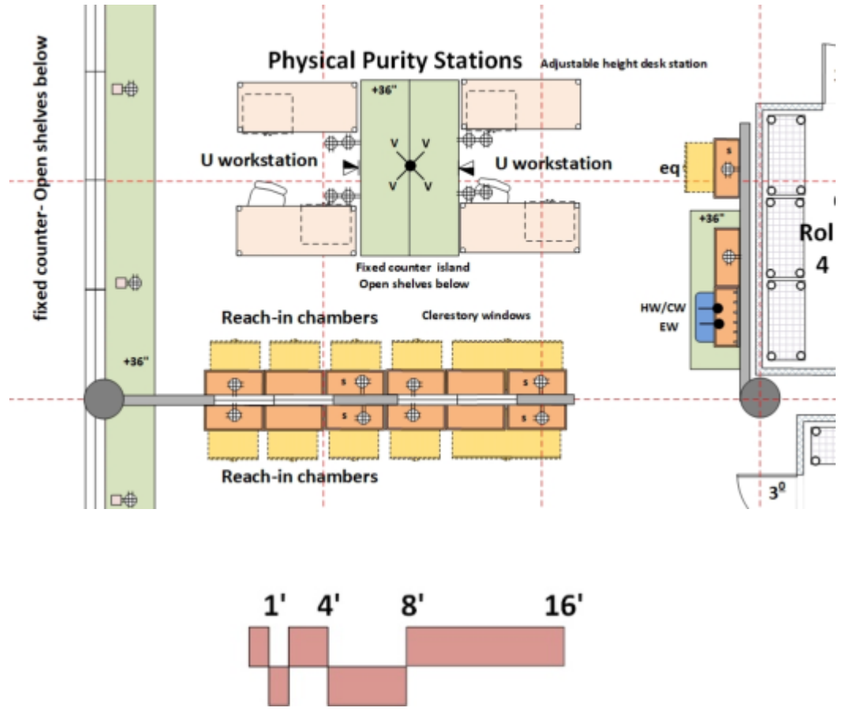
SYNGENTA FURNISHED EQUIPMENT

Refrigerators
Freezers
Growth Champers
Carts

PHYSICAL PURITY STATIONS

Physiology Work Room Suite

Program Requirements



ARCHITECTURAL

Occupancy: B
Floor: sealed concrete or vinyl tile or rubber tile
Walls: metal stud with gypsum board
Sound attenuation: NC 40 or less
Security: card access

STRUCTURAL

Slab on grade

MECHANICAL

Temperature: 68-72 deg F +/- 2 deg F
Humidity: Ambient

PLUMBING

Hot/Cold water at sink
Pure water at sinks via point-of-use water polishers
Eyewash unit at sink
Vacuum at purity work stations

ELECTRICAL

115v20a1ph outlets at walls
Stand by power
Hardwire and wireless data (WAP)
Lighting: recessed, sealed LED at 500 LUX

CONTRACTOR FURNISHED EQUIPMENT

Metal casework, sinks, tops
Lab benches

SYNGENTA FURNISHED EQUIPMENT

Refrigerators
Freezers
Growth chambers

PHYSIOLOGY HEADHOUSE- Clean

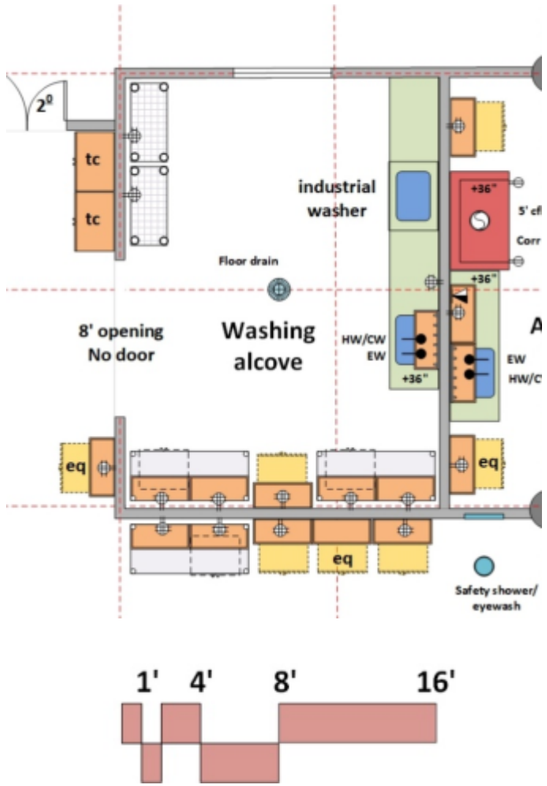
Program Requirements

Each lab's program requirements are noted on the following pages, starting at Washing Alcove and proceeding clockwise.

WASHING ALCOVE

Physiology Headhouse- Clean

Program Requirements



ARCHITECTURAL

Occupancy: B
Floor: sealed concrete or epoxy
Walls: metal stud with water proof gypsum board
Ceiling: open to structure
Sound attenuation: NC 45 or less

STRUCTURAL

Slab on grade.

MECHANICAL

Temperature: 68-72 deg F +/- 2 deg F
Humidity: Ambient
100% exhaust
Air changes: 6/hour occupied; 2/hour unoccupied
Variable Air Volume
Equipment Heat Gain: 50 btuh/sf
Pressure: Negative

PLUMBING

Hot/Cold water at sink
Pure water at sinks via point-of-use water polishers
Eyewash unit at each sink
Floor drain

ELECTRICAL

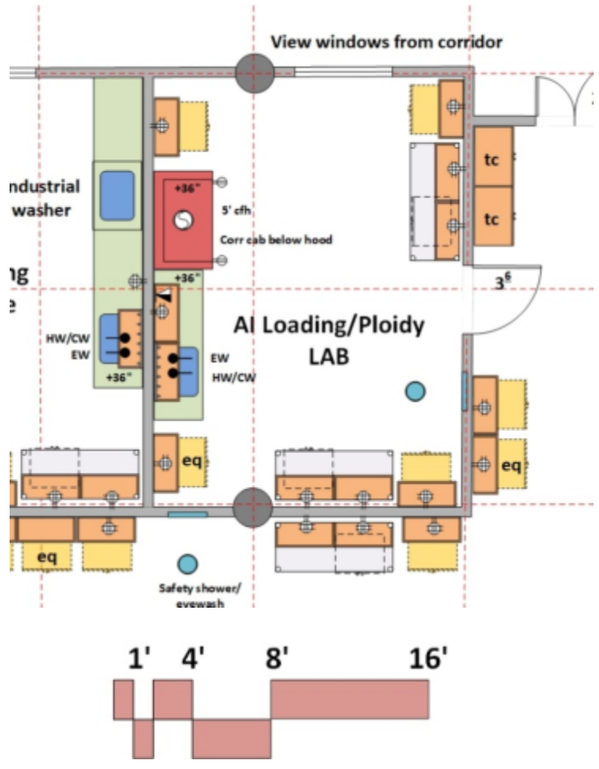
115v20a1ph outlets at walls
208 or 480v power at washer
Hardwire and wireless data (WAP)
Lighting: recessed, sealed LED at 500 LUX

CONTRACTOR FURNISHED EQUIPMENT

Industrial Washer
Stainless steel casework, sink, tops
Metro shelf units

SYNGENTA FURNISHED EQUIPMENT

None



AI LOADING/PLOIDY LAB

Physiology Headhouse- Clean

Program Requirements

ARCHITECTURAL

Occupancy: B
Floor: sealed concrete
Walls: metal stud with gypsum board
Ceiling: lab grade mylar acoustic tile
Doors: 3'-6"/x8'-0" with view window
attenuation: NC 45 or less
Security: card access

STRUCTURAL

Slab on grade.

MECHANICAL

Temperature: 68-72 deg F +/- 2 deg F
Humidity: Ambient
100% exhaust
Air changes: 6/hour occupied; 4/hour unoccupied
Variable Air Volume
Air change rate may be higher due to equipment heat gain
Equipment Heat Gain: 25 btuh/sf
Pressure: Negative

PLUMBING

Hot/Cold water at sink
Eyewash unit at each sink
Tepid water feed at safety shower/eyewash
Floor drain at safety shower/eyewash

ELECTRICAL

115v20a1ph outlets at walls
Hardwire and wireless data (WAP)
Lighting: LED at 500 LUX

CONTRACTOR FURNISHED EQUIPMENT

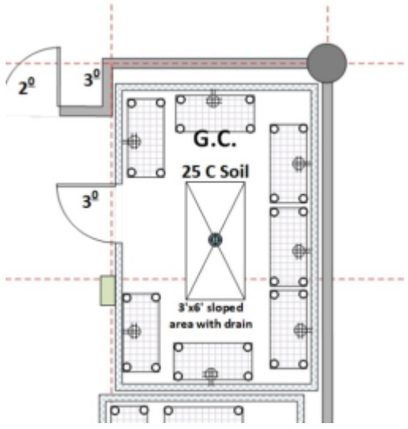
Stainless steel casework, sinks, tops
Protean Lab benches
Shelves at equipment space
Chemical Fume Hood
Safety shower/eyewash

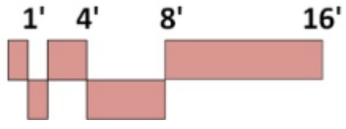
SYNGENTA FURNISHED EQUIPMENT

Scientific Instruments

GROWTH CHAMBERS- 24°C SAND BOX

Physiology Headhouse- Clean
Typical for 2 sand box chambers
& 2 soil chambers
Program Requirements





ARCHITECTURAL
Occupancy: B
Floor: insulated panels
Walls: insulated panels
Ceiling: insulated panels
Doors: 3'-0"x7'-0" glass panel
attenuation: NC 40 or less
Security: card access

STRUCTURAL
Slab on grade.
Slope floor at drain

MECHANICAL
Temperature: 24 deg C +/- 1 deg C
Humidity: Controlled
Pressure: Positive

PLUMBING
RO water
Drain for condensate
Floor drain

ELECTRICAL
115v20a1ph outlets at walls
Stand by power
Hardwire and wireless data (WAP)
Lighting: LED at 500 LUX

CONTRACTOR FURNISHED EQUIPMENT
Walk-in Growth Chamber
Metro shelf units
Condenser unit on roof

SYNGENTA FURNISHED EQUIPMENT
Instruments

OPEN HEADHOUSE AREA

Physiology Headhouse- Clean

Program Requirements

ARCHITECTURAL

Occupancy: B
Floor: sealed concrete
Walls: metal stud with concrete backer board with fiberglass finish & epoxy paint
Stainless steel wall guards at corridor; Stainless steel corner guards at wall corners
Ceiling: open to structure
Doors: 3'-0"/2'-0"x8'-0" pair with view window;
Sound attenuation: NC 45 or less
Security: card access

STRUCTURAL

Slab on grade.
Floor must accommodate pallet jack use

MECHANICAL

Temperature: 68-72 deg F +/- 2 deg F
Humidity: Ambient
100% exhaust
Air changes: 6/hour occupied; 4/hour unoccupied
Variable air volume
Air change rate may be higher due to equipment heat gain
Equipment Heat Gain: 50 Btuh/sf
Pressure: Positive

PLUMBING

Vacuum at evaluation work tables
Cold water, drain, compressed air, at Tray Filler and Media Mixer
Tepid feed water at safety shower/eyewash
Floor drain at safety shower/eyewash

ELECTRICAL

115v20a1ph outlets at walls and ceilings
208v power and/or 480v power at Tray Filler and Media Mixer
per manufacturer requirements
Stand by power for walk-in chambers
Hardwire and wireless data (WAP)
Lighting: LED at 500 LUX

CONTRACTOR FURNISHED EQUIPMENT

Stainless steel casework, sinks, tops
Evaluation work tables
Tall cabinets- lockable
Shelves at equipment spaces
Industrial shelf units

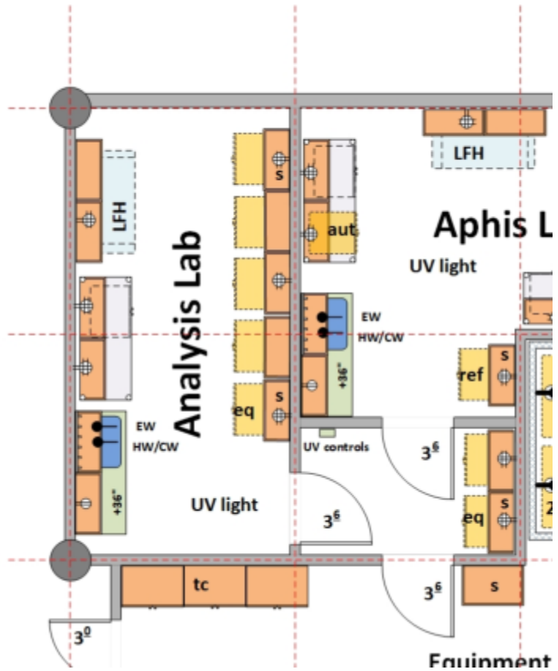
SYNGENTA FURNISHED EQUIPMENT

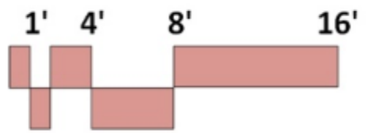
Tray filler
Media Mixer
Refrigerators
Freezers
Carts
Soil bales

SEED HEALTH LAB SUITE

Program Requirements

Each lab's program requirements are noted on the following pages, starting at Analysis Lab and proceeding clockwise.





ANALYSIS LAB

Seed Health Lab Suite

Program Requirements

ARCHITECTURAL

Occupancy: B
Floor: sealed concrete or vinyl tile or rubber tile
Walls: metal stud with gypsum board
Ceiling: lab grade mylar acoustic tile at 10'
Stainless steel corner guards at wall corners
Doors: 3'-6"x8'-0" with view window
Sound attenuation: NC 45 or less
Security: card access

STRUCTURAL

Slab on grade

MECHANICAL

Temperature: 68-72 deg F +/- 2 deg F
Humidity: Ambient
100% exhaust
Air changes: 6/hour occupied; 4/hour unoccupied
Variable Air Volume
Air change rate may be higher due to equipment heat gain
Equipment Heat Gain: 50 btuh/sf
Pressure: positive to vestibule; vestibule negative to corridor

PLUMBING

Hot/Cold water at sink
RO water for water polisher
Pure water at sinks via point-of-use water polishers
Eyewash unit at each sink
Compressed air, Vacuum-verify with Syngenta, location to be determined

ELECTRICAL

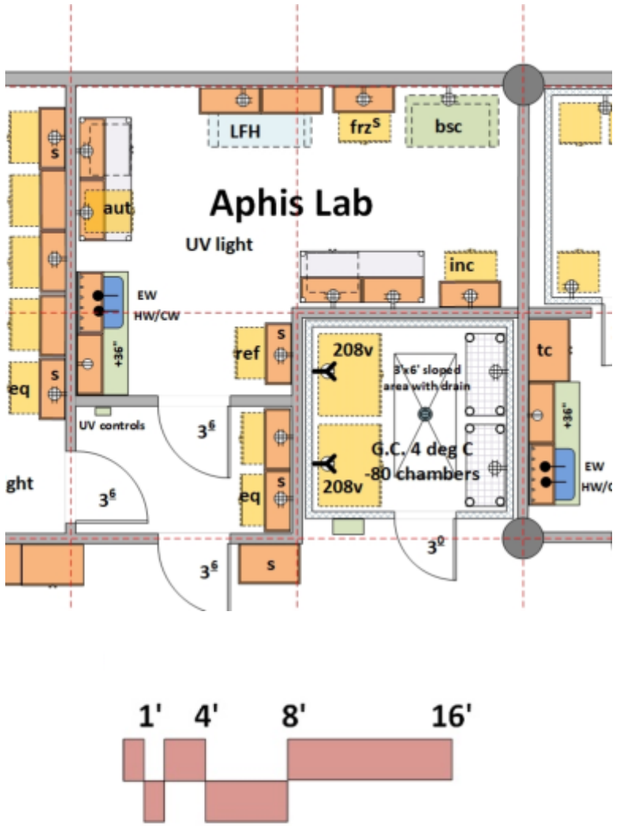
115v20a1ph outlets at walls
Stand by power
Hardwire and wireless data (WAP)
Lighting: LED at 500 LUX
UV Light for room decontamination

CONTRACTOR FURNISHED EQUIPMENT

Metal casework, sinks, tops
Protean Lab benches
Service columns
Tall cabinets

SYNGENTA FURNISHED EQUIPMENT

Refrigerators
Freezers
Laminar flow hood
Light Box
Computers



APHIS LAB

Seed Health Lab Suite

Program Requirements

ARCHITECTURAL

Occupancy: B
Floor: sealed concrete or vinyl tile or rubber tile
Walls: metal stud with gypsum board
Ceiling: lab grade acoustic tile at 10'
Doors: 3'-6"x8'-0" with view window
Sound attenuation: NC 45 or less
Security: card access

STRUCTURAL

Slab on grade

MECHANICAL

Temperature: 68-72 deg F +/- 2 deg F
Humidity: Ambient
100% exhaust
Air changes: 6/hour occupied; 4/hour unoccupied
Variable Air Volume
Air change rate may be higher due to equipment heat gain
Equipment Heat Gain: 50 btuh/sf
Pressure: positive to vestibule; vestibule negative to corridor

PLUMBING

Hot/Cold water at sink
RO water for water polisher
Pure water at sinks via point-of-use water polishers
Eyewash unit at each sink
Compressed air, Vacuum- confirm with Syngenta, location to be determined

ELECTRICAL

115v20a1ph outlets at walls
Stand by power
Hardwire and wireless data (WAP)
Lighting: LED at 500 LUX

CONTRACTOR FURNISHED EQUIPMENT

Metal casework, sinks, tops
Protean Lab benches
Service columns
Tall cabinets

SYNGENTA FURNISHED EQUIPMENT

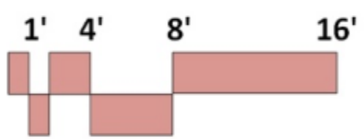
Refrigerators
Freezers
Biological Safety Cabinet
Laminar Flow Hood
Benchtop autoclave
Incubators
Light box
Computer work station
Carts

GROWTH CHAMBER- 4°C

For -80°C Reach-in Chambers

Seed Health Lab Suite

Program Requirements



ARCHITECTURAL
Occupancy: B
Floor: insulated panels
Walls: insulated panels
Ceiling: insulated panels
Doors: 3'-0"x7'-0" glass panel
Security: card access

STRUCTURAL
Slab on grade.

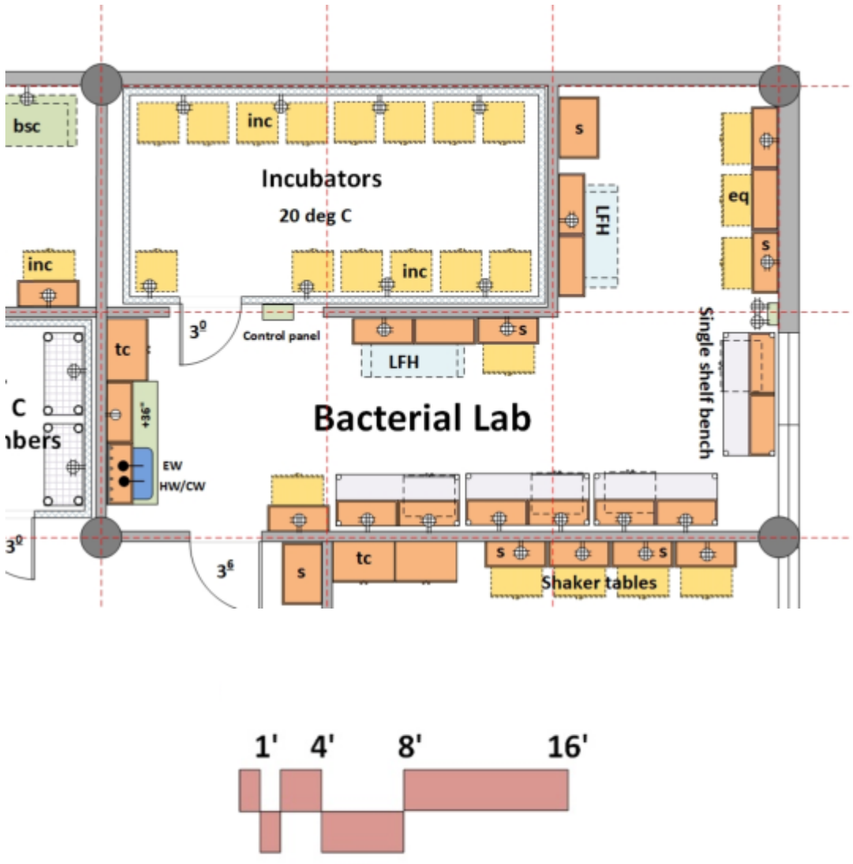
MECHANICAL
Temperature: 4 deg C +/- 1 deg C
Humidity: Controlled
Pressure: Positive

PLUMBING
RO water
Drain for condensate

ELECTRICAL
115v20a1ph outlets at walls
208v power at -80 chambers
Stand by power
Hardwire and wireless data (WAP)
Lighting: LED at 500 LUX

CONTRACTOR FURNISHED EQUIPMENT
Walk-in Growth Chamber
Metro shelf units
Condenser unit on roof

SYNGENTA FURNISHED EQUIPMENT
-80 deg C reach-in growth chambers



BACTERIAL LAB

Includes Incubator Room

Seed Health Lab Suite

Program Requirements

ARCHITECTURAL

Occupancy: B
Floor: sealed concrete or vinyl tile or rubber tile
Walls: metal stud with gypsum board
Doors: 3'-6"x8'-0" with view window
Ceiling: lab grade acoustic tile at 10'
Natural daylight: at exterior windows with light attenuation
Sound attenuation: NC 45 or less
Security: card access
Insulated panels for walls and ceiling at Incubator Room

STRUCTURAL

Slab on grade

MECHANICAL

Temperature: 68-72 deg F +/- 2 deg F; 20 Deg C at Incubator Room
Humidity: Ambient
100% exhaust
Air changes: 6/hour occupied; 4/hour unoccupied
Variable Air Volume
Air change rate may be higher due to equipment heat gain
Equipment Heat Gain: 50 btuh/sf
Pressure: Negative

PLUMBING

Hot/Cold water at sink
RO water at sink for water polisher
Pure water at sinks via point-of-use water polishers
Compressed air, Vacuum- verity with Syngenta, location to be determined

ELECTRICAL

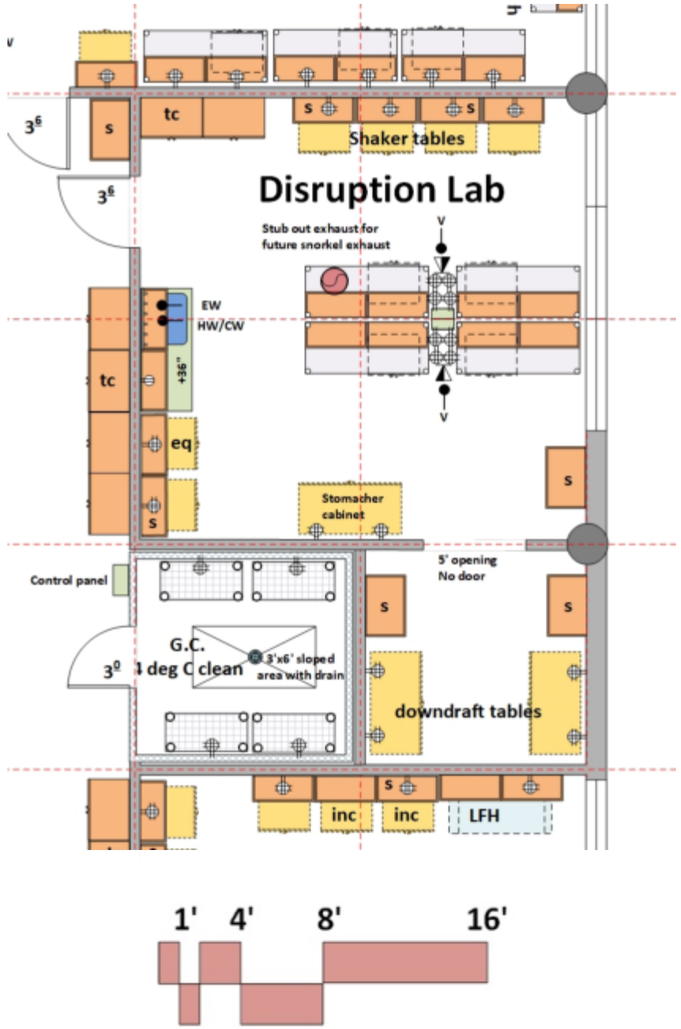
115v20a1ph outlets at walls
Stand by power
Hardwire and wireless data (WAP)
Lighting: LED at 500 LUX

CONTRACTOR FURNISHED EQUIPMENT

Metal casework sinks, tops
Protean Lab benches
Service columns
Tall cabinets
Incubator Room

SYNGENTA FURNISHED EQUIPMENT

Refrigerators
Freezers
Laminar flow hood
Incubators
Centriguges



DISRUPTION LAB

Includes DD Tables Room

Seed Health Lab Suite

Program Requirements

ARCHITECTURAL

Occupancy: B
Floor: sealed concrete or vinyl tile or rubber tile
Walls: metal stud with gypsum board
Ceiling: lab grade acoustic tile at 10'
Doors: 3'-6"x8'-0" with view window
Sound attenuation: NC 45 or less
Security: card access

STRUCTURAL

Slab on grade

MECHANICAL

Temperature: 68-72 deg F +/- 2 deg F
Humidity: Ambient
100% exhaust
Air changes: 6/hour occupied; 2/hour unoccupied
Variable Air Volume
Air change rate may be higher due to equipment heat gain
Equipment Heat Gain: 50 btuh/sf
Pressure: Negative or positive depending upon use

PLUMBING

Hot/Cold water at sink
RO water for water polisher
Pure water at sinks via point-of-use water polishers
Eyewash unit at sink
Compressed Air, Vacuum- verify with Syngenta, location to be determined

ELECTRICAL

115v20a1ph outlets at walls and ceiling
Stand by power
Hardwire and wireless data (WAP)
Lighting: LED at 500 LUX

CONTRACTOR FURNISHED EQUIPMENT

Metal casework, sinks, tops
Protean lab benches
Service column
Tall cabinets
Snorkel exhaust stub out

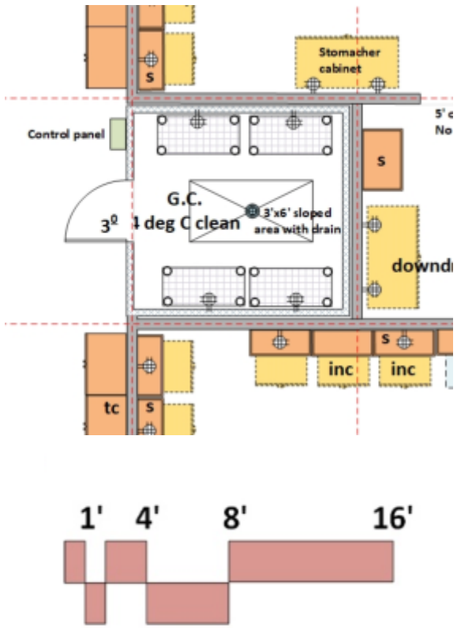
SYNGENTA FURNISHED EQUIPMENT

Refrigerators
Freezers
Reach-in growth chambers
Shaker tables
Laminar Flow Clean Benches
Genogrinders (high impact)

GROWTH CHAMBER- 4°C (CLEAN)

Seed Health Lab Suite

Program Requirements



ARCHITECTURAL

Occupancy: B
Floor: insulated panels
Walls: insulated panels
Ceiling: insulated panels
Doors: 3'-0"x7'-0" glass panel
Security: card access

STRUCTURAL

Slab on grade

MECHANICAL

Temperature: 4 deg C +/- 1 deg C
Humidity: Controlled
Pressure: Positive

PLUMBING

RO water
Drain for condensate

ELECTRICAL

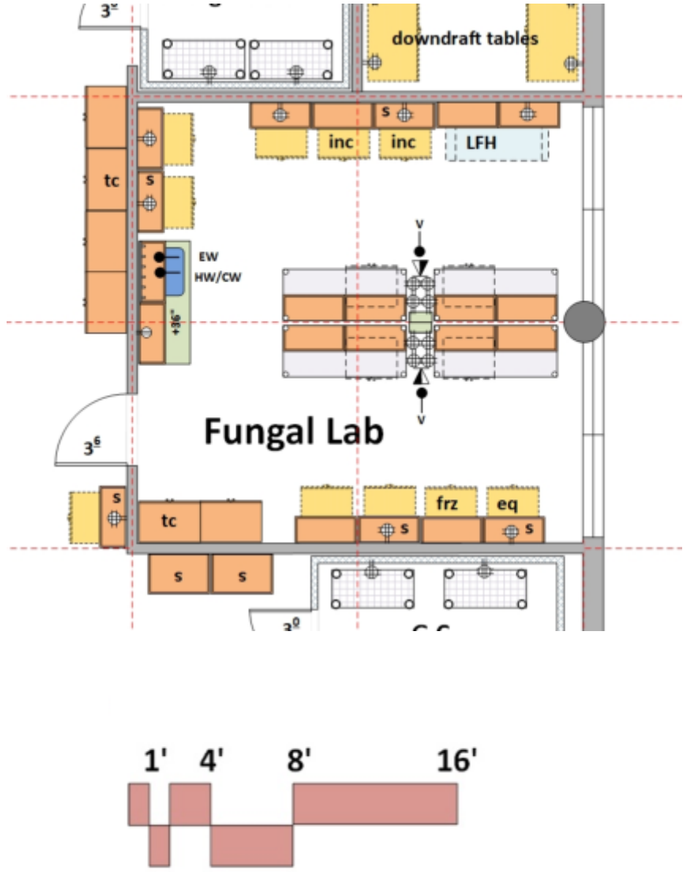
115v20a1ph outlets at walls
Stand by power
Hardwire and wireless data (WAP)
Lighting: LED at 500 LUX

CONTRACTOR FURNISHED EQUIPMENT

Walk-in Growth Chamber
Metro shelf units
Condenser unit on roof

SYNGENTA FURNISHED EQUIPMENT

Instruments



FUNGAL LAB

Seed Health Lab Suite

Program Requirements

ARCHITECTURAL

Occupancy: B
Floor: sealed concrete or vinyl tile or rubber tile
Walls: metal stud with gypsum board
Ceiling: lab grade acoustic tile at 10'
Doors: 3'-6"x8'-0" with view window
Natural Daylight: light attenuation at exterior windows
Sound attenuation: NC 45 or less
Security: card access

STRUCTURAL

Slab on grade

MECHANICAL

Temperature: 68-72 deg F +/- 2 deg F
Humidity: Ambient
100% exhaust
Air changes: 6/hour occupied; 2/hour unoccupied
Variable Air Volume
Air change rate may be higher due to equipment heat gain
Equipment Heat Gain: 50 btuh/sf
Pressure: Negative or positive depending upon use

PLUMBING

Hot/Cold water at sink
RO water for water polisher
Pure water at sinks via point-of-use water polishers
Eyewash unit at sink
Compressed air, Vacuum- verify with Syngenta, location to be determined

ELECTRICAL

115v20a1ph outlets at walls and ceilings
Stand by power
Hardwire and wireless data (WAP)
Lighting: LED at 500 LUX

CONTRACTOR FURNISHED EQUIPMENT

Metal casework, sinks, tops
Protean lab benches
Service column
Tall cabinets

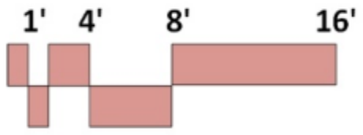
SYNGENTA FURNISHED EQUIPMENT

Refrigerators
Freezers
Incubators
Laminar Flow Hood
Reach-in growth chambers
Computers

GROWTH CHAMBER- 4°C (DIRTY)

Seed Health Lab Suite

Program Requirements



ARCHITECTURAL

Occupancy: B
Floor: insulated panels
Walls: insulated panels
Ceiling: insulated panels
Doors: 3'-0"x7'-0" glass panel
Security: card access

STRUCTURAL

Slab on grade

MECHANICAL

Temperature: 4 deg C +/- 1 deg C
Humidity: Controlled
Pressure: Positive

PLUMBING

RO water
Drain for condensate

ELECTRICAL

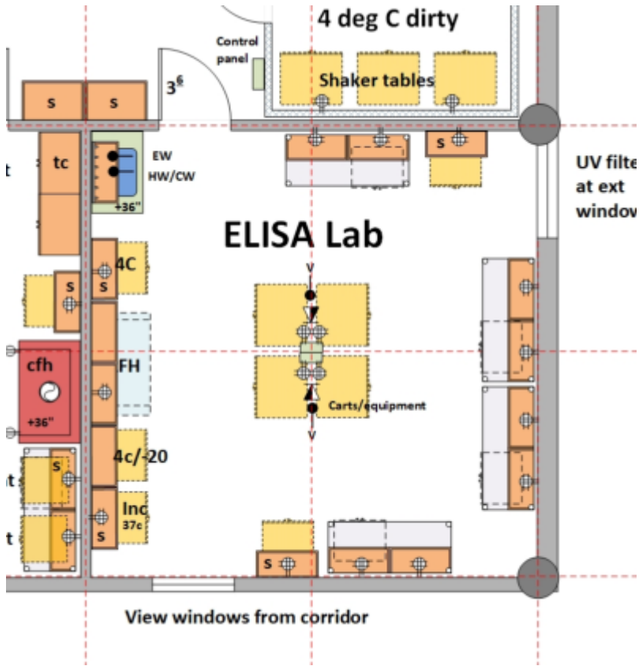
115v20a1ph outlets at walls
Stand by power
Hardwire and wireless data (WAP)
Lighting: LED at 500 LUX

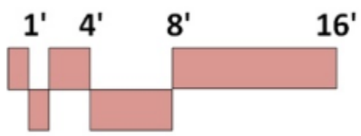
CONTRACTOR FURNISHED EQUIPMENT

Walk-in Growth Chamber
Metro shelf units
Condenser unit on roof

SYNGENTA FURNISHED EQUIPMENT

Instruments





ELISA LAB

Seed Health Lab Suite

Program Requirements

ARCHITECTURAL

Occupancy: B
Floor: sealed concrete or vinyl tile or rubber tile
Walls: metal stud with gypsum board
Ceiling: lab grade acoustic tile at 10'
Doors: 3'-6"x8'-0" with view window
Sound attenuation: NC 45 or less
Security: card access

STRUCTURAL

Slab on grade

MECHANICAL

Temperature: 68-72 deg F +/- 2 deg F
Humidity: Ambient
100% exhaust
Air changes: 6/hour occupied; 2/hour unoccupied
Variable Air Volume
Air change rate may be higher due to equipment heat gain
Equipment Heat Gain: 50 btuh/sf
Pressure: Negative or positive depending upon use

PLUMBING

Hot/Cold water at sink
RO water for water polisher
Pure water at sinks via point-of-use water polishers
Eyewash unit at sink
Compressed air, Vacuum- verify with Syngenta, location to be determined

ELECTRICAL

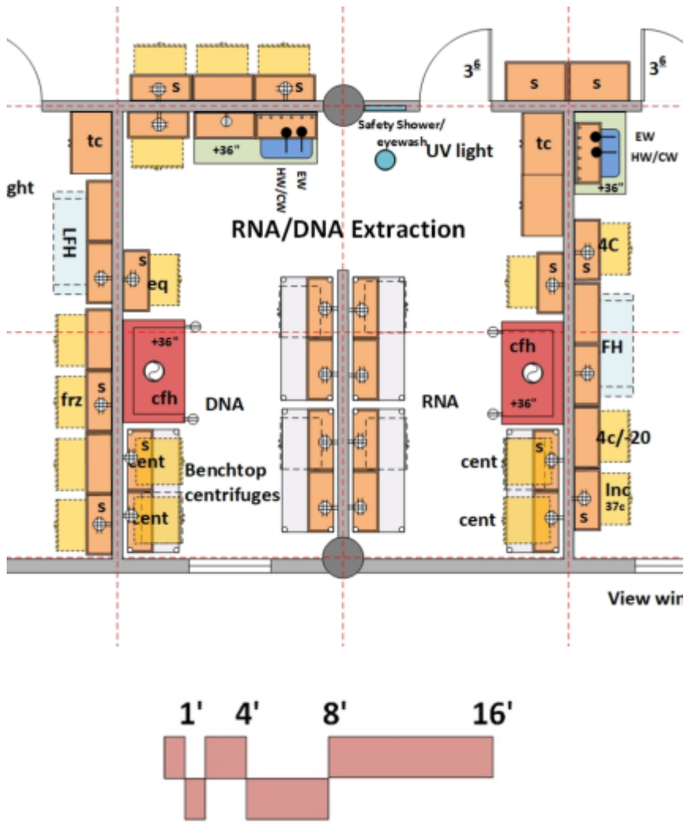
115v20a1ph outlets at walls and ceiling
Stand by power
Hardwire and wireless data (WAP)
Lighting: LED at 500 LUX

CONTRACTOR FURNISHED EQUIPMENT

Metal casework, sinks, tops
Tall cabinets

SYNGENTA FURNISHED EQUIPMENT

Refrigerators
Freezers
Incubators
Laminar Flow Hoods
Reach-in growth chambers
Plate washer
Computers



RNA/DNA Extraction Lab

Seed Health Lab Suite

Program Requirements

ARCHITECTURAL

Occupancy: B
Floor: sealed concrete or vinyl tile or rubber tile
Walls: metal stud with gypsum board
Ceiling: Lab grade acoustic tile at 10'
Doors: 3'-6"x8'-0" with view window
Sound attenuation: NC 45 or less
Security: card access

STRUCTURAL

Slab on grade

MECHANICAL

Temperature: 68-72 deg F +/- 2 deg F
Humidity: Ambient
100% exhaust
Air changes: 6/hour occupied; 4/hour unoccupied
Variable Air Volume
Air change rate may be higher due to equipment heat gain
Equipment Heat Gain: 50 btuh/sf
Pressure: Negative or positive depending upon use

PLUMBING

Hot/Cold water at sink
RO water for water polisher
Pure water at sinks via point-of-use water polishers
Eyewash unit at sink
Compressed air, Vacuum- verify with Syngenta, location to be determined

ELECTRICAL

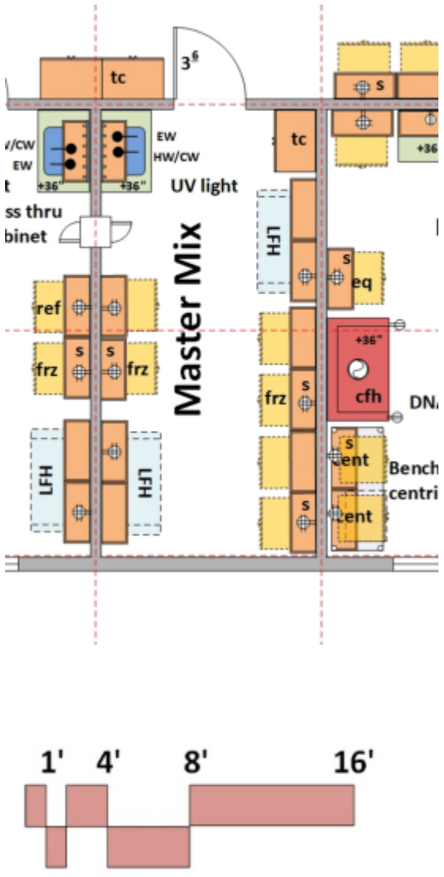
115v20a1ph outlets at walls
Stand by power
Hardwire and wireless data (WAP)
Lighting: LED at 500 LUX

CONTRACTOR FURNISHED EQUIPMENT

Metal casework, sinks, tops
Protean Lab benches
Service columns
Chemical fume hoods
Tall cabinets

SYNGENTA FURNISHED EQUIPMENT

Refrigerators
Centrifuges
Kingfisher units



MASTER MIX LAB

Seed Health Lab Suite

Program Requirements

ARCHITECTURAL

Occupancy: B
Floor: sealed concrete or vinyl tile or rubber tile
Walls: metal stud with gypsum board
Ceiling: lab grade acoustic tile at 10'
Doors: 3'-6"x8'-0" with view window
Sound attenuation: NC 45 or less
Security: card access

STRUCTURAL

Slab on grade

MECHANICAL

Temperature: 68-72 deg F +/- 2 deg F
Humidity: Ambient
100% exhaust
Air changes: 6/hour occupied; 4/hour unoccupied
Variable Air Volume
Air change rate may be higher due to equipment heat gain
Equipment Heat Gain: 50 btuh/sf
Pressure: Negative or positive depending upon use

PLUMBING

Hot/Cold water at sink
RO water for water polisher
Pure water at sinks via point-of-use water polishers
Eyewash unit at sink
Compressed air, Vacuum- verify with Syngenta, location to be determined

ELECTRICAL

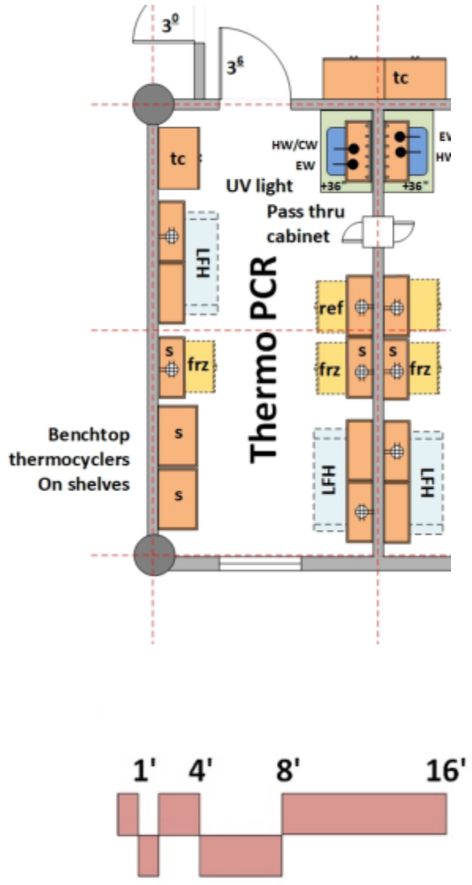
115v20a1ph outlets at walls
Stand by power
Hardwire and wireless data (WAP)
Lighting: LED at 500 LUX
UV light for room decontamination

CONTRACTOR FURNISHED EQUIPMENT

Metal casework, sinks, tops
Tall cabinets
Pass thru cabinet

SYNGENTA FURNISHED EQUIPMENT

Refrigerators
Freezers
Laminar Flow Hoods



THERMO PCR LAB

Seed Health Lab Suite

Program Requirements

ARCHITECTURAL

Occupancy: B
Floor: sealed concrete or vinyl tile or rubber tile
Walls: metal stud with gypsum board
Ceiling: lab grade acoustic tile at 10'
Doors: 3'-6"x8'-0" with view window
Sound attenuation: NC 45 or less
Security: card access

STRUCTURAL

Slab on grade

MECHANICAL

Temperature: 68-72 deg F +/- 2 deg F
Humidity: Ambient
100% exhaust
Air changes: 6/hour occupied; 4/hour unoccupied
Variable Air Volume
Air change rate may be higher due to equipment heat gain
Equipment Heat Gain: 50 btuh/sf
Pressure: Negative or positive depending upon use

PLUMBING

Hot/Cold water at sink
RO water for water polisher
Pure water at sinks via point-of-use water polishers
Eyewash unit at sink
Compressed air, Vacuum- verify with Syngenta, location to be determined

ELECTRICAL

115v20a1ph outlets at walls
Stand by power
Hardwire and wireless data (WAP)
Lighting: LED at 500 LUX
UV light for room decontamination

CONTRACTOR FURNISHED EQUIPMENT

Metal casework, sinks, tops
Tall cabinets
Pass thru cabinet

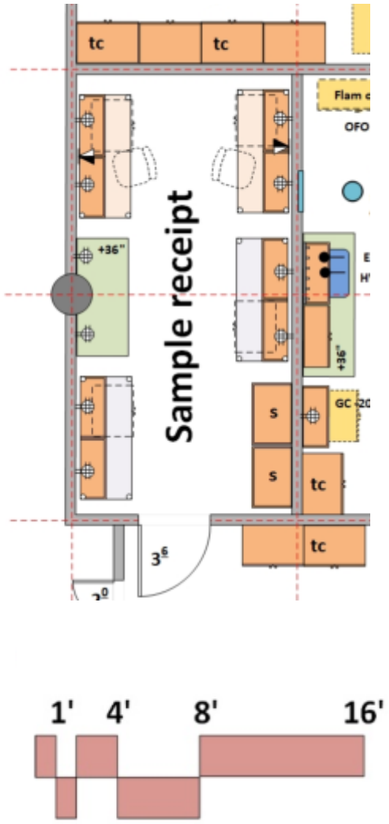
SYNGENTA FURNISHED EQUIPMENT

Refrigerators
Freezers
Laminar Flow Hoods
Thermocylers

SAMPLE RECEIPT

Seed Health Lab Suite

Program Requirements



ARCHITECTURAL

Occupancy: B
Floor: sealed concrete or vinyl tile or rubber tile
Walls: metal stud with gypsum board
Ceiling: lab grade acoustic tile at 10'
Doors: 3'-6"x8'-0" with view window
Sound attenuation: NC 40 or less
Security: card access

STRUCTURAL

Slab on grade

MECHANICAL

Temperature: 68-72 deg F +/- 2 deg F
Humidity: Ambient
100% exhaust
Air changes: 6/hour occupied; 2/hour unoccupied
Variable Air Volume
Air change rate may be higher due to equipment heat gain
Equipment Heat Gain: 25 btuh/sf
Pressure: Negative or positive depending upon use

PLUMBING

Vacuum- location to be determined

ELECTRICAL

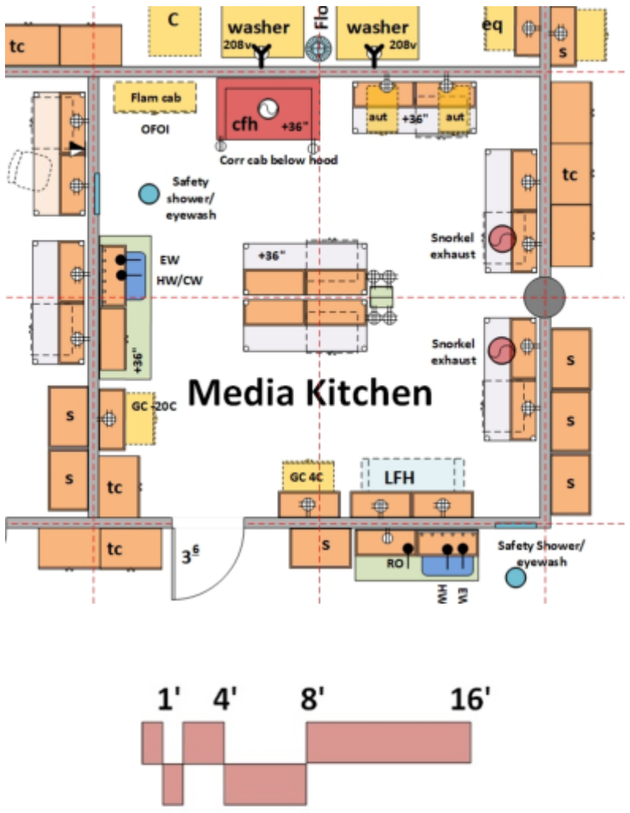
115v20a1ph outlets at walls
Stand by power
Hardwire and wireless data (WAP)
Lighting: LED at 500 LUX

CONTRACTOR FURNISHED EQUIPMENT

Metal casework
Protean desk stations
Service columns
Tall cabinets

SYNGENTA FURNISHED EQUIPMENT

Scientific Instruments
Computers
Balances



MEDIA KITCHEN

Seed Health Lab Suite

Program Requirements

ARCHITECTURAL

Occupancy: B
Floor: sealed concrete or epoxy
Walls: metal stud with gypsum board, epoxy paint
Ceiling: lab grade mylar tile at 10'
Doors: 3'-6"x8'-0" with view window
Sound attenuation: NC 45 or less
Security: card access

STRUCTURAL

Slab on grade

MECHANICAL

Temperature: 68-72 deg F +/- 2 deg F
Humidity: Ambient
100% exhaust
Air changes: 10/hour occupied; 4/hour unoccupied
Variable Air Volume
Air change rate may be higher due to equipment heat gain
Equipment Heat Gain: 50 btuh/sf
Pressure: Negative

PLUMBING

Hot/Cold water at sinks
Pure water at sinks via point-of-use water polishers
Compressed air, Vacuum- verify with Syngenta, location to be determined
Domestic water at safety shower/eyewash
Eyewash unit at sink
Floor drain at safety shower/eyewash

ELECTRICAL

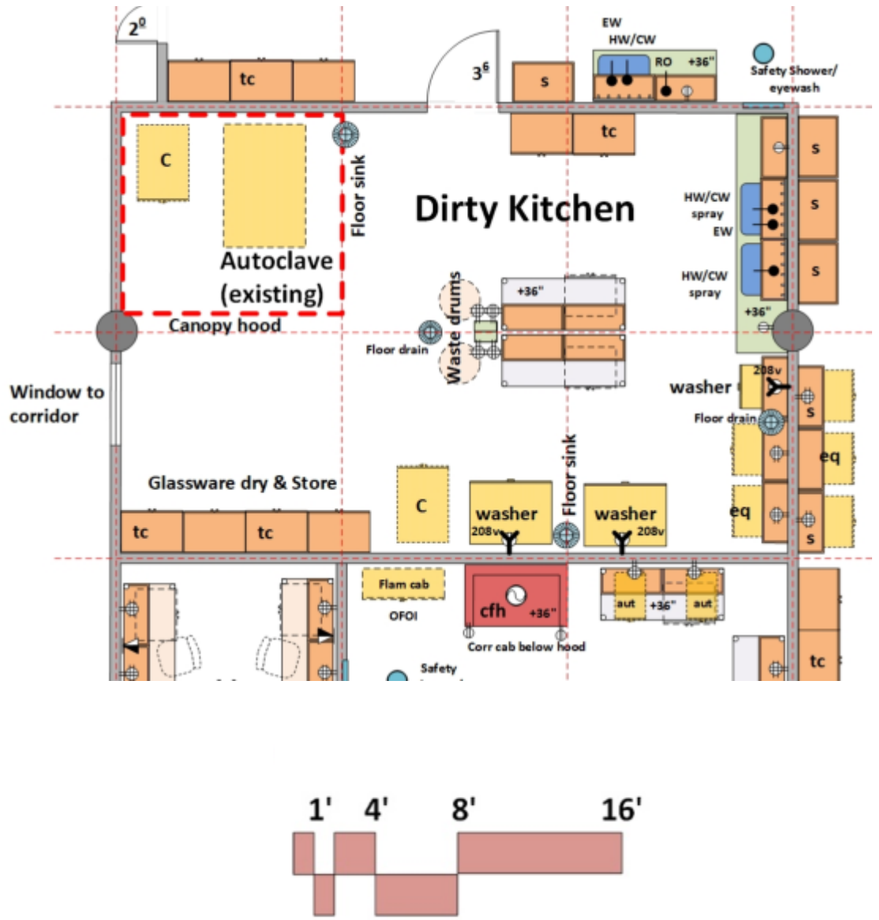
115v20a1ph outlets at walls and ceilings
208v power
Stand by power
Hardwire and wireless data (WAP)
Lighting: recessed, sealed LED at 500 LUX

CONTRACTOR FURNISHED EQUIPMENT

Metal or wood casework, sinks, tops
Lab benches
Service columns
Chemical Fume Hood
Snorkel exhaust
Chemical storage cabinets
Tall cabinets

SYNGENTA FURNISHED EQUIPMENT

Refrigerators
Freezers
Benchtop autoclaves
Laminar flow hood
Carts



DIRTY KITCHEN

Seed Health Lab Suite

Program Requirements

ARCHITECTURAL

Occupancy: B
Floor: sealed concrete or epoxy
Walls: metal stud with gypsum board, epoxy paint
Ceiling: Lab grade mylar acoustic tile at 10'
Doors: 3'-6"x8'-0" with view window
Sound attenuation: NC 45 or less
Security: card access

STRUCTURAL

Slab on grade

MECHANICAL

Temperature: 68-72 deg F +/- 2 deg F
Humidity: Ambient
100% exhaust
Air changes: 10/hour occupied; 4/hour unoccupied
Air change rate may be higher due to equipment heat gain
Equipment Heat Gain: 75 btuh/sf
Pressure: Negative

PLUMBING

Hot/Cold water at sinks and washers
RO water at washers for rinse cycle
RO water at sink for water polisher
Pure water at sinks via point-of-use water polishers
Eyewash unit at sinks
Compressed air, Vacuum- verify with Syngenta, location to be determined

ELECTRICAL

115v20a1ph outlets at walls and ceilings
208v power; 480v power at autoclave and washers
per manufacturers requirements
Hardwire and wireless data (WAP)
Lighting: LED at 500 LUX

CONTRACTOR FURNISHED EQUIPMENT

Stainless Steel casework, sinks, tops
Lab benches
Service columns
Tall cabinets
Steam canopy above autoclave
Washers

SYNGENTA FURNISHED EQUIPMENT

Autoclave (existing to be relocated) with integral electric steam generator
Refrigerators
Freezers
Carts

EQUIPMENT/SUPPLIES HALLWAY

Seed Health Lab Suite

Program Requirements

ARCHITECTURAL

Occupancy: B
Floor: sealed concrete or vinyl tile or rubber tile
Walls: metal stud with gypsum board
Doors: 3'-0"/2'-0"x8'-0" pair with view window
Stainless steel wall guards at corridor; Stainless steel corner guards at wall corners
Ceiling: lab grade acoustic tile at 10'
Sound attenuation: NC 45 or less
Security: card access

STRUCTURAL

Slab on grade

MECHANICAL

Temperature: 68-72 deg F +/- 2 deg F
Humidity: Ambient
100% exhaust
Air changes: 6/hour occupied; 4/hour unoccupied
Variable Air Volume
Air change rate may be higher due to equipment heat gain
Equipment Heat Gain: 25 btuh/sf
Pressure: Negative

PLUMBING

Hot/Cold water at sinks
RO water for water polisher
Pure water at sinks via point-of-use water polishers
Tepid feed water at safety shower/eyewash
Eyewash unit at sinks
Floor drain at safety shower/eyewash

ELECTRICAL

115v20a1ph outlets at walls
Stand by power
Hardwire and wireless data (WAP)
Lighting: LED at 500 LUX

CONTRACTOR FURNISHED EQUIPMENT

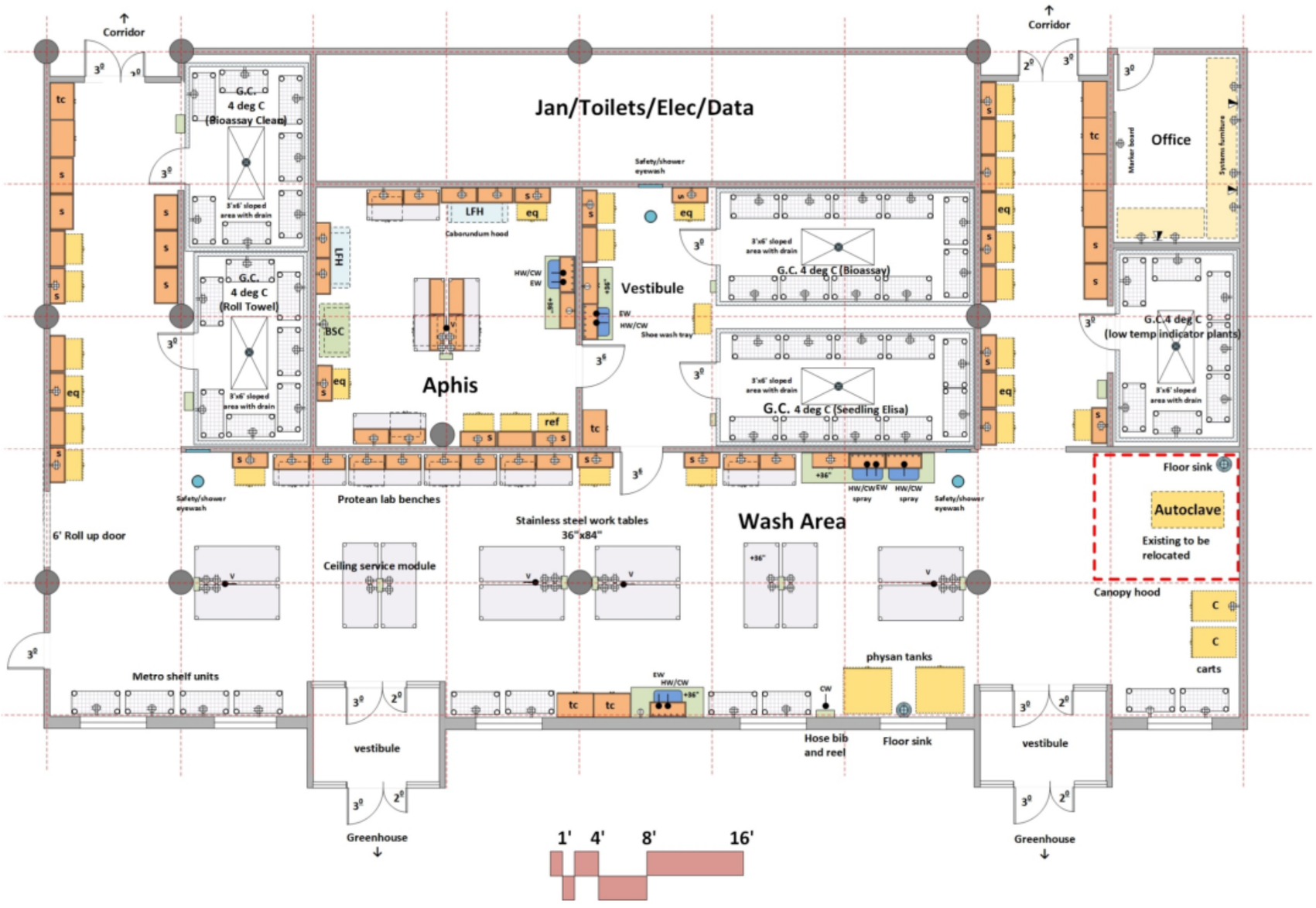
Metal casework, sinks, tops
Tall storage shelves
Tall cabinets
Safety Shower/Eyewash units

SYNGENTA FURNISHED EQUIPMENT

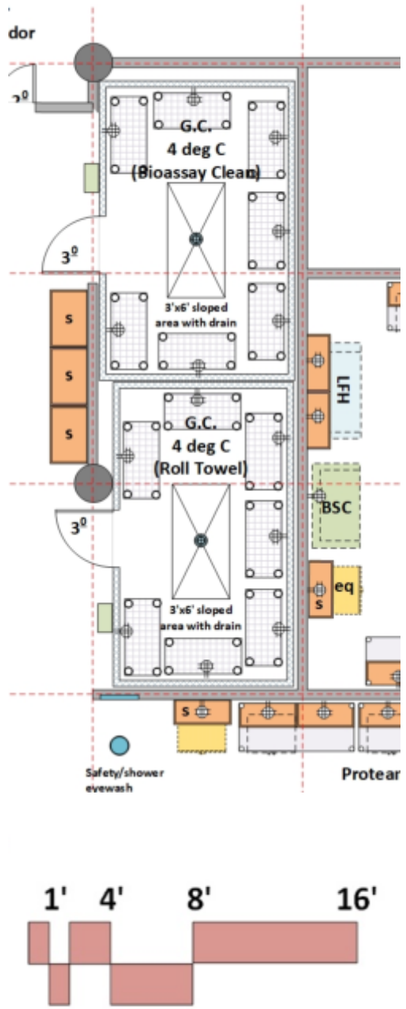
Refrigerators
Freezers
Reach-in growth chambers

SEED HEADHOUSE- Dirty

Program Requirements



Each lab's program requirements are noted on the following pages, starting at Growth Chambers 4 deg C; Bioassay Clean, and Roll Towel, and proceeding clockwise.



GROWTH CHAMBER- 4°C

Roll Towel
Bioassay Clean
Seed Headhouse (Dirty)
Program Requirements

ARCHITECTURAL
Occupancy: B
Floor: insulated panels
Walls: insulated panels
Ceiling: insulated panels
Doors: 3'-0"x7'-0" glass panel
Security: card access

STRUCTURAL
Slab on grade
Slope floor at drain

MECHANICAL
Temperature: 4 deg C +/- 1 deg C
Humidity: Controlled
Pressure: Positive

PLUMBING
RO water
Drain for condensate

ELECTRICAL
115v20a1ph outlets at walls
Stand by power
Hardwire and wireless data (WAP)
Lighting: LED at 500 LUX

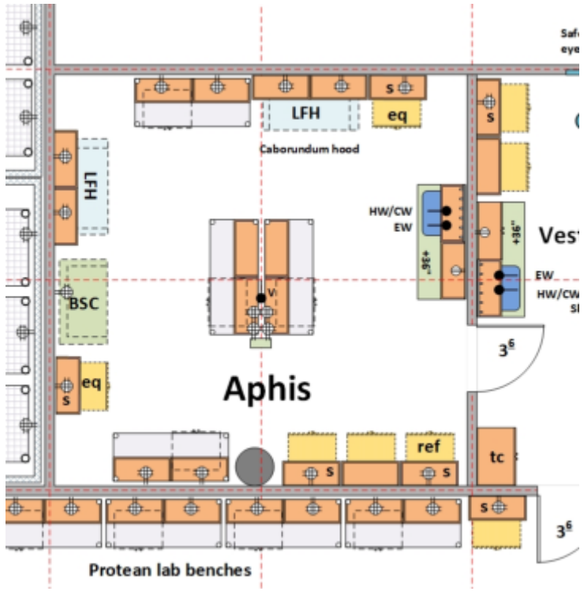
CONTRACTOR FURNISHED EQUIPMENT
Walk-in Growth Chamber
Metro shelf units
Condenser unit on roof

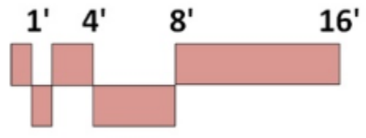
SYNGENTA FURNISHED EQUIPMENT
Instruments

APHIS LAB

Seed Headhouse (Dirty)

Program Requirements





ARCHITECTURAL

Occupancy: B
Floor: sealed concrete or vinyl tile or rubber tile
Walls: metal stud with gypsum board
Ceiling: lab grade acoustic tile at 10'
Doors: 3'-6"x8'-0" with view window
Sound attenuation: NC 45 or less
Security: card access

STRUCTURAL

Slab on grade

MECHANICAL

Temperature: 68-72 deg F +/- 2 deg F
Humidity: Ambient
100% exhaust
Air changes: 6/hour occupied; 4/hour unoccupied
Variable Air Volume
Air change rate may be higher due to equipment heat gain
Equipment Heat Gain: 50 btuh/sf
Pressure: Negative or positive depending upon use

PLUMBING

Hot/Cold water at sinks
RO water at sink for water polisher
Pure water at sinks via point-of-use water polishers
Compressed air, Vacuum- verify with Syngenta, location to be determined
Eyewash unit at sink
Domestic water at safety shower/eyewash
Floor drain at safety shower/eyewash

ELECTRICAL

115v20a1ph outlets at walls and ceiling
Stand by power
Hardwire and wireless data (WAP)
Lighting: LED at 500 LUX

CONTRACTOR FURNISHED EQUIPMENT

Stainless steel casework, sinks, tops
Tall storage shelves
Tall cabinets

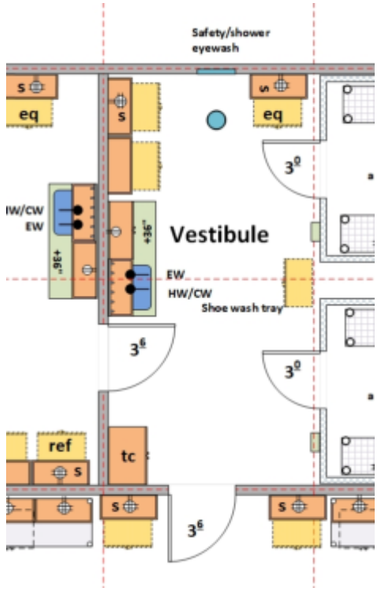
SYNGENTA FURNISHED EQUIPMENT

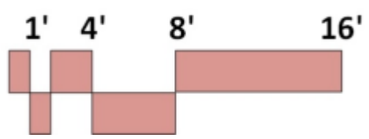
Refrigerators
Freezers
Biological safety cabinet
Laminar Flow Hood

VESTIBULE

Seed Headhouse (Dirty)

Program Requirements





ARCHITECTURAL

Occupancy: B
Floor: sealed concrete or vinyl tile or rubber tile
Walls: metal stud with gypsum board
Ceiling: lab grade acoustic tile at 10'
Doors: 3'-6"x8'-0" with view window
Sound attenuation: NC 45 or less
Security: card access

STRUCTURAL

Slab on grade.

MECHANICAL

Temperature: 68-72 deg F +/- 2 deg F
Humidity: Ambient
100% exhaust
Air changes: 6/hour occupied; 4/hour unoccupied
Variable Air Volume
Air change rate may be higher due to equipment heat gain
Equipment Heat Gain: 25 btuh/sf
Pressure: Negative

PLUMBING

Hot/Cold water at sink
RO water at sink for water polisher
Pure water at sink via point-of-use water polishers
Eyewash unit at sink
Compressed Air, vacuum- verify with Syngenta, location to be determined

ELECTRICAL

115v20a1ph outlets at walls
Stand by power
Hardwire and wireless data (WAP)
Lighting: LED at 500 LUX

CONTRACTOR FURNISHED EQUIPMENT

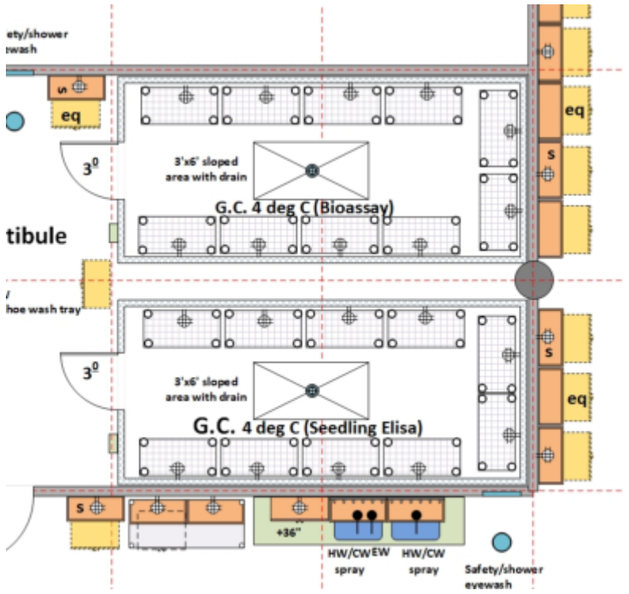
Stainless steel casework, sink, top
Tall cabinets

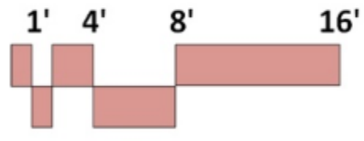
SYNGENTA FURNISHED EQUIPMENT

Shoe wash tray
Carts

GROWTH CHAMBER- 4°C

Bioassay & Seedling ELISA
Seed Headhouse (Dirty)
Program Requirements





ARCHITECTURAL
Occupancy: B
Floor: insulated panels
Walls: insulated panels
Ceiling: insulated panels
Doors: 3'-0"x7'-0" glass panel
Security: card access

STRUCTURAL
Slab on grade
Slope floor at drain

MECHANICAL
Temperature: 4 deg C +/- 1 deg C
Humidity: Controlled
Pressure: Positive

PLUMBING
RO water
Drain for condensate

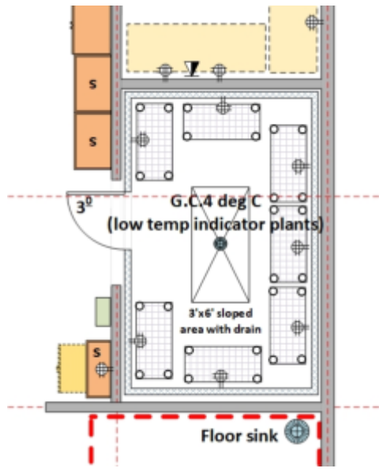
ELECTRICAL
115v20a1ph outlets at walls and ceilings
Stand by power
Hardwire and wireless data (WAP)
Lighting: LED at 500 LUX

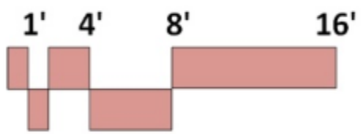
CONTRACTOR FURNISHED EQUIPMENT
Walk-in Growth Chamber
Metro shelf units
Condenser unit on roof

SYNGENTA FURNISHED EQUIPMENT
Instruments

GROWTH CHAMBER- 4°C

Low Temp Indicator Plants
Seed Headhouse (Dirty)
Program Requirements





ARCHITECTURAL
Occupancy: B
Floor: insulated panels
Walls: insulated panels
Ceiling: insulated panels
Doors: 3'-0"x7'-0" glass panel
Security: card access

STRUCTURAL
Slab on grade
Slope floor at drain

MECHANICAL
Temperature: 4 deg C +/- 1 deg C
Humidity: controlled
Pressure: Positive

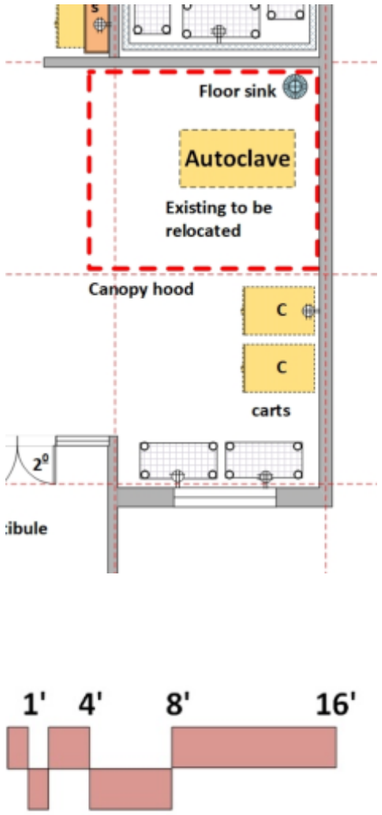
PLUMBING
RO water
Drain for condensate

ELECTRICAL
115v20a1ph outlets at walls
Stand by power
Hardwire and wireless data (WAP)
Lighting: LED at 500 LUX

CONTRACTOR FURNISHED EQUIPMENT
Walk-in Growth Chamber
Metro shelf units
Condenser unit on roof

SYNGENTA FURNISHED EQUIPMENT
Instruments

AUTOCLAVE ALCOVE
Seed Headhouse (Dirty)



ARCHITECTURAL
Occupancy: B
Floor: sealed concrete or epoxy
Walls: metal stud with concrete backer board and fiberglass/paint finish
Ceiling: metal stud with concrete backer board and fiberglass/paint finish
or open to structure

STRUCTURAL
Slab on grade

MECHANICAL
Temperature: 68-72 deg F +/- 2 deg F
Humidity: Ambient
Pressure: Negative

PLUMBING
Hot/Cold water
Steam supply from new steam boiler in MEP room
Floor sink

ELECTRICAL
208v or 480v per existing unit requirements
Lighting: LED at 500 LUX

CONTRACTOR FURNISHED EQUIPMENT
Steam canopy above autoclave

SYNGENTA FURNISHED EQUIPMENT
Autoclave
Carts

SEED HEADHOUSE OPEN AREA

Seed Headhouse (Dirty)

Program Requirements

ARCHITECTURAL

Occupancy: B
Floor: sealed concrete
Walls: metal stud with concrete backer board and fiberglass/paint finish
Stainless steel wall guards at corridor; Stainless steel corner guards at wall corners
Ceiling: open to structure
Doors: 3'-0"/2'-0"x8'-0" pair with view window
attenuation: NC 45 or less
Security: card access

STRUCTURAL

Slab on grade.

MECHANICAL

Temperature: 68-72 deg F +/- 2 deg F
Humidity: Ambient
100% exhaust
Air changes: 6/hour occupied; 4/hour unoccupied
Variable Air Volume
Air change rate may be higher due to equipment heat gain
Equipment Heat Gain: 50 btuh/sf
Pressure: Negative

PLUMBING

Hot/Cold water at sinks
RO at sinks for water polisher
Pure water at sinks via point-of-use water polishers
Compressed Air, vacuum (to be confirmed)
Eyewash unit at sink
Domestic water at safety shower/eyewash
Floor drain at safety shower/eyewash
Hose bib and reel at Physan tanks

ELECTRICAL

115v20a1ph outlets at walls and ceilings
Stand by power
Hardwire and wireless data (WAP)
Lighting: LED at 500 LUX

CONTRACTOR FURNISHED EQUIPMENT

Stainless steel casework, sink, top
Protean Lab benches
Service columns
Tall cabinets
Metro shelf units

SYNGENTA FURNISHED EQUIPMENT

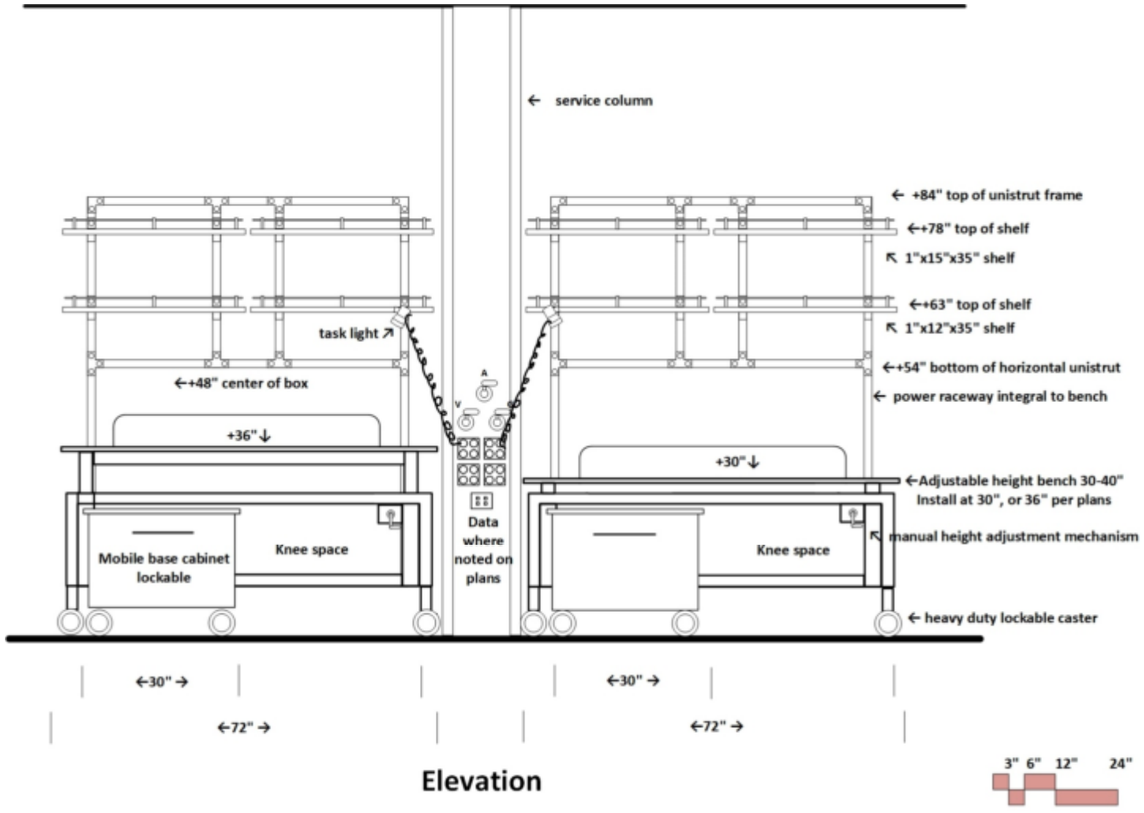
Growth Chambers
Refrigerators
Freezers
Physan tanks
Carts

PROTEAN LAB CONCEPTS

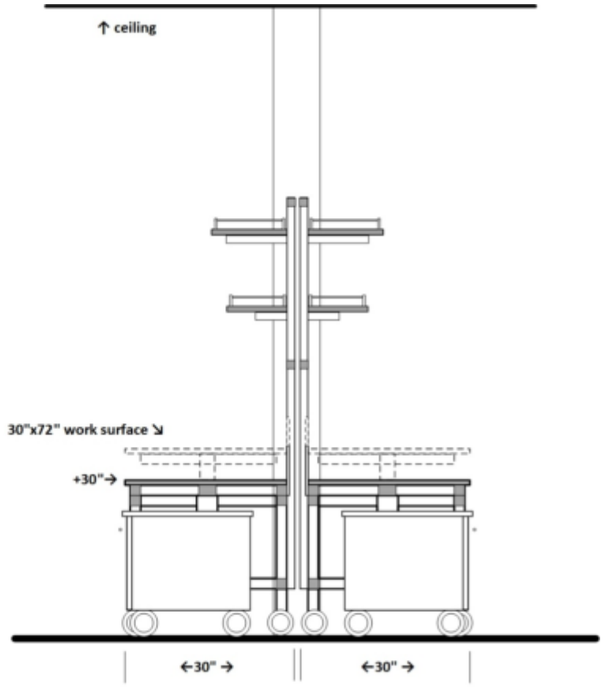
Protean = adjustable, flexible, adaptable.

The following illustrations incorporate the Protean Lab Concept features for lab benches, sink stations, equipment space and tall storage. The intent is to provide a non-proprietary lab casework system that can be bid by multiple manufacturers.

PROTEAN LAB BENCH CONCEPT
Island or Peninsula



Elevation



Section

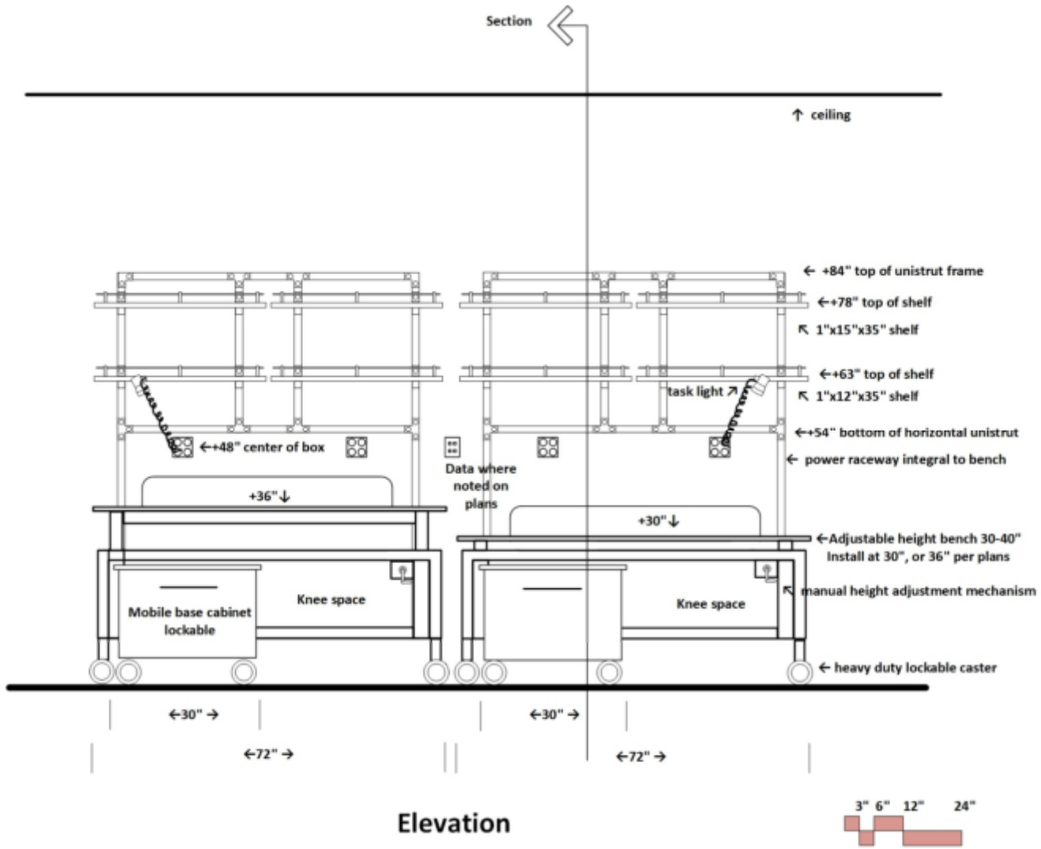
The features of the "Protean" Lab Bench are:

1. **Adjustable height from sitting position (30" above floor) to standing position (40" above floor).**
2. **Integral shelves- 2 rows.**
3. **LED task lights attach to shelves above work surface, and can be relocated.**
4. **Mobile base cabinet below.**
5. **Bench and base cabinet on heavy duty lockable casters.**
6. **Gas, Air, Vacuum valves only as noted on plans.**
7. **1" epoxy resin (or phenolic resin) work surface.**

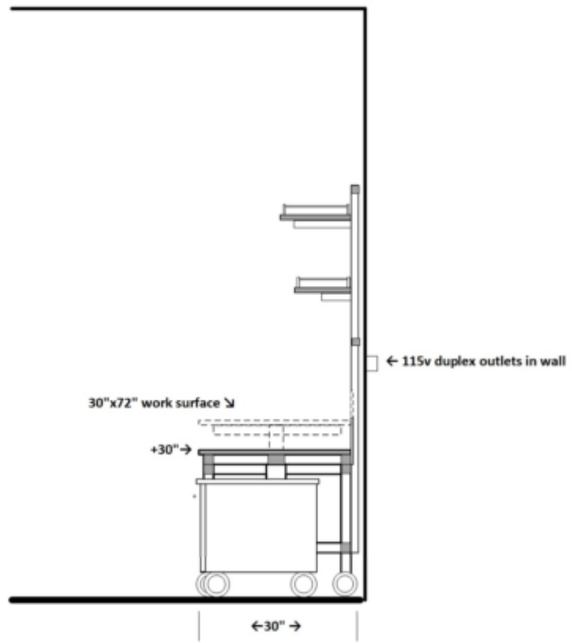
Illustration at left is based on non-proprietary bench design. A non-proprietary specification will allow for competitive bidding between manufacturers.

Lab casework system cabinets can be metal or wood.

PROTEAN LAB BENCH CONCEPT
Wall location



Elevation



Section

The features of the "Protean" Lab Bench are:

1. **Adjustable height from sitting position (30" above floor) to standing position (40" above floor).**
2. **Integral shelves- 2 rows.**
3. **LED task lights attach to shelves above work surface, and can be relocated.**
4. **Mobile base cabinet below.**
5. **Bench and base cabinet on heavy duty lockable casters.**
6. **1" epoxy resin work surface.**

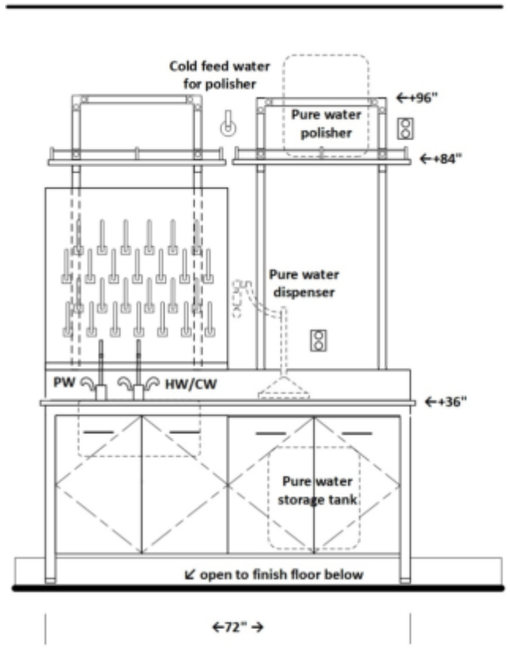
Illustration at left is based on non-proprietary bench design. A non-proprietary specification will allow for competitive bidding between manufacturers.

Lab casework system cabinets can be metal or wood.

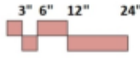
PROTEAN LAB SINK CONCEPT

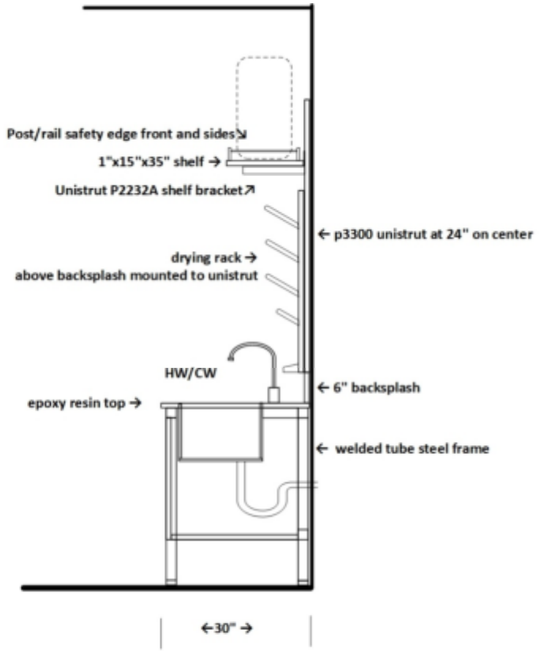
Standard sink station at left.
ADA accessible sink station below.

Pure water in labs is provided by point-of-use water polishers at select lab sinks, where noted.



Elevation





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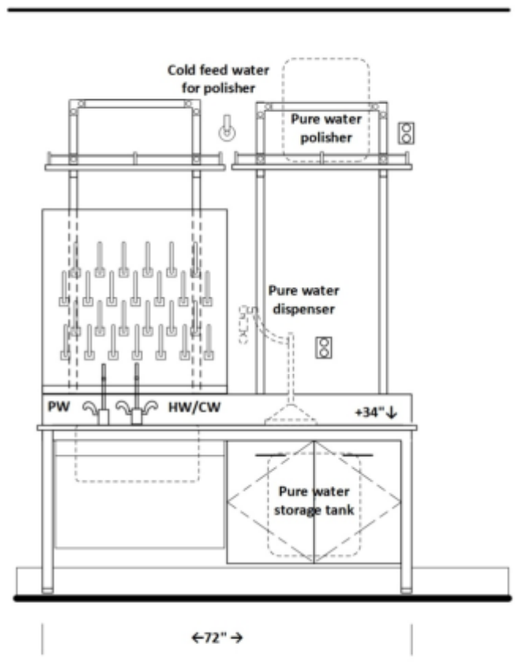

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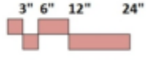
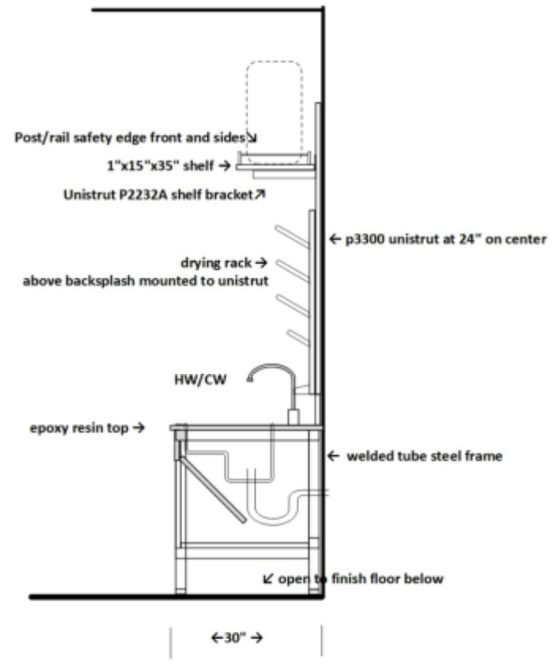
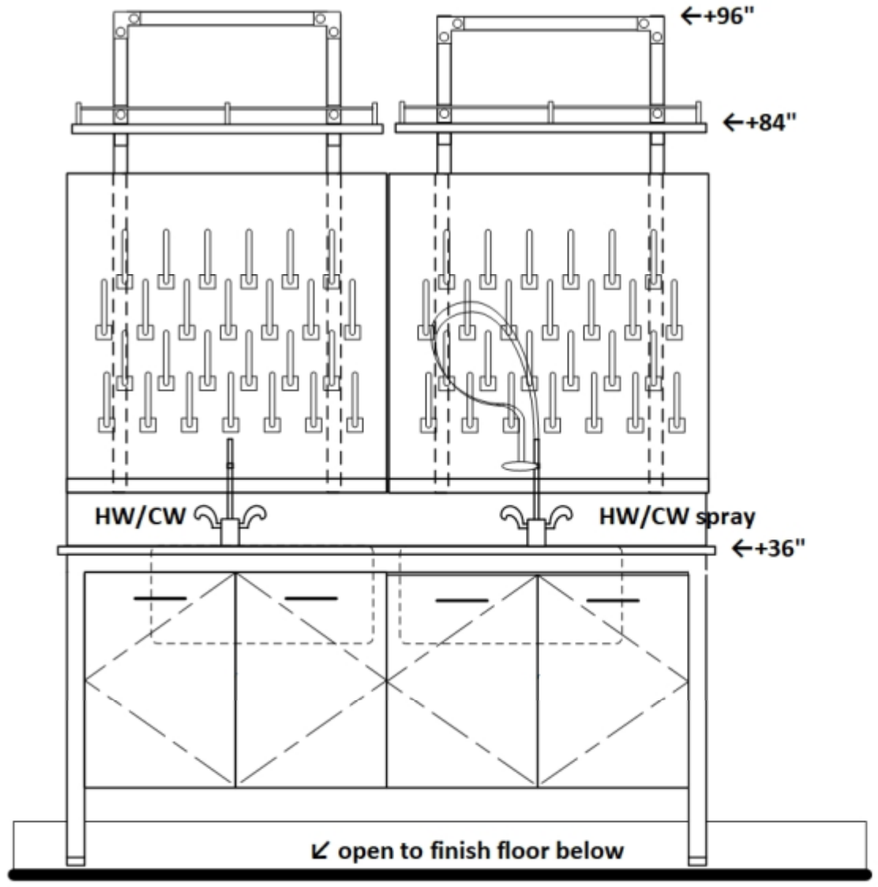


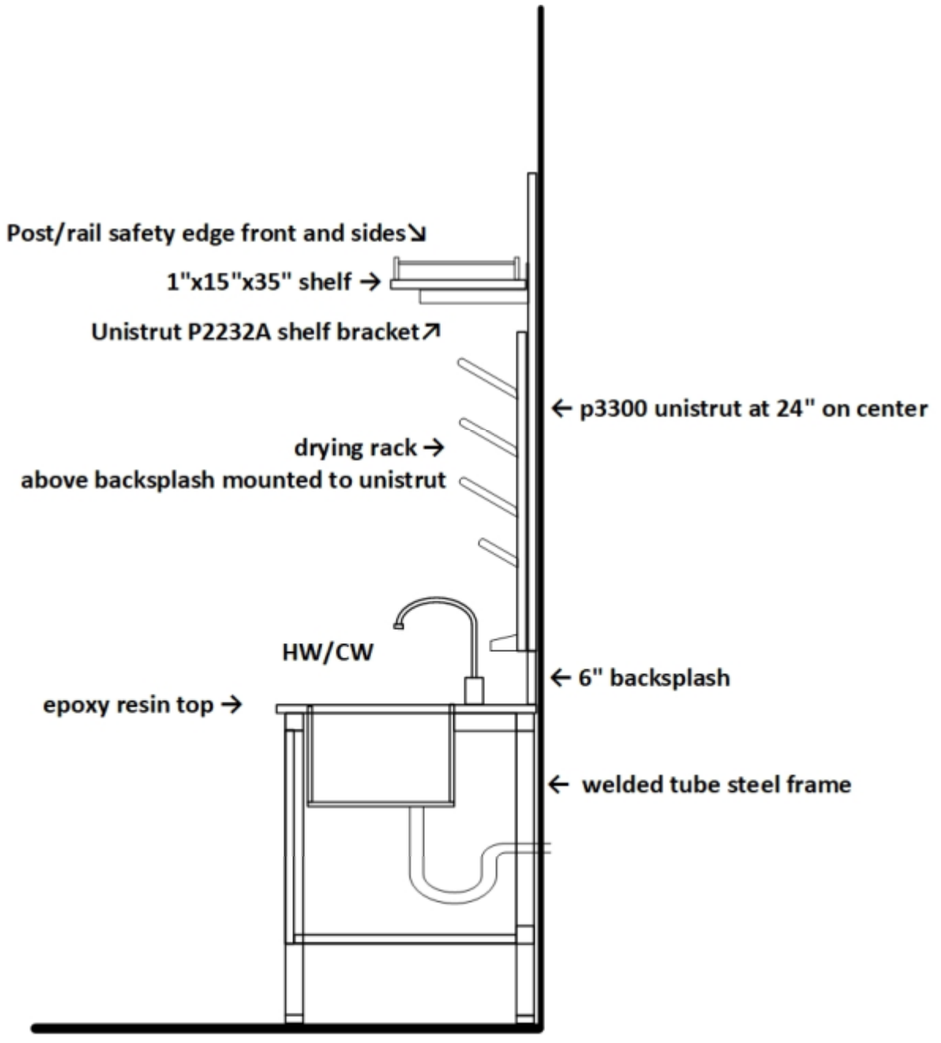


Section

DOUBLE LAB SINK CONCEPT

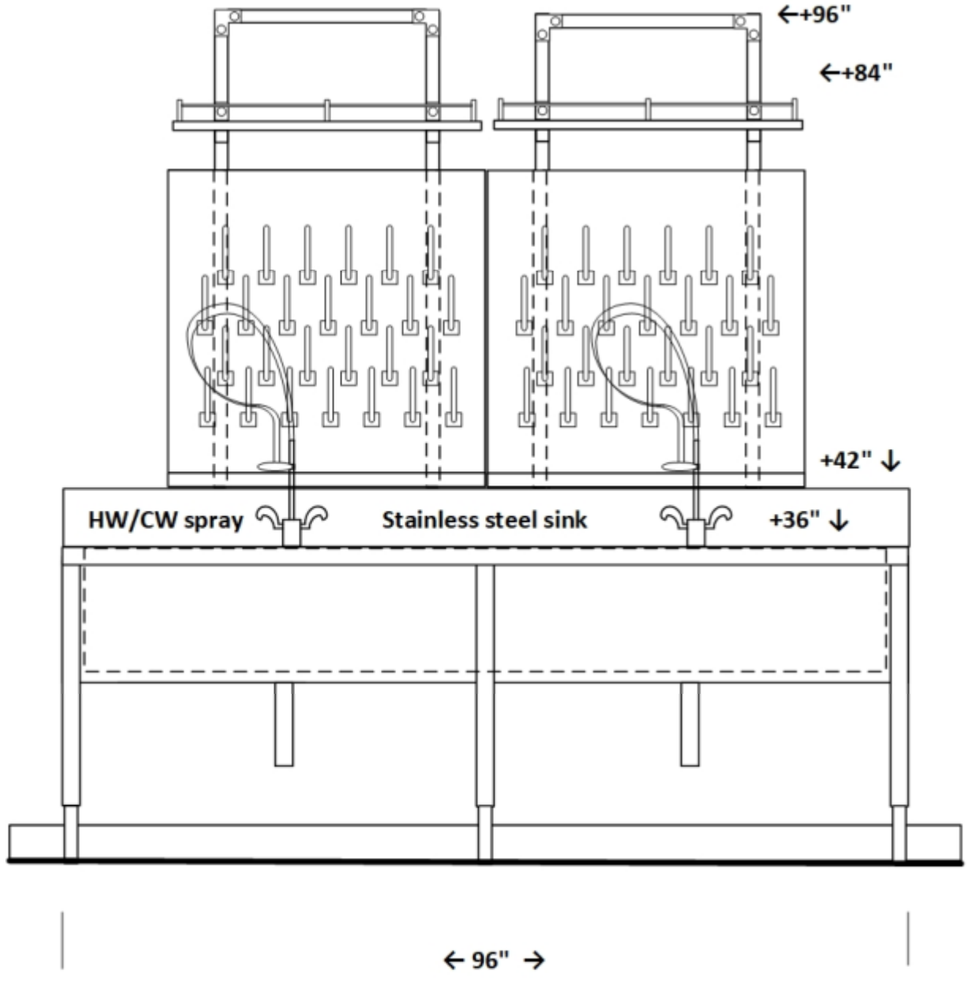


Elevation

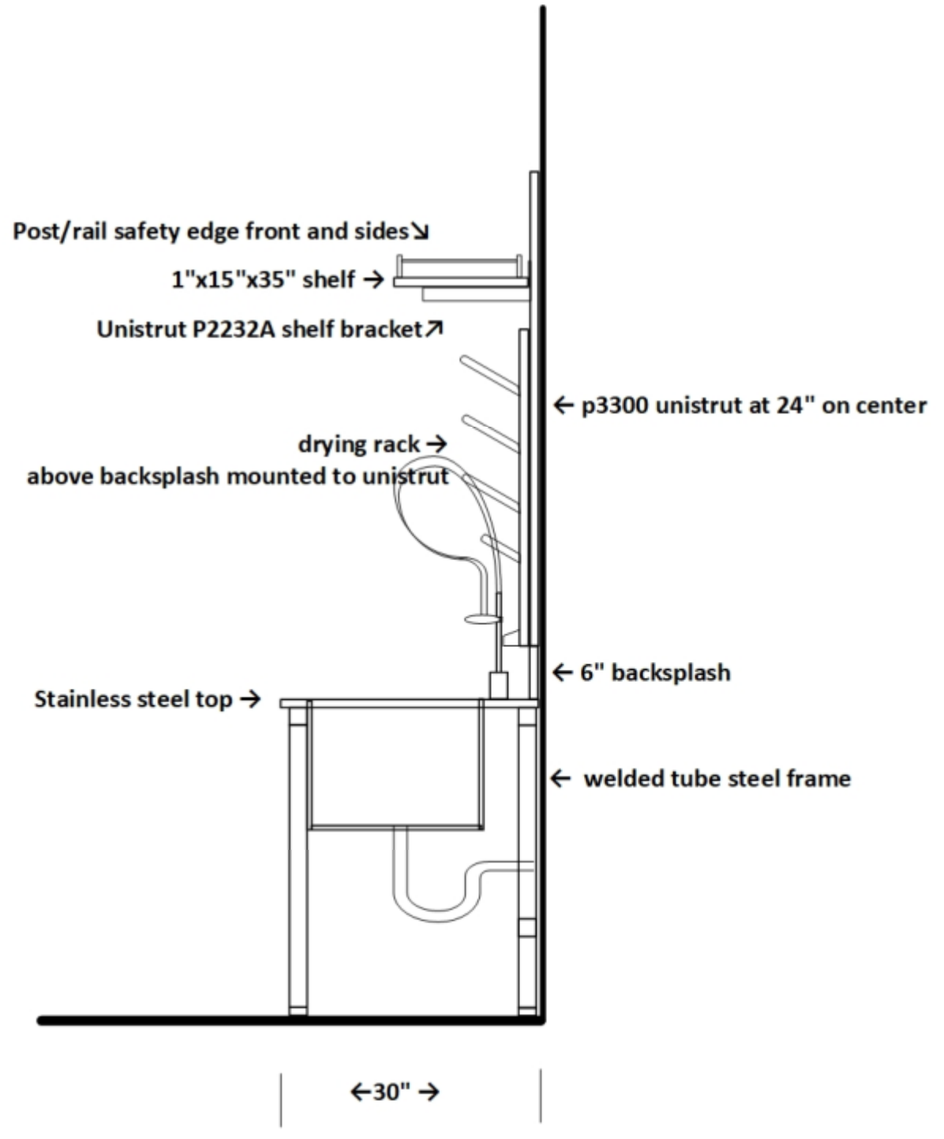


Section

TROUGH LAB SINK CONCEPT

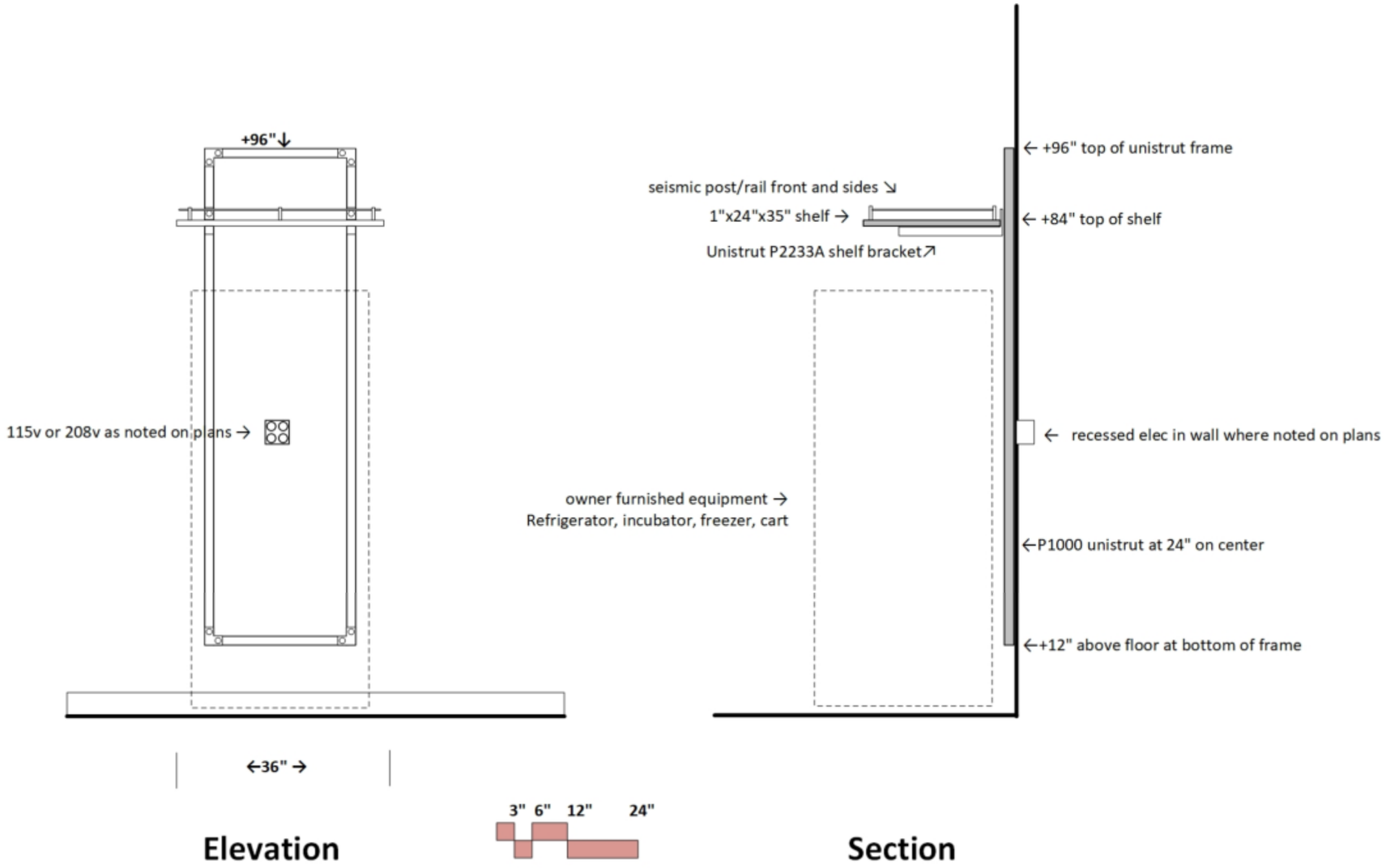


Elevation



Section

PROTEAN EQUIPMENT SPACE CONCEPT



Equipment spaces are provided throughout all labs. The equipment space if for Owner furnished equipment such as laminar flow hoods, refrigerators, freezers, growth chambers, centrifuges, carts, chemical storage cabinets, cylinder gases, instrument carts and any other Owner furnished equipment.

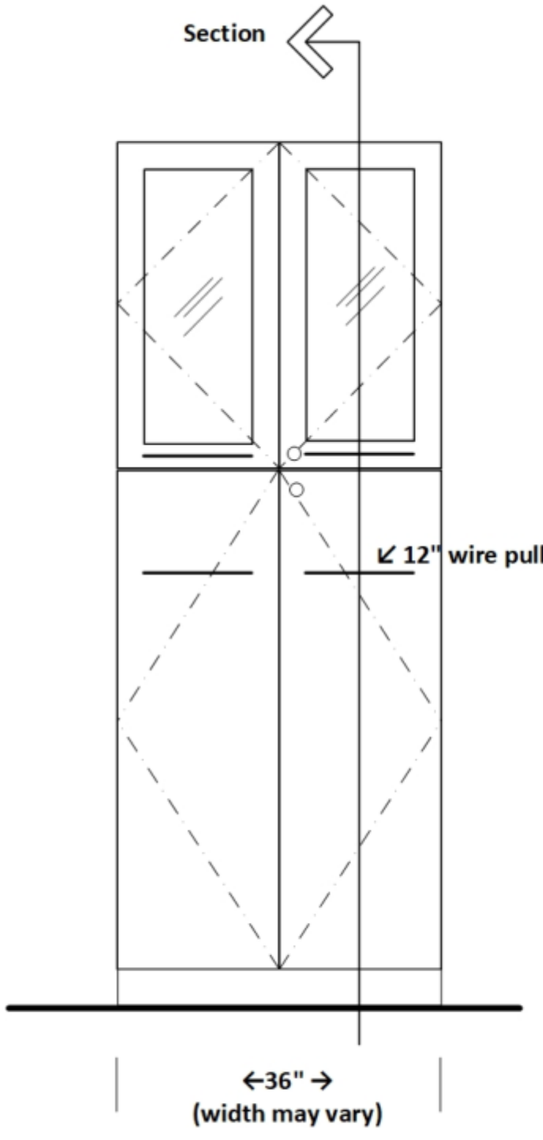
Epoxy powder coat metal in lab suites. Stainless steel in headhouse suites.

Storage within labs is provided, in part, by the adjustable tall shelf located above the equipment. This shelf is for lab supplies that are not needed on a frequent basis.

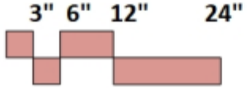
Dedicated circuit 115v power fourplex is provided at each equipment space.

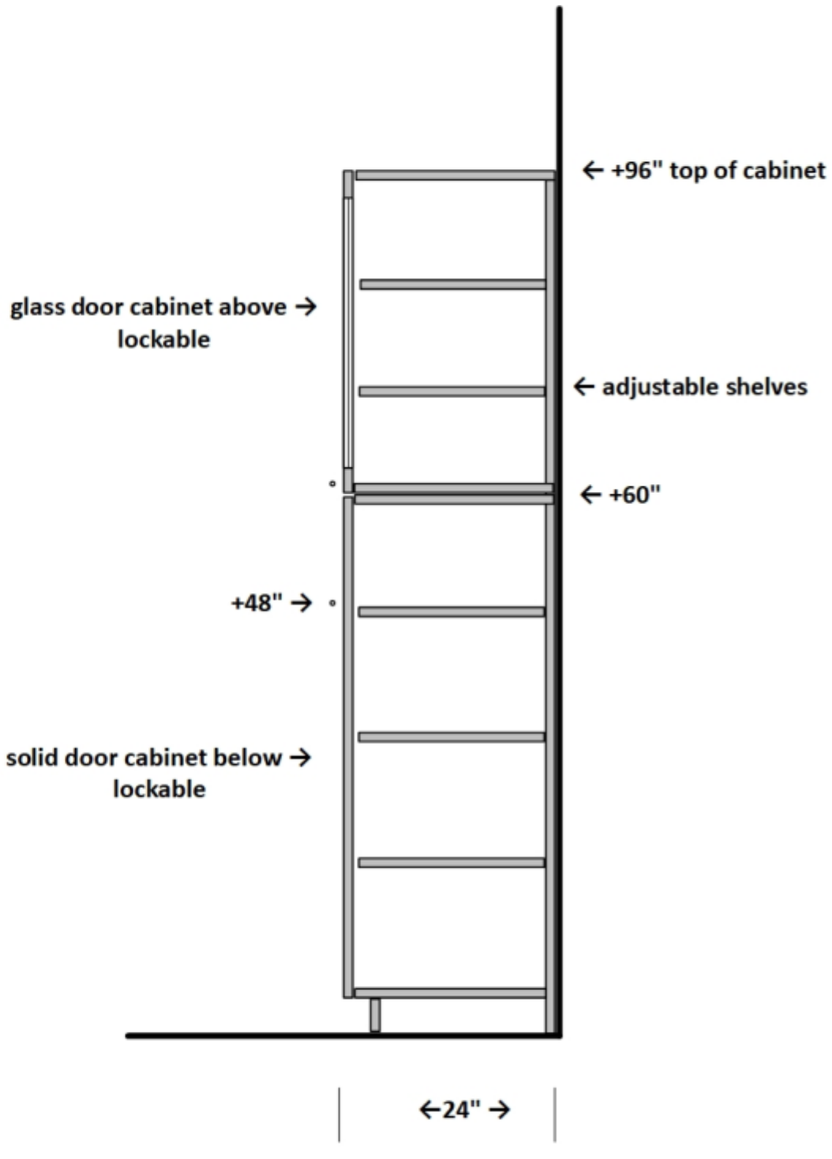
208v20amp1phase power is provide where noted, as required for specific equipment.

PROTEAN TALL CABINET CONCEPT



Elevation





Section

Storage within labs is provided, in part, by tall storage cabinets located in lab suites and procedure rooms.

Epoxy powder coat painted metal in lab suites.
Stainless steel in headhouse suites.

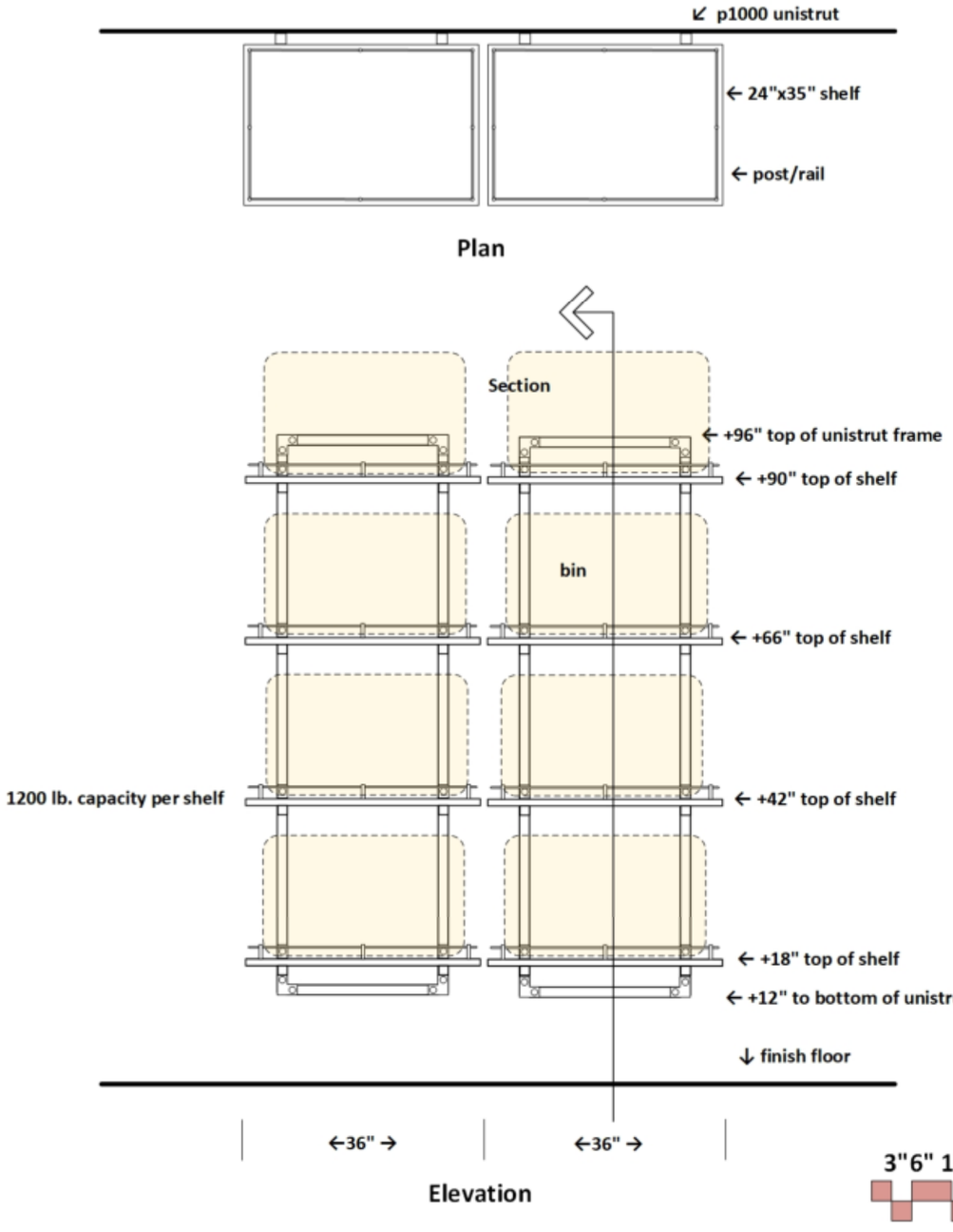
Tall cabinets are lockable, and have adjustable interior shelves.

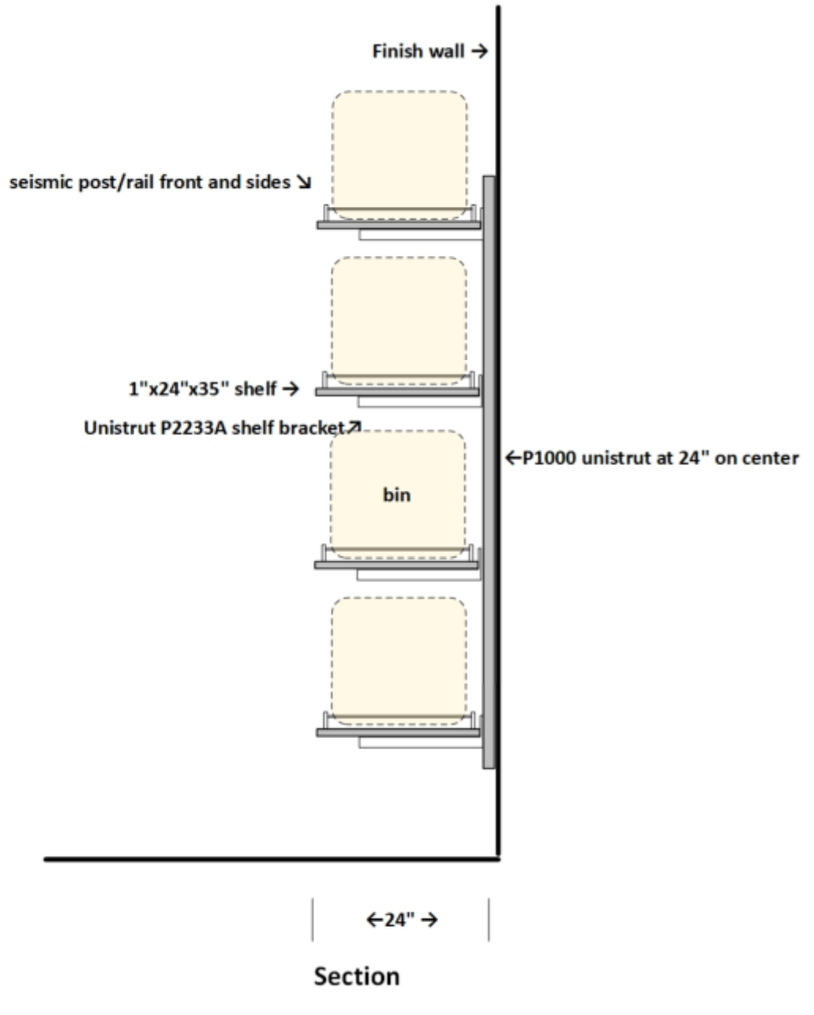
PROTEAN TALL SHELF UNIT CONCEPT

Shelf units may be single column wide depending upon location. Double column shelf unit shown at left.

Epoxy powder coat in lab suites. Stainless steel in headhouse suites.

Primary function of shelf unit is to provide storage space for bins holding consumables/lab supplies. Power at wall is for instruments which may require power, or for conversion of shelf space to equipment space with shelf above. Translation: Protean Lab Flexibility.



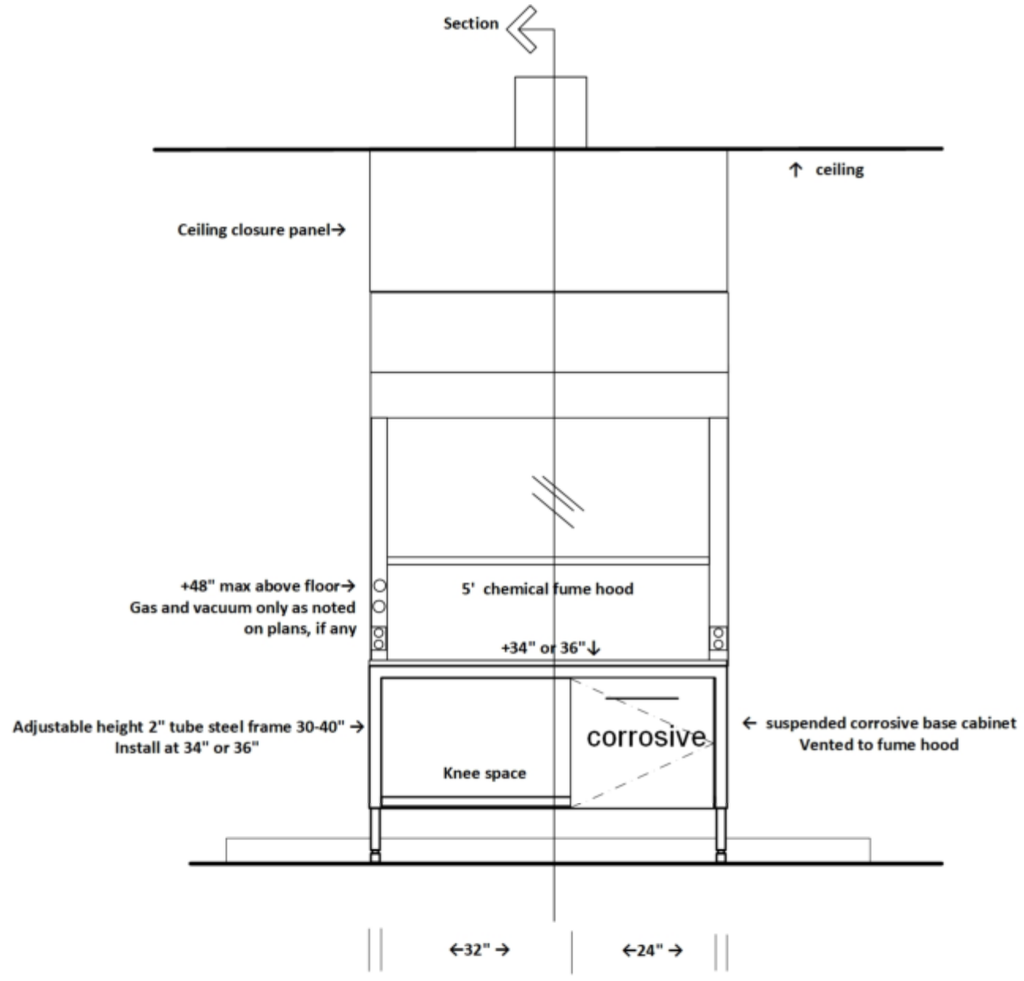


PROTEAN FUME HOOD UNIT CONCEPT

Chemical fume hoods are designed with glass side panels to allow for light dispersion from within fume hood and from without.

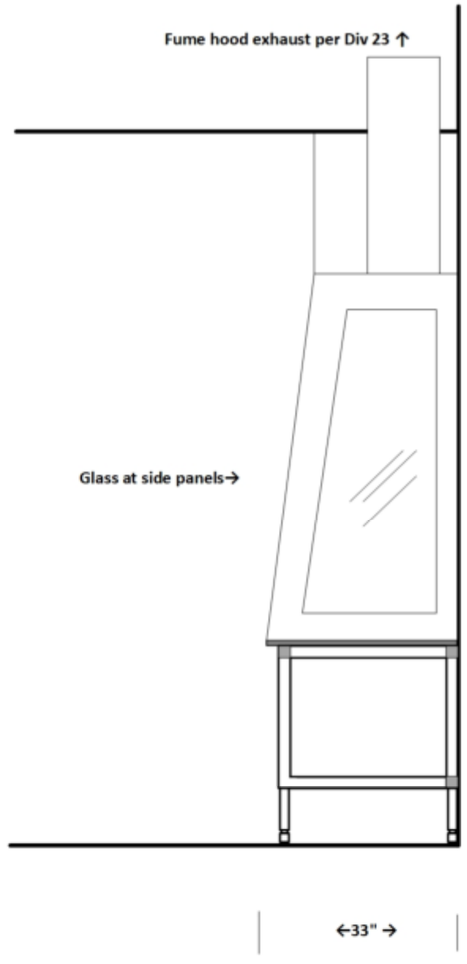
Fume hood superstructure is mounted to 2” tube steel frame, adjustable in height.

Corrosive base cabinet is located below fume hood, suspended to metal frame, and vented to fume hood above.



Elevation

3"6" 12" 24"



Section

EQUIPMENT SCHEDULE

The following schedule provides a summary of the Owner Furnished Equipment.

Equipment Schedule- Syngenta Leaf: Owner Furnished Scientific Equipment

2020 May 12

Item Number	Description	Manufacturer	Model	W-D-H Dementions	Weight	Floor (F) or Bench Mount (B)	Electrical	Standby Power	Dedicated circuit	Data	Exhaust	Plumbing	Remarks	Contractor Furnished / Contractor Intalled (CFCI)	Owner Furnished/ Contractor Installed (OFCI)	Owner Furnished/ Owner Installed (OFOI)	location
EQ-101	Incubator (6)	Thermoscientific	Precision	34x30x68		F									X		Physiology Lab
EQ-102	Incubator	Hoffman	double door	52x34x78		F									X		Physiology Lab
EQ-103	Walk in chamber (2)	CT chambers		11'x16'x7'		F									X		Physiology Lab
EQ-104	Walk in chamber (6)	EGC		10'x14'x8'7"		F									X		5 in Phys lab, 1 in head house
EQ-105	Walk in chamber	"Sandbox"		10'6"x13'6"x7' 6"		F									X		Phys head house

Equipment Schedule- Syngenta Leaf: Owner Furnished Scientific Equipment

2020 May 12

Item Number	Description	Manufacturer	Model	W-D-H Dementions	Weight	Floor (F) or Bench Mount (B)	Electrical	Standby Power	Dedicated circuit	Data	Exhaust	Plumbing	Remarks	Contractor Furnished / Contractor Installed (CFCI)	Owner Furnished/ Contractor Installed (OFCI)	Owner Furnished/ Owner Installed (OFOI)	New lab location
EQ-01	4c Incubator	Eletrolux	Frigidare	$34x28x67^{1/2}$		F	115VAC/60Hz/5-Amps	X								X	Disruption Lab
EQ-02	4c Incubator	Danby Product	Danby Designer	$30^{1/2}x29x67$		F	115 VAC/60HZ/4-Amp	X								X	Disruption Lab
EQ-03	5-Stomachers	Interscience	Bag Mixer	$36^{1/2}x26^{1/2}x53^{1/2}$		F	115VAC/1.5-Amp									X	Disruption Lab
EQ-03	Shaker Table	Brunswick	G10 Gyrotory Shaker	48x24x32		F	115VAC/60Hz/3-Amp									X	Disruption Lab
EQ-04	Shaker Table	Brunswick	G10 Gyrotory Shaker	48x24x18		F	115VAC/50/60Hz/3-Amp									X	Disruption Lab
EQ-05	2-Down Draft Table	Diversitech	Down Draft	69x32x70		F	120 Volt/60Hz		X		X		Blower exhaust thru prefilter and pleaded filter inside the room blowing up inside at the ceiling /Air compressor for blow out cleaning off pleaded filter			X	Disruption Lab
EQ-06	Freezer	Kemore	Kemore	$21^{1/2}x26x47$		F	120 Volt/60Hz							X			Thermo PCR
EQ-07	Freezer	Summit	Summit	$21^{1/2}x24x33^{1/2}$		F	120Volt/60Hz/1.1-Amp							X			Master Mix
EQ-08	Fridge	Magic Chef	Magic Chef	19x21x33		F	115Volt/60Hz/1.5-Amp							X			Master Mix
EQ-09	Fridge	Forma Scientific	Forma Scientific	$27^{1/2}x17^{3/4}x59^{3/4}$		F	120volt/60Hz/2.5-Amp	X						X			ELISA Lab
EQ-10	Laminar Flow Hood	The Baker Company Inc.	EdgeGard Hood	50x34x64		F	115volt/9.4-amp							X			Don't relocate
EQ-11	Fridge w/ Freezer	Sears, Robuck	Kenmore	$23^{3/4}x25x34$		F	120volt/60Hz/1.4-amp	X						X			Bacterial Lab
EQ-12	Dryer	American Scientific Products	American IC-62	$27^{3/4}x25x34$		F	110 Plug? No information on equipment									X	Dirty Kitchen (needs to be replaced)
EQ-13	Fridge w/ Freezer	Kenmore	Coldspot	33x29x66		F	115volt/60Hz/6.5-amp	X						X			Media Kitchen
EQ-14	Fridge	Electrolux	Fridgidaire	$34x28^{1/4}x68$		F	115volt/60Hz/5-amp							X			Media Kitchen

Equipment Schedule- Syngenta Leaf: Owner Furnished Scientific Equipment

2020 May 12

Item Number	Description	Manufacturer	Model	W-D-H Dementions	Weight	Floor (F) or Bench Mount (B)	Electrical	Standby Power	Dedicated circuit	Data	Exhaust	Plumbing	Remarks	Contractor Furnished / Contractor Installed (CFCI)	Owner Furnished/ Contractor Installed (OFCI)	Owner Furnished/ Owner Installed (OFOI)	New lab location
EQ-15	Fume Hood	Kewaunee Scientific Corporation	Kewaunee Scientific Corporation	$72^{1/2}$x45x$104^{1/2}$		F/Wall Mount	?		X			All built into the ceiling and wall for plumping, not sure if its RO/DI or tap water. Shows hot and cold at the knob. Never use it.	Gas/water?/Compress air/Vacuum, Small sink drain into a 5 gallon bucket. Maybe for chemical spills.	X			Bacterial Lab (don't' relocate)
EQ-16	Incubator	Thermo Fisher Scientific	Precision	34x33x$78^{1/8}$(Leg Adjustment causes difference between incubators)		F	115volt/60Hz/6.2-amp	X							X		Bacterial Lab
EQ-17	Incubator	Thermo Fisher Scientific	Precision	34x33x$78^{3/4}$(Leg Adjustment causes difference between incubators)		F	115volt/60Hz/5-amp	X							X		Bacterial Lab
EQ-18	Autoclave	Market Forge	Sterilmatic	$18^{3/4}$x32x32		B	208/240volt/60Hz/12K.W./236V.		X		X		Steam Exhaust/Drain		X		Media Kitchen
EQ-19	Large Autoclave	Getinge Castle INC.	Castle	30x48x74		F	Top half/115v/12A/50/60Hz Bottom half/Boiler/Powervolt 220/240/Control volt 120 Vac/Amp 73/Control Amp 8 KW30 phase 3		X		X	Tap water to the RO system on wall unit have a 3/8 poly line to the autoclave pump for boiler feed.	RO water/Steam Exhaust/Drain	X			Media Kitchen
EQ-20	Laminar Flow Hood	Labconco	Labconco	$50^{1/2}$x34x$78^{1/2}$		F	115V/60Hz/7Amp							X			Bacterial Lab
EQ-21	Freezer	Idylis	Idylis	37x$22^{1/2}$x33		F	115volt/60Hz/1.70-amp	X						X			Fungal Lab
2+A48A48	Incubator	Percival Scientific Inc.	Percival	41x$33^{3/4}$x$77^{1/2}$		F	115volt/60Hz/10-amp	X				1/4 poly line from wall RO/DI water to the incubator for humidity	RODI water for Humidity		X		Fungal Lab
EQ-23	Laminar Flow Hood	The Baker Company Inc.	EdgeGard	74x34x$64^{1/4}$		F	?							X			Do not relocate
EQ-24	Autoclave	Market Forge	Sterilmatic	$18^{3/4}$x32x32		B	120/208/240volt/60Hz/12K.W./236V		X			Tap water for cooling exhaust to the Floor drain	Steam Exhaust/Drain		X		APHIS Lab
EQ-25	Freezer	Holiday	Holiday	37x$22^{1/2}$x33		F	115volt/60Hz/1.70-amp	X						X			APHIS Lab
EQ-26	Biological Safety Hood	Nuaire	Nuaire Biological Safety Cabinet	39x$30^{1/2}$x$87^{1/2}$		F	115volt/60Hz/Duplex Amp-8/Cabinet Amp-15							X			APHIS Lab
EQ-27	Fridge	Revco Scientific	Baxter Scientific Product Cryofridge	$21^{1/4}$x26x$33^{1/4}$		F	115volt/60Hz/1.1-amp							X			APHIS Lab

Equipment Schedule- Syngenta Leaf: Owner Furnished Scientific Equipment

2020 May 12

Item Number	Description	Manufacturer	Model	W-D-H Dementions	Weight	Floor (F) or Bench Mount (B)	Electrical	Standby Power	Dedicated circuit	Data	Exhaust	Plumbing	Remarks	Contractor Furnished / Contractor Installed (CFCI)	Owner Furnished/ Contractor Installed (OFCI)	Owner Furnished/ Owner Installed (OFOI)	New lab location
EQ-28	Fridge	Whirlpool	Whirlpool	30x27 1/2 x66 1/2		F	115volt/60Hz/4-amp							X			APHIS Lab
EQ-29	Freezer	Forma Scientific Inc.	VWR Brand	48x32x42		F	120volt/60Hz/14-amp							X			APHIS Lab
EQ-30	Incubator	Hoffman Manufacturing	Hoffman	36 1/2 x34 1/2 x80		F	115volt/60Hz/9-amp	X							X		APHIS Lab
EQ-31	Lyophelizer	Labconco	Freeze Dry System/Freezone 4.5	36x24x36		F	115volt/60Hz/14-amp							X			Seed Health Headhouse
EQ-32	Plate Washer	Biotek Instrument Inc.	405LSRS	66x34x16		B	Mains Input: 100-240volt/50/60Hz/9 amp Accessory Outlet: ≤5-amp, Vacuum Pump. Accessory Fuse: T 5-amp/250volt									X	ELISA Lab
EQ-33	Plate Reader	Tecan	Sunrise	11 1/4 x13 3/4 x5 1/2		B	110VA. AC 100-120/220-240, 50/60Hz	X		X						X	ELISA Lab
EQ-34	Bag Grinder	Bioreba AG	Homex Grinder	39x20 1/2 x11		B	115V									X	ELISA Lab
EQ-35	Incubator	Thermo Scientific	Heratherm IGS60	20 1/2 x23 1/2 x30		B	120volt/60Hz/2.5-amp/300watt									X	ELISA Lab
EQ-36	Centrifuge	Thermo Scientific	Sorvall ST40R	29 1/4 x27 1/2 x14		B	120volt/60Hz/12-amp/1400watt		X						X		RNA/DNA Extraction Lab
EQ-37	UV Cabinet	Coy	The Clean Spot PCR Workstation	24 1/2 x18 1/2 x28 1/2		B	110volt/60Hz/1.5-amp										Do not relocate
EQ-38	Flow Hood/UV Cabinet	Labconco	Purifier Filtered PCR Enclosure	36x29x37		B	115volt/60Hz/3-amp							X			Thermo PCR room
EQ-39	Laminar flow hood	Labconco	Horizontal Clean Bench	50 1/2 x34x78		F	115volt/60Hz/7-amp							X			Media Kitchen (replace)
EQ-40	Centrifuge (2)	Beckman Coulter	Allegra 25R	25 5/8 x27x16		B	208volt/60Hz/16-amp		X					X			Bacterial Lab
EQ-41	Media Prep	Systec the autoclave company	Systec	22x27x20 1/2		B	230volt/50/60Hz/15.5-Amp		X			X	RODIwater/Floor Drain		X		Media Kitchen
EQ-42	Media fill	Systec the autoclave company	Systec	26x27x29		B	100-230volt/50/60Hz/250 W		X				Masurement include Carousel 220		X		Media Kitchen

Equipment Schedule- Syngenta Leaf: Owner Furnished Scientific Equipment

2020 May 12

Item Number	Description	Manufacturer	Model	W-D-H Dementions	Weight	Floor (F) or Bench Mount (B)	Electrical	Standby Power	Dedicated circuit	Data	Exhaust	Plumbing	Remarks	Contractor Furnished / Contractor Installed (CFCI)	Owner Furnished/ Contractor Installed (OFCI)	Owner Furnished/ Owner Installed (OFOI)	New lab location
EQ-43	Dishwasher	Eletrolux	Frigidaire	24x26x34		F	120volt/60Hz/motor1,1A/Other 7.6A.Amp 10.0A					X		X			Dirty Kitchen (replace)
EQ-44	Flask Scubber	Labconco	Labconco Flask scrubber	24.1x27.4x34.2		F	115volt/60Hz/16A		X			Not sure if this is tap water or RO/DI and there is a small water heater above in ceiling for preheating for flask scrubber.	Manual masurement undercounter model/Tap or RODI water/ Floor Drain		X		Dirty Kitchen (replace)
EQ-45	water bath	Sheldon manufacturing INC.	VWR Scienetific	14x26x9 3/4		B	120V/50/60Hz 600Watts								X		media kitchen (replace)
EQ-46	water bath	Sheldon manufacturing INC.	VWR/Vanlab	13x24x9		B	110m/60Hz/5Amp								X		media kitchen (replace)
EQ-47	Chest Freezer	So-low/Enviromintal Equipment INC.	Ultra low So-low	96x35x44		F	115V/60Hz/14.5 F.L.A.							X			freezer room (replace)
EQ-48																	

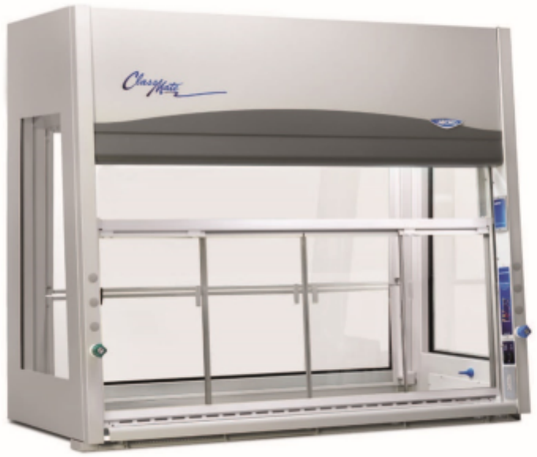
Please confirm plumbing needs;
Hot/cold water, floor drain,
sanitary sewer, RO/DI, etc.

EQUIPMENT CUT SHEETS

The following cut sheets are for Contractor Furnished Equipment.

Protector® ClassMate® Laboratory Hoods

with Combination Horizontal-Sliding/Vertical-Rising Sashes



All models feature:

- ❄ High performance hood per SEFA 1 definition
- ❄ Patented* design
- By-pass airflow design
- Glacier white powder-coated steel frame
- ❄ Ergonomic, low-profile air foil with aerodynamic Clean-Sweep** openings and spill trough
- Clear, 1/4" thick, tempered safety glass sides, back, baffle and viewing panel
- Combination horizontal-sliding/ vertical-rising sashes that allow the operator to use the hood with sashes half open either horizontally or vertically
- Sash stop at 14" height from work surface (50% vertical opening). Can be field modified to 18" from work surface
- 5° angled stationary viewing panel and sash
- Chain-driven sash with anti-racking shaft and powder-coated steel frames
- ❄ 3-piece glass baffle pivots for cleaning
- ❄ Powder-coated steel sash handle with aerodynamic Clean-Sweep** airflow openings

❄ Labconco exclusive feature

- ❄ Cord-Keeper™ slots on left and right side of air foil
- Pre-wired LED lighting, light switch and blower switch
- Powder-coated stainless steel tissue screen located below exhaust outlet
- Removable front panel, side panels and interior cover plates for access to plumbing and electrical wiring
- Powder-coated stainless steel 12.8" ID exhaust connection

Standards conformance & regulations:

- CFR 29, Part 1910
- SEFA 1
- NFPA 45
- ASHRAE 110
- ANSI Z9.5
- UL 61010-1
- CAN/CSA C22.2 No. 61010.1
- UL 1805
- SEFA 8

Fixtured models may feature:

- Two pre-plumbed service fixtures with forged brass valves, lower right side with brass tubing for gas and lower left side with copper tubing for cold water. Components for converting either or both fixtures to air and vacuum are provided. **Inlet tubing is not provided**
- One pre-wired GFCI electrical duplex receptacle on lower right side

Required accessories (not included):

- Remote blower
- Ductwork
- Work surface. See page 9
- Base cabinet

Optional accessories for on-site installation include (see page 10):

- Distillation Grid Kits
- Guardian Airflow Monitors
- Upper Rear Finish Panel Kits
- Electrical Receptacle Kits
- Dual Exhaust Adapter
- Service Fixtures. See manual

Intertek

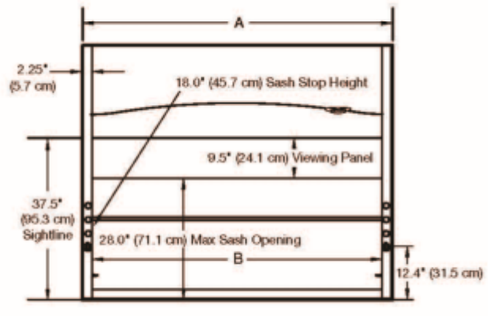
*U.S. Design Patent No. 472,645
**U.S. Patent No. 6,461,233

Heights of switches, electrical receptacles and service fixtures meet requirements of ADA.

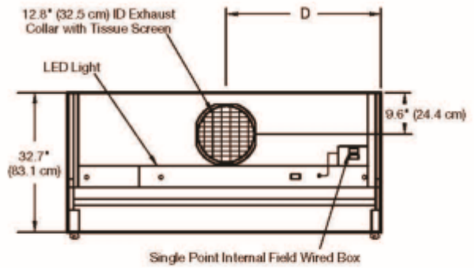
Protector® ClassMate® Laboratory Hoods

Dimensional Data

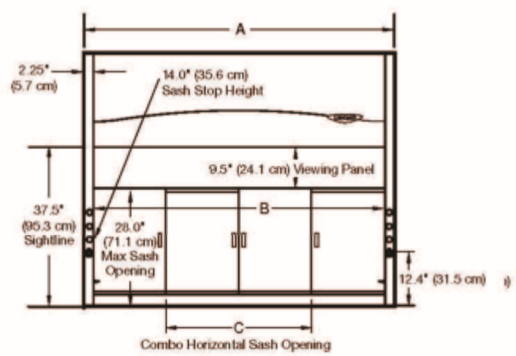
	A*	B*	C*	D*
4' Hood	48.0" (121.9 cm)	43.5" (110.5 cm)	20.5" (52.2 cm)	24.0" (61.0 cm)
5' Hood	60.0" (152.4 cm)	55.5" (141.0 cm)	26.5" (67.3 cm)	30.0" (76.2 cm)
6' Hood	72.0" (182.9 cm)	67.5" (171.5 cm)	32.5" (82.6 cm)	36.0" (91.4 cm)



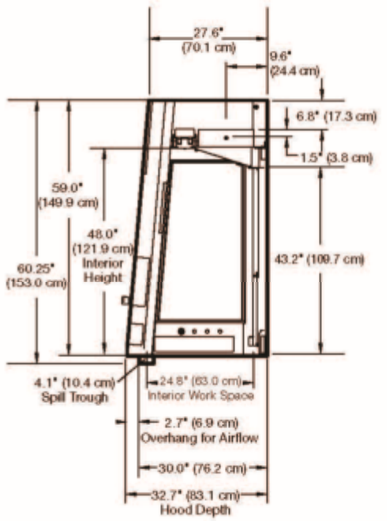
FRONT
(Vertical-Rising Sash Models)



TOP
(All Models)



FRONT
(Combination Sash Models)



SIDE
(All Models)

SAFETY SHOWER CUT SHEET

Unit 2150 will be specified.

Requires drain inside wall cavity for eyewash per Division 22.

Provide drain at floor for shower.

Recessed Laboratory Units

Application: ColorTech recessed laboratory units are recess mounted into a finished wall. They conserve valuable floor space, while eliminating the clutter and obstruction created by conventional eye wash and shower equipment. Units can be installed in either a corridor or a lab room, close to where accidents might occur. In an emergency, units are easily located and activated.

ADA Compliance: When installed at recommended mounting heights, units comply with ADA requirements for accessibility by handicapped persons (maximum height and reach, minimum knee clearance and distance from obstructions).

Certification: All ColorTech safety equipment is third-party certified to meet the requirements of ANSI Z358.1 - 1998 ("Emergency Eye Wash and Shower Equipment").

Finish: Units are supplied with a powder coated finish on all exposed brass components. Specify finish when ordering: white, gray, tan, polished chrome with clear epoxy or satin chrome with clear epoxy.

Shower Head: 8" diameter cast brass. Furnished with vertical supply pipe and ceiling escutcheon for mounting shower head at desired height below finished ceiling.

Shower Valve: 1" IPS brass stay-open ball valve with stainless steel "panic bar". Pulling bar down activates shower; shower remains in operation until bar is returned to original closed position. Furnished with stainless steel access panel and 1" IPS unions for valve.

Cover/Drain Pan: Eye/face wash section of unit has stainless steel cover. Opening cover pulls outlet head assembly down from vertical to horizontal position and activates water flow. Horizontal grab bar is easily grasped and pulled in an emergency. While unit is in operation, waste water is collected by drain pan and returned into unit for drainage. Unit remains in operation until cover is returned to closed position.

Outlet Head Assembly: Two FS-Plus spray heads mounted on supply arms. Each spray head has internal flow control and filter to remove impurities from water.

Eye/Face Wash Valve: 1/2" IPS brass stay-open ball valve.

Mounting: Entire unit is contained in an 18 gauge stainless steel cabinet with flanged rim for recessed mounting in wall. Combination cover and drain pan is 18 gauge stainless steel. Unit fits in standard 3-1/2" deep wall.

Pipe and Fittings: All pipe and fittings are brass.

Supply: 1" IPS female inlet.

Waste: 1-1/2" OD chrome plated brass tube.

Sign: Furnished with ANSI-compliant identification sign.

Quality Assurance: Unit is completely assembled and water tested prior to shipment

U.S. Patent: 5,768,721

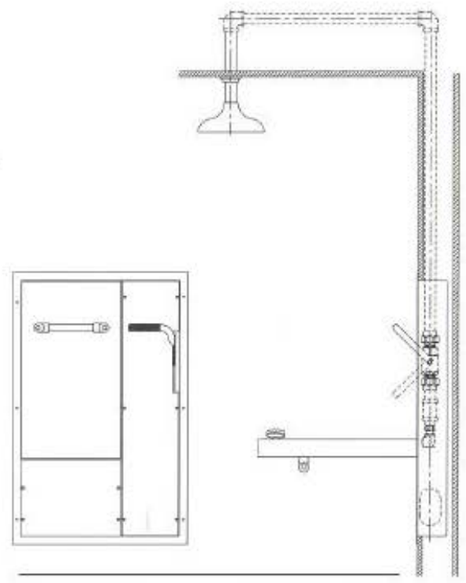
Available Options:

AP280-220 Electric Light and Alarm Horn. Flashing light is mounted on wall above unit. Alarm horn is recess mounted in wall next to light. Light is illuminated and horn sounds when either eye/face wash or shower is activated. See page 87 for complete information.

AP3800 Thermostatic Mixing Valve. Mixing valve precisely blends hot and cold water to deliver warm (tepid) water to eye/face wash and shower station as required by ANSI Z358.1 - 1998. Warm water prevents possibility of thermal shock. See page 86 for complete information.

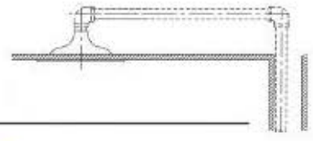
CTSSBF2150

Recessed Safety Station with Drain Pan



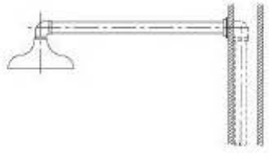
CTSSBF2160

Same as above except with recess mounted shower head.



CTSSBF2170

Same as above except with wall mounted shower head.

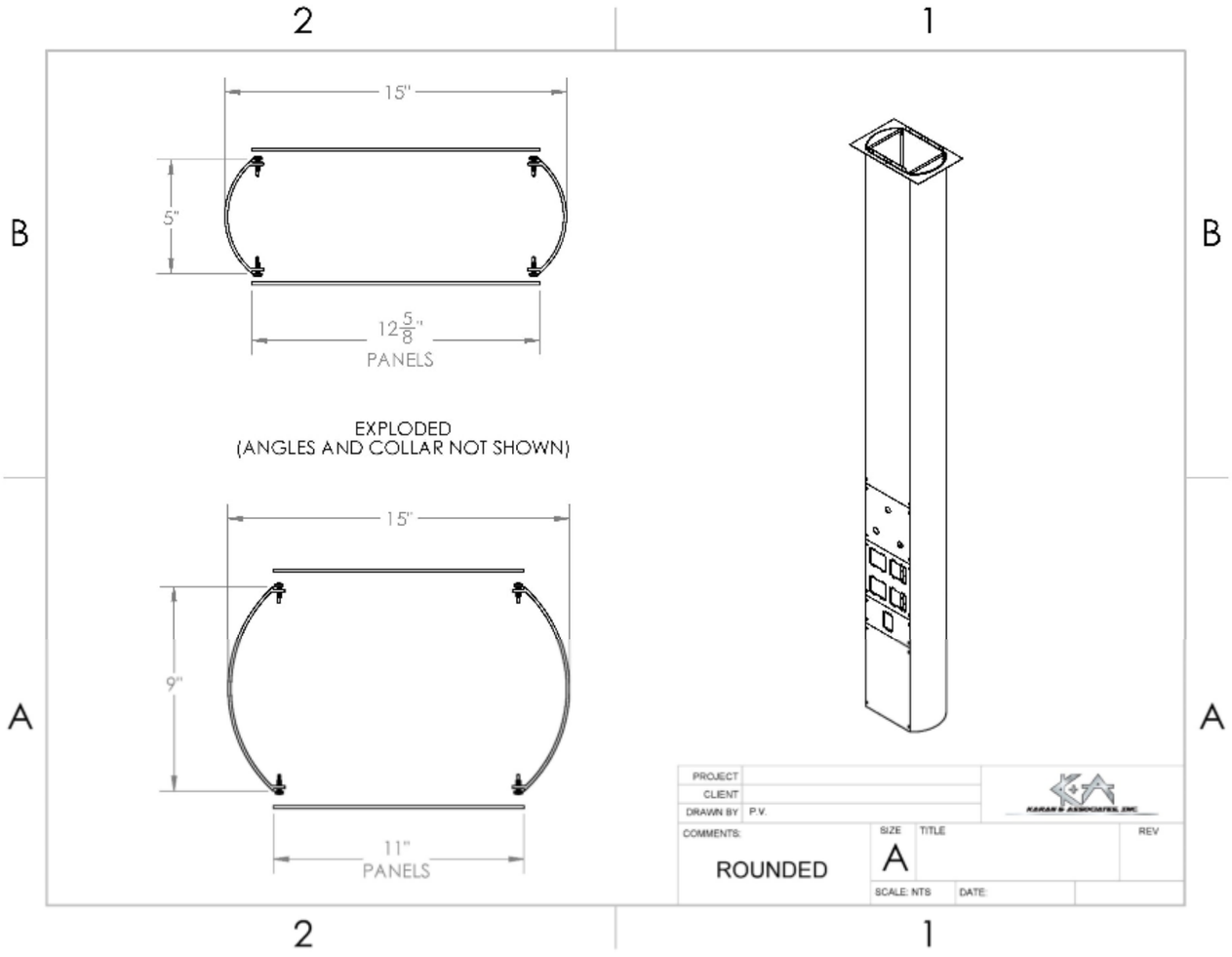


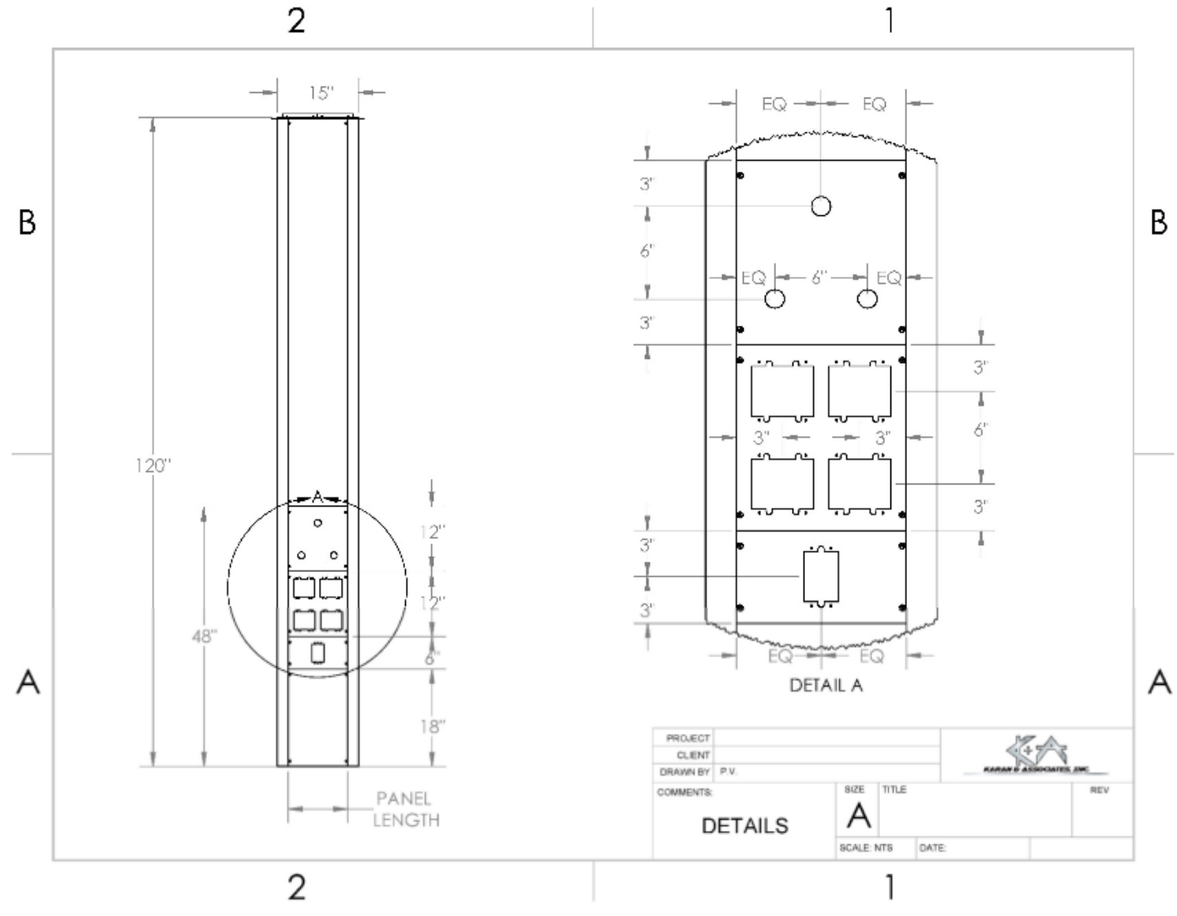
WaterSaver Faucet Co. 312.666.5500 Voice 312.666.8597 Fax wsflab.com

SERVICE COLUMN CUT SHEET

5” width at wall location; 9” width at island or peninsula location.

Material is painted aluminum panels.





AUTOCLAVE CUT SHEET

Existing Autoclave to be relocated to Dirty Kitchen-
Seed Health lab Suite
Electric Steam Heat

Cut Sheet to be provided by Syngenta.

AUTOCLAVE CUT SHEET

Existing Autoclave to be relocated to Seed Headhouse-

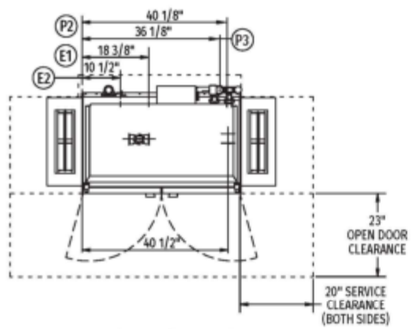
Steam Heat from new boiler in MEP room

Cut Sheet to be provided by Syngenta.

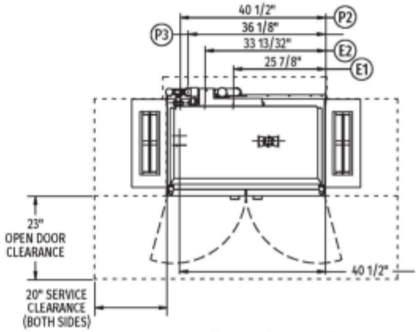
HOBART

CL44eN-ADV advansys ELECTRIC

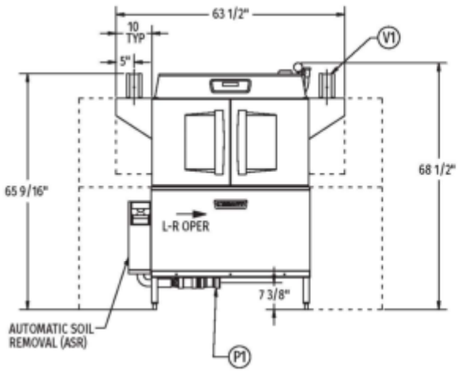
High Temperature Rack Conveyor Dishwashing Machine



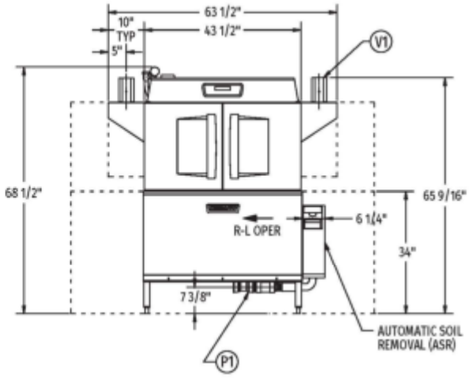
Top View Left to Right



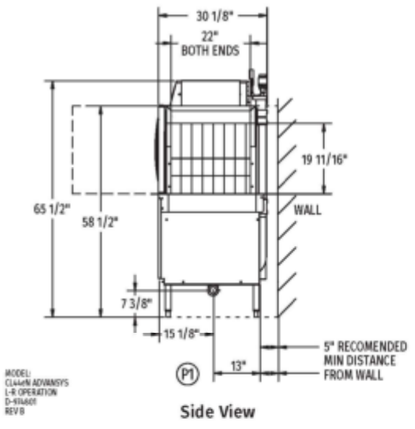
Top View Right to Left



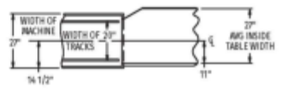
Front View Left to Right



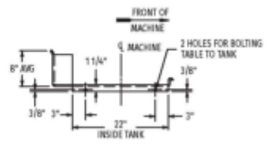
Front View Right to Left



Side View



Suggested Track and Table Layout



View Showing Hole Locations in Turned Down Portion of Table

CAD and/or Revit Files Available

CONVEYER WASHER CUT SHEET

Washing Alcove- Physiology Headhouse

LEGEND

Electrical Connections	
E1	Motors, controls, and electric tank heat 1-1/4" or 2" conduit, 63-3/4" AFF.
E2	Internal electric booster 1-1/4" or 2" conduit, 63-3/4" AFF.

NOTE: Common electrical connection (single point) available, see page 4 for details.

Plumbing Connections	
P1	Drain. May be drained to either side of valve, plug opposite side 2" FPT. Recommend a floor drain minimum of 12" from machine for access and maintenance. 7-3/8" AFF.
P2	Hot water. 1/2" FPT connection. 1/2", 11-3/16" AFF. See plumbing notes for required temperatures.
P3	Cold water connection 1/2" FPT, cold water temperature 80° F, maximum 7-3/8" AFF.
Vent Connections	
V1	Optional vent hoods, 4" x 16" vent stack with damper.

SPECIFICATIONS

Capacities
- Racks per Hour (NSF rated) 202
- Wash Tank (U.S. gallons) 23
- Conveyor Speed (feet per minute) 5.6

Motor Horsepower
- Drive 1/6
- Wash 2
- ASR 1/2

Water Consumption
- U.S. Gallons per Hour (maximum use at 20 PSI) 126
- U.S. Gallons per Rack 0.62
- Peak Drain Flow (U.S. gallons per minute) 38

Heating
- Tank Heat, Electric (kW) 15
- Electric Booster (built-in) (kW for 70°F rise) 30

Venting
- Load End (minimum CFM) 200
- Unload End (minimum CFM) 400

Shipping Weight (approximate) ..... 723 lbs.

Crated Dimensions ..... 53"L x 38"W x 78"H

E1 Electrical Connection (3 PH only) Motors, Controls and Electric Tank Heat			
Voltage	Rated Amps	Minimum Supply Circuit Ampacity	Maximum Protective Device
208/60/3	55.0	70	70
240/60/3	52.6	70	70
480/60/3	27.9	40	40
600/60/3	20.3	25	25

NOTE: Electric tank heat can be split from motors & controls, see page 4 for details.

E2 Booster Heat 30 kW Minimum 110°F Incoming Water			
Voltage	Rated Amps	Minimum Supply Circuit Ampacity	Maximum Protective Device
208/60/3	83.9	90	90
240/60/3	80.2	90	90
480/60/3	40.1	50	50
600/60/3	33.7	40	40

Dishmachine not provided with internal GFCI protection.

CL44eN-ADV Electric Heat Dissipation BTU/HR.	
Latent	Sensible
42,200	18,100

NOTE: Additional CLeN Voltages and Amperages are available, see document F40972.

WARNING: Plumbing and electrical connections should be made by qualified personnel who will observe all the applicable plumbing, sanitary, safety codes and National Electrical Code.

Plumbing Notes: Minimum incoming water temperatures: 110°F for 30kW internal booster. Building flowing water pressure to dish machine is 20 PSI (+/- 5 PSI).

Single cold water connection supplies both drain water energy recovery and drain water tempering.

Recommended water hardness to be 3 grains or less for best results.

LARGE WASHER CUT SHEET

Dirty Kitchen- Seed Health Lab Suite

Efficiency is integral to the GEW 8668 washer-dryer. Factory loaded wash and dry programs can be programmed on site with custom parameters to match the exact requirements of the local protocol. A combination of loading racks and a spacious interior chamber permit high density loading to reduce cycle frequency, accelerate throughput and reduce energy consumption.

Advanced control features offer simple single button operation of preset or locally programmed cycles selected from an intuitive touchscreen controller. The microprocessor-based Getinge G1 controller is managed through the Getinge CENTRIC graphic user interface to simplify cycle selection and operation.

Technical data

Chamber Volume (L)	351 (Effective), 480 (Gross)
Chamber Volume ( )	351 (Effective), 480 (Gross)
Net Weight (kg)	400
Chamber Width (mm)	665
Chamber Height	667
Chamber Depth	810
exterior Width (mm)	1110
Exterior Height (mm)	1552
Exterior Depth (mm)	930

Cabinet materials are engineered for best performance in sanitary applications.

Integrated drying system with heat exchanger, temperature and (optional humidity) sensors accelerates drying time and increases throughput.

Getinge CENTRIC one-touch operation simplifies user interface, permits visual verification of cycle process and accepts gloved touchscreen function entry.

Accesories

Automatic Loaders and unloaders

When the washer is ready for loading or unloading, it is done automatically. The wash carts have barcodes that start the right wash program for the particular cart. Automatic loading and unloading is a handy option that reduces handling time and releases the operator to perform other tasks.

Getinge AGS system (Air Glide System)

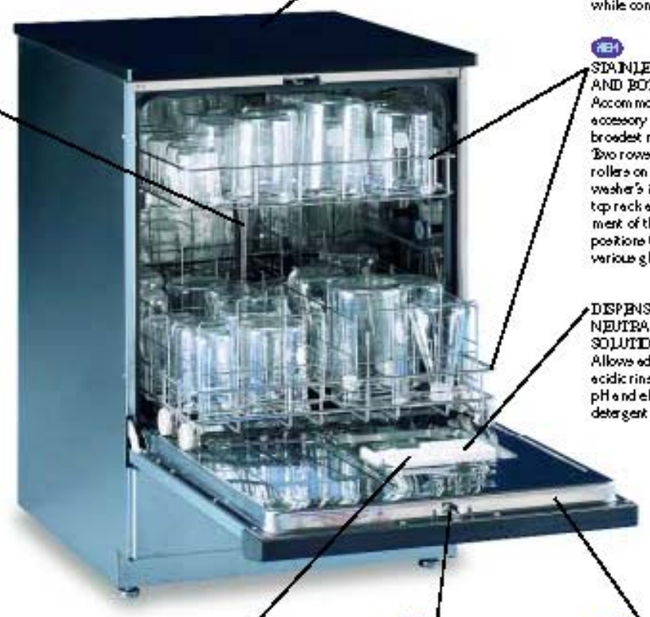
The principle of the Getinge AGS is "no waiting". Wash carts are loaded into the washer-dryer in the order of their arrival, since the wash carts form a washer-dryers queue up at one single point. The system handles all loading, program selection and unloading automatically.

Wash carts

Getinge provide loading equipment engineered for optimal cleaning performance and best throughput/cycle. Multiple wash carts are available that enhance flexibility for different loading scenarios to fulfil user requirements.

SteamScrubbers®
Features & Benefits

Ideal washer for cleaning beakers and other general purpose labware



MIRROR BRIGHT TYPE 304 STAINLESS STEEL INTERIOR
The shiny, non-porous finish provides a corrosion-resistant surface which reduces contaminant carry over during wash and rinse cycles.

UPPER AND LOWER ROTATING WASH ARMS WITH ADJUSTABLE HEIGHT CENTER TOWER
Distribute up to 60 gallons (227 liters) of water per minute. Wash arms clean with a 360° revolving motion. The lower arm pumps water upward through the bottom rack while the upper arm propels water down across glassware below and up through the top rack. The center telescoping tower has a locking pin that adjusts the upper arm to 2 positions to accommodate various glassware heights.

BUILT-IN FORCED AIR DRYING SYSTEM
Dries glassware with hot, dry air.

STEAM GENERATOR
Produces hot vapor to penetrate and soften dried residue allowing detergent and hot water to work effectively.

DUAL HEATERS
Boost water and glassware temperatures to enhance washing and drying results by applying heat during all cycles. Models for operation on 115 volts have 1450 watts of heating power; 230 volt models have 2150 watts. With a minimum inlet temperature of 120° F (49° C), the sump heater elevates water temperature approximately 20° F (11° C) on 115 volt models and 60° F (33° C) on 230 volt models.

PARTICLE FILTER
One-piece stainless steel screen filters fine particles, protecting the pump from broken glass and debris.

MELAMINE-COVERED TOP
On mobile and freestanding models, the high-density particleboard top is melamine-coated on all sides to repel moisture.

QUIET, ENERGY EFFICIENT OPERATION AT 62 DECIBELS
Aluminum-backed, sound-deadening material is strategically placed throughout the washer to absorb noise. An insulation blanket optimizes internal tank temperature while conserving energy.

STAINLESS STEEL TOP AND BOTTOM RACKS
Accommodates a variety of accessory inserts and the broadest range of glassware. Two rows of factory-installed rollers on the sides of the washer's interior guide the top rack and allow placement of the rack in two positions to accommodate various glassware heights.

DISPENSER FOR NEUTRALIZING SOLUTION
Allows addition of mildly acidic rinse solution to alter pH and eliminate alkaline detergent carry over.

BUILT-IN PURIFIED WATER PUMP
Draws from a storage tank or pressurized system to deliver purified water during final two rinses.

EASY INSTALLATION
To begin operation, tap and purified water, a drain and electricity are required. Mobile models feature a quick-disconnect attachment for tap water and drain. Undercounter and free-standing models have straight line plumbing and electrical connections accessible from the front. Higher built-in drain location prevents self-draining and plumbing errors.

DRY OR LIQUID DETERGENT DISPENSER
Detergent compartments release a premeasured amount (135 ounces or 40 ml) ensuring clean labware.

FULL ONE YEAR WARRANTY
Is provided against defects in materials and workmanship.

DRAW LATCH
Securely locks the door energizing the electronic controls.

INTERNATIONAL ELECTRICAL CONFIGURATIONS AVAILABLE
All 230 volt models conform to the CE (European Community) requirements for electrical safety and electromagnetic compatibility.

TYPE 304 STAINLESS STEEL DOOR
Front door is sleek brushed stainless steel. Mobile and freestanding models also have brushed stainless steel sides and epoxy-coated steel backs.

ETL LISTED
Washer carries the ETL Testing Laboratories seal in the U.S. and ETL-C seal in Canada, signifying it meets or exceeds all minimum requirements of UL Standard 3101-1 and CAN/CSA C22.2 No. 1010.1.

Exclusive Asko

SMALL WASHER CUT SHEET
Dirty Kitchen- Seed Health Lab Suite

Undercounter SteamScrubbers

24.0" w x 26.4" d x 34.3" h minimum to 36.3" h maximum (60.9 x 67.1 x 87.1 to 92.1 cm).
Shipping weight 142 lbs. (64 kg). Includes one 3/8" IPS inlet fitting for tap water, one fitting for 3/4" ID hose for purified water, one Top Rack, one Bottom Rack, and leveling feet.

Catalog Number	Electrical Requirements	Options: High Heat	Options: Window	Required (not included)
44003-00	115 v, 60 Hz, 16 amps			hardwiring to a 20 amp dedicated circuit 1 1/2" vent trap or drain air gap
44003-01	230 v, 50/60 Hz, 13 amps	•		hardwiring to a 20 amp dedicated circuit 1 1/2" vent trap or drain air gap
44003-10	115 v, 60 Hz, 16 amps		•	hardwiring to a 20 amp dedicated circuit 1 1/2" vent trap or drain air gap
44003-11	230 v, 50/60 Hz, 13 amps	•	•	hardwiring to a 20 amp dedicated circuit 1 1/2" vent trap or drain air gap

Freestanding SteamScrubbers

24.5" w x 26.7" d x 35.1" h minimum to 37.1" h maximum (62.2 x 67.8 x 89.2 to 94.2 cm). Shipping weight 189 lbs. (86 kg).
Includes melamine-covered top, stainless steel front and side panels, epoxy-coated steel back panel, 3/8" IPS inlet for tap water, one fitting for 3/4" ID hose for purified water, one Top Rack, one Bottom Rack, and leveling feet.

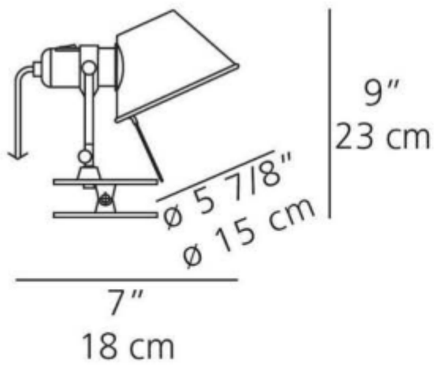
Catalog Number	Electrical Requirements	Options: High Heat	Options: Window	Required (not included)
44004-00	115 v, 60 Hz, 16 amps			hardwiring to a 20 amp dedicated circuit 1 1/2" vent trap or drain air gap
44004-01	230 v, 50/60 Hz, 13 amps	•		hardwiring to a 20 amp dedicated circuit 1 1/2" vent trap or drain air gap
44004-10	115 v, 60 Hz, 16 amps		•	hardwiring to a 20 amp dedicated circuit 1 1/2" vent trap or drain air gap
44004-11	230 v, 50/60 Hz, 13 amps	•	•	hardwiring to a 20 amp dedicated circuit 1 1/2" vent trap or drain air gap

TASK LIGHT CUT SHEET

LED Task light at adjustable shelf attaches to shelf edge and is easily moved/removed. Task light plugs into raceway at mobile lab bench.

Task lights at fixed wall cabinets will be hardwire undercabinet mount by Div 26.

Tolomeo clip spot



PHOTOS

The following photos illustrate similar building type, lab type, and equipment.

PHOTOS DANFORTH PLANT SCIENCE CENTER- ST. LOUIS

TOUR CORRIDOR PHOTO

Danforth Plant Science Center

PLANT SCIENCE LAB PHOTO

Danforth Plant Science Center

Plant Science Growth Chamber Photos

There are two basic types of growth chambers- walk-in room type and reach-in chamber type.

All walk-in room types are noted herein, labeled "G.C." with specific functions noted.

All equipment spaces in all labs are potential location for reach-in chambers.

Walk-in Chamber Door Photos

Consider use of all glass panel doors at walk-in chambers and environmental rooms.

This will allow better visibility to and from the room interior. The interior rooms will not feel so claustrophobic.