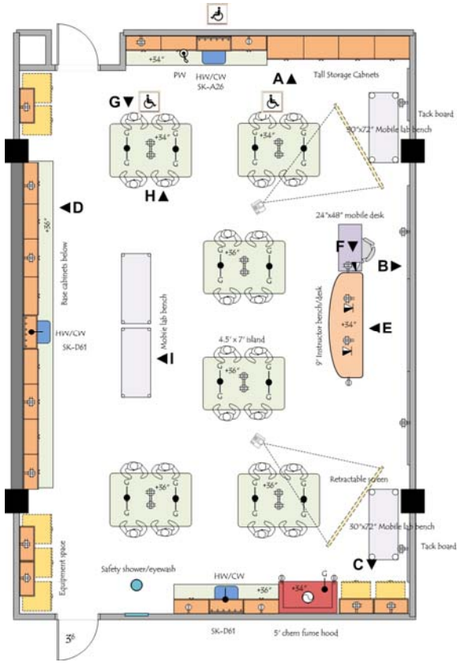
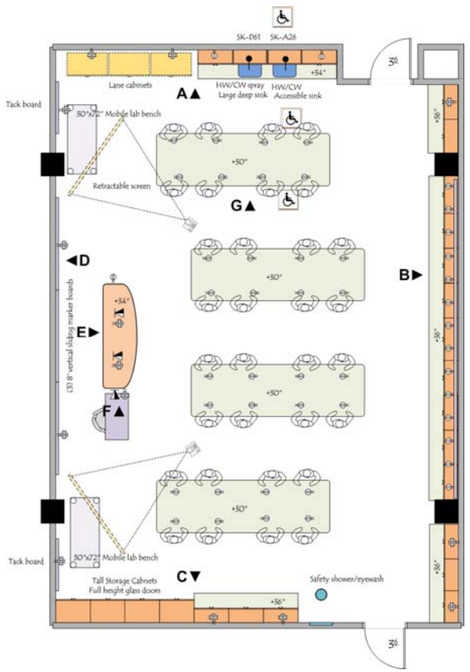
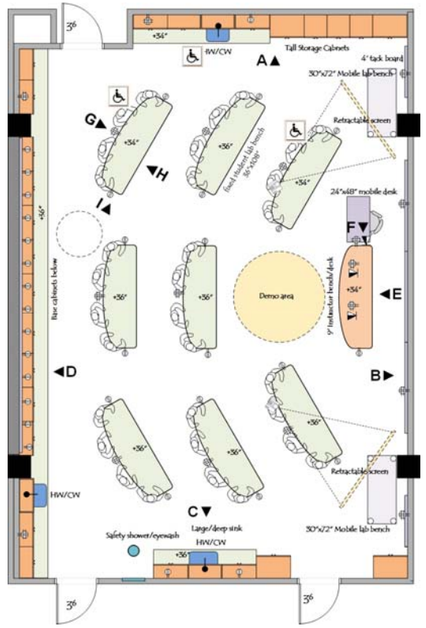


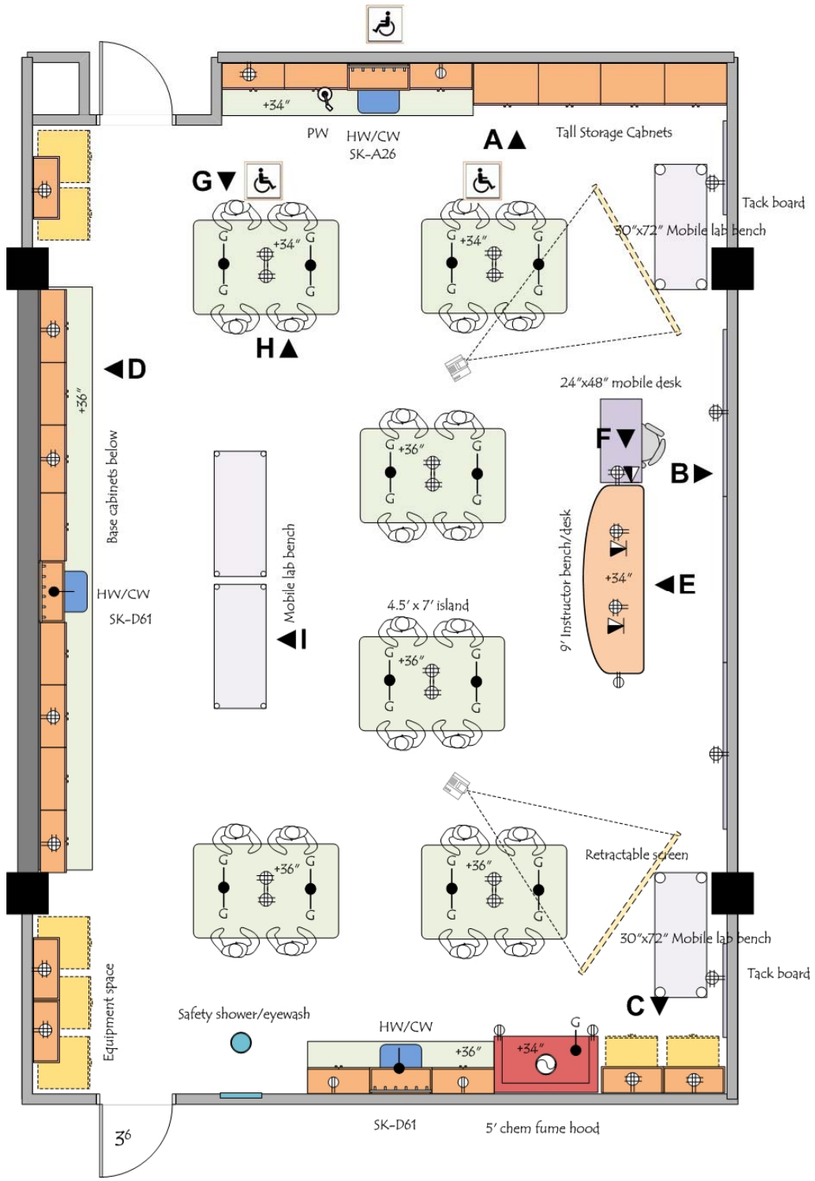




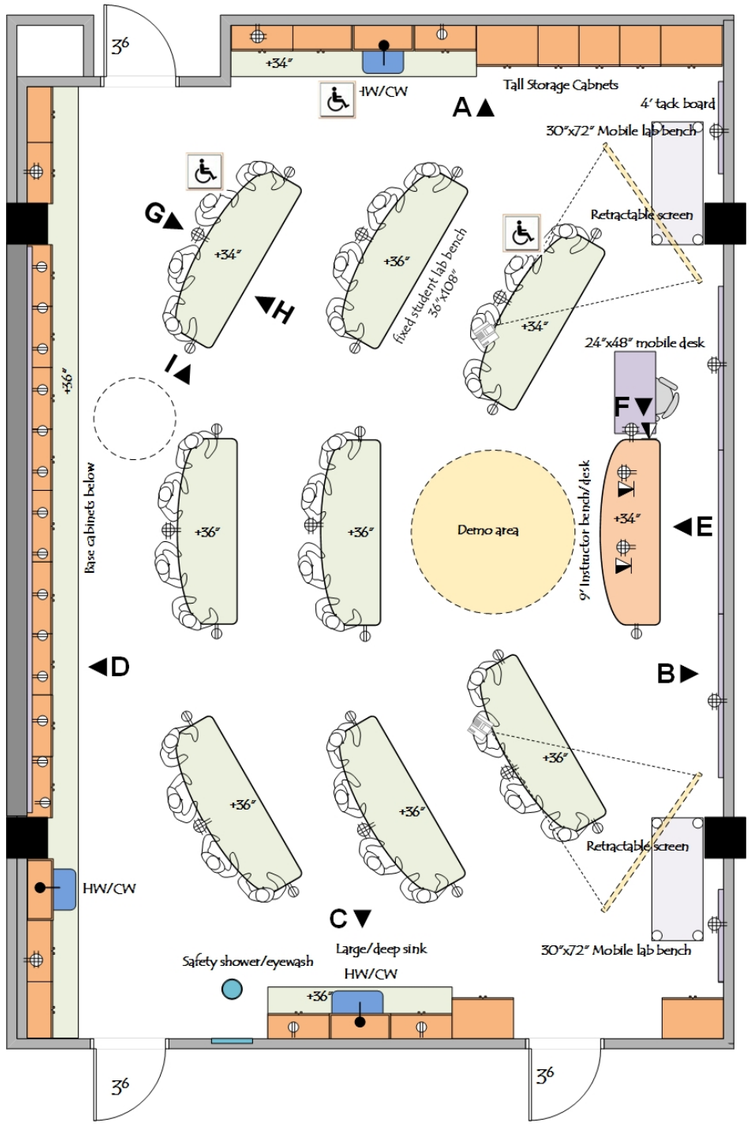
LIFE SCIENCE LABORATORY SKETCHBOOK

Southwestern College
Math, Science, & Engineering Building
Design Development Phase
2015 August 17

DESIGN for SCIENCE



Contents



Introduction

This document is the fifth draft of the laboratory design sketchbook submitted in the design development phase of the new Science Math & Engineering Building at Southwestern College in Chula Vista, California. The purpose of this document is to illustrate design intent of the science labs and prep spaces.

All mechanical, plumbing, and electrical requirements for the labs are noted in this document. All plumbing and electrical outlets and points of service are noted on the plan drawings.

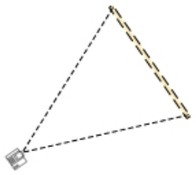
Interior laboratory elevations are included, as well as typical section details for laboratory casework.

Changes requested by faculty in 2015 Mar 26 teleconference are included in this document. Base cabinets that have been added at knee spaces are illustrated with colored background (beige color) in teaching lab elevations.

Faculty comments received in the 2015 Jun 02 BUG teleconference are included in this document.

Glen Berry, AIA
Laboratory Planning Consultant
designforscience@icloud.com

Symbol Legend



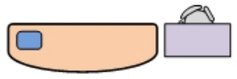
Projector and screen

Chemical fume hood

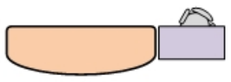
Biological safety cabinet

Autoclave

Equipment space with 2 rows shelves above

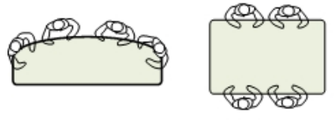


Instructor bench with sink with mobile desk at side



Instructor bench without sink with mobile desk at side

Demo area in teaching lab



Student island bench

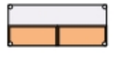
Safety shower/eyewash

Floor drain or floor sink

Balance at balance room benchtop

Mobile lab table

Fixed lab bench



Mobile lab bench with integral shelves above

Wall cabinet or tall storage cabinet

Open wall shelf or open tall storage cabinet

Lab sink with shelf above

Corrosive storage chemical cabinet

Flammable storage chemical cabinet

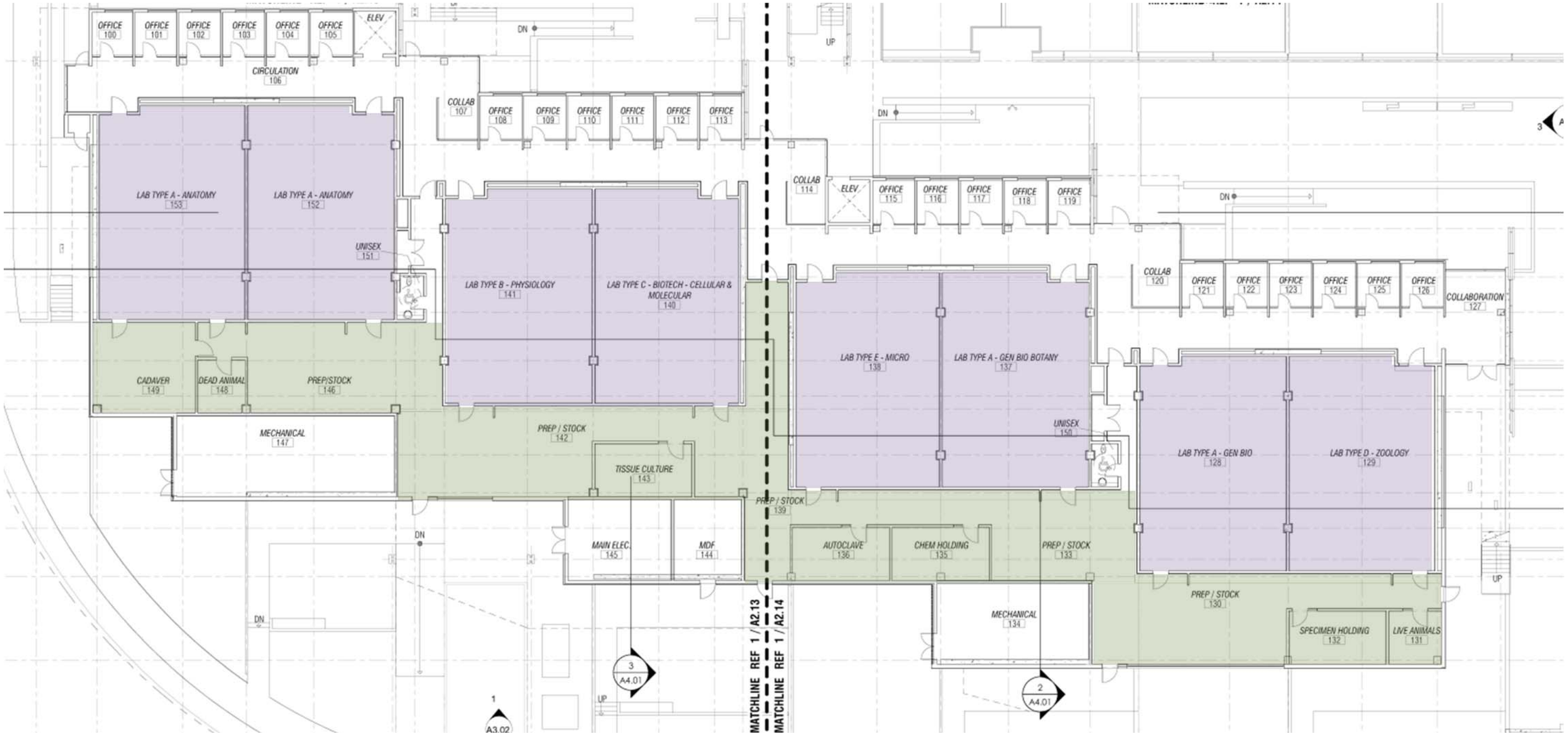
MEP Criteria

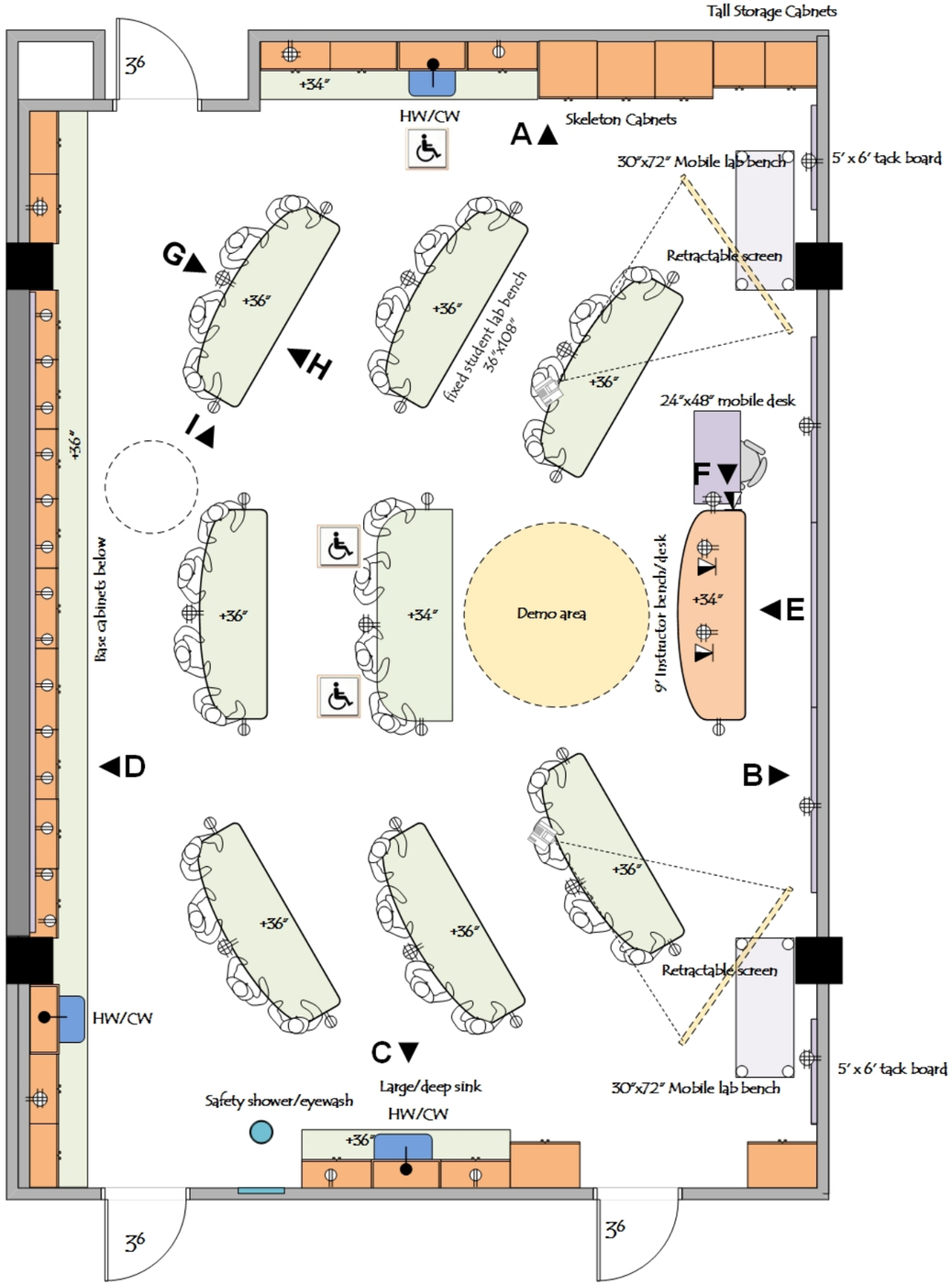
Mechanical	Electrical	Plumbing
▪ 100% exhaust for all lab and prep areas ▪ All lab and prep areas with negative pressure- except for lab tech workrooms located inside prep area shall have positive pressure ▪ Standard air change rate is 6 air changes per hour- occupied ▪ Unoccupied air change rate can be reduced to 4 air changes per hour- SWC to determine what defines "unoccupied"- it may be 10 pm to 6 am, plus weekends, plus holidays; or it may be based on occupancy sensor. ▪ Some labs have higher than 6 air changes per hour- 2 anatomy labs and physiology lab have up to 12 air changes per hour with manual control, with high and low exhaust. ▪ All labs on individual thermostat control- one thermostat per lab. ▪ All prep areas on individual thermostat control- one thermostat per prep area (4 prep areas per floor). ▪ All enclosed rooms within prep area on individual thermostat control. ▪ Supply air to be pre-filtered at 30% and 95% efficiency. ▪ Heat gain in labs: 25 btuh/sf for teaching labs; 50 btuh/sf for prep areas. ▪ Fume hood exhaust system on emergency power. ▪ All fume hoods to be variable air volume (VAV) with sash sensor controls.	▪ Maximum of four duplex or two fourplex power outlets on same circuit anywhere in lab or prep areas. ▪ Power outlets at equipment space on dedicated circuits. ▪ Under counter washers in prep areas on 208v power. ▪ Limited number of equipment space power outlets on 208v power. ▪ Autoclaves on 480v or 208v power. ▪ Lighting control switches to be located at each lab door and at instructor bench at marker board wall. ▪ Separate down lighting for marker board wall. ▪ Dimmable or stepped lighting in teaching labs. ▪ Aluminum raceways (single compartment) at lab walls where there are long runs of bench. ▪ GFI outlets at General Biology/Botany Lab student islands.	▪ Industrial water for hot and cold or vacuum breakers at each sink faucet. ▪ Pure water on level 1 to be provide by point-of-use water polishers specified per Div. 11 and installed per Div. 22. ▪ Piped services include hot water, cold water, gas, air, and vacuum. ▪ Hard drain connection in wall for emergency eyewash stations with floor drains below safety showers.

Labs Level 1

Teaching Labs

Prep/Store





Anatomy Lab 1

ARCHITECTURAL
Occupancy: B
Floor: vinyl composition tile
Walls: gypsum board and enamel paint
Ceiling: 9'-6"' acoustic tile
Doors: $3^{6}x8^{0}$with window; dutch doors between labs and prep
Daylight: Clerestory window and/or view windows
Light attenuation: blinds at windows
Acoustic Attenuation: NC 40 or less
Security: key or card key access

STRUCTURAL
Vibration attenuation: 4,000 micro inches/sec or less

MECHANICAL
Hours of operation: 6 am to 11 pm
Temperature: : 66-74 deg. F, +/- 2 deg. F
100% exhaust- no recirculation of air
(6) air changes per hour occupied
Provide manual control to increase to 12 air changes per hour on demand- high exhaust at ceiling with low exhaust at perimeter wall
(4) air changes per hour unoccupied
Pressure: Negative
Humidity: Ambient

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
208v outlets at equipment space in prep area
Data & Wireless data
Lighting: indirect fluorescent @ 60 f.c. with multi-level switching task lights below wall cabinets
Provide light switches at instructor's bench and at each door
Separate lighting for marker board wall

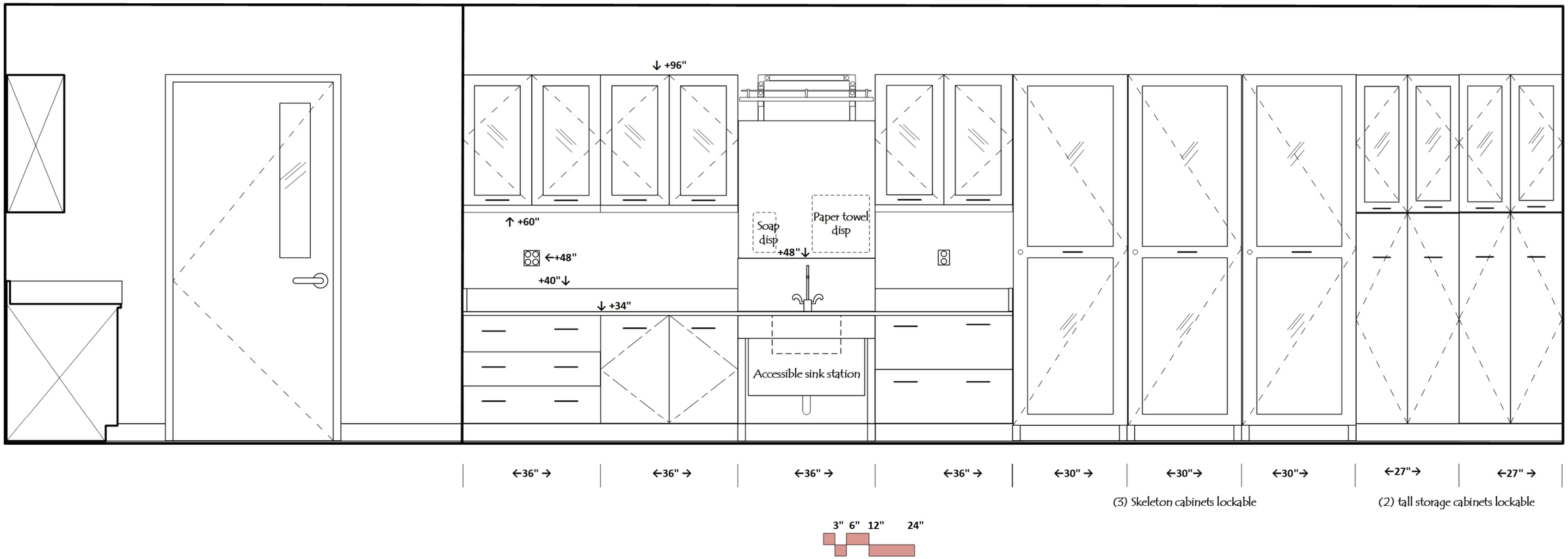
PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers
Disposal at sinks

CONTRACTOR FURNISHED EQUIPMENT
Wood casework- base cabinets, wall cabinets, tall cabinets
Tables
Resin tops and sinks
Faucets & fittings
marker boards; projection screens
Projector system

COLLEGE FURNISHED EQUIPMENT
Chairs
Benchtop analytical instruments
Scientific equipment
paper towel dispenser
Cadaver gurneys

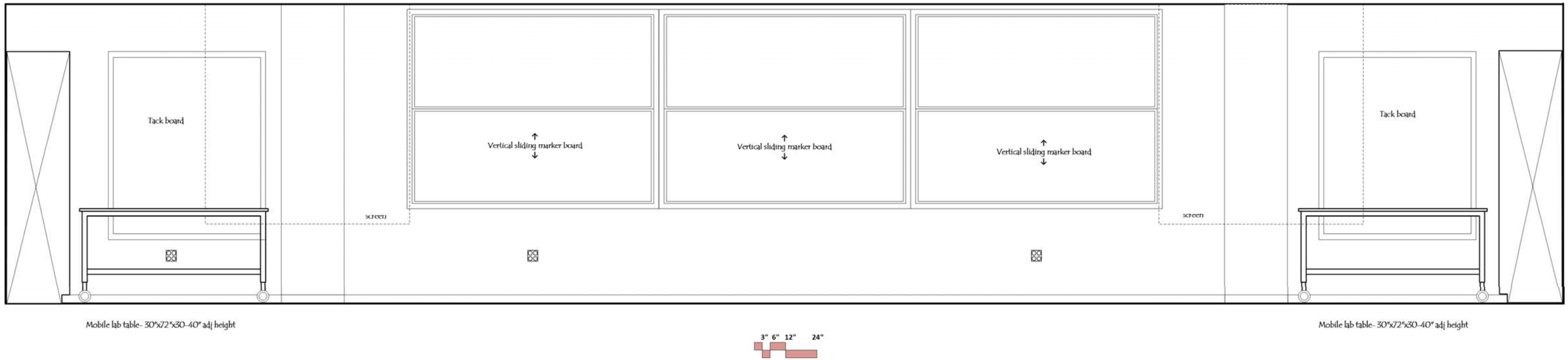
Anatomy Lab 1

Elevation A- North Wall



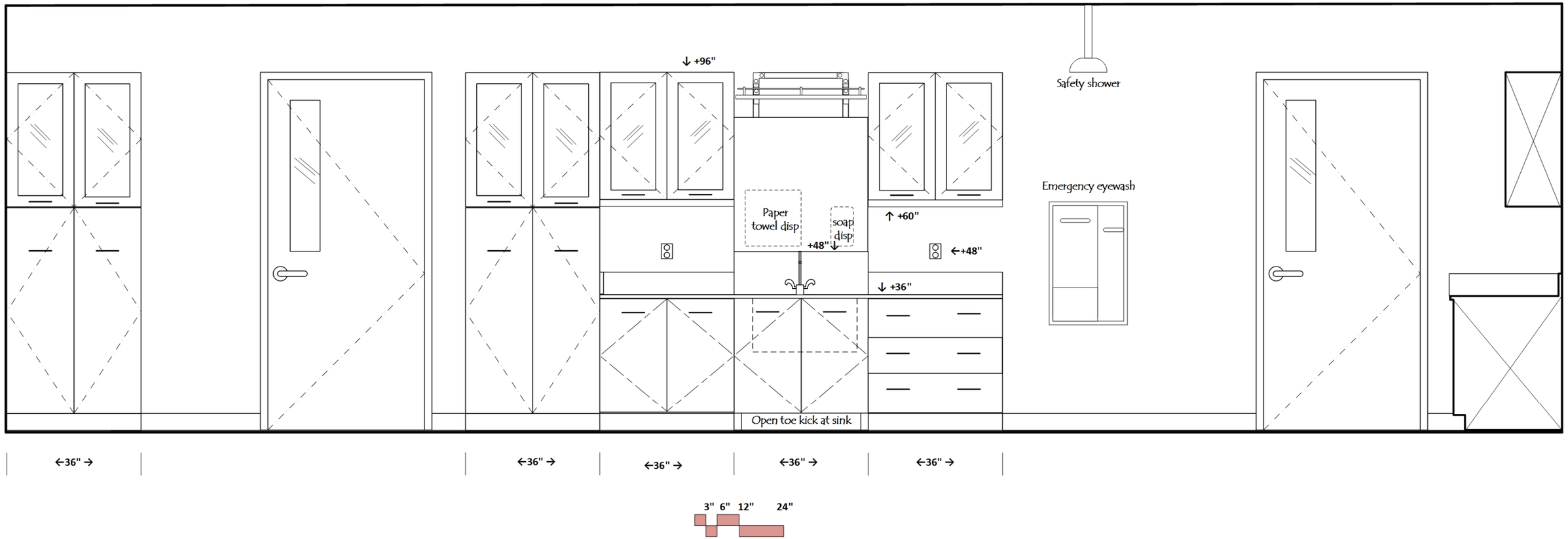
Anatomy Lab 1

Elevation B- East Wall



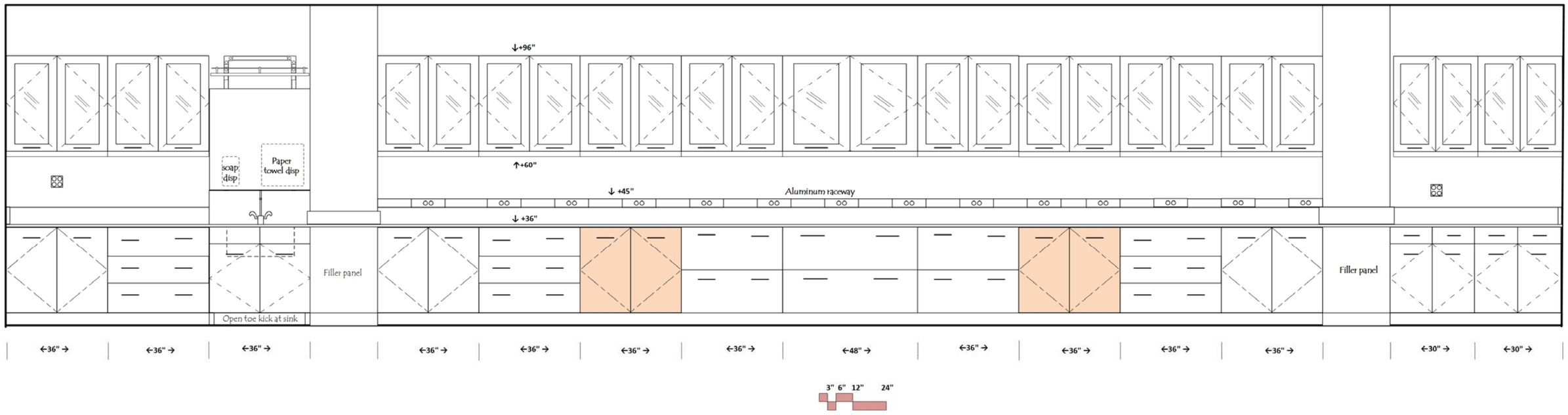
Anatomy Lab 1

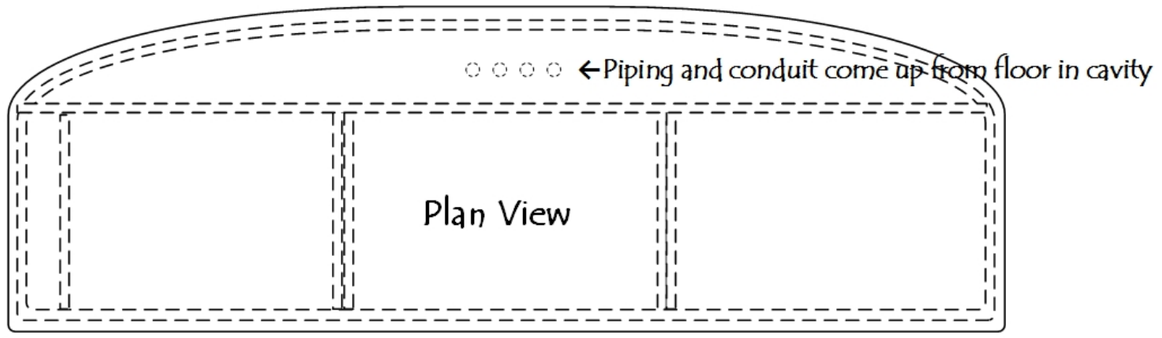
Elevation C- South Wall

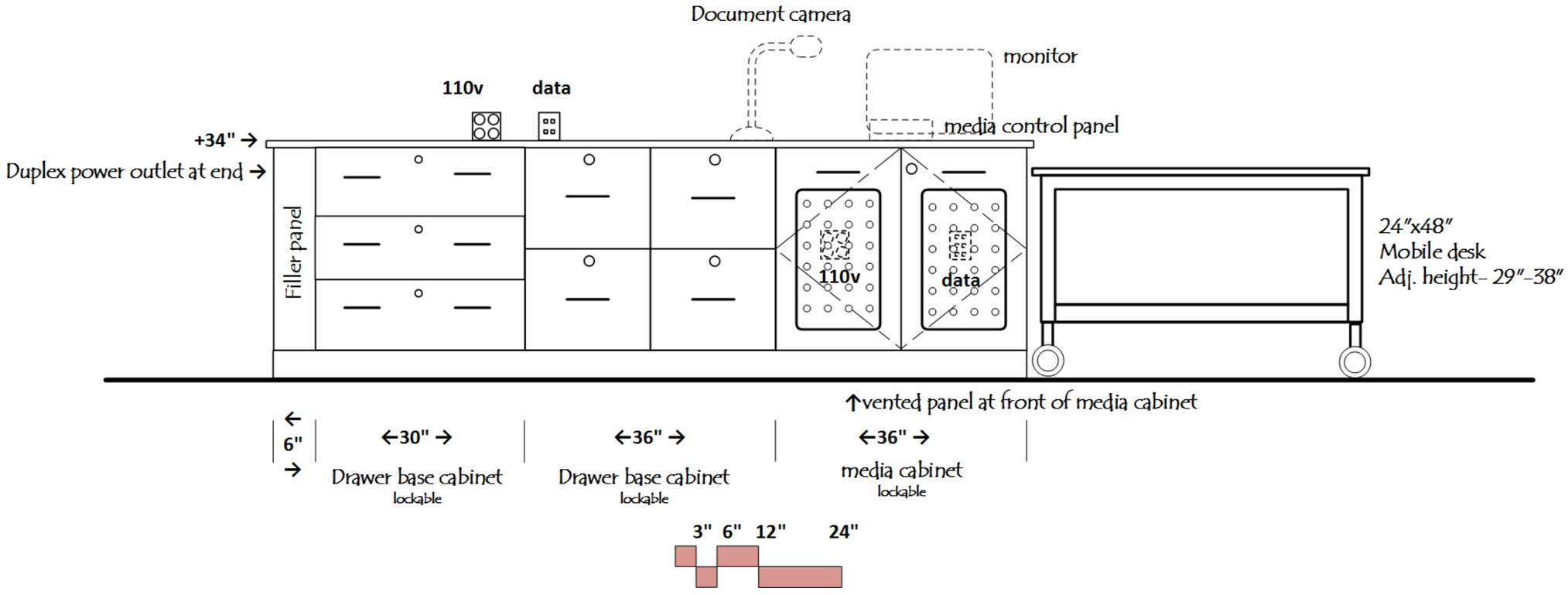


Anatomy Lab 1

Elevation D- West Wall




←Piping and conduit come up from floor in cavity
Plan View


Document camera
monitor
media control panel
110v
data
+34" →
Duplex power outlet at end →
Filler panel
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Mobile desk
Adj. height- 29"-38"
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Drawer base cabinet
lockable
Drawer base cabinet
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media cabinet
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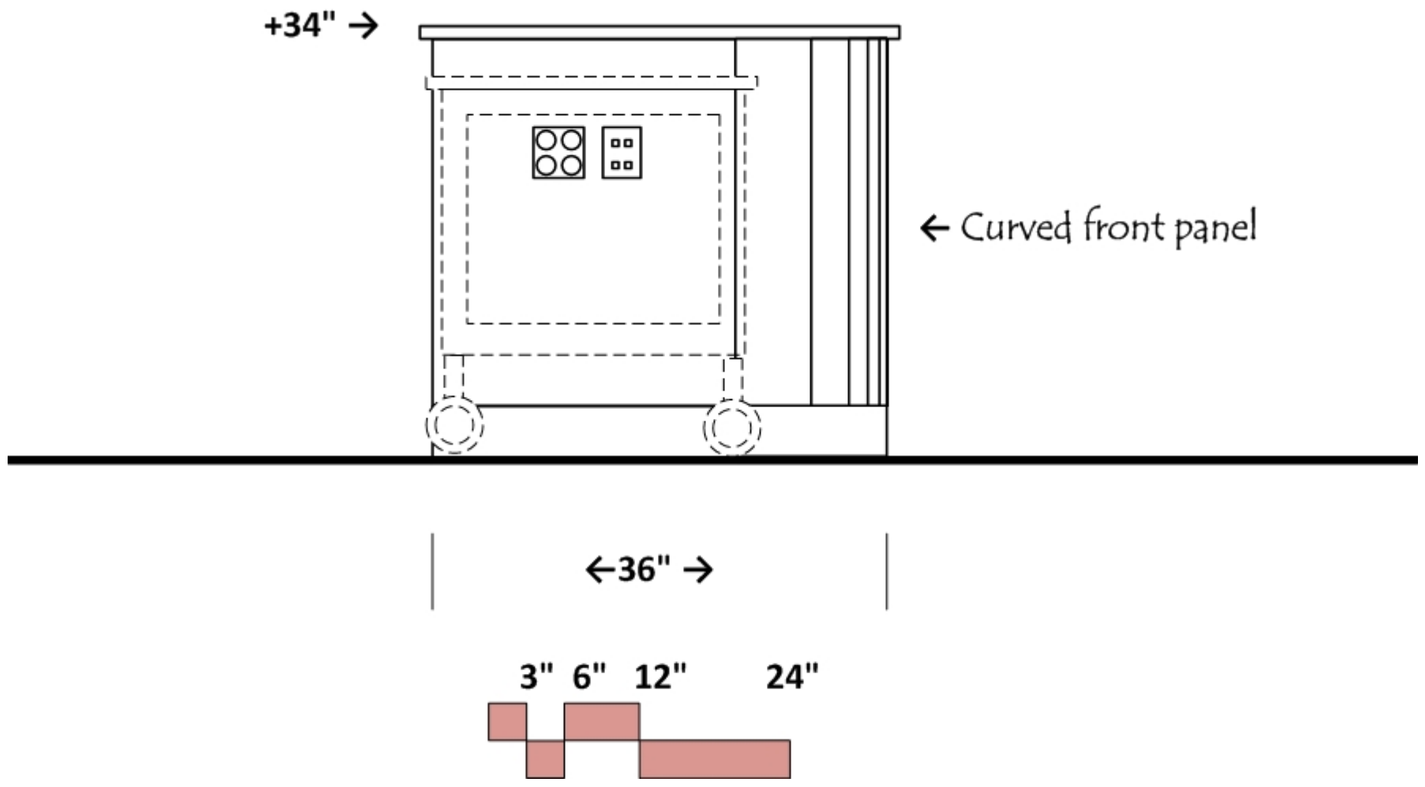
3" 6" 12" 24"


+34" →
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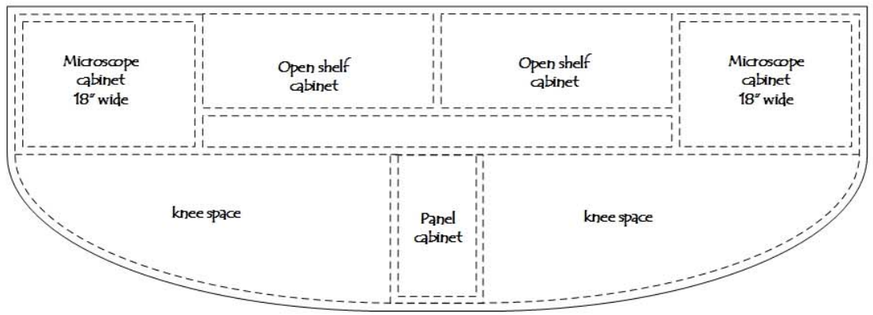
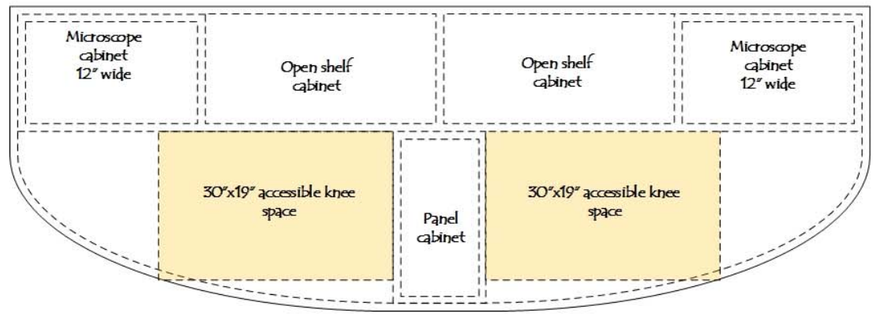
TOP VIEW



↑108" x 36" epoxy resin top

Stamdard island top- six per lab



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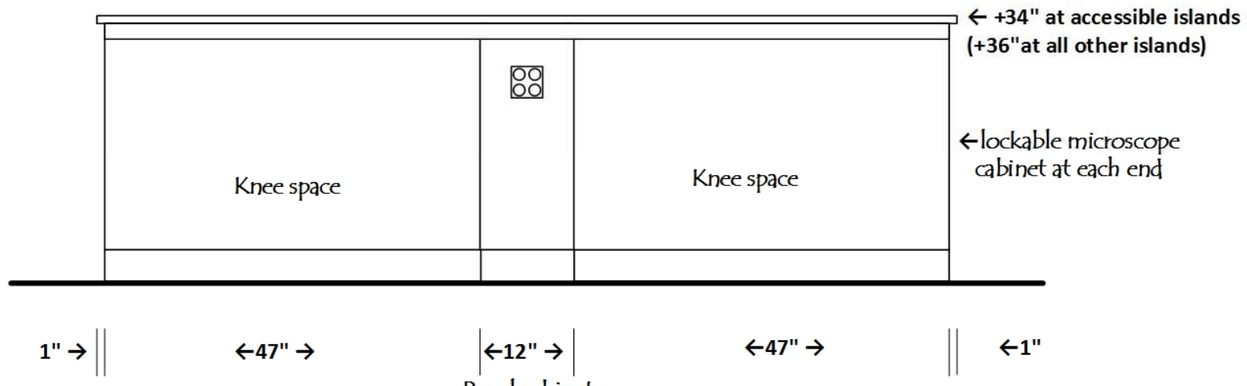
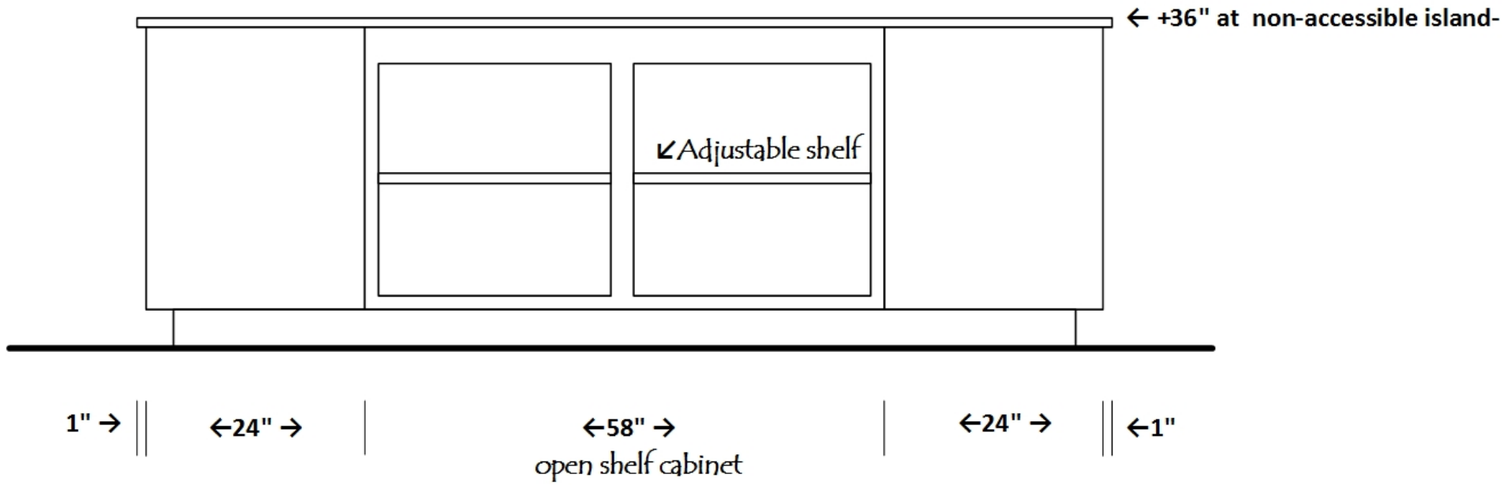
Accessible island top- two per lab

FRONT VIEW



Elevation at Non- Accessible Island



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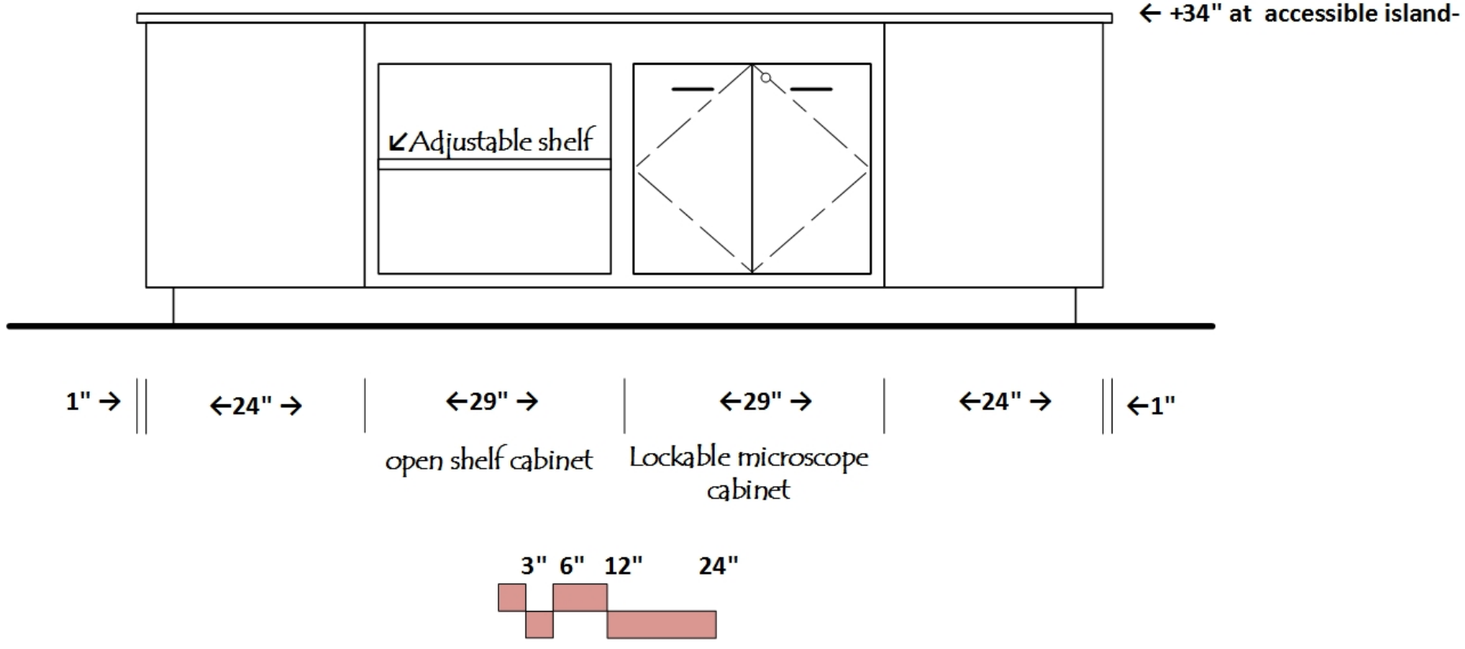
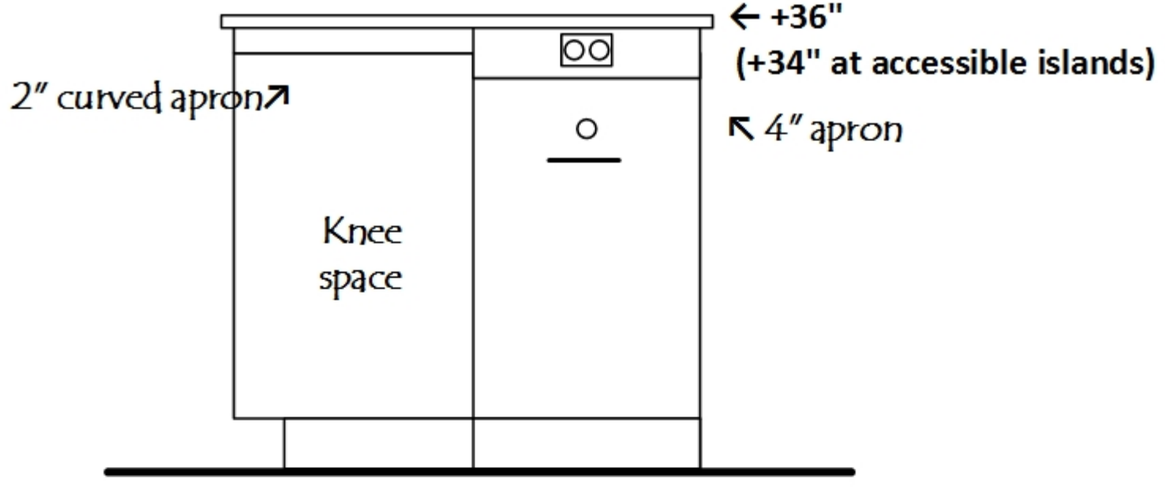
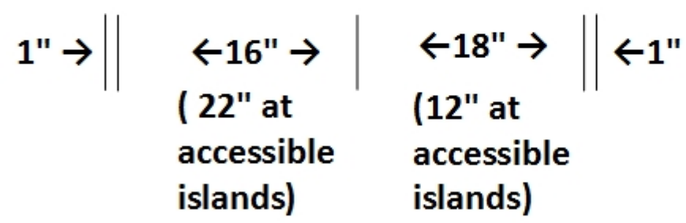
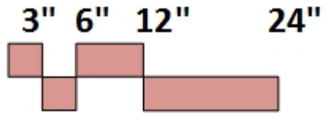
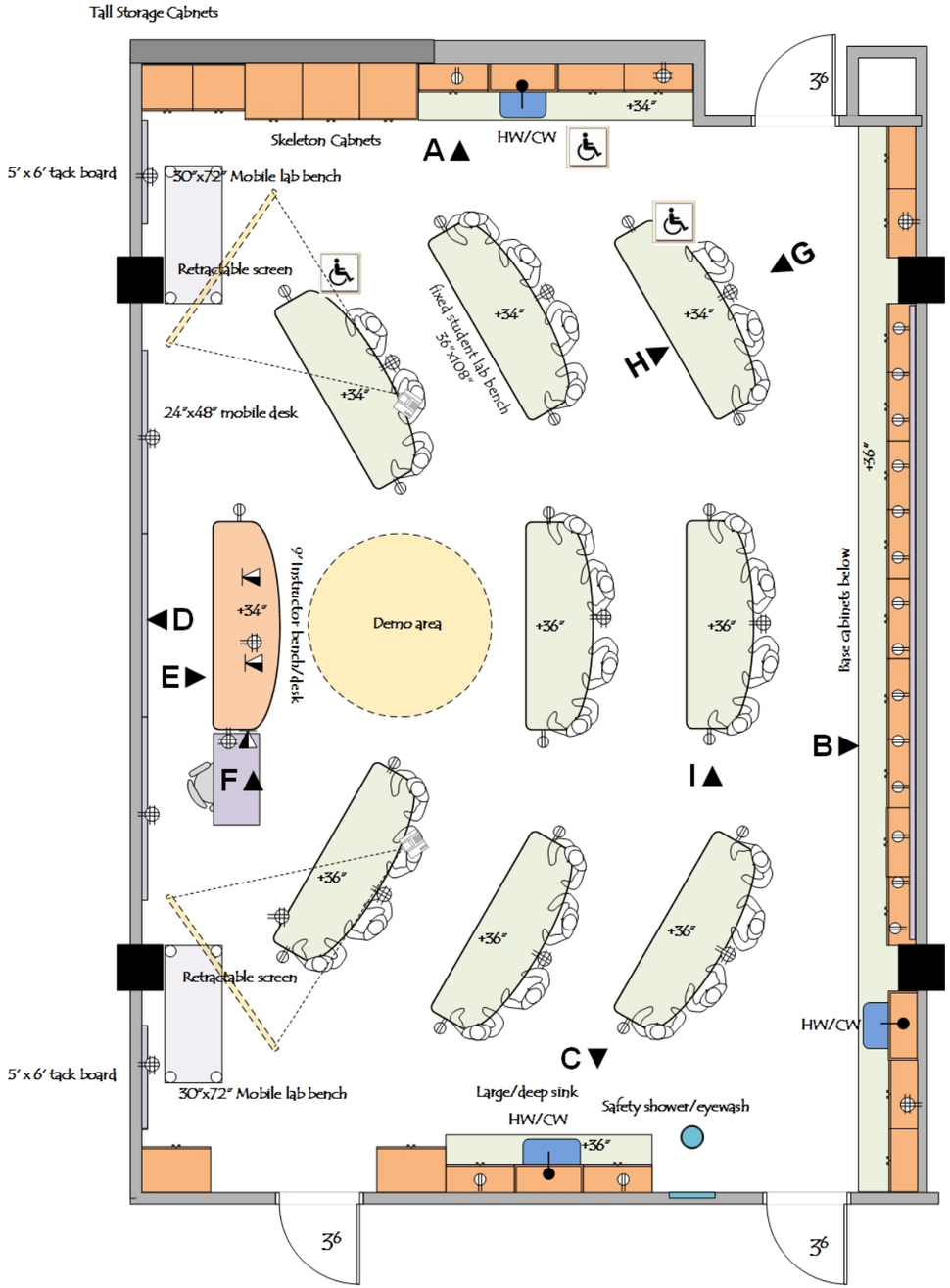






Microscope drawer
base cabinet
lockable





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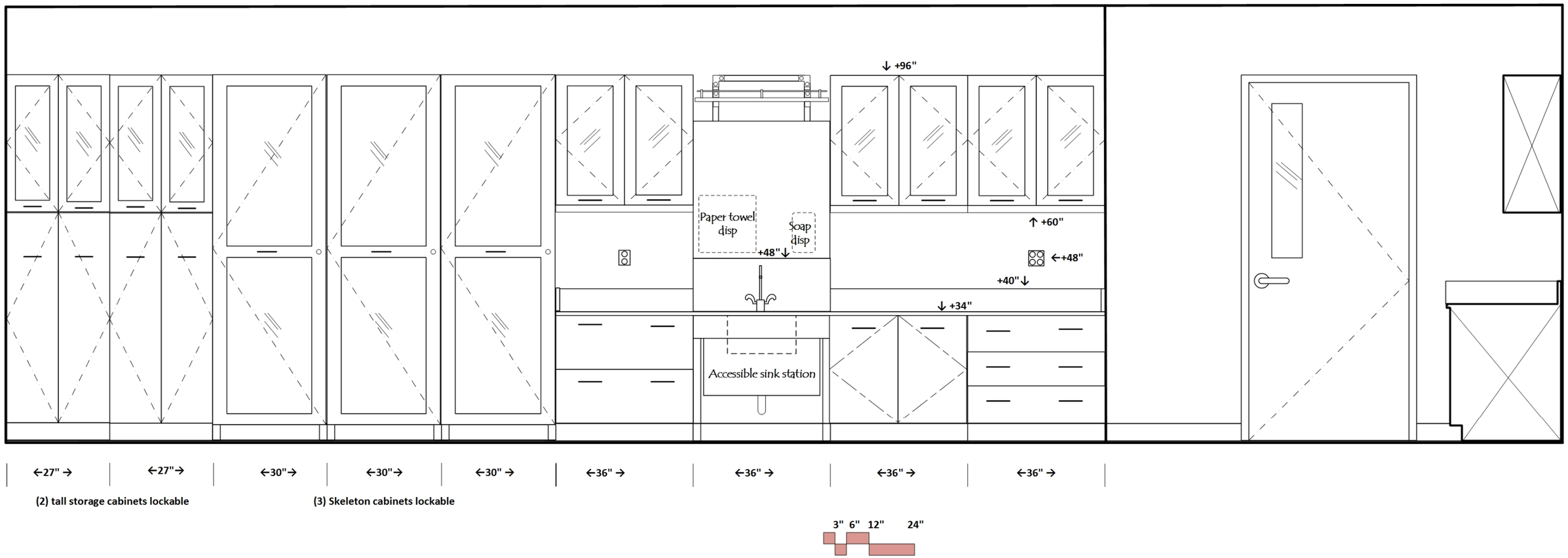
Benchtop analytical instruments
Scientific equipment
paper towel dispenser

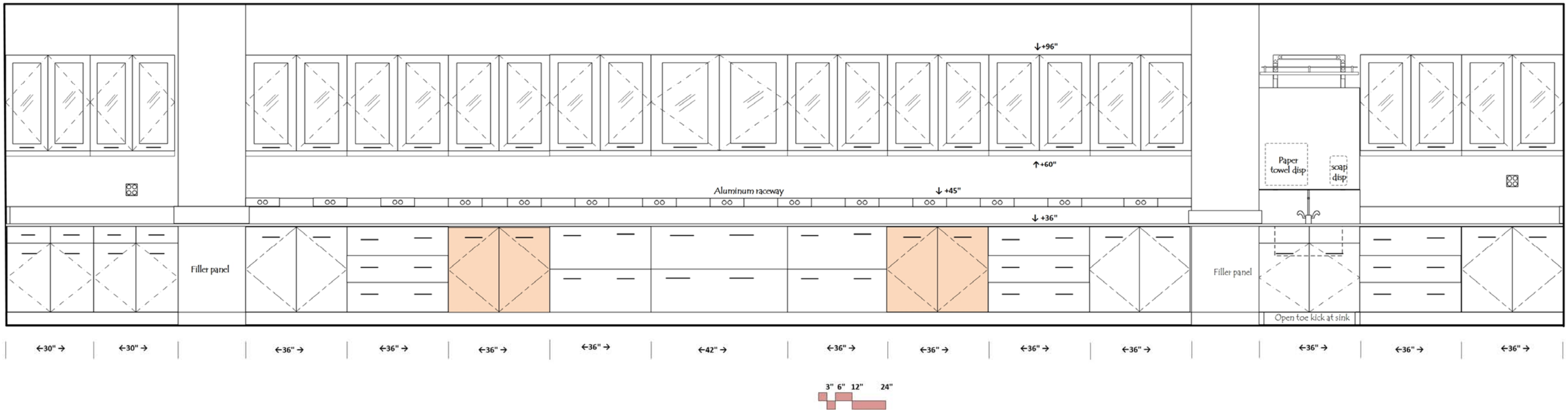
Lab Anatomy 2

Elevation A- North Wall



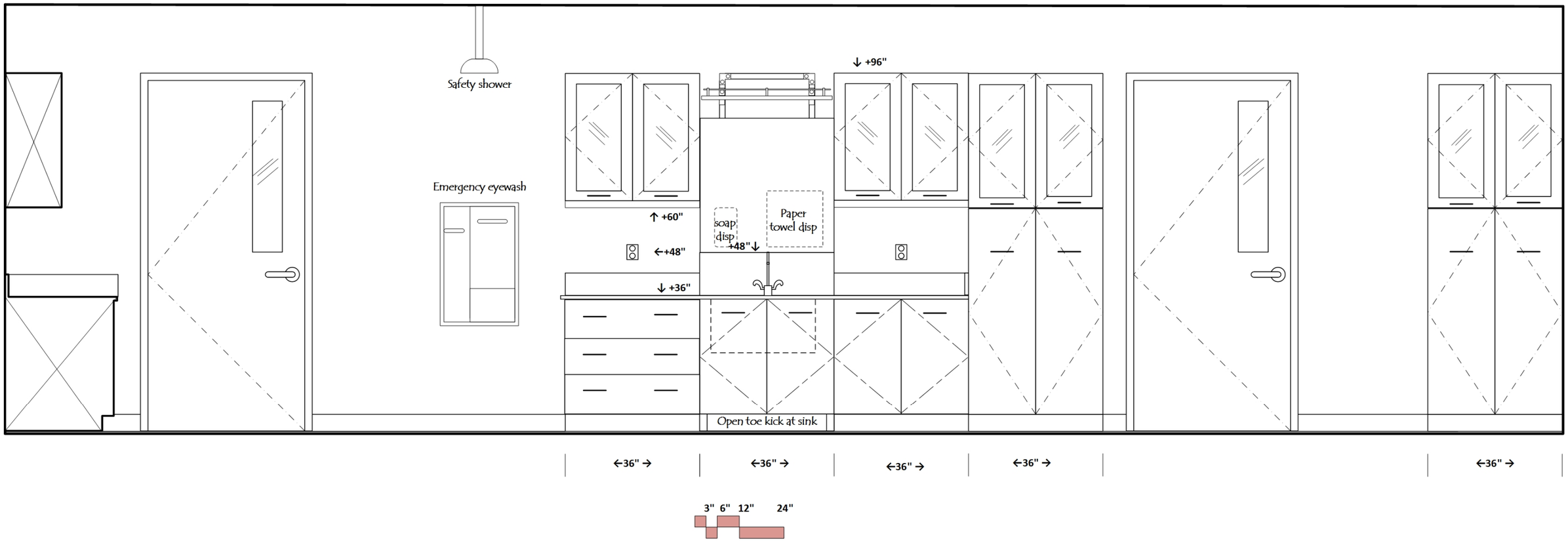
Lab Anatomy 2

Elevation B- East Wall



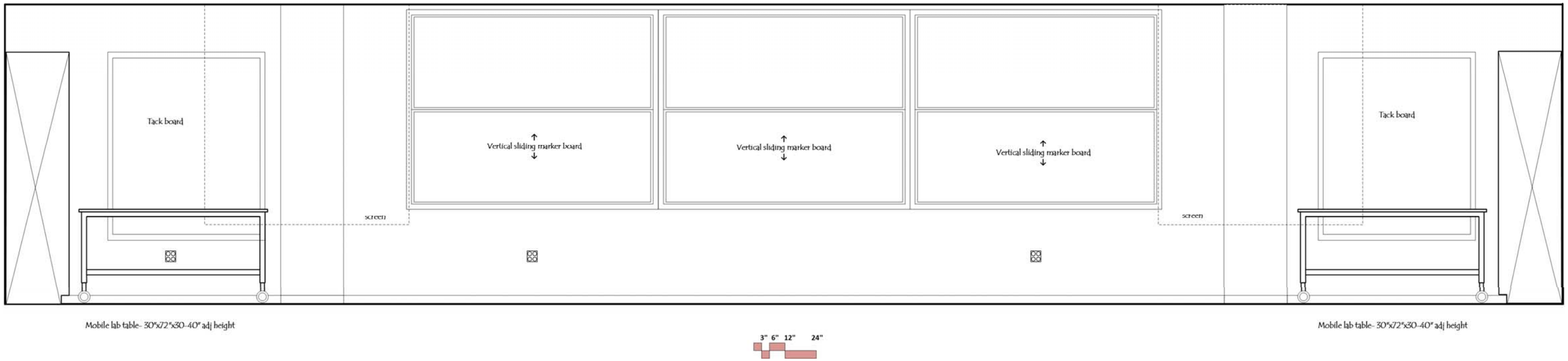
Lab Anatomy 2

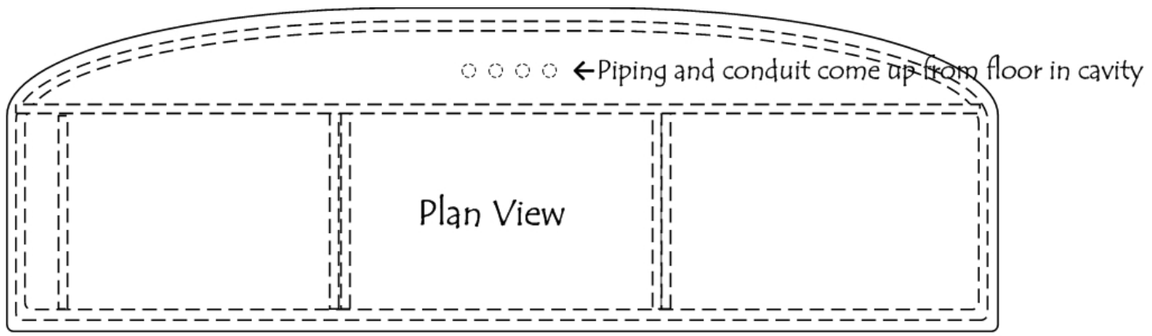
Elevation C- South Wall



Lab Anatomy 2

Elevation D- West Wall

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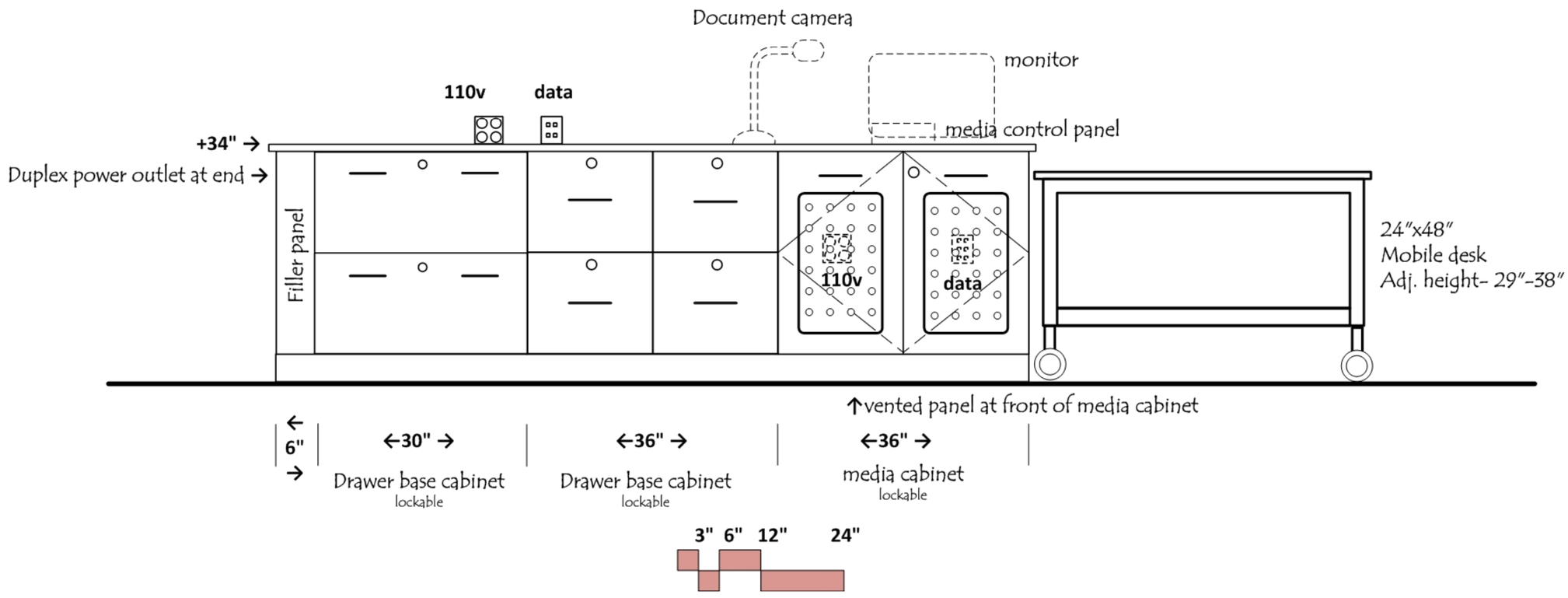
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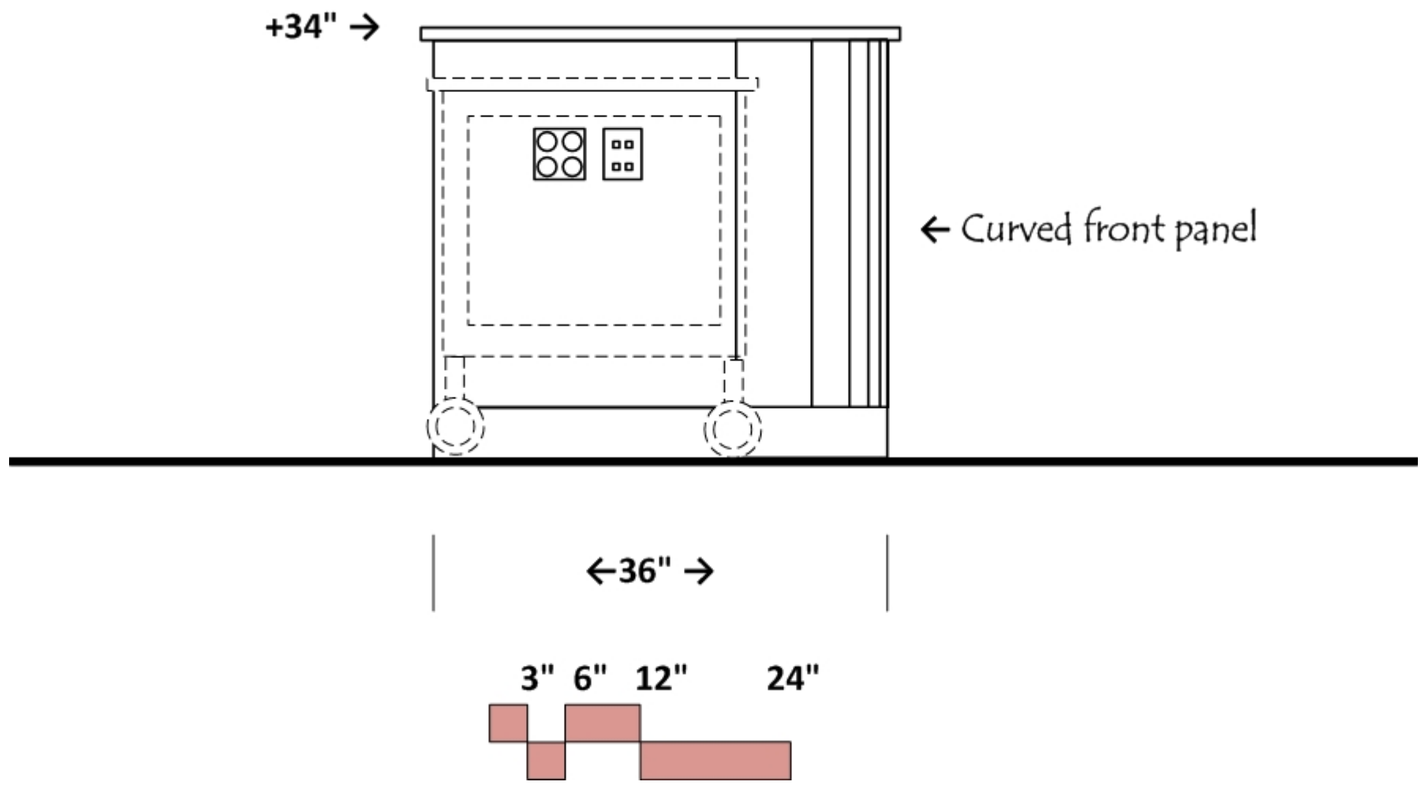
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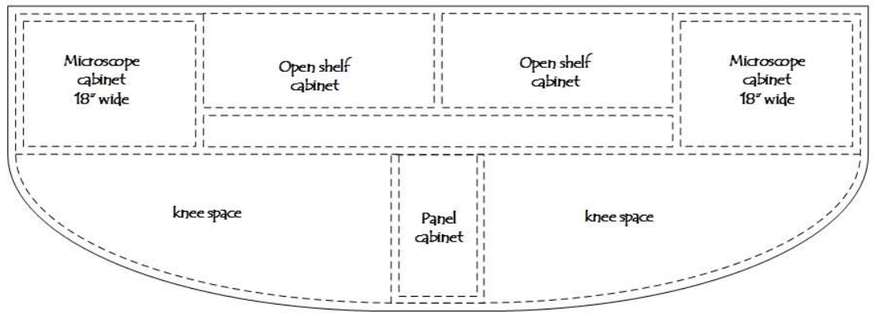
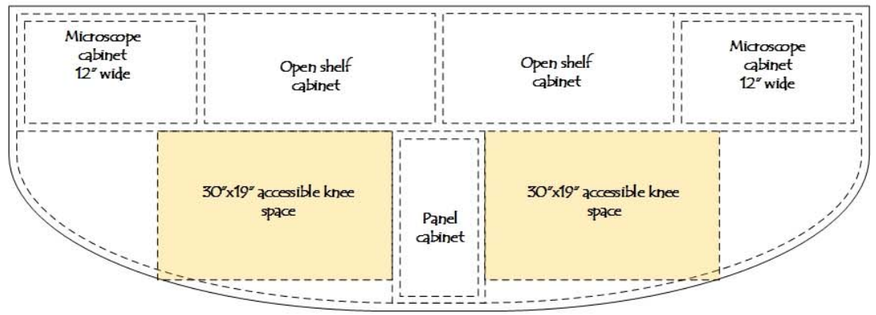
TOP VIEW



↑108" x 36" epoxy resin top

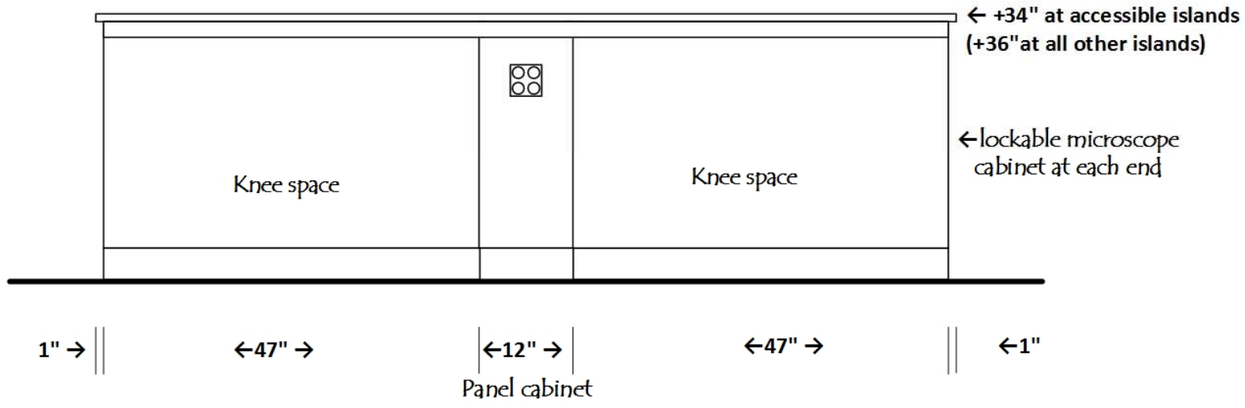
Stamdard island top- six per lab

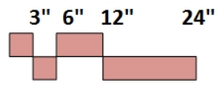


↑108" x 36" epoxy resin top

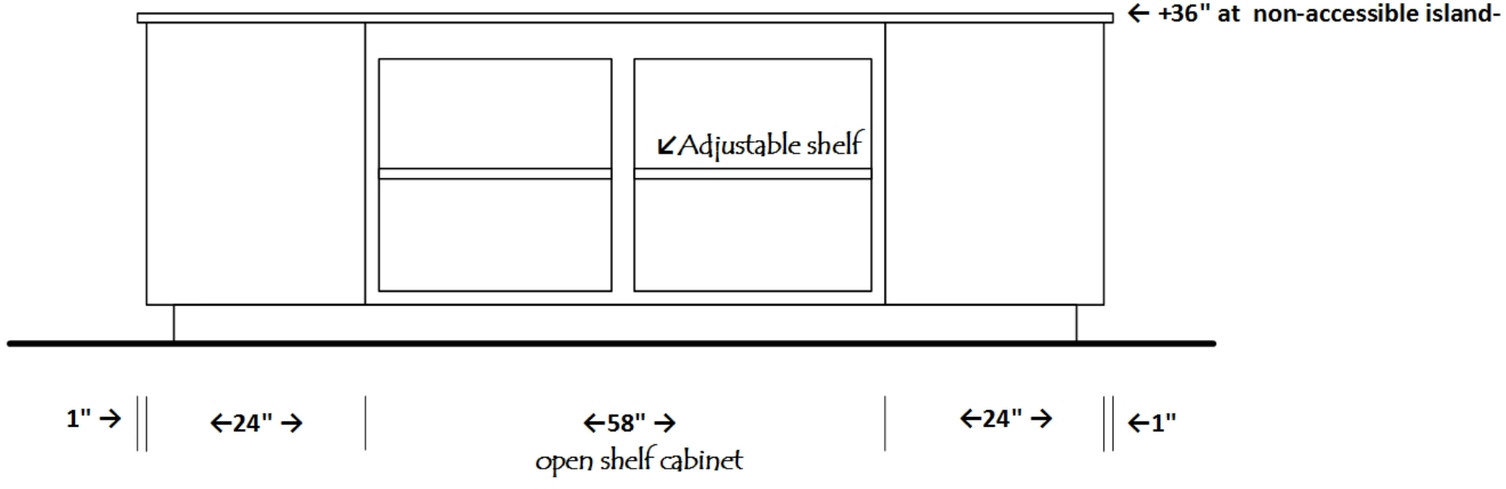
Accessible island top- two per lab

FRONT VIEW

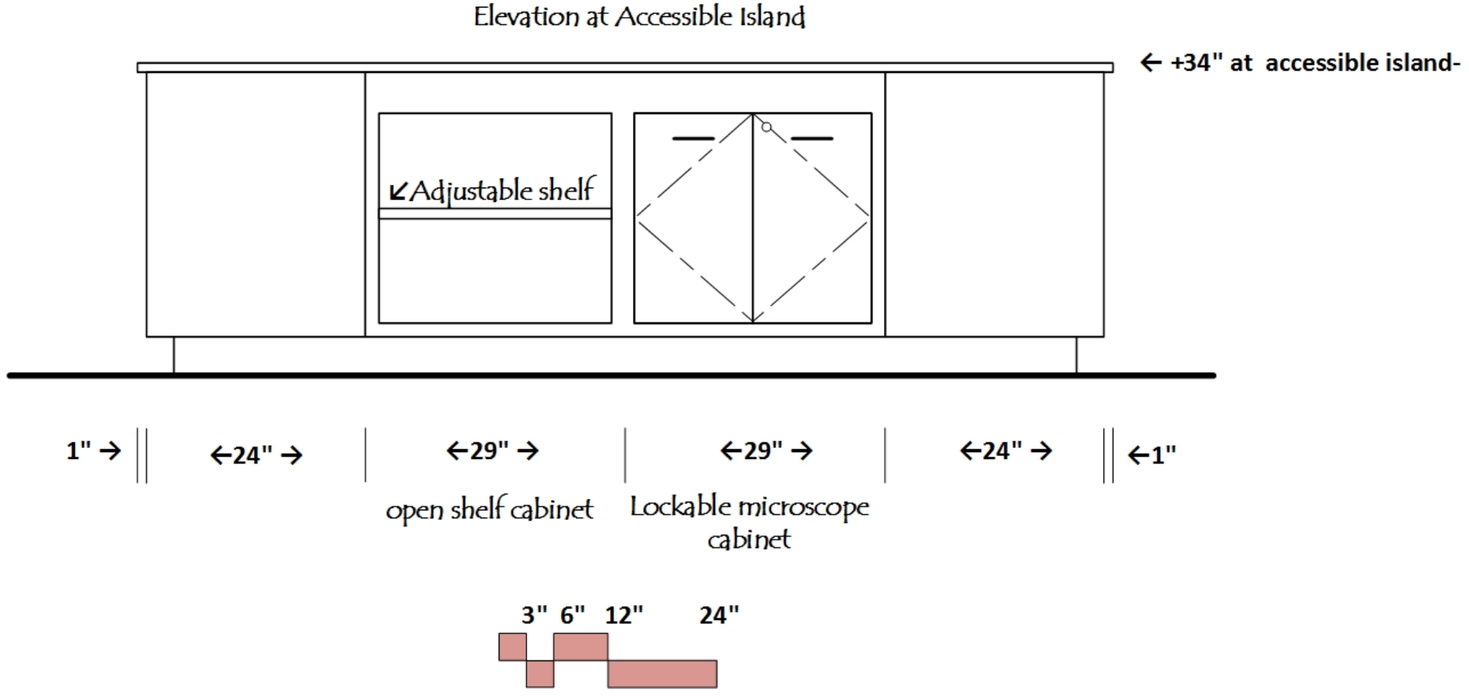


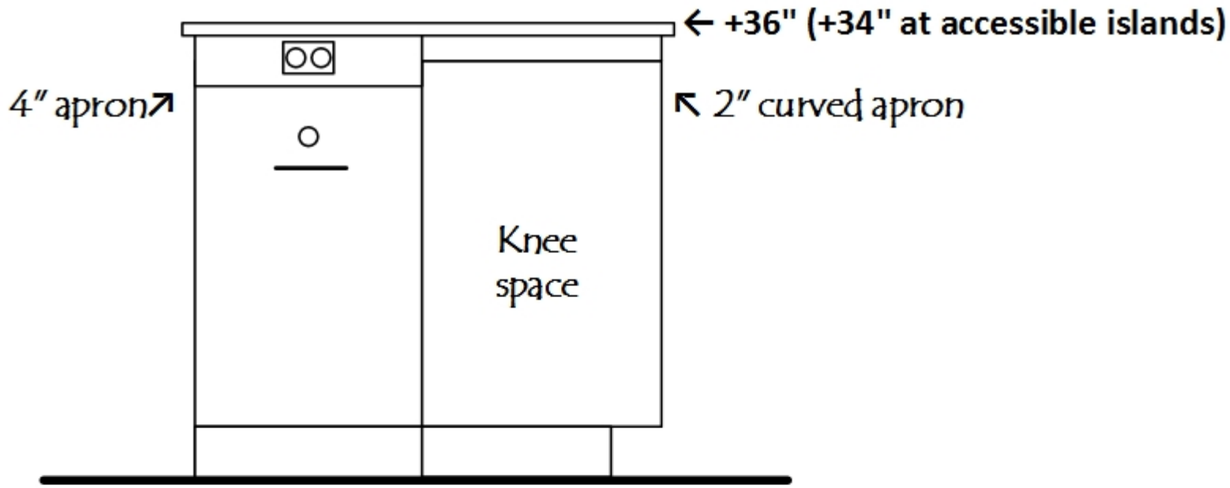


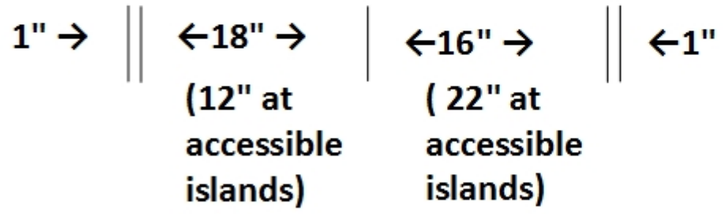
Elevation at Non- Accessible Island



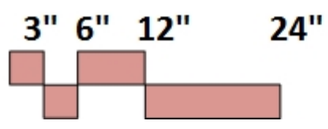
Elevation at Accessible Island





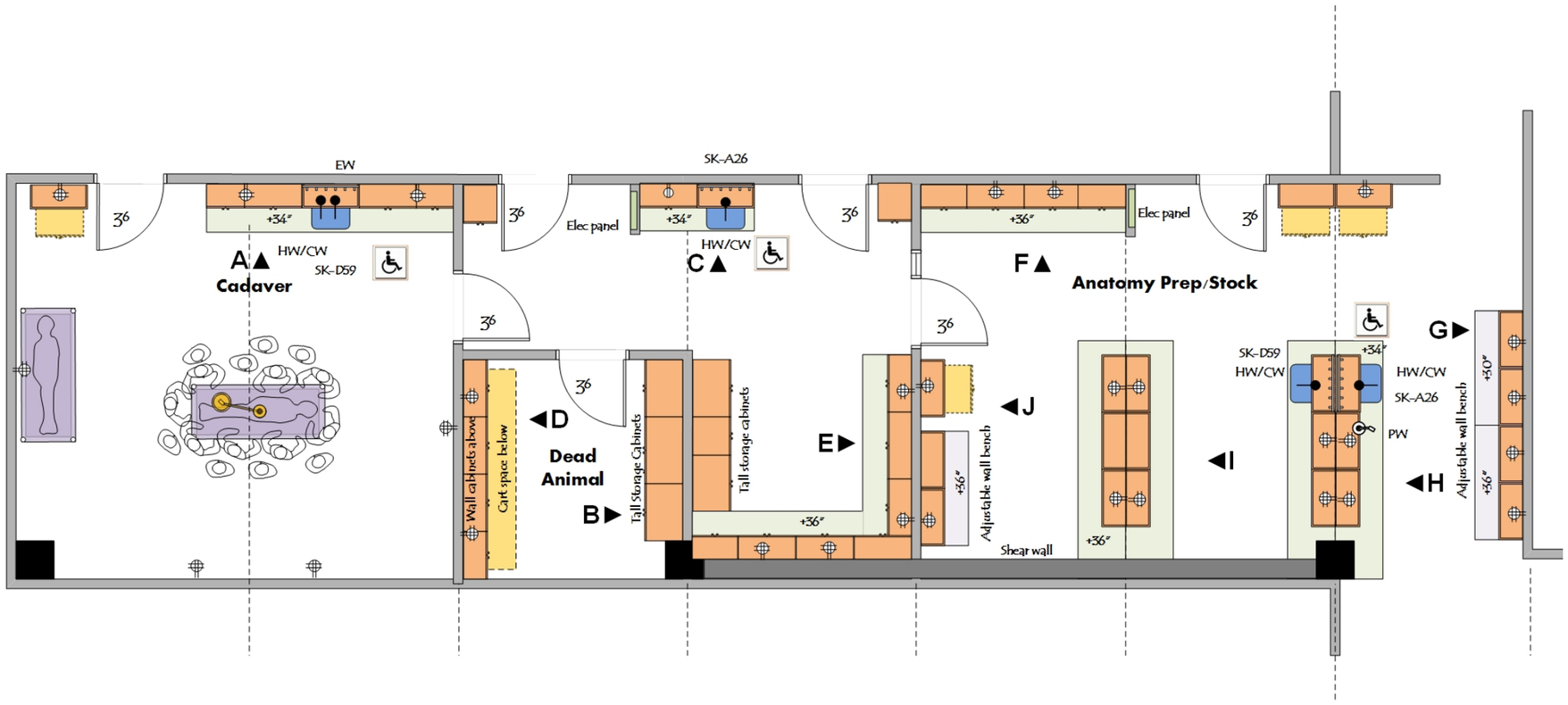


Microscope drawer base cabinet lockable



Lab Anatomy 2

Chevron Lab Bench
Miramar College Science Building



Prep- Anatomy

1st Floor East

ARCHITECTURAL
Occupancy: B
Floor: vinyl composition tile
Walls: gypsum board and enamel paint
Ceiling: 9'-0"' acoustic tile
Doors: 3^{6}x$8^{0}$with window; dutch doors between labs and prep
Daylight: Clerestory window and/or view windows
Light attenuation: blinds at windows
Acoustic Attenuation: NC 40 or less
Security: key or card key access

STRUCTURAL
Vibration attenuation: 4,000 micro inches/sec or less

MECHANICAL
Hours of operation: 6 am to 11 pm
Temperature: : 66-74 deg. F, +/- 2 deg. F
100% exhaust- no recirculation of air
(6) air changes per hour occupied
(4) air changes per hour unoccupied
(12) air changes per hour Cadaver Room 24/7 with high and low exhaust
Pressure: Negative
Humidity: Ambient

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
208v outlets at equipment space in prep area
Data & Wireless data
Lighting: indirect fluorescent @ 60 f.c. with multi-level switching
task lights below wall cabinets

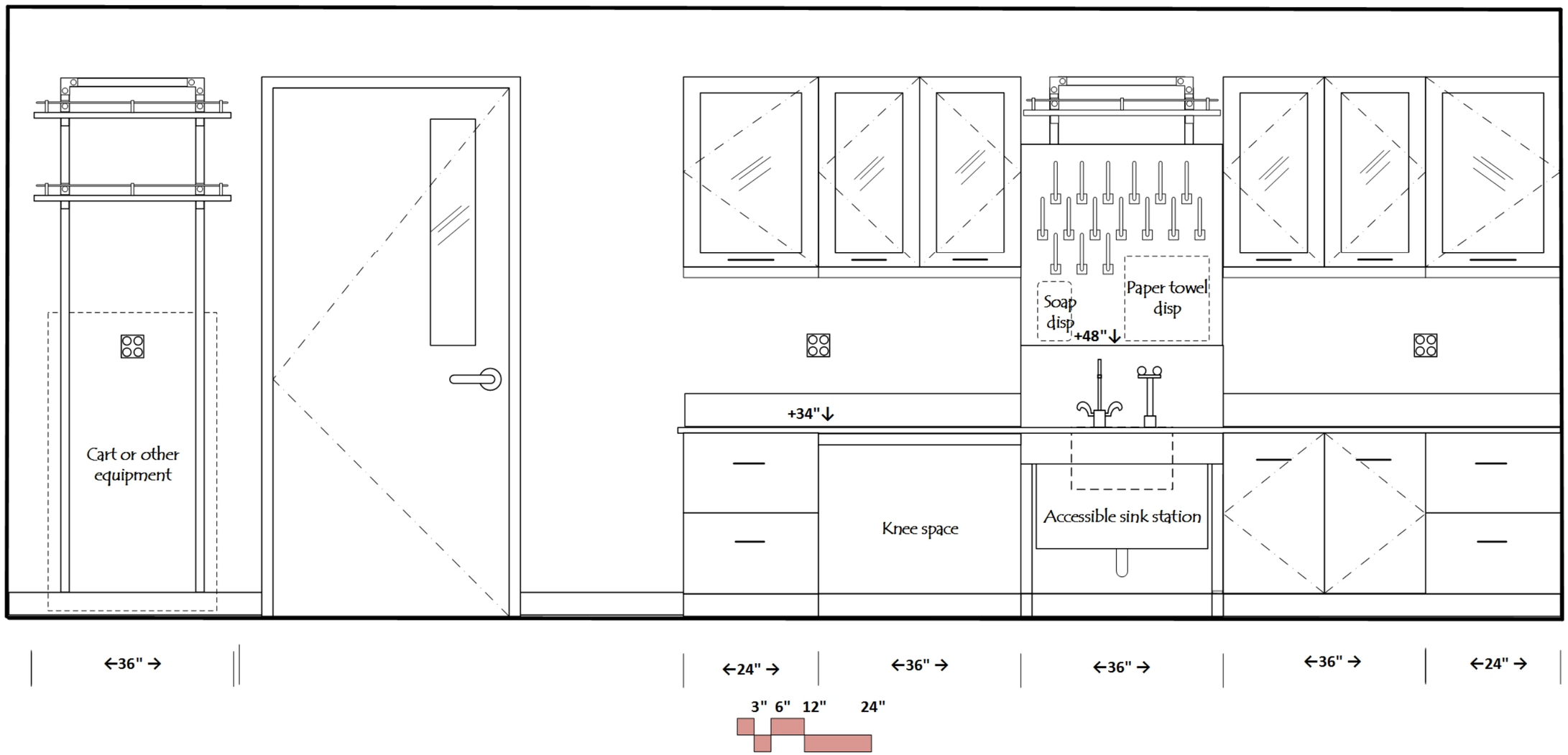
PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers
Pure water (PW) station at one sink
disposals at sinks
Eyewash at Cadaver Room sink

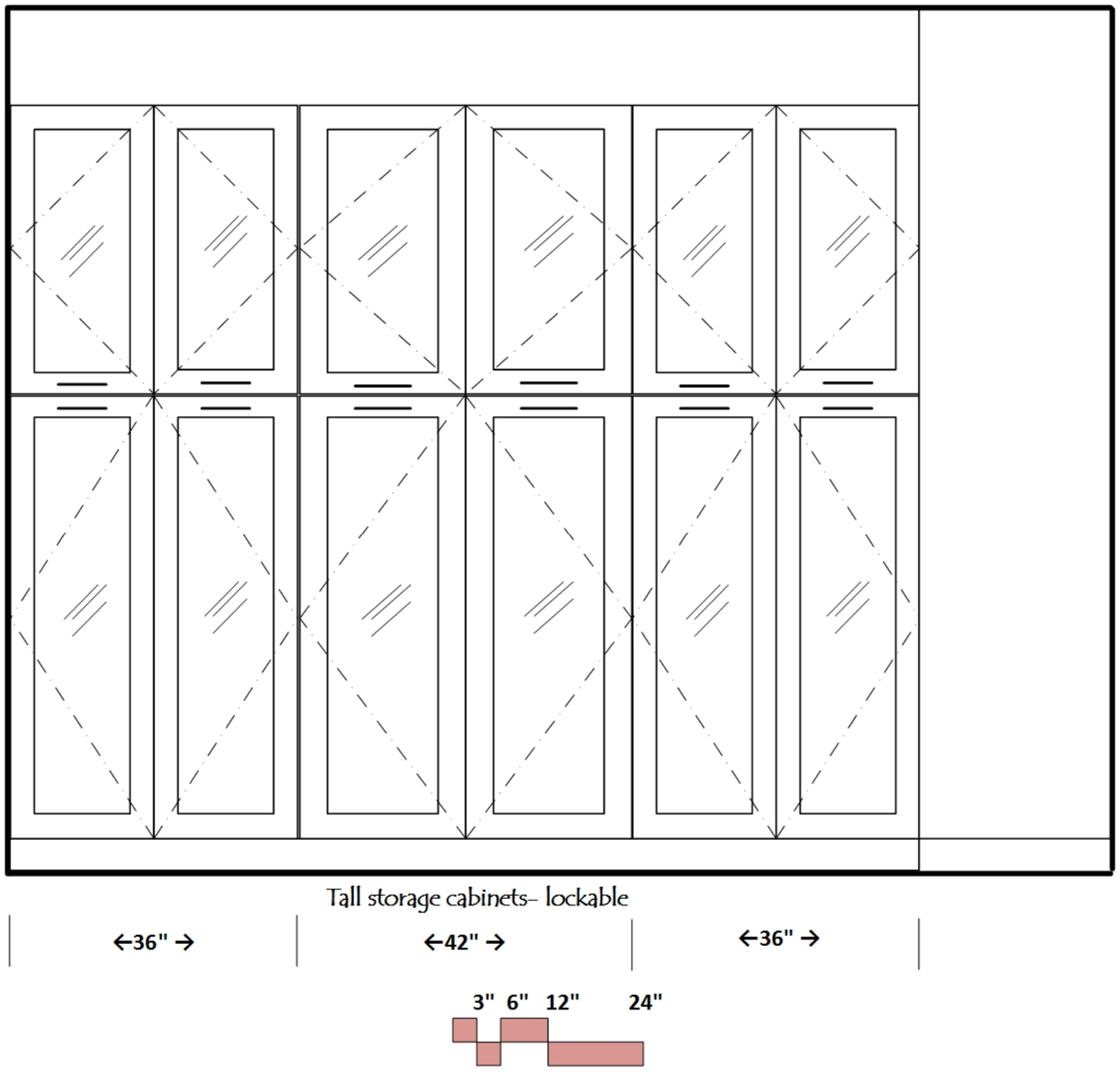
CONTRACTOR FURNISHED EQUIPMENT
Wood casework- base cabinets, wall cabinets, tall cabinets
Tables
Resin tops and sinks
Faucets & fittings

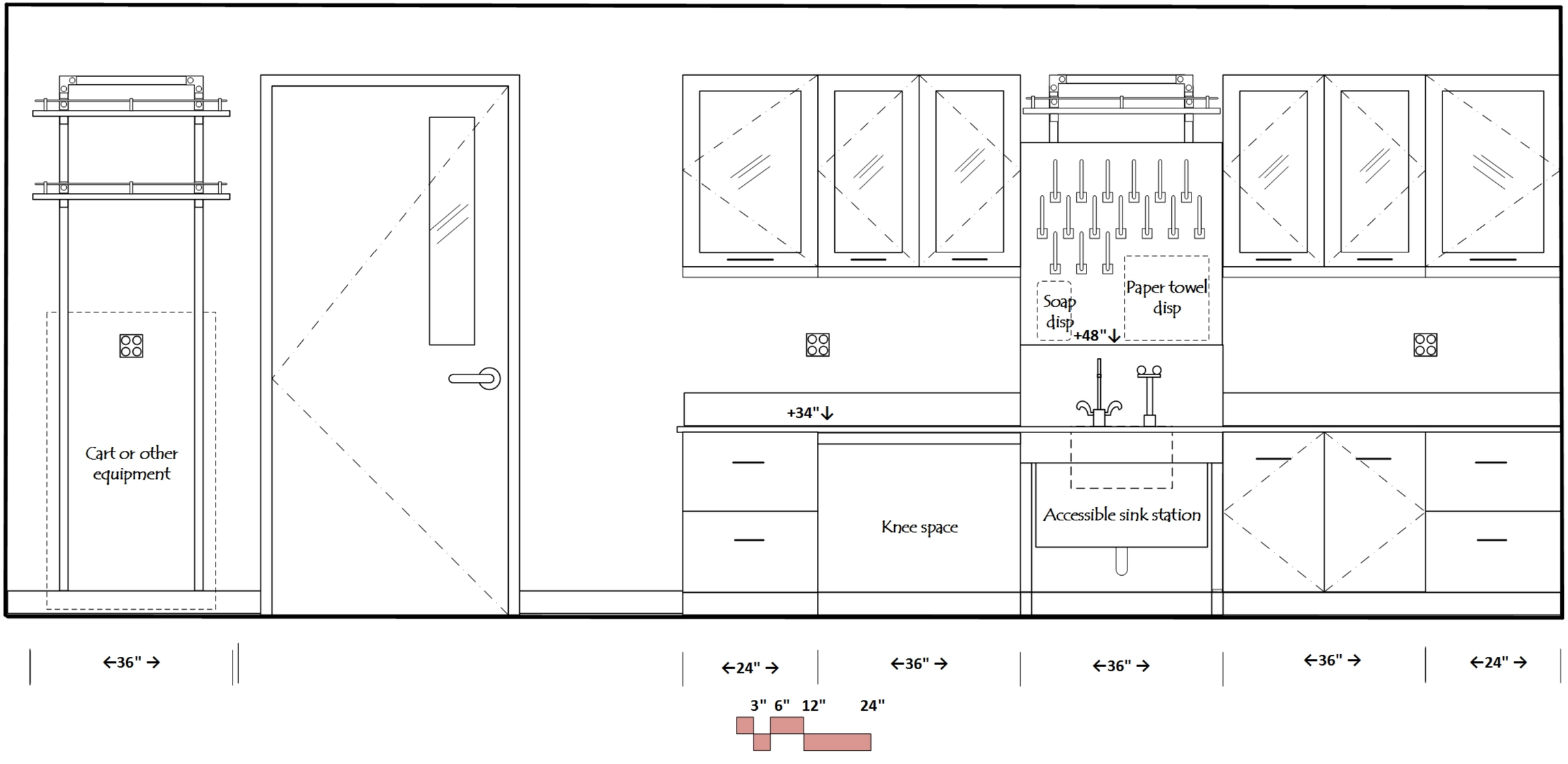
COLLEGE FURNISHED EQUIPMENT
Chairs
Benchtop analytical instruments
Scientific equipment
paper towel dispensers
Cadaver gurneys

Prep- Anatomy

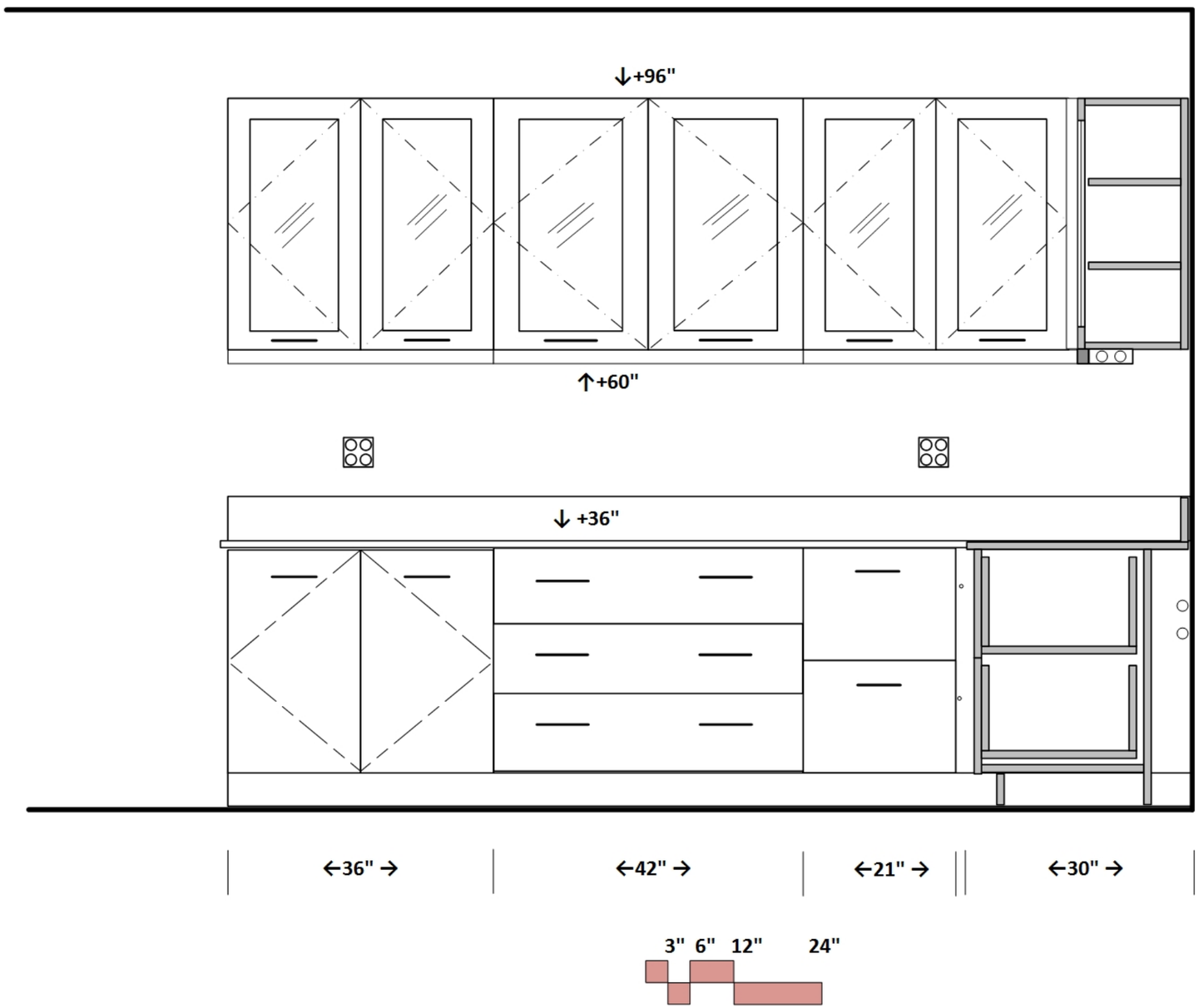
Elevation A




Tall storage cabinets- lockable
←36" →
←42" →
←36" →
3"
6"
12"
24"

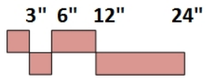

Cart or other equipment
Soap disp
+48"↓
Paper towel disp
+34"↓
Knee space
Accessible sink station
←36" →
←24" →
←36" →
←36" →
←36" →
←24" →
3" 6" 12" 24"

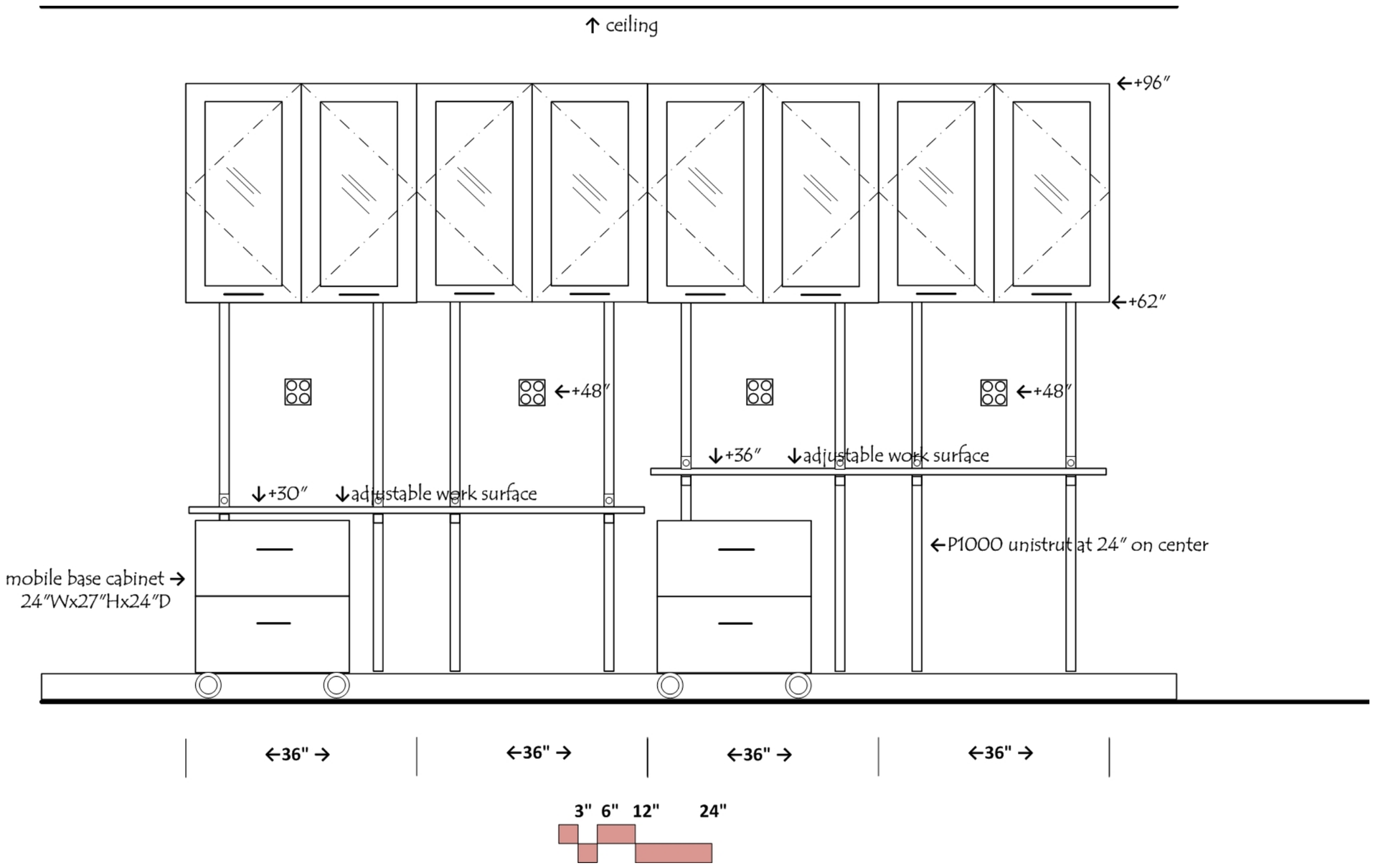

Wall cabinets above
Carts below
←30" →
←36" →
←36" →
←36" →
3" 6" 12" 24"

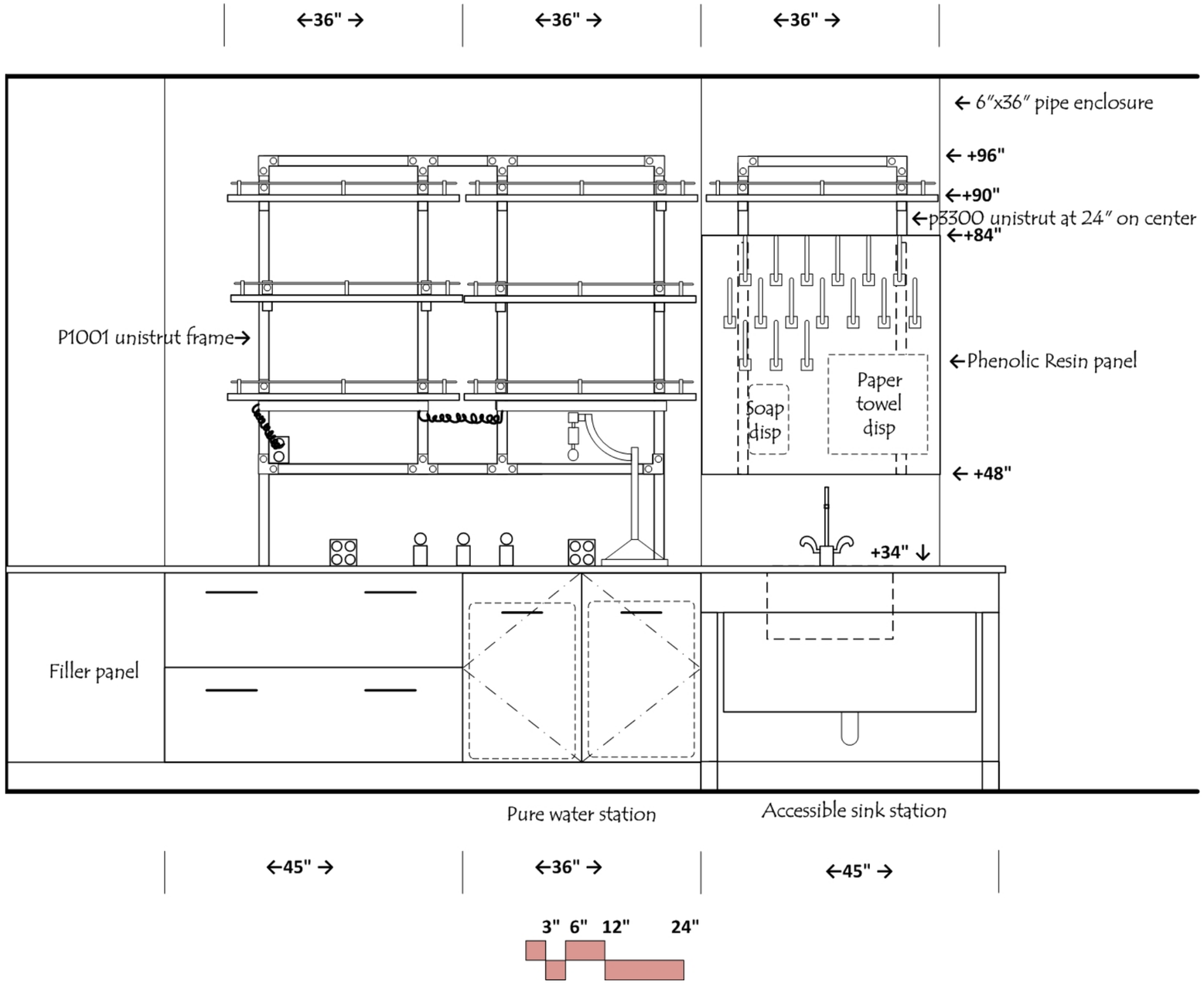

↓+96"
↑+60"
↓ +36"
←36" →
←42" →
←21" →
←30" →
3" 6" 12" 24"

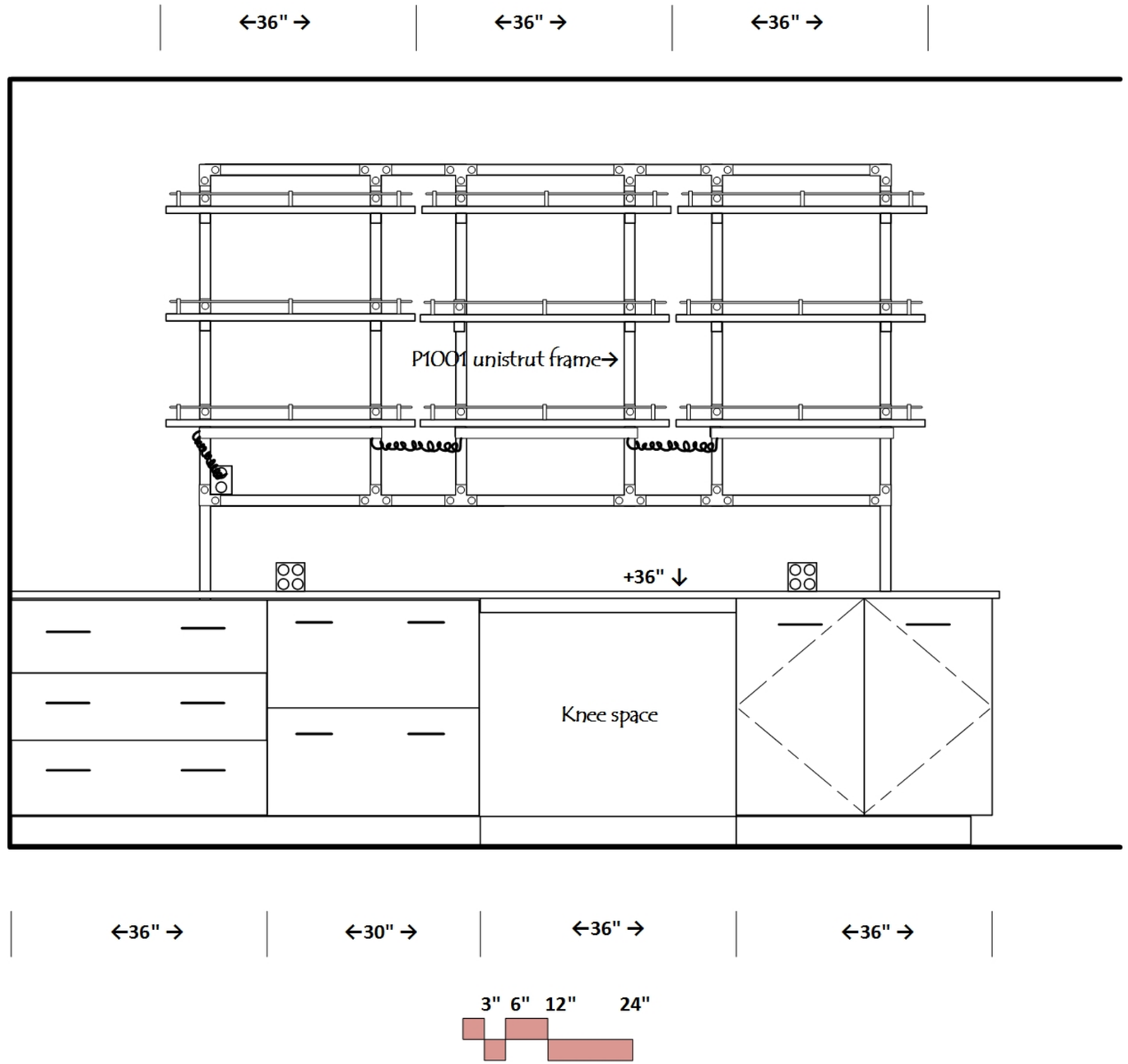
Prep- Anatomy

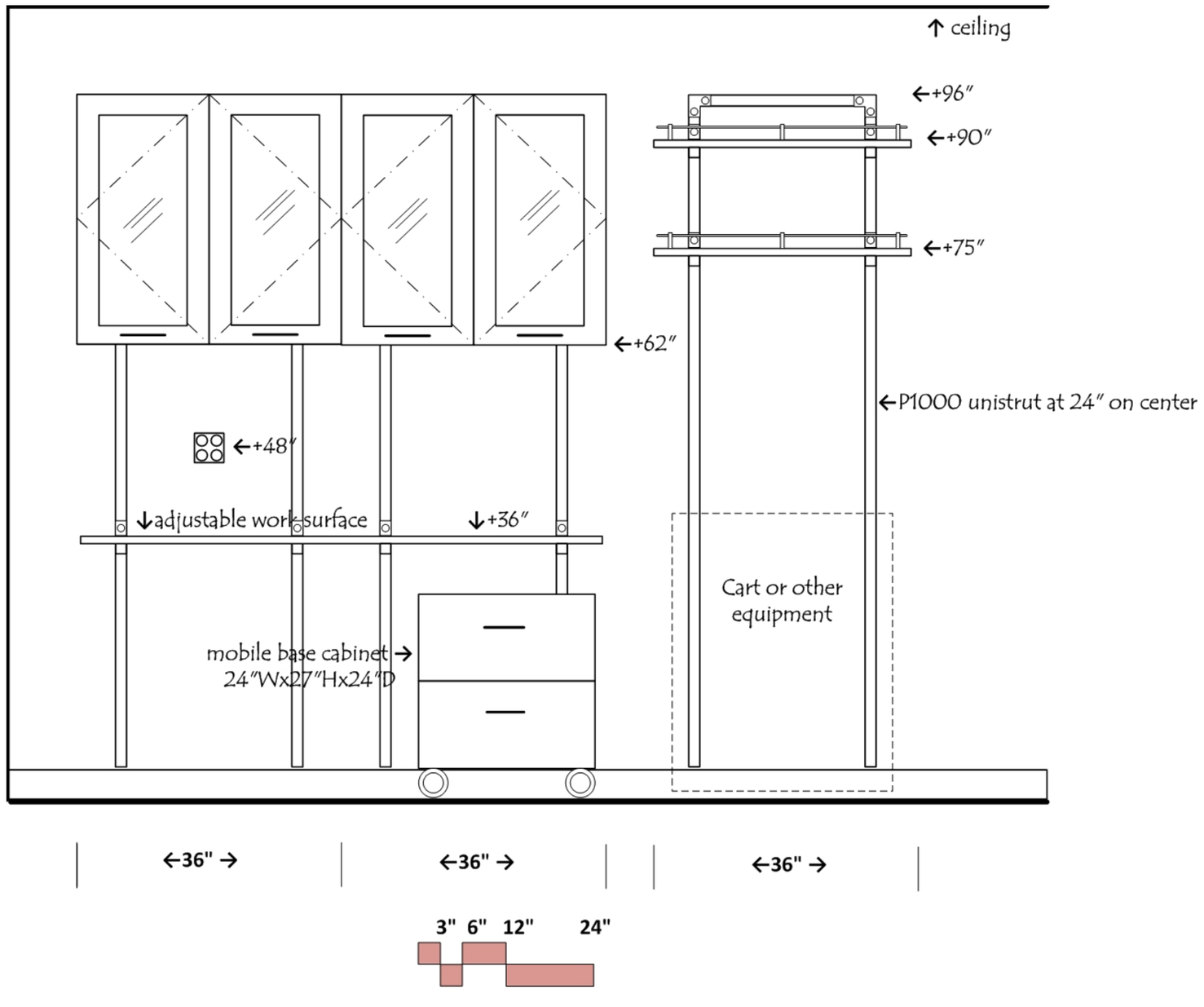
Elevation F

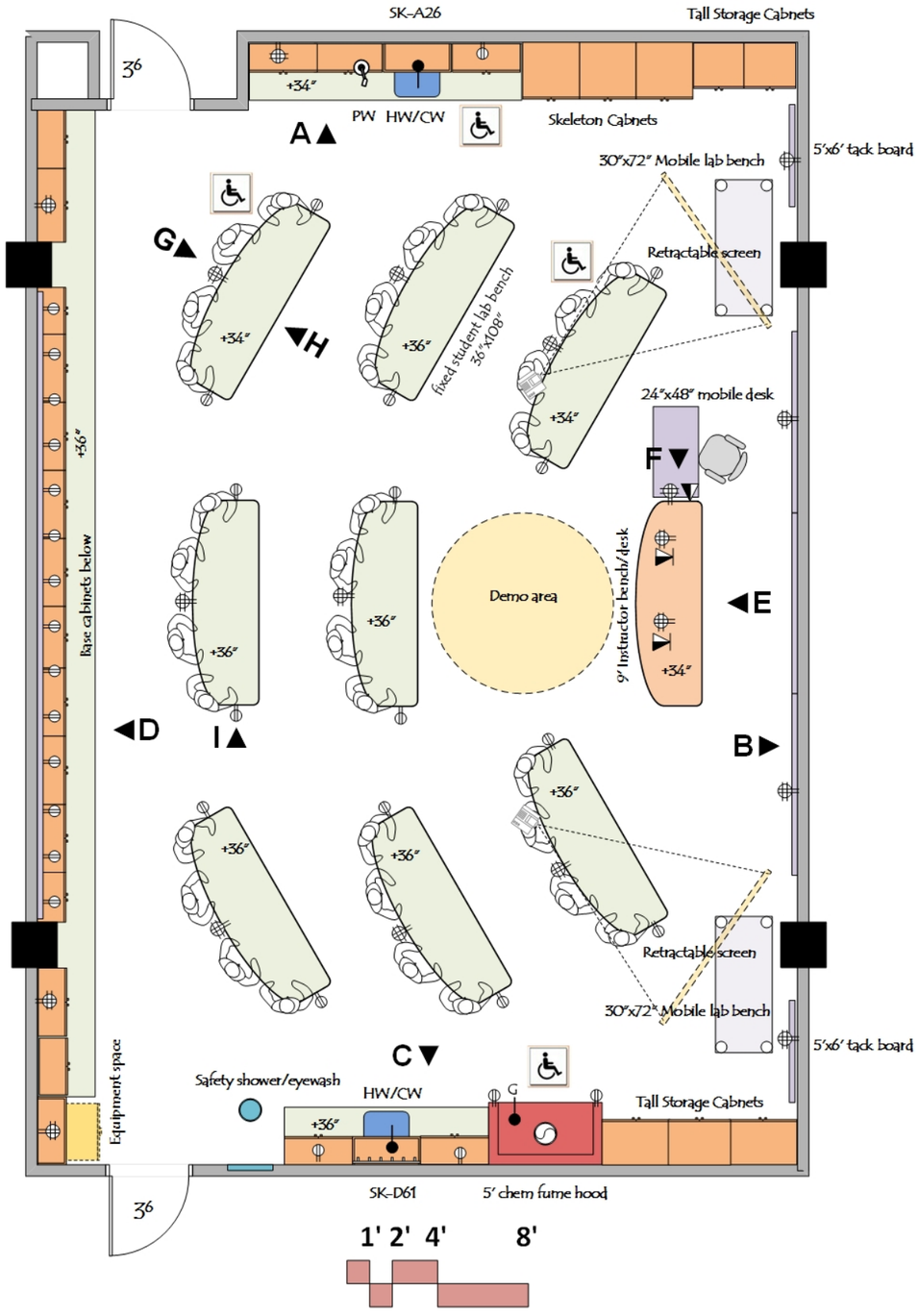



↑ ceiling
←+96″
←+62″
←+48″
←+48″
↓+36″ ↓adjustable work surface
↓+30″ ↓adjustable work surface
←P1000 unistrut at 24″ on center
mobile base cabinet →
24″Wx27″Hx24″D
←36" →
←36" →
←36" →
←36" →
3" 6" 12" 24"


←36" →
←36" →
←36" →
← 6"x36" pipe enclosure
← +96"
←+90"
←p3300 unistrut at 24" on center
←+84"
P1001 unistrut frame→
←Phenolic Resin panel
Soap disp
Paper towel disp
← +48"
+34" ↓
Filler panel
Pure water station
Accessible sink station
←45" →
←36" →
←45" →
3" 6" 12" 24"


←36" →
←36" →
←36" →
P1001 unistrut frame→
+36" ↓
Knee space
←36" →
←30" →
←36" →
←36" →
3" 6" 12" 24"


↑ ceiling
←+96″
←+90″
←+75″
←+62″
←P1000 unistrut at 24″ on center
←+48″
↓adjustable work surface
↓+36″
Cart or other equipment
mobile base cabinet →
24″Wx27″Hx24″D
←36" →
←36" →
←36" →
3" 6" 12" 24"



Anatomy/Physiology Lab

ARCHITECTURAL
Occupancy: B
Floor: vinyl composition tile
Walls: gypsum board and enamel paint
Ceiling: 9'-6"' acoustic tile
Doors: $3^{6}x8^{0}$with window; dutch doors between labs and prep
Daylight: Clerestory window and/or view windows
Light attenuation: blinds at windows
Acoustic Attenuation: NC 40 or less
Security: key or card key access

STRUCTURAL
Vibration attenuation: 4,000 micro inches/sec or less

MECHANICAL
Hours of operation: 6 am to 11 pm
Temperature: : 66-74 deg. F, +/- 2 deg. F
100% exhaust- no recirculation of air
Exhaust on emergency power supply
(6) air changes per hour occupied
(4) air changes per hour unoccupied
Pressure: Negative
Humidity: Ambient

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
Data & Wireless data
Lighting: indirect fluorescent @ 60 f.c. with multi-level switching
task lights below wall cabinets
Provide light switches at instructor's bench and at each door
Separate lighting for marker board wall

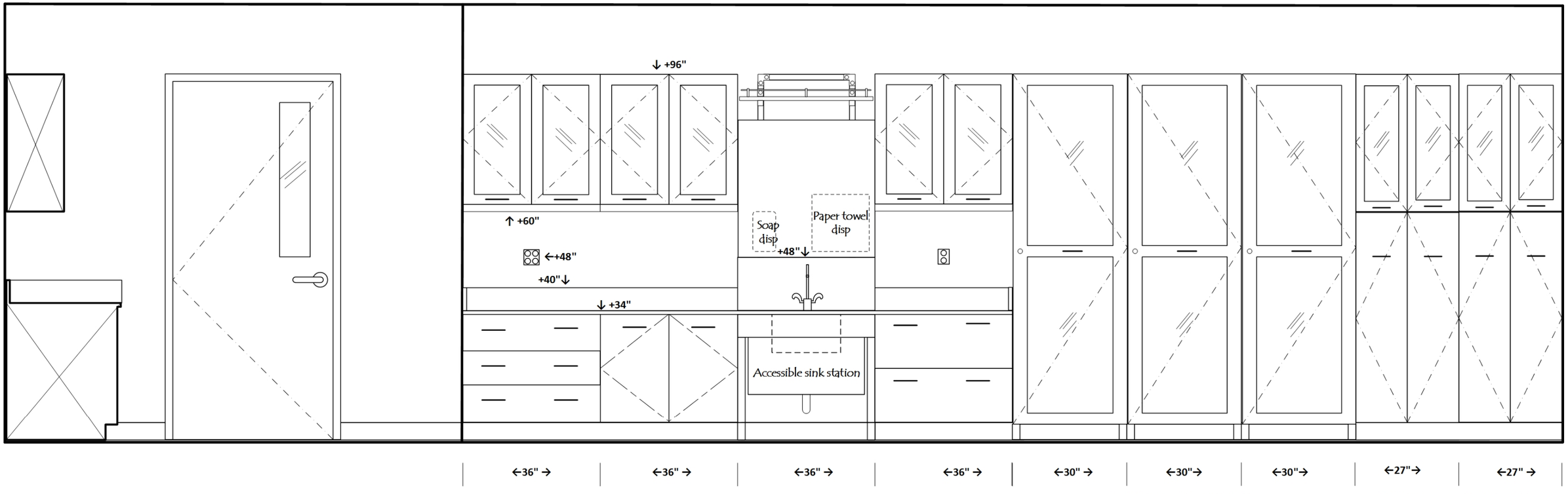
PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers
Pure water (PW) station at one sink
Gas at each island bench

CONTRACTOR FURNISHED EQUIPMENT
Wood casework- base cabinets, wall cabinets, tall cabinets
Tables
Resin tops and sinks
Faucets & fittings
marker boards
tack boards- 5' W x 6' H
Projection screens
Projection system
5' chemical fume hood- VAV

COLLEGE FURNISHED EQUIPMENT
Chairs
Benchtop analytical instruments
Scientific equipment
paper towel dispenser

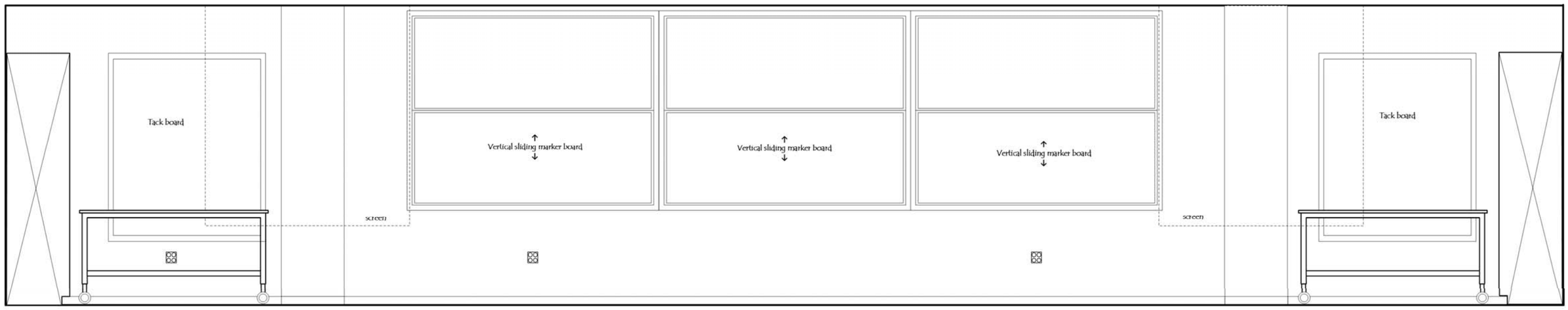
Anatomy/Physiology Lab

Elevation A- North Wall



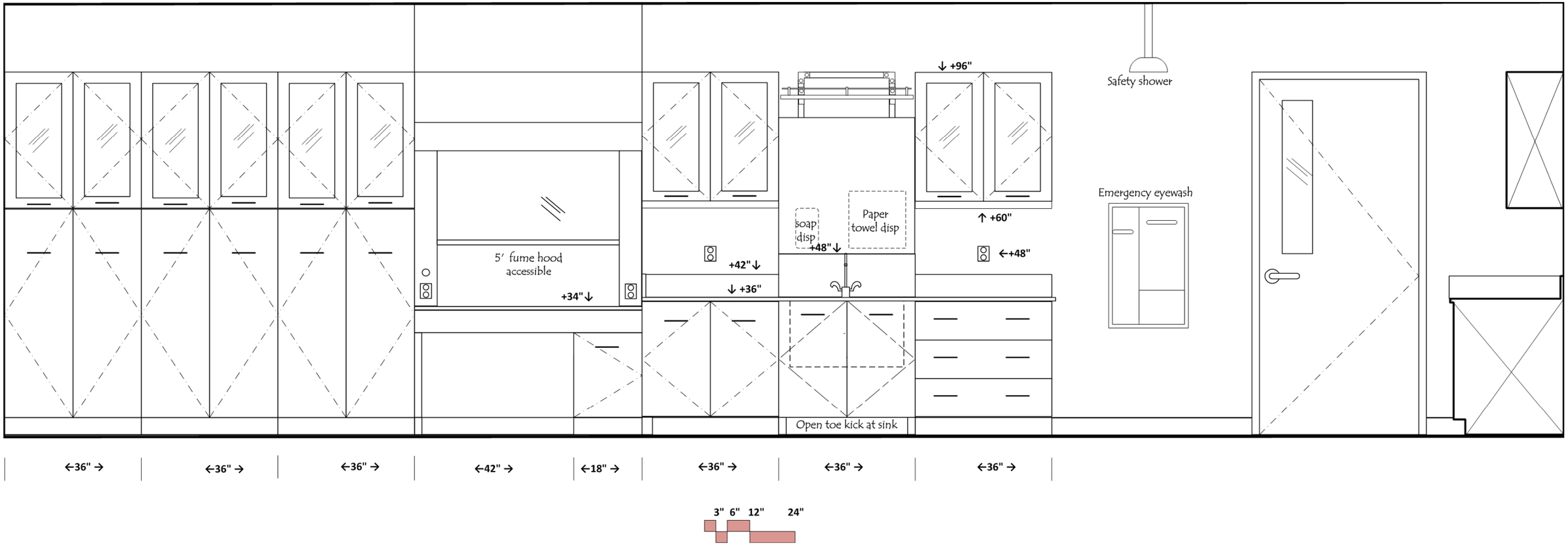
Anatomy/Physiology Lab

Elevation B- East Wall



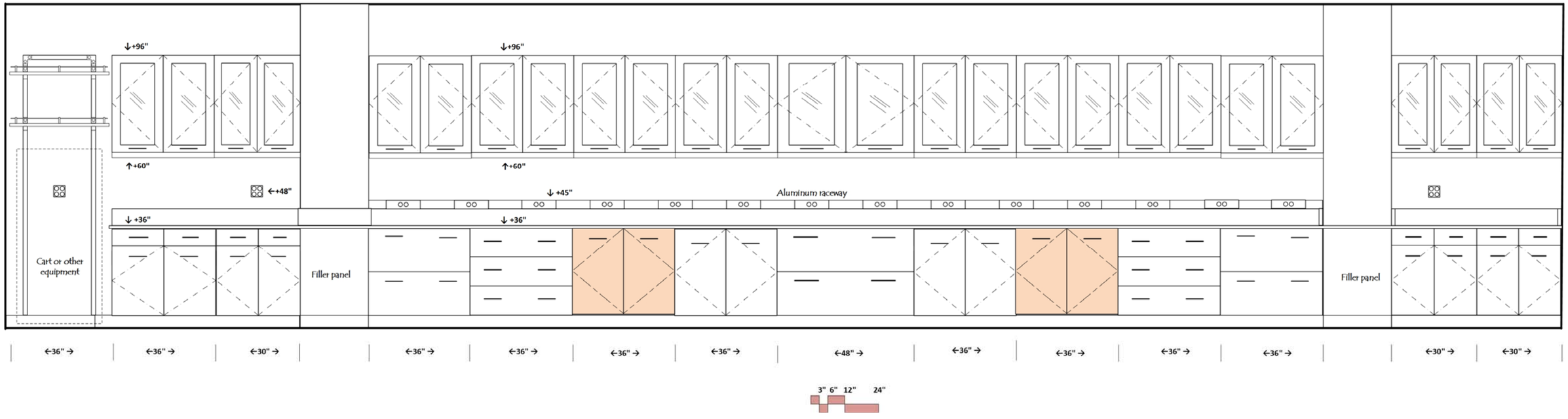
Anatomy/Physiology Lab

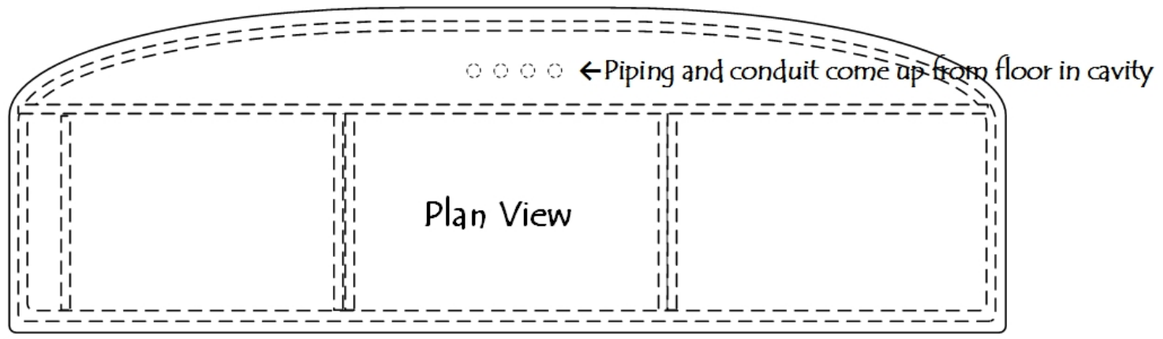
Elevation C- South Wall

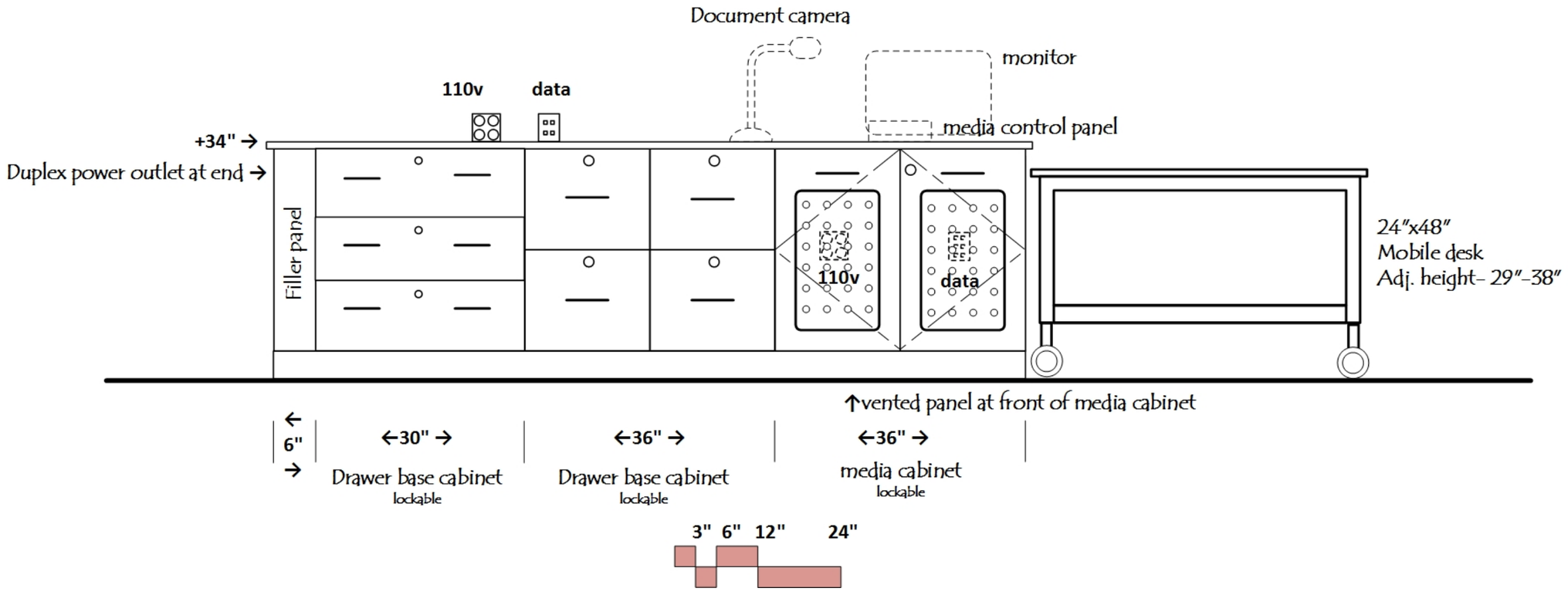


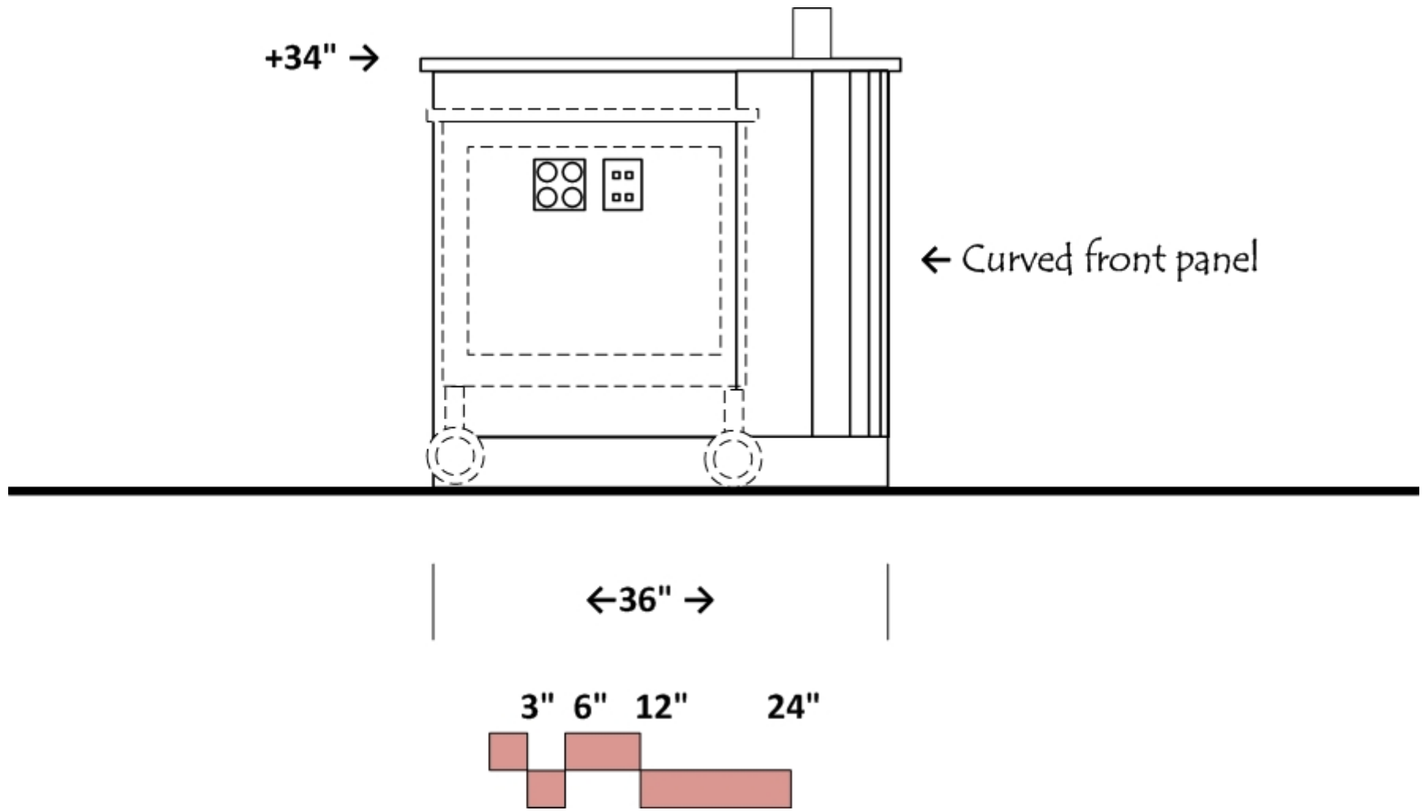
Anatomy/Physiology Lab

Elevation D- West Wall

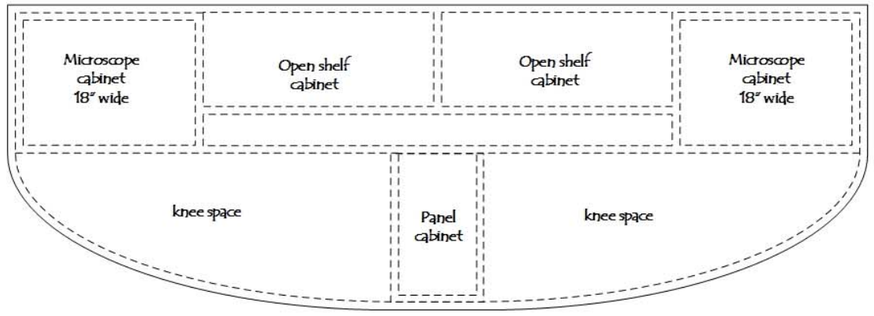



←Piping and conduit come up from floor in cavity
Plan View


Document camera
monitor
media control panel
110v
data
+34" →
Duplex power outlet at end →
Filler panel
110v
data
24"x48"
Mobile desk
Adj. height- 29"-38"
↑vented panel at front of media cabinet
← 6" →
←30" →
Drawer base cabinet
lockable
←36" →
Drawer base cabinet
lockable
←36" →
media cabinet
lockable
3" 6" 12" 24"

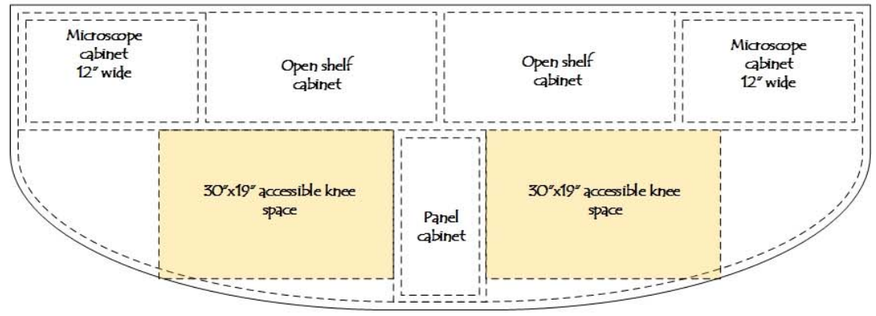

+34" →
← Curved front panel
←36" →
3" 6" 12" 24"

TOP VIEW



↑108" x 36" epoxy resin top

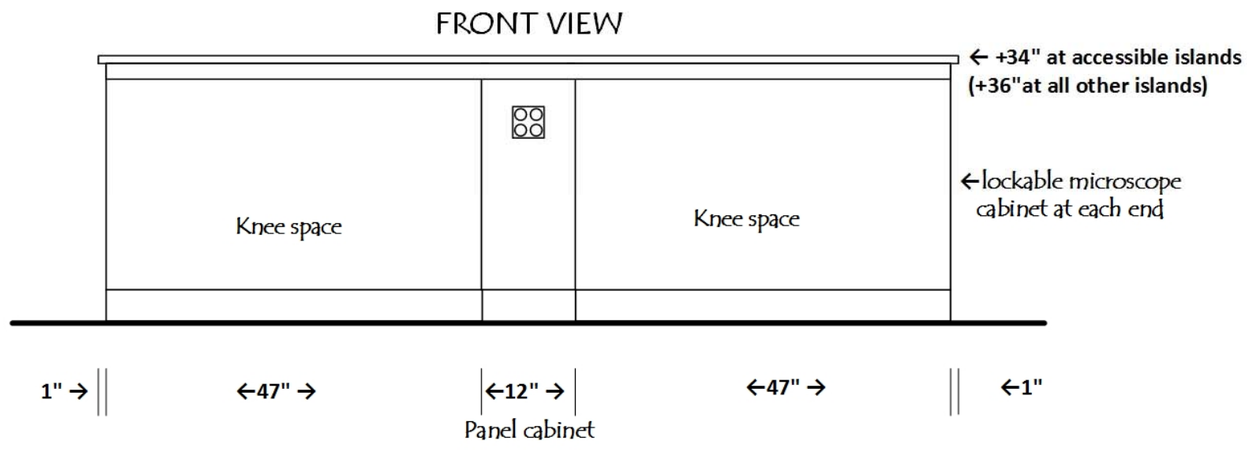
Stamdard island top- six per lab

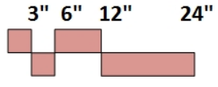


↑108" x 36" epoxy resin top

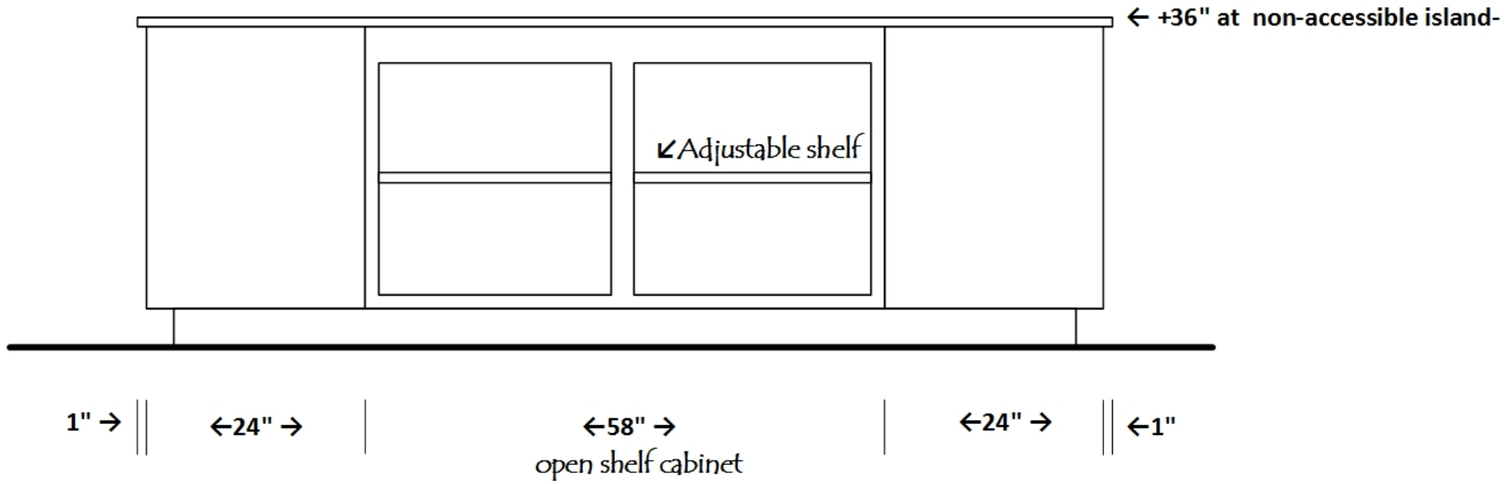
Accessible island top- two per lab

FRONT VIEW

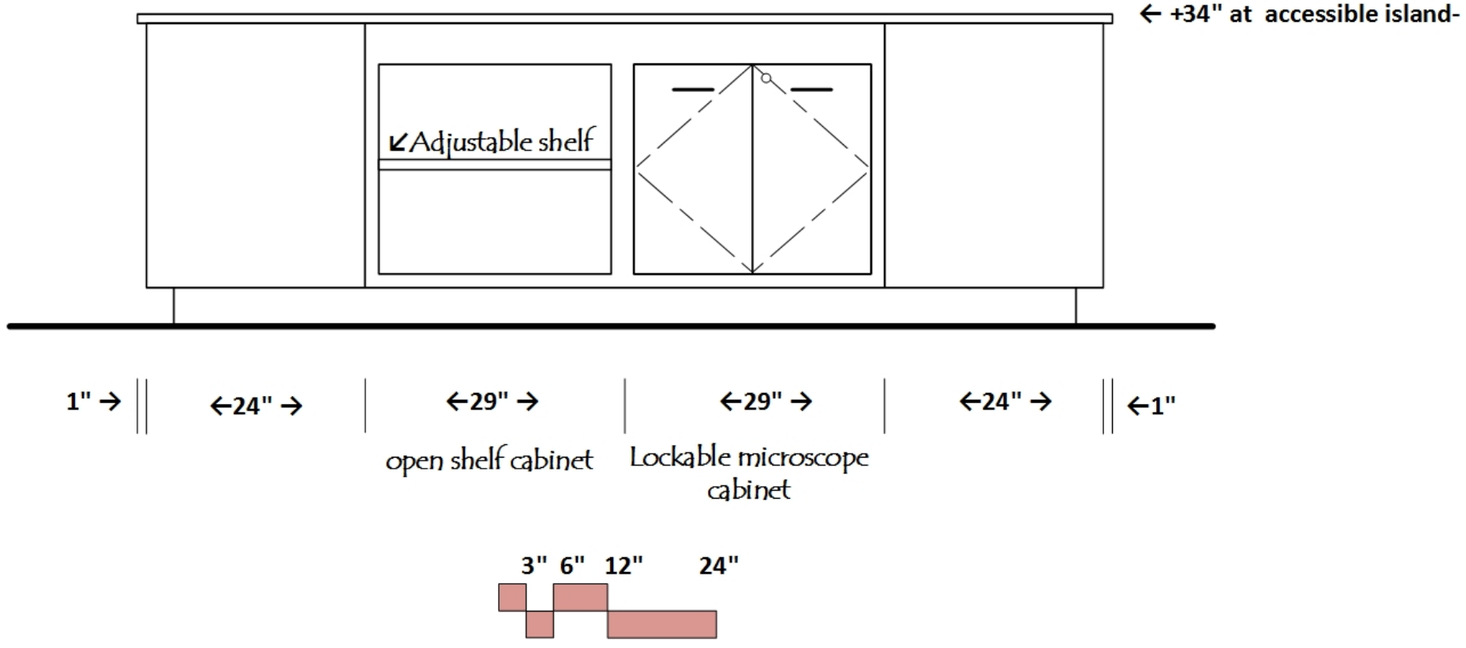


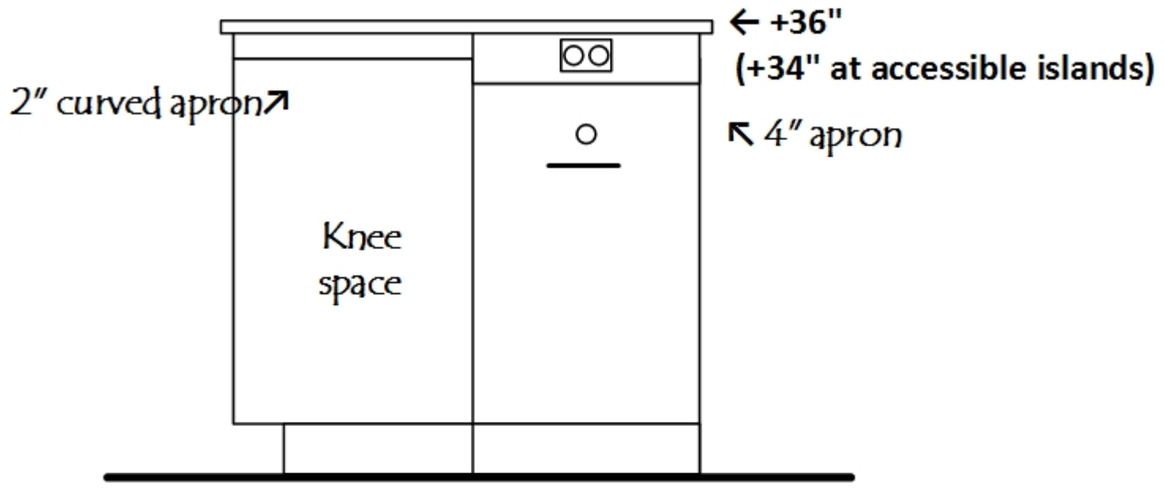


Elevation at Non- Accessible Island

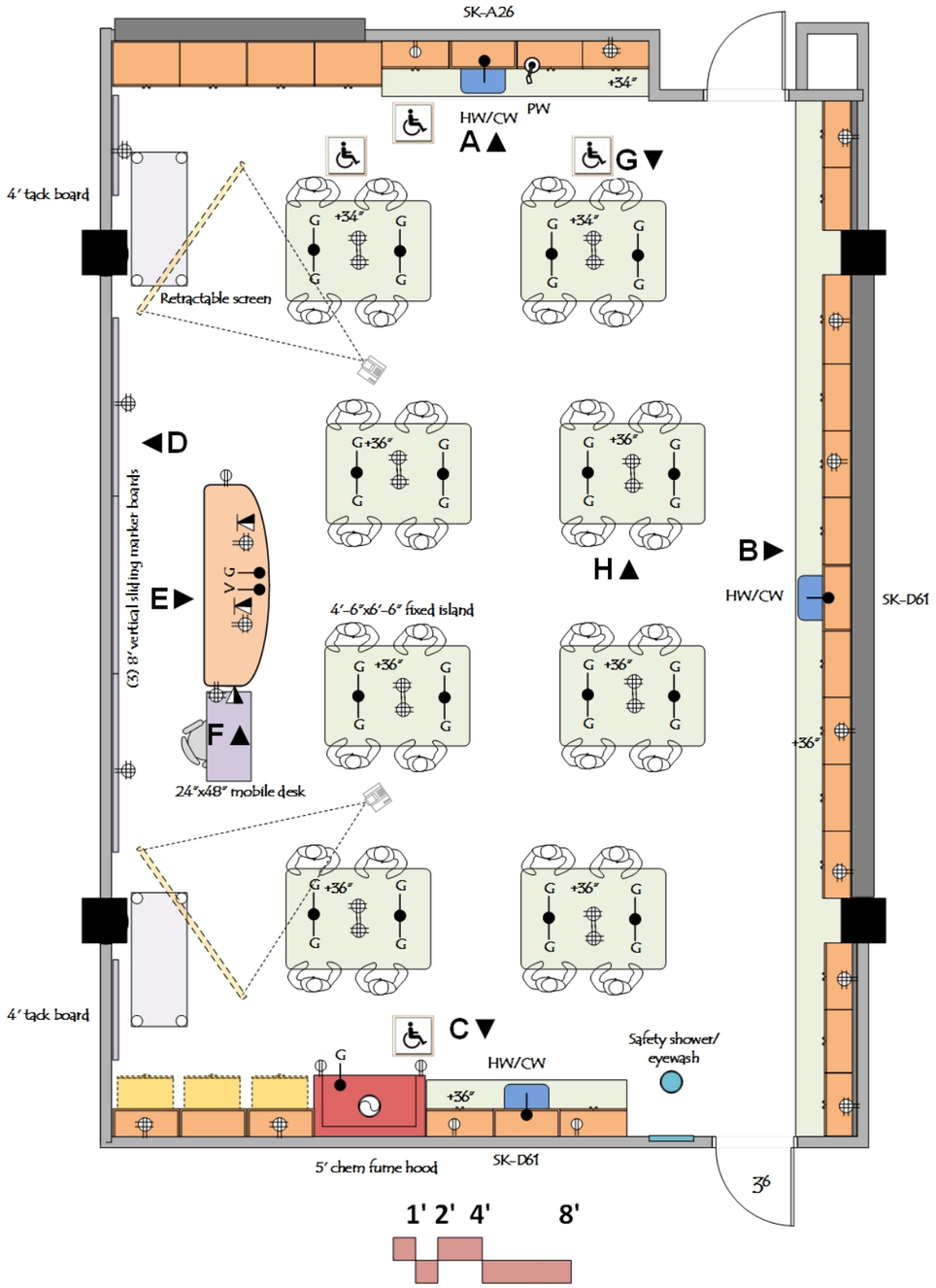


Elevation at Accessible Island




← +36"
(+34" at accessible islands)
2" curved apron↗
↖ 4" apron
Knee space
1" →
←16" →
(22" at accessible islands)
←18" →
(12" at accessible islands)
←1"
Microscope drawer base cabinet lockable
3" 6" 12" 24"

Biotechnology/Cellular & Molecular Biology Lab



ARCHITECTURAL
Occupancy: B
Floor: vinyl composition tile
Walls: gypsum board and enamel paint
Ceiling: 9'-6"' acoustic tile in labs
Doors: $3^{6}x8^{0}$with window; dutch doors between labs and prep
Daylight: Clerestory window and/or view windows
Light attenuation: blinds at windows
Acoustic Attenuation: NC 40 or less
Security: key or card key access

STRUCTURAL
Vibration attenuation: 4,000 micro inches/sec or less

MECHANICAL
Hours of operation: 6 am to 11 pm
Temperature: : 66-74 deg. F, +/- 2 deg. F
100% exhaust- no recirculation of air
Exhaust on emergency power supply
(6) air changes per hour occupied
(4) air changes per hour unoccupied
Pressure: Negative
Humidity: Ambient

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
Data & Wireless data
Lighting: indirect fluorescent @ 60 f.c. with multi-level switching
task lights below wall cabinets
Provide light switches at instructor's bench and at each door
Separate lighting for marker board wall

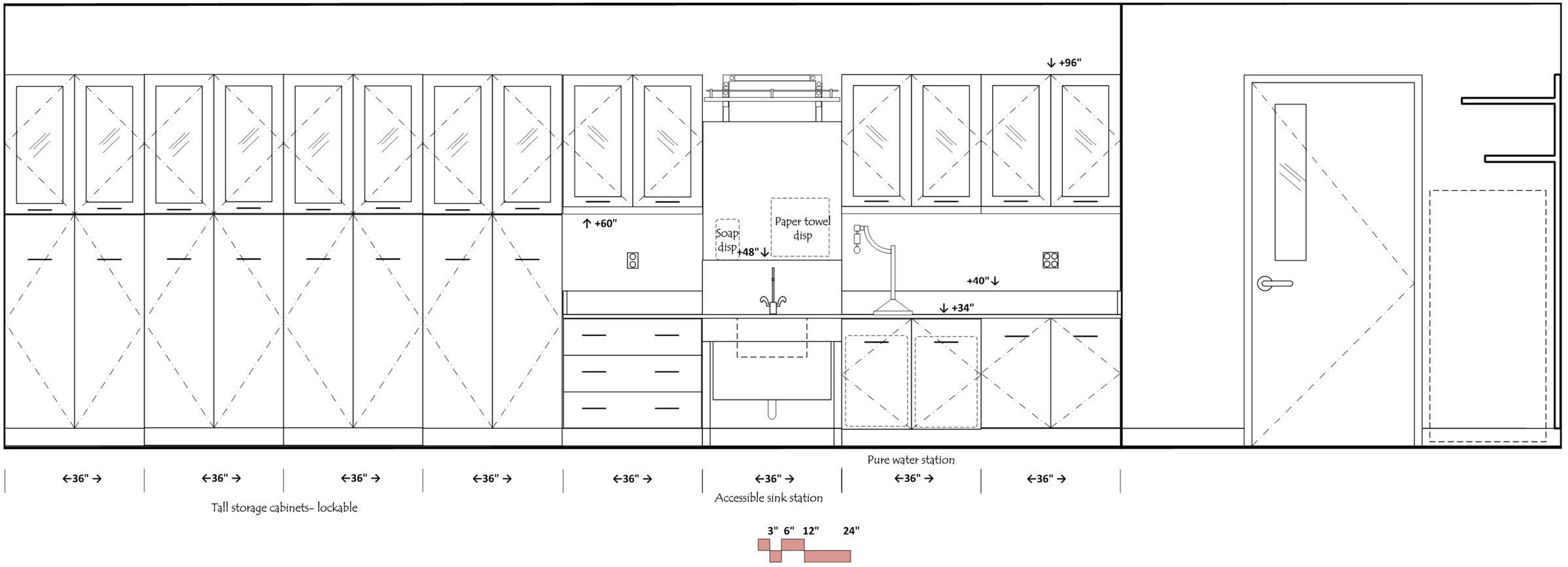
PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers
Pure water (PW) station at one sink
Gas at each student station and fume hood

CONTRACTOR FURNISHED EQUIPMENT
Wood casework- base cabinets, wall cabinets, tall cabinets
Tables
Resin tops and sinks
Faucets & fittings
marker boards
Projection screens
Projection system
5' chemical fume hood- VAV

COLLEGE FURNISHED EQUIPMENT
Chairs
Benchtop analytical instruments
Scientific equipment
paper towel dispenser

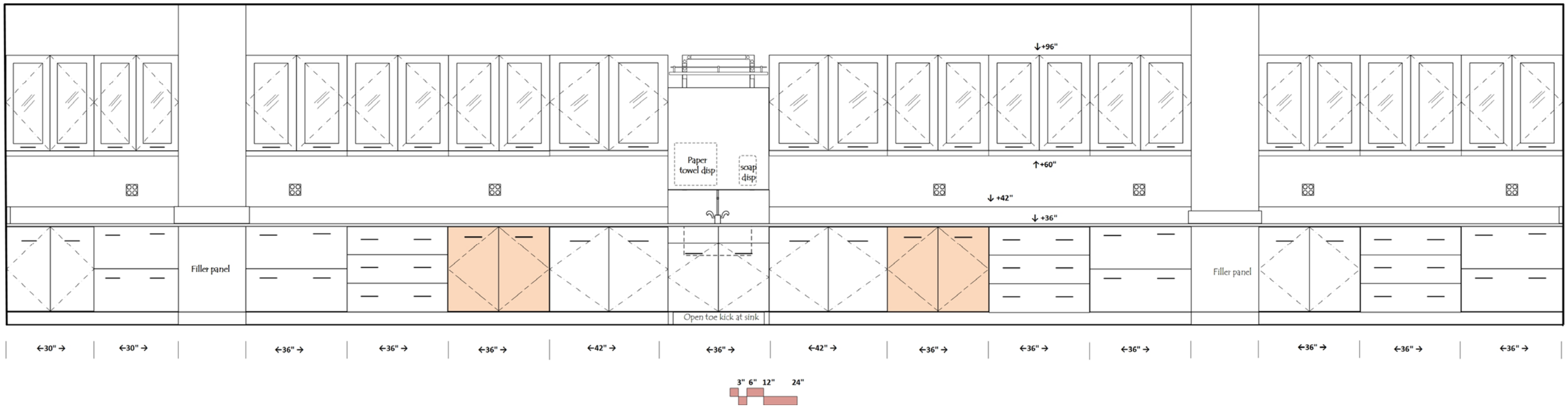
Biotechnology/Cellular & Molecular Biology Lab

Elevation A- North Wall



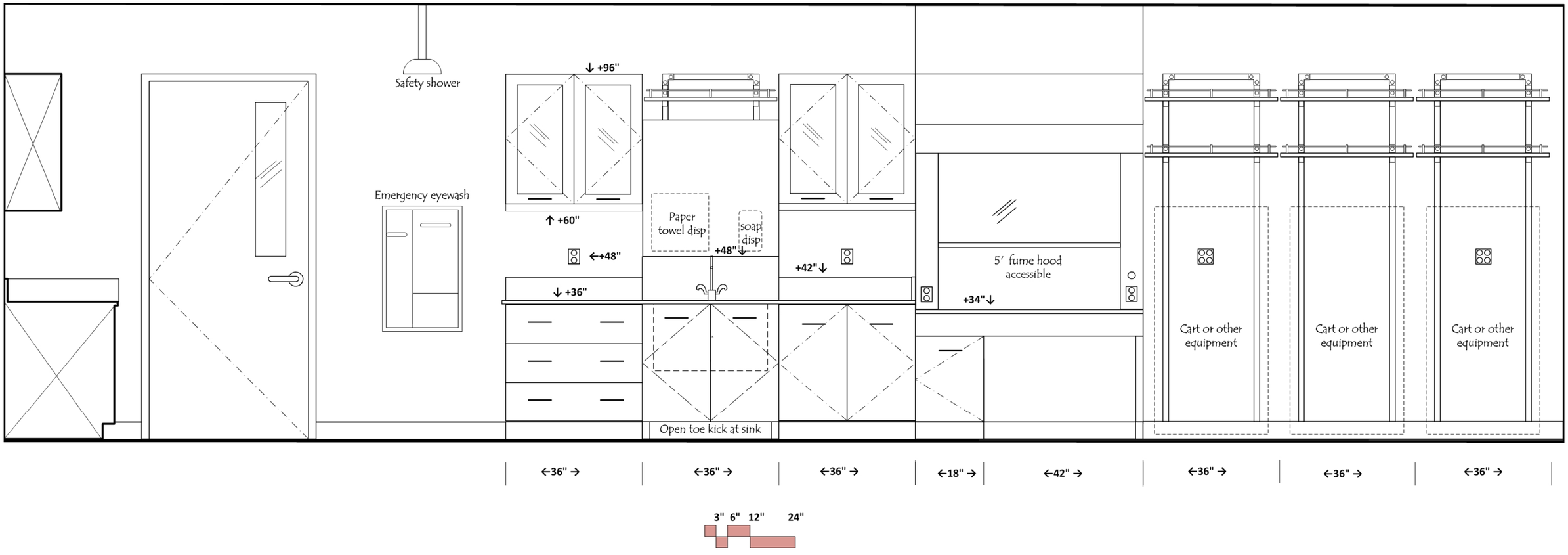
Biotechnology/Cellular & Molecular Biology Lab

Elevation B- East Wall



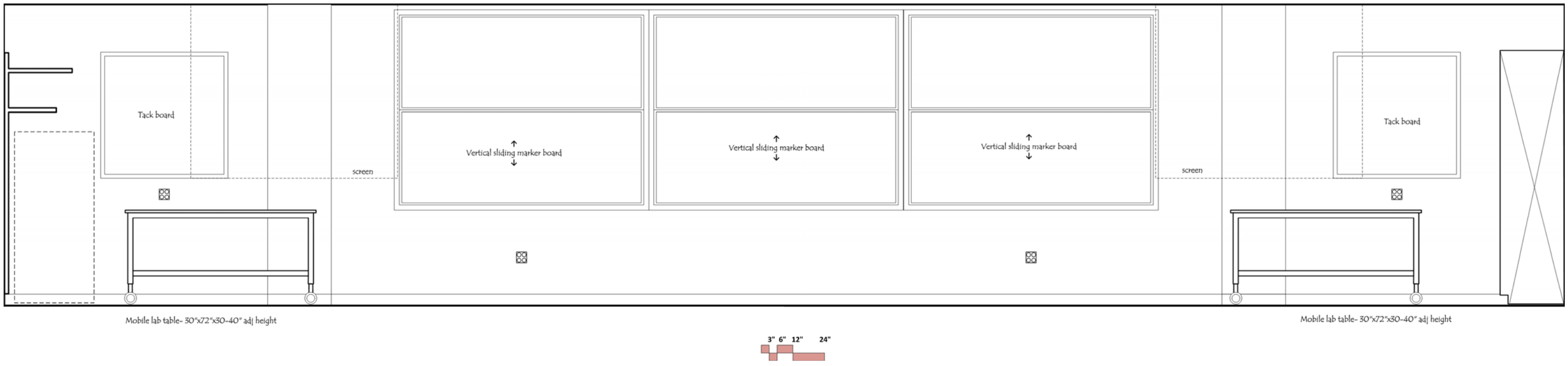
Biotechnology/Cellular & Molecular Biology Lab

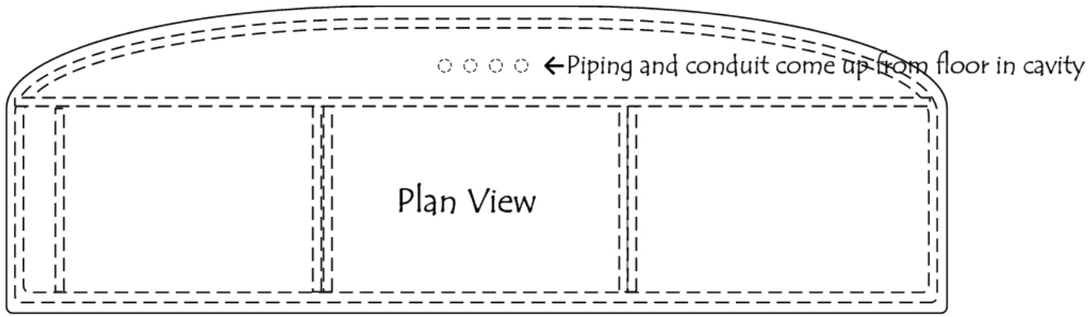
Elevation C- South Wall

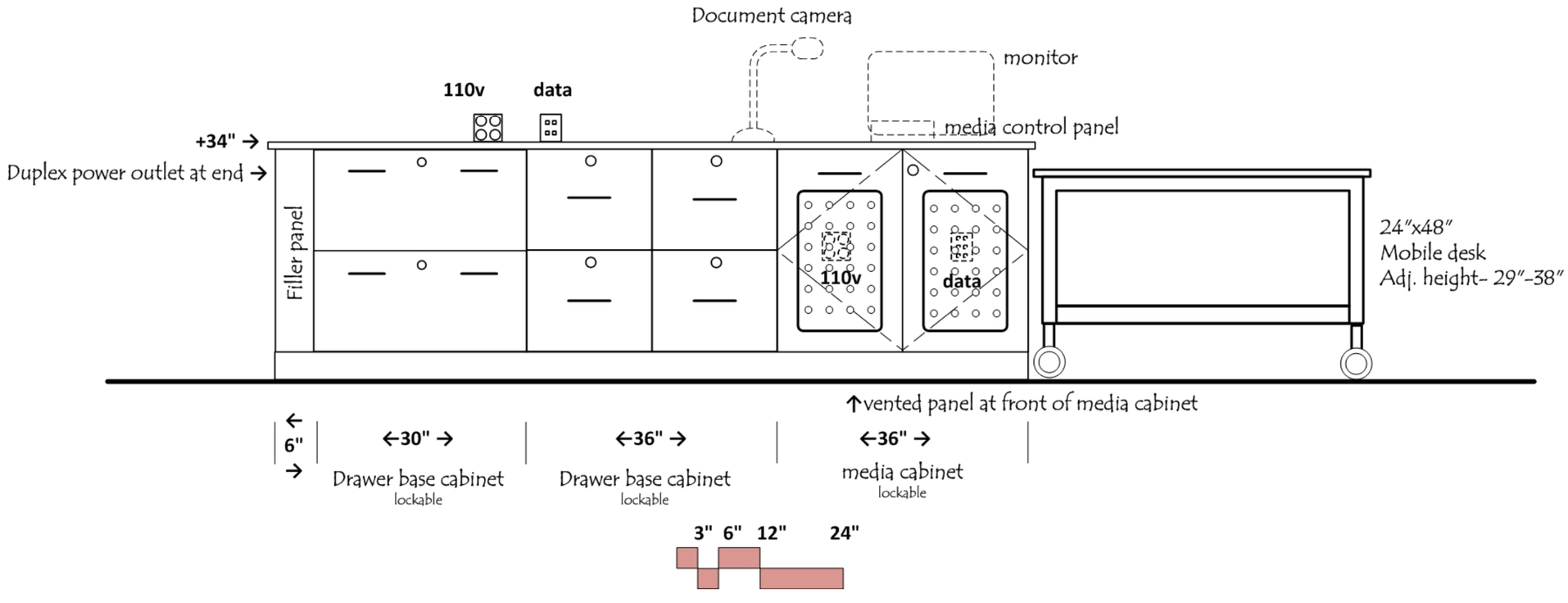


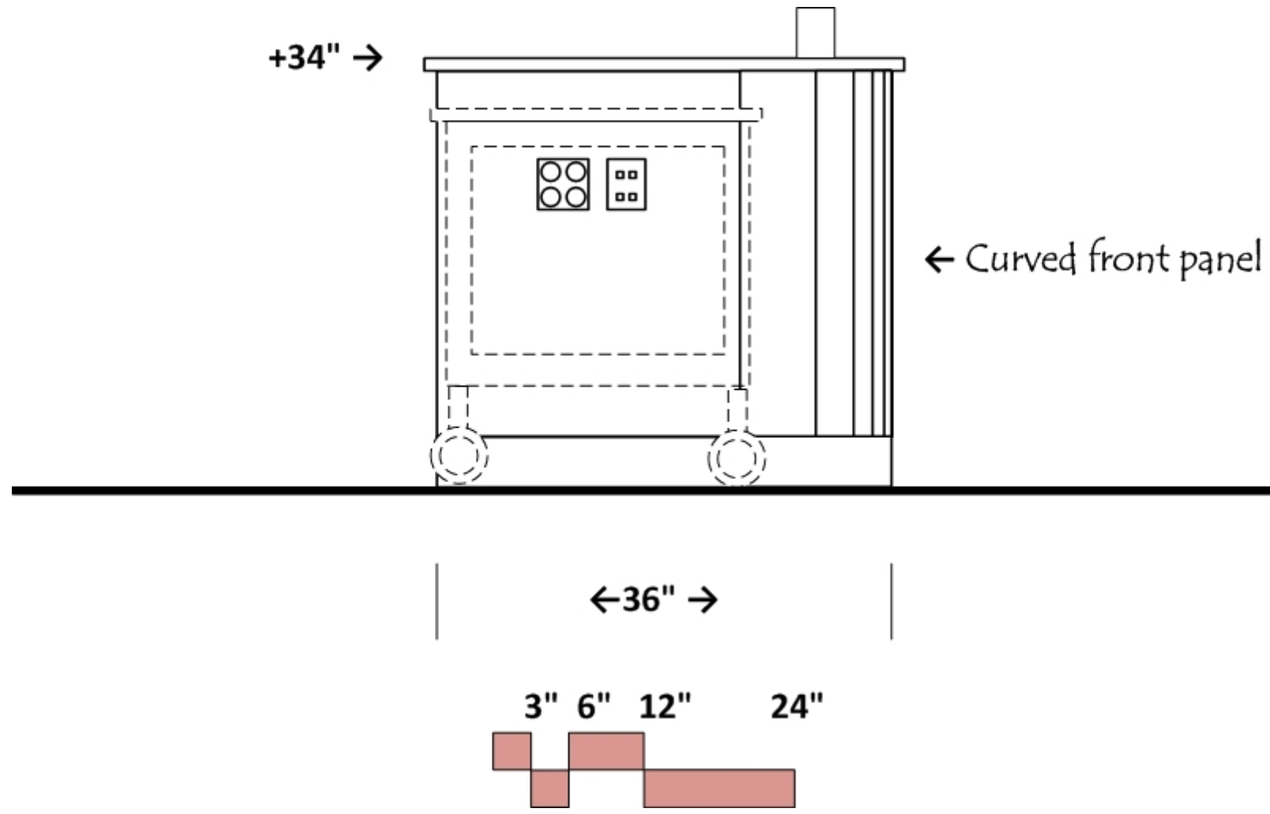
Biotechnology/Cellular & Molecular Biology Lab

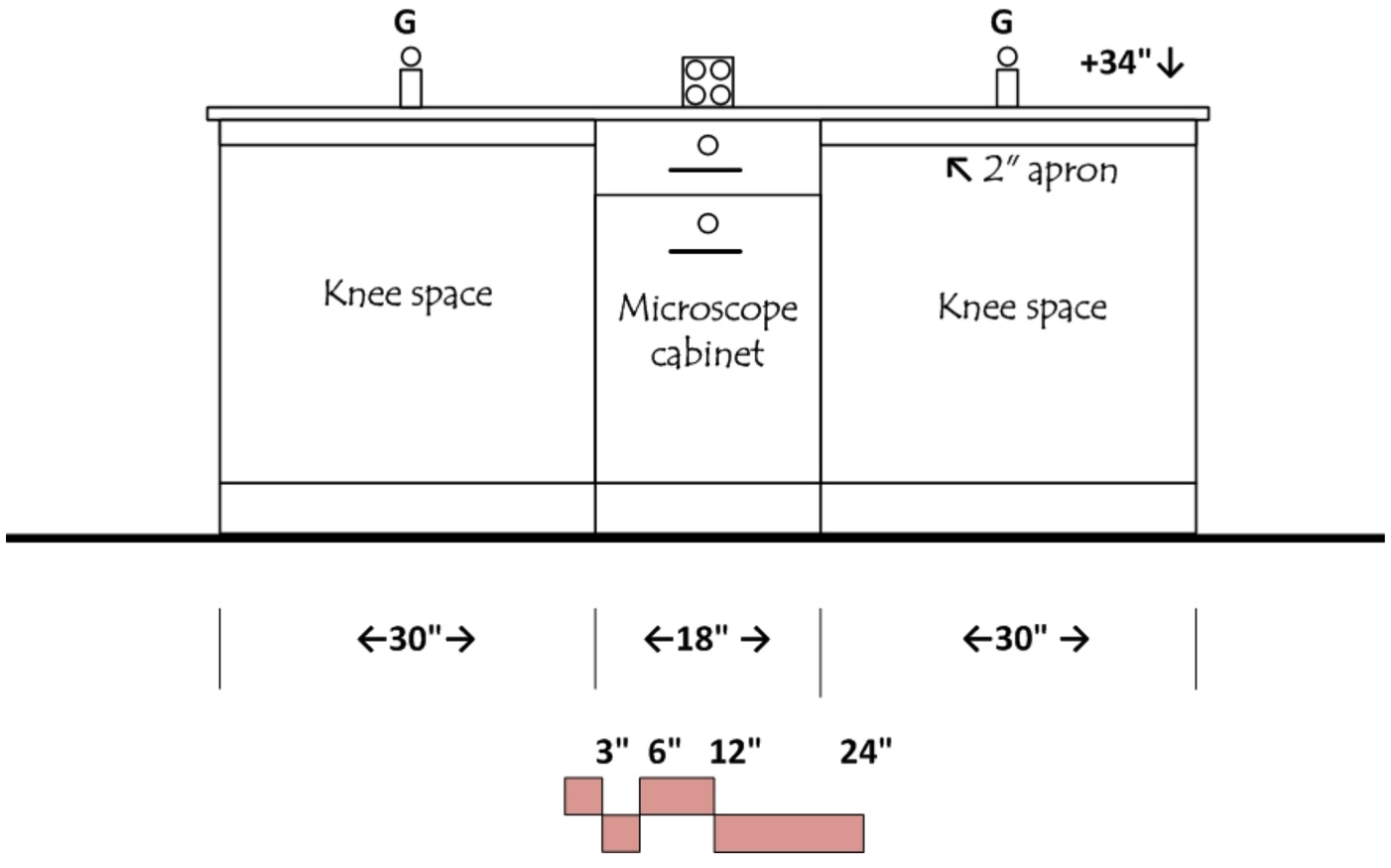
Elevation D- West Wall

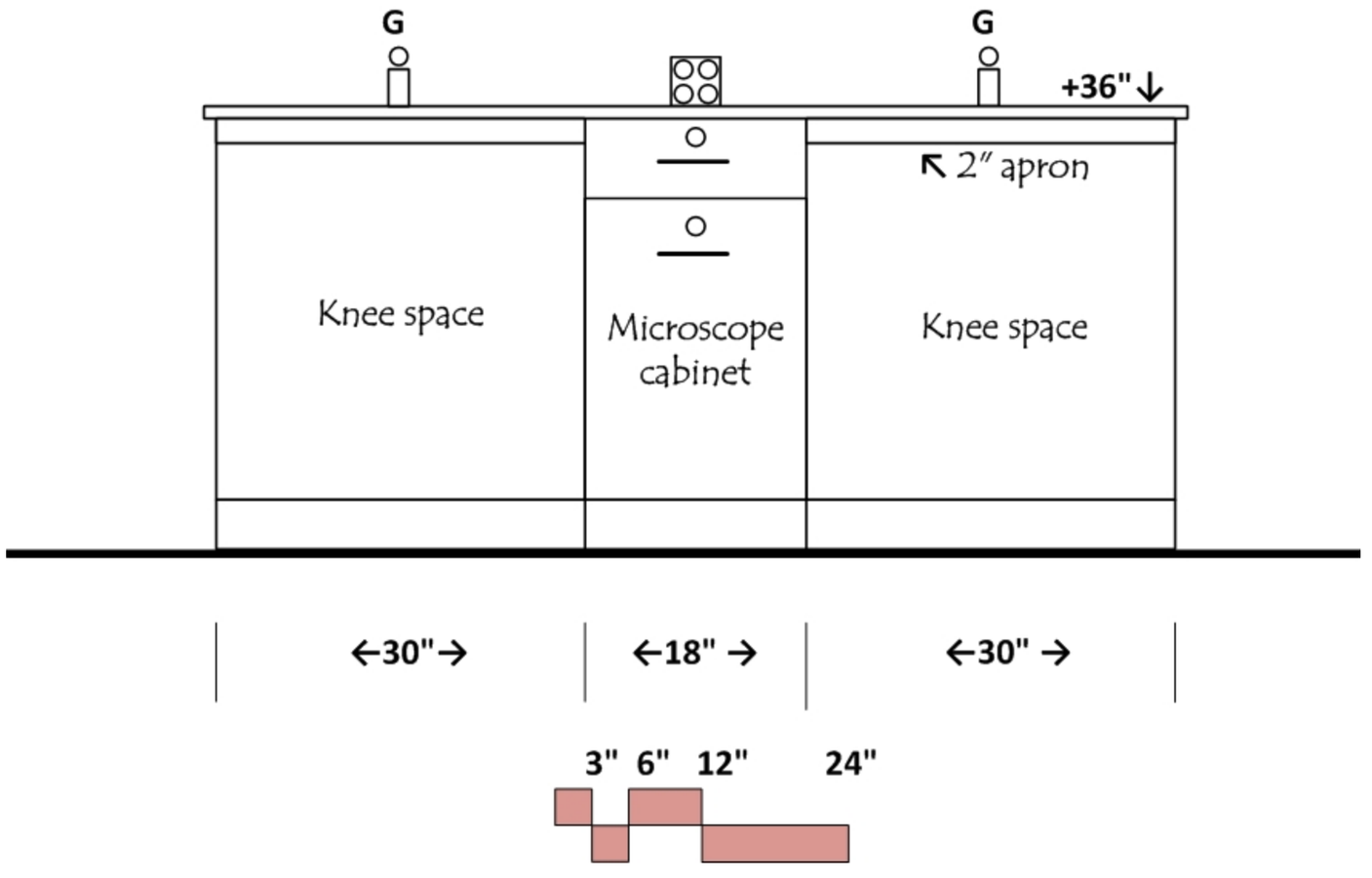



←Piping and conduit come up from floor in cavity
Plan View


Document camera
monitor
media control panel
110v
data
+34" →
Duplex power outlet at end →
Filler panel
110v
data
24"x48"
Mobile desk
Adj. height- 29"-38"
↑vented panel at front of media cabinet
←6"→
←30"→
Drawer base cabinet
lockable
←36"→
Drawer base cabinet
lockable
←36"→
media cabinet
lockable
3" 6" 12" 24"


+34"
Curved front panel
36"
3"
6"
12"
24"


G
G
+34"↓
↖ 2" apron
Knee space
Microscope cabinet
Knee space
←30"→
←18" →
←30" →
3" 6" 12" 24"


G
G
+36"↓
↖ 2" apron
Knee space
Microscope cabinet
Knee space
←30"→
←18" →
←30" →
3"
6"
12"
24"

Prep-Biotechnology/Cellular & Molecular Biology

ARCHITECTURAL
Occupancy: B
Floor: vinyl composition tile
Walls: gypsum board and enamel paint
Ceiling: 9'-0" acoustic tile
Doors: 3^{6}x$8^{0}$with window; dutch doors between labs and prep
Daylight: Clerestory window and/or view windows
Light attenuation: blinds at windows
Acoustic Attenuation: NC 40 or less
Security: key or card key access

STRUCTURAL
Vibration attenuation: 4,000 micro inches/sec or less

MECHANICAL
Hours of operation: 6 am to 11 pm
Temperature: : 66-74 deg. F, +/- 2 deg. F
100% exhaust- no recirculation of air
Exhaust on emergency power supply
(6) air changes per (exhaust at ceiling) hour occupied
(4) air changes per hour unoccupied
Pressure: Negative
Humidity: Ambient

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
208v power at undercounter washers
Data & Wireless data
Lighting: indirect fluorescent @ 60 f.c. with multi-level switching task lights below wall cabinets

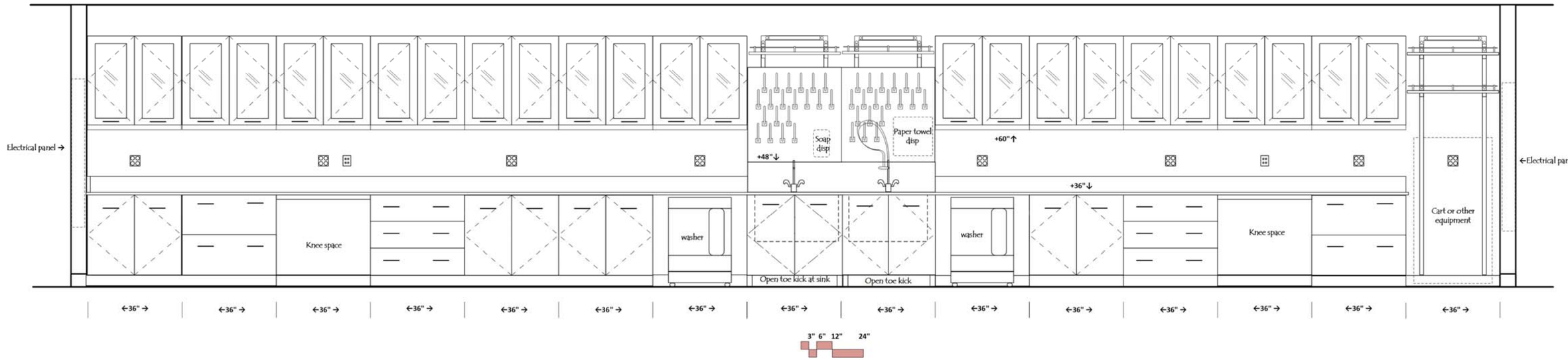
PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers
Pure water (PW) station at one sink
Gas and vac at lab bench in Tissue Culture and prep area
Gas, air, vac at peninsula bench
Gas at chemical fume hoods

CONTRACTOR FURNISHED EQUIPMENT
Wood casework- base cabinets, wall cabinets, tall cabinets
Tables
Resin tops and sinks
Faucets & fittings
Undercounter washers

COLLEGE FURNISHED EQUIPMENT
Chairs
Benchtop analytical instruments
Scientific equipment
paper towel dispenser

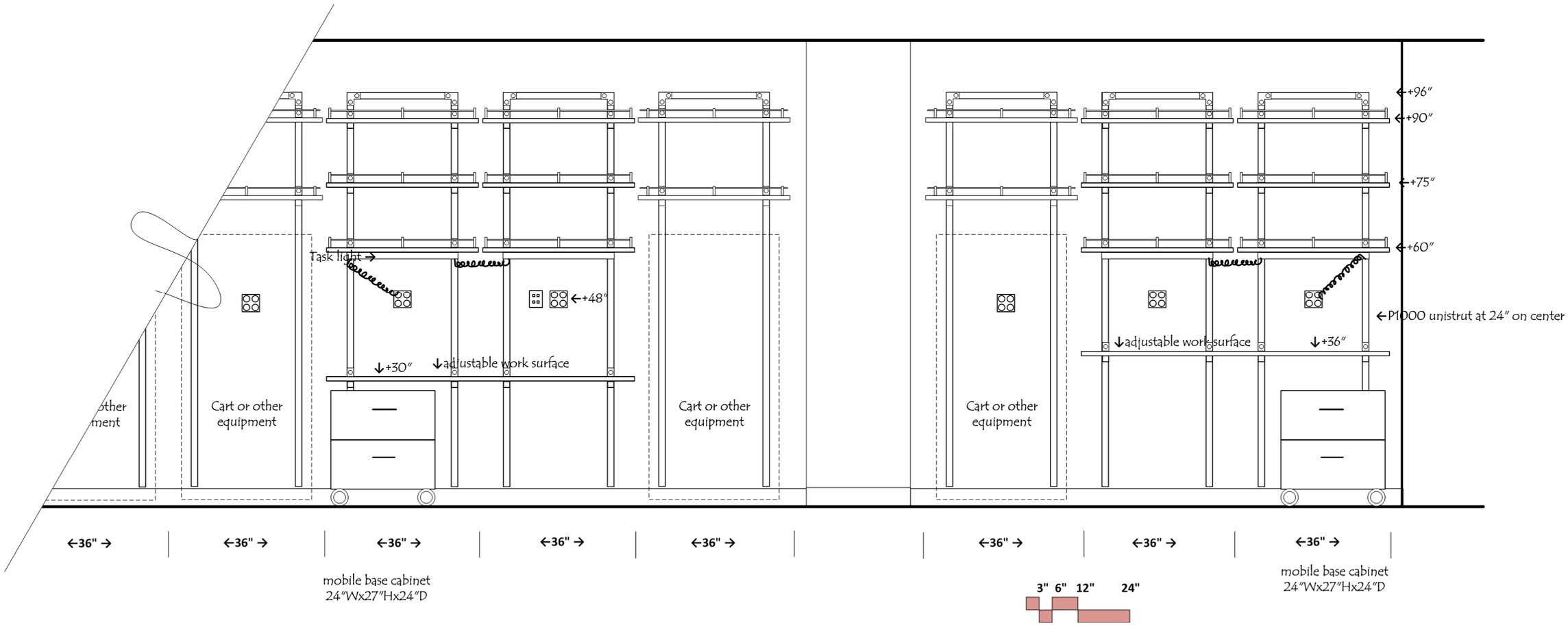
Prep-Biotechnology/Cellular & Molecular Biology

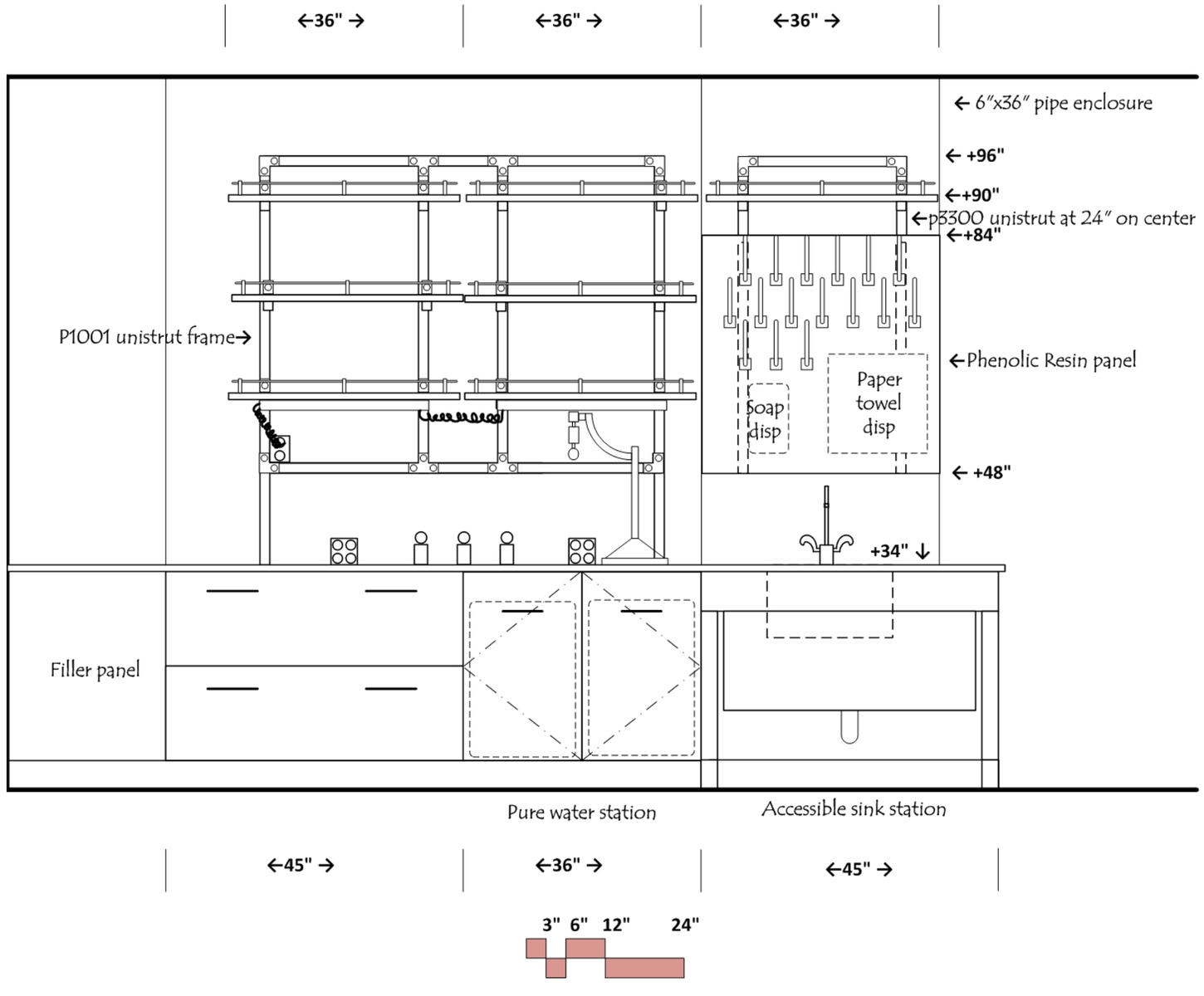
Elevation A- North Wall



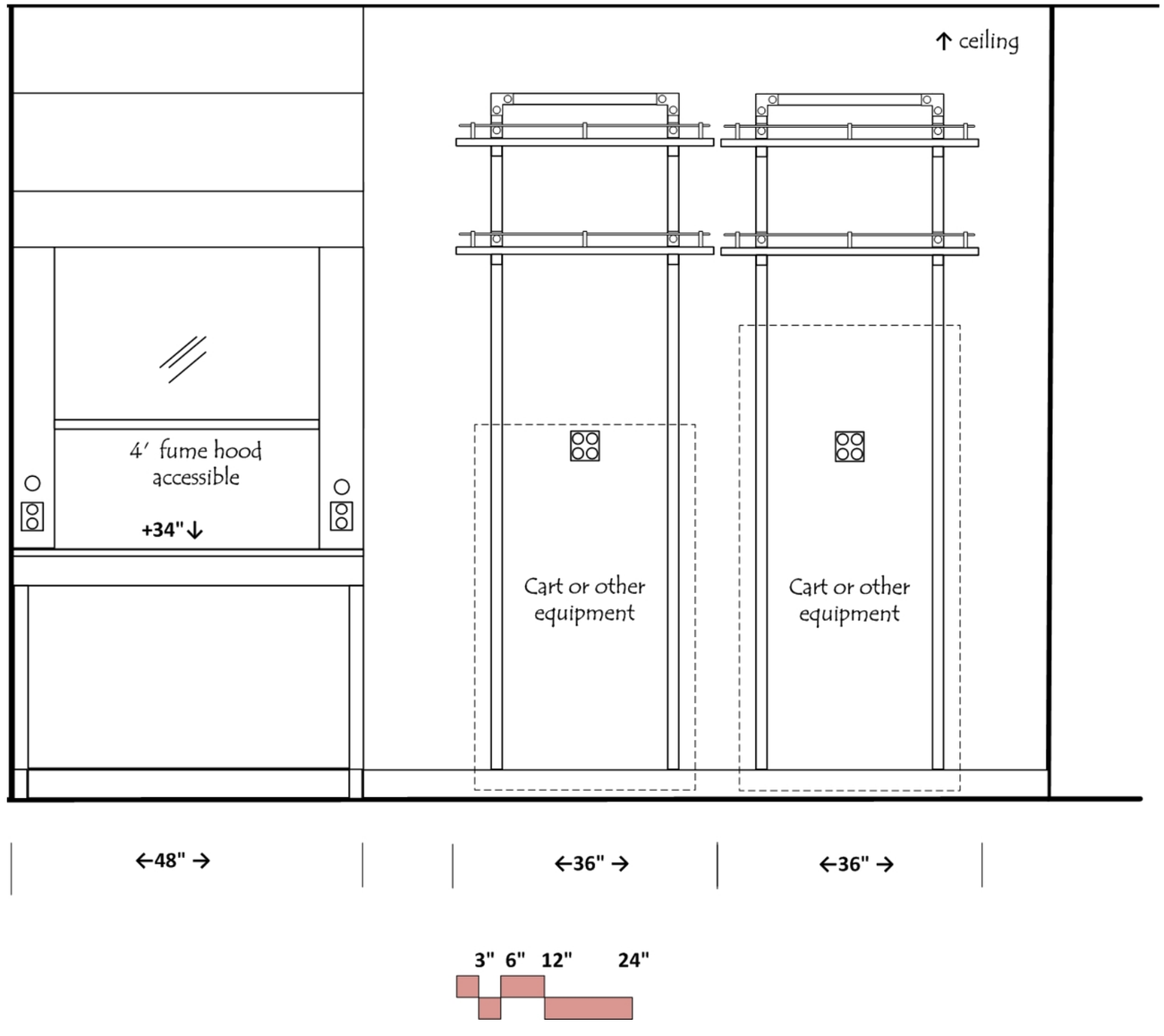
Prep-Biotechnology/Cellular & Molecular Biology

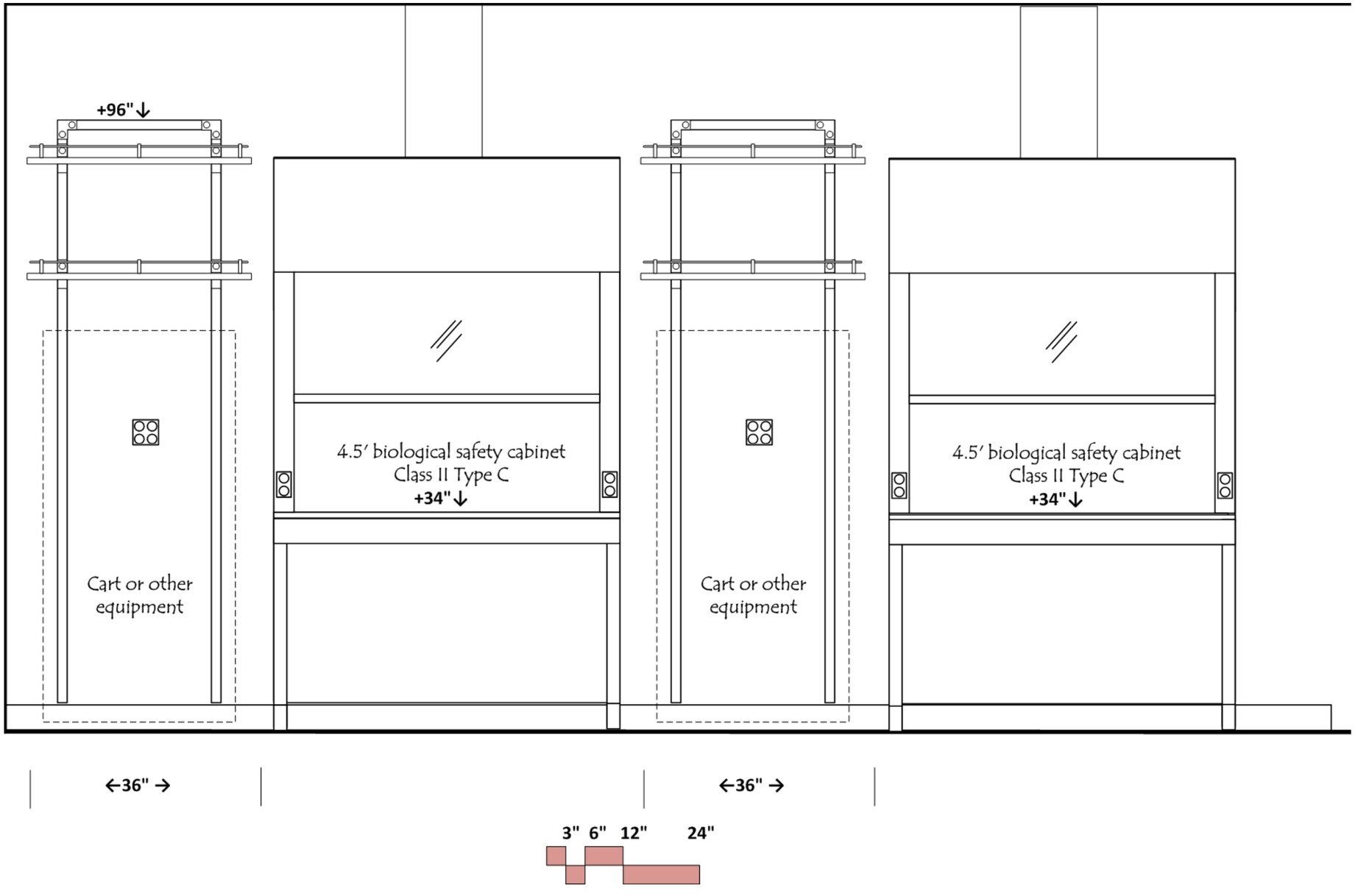
Elevation B- East Wall

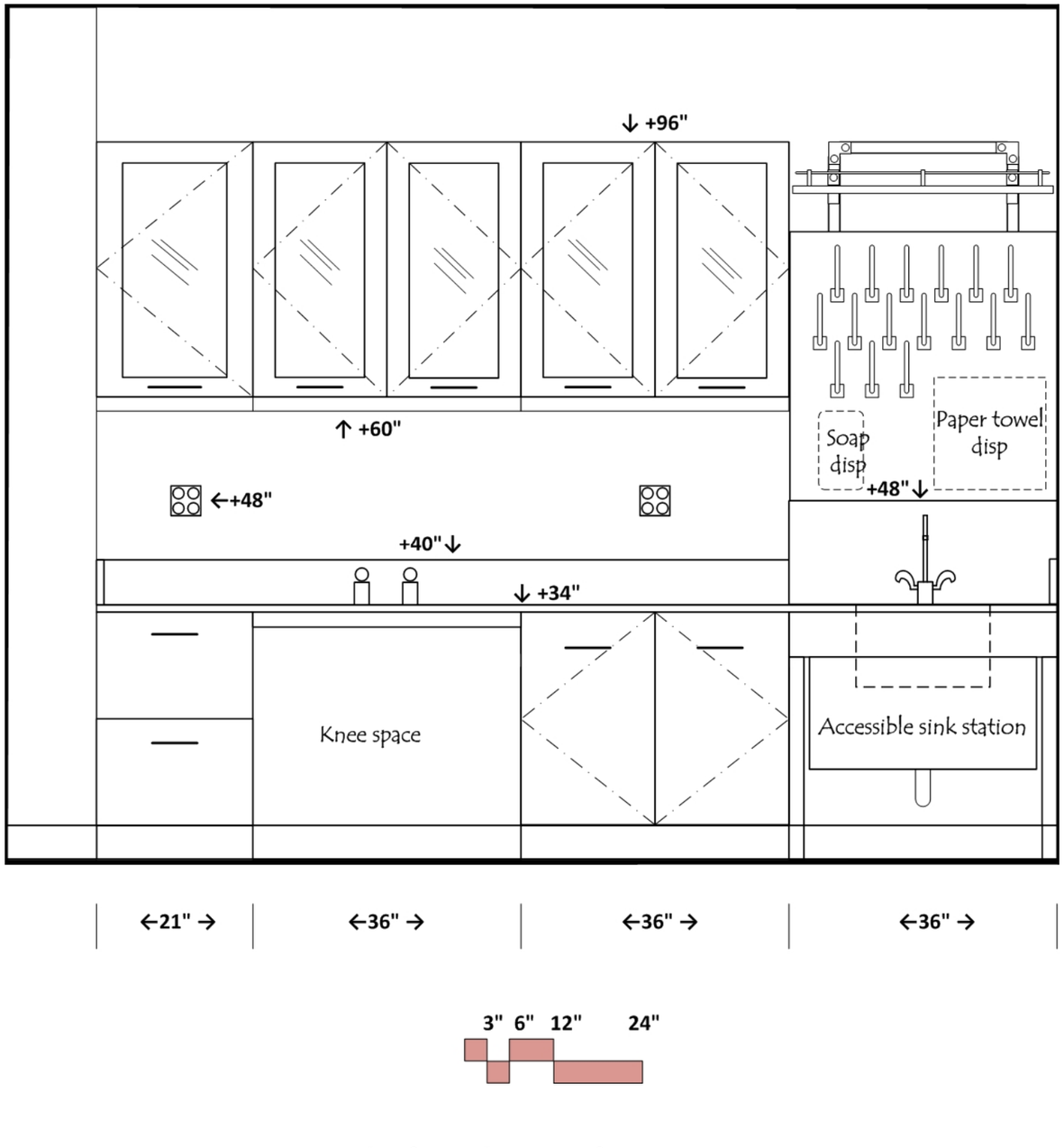


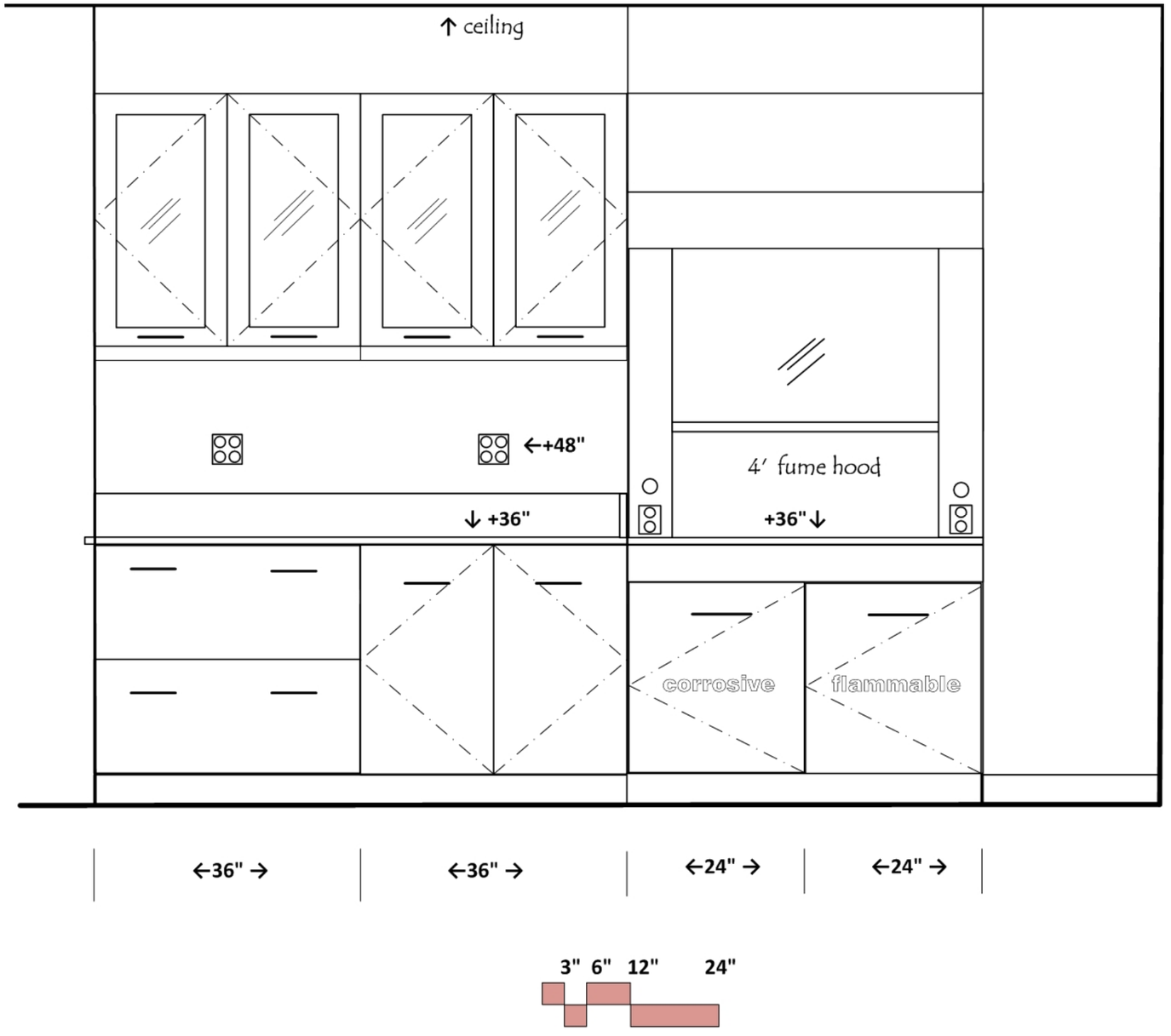

←36" →
←36" →
←36" →
← 6"x36" pipe enclosure
← +96"
←+90"
←p3300 unistrut at 24" on center
←+84"
P1001 unistrut frame→
←Phenolic Resin panel
Soap disp
Paper towel disp
← +48"
+34" ↓
Filler panel
Pure water station
Accessible sink station
←45" →
←36" →
←45" →
3" 6" 12" 24"

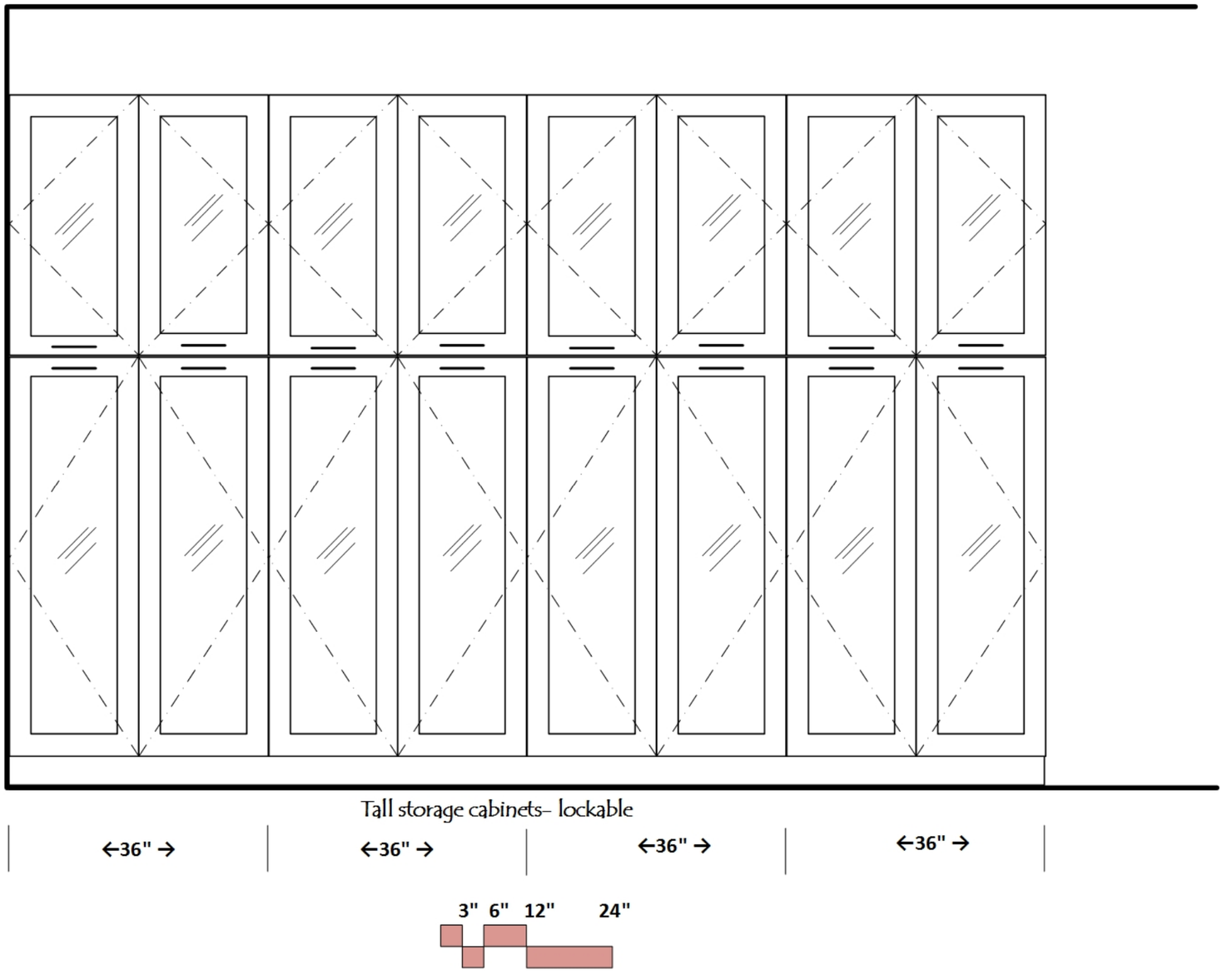
Elevation D- Fume Hood Wall

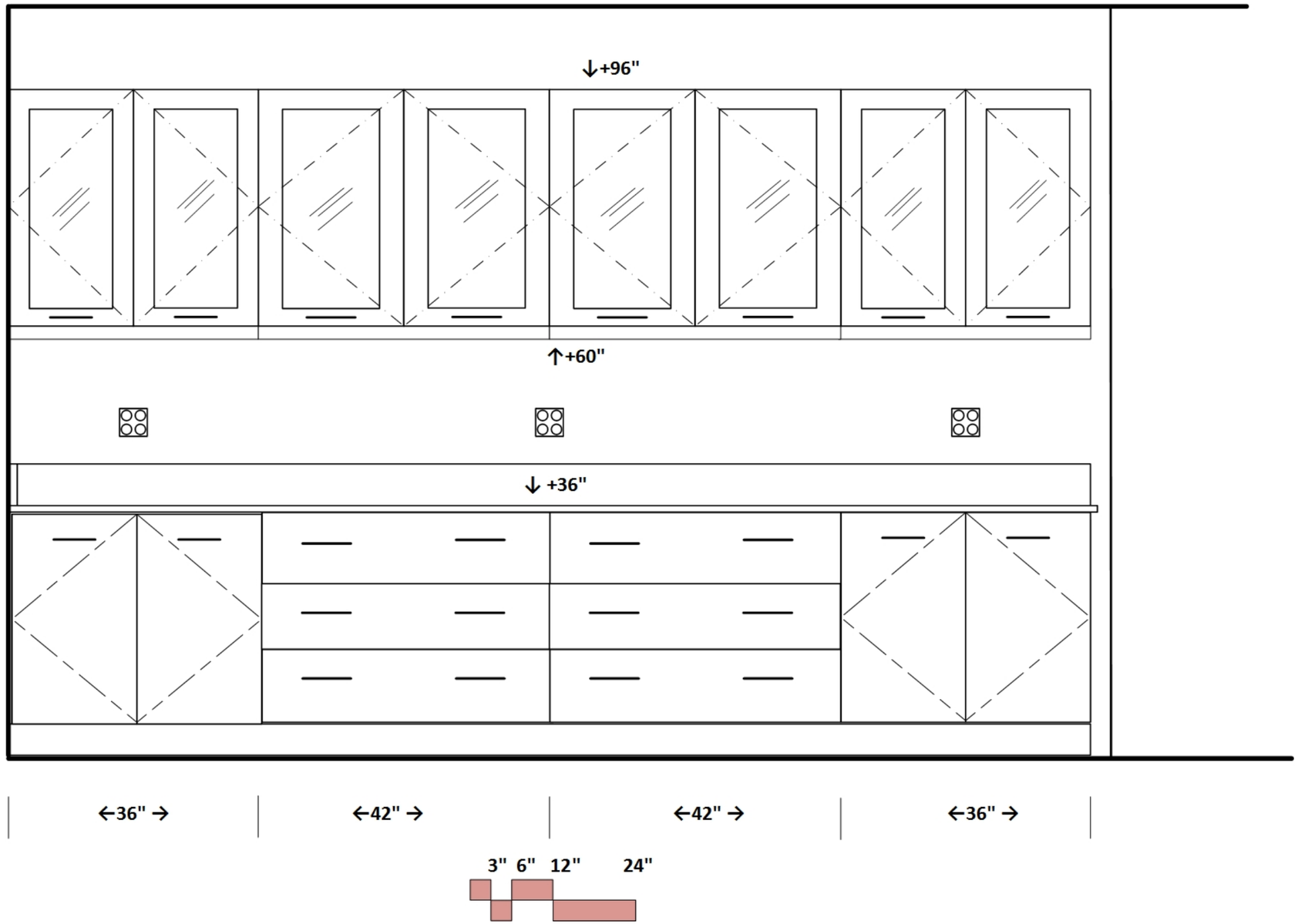


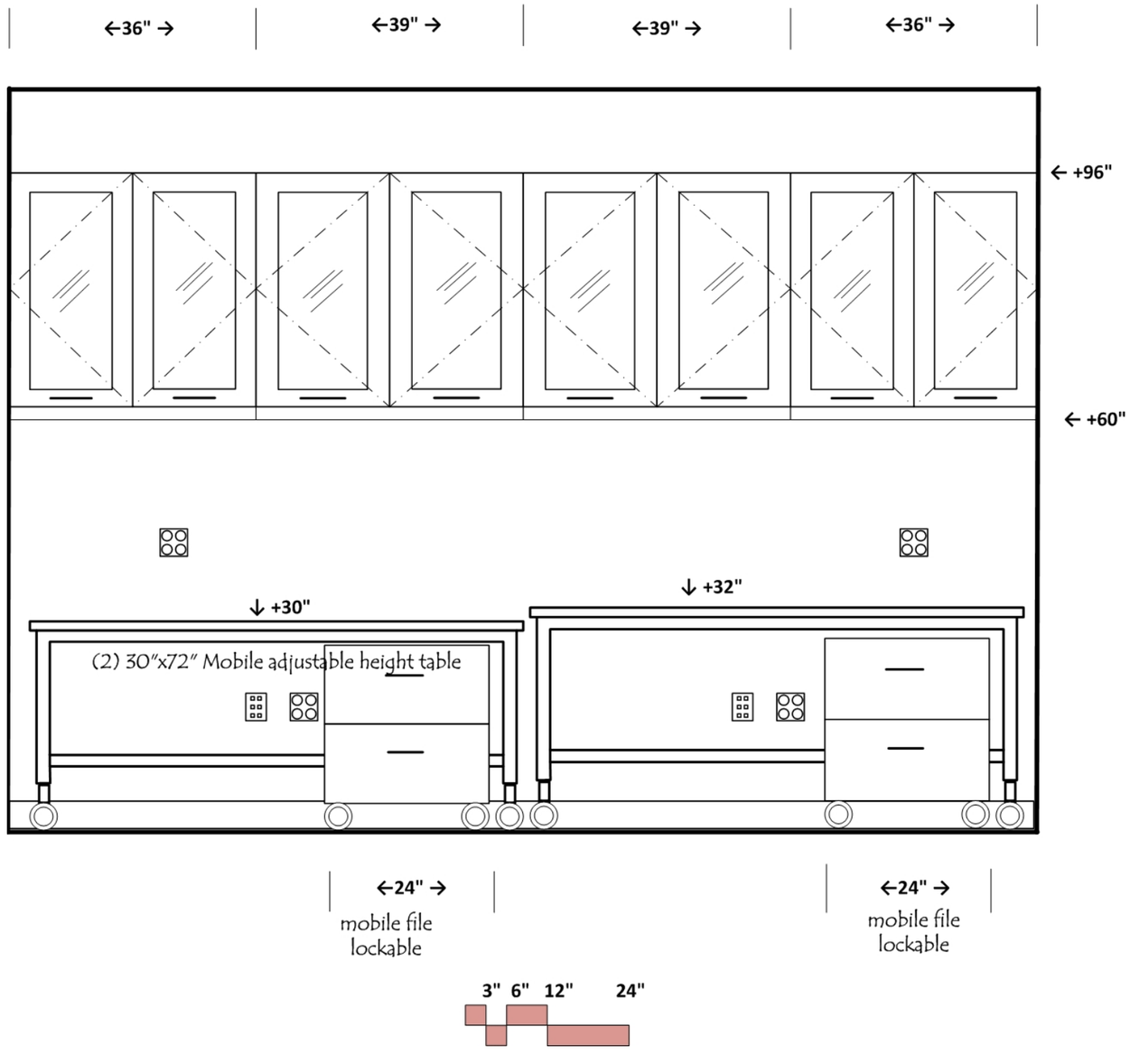

+96"↓
4.5′ biological safety cabinet
Class II Type C
+34"↓
Cart or other
equipment
4.5′ biological safety cabinet
Class II Type C
+34"↓
Cart or other
equipment
←36" →
←36" →
3" 6" 12" 24"

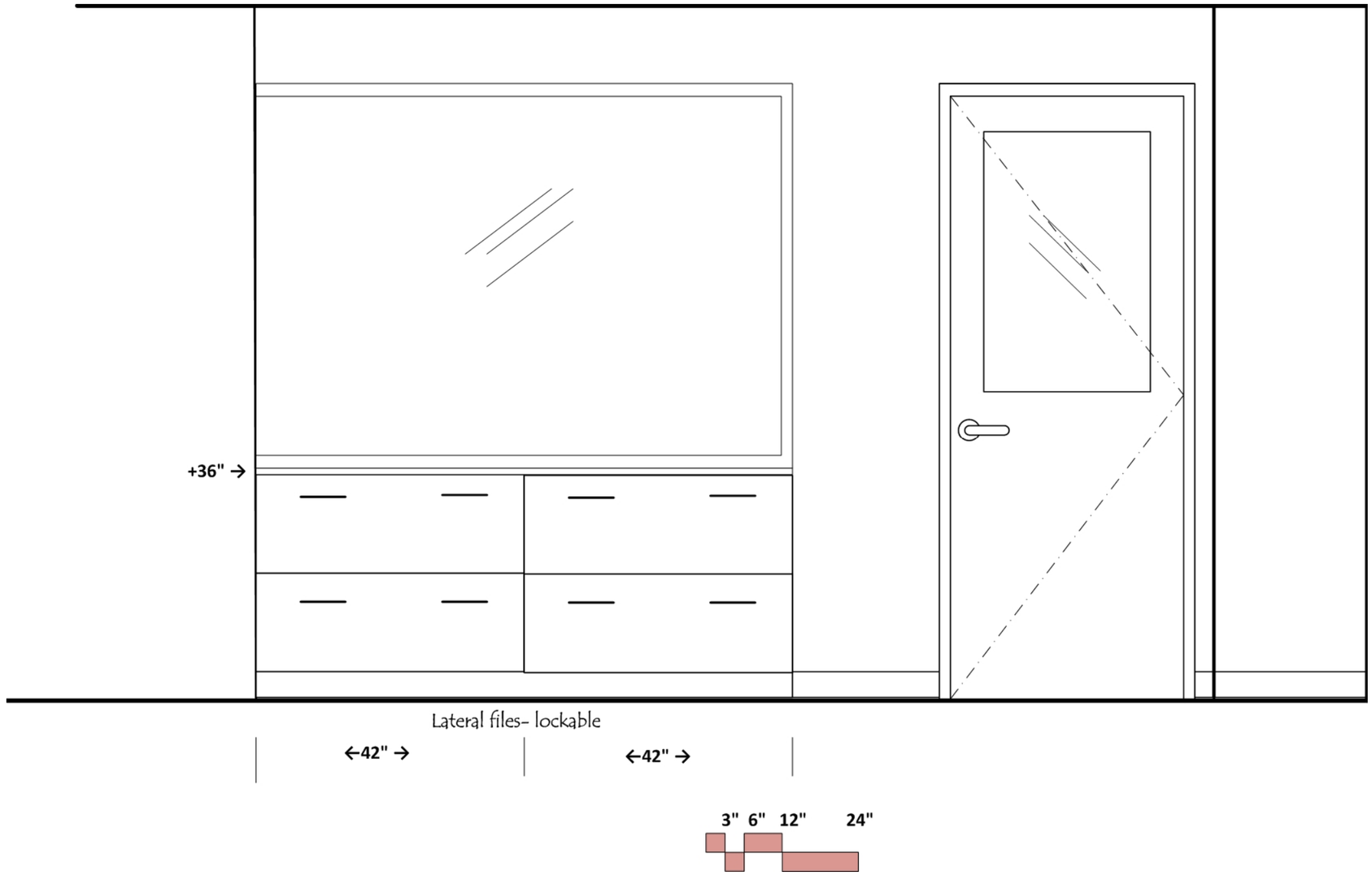

↓ +96"
↑ +60"
←+48"
+40"↓
↓ +34"
Soap disp
Paper towel disp
+48"↓
Knee space
Accessible sink station
←21" →
←36" →
←36" →
←36" →
3" 6" 12" 24"

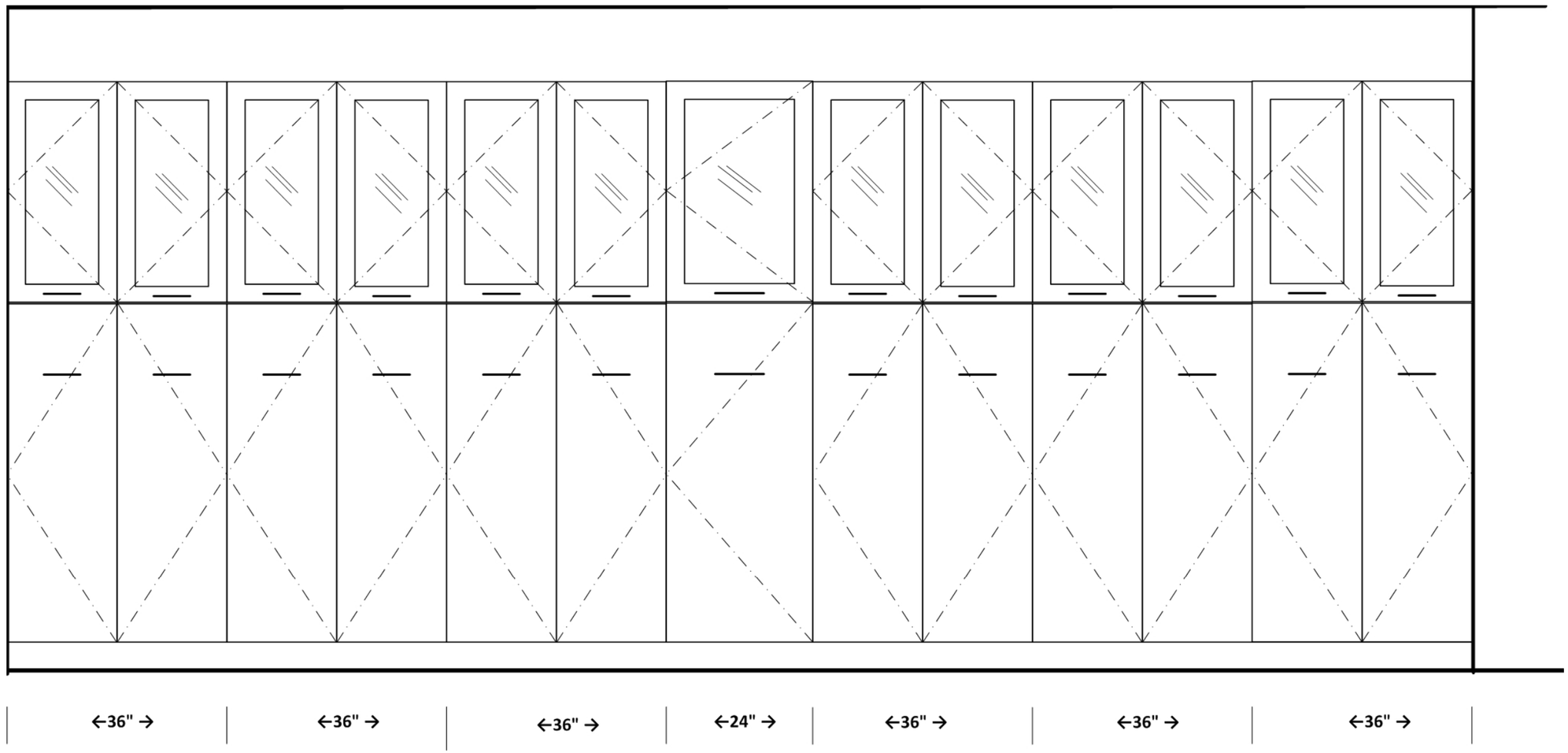

↑ ceiling
←+48"
↓ +36"
4' fume hood
+36"↓
corrosive
flammable
←36" →
←36" →
←24" →
←24" →
3" 6" 12" 24"

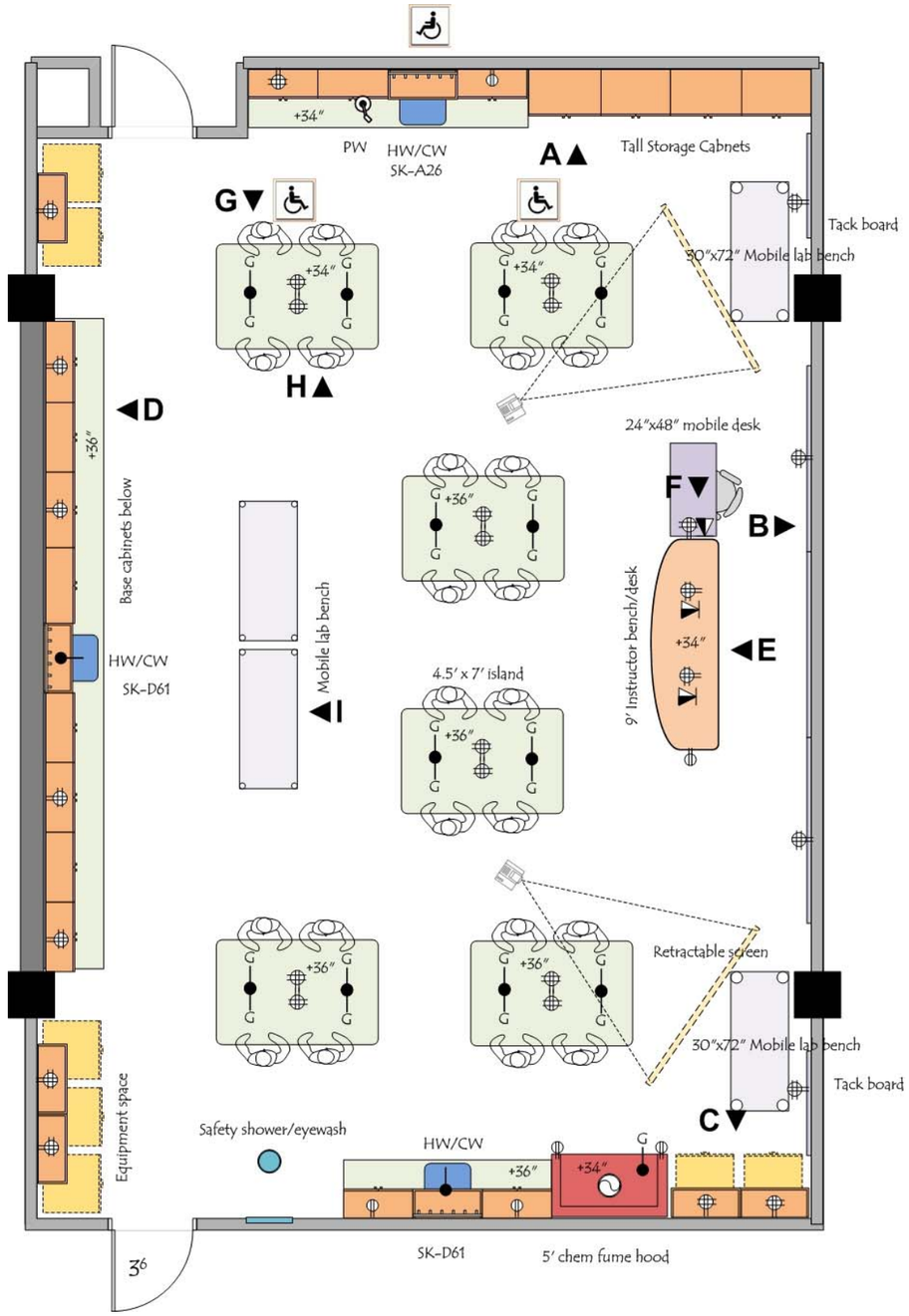

Tall storage cabinets- lockable
←36" →
←36" →
←36" →
←36" →
3"
6"
12"
24"


↓+96"
↑+60"
↓ +36"
←36" →
←42" →
←42" →
←36" →
3" 6" 12" 24"


←36" →
←39" →
←39" →
←36" →
← +96"
← +60"
↓ +30"
↓ +32"
(2) 30"x72" Mobile adjustable height table
←24" →
mobile file lockable
←24" →
mobile file lockable
3" 6" 12" 24"


+36" →
Lateral files- lockable
←42" →
←42" →
3"
6"
12"
24"


←36" →
←36" →
←36" →
←24" →
←36" →
←36" →
←36" →
3"
6"
12"
24"



Microbiology Lab

ARCHITECTURAL
Occupancy: B
Floor: vinyl compostion tile
Walls: gypsum board and enamel paint
Ceiling: 9'-6"' acoustic tile
Doors: 3^{6}x$8^{0}$with window; dutch doors between labs and prep
Daylight: Clerestory window and/or view windows
Light attenuation: blinds at windows
Acoustic Attenuation: NC 40 or less
Security: key or card key access

STRUCTURAL
Vibration attenuation: 4,000 micro inches/sec or less

MECHANICAL
Hours of operation: 6 am to 11 pm
Temperature: : 66-74 deg. F, +/- 2 deg. F
100% exhaust- no recirculation of air
Exhaust on emergency power supply
(6) air changes perhour occupied
(4) air changes per hour unoccupied
Pressure: Negative
Humidity: Ambient

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
Data & Wireless data
Lighting: indirect fluorescent @ 60 f.c. with multi-level switching
task lights below wall cabinets
Provide light switches at instructor's bench and at each door
Separate lighting for marker board wall

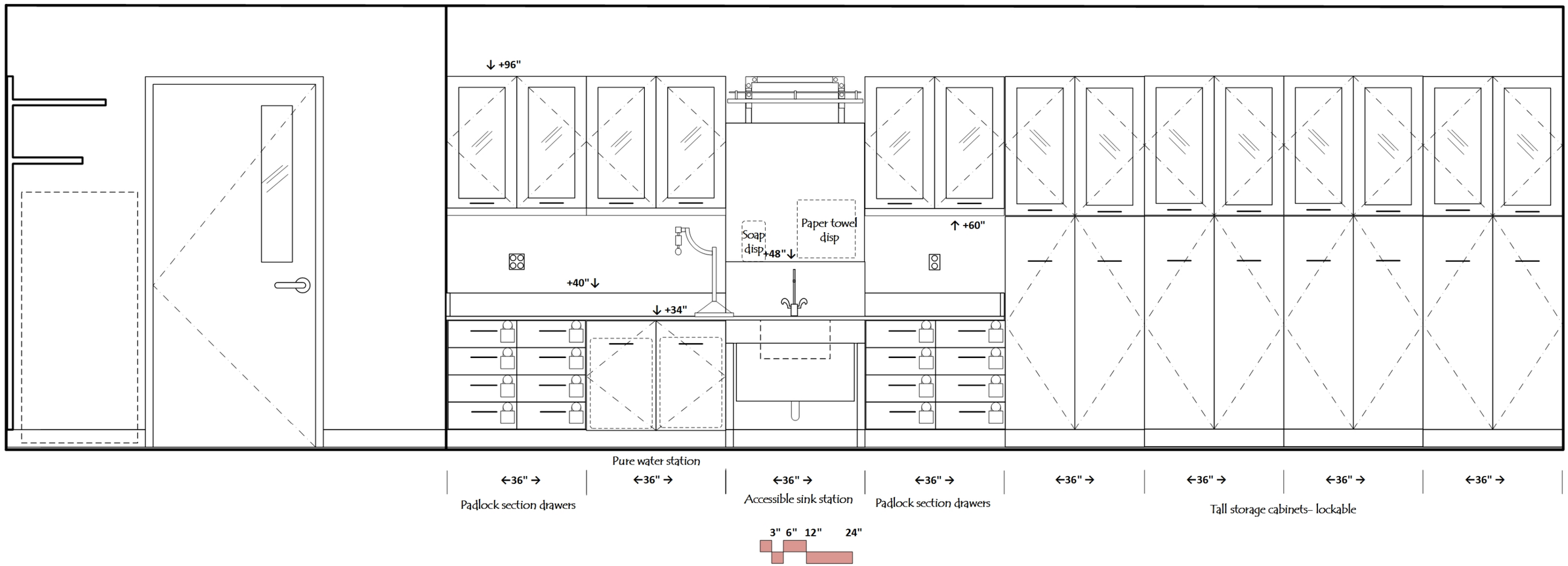
PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers
Pure water (PW) station at one sink
Gas at each student station
Gas at fume hood

CONTRACTOR FURNISHED EQUIPMENT
Wood casework- base cabinets, wall cabinets, tall cabinets
Tables
Resin tops and sinks
Faucets & fittings
marker boards
Projection screens
5' chemical fume hood- VAV

COLLEGE FURNISHED EQUIPMENT
Chairs
Benchtop analytical instruments
Scientific equipment
paper towel dispenser
Projection system
refrigerators
incubators

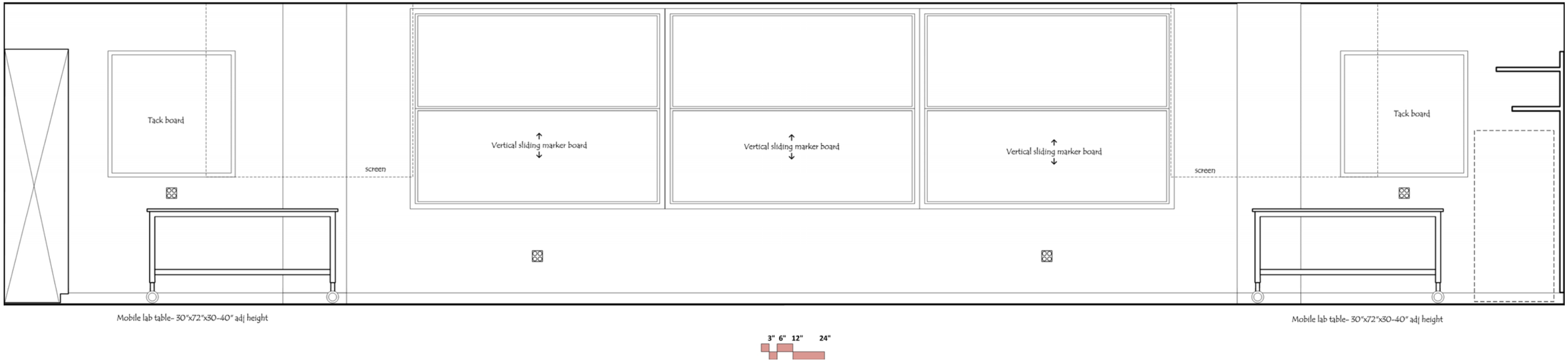
Microbiology Lab

Elevation A- North Wall



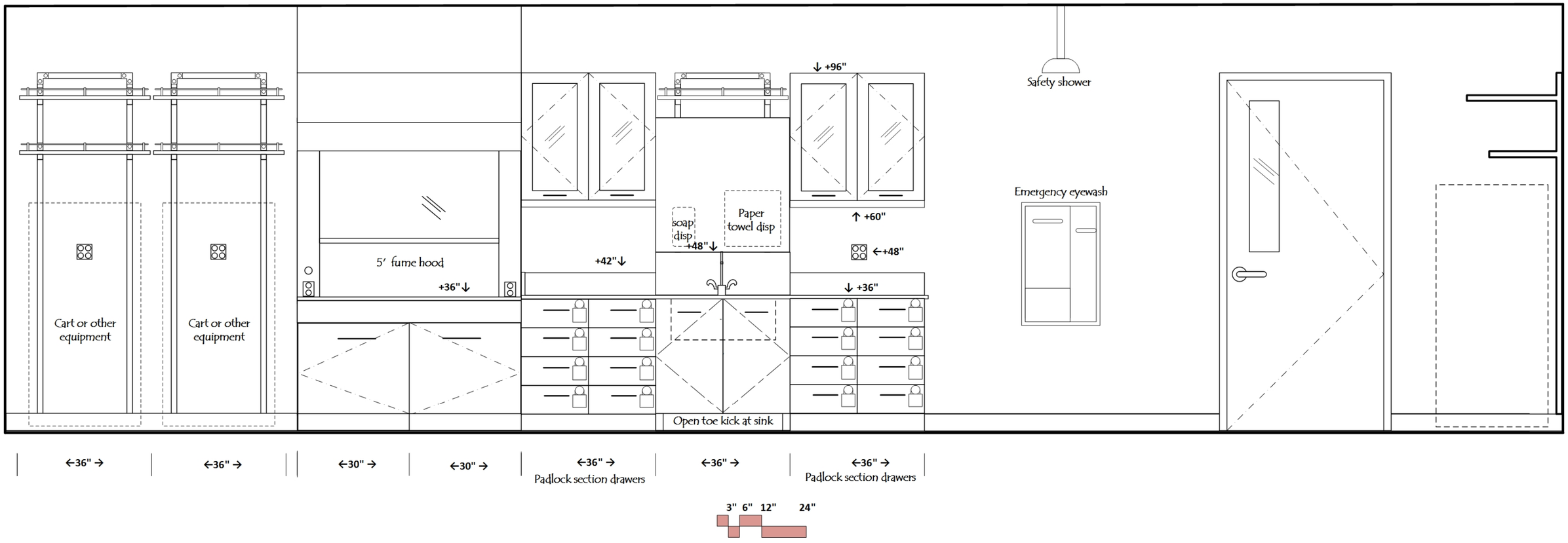
Microbiology Lab

Elevation B- East Wall



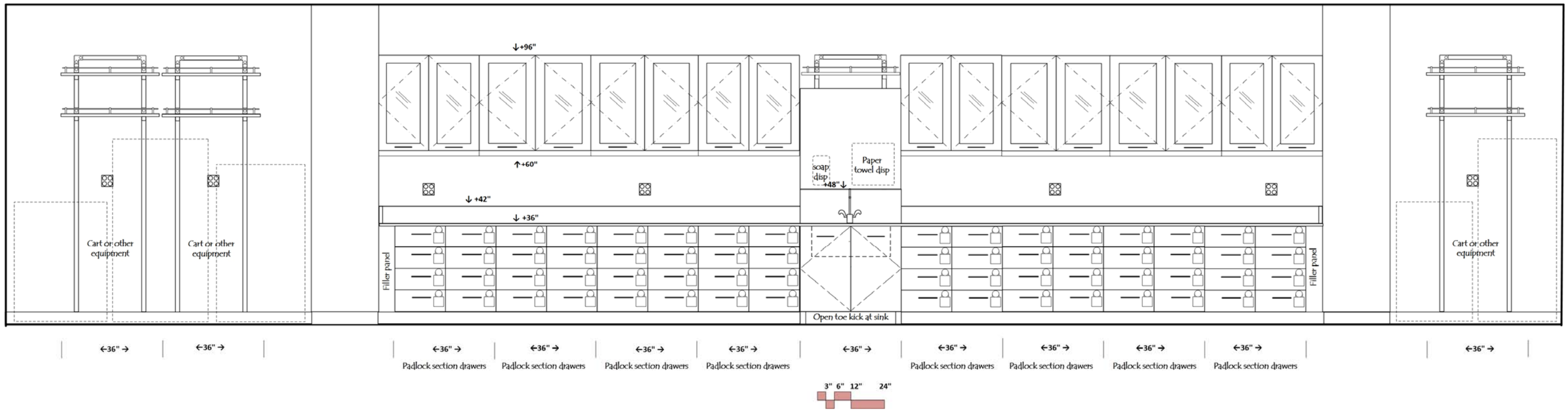
Microbiology Lab

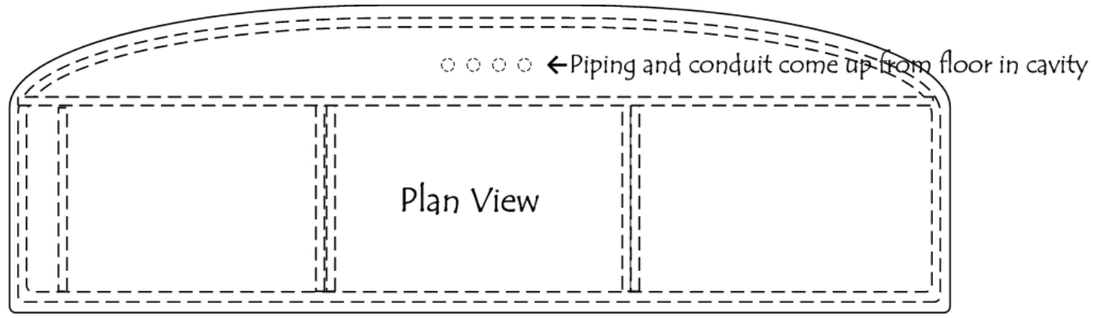
Elevation C- South Wall

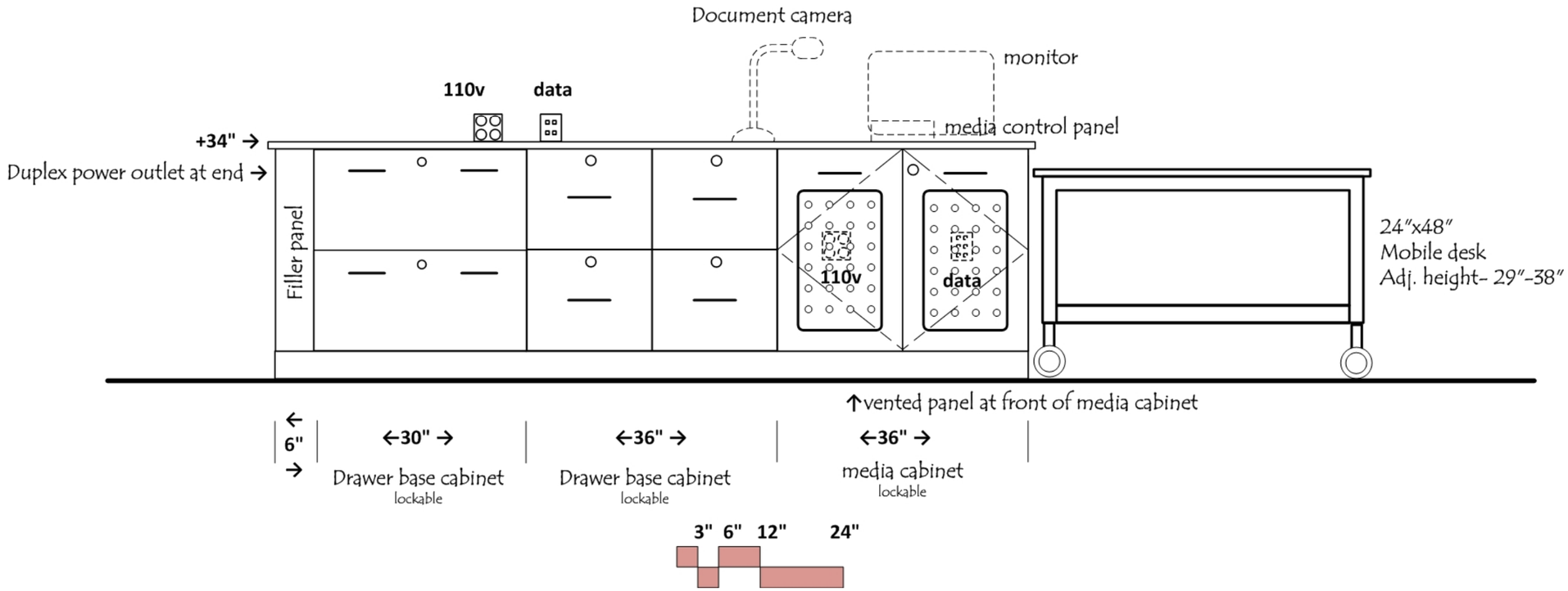


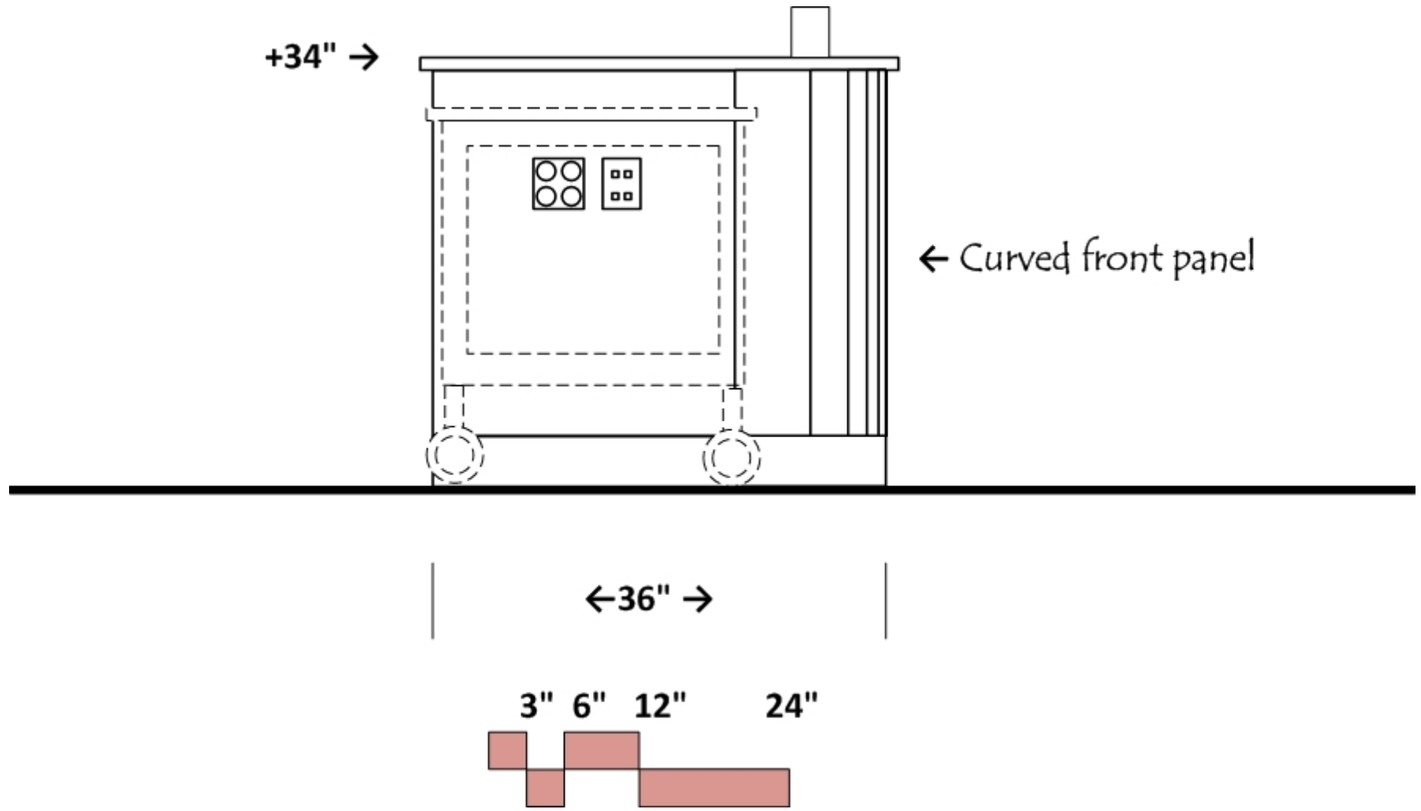
Microbiology Lab

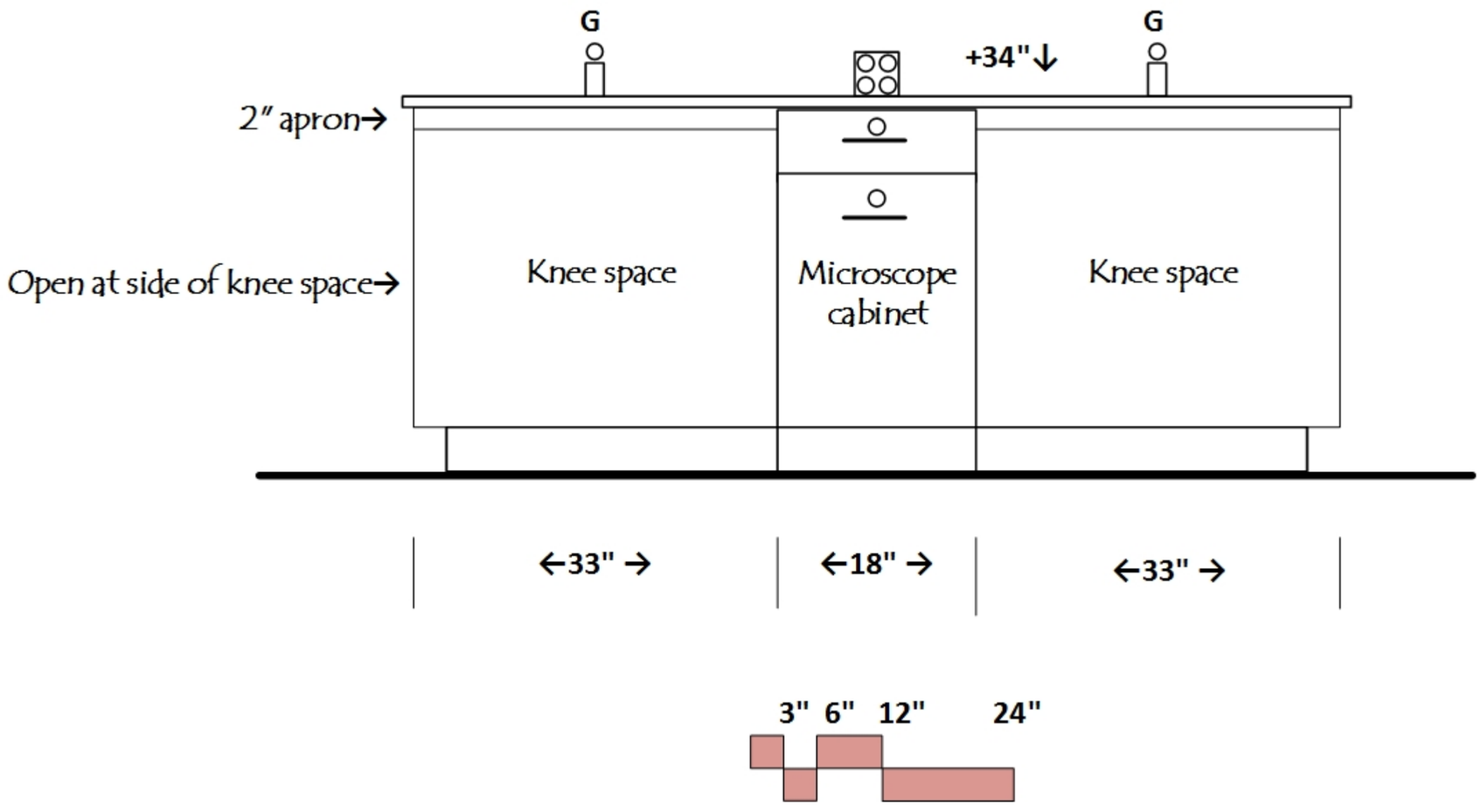
Elevation D- West Wall




←Piping and conduit come up from floor in cavity
Plan View


Document camera
monitor
media control panel
110v
data
+34" →
Duplex power outlet at end →
Filler panel
110v
data
24"x48"
Mobile desk
Adj. height- 29"-38"
↑vented panel at front of media cabinet
← 6" →
←30" →
←36" →
←36" →
Drawer base cabinet
lockable
Drawer base cabinet
lockable
media cabinet
lockable
3" 6" 12" 24"

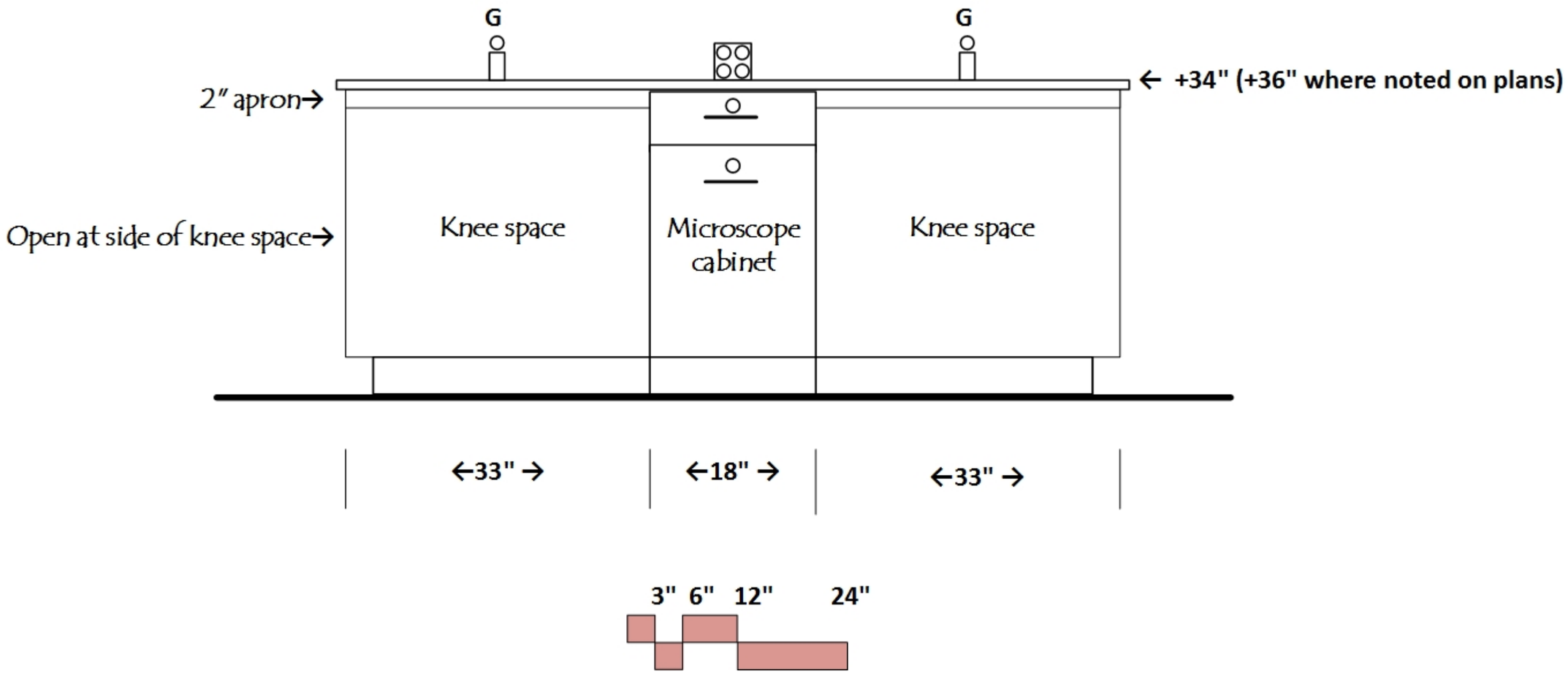

+34" →
← Curved front panel
←36" →
3" 6" 12" 24"

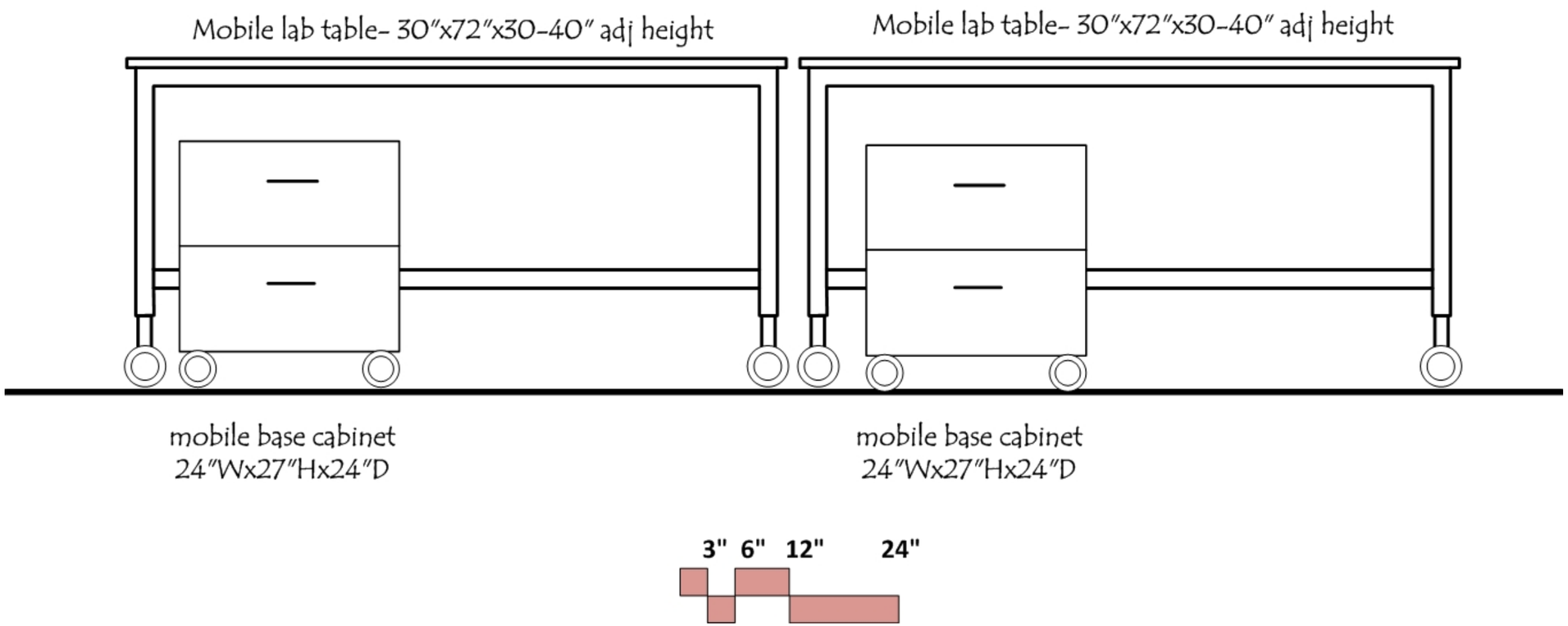

G
G
+34"↓
2" apron→
Open at side of knee space→
Knee space
Microscope cabinet
Knee space
←33" →
←18" →
←33" →
3"
6"
12"
24"

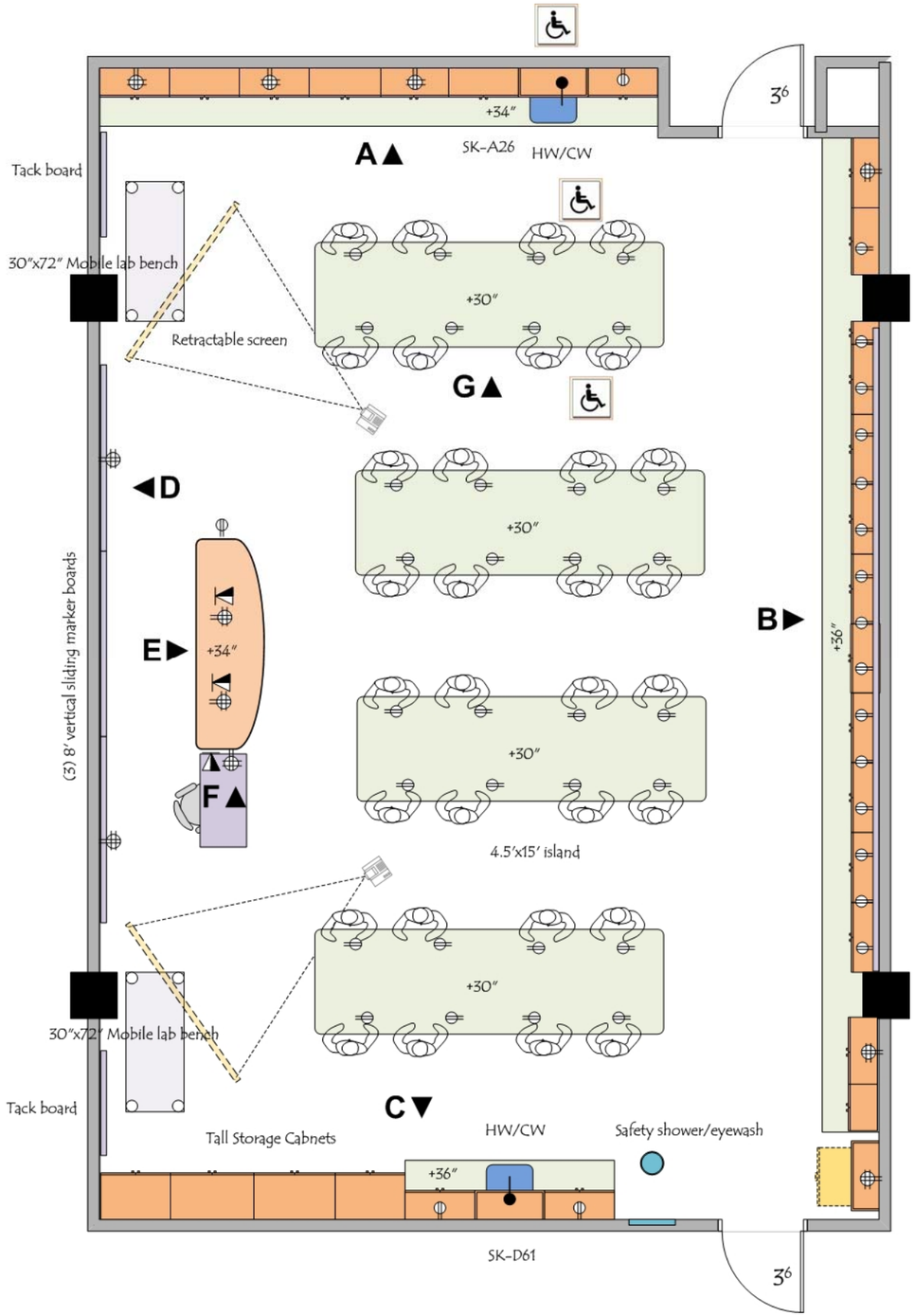
Microbiology Lab

Elevation H- Student Island

Similar for all other islands in lab




Mobile lab table- 30"x72"x30-40" adj height
Mobile lab table- 30"x72"x30-40" adj height
mobile base cabinet
24"Wx27"Hx24"D
mobile base cabinet
24"Wx27"Hx24"D
3"
6"
12"
24"



General Biology/Botany Lab

ARCHITECTURAL
Occupancy: B
Floor: vinyl composition tile
Walls: gypsum board and enamel paint
Ceiling: 9'-6"' acoustic tile
Doors: 3^{6}x$8^{0}$with window
Daylight: Clerestory window and/or view windows
Light attenuation: blinds at windows
Acoustic Attenuation: NC 40 or less
Security: key or card key access

STRUCTURAL
Vibration attenuation: 4,000 micro inches/sec or less

MECHANICAL
Hours of operation: 6 am to 11 pm
Temperature: : 66-74 deg. F, +/- 2 deg. F
100% exhaust- no recirculation of air
Exhaust on emergency power supply
(6) air changes perhour occupied
(4) air changes per hour unoccupied
Pressure: Negative
Humidity: Ambient

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
Data & Wireless data
Lighting: indirect fluorescent @ 60 f.c. with multi-level switching
task lights below wall cabinets
Provide light switches at instructor's bench and at each door
Separate lighting for marker board wall

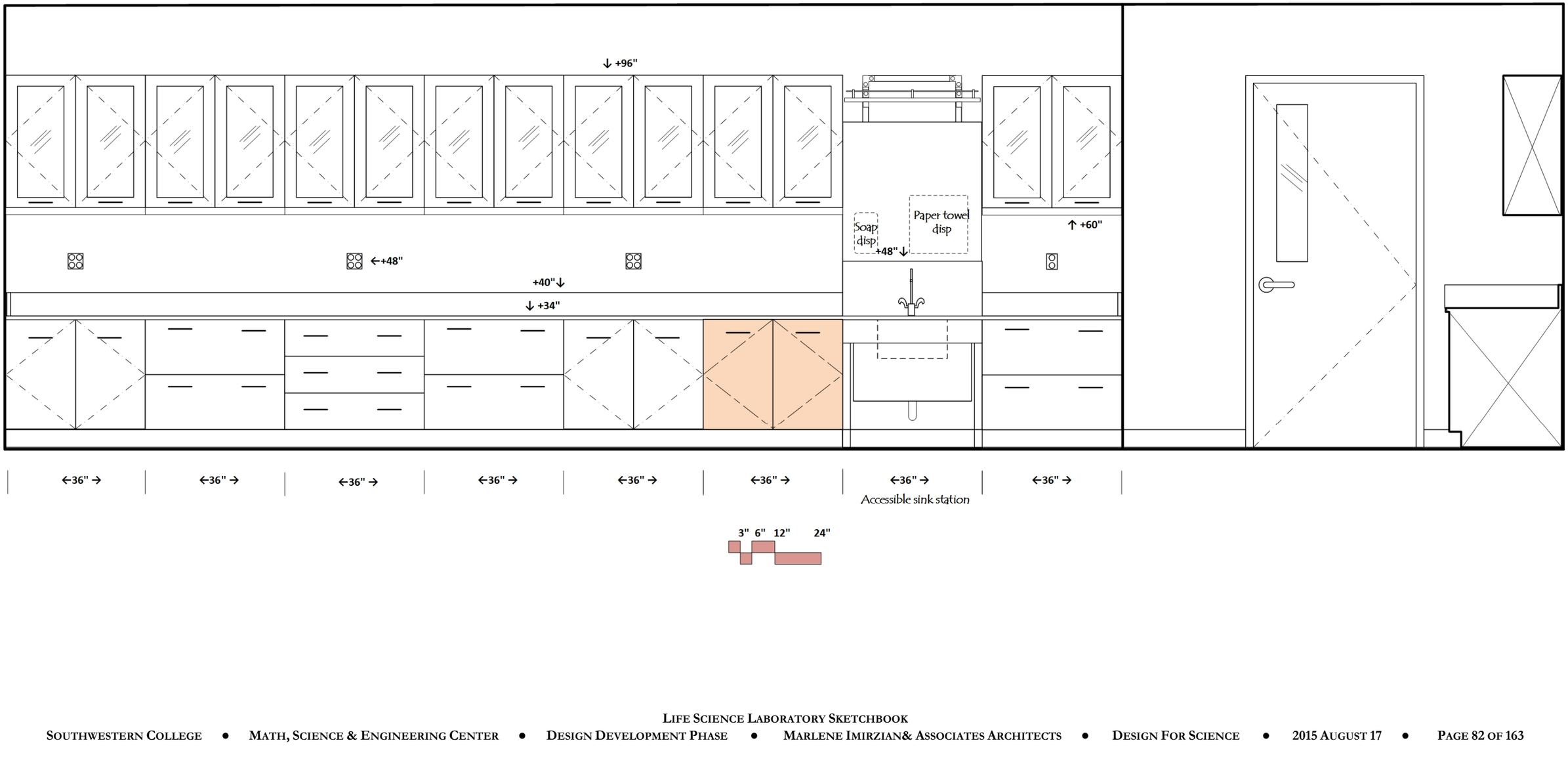
PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers

CONTRACTOR FURNISHED EQUIPMENT
Wood casework- base cabinets, wall cabinets, tall cabinets
Tables
Resin tops and sinks
Faucets & fittings
marker boards
Projection screens

COLLEGE FURNISHED EQUIPMENT
Chairs
Benchtop analytical instruments
Scientific equipment
paper towel dispenser
Projection system

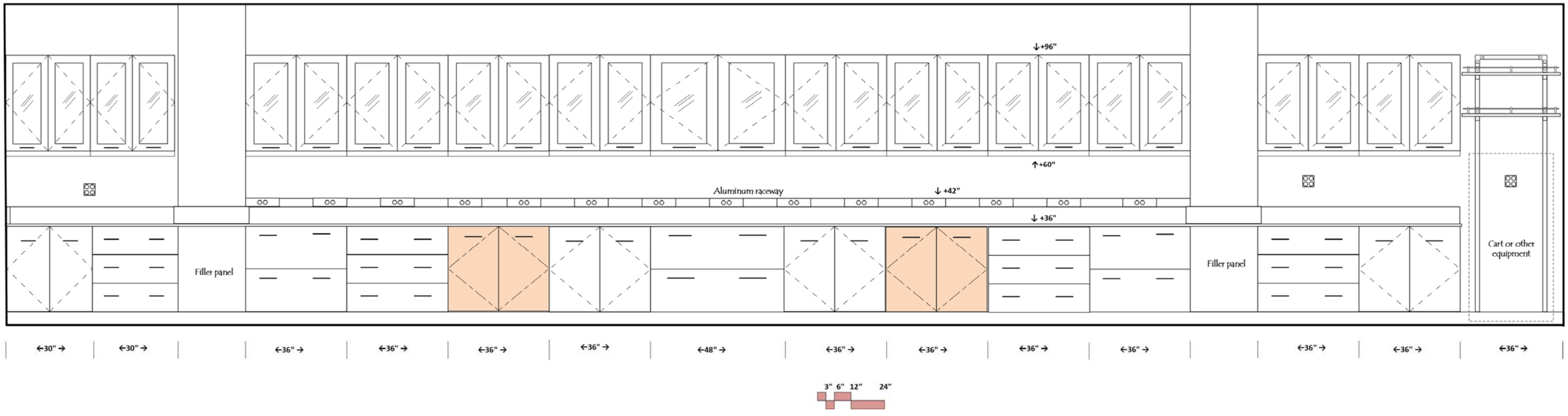
General Biology/Botany Lab

Elevation A- North Wall



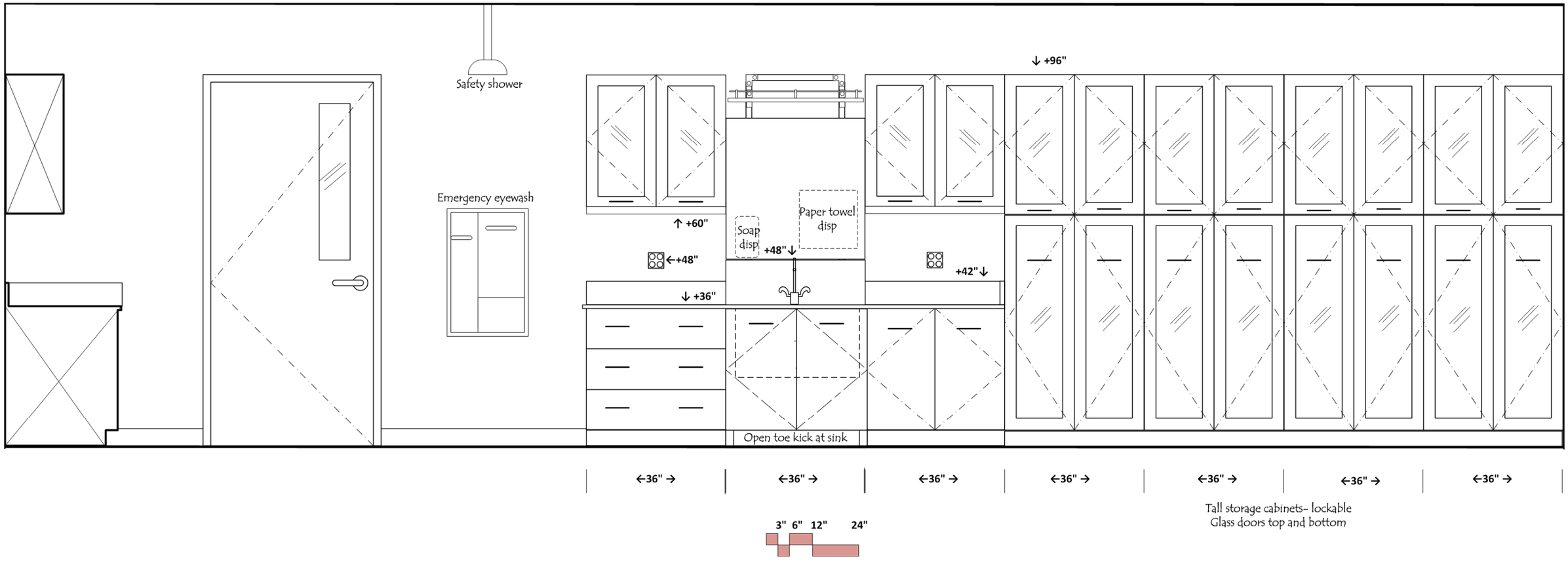
General Biology/Botany Lab

Elevation B- East Wall



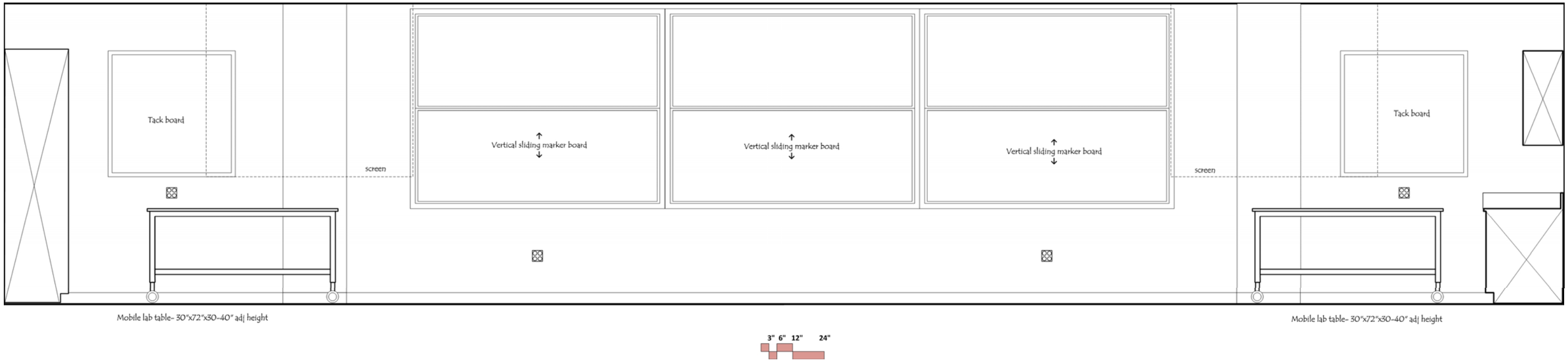
General Biology/Botany Lab

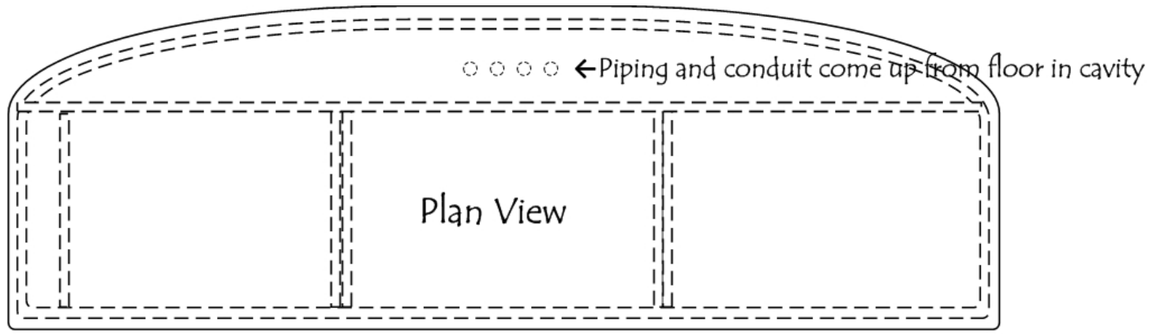
Elevation C- South Wall

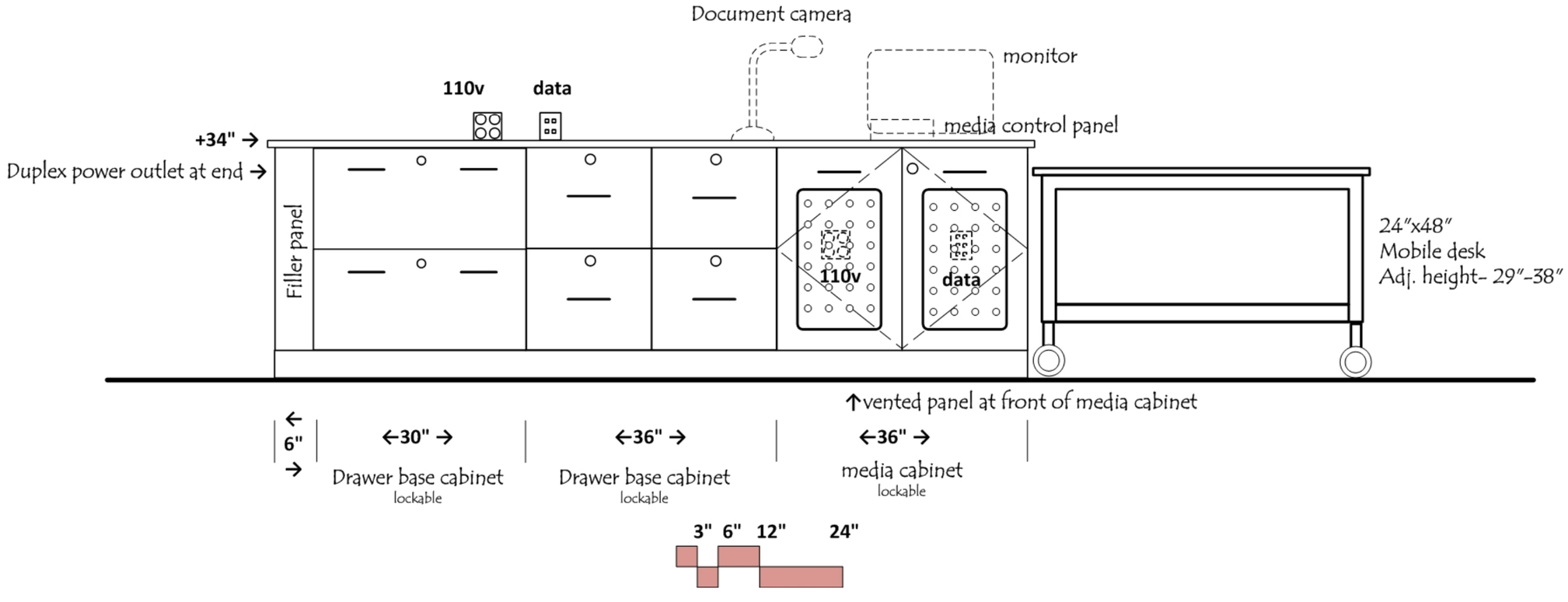


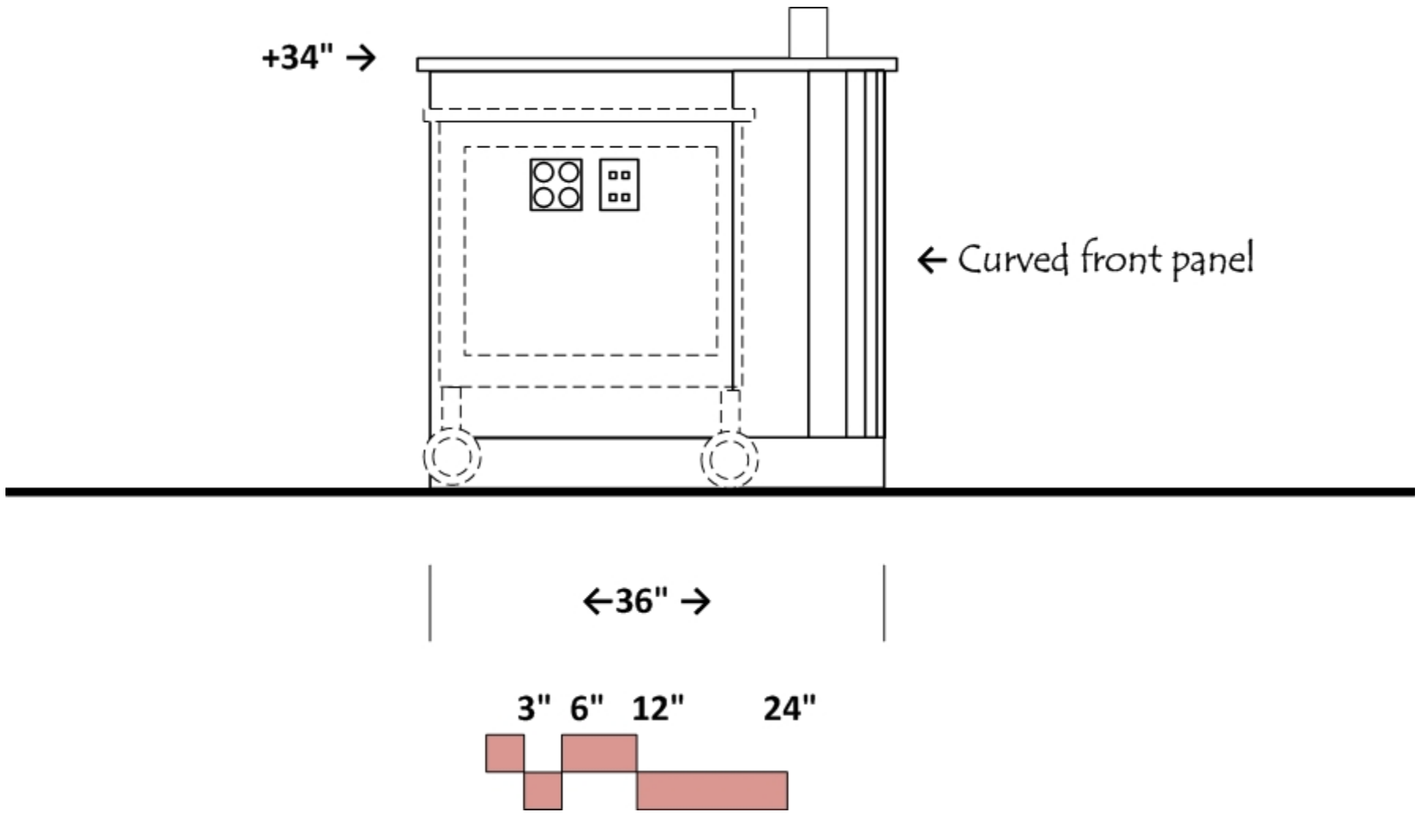
General Biology/Botany Lab

Elevation D- West Wall



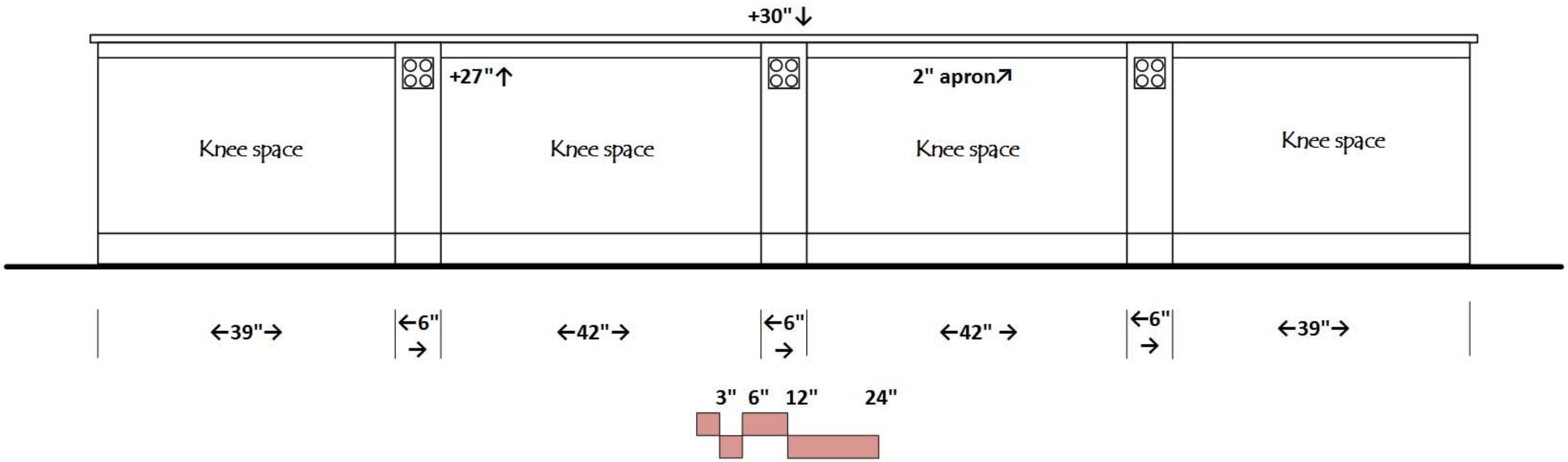

←Piping and conduit come up from floor in cavity
Plan View


Document camera
monitor
media control panel
110v
data
+34" →
Duplex power outlet at end →
Filler panel
110v
data
24"x48"
Mobile desk
Adj. height- 29"-38"
↑vented panel at front of media cabinet
←6"→
←30"→
Drawer base cabinet
lockable
←36"→
Drawer base cabinet
lockable
←36"→
media cabinet
lockable
3" 6" 12" 24"


+34"
Curved front panel
←36"
3" 6" 12" 24"

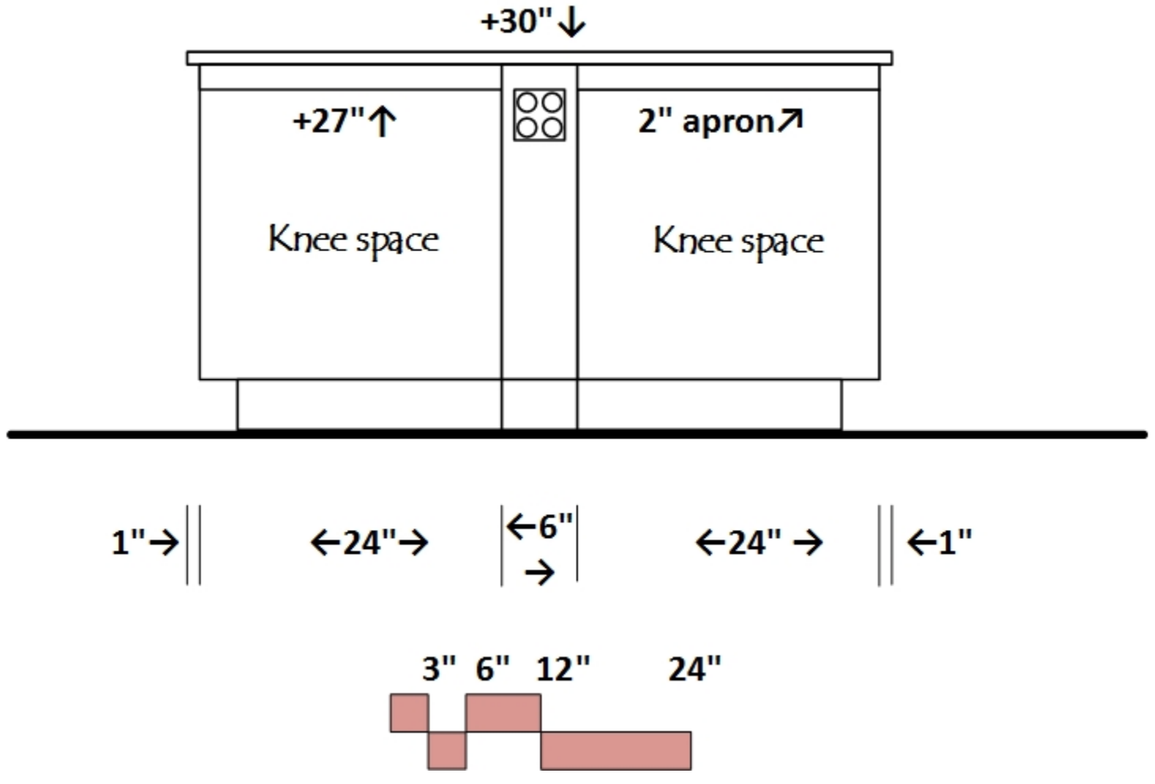
General Biology/Botany Lab

Elevation G- Student Island
Similar for all islands
All power outlets at student islands to be GFI (ground fault interrupt)

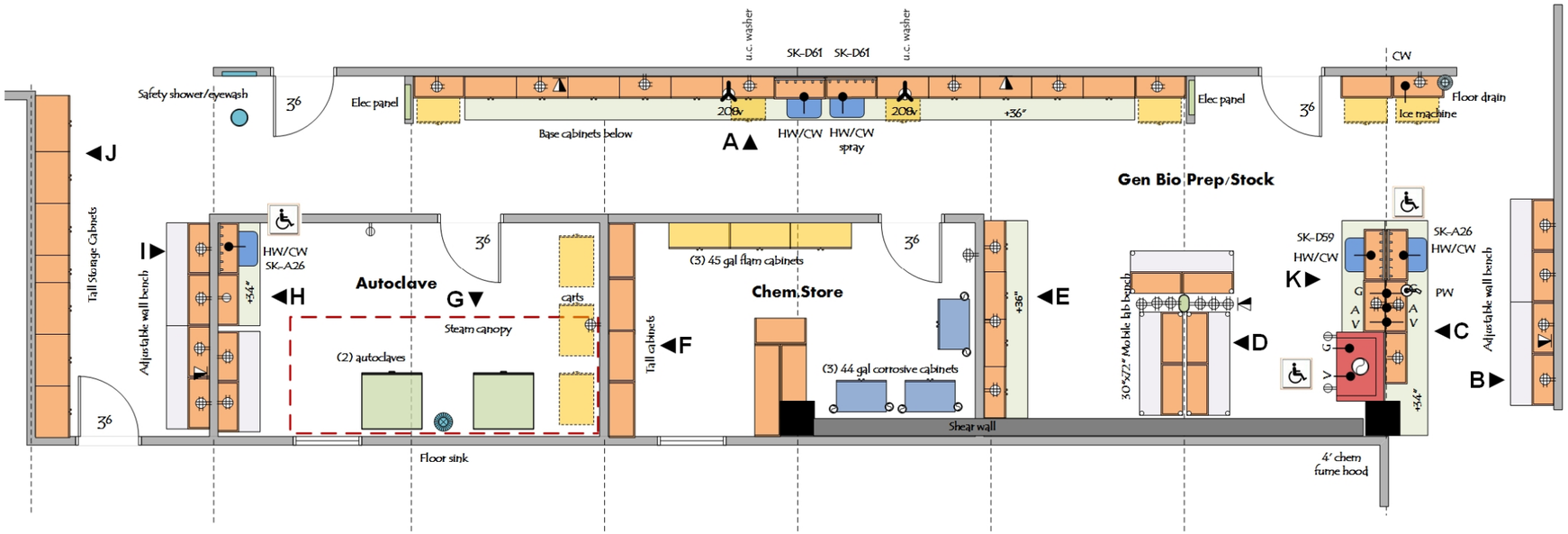


General Biology/Botany Lab

Elevation H- Student Island
Similar for all islands
All power outlets at student islands to be GFI (ground fault interrupt)



Prep- Microbiology; General Biology/Botany



ARCHITECTURAL
Occupancy: B
Floor: vinyl composition tile
Walls: gypsum board and enamel paint
Ceiling: 9'-0" acoustic tile
Doors: 3^{6}x$8^{0}$with window
Daylight: Clerestory window and/or view windows
Light attenuation: blinds at windows
Acoustic Attenuation: NC 40 or less
Security: key or card key access
1 hour rating around chem store

STRUCTURAL
Vibration attenuation: 4,000 micro inches/sec or less

MECHANICAL
Hours of operation: 6 am to 11 pm
Temperature: : 66-74 deg. F, +/- 2 deg. F
100% exhaust- no recirculation of air
Exhaust on emergency power supply
(6) air changes per (exhaust at ceiling) hour occupied
(4) air changes per hour unoccupied
Chem Store at 6 air changes per hour 24/7
Pressure: Negative
Humidity: Ambient

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
Data & Wireless data
208v power at undercounter washers
480v power at autoclaves with disconnect
Lighting: indirect fluorescent @ 60 f.c.
task lights below wall cabinets

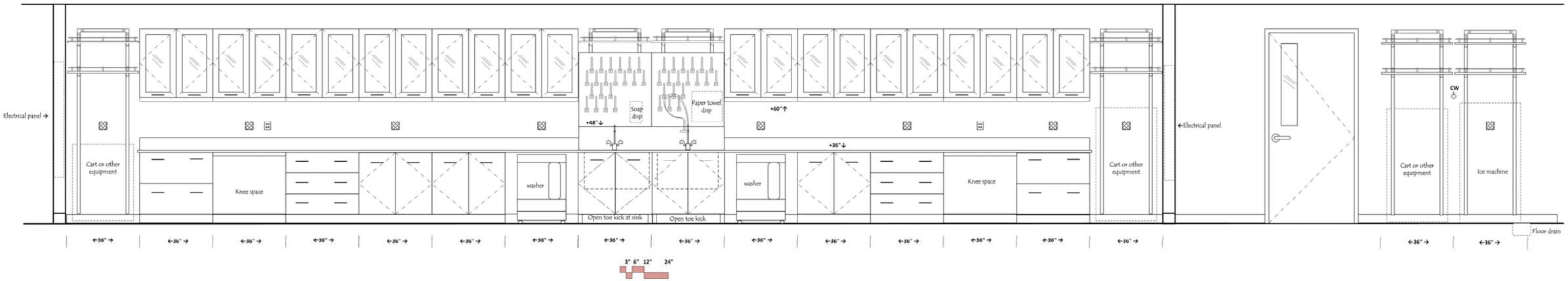
PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers
Pure water (PW) station at one sink
Gas and vac at lab bench
Cold water at ice machine

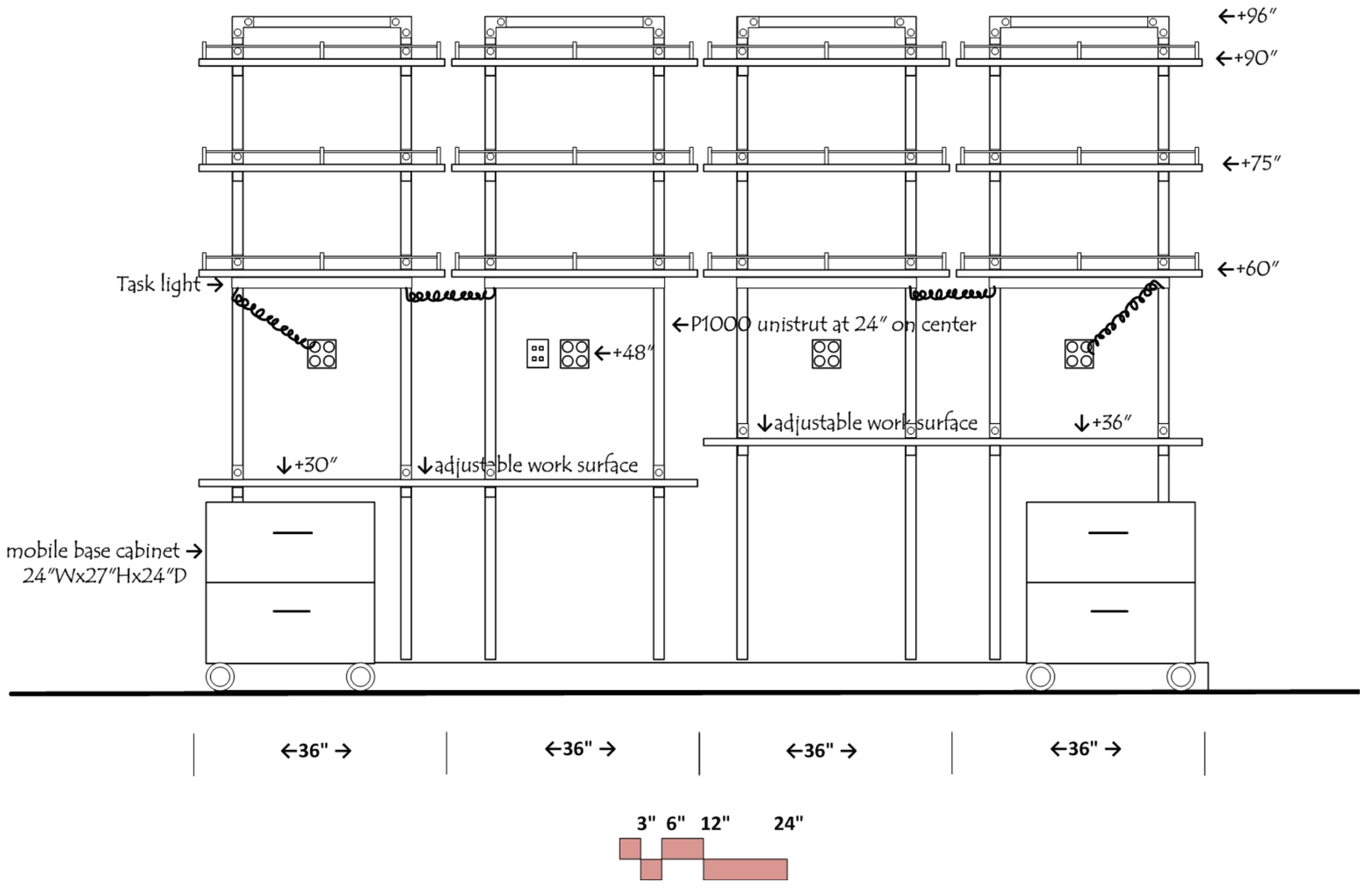
CONTRACTOR FURNISHED EQUIPMENT
Wood casework- base cabinets, wall cabinets, tall cabinets
Tables
Resin tops and sinks
Faucets & fittings
(2) undercounter washers
(2) autoclaves- 20x20x38 chamber size
chemical storage cabinets
4' chemical fume hood- VAV
Ice machine

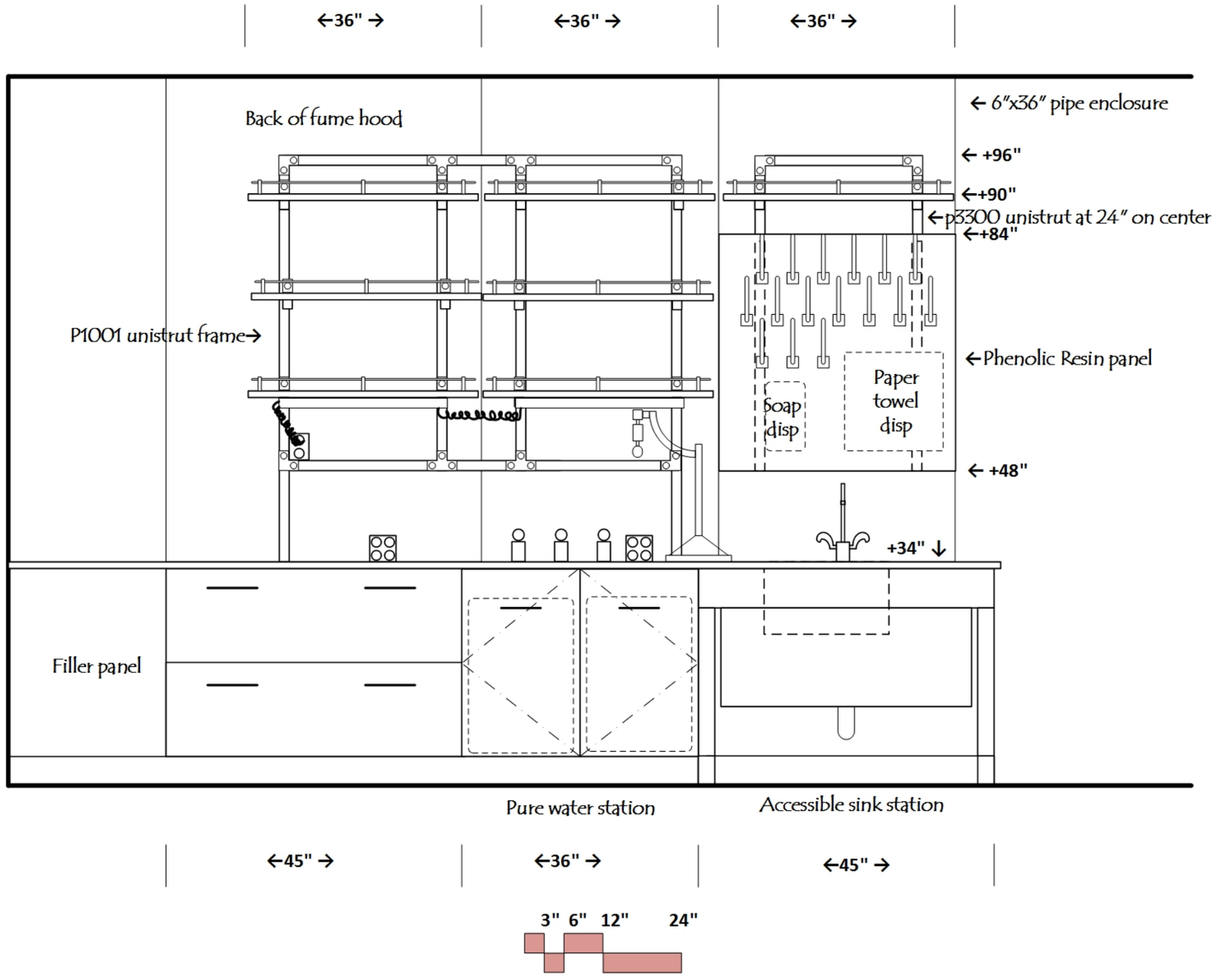
COLLEGE FURNISHED EQUIPMENT
Chairs
Benchtop analytical instruments
Scientific equipment
paper towel dispenser

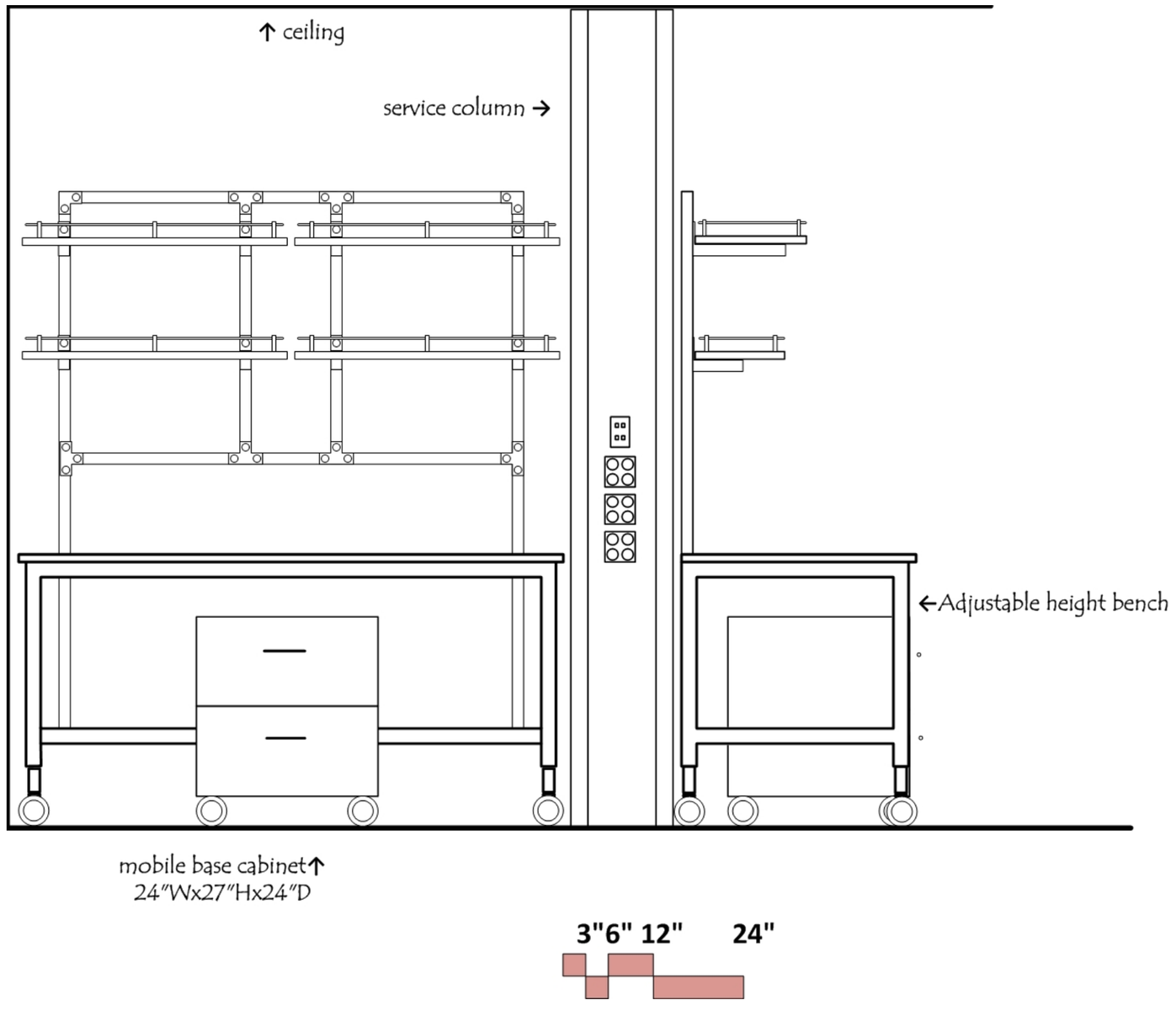
Prep- Microbiology; General Biology/Botany

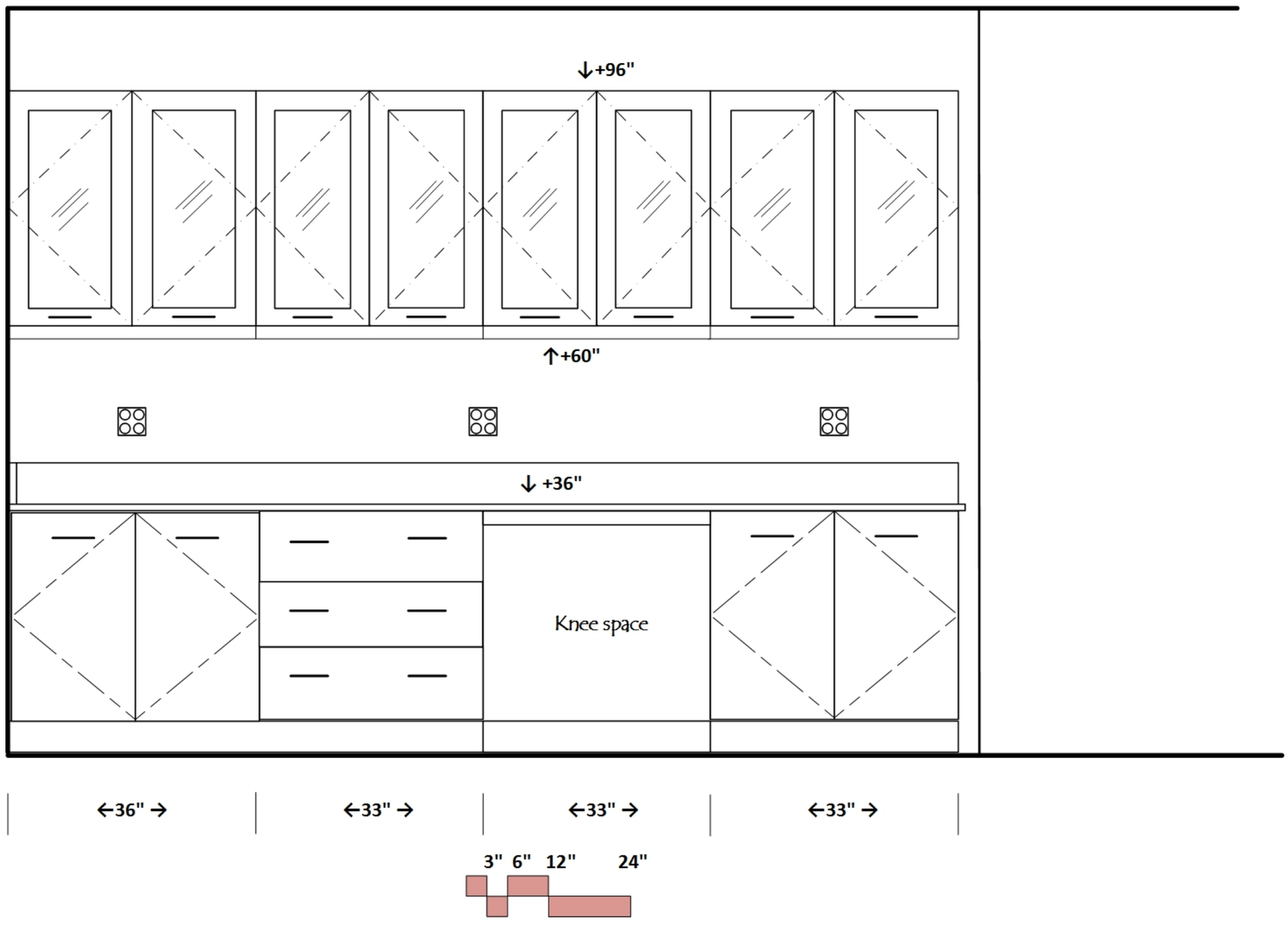
Elevation A- North Wall




←+96″
←+90″
←+75″
←+60″
Task light →
←P1000 unistrut at 24″ on center
←+48″
↓adjustable work surface
↓+36″
↓+30″
↓adjustable work surface
mobile base cabinet →
24″Wx27″Hx24″D
←36" →
←36" →
←36" →
←36" →
3" 6" 12" 24"

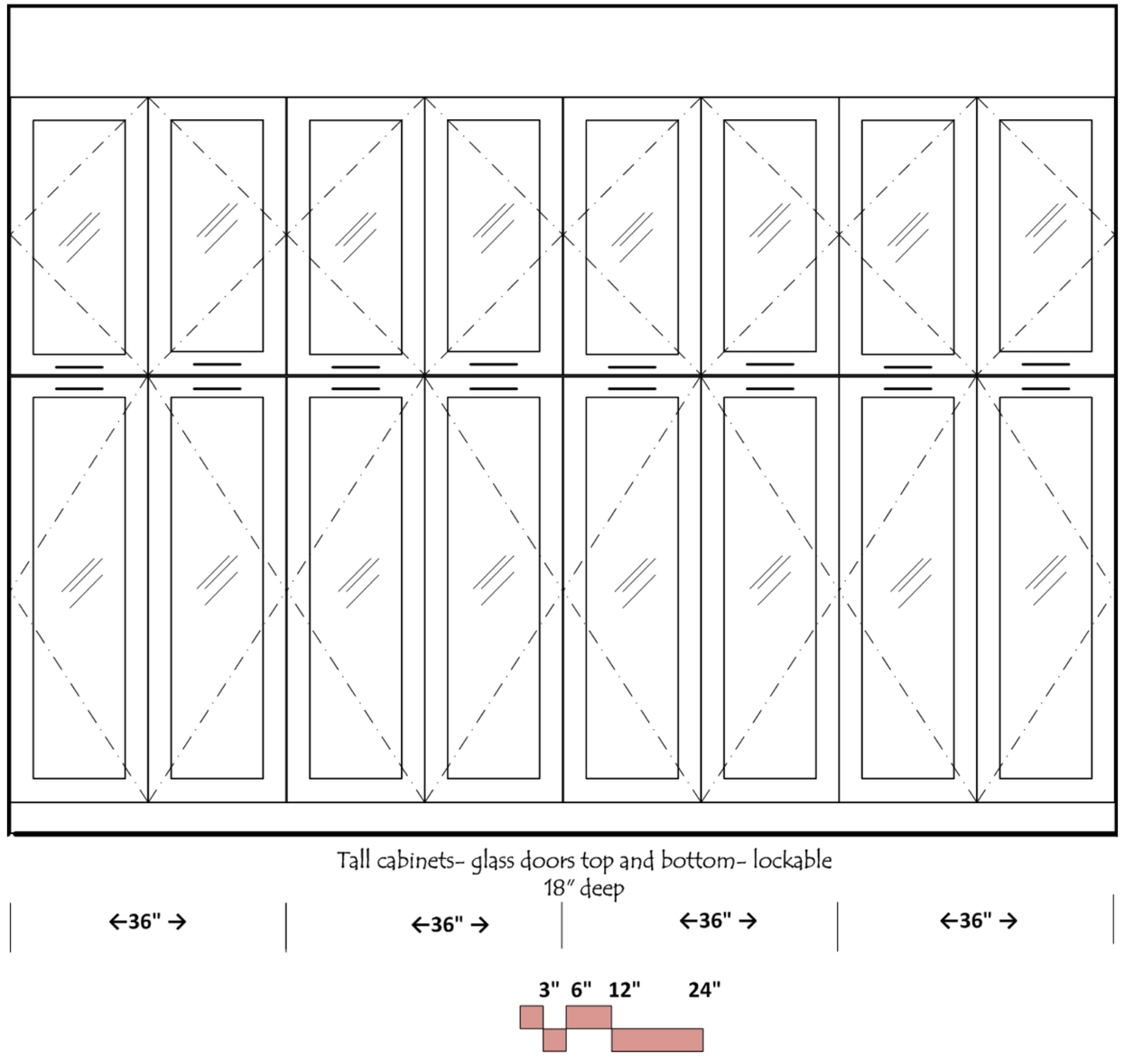

←36" →
←36" →
←36" →
Back of fume hood
← 6"x36" pipe enclosure
← +96"
←+90"
←p3300 unistrut at 24" on center
←+84"
P1001 unistrut frame→
←Phenolic Resin panel
Soap disp
Paper towel disp
← +48"
+34" ↓
Filler panel
Pure water station
Accessible sink station
←45" →
←36" →
←45" →
3" 6" 12" 24"


↑ ceiling
service column →
←Adjustable height bench
mobile base cabinet↑
24"Wx27"Hx24"D
3"6" 12" 24"


↓+96"
↑+60"
↓ +36"
Knee space
←36" →
←33" →
←33" →
←33" →
3" 6" 12" 24"

Prep- Microbiology; General Biology/Botany

Elevation F- Chem Store West Wall
Similar for other dry chem store cabinets in Chem Store Room

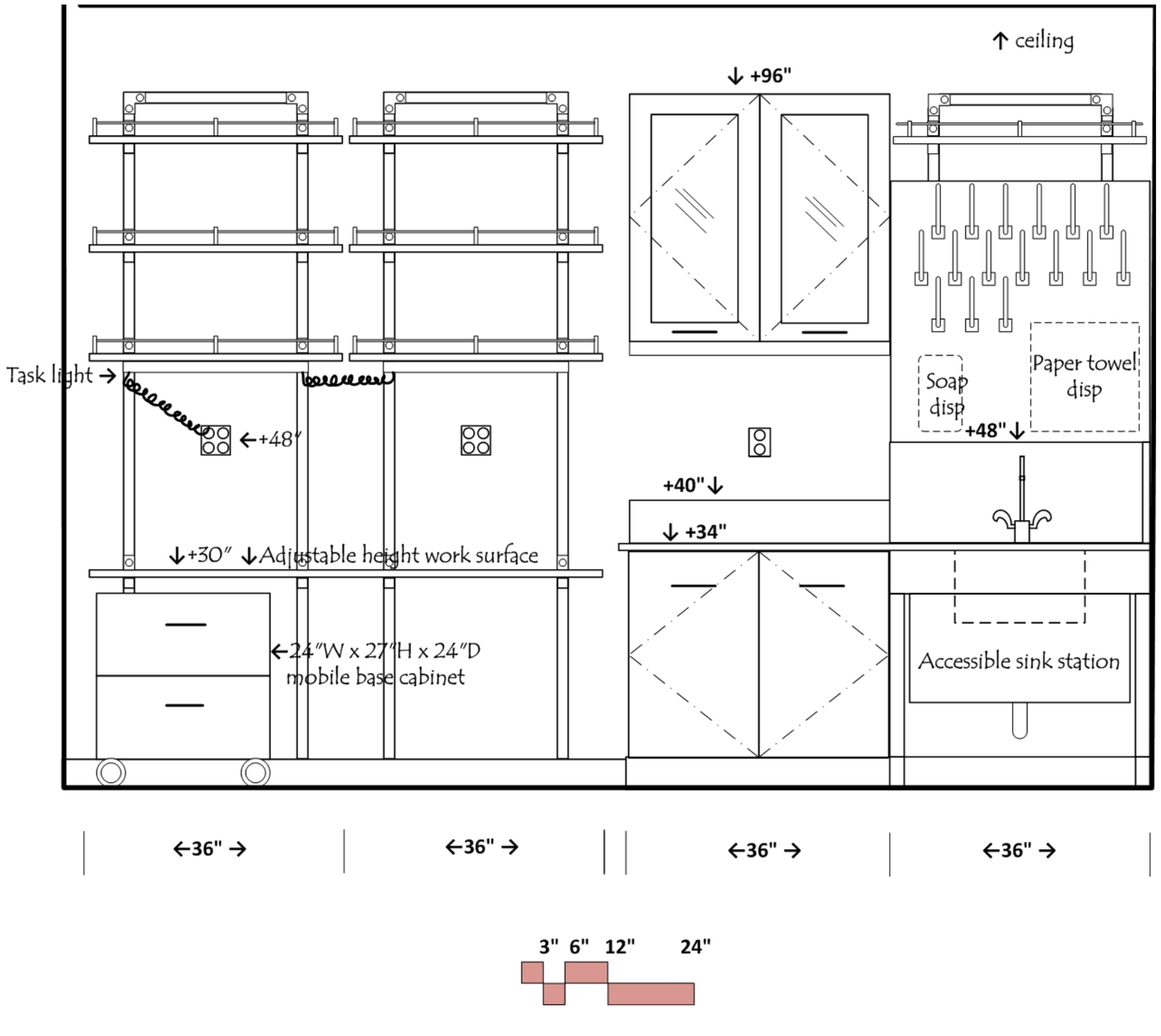


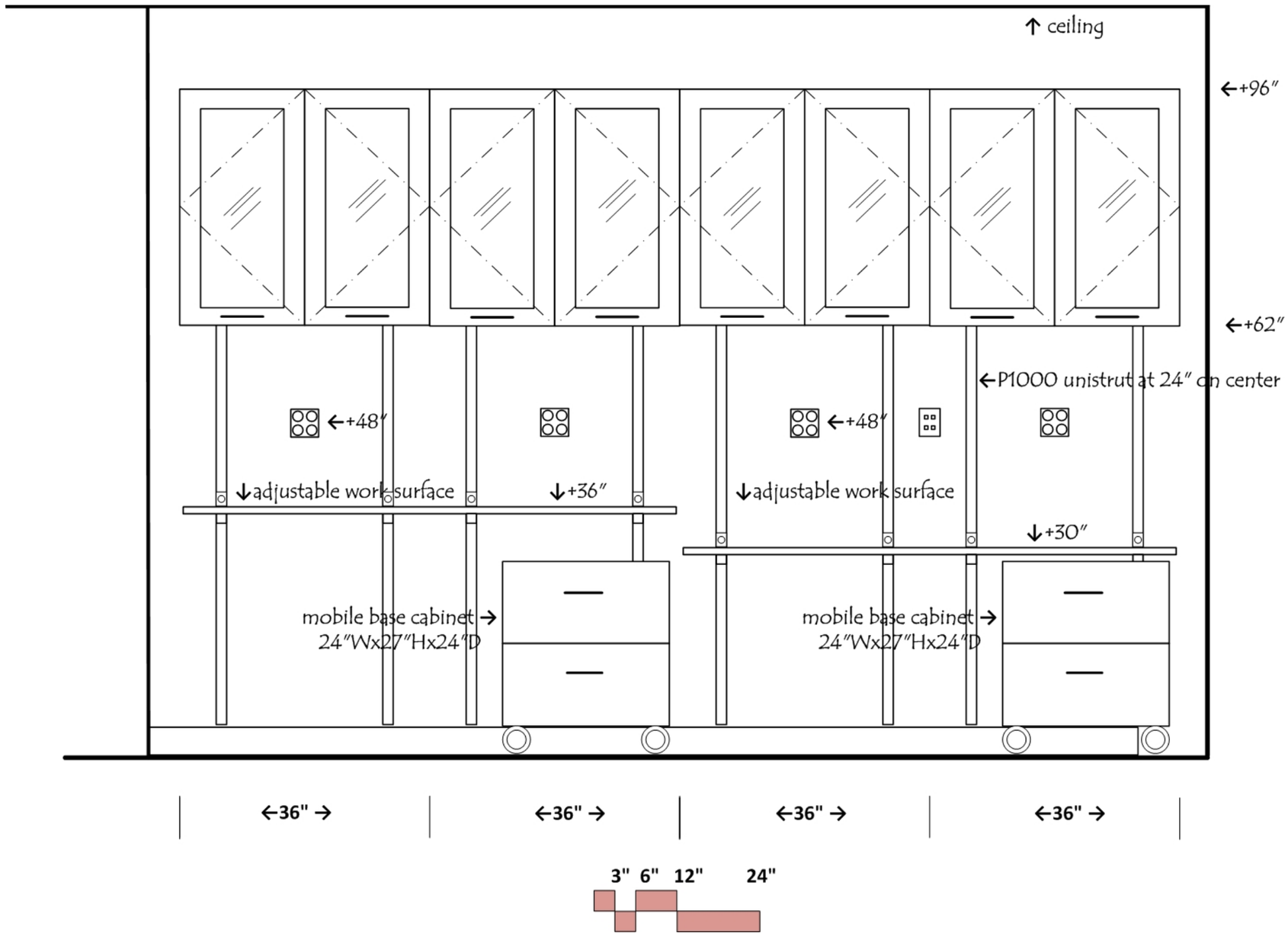
Prep- Microbiology; General Biology/Botany

Elevation G- Autoclave South Wall

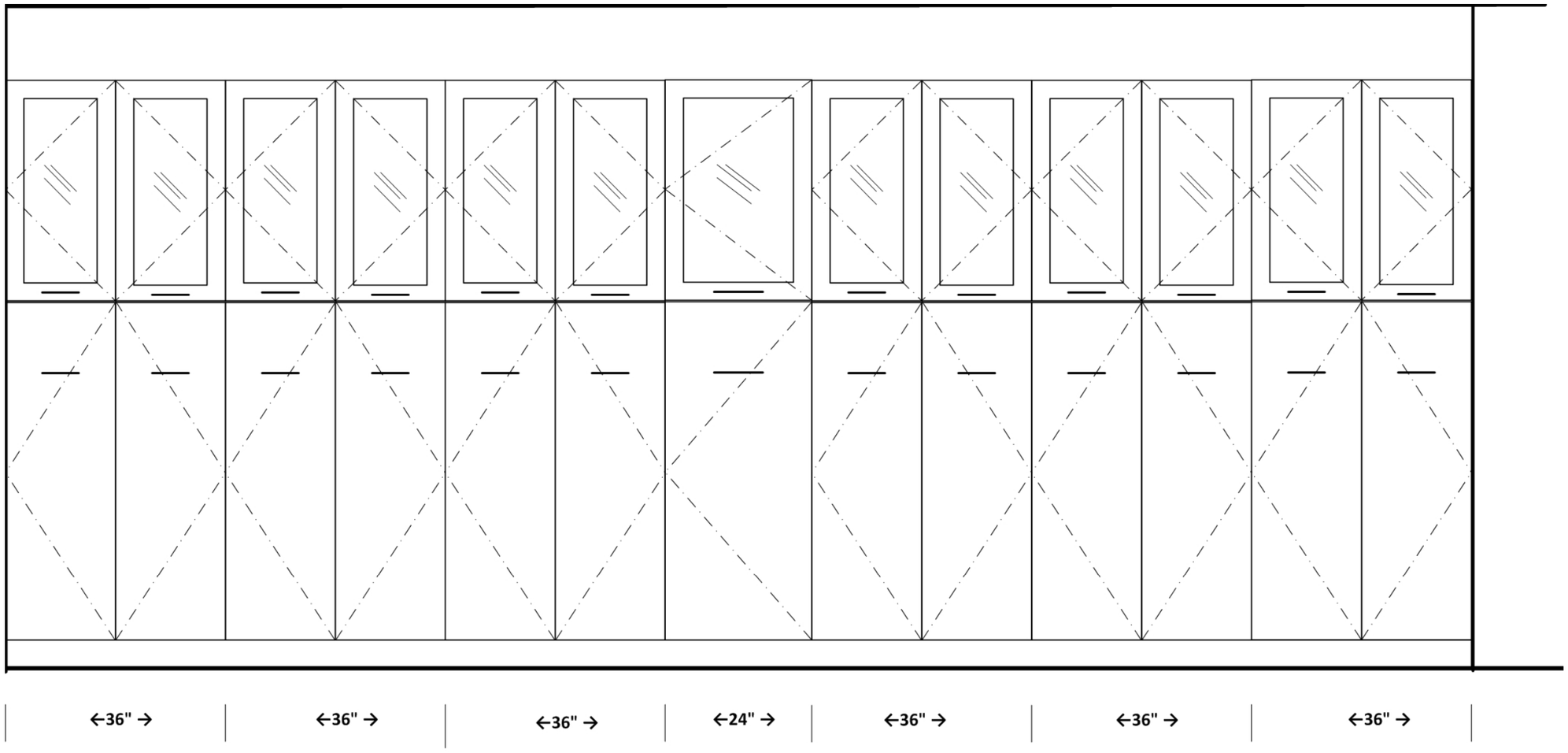
exhaust for canopy hood : 75 c.f.m. per linear foot of open perimeter

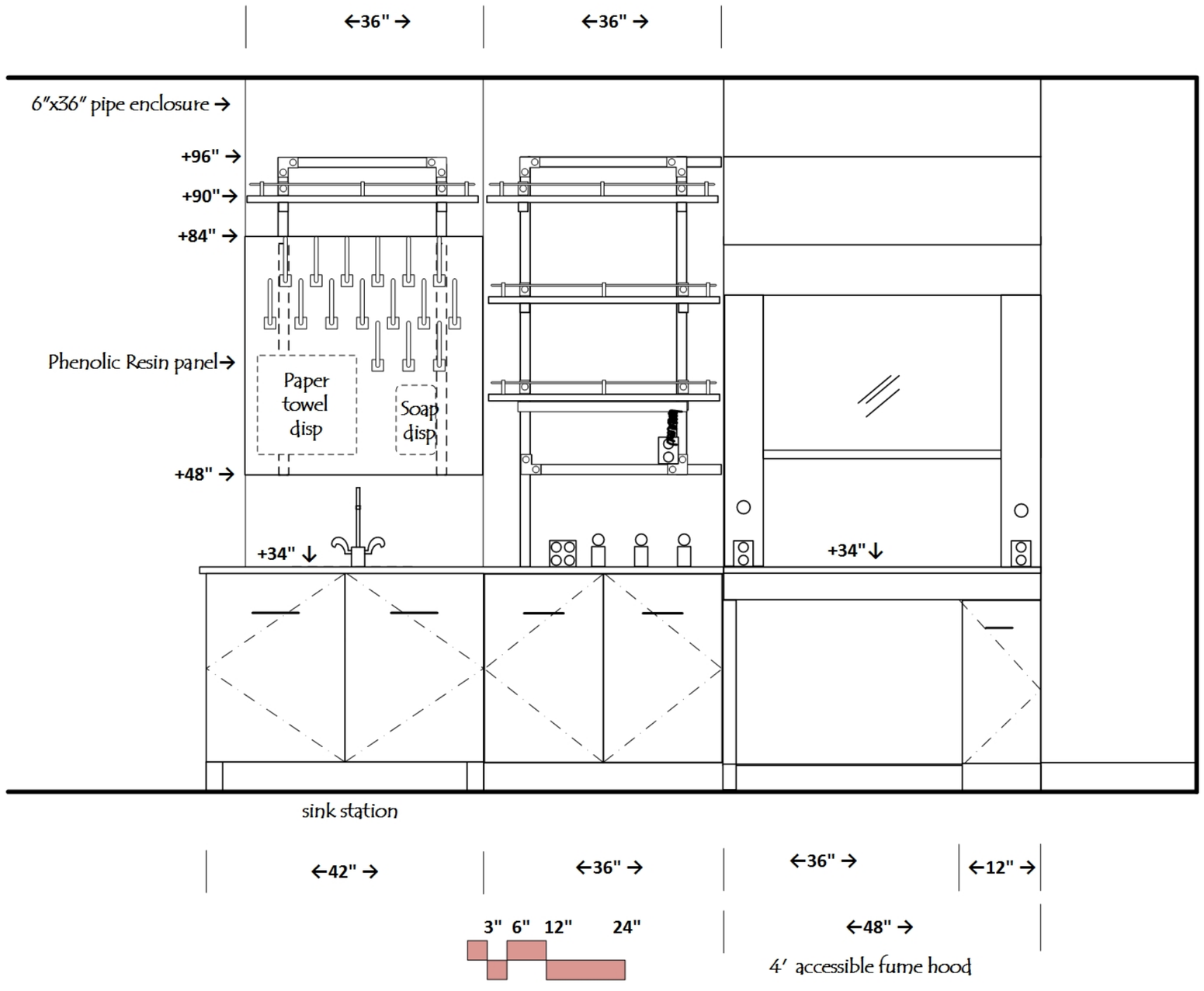
Section

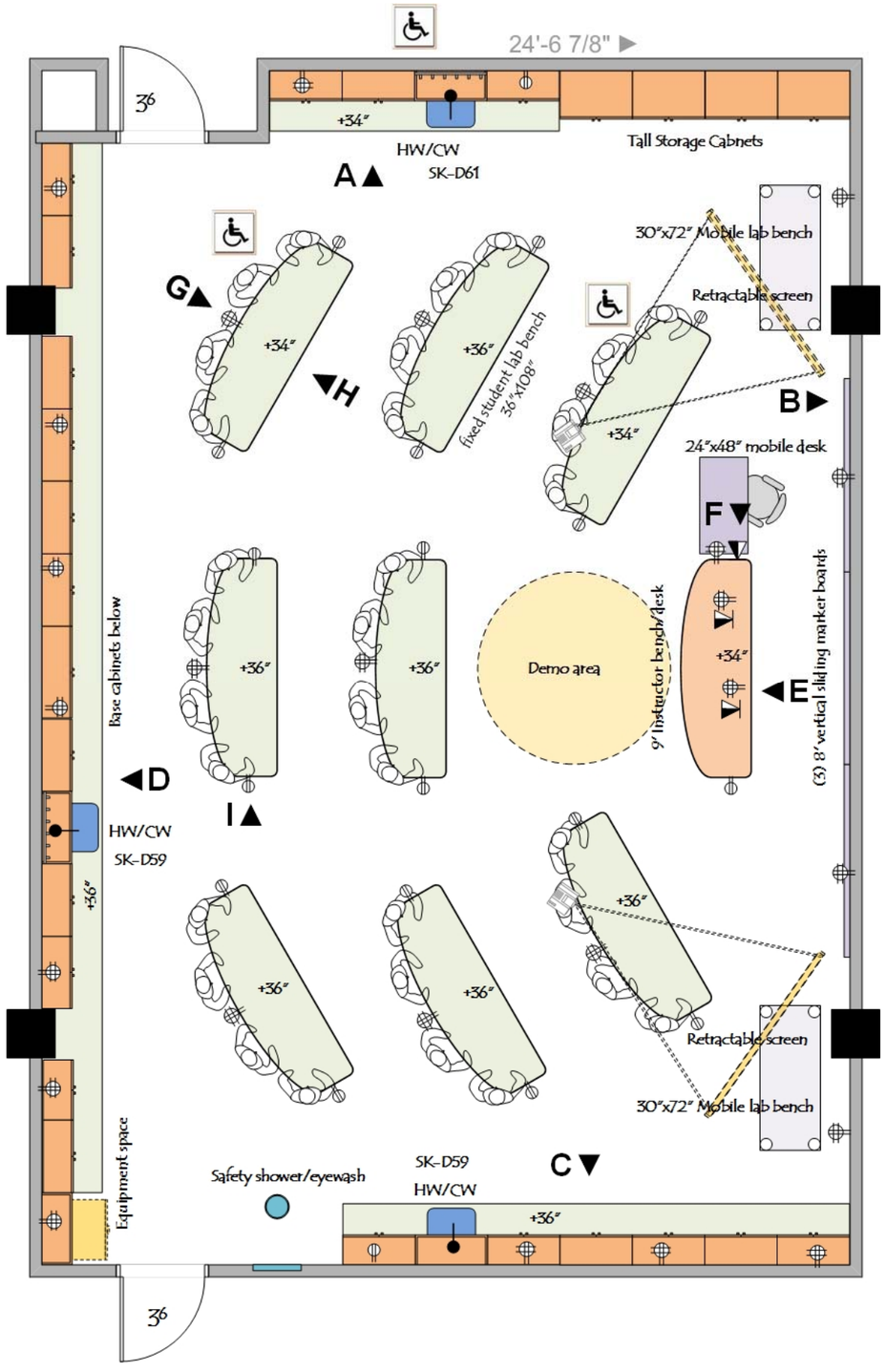

↑ ceiling
↓ +96"
Task light →
←+48"
Soap disp
Paper towel disp
+48"↓
+40"↓
↓ +34"
↓+30"
↓Adjustable height work surface
←24"W x 27"H x 24"D mobile base cabinet
Accessible sink station
←36" →
←36" →
←36" →
←36" →
3"
6"
12"
24"


↑ ceiling
←+96″
←+62″
←P1000 unistrut at 24″ on center
←+48″
←+48″
↓adjustable work surface
↓+36″
↓adjustable work surface
↓+30″
mobile base cabinet →
24″Wx27″Hx24″D
mobile base cabinet →
24″Wx27″Hx24″D
←36" →
←36" →
←36" →
←36" →
3" 6" 12" 24"

Elevation J- West Wall




←36" →
←36" →
6"x36" pipe enclosure →
+96" →
+90" →
+84" →
Phenolic Resin panel →
Paper towel disp
Soap disp
+48" →
+34" ↓
+34" ↓
sink station
←42" →
←36" →
←36" →
←12" →
3" 6" 12" 24"
←48" →
4' accessible fume hood



General Biology Lab

ARCHITECTURAL
Occupancy: B
Floor: vinyl composition tile
Walls: gypsum board and enamel paint
Ceiling: 9'-6"' acoustic tile
Doors: $3^{6}x8^{0}$with window
Daylight: Clerestory window and/or view windows
Light attenuation: blinds at windows
Acoustic Attenuation: NC 40 or less
Security: key or card key access

STRUCTURAL
Vibration attenuation: 4,000 micro inches/sec or less

MECHANICAL
Hours of operation: 6 am to 11 pm
Temperature: : 66-74 deg. F, +/- 2 deg. F
100% exhaust- no recirculation of air
Exhaust on emergency power supply
(6) air changes per hour occupied
(4) air changes per hour unoccupied
Pressure: Negative
Humidity: Ambient

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
Data & Wireless data
Lighting: indirect fluorescent @ 60 f.c. with multi-level switching
task lights below wall cabinets
Provide light switches at instructor's bench and at each door
Separate lighting for marker board wall

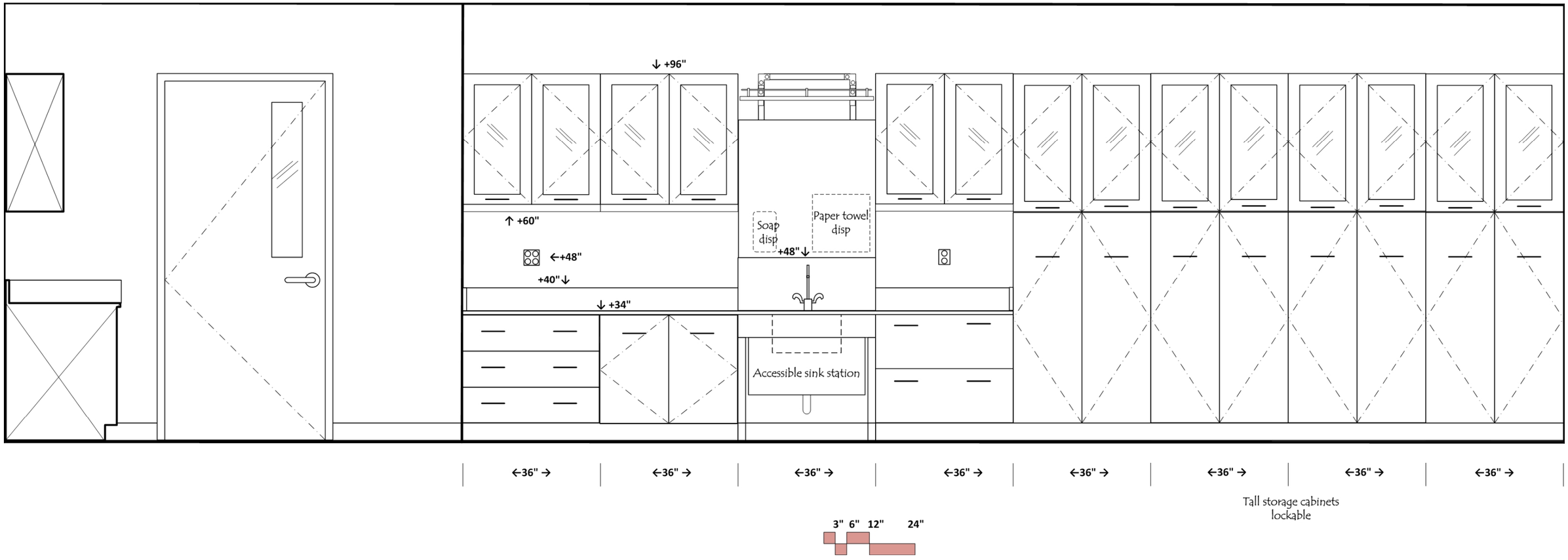
PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers

CONTRACTOR FURNISHED EQUIPMENT
Wood casework- base cabinets, wall cabinets, tall cabinets
Tables
Resin tops and sinks
Faucets & fittings
marker boards
Projector Screens
Projection system

COLLEGE FURNISHED EQUIPMENT
Chairs
Benchtop analytical instruments
Scientific equipment
paper towel dispenser

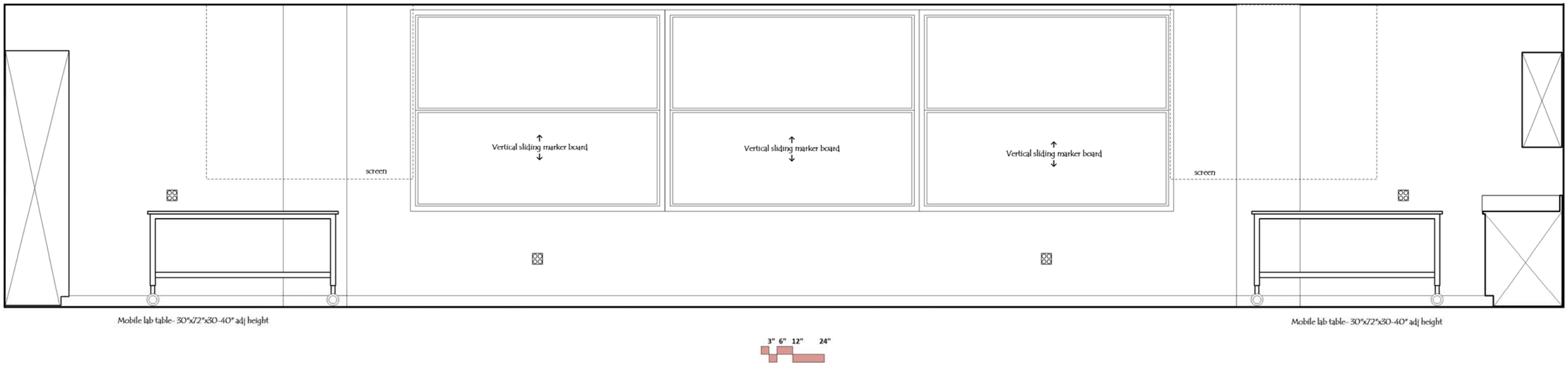
General Biology Lab

Elevation A- North Wall



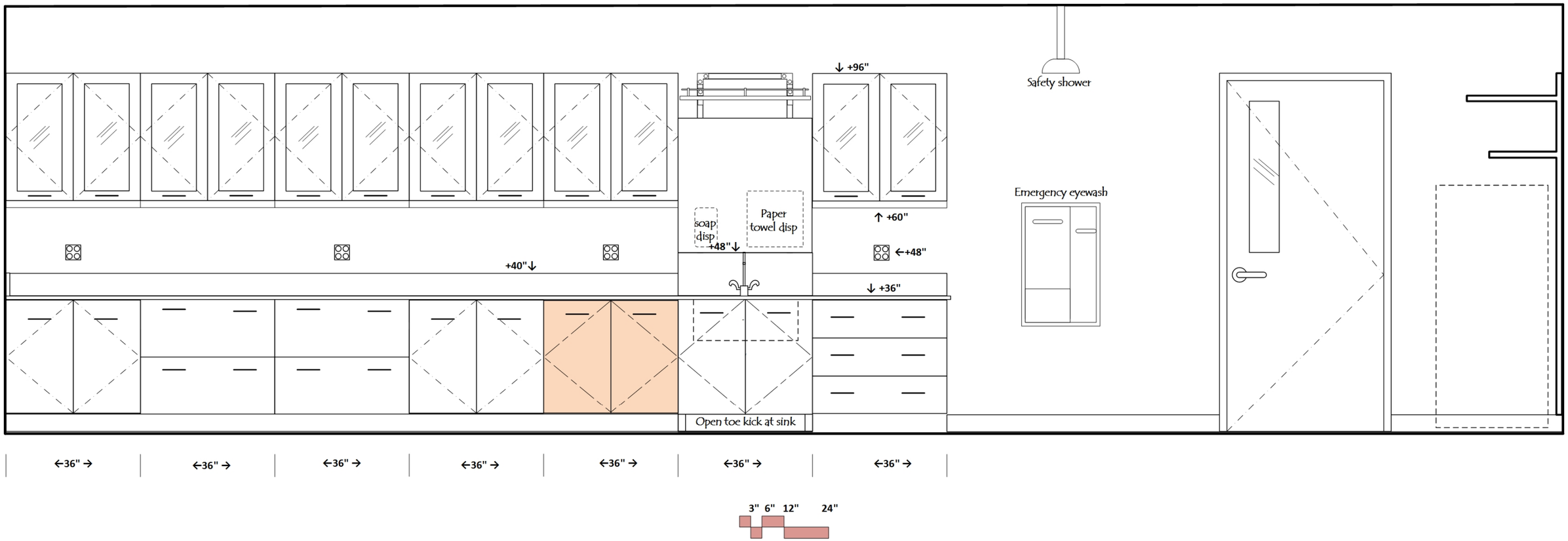
General Biology Lab

Elevation B- East Wall



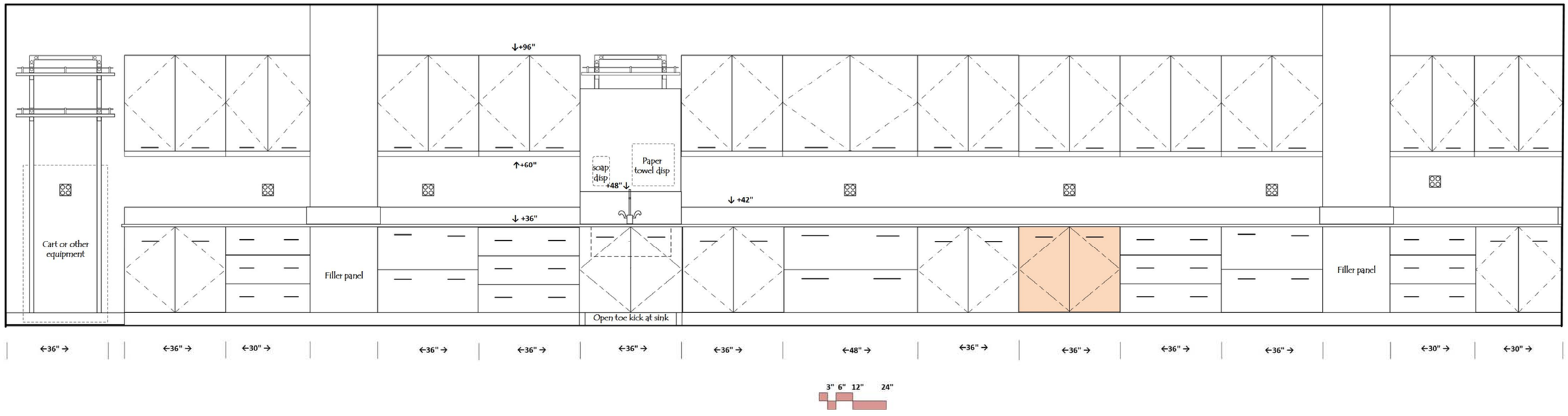
General Biology Lab

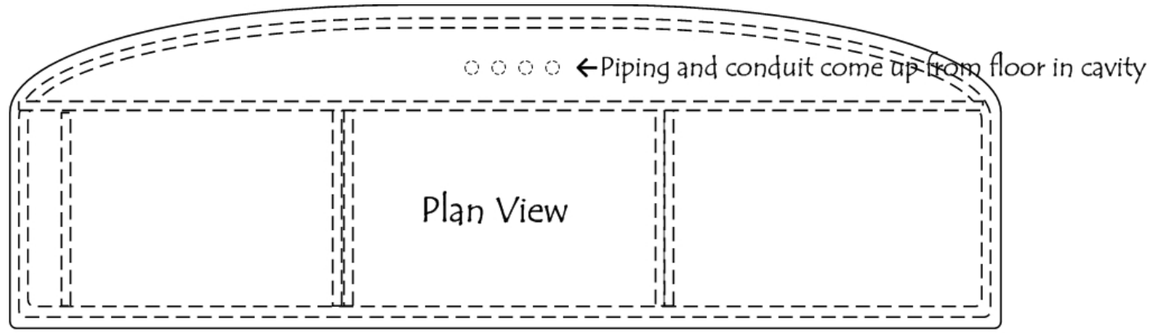
Elevation C- South Wall

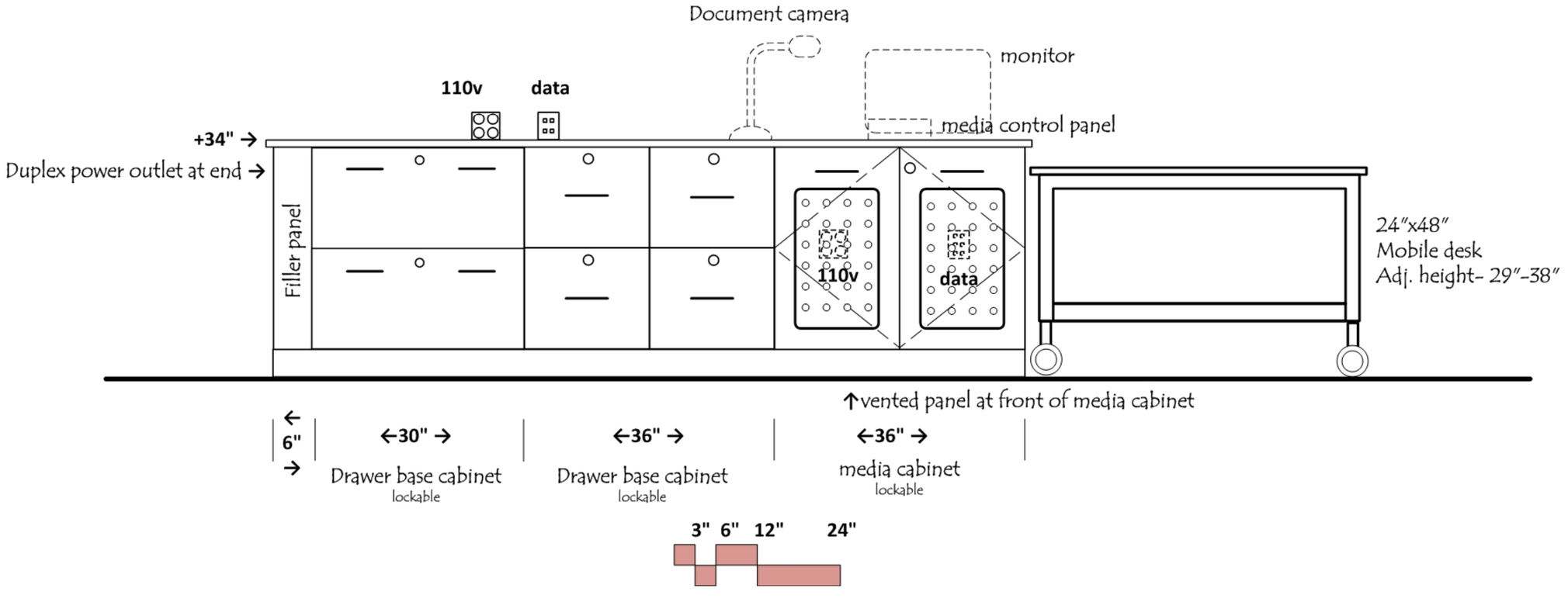


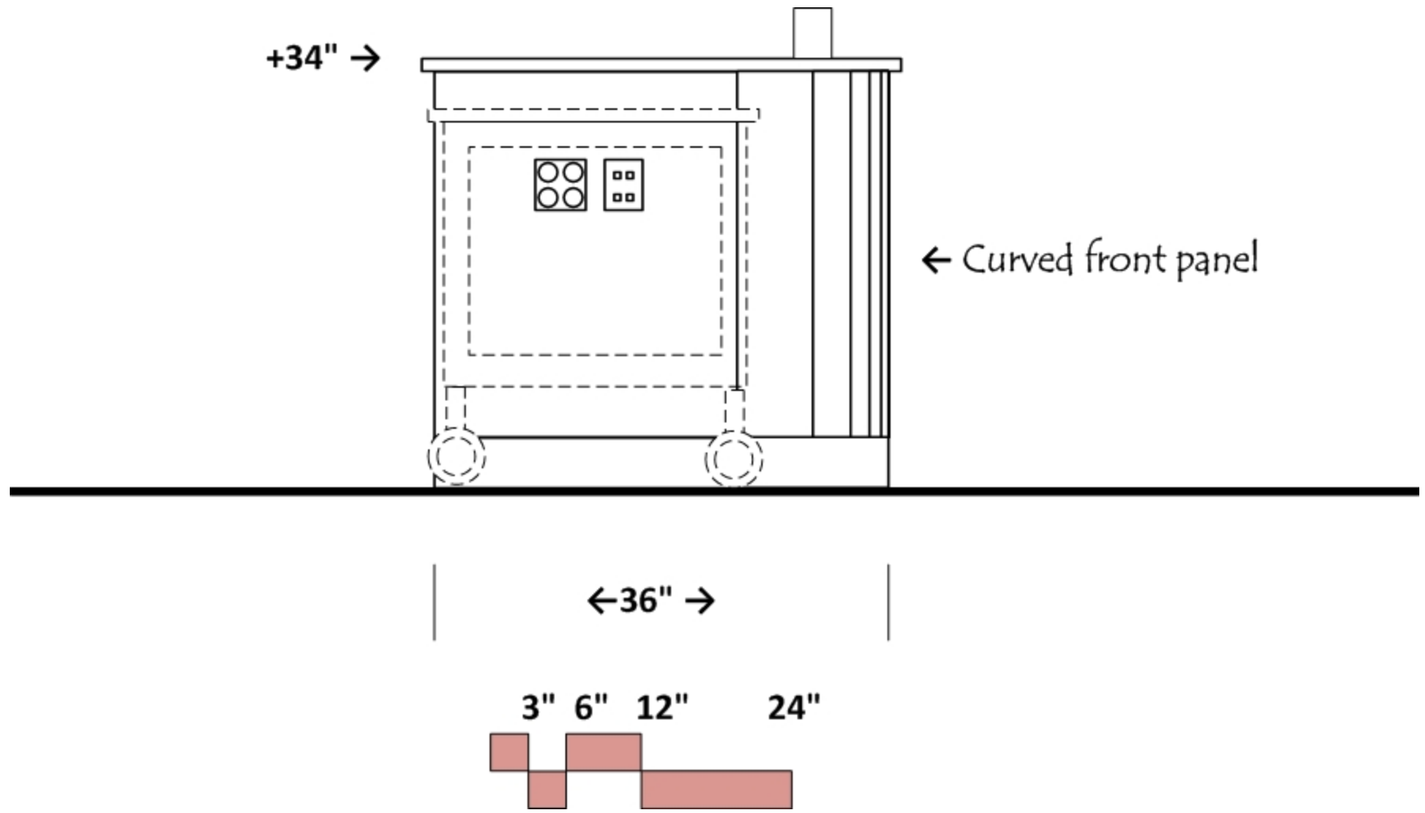
General Biology Lab

Elevation D- West Wall

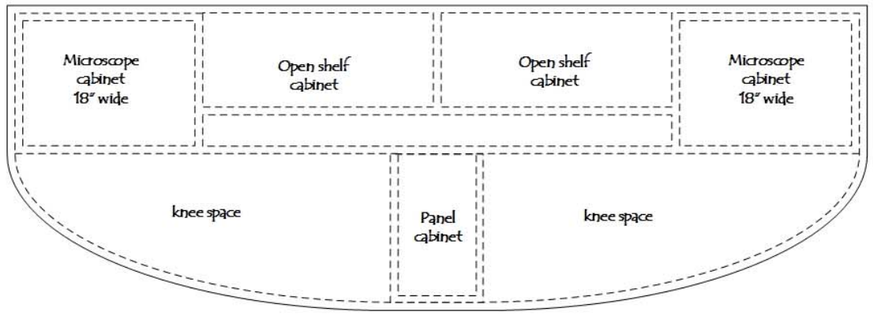



←Piping and conduit come up from floor in cavity
Plan View


Document camera
monitor
media control panel
110v
data
+34" →
Duplex power outlet at end →
Filler panel
110v
data
24"x48"
Mobile desk
Adj. height- 29"-38"
↑vented panel at front of media cabinet
← 6" →
←30" →
←36" →
←36" →
Drawer base cabinet
lockable
Drawer base cabinet
lockable
media cabinet
lockable
3" 6" 12" 24"

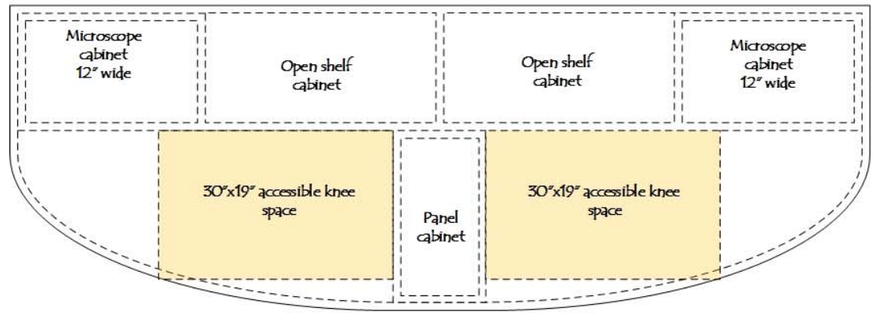

+34" →
← Curved front panel
←36" →
3" 6" 12" 24"

TOP VIEW



↑108" x 36" epoxy resin top

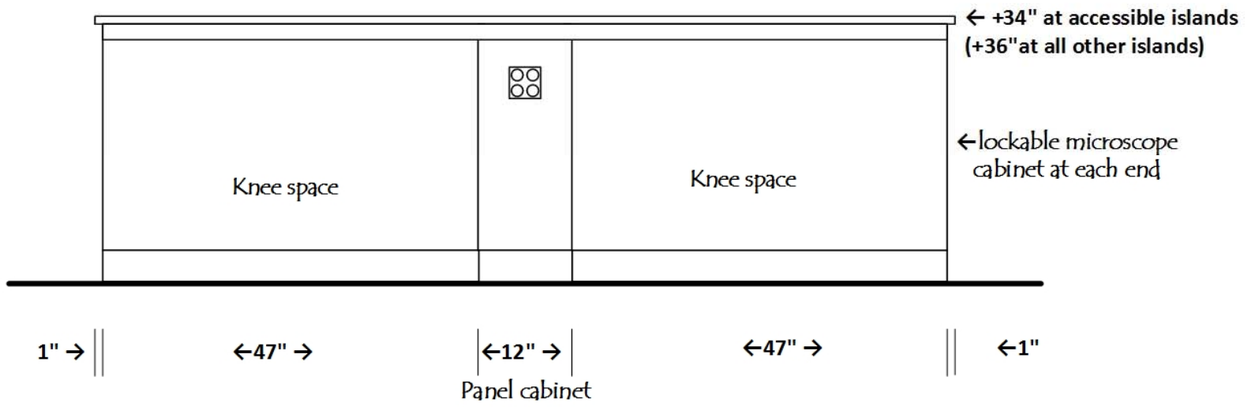
Stamdard island top- six per lab

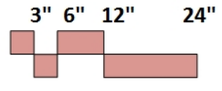


↑108" x 36" epoxy resin top

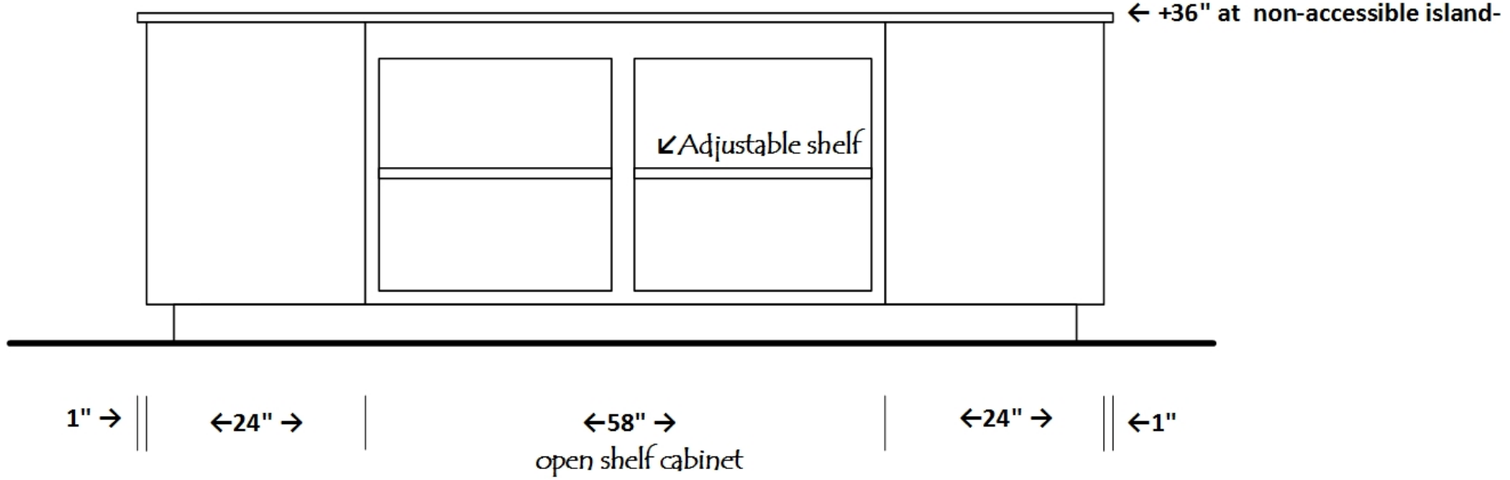
Accessible island top- two per lab

FRONT VIEW

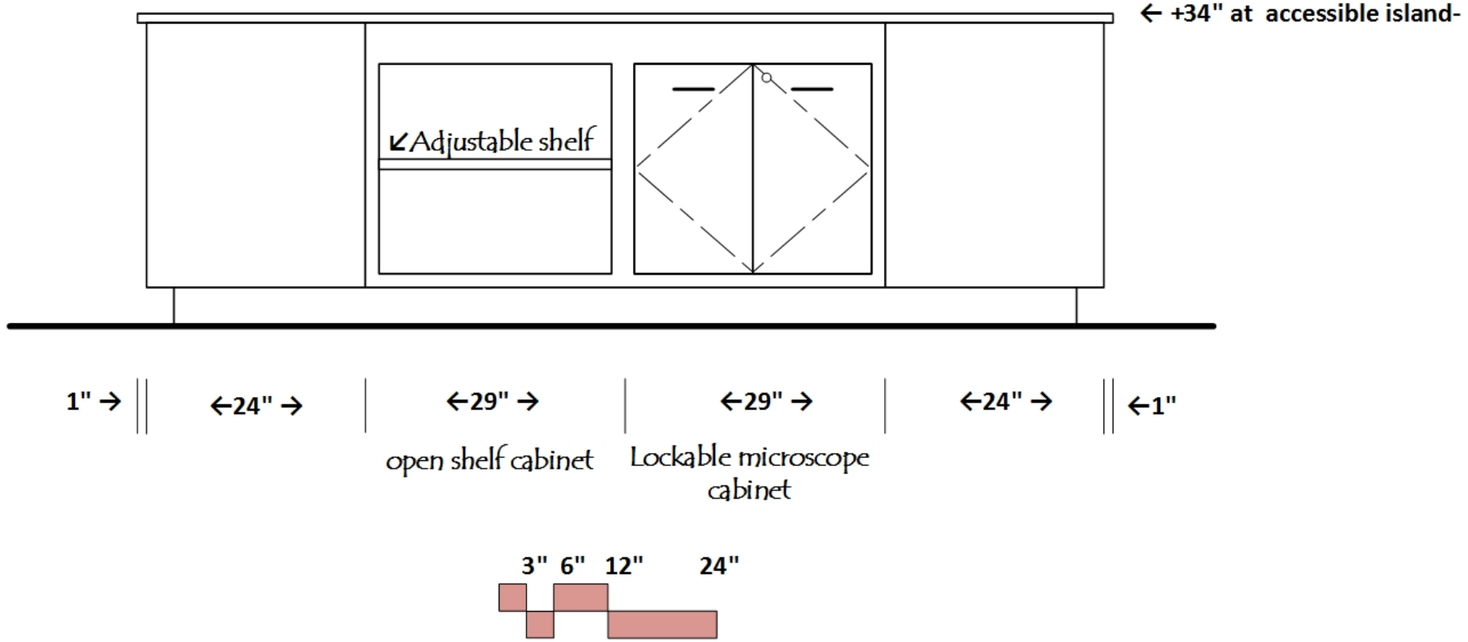


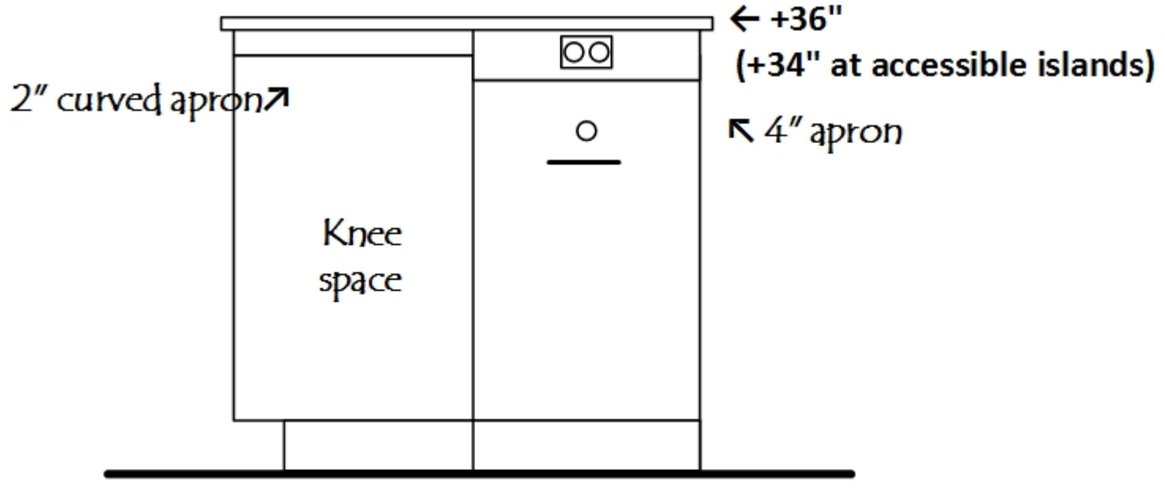


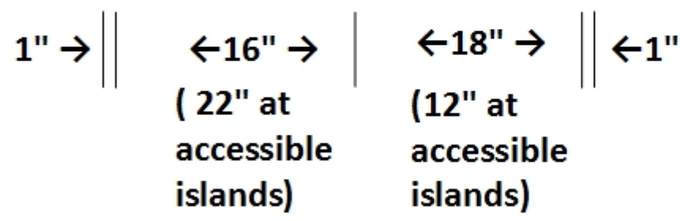
Elevation at Non- Accessible Island



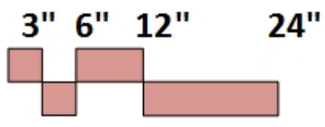
Elevation at Accessible Island

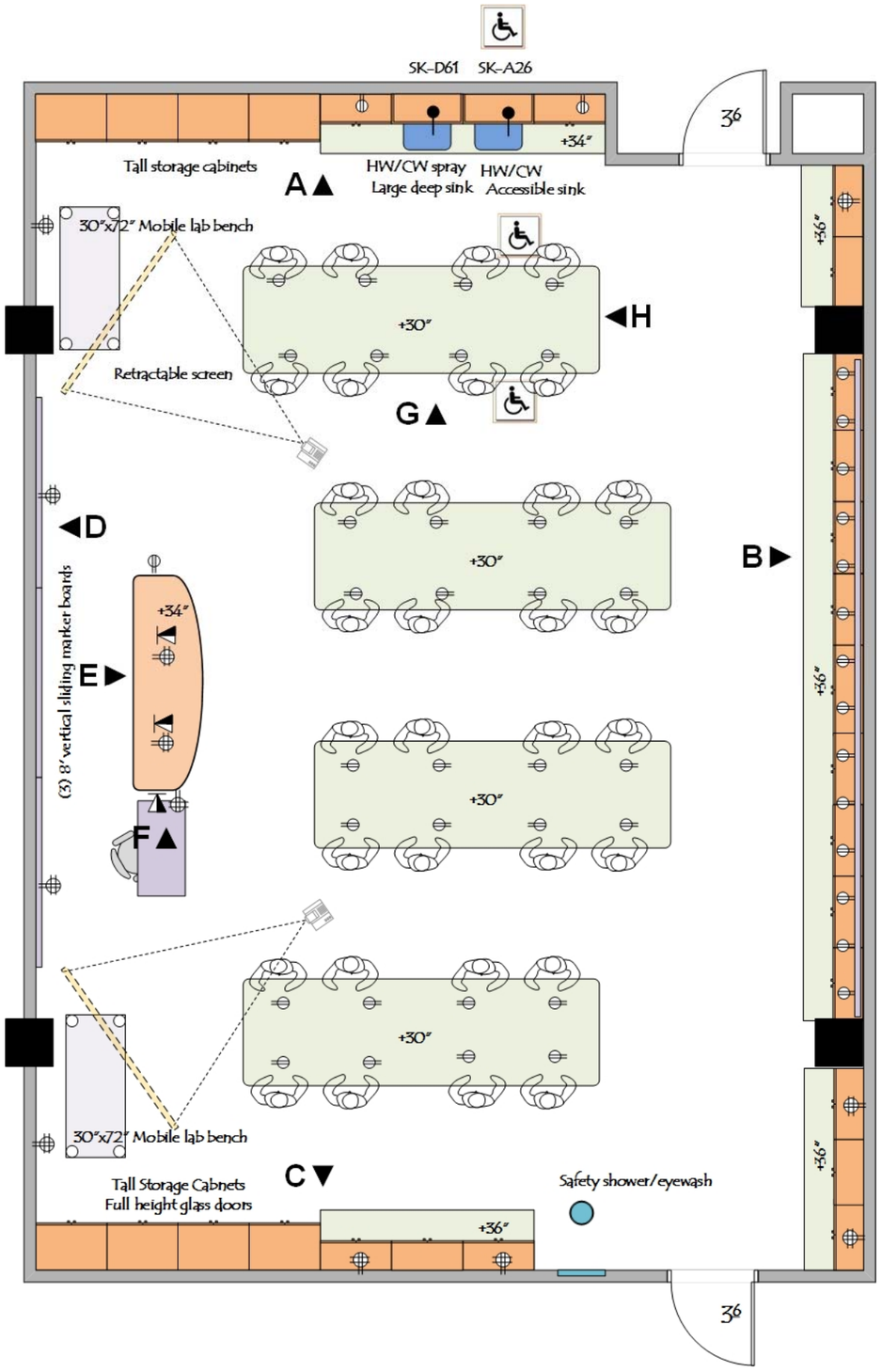






Microscope drawer
base cabinet
lockable





Zoology Lab

ARCHITECTURAL
Occupancy: B
Floor: vinyl composition tile
Walls: gypsum board and enamel paint
Ceiling: 9'-6"' acoustic tile
Doors: 3^{6}x$8^{0}$with window
Daylight: Clerestory window and/or view windows
Light attenuation: blinds at windows
Acoustic Attenuation: NC 40 or less
Security: key or card key access

STRUCTURAL
Vibration attenuation: 4,000 micro inches/sec or less

MECHANICAL
Hours of operation: 6 am to 11 pm
Temperature: : 66-74 deg. F, +/- 2 deg. F
100% exhaust- no recirculation of air
Exhaust on emergency power supply
(6) air changes per hour occupied
(4) air changes per hour unoccupied
Pressure: Negative
Humidity: Ambient

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
Data & Wireless data
Lighting: indirect fluorescent @ 60 f.c. with multi-level switching
task lights below wall cabinets
Provide light switches at instructor's bench and at each door
Separate lighting for marker board wall

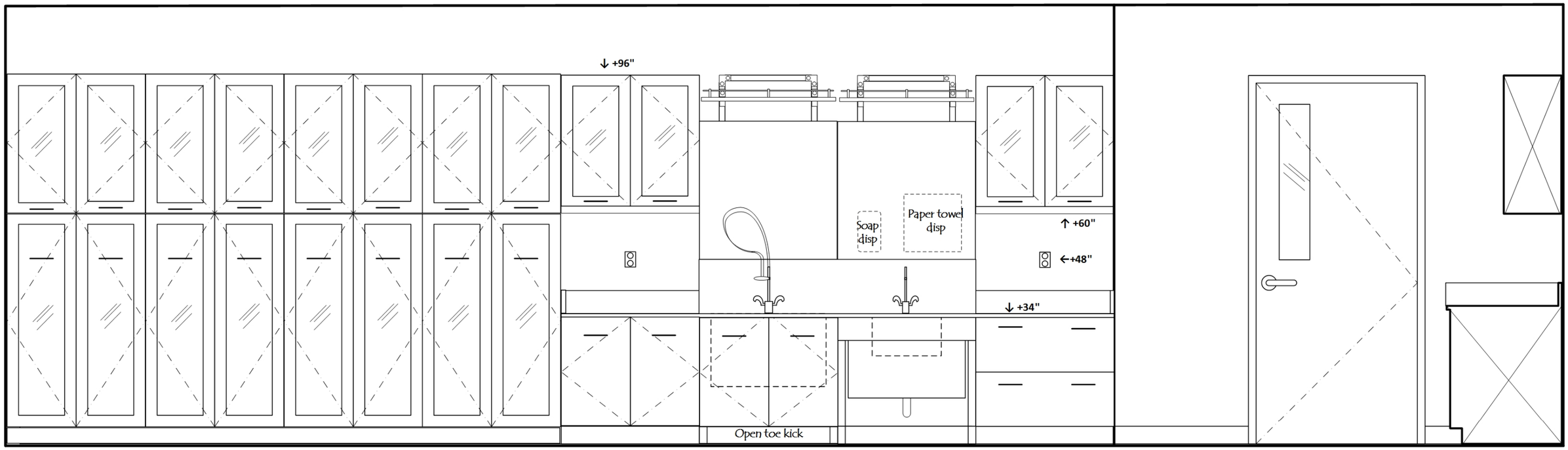
PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers
drain and floor drain at safety shower/eyewash
Stub out water and drain at south wall knee space for future sink

CONTRACTOR FURNISHED EQUIPMENT
Wood casework- base cabinets, wall cabinets, tall cabinets
Tables
Resin tops and sinks
Faucets & fittings
marker boards
Projector Screens
Projection system

COLLEGE FURNISHED EQUIPMENT
Chairs
Benchtop analytical instruments
Scientific equipment
paper towel dispenser

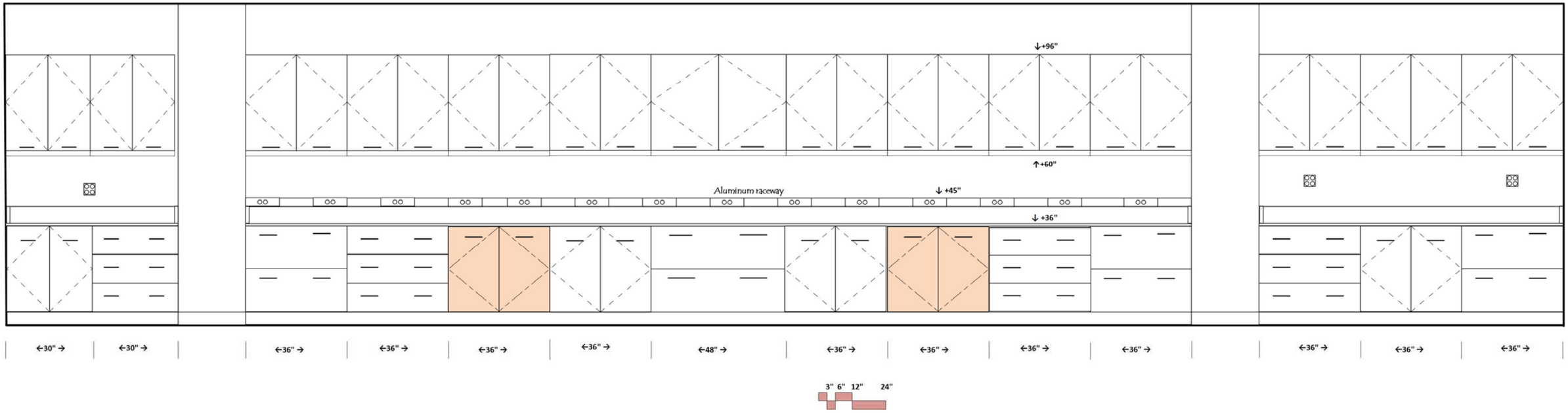
Zoology Lab

Elevation A- North Wall



Zoology Lab

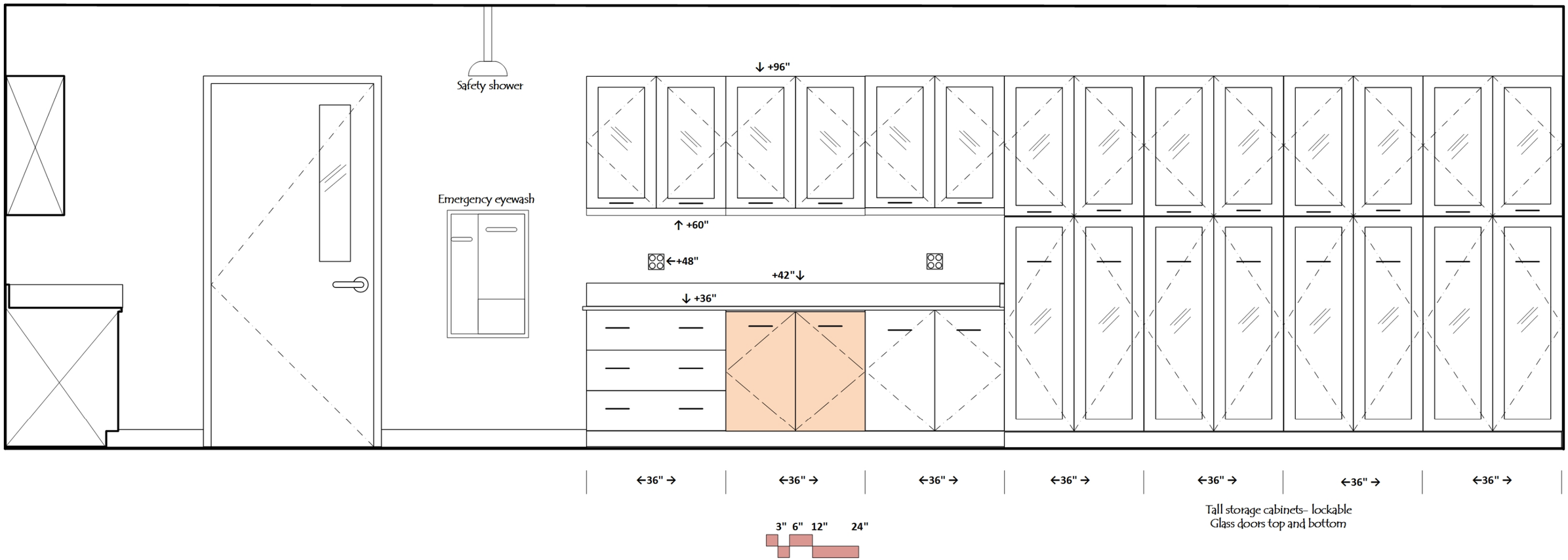
Elevation B- East Wall



Zoology Lab

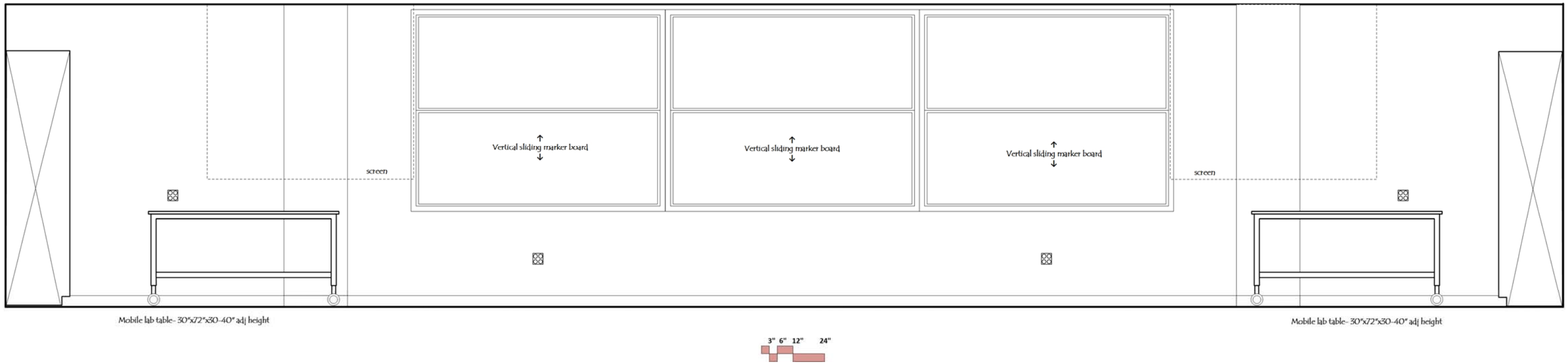
Elevation C- South Wall

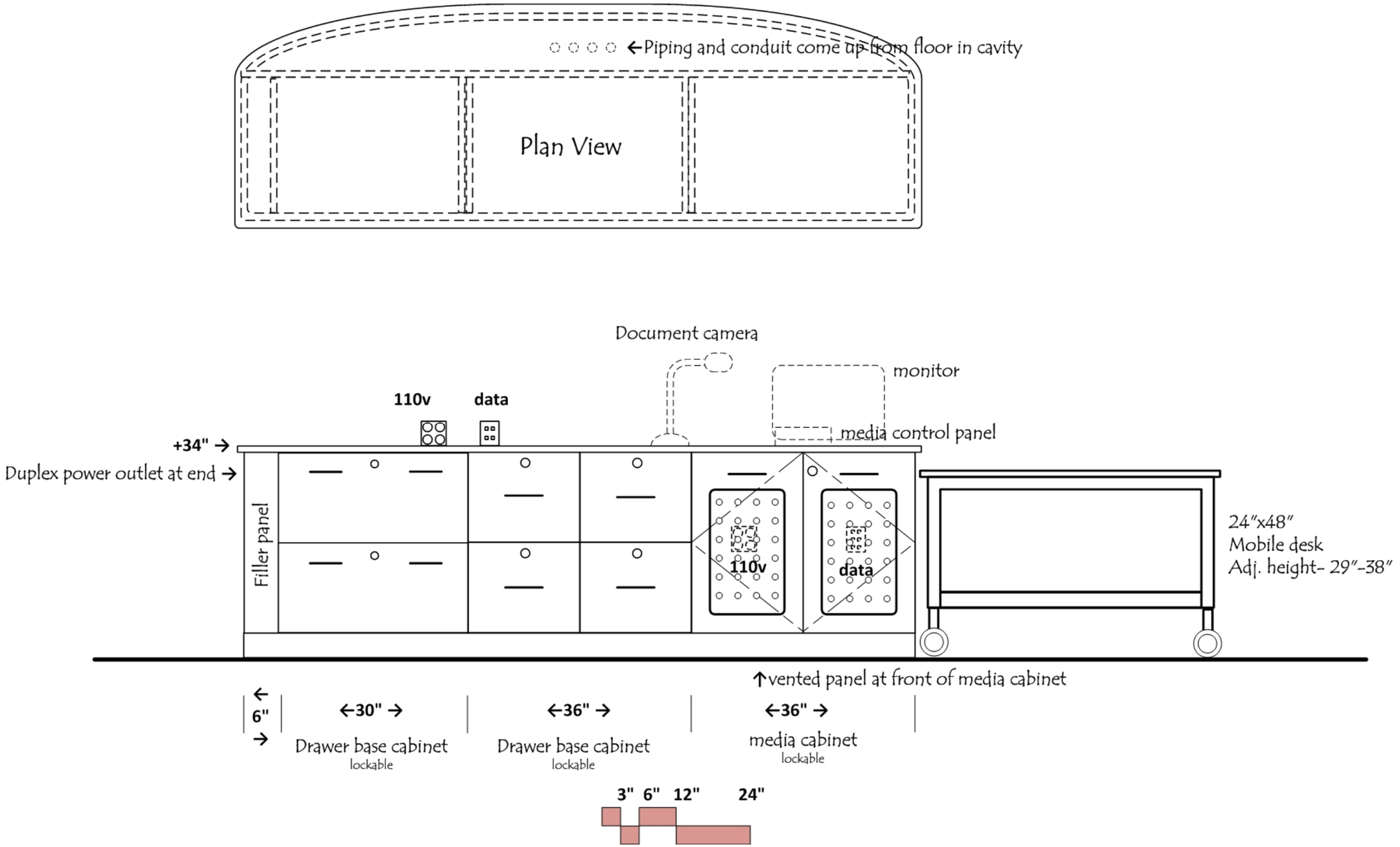
stub out water, drain, and vent at south wall knee space for future lab sink

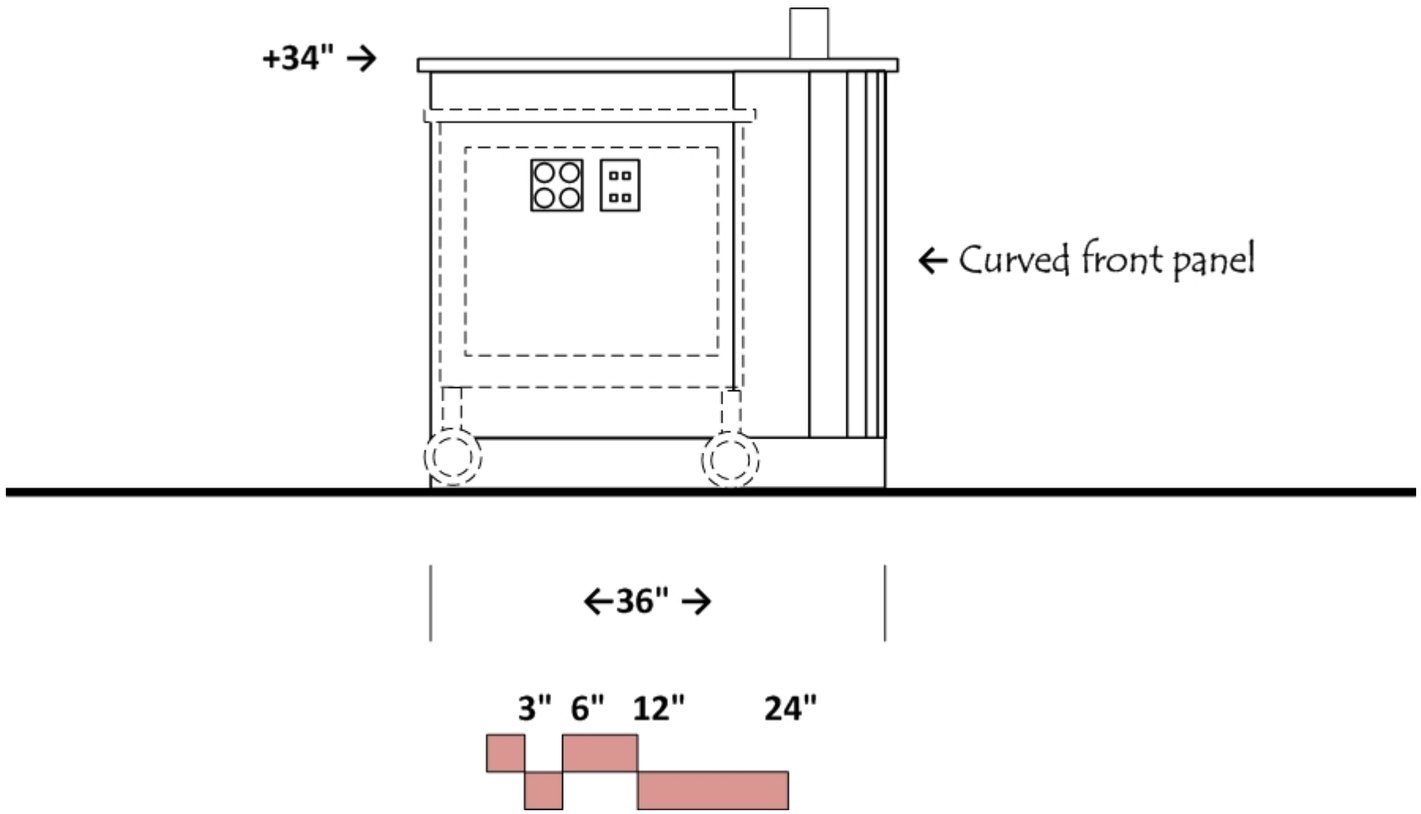


Zoology Lab

Elevation D- West Wall

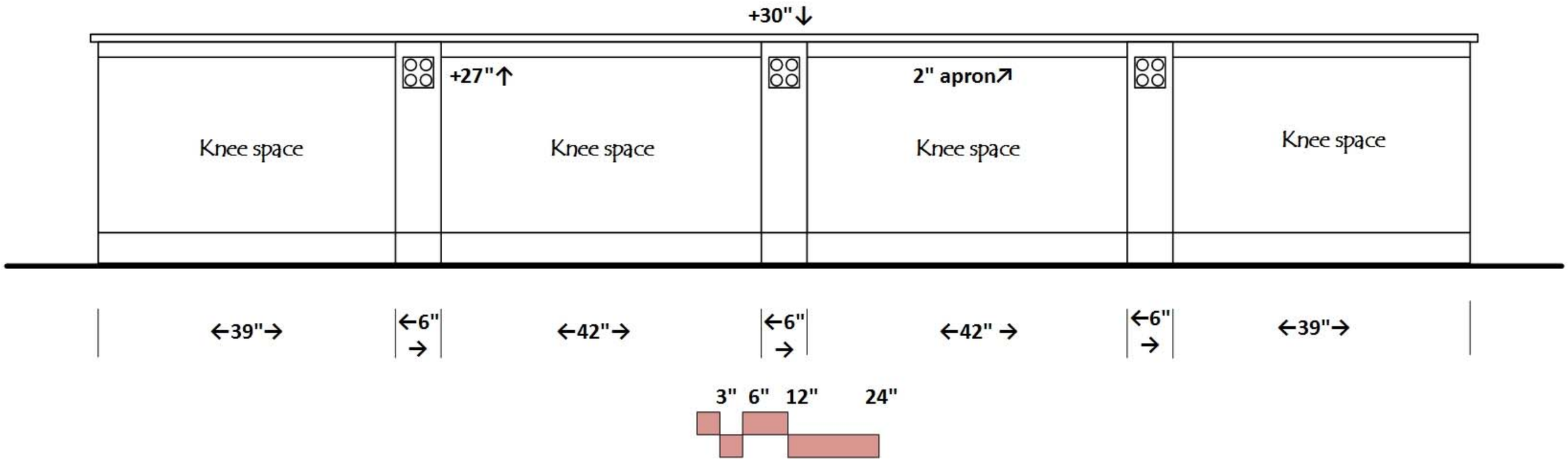



←Piping and conduit come up from floor in cavity
Plan View
Document camera
monitor
media control panel
110v
data
+34" →
Duplex power outlet at end →
Filler panel
110v
data
24"x48"
Mobile desk
Adj. height- 29"-38"
↑vented panel at front of media cabinet
← 6" →
←30" →
Drawer base cabinet
lockable
←36" →
Drawer base cabinet
lockable
←36" →
media cabinet
lockable
3" 6" 12" 24"


+34" →
← Curved front panel
←36" →
3" 6" 12" 24"

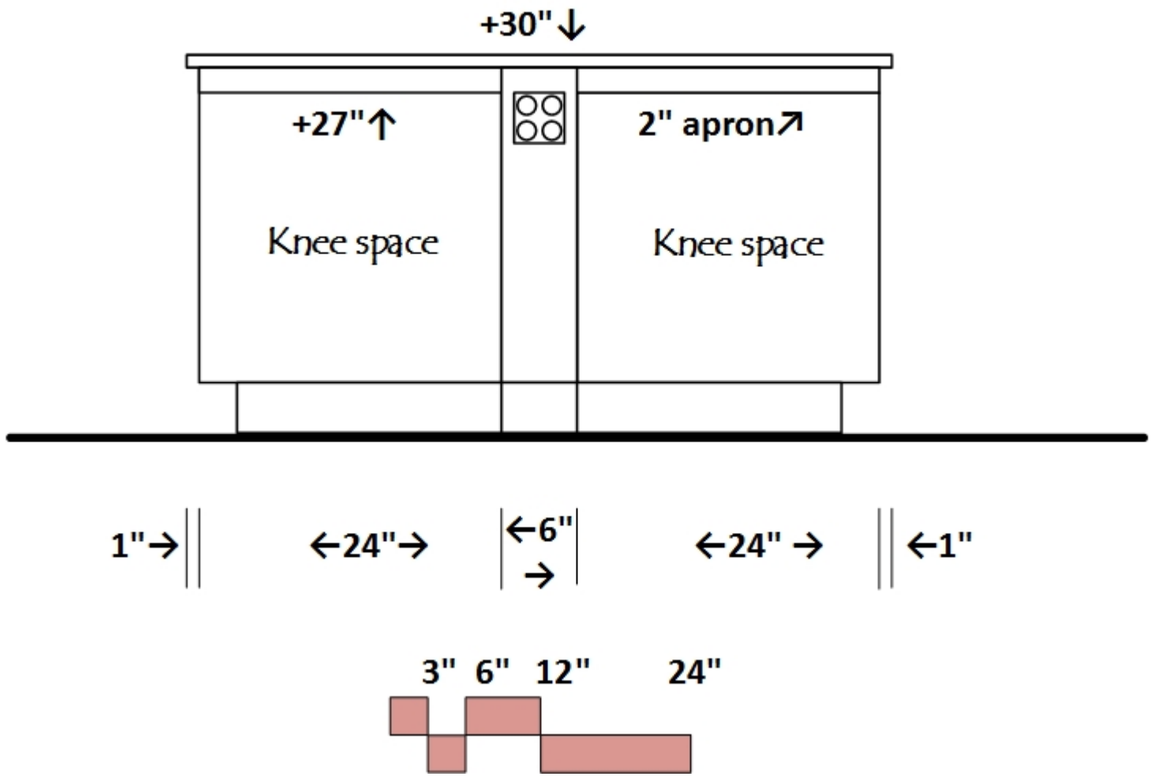
Zoology Lab

Elevation G- Student Bench
Typical for all islands
All power outlets at student islands to be GFI (ground fault interrupt)

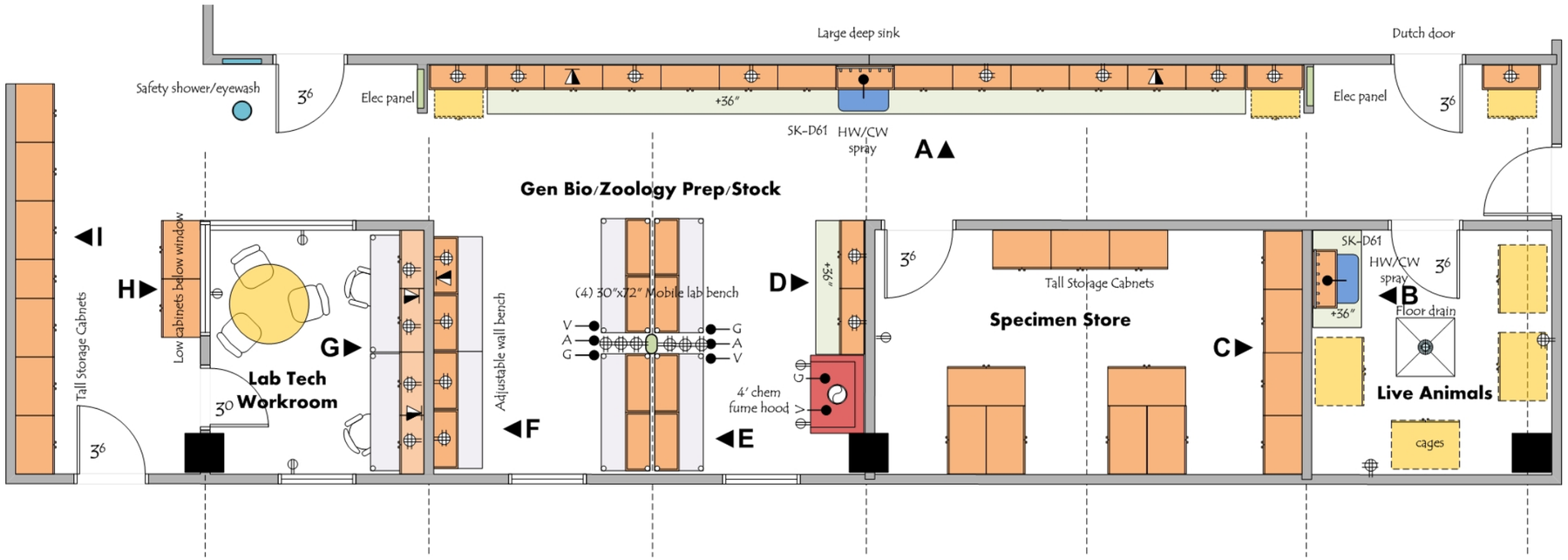


Zoology Lab

Elevation H- Student Bench
Typical for all islands
All power outlets at student islands to be GFI (ground fault interrupt)



Prep- General Biology; Zoology



ARCHITECTURAL
Occupancy: B
Floor: vinyl composition tile; sealed concrete in live animals room with 3' square slope around floor drain
Walls: gypsum board and enamel paint
Ceiling: 9'-0" acoustic tile
Doors: 3^{6}x$8^{0}$with window; dutch doors between labs and prep
Daylight: Clerestory window and/or view windows
Light attenuation: blinds at windows
Acoustic Attenuation: NC 40 or less
Security: key or card key access

STRUCTURAL
Vibration attenuation: 4,000 micro inches/sec or less

MECHANICAL
Hours of operation: 6 am to 11 pm
Temperature: : 66-74 deg. F, +/- 2 deg. F
100% exhaust- no recirculation of air
Exhaust on emergency power supply
(6) air changes per (exhaust at ceiling) hour occupied
(4) air changes per hour unoccupied
10 air changes per hour in live animal room- 24/7
Pressure: Negative; Positive pressure for Lab Tech Workroom
Humidity: Ambient

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
Data & Wireless data
Lighting: indirect fluorescent @ 60 f.c. with multi-level switching
task lights below wall cabinets

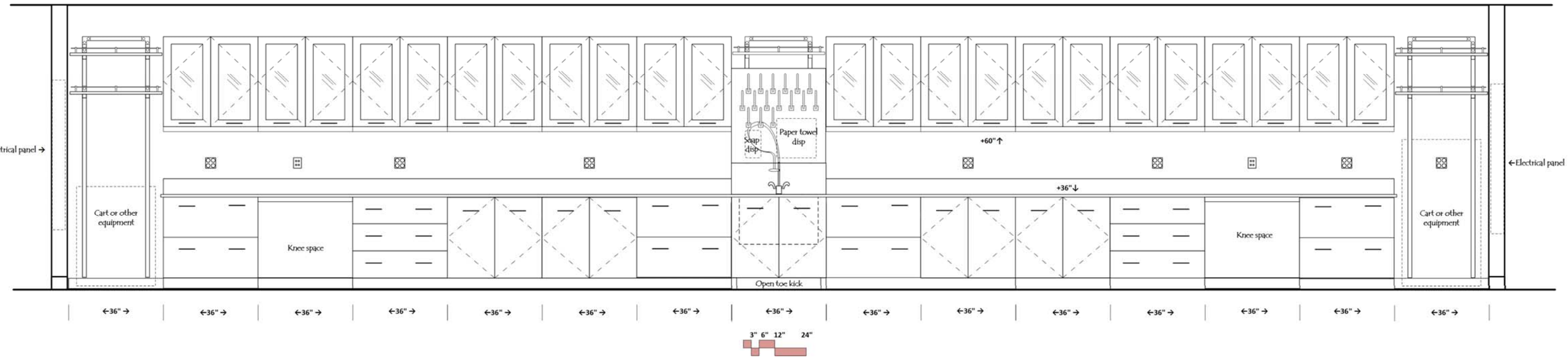
PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers
Gas, Air, and Vac at mobile bench peninsula
Gas and Vac at fume hood
floor drain in live animals room
floor drain below safety shower

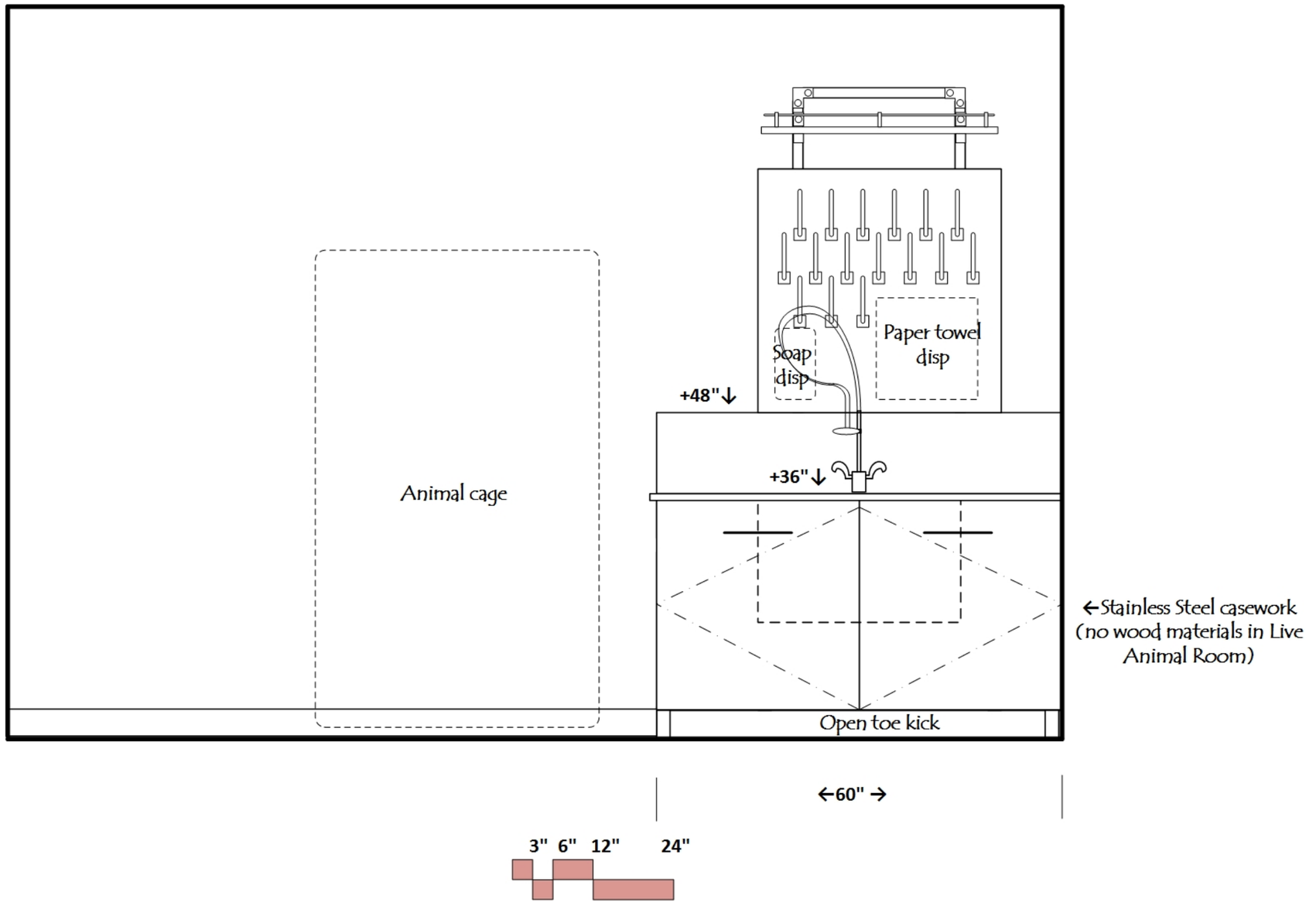
CONTRACTOR FURNISHED EQUIPMENT
Wood casework- base cabinets, wall cabinets, tall cabinets
Tables
Resin tops and sinks
phenolic resin casework in Live Animals Room and Specimen Store
Faucets & fittings
4' chemical fume hood- VAV

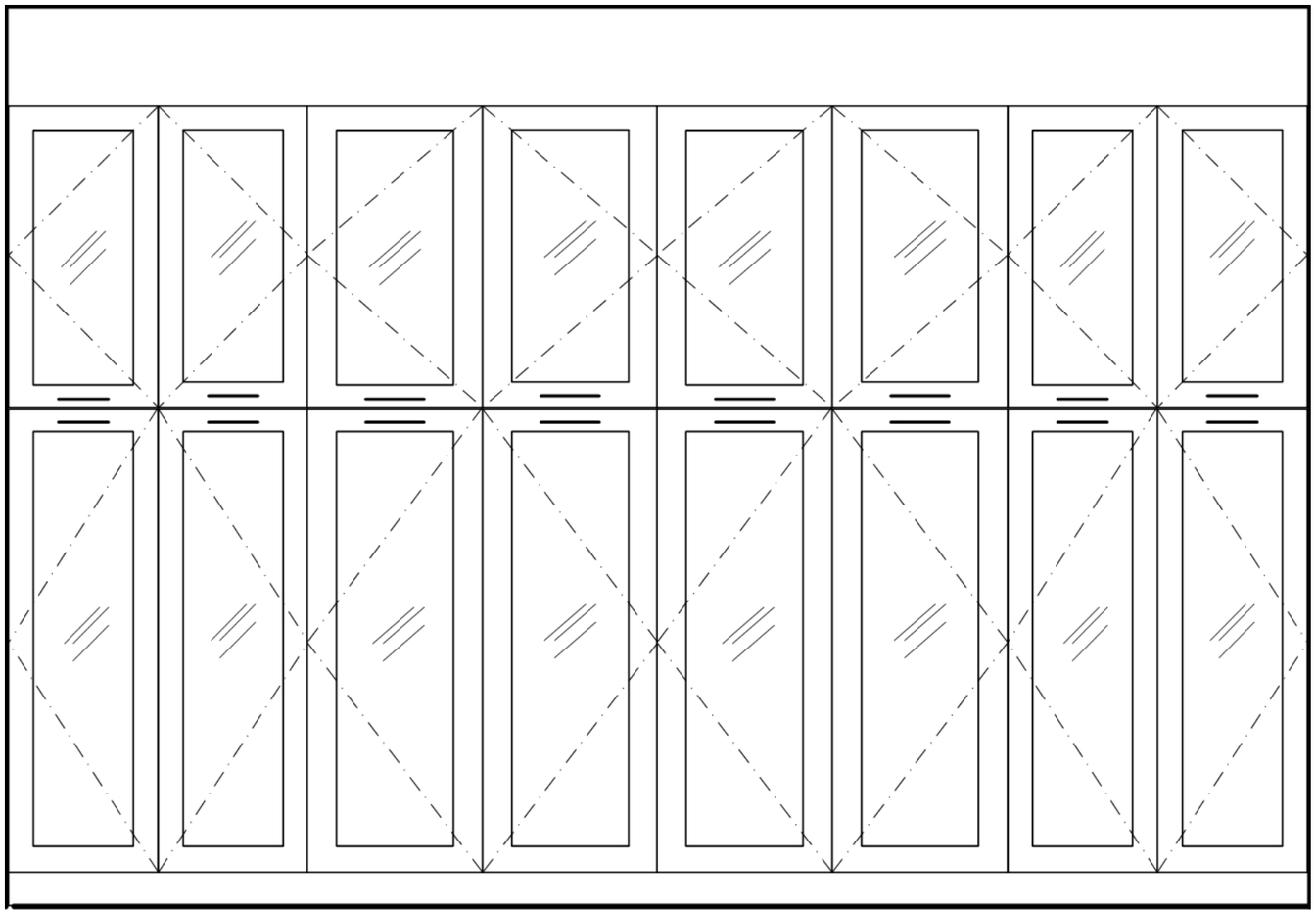
COLLEGE FURNISHED EQUIPMENT
Chairs
Benchtop analytical instruments
Scientific equipment
paper towel dispenser
Animal cages

Prep- General Biology/Zoology

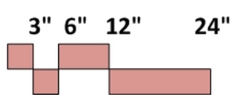
Elevation A- North Wall




Soap disp
Paper towel disp
+48"↓
+36"↓
Animal cage
←Stainless Steel casework (no wood materials in Live Animal Room)
Open toe kick
←60" →
3" 6" 12" 24"

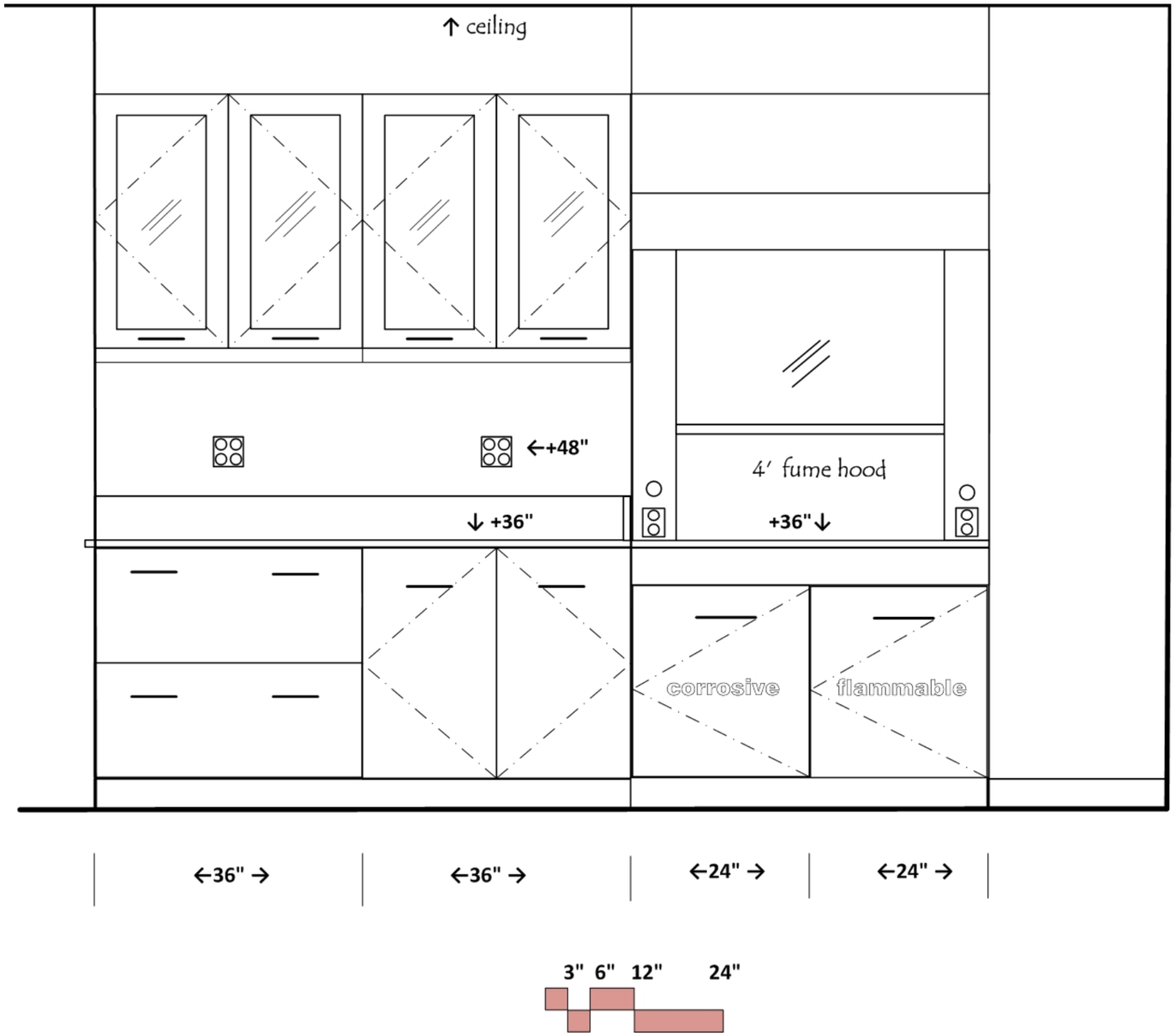


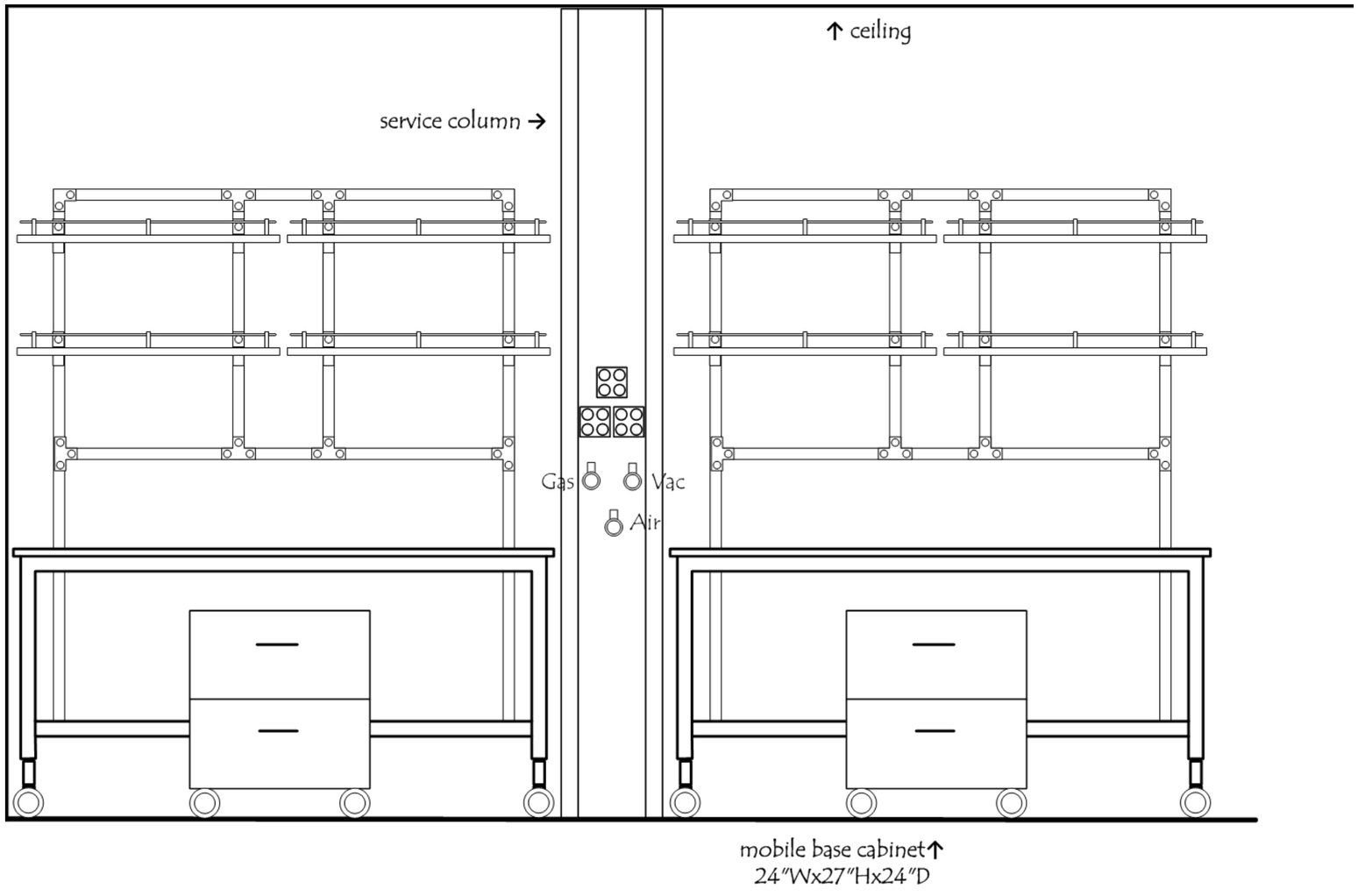
Tall cabinets- glass doors top and bottom- lockable

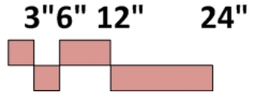


Prep- General Biology/Zoology

Elevation D- Alcove East Wall

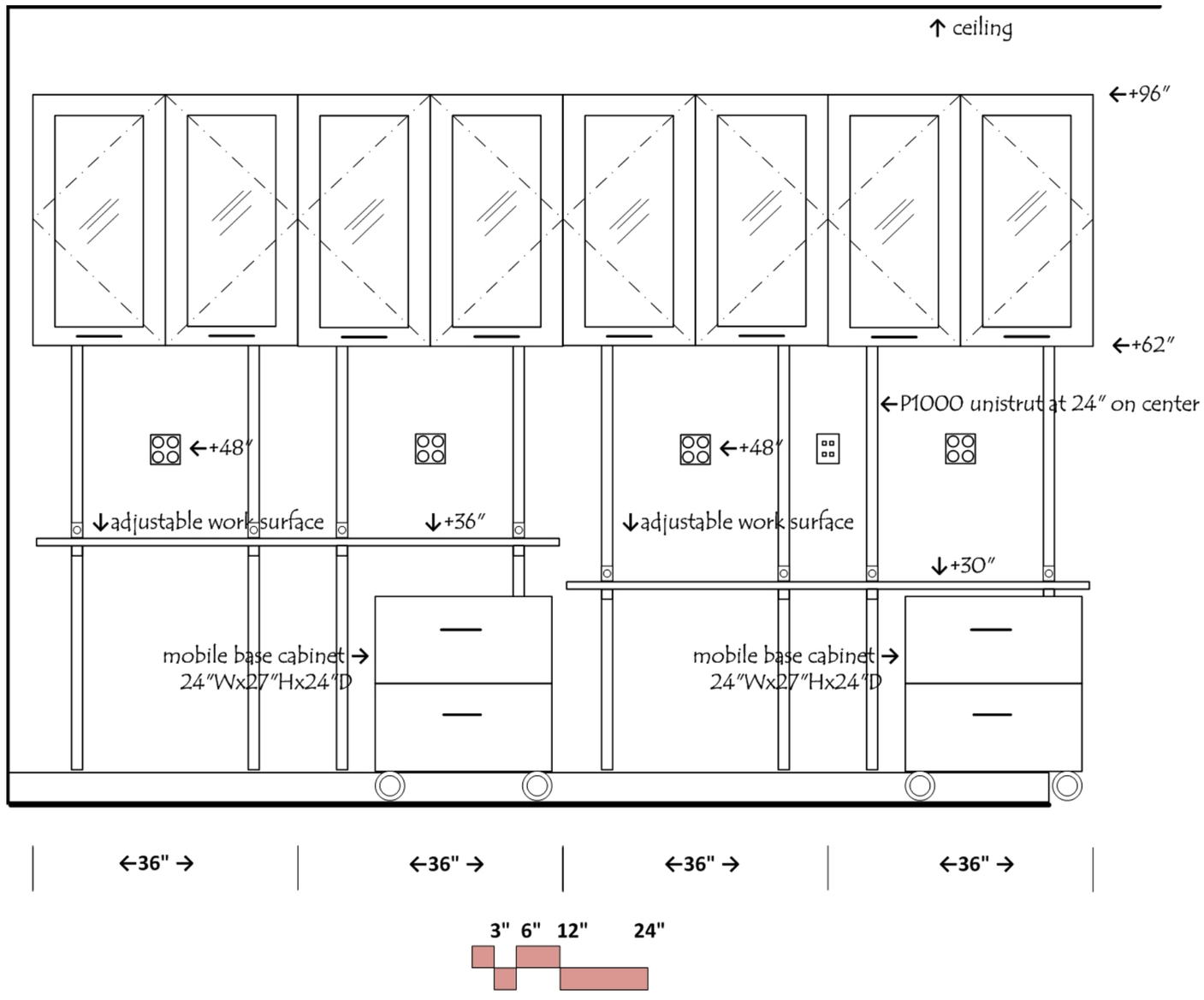


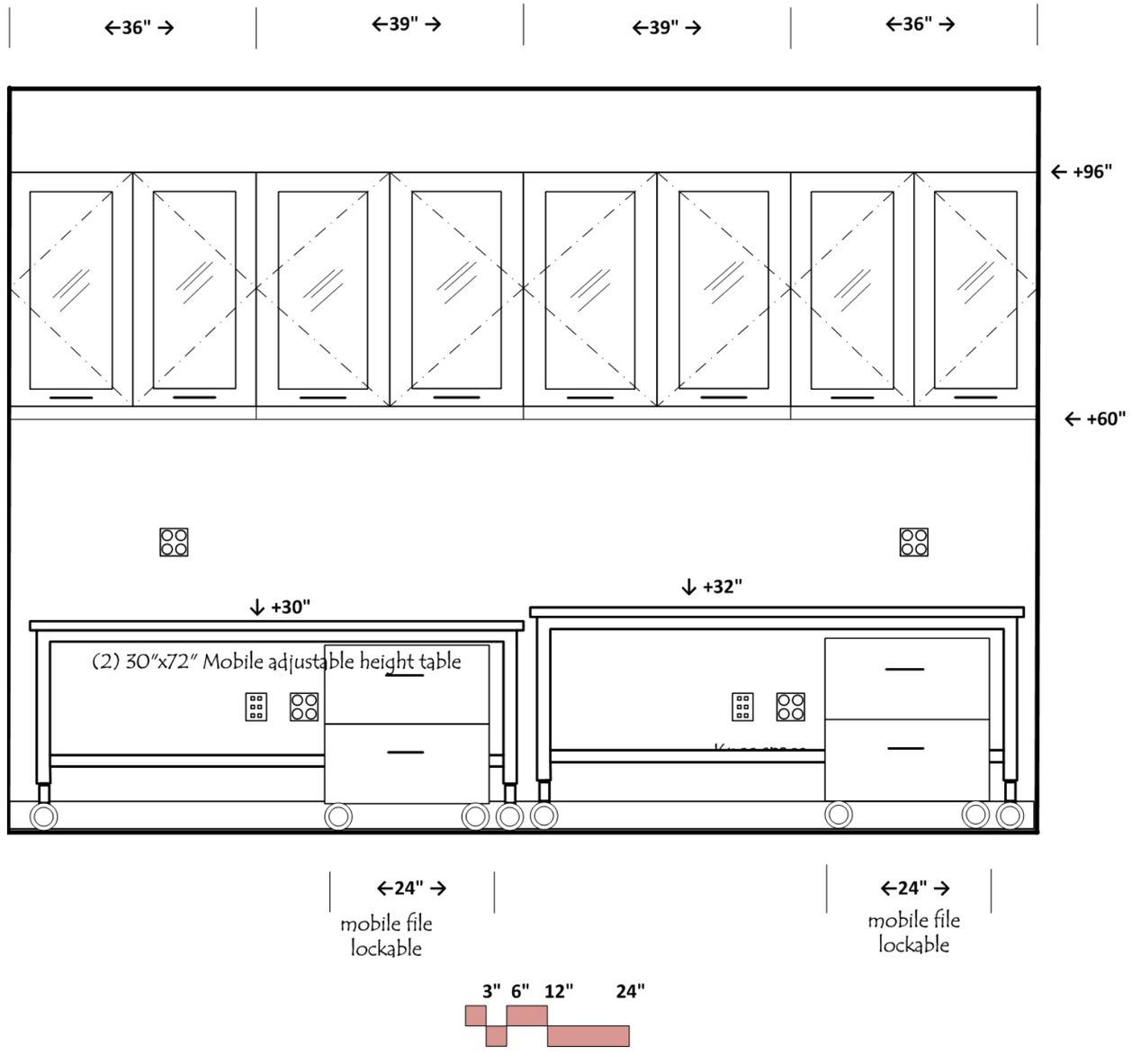

↑ ceiling
service column →
Gas
Vac
Air
mobile base cabinet↑
24"Wx27"Hx24"D

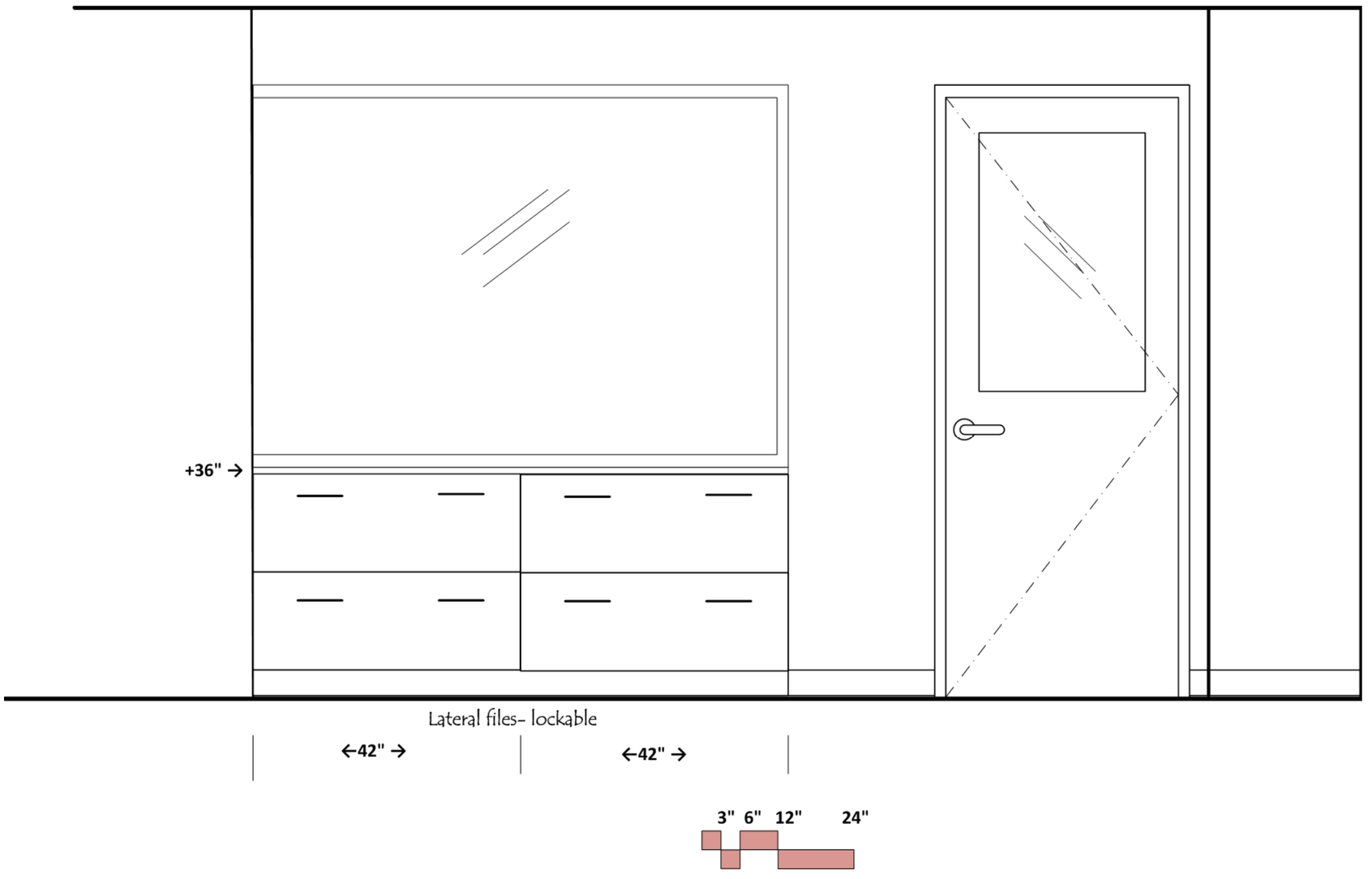

3"6" 12"
24"

Prep- General Biology/Zoology

Elevation F- Alcove West Wall

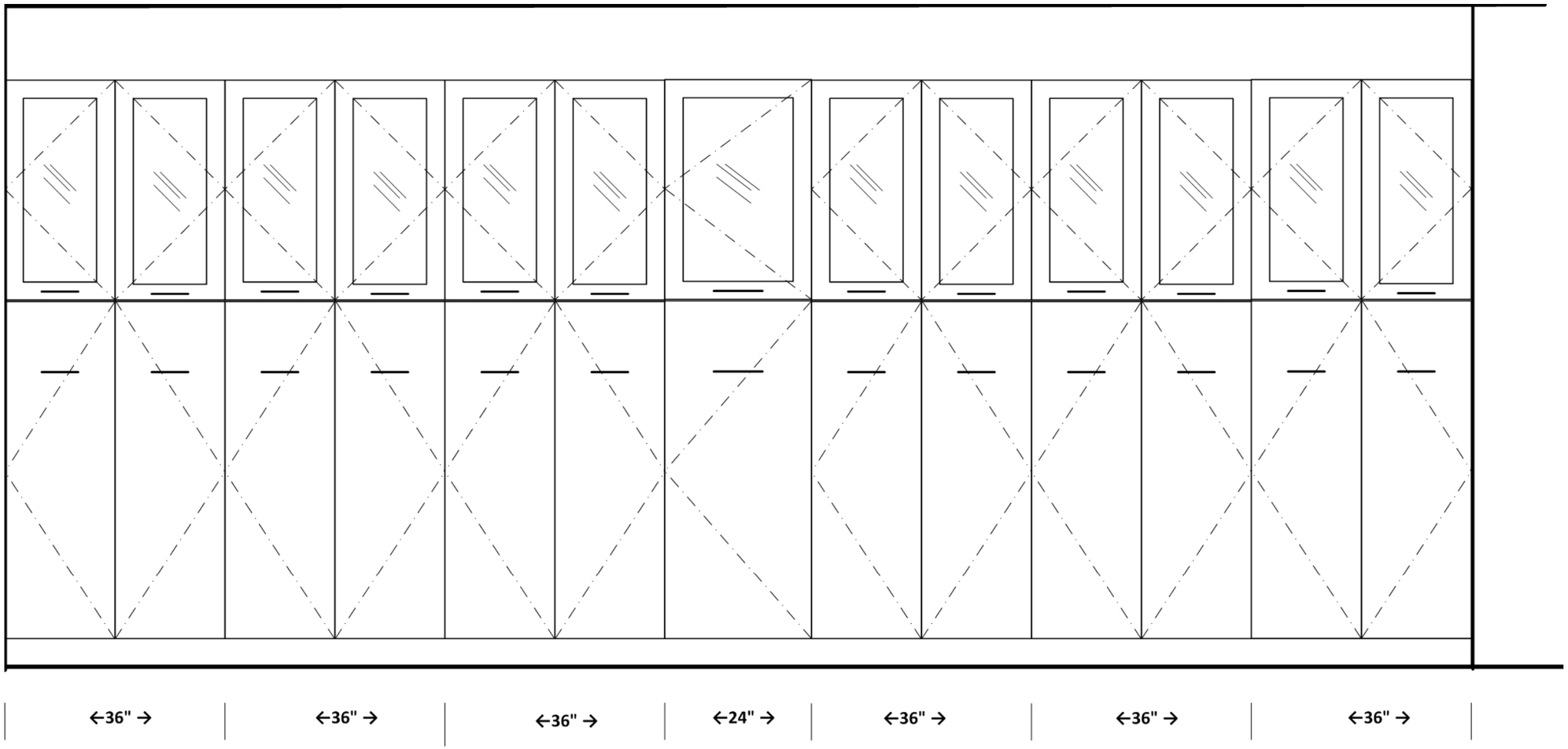


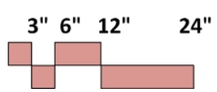

←36" →
←39" →
←39" →
←36" →
← +96"
← +60"
↓ +30"
↓ +32"
(2) 30"x72" Mobile adjustable height table
←24" →
mobile file lockable
←24" →
mobile file lockable
3" 6" 12" 24"


+36" →
Lateral files- lockable
←42" →
←42" →
3" 6" 12" 24"

Prep- General Biology/Zoology

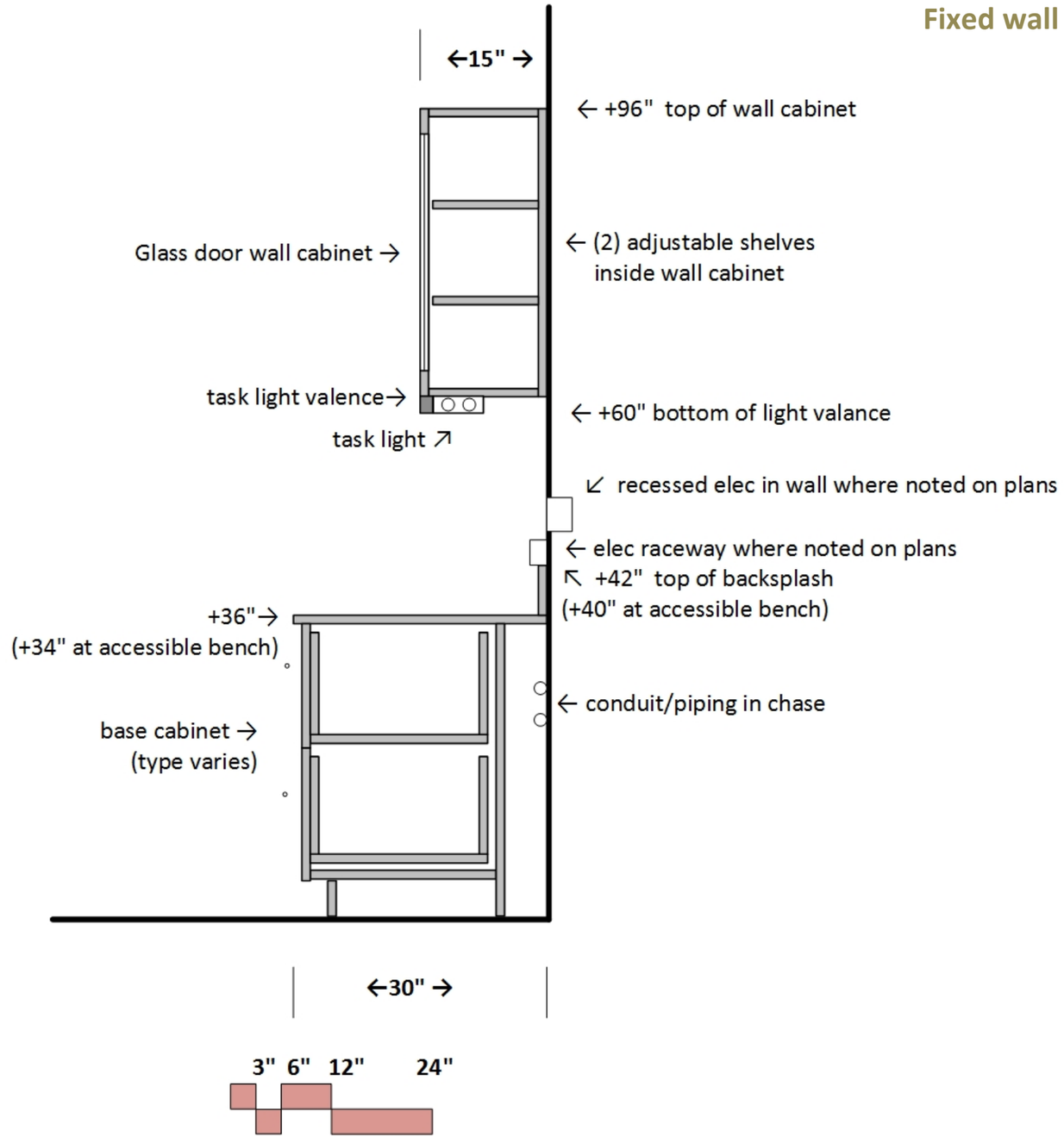
Elevation I- West Wall





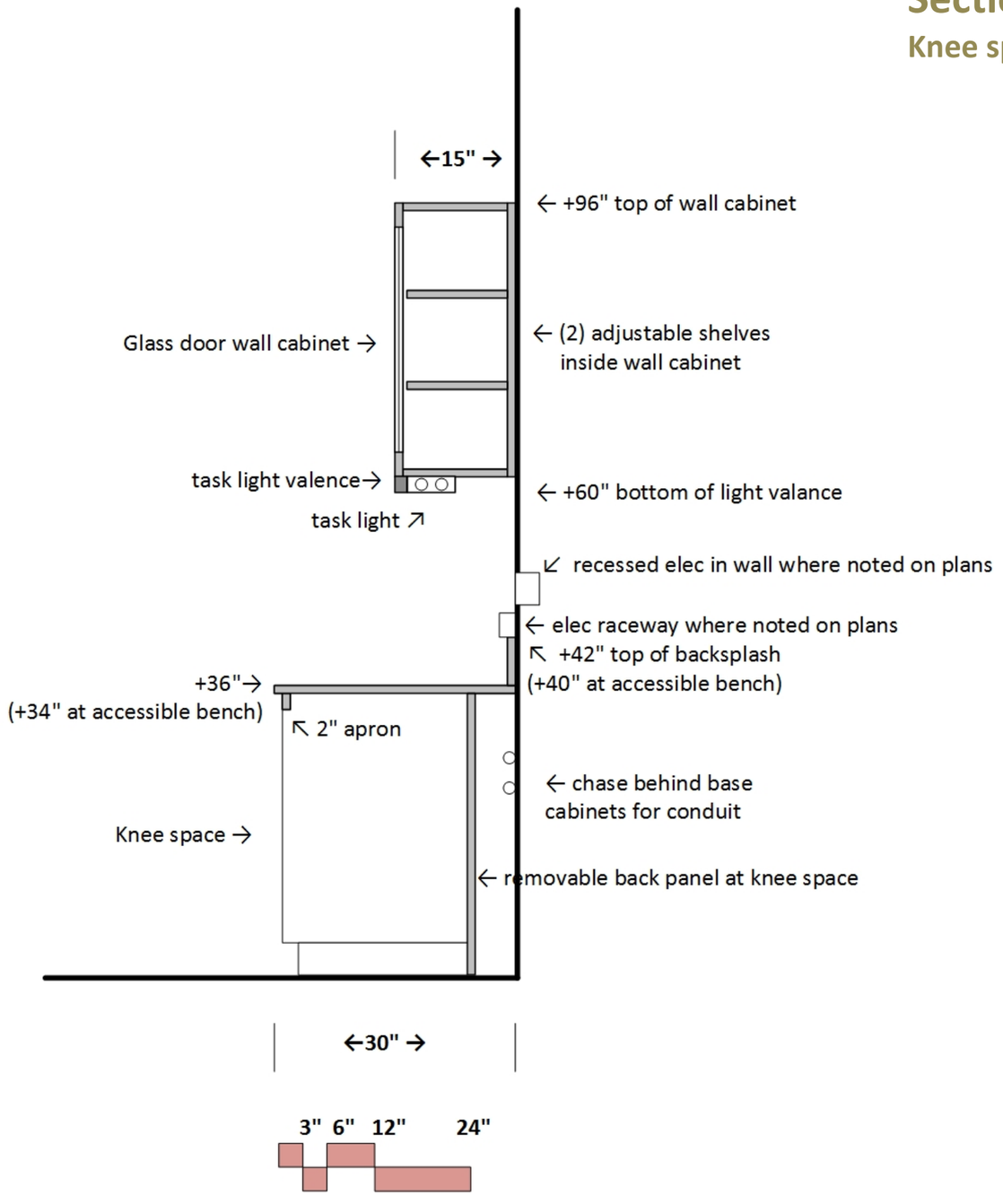
Section Detail 01

Fixed wall bench, wall cabinet above



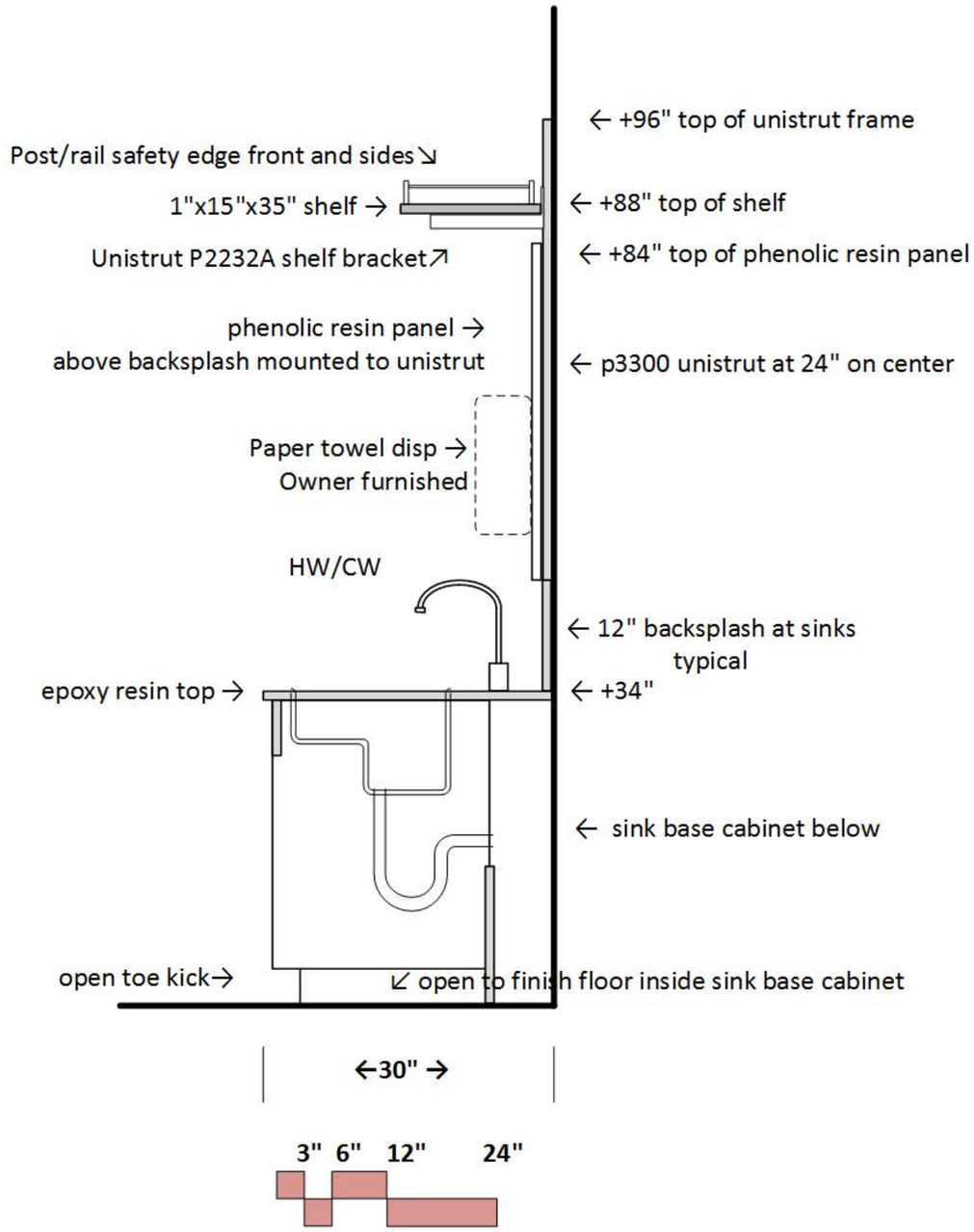
Section Detail 02

Knee space, wall cabinet above



Section Detail 03

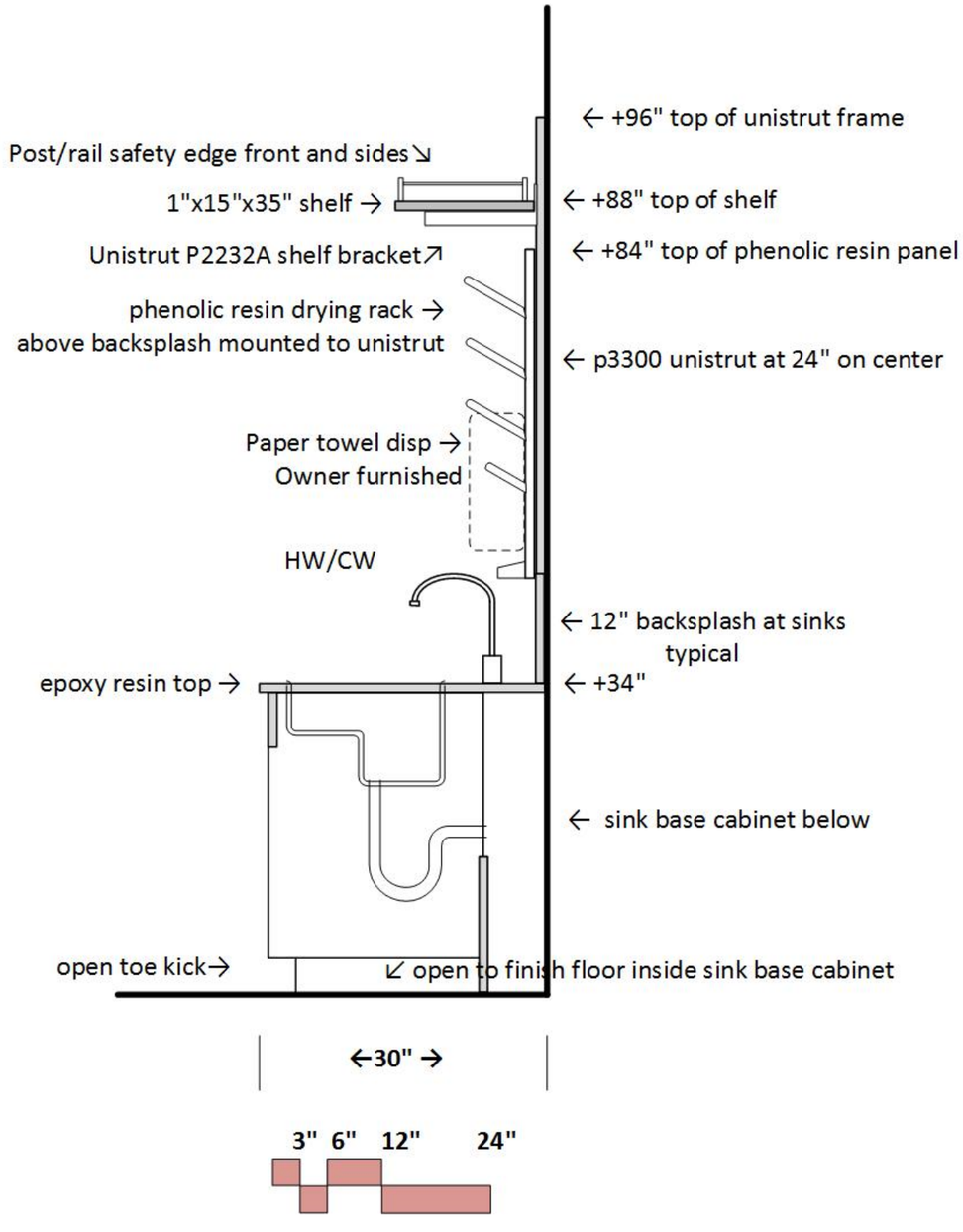
Accessible lab sink at wall bench (without drying rack)



Note: all sinks in teaching labs do not have drying racks.

Section Detail 04

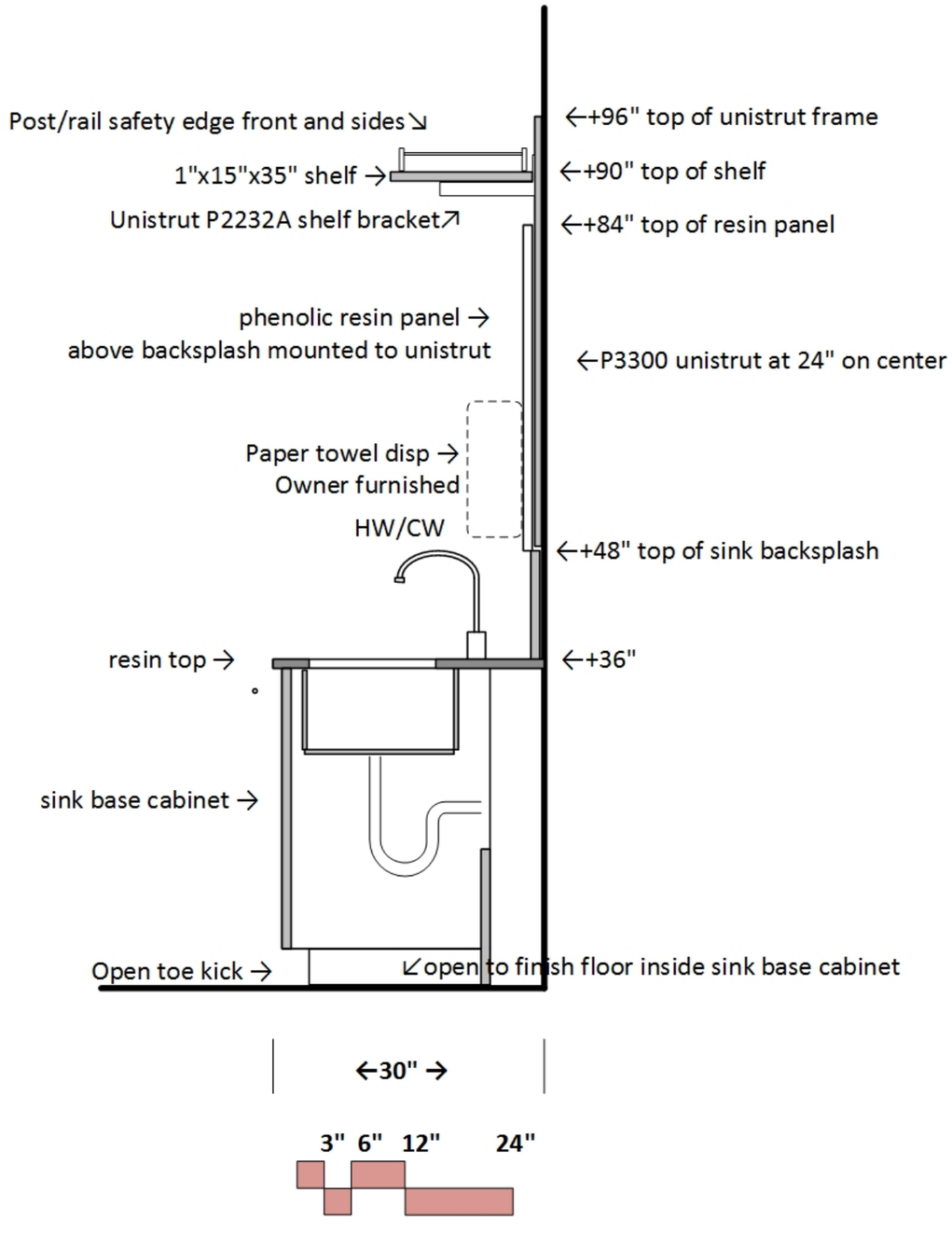
Accessible prep sink at wall bench (with drying rack)



Note: all sinks in prep areas have drying racks, except for Physics/Astronomy Prep area.

Section Detail 05

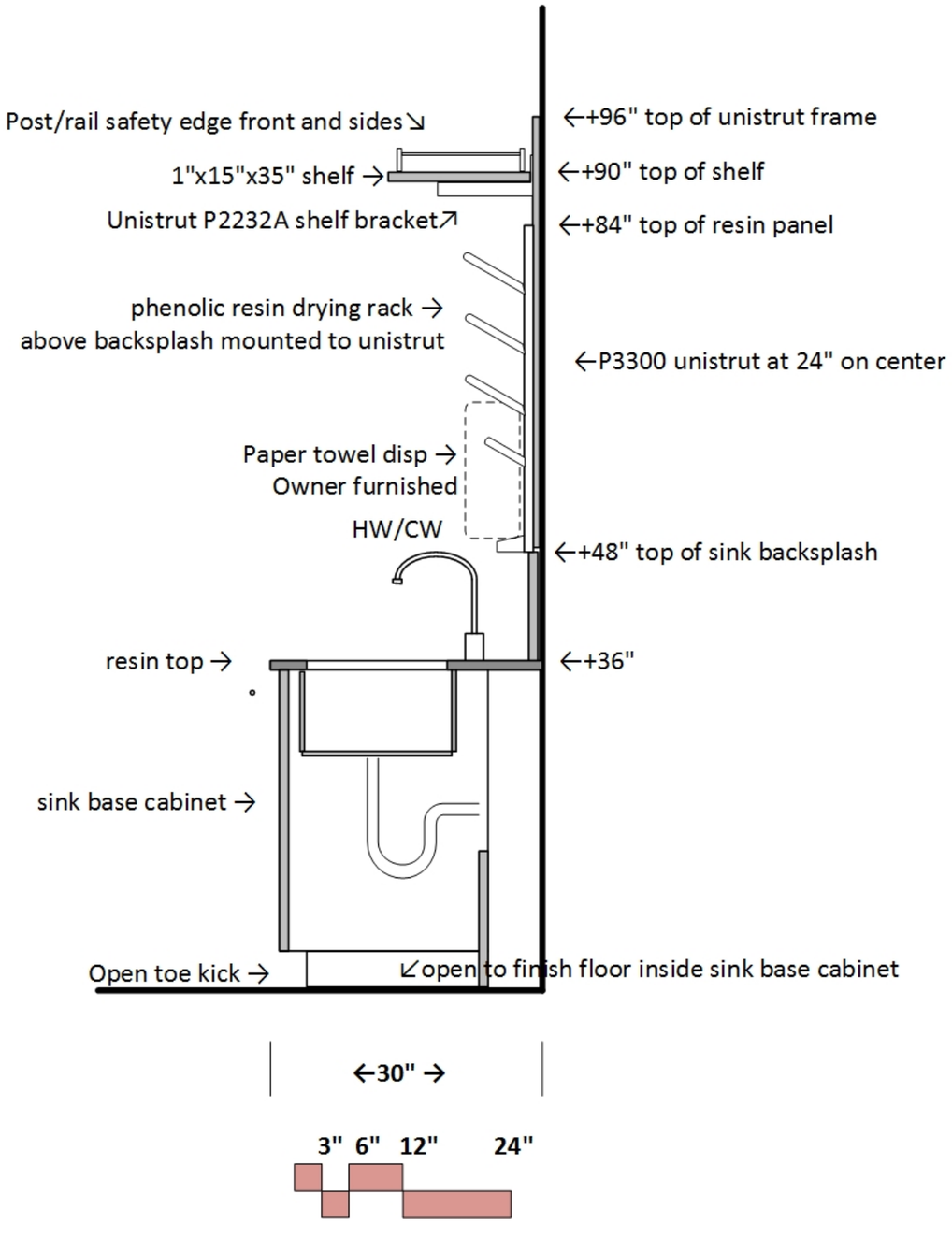
Standard lab sink at wall bench (without drying rack)



Note: all sinks in teaching labs do not have drying racks.

Section Detail 06

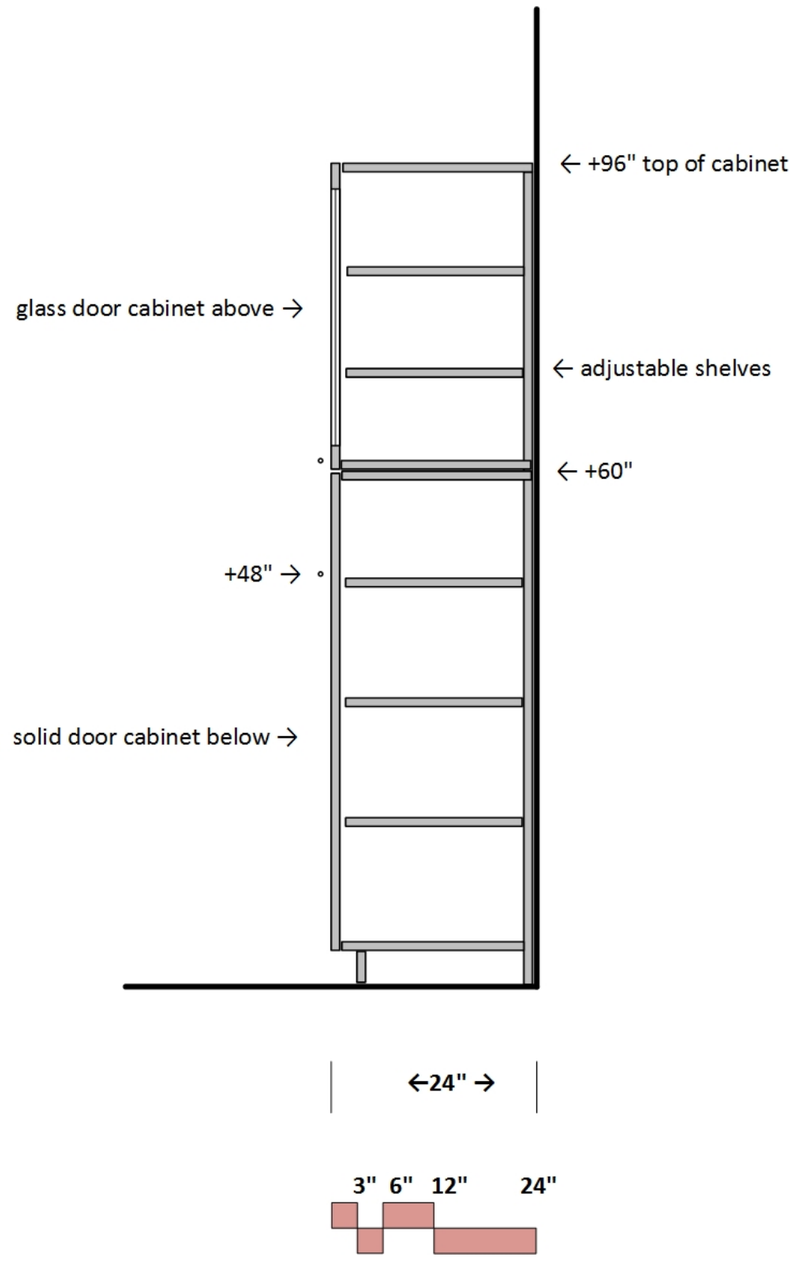
Standard prep sink at wall bench (with drying rack)



Note: all sinks in prep areas have drying racks, except for Physics/Astronomy Prep area.

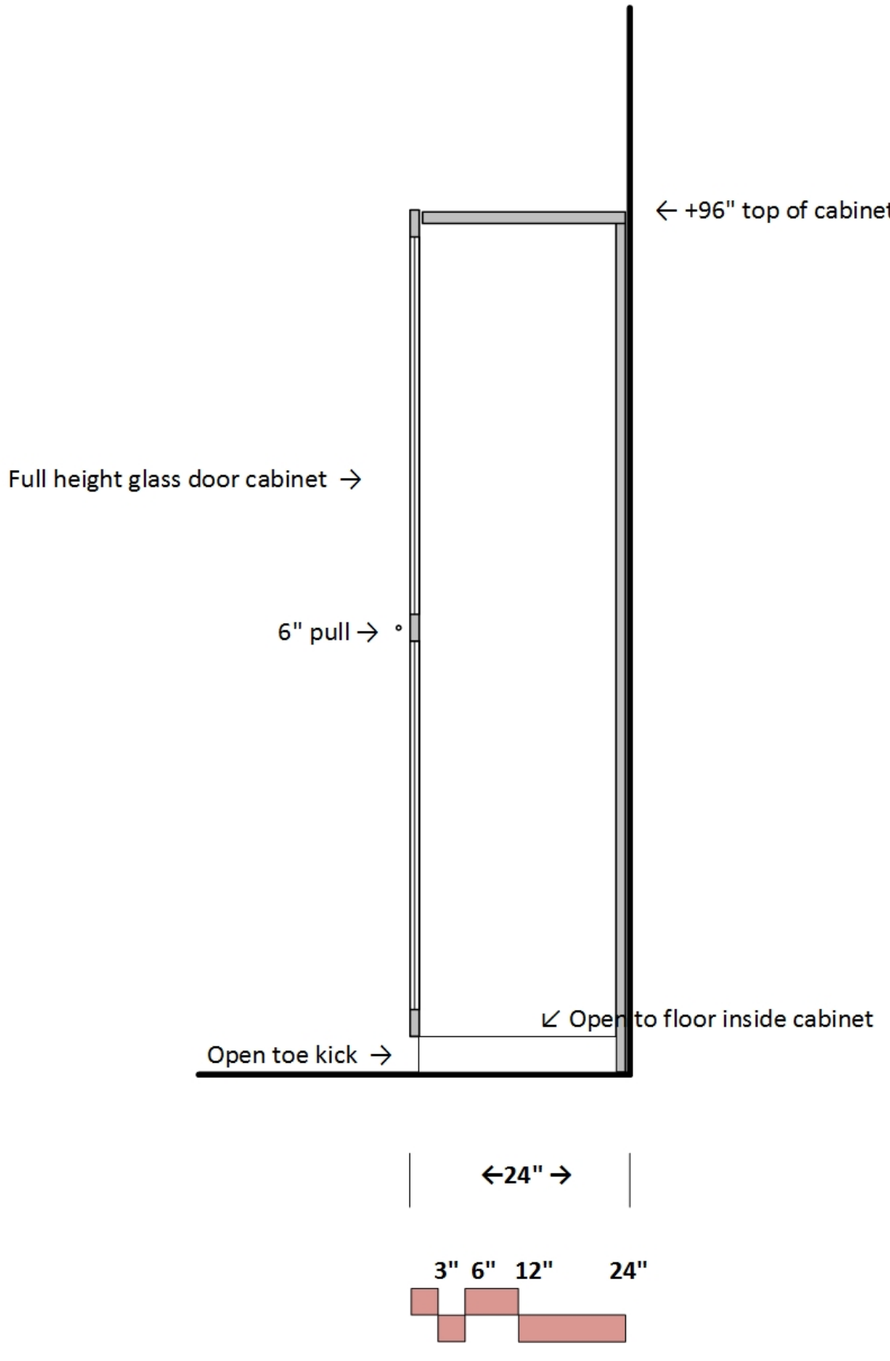
Section Detail 07

Tall Storage Cabinet



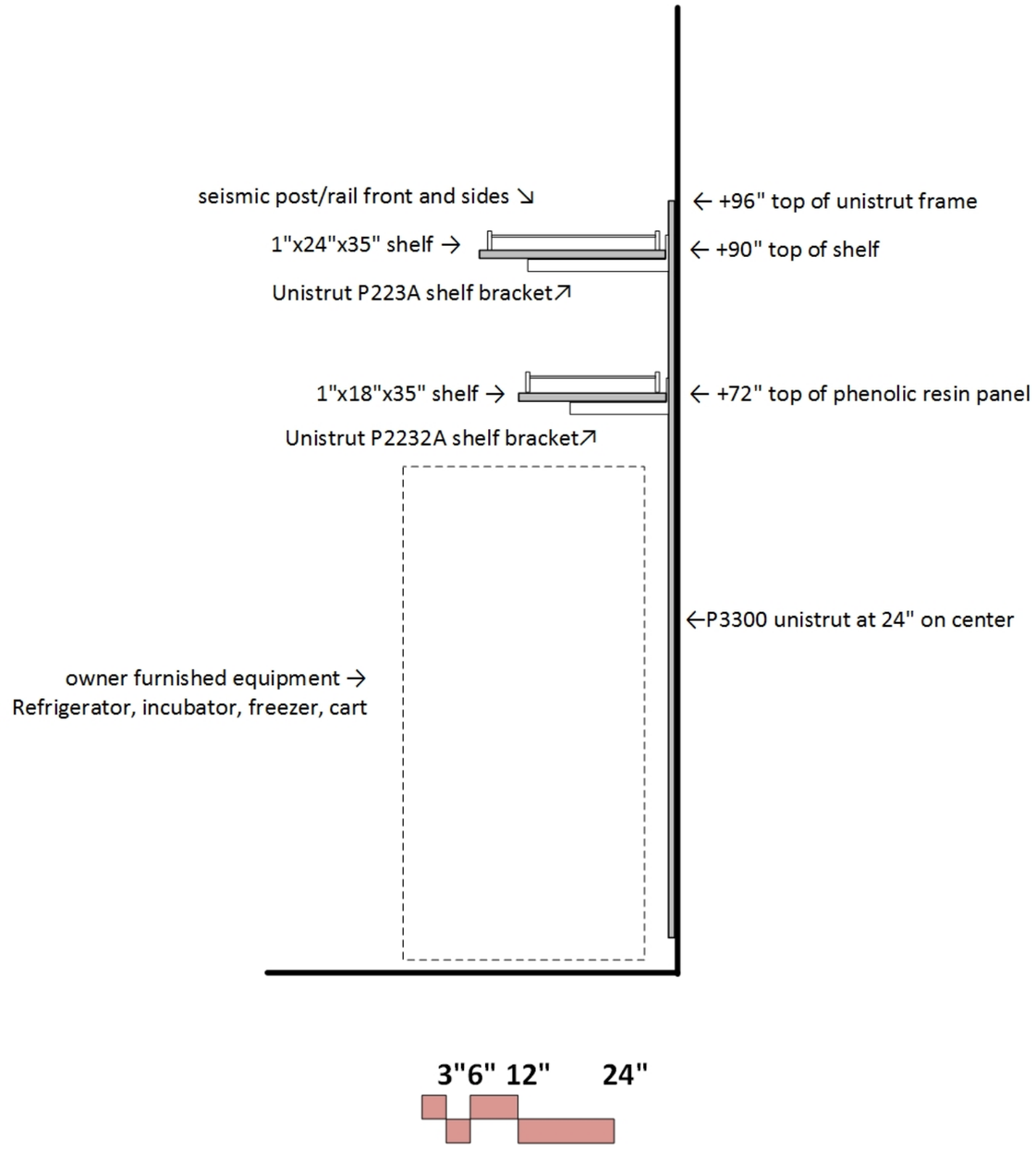
Section Detail 08

Tall Skeleton Cabinet



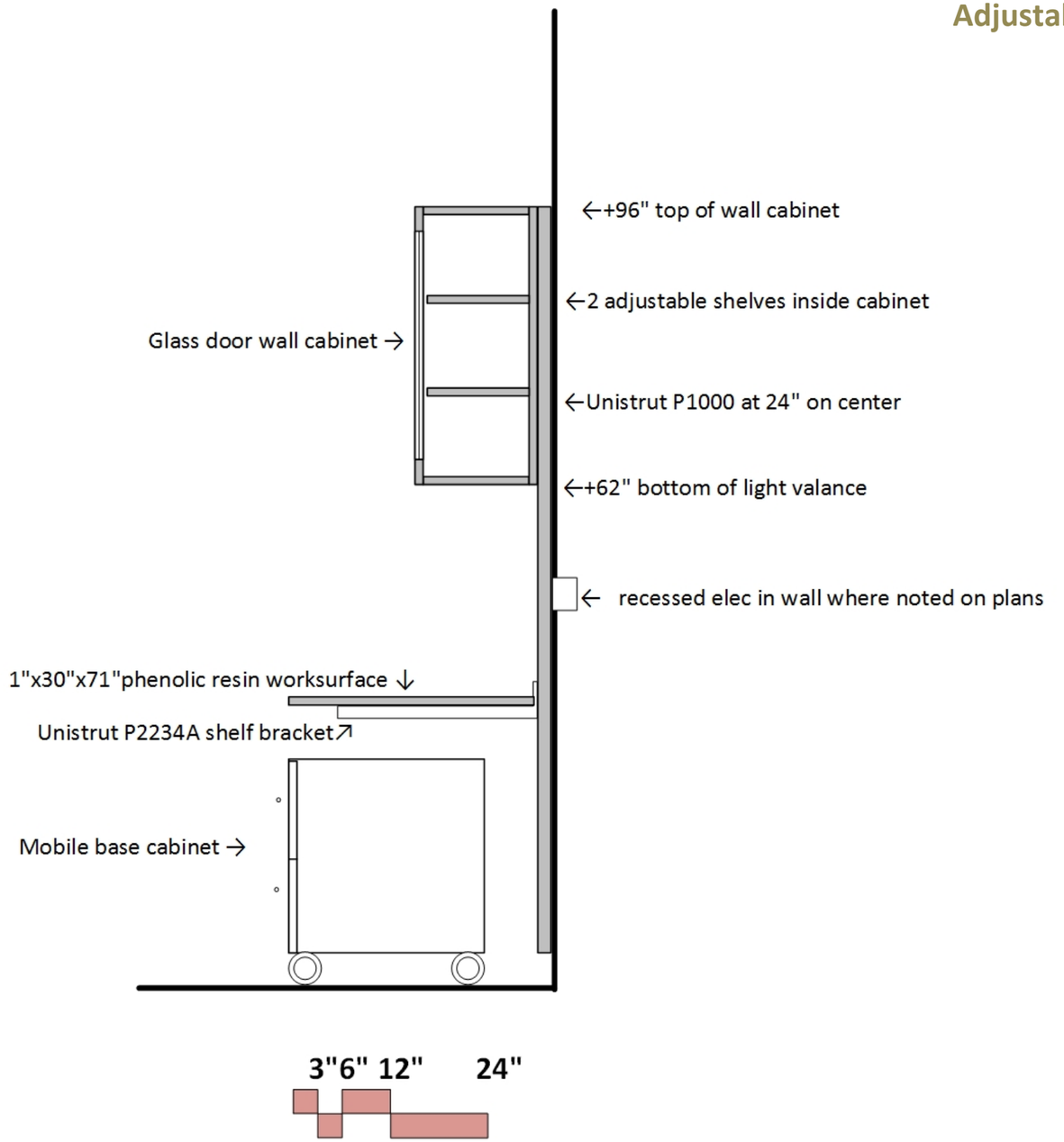
Section Detail 09

Equipment space



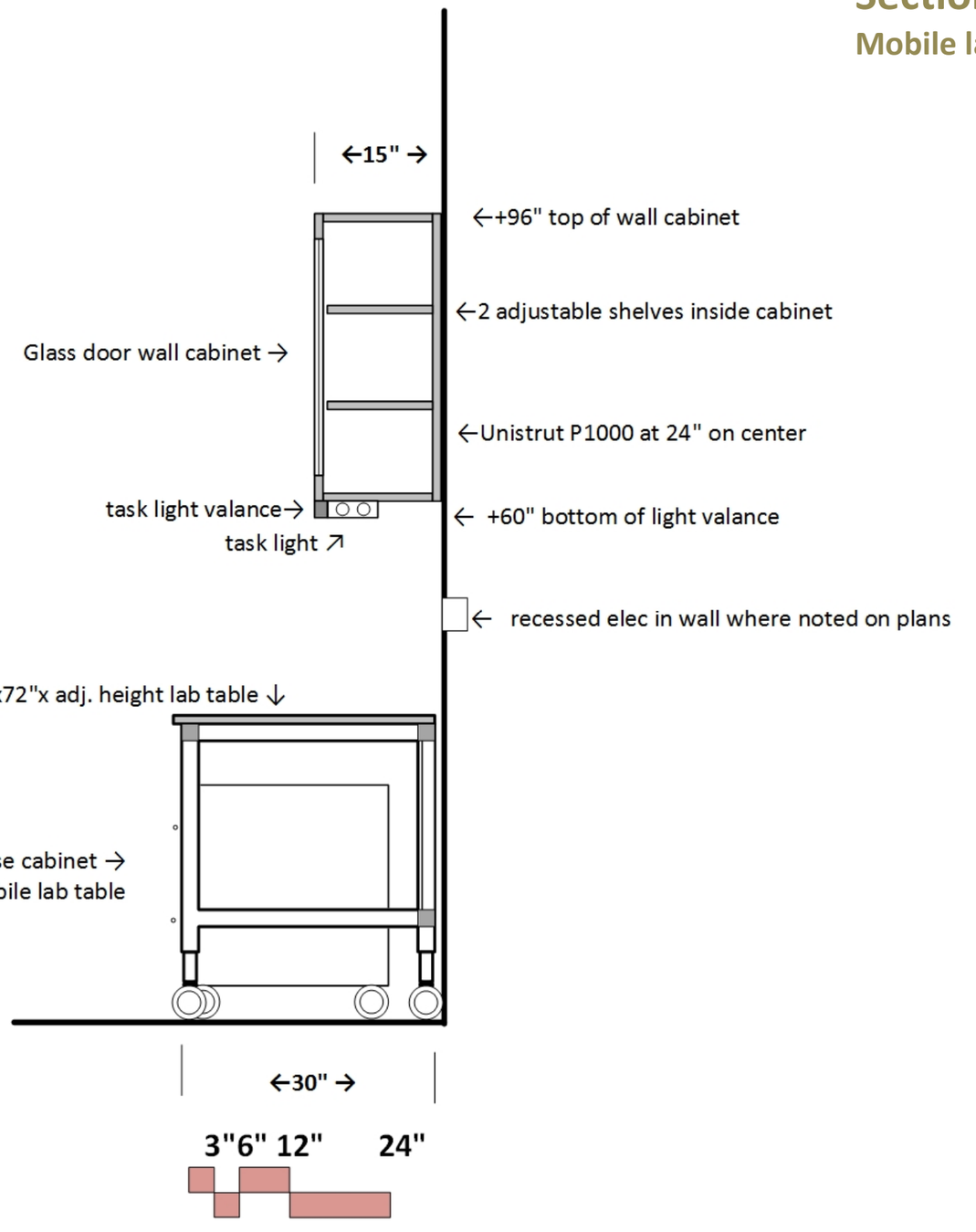
Section Detail 10

Adjustable wall bench with cabinet above



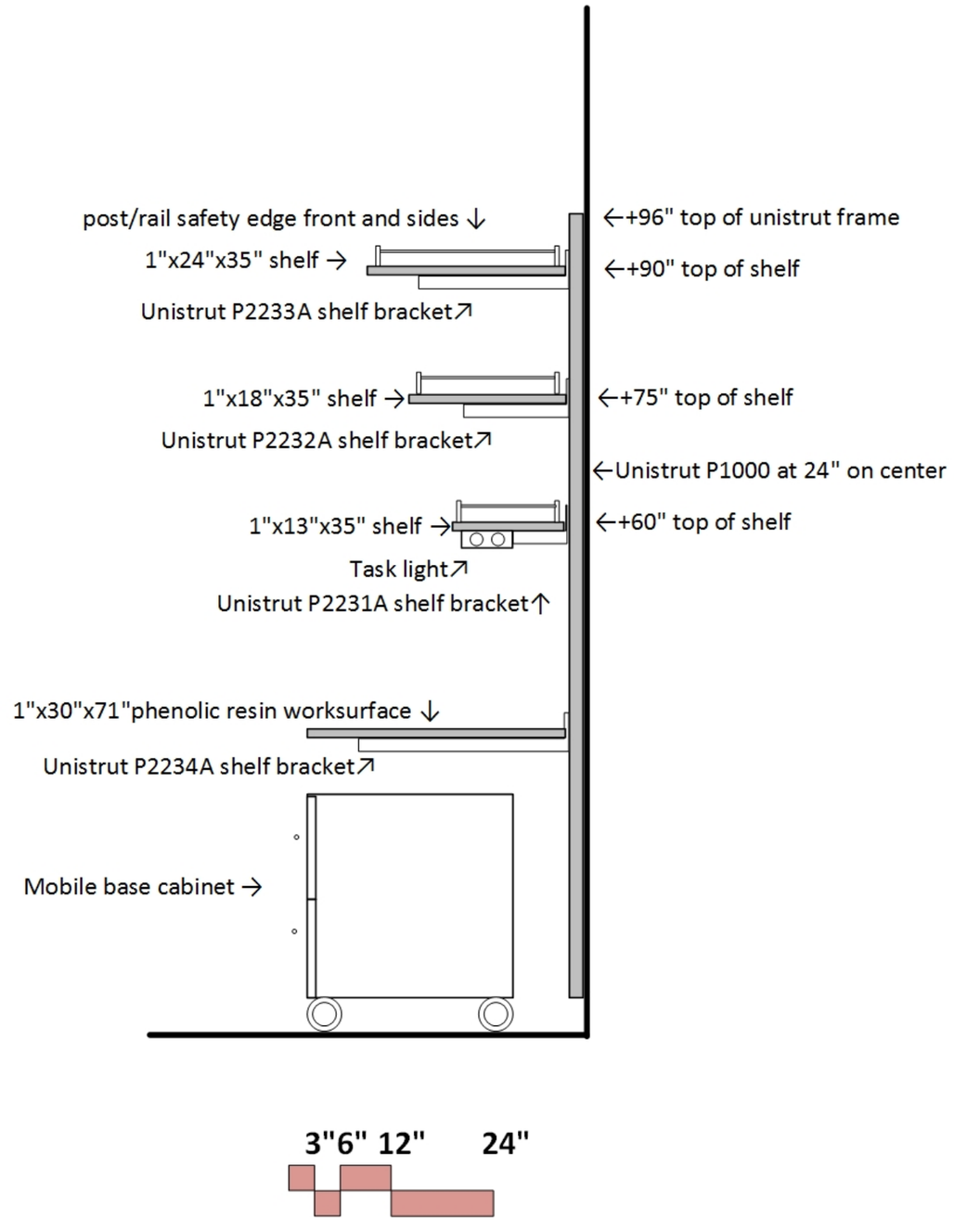
Section Detail 11

Mobile lab bench with cabinet above



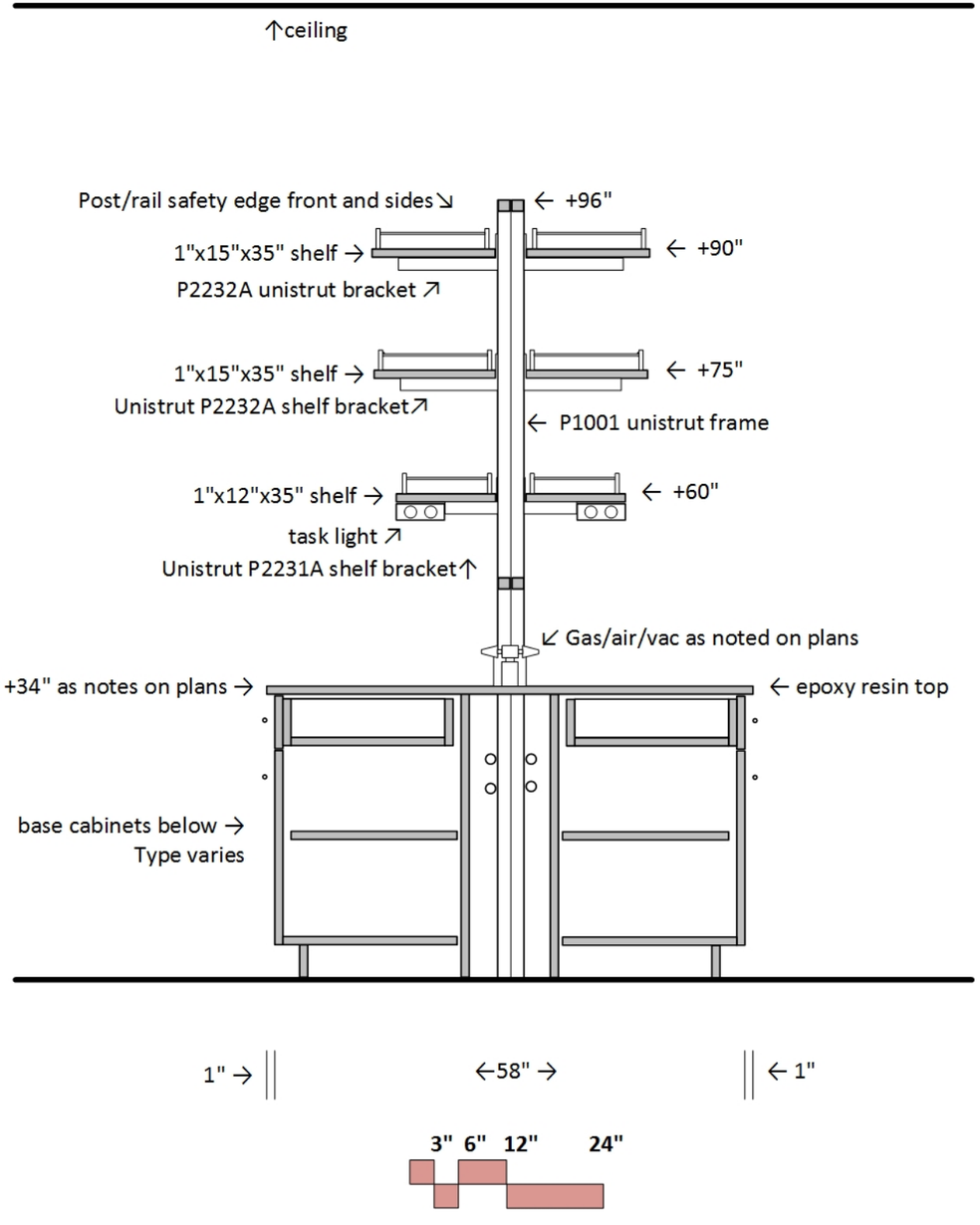
Section Detail 12

Adjustable wall bench with shelves above



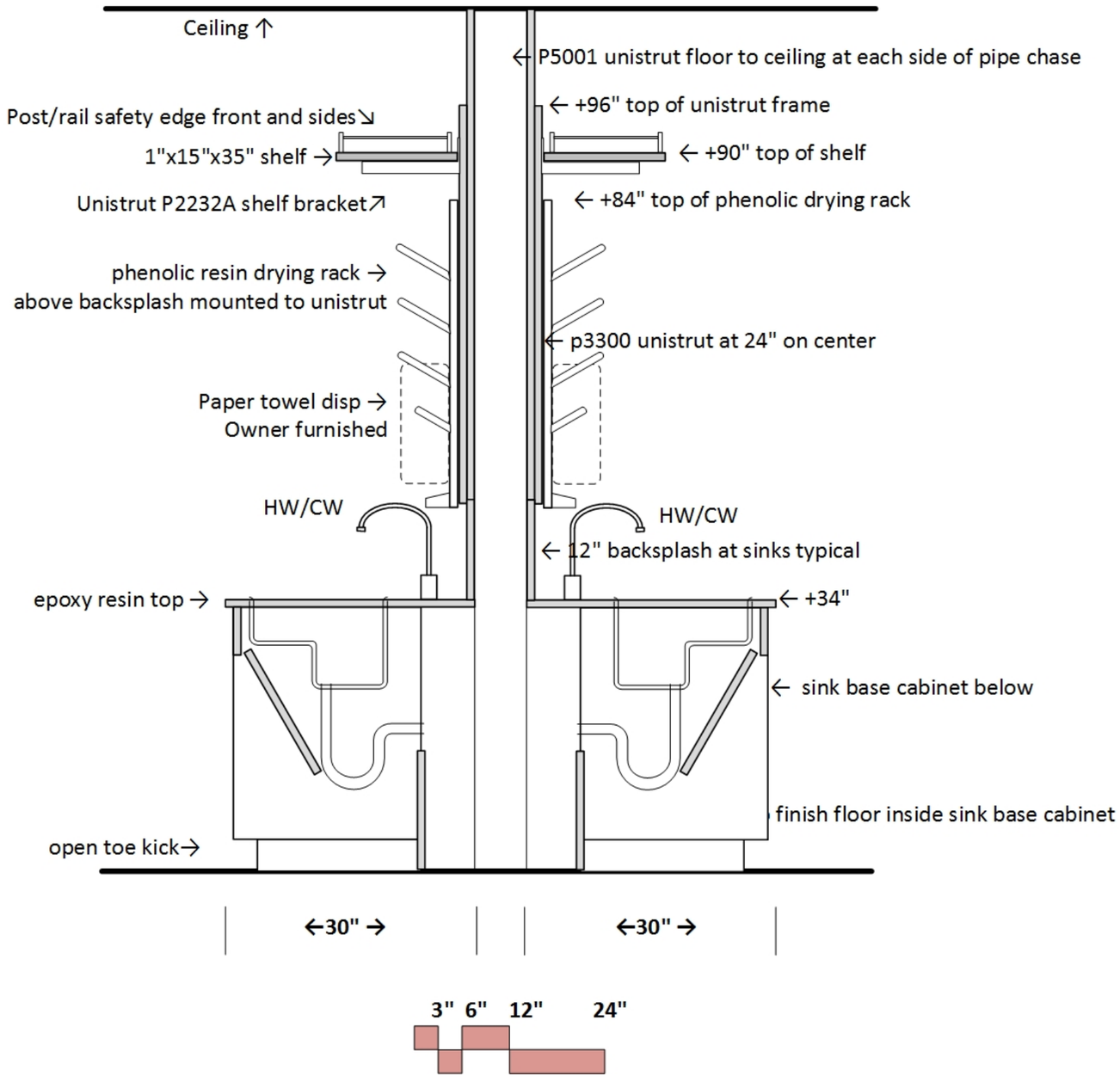
Section Detail 13

Peninsula bench with shelves above



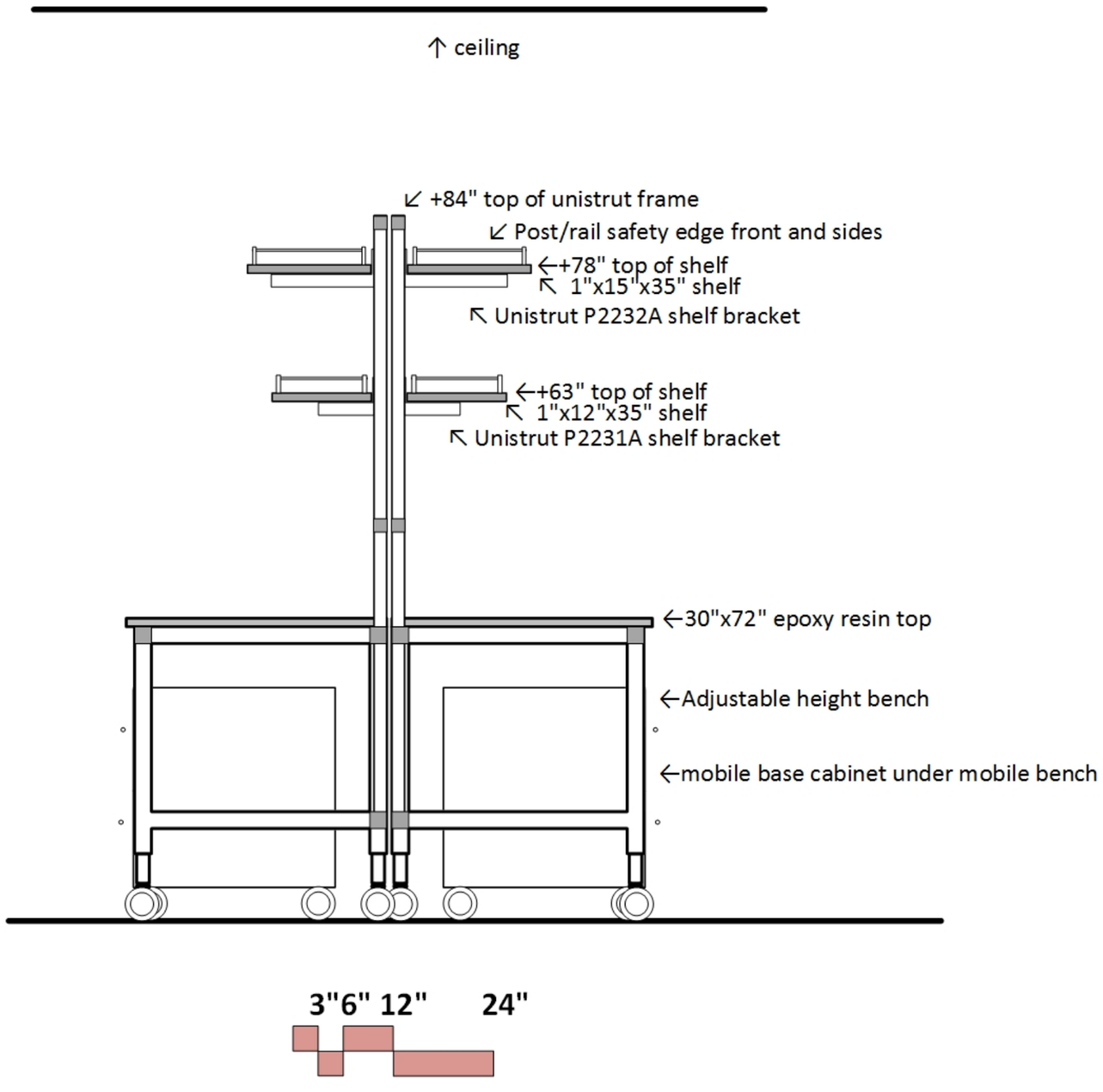
Section Detail 14

Peninsula bench with sinks



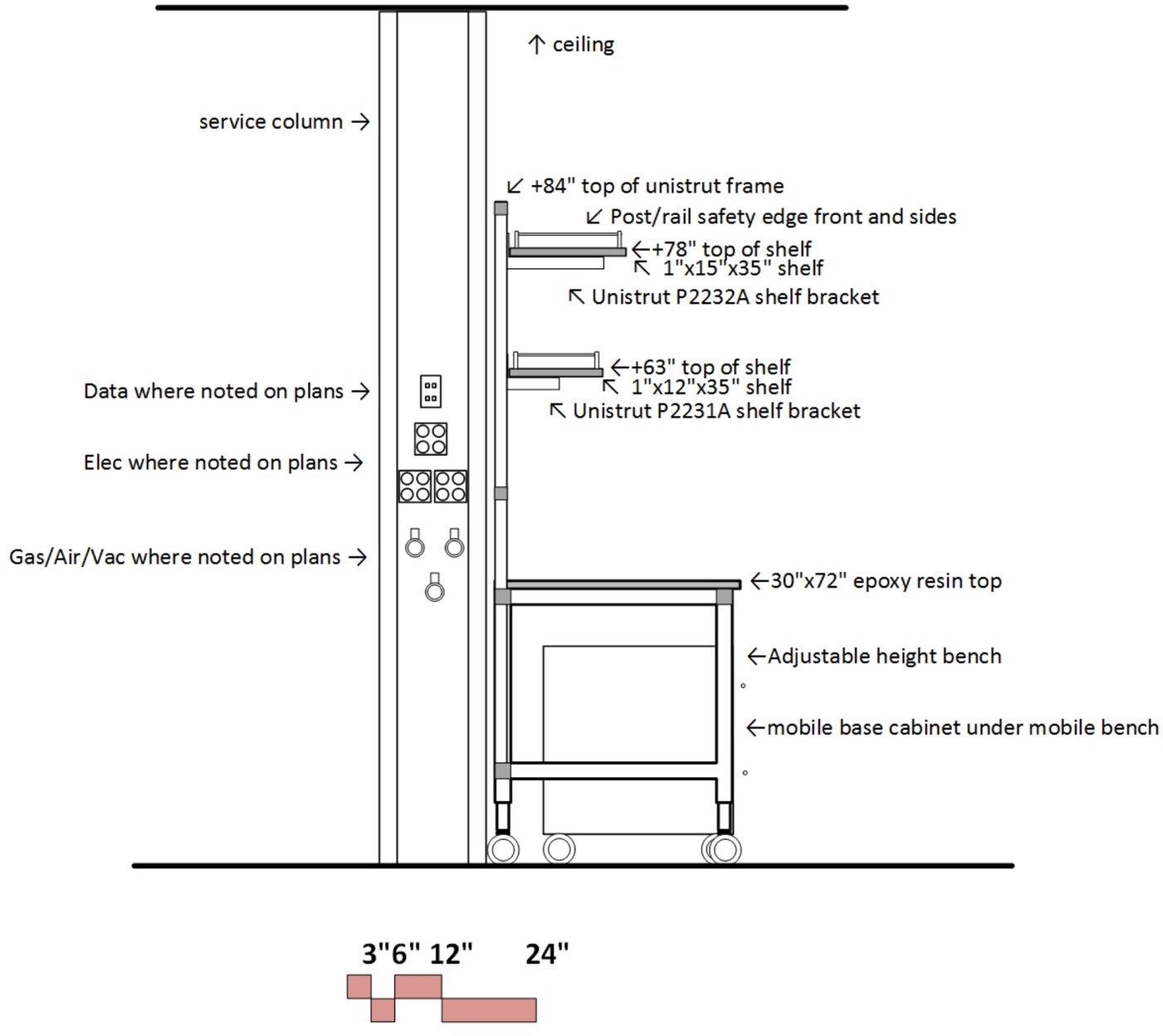
Section Detail 15

Mobile lab bench- back-to-back



Section Detail 16

Mobile lab bench



Fume Hood Cut Sheet

All fume hoods VAV
Fume Hoods shall be maximum depth of 36" from face of back wall to front face of fume hood

Protector® XStream™ Laboratory Hoods

Protector XStream Laboratory Hood 9840600 is shown with SpillStopper Work Surface 9849800, Protector Acid Storage Cabinet 9901100 and Protector Standard Storage Cabinet 9900100. Blower, ductwork, work surface and base cabinets must be ordered separately.

All models feature:

- Modified by-pass airflow design.
- Ergonomic air foil with aerodynamic Clean-Sweep* airflow openings.
- Upper Dilution Air Supply.*
- Glacier white, dry powder epoxy-coated steel exterior.
- Chemical-resistant, fiberglass-reinforced, composite panel liner and pre-set Rear Downflow Dual Baffle System* with flame spread less than 25 per ASTM E-84.
- 3/16" thick tempered safety glass vertical-rising sash with epoxy-coated aluminum sash handle with large radius and perforations.*
- Removable front and side panels and front and interior service access panels for access to plumbing and electrical wiring.
- Pre-wired T8 fluorescent lighting, ADA-compliant light and blower switches for 115 volt, 60 Hz operation.
- Sash stop located at 18" sash opening position.
- Epoxy-coated stainless steel, 12.81" ID exhaust connection(s).

*Contact Labconco at **800-821-5525** or **816-333-8811** for ordering information on explosion-proof lighting and other sash configurations and for blower sizing assistance.*

All models conform to the following regulations and standards:

- SEFA 1-2002
- NFPA 45-2000
- ASTM E84-01
- ASHRAE 110-95
- ANSI Z9.5-1993
- UL 3101-1/61010-1
- CAN/CSA C22.2 No. 1010.1
- UL 1805
- CE Conformity Marking (230 volt models)†

Fixtured models 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 115 volt, 20 amp electrical duplex receptacle on lower right side.

All models require (not included):

- ***Remote Blower.*** See back pocket.
- ***Ductwork.*** See back pocket.
- ***Work Surface.*** See pages 92-95.
- ***Base Cabinet or Stand.*** See pages 96-106.

Optional accessories for on-site installation include:

- ***Service Fixture Kits.*** See page 107.
- ***Electrical Duplex Kits.*** See page 108.
- ***Guardian Jr. and Digital Airflow Monitor Kits.*** See page 108.
- ***Distillation Grid Kits.*** See page 110.
- ***Sash Stop Kits.*** See page 108.
- ***Snuffer Fire Extinguishers.*** See page 110.
- ***Ceiling Enclosure and Rear Finish Panel Kits.*** See page 109.

** U.S. Patent No. 6,461,233*

† pending

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

Exclusive Feature

Ordering Information

Protector® XStream™ Laboratory Hoods

ASHRAE 110-95 tests show less than 0.05 ppm leak rate when tested at 4.0 lpm; at OSHA-approved 60, 80, and 100 fpm face velocity and sash positions of 18" and 28". To ensure performance at 60 fpm, Labconco engineers challenged the Protector XStream Hood at less than ideal conditions such as 30 fpm cross drafts, modified ASHRAE test procedures and average face velocities lower than 60 fpm. Contact Labconco for a technical paper with complete ASHRAE test data.

Total Exhaust CFM and Static Pressure @ 18" Sash Opening (60% open)

Nominal Width	100 fpm	s.p.	80 fpm	s.p.	60 fpm	s.p.	CFM Savings at 60 fpm vs. 100 fpm	Total Average Annual Dollar Savings at 60 fpm vs. 100 fpm*
4 feet	470	0.11`	380	0.07`	280	0.04`	190	$760
5 feet	610	0.13`	490	0.08`	370	0.05`	240	$960
6 feet	750	0.15`	600	0.10`	450	0.06`	300	$1200
8 feet	1060	0.12`	850	0.08`	640	0.04`	420	$1680

Total Exhaust CFM and Static Pressure @ 28" Sash Opening (100% open)

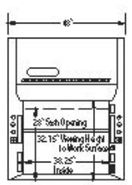
Nominal Width	100 fpm	s.p.	80 fpm	s.p.	60 fpm	s.p.	CFM Savings at 60 fpm vs. 100 fpm	Total Average Annual Dollar Savings at 60 fpm vs. 100 fpm*
4 feet	730	0.25`	590	0.13`	440	0.08`	290	$1160
5 feet	960	0.30`	770	0.19`	580	0.11`	380	$1520
6 feet	1180	0.36`	940	0.23`	710	0.13`	470	$1880
8 feet	1660	0.28`	1330	0.18`	1000	0.10`	660	$2640

**Based on average annual dollars per CFM usage of $4.00; fume hood operating 24 hours a day and 5 days per week (6240 hours per year).*

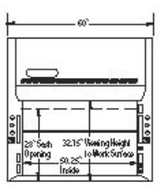
Catalog Number	Nominal Width	Electrical Requirements	Exterior Depth	Interior Working Depth	Fluorescent Lamps	Service Fixtures	Electrical Duplex	Exhaust Collar(s)	Shipping Wt. lbs./kg
9840400	4 feet	115 volts, 60 Hz	39.20`	27.3`	(2) 25 watt	None	None	12.81` ID	400/181
9840401	4 feet	115 volts, 60 Hz	39.20`	27.3`	(2) 25 watt	2	1	12.81` ID	400/181
9840402**	4 feet	230 volts, 50 Hz	39.20`	27.3`	(2) 25 watt	None	None	12.81` ID	400/181
9840403**	4 feet	230 volts, 50 Hz	39.20`	27.3`	(2) 25 watt	2	None	12.81` ID	400/181
9840500	5 feet	115 volts, 60 Hz	39.20`	27.3`	(2) 32 watt	None	None	12.81` ID	460/209
9840501	5 feet	115 volts, 60 Hz	39.20`	27.3`	(2) 32 watt	2	1	12.81` ID	460/209
9840502**	5 feet	230 volts, 50 Hz	39.20`	27.3`	(2) 32 watt	None	None	12.81` ID	460/209
9840503**	5 feet	230 volts, 50 Hz	39.20`	27.3`	(2) 32 watt	2	None	12.81` ID	460/209
9840600	6 feet	115 volts, 60 Hz	39.20`	27.3`	(2) 32 watt	None	None	12.81` ID	520/236
9840601	6 feet	115 volts, 60 Hz	39.20`	27.3`	(2) 32 watt	2	1	12.81` ID	520/236
9840602**	6 feet	230 volts, 50 Hz	39.20`	27.3`	(2) 32 watt	None	None	12.81` ID	520/236
9840603**	6 feet	230 volts, 50 Hz	39.20`	27.3`	(2) 32 watt	2	None	12.81` ID	520/236
9840800	8 feet	115 volts, 60 Hz	39.20`	27.3`	(4) 25 watt	None	None	(2) 12.81` ID	700/318
9840801	8 feet	115 volts, 60 Hz	39.20`	27.3`	(4) 25 watt	2	1	(2) 12.81` ID	700/318
9840802**	8 feet	230 volts, 50 Hz	39.20`	27.3`	(4) 25 watt	None	None	(2) 12.81` ID	700/318
9840803**	8 feet	230 volts, 50 Hz	39.20`	27.3`	(4) 25 watt	2	None	(2) 12.81` ID	700/318

***International electrical configuration*

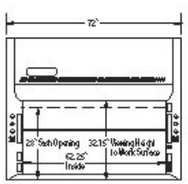
4 Feet
98404 Series



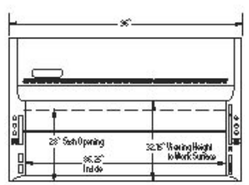
5 Feet
98405 Series



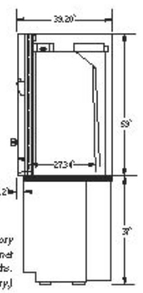
6 Feet
98406 Series



8 Feet
98408 Series



Side View/
All Models



Side view shown with accessory work surface and base cabinet available for all hood widths. Height can vary.

PURIFIER® AXIOM™

CLASS II BIOSAFETY CABINETS

Performance Features

NEW Two operation modes: Type A mode for standard microbiological use and Type B mode for connection to exhaust system when handling hazardous chemical vapors or radionuclides

NEW Dual Electronically Commutated Motors (ECM)

Constant Airflow Profile™ (CAP) Technology airflow monitoring system that provides constant and precise volume of air as required and automatically adjusts as filter load without relying on airflow or pressure sensors

- Low static pressure and volumetric rate exhaust requirements when in Type B mode. No dedicated exhaust system per BSC required as compared to contemporary Class II, Type B biosafety cabinets.

Air-Wave™ Entry System*

Contain-Air™ Negative Pressure Channel*

- MyLogic™ Operating System that controls Smart-Start™ System for allowing the user to program start up and shut down operations and Night-Smart™ System for idling the blower when the sash is fully closed (Night-Smart operational in Type A mode only)
- Built-in interval or elapsed timer for experiment monitoring, fluorescent light or UV light control (on models with UV light)
- Digital clock
- Bright, 90-150 footcandle, glare-free fluorescent lighting located outside the contaminated work area
- Five year warranty

Safety Features

LCD information center with "Filter Life Remaining" bar graph for each HEPA filter, status line for alarm conditions and alerts to warn when filter life diminishes to 20% and 0%

NEW Active Protection Protocol that maintains negative pressure ensuring user safety during normal shut down and exhaust failure (when connected to exhaust in Type B mode).**

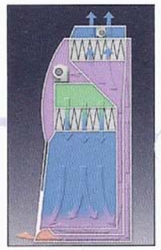
- Electronic security lock (optional activation) that requires code to operate the cabinet
- Two electrical duplex receptacles, (single outlets on 230 volt models), located one on each side (GFCI on 115 volt models only)
- Intrinsically safe negative pressure design
- Fully-closing. clear 1/4" tempered safety glass sash
- Stainless steel inlet grille with Reserve-Air™ Secondary Airflow Slots*
- Supply and exhaust 99.99+% efficient HEPA filters. Contact Labconco for optional 99.999% efficient ULPA filters.
- Leak-tight stainless steel interior

Comfort Features

Interior-mounted, line-of-sight, full color LCD information center with easy-to-understand MyLogic™ programming

NEW 22.6" (58 cm) maximum sash opening height and 27.0" (69 cm) viewing height

Waterfall design curved inlet grille forearm support*



Side View: Airflow Diagram

NEW Removable, type 304 stainless steel 3-piece work surface (including 2 flat sides and 1 dished center) with lift out knobs and clearly delineated working area (when handling chemicals)**

NEW Catch latch to hold center dished Chem-Zone™ work surface in upright position for easy cleaning of catch pan and sump area

- 10° Angled sash with counterbalanced, anti-racking mechanism for ease of lifting

ADA-compliant touchpad control on right-hand side post for manual activation of blower, light(s), timer, electrical receptacles, audible alarm mute and menu selection

Flush-mounted stainless steel electrical receptacle covers with dampened hinges

NEW Two operational ADA-compliant sash heights. BSC can be programmed on location to have either 8" or 10" sash height.

Specifications

NEW Chem-Zone™ work area with dedicated direct exhaust for use with hazardous vapors or radionuclides**

- Nominal inflow velocity of 105 feet per minute (fpm) (0.53 m/sec)
- Nominal downflow velocity of 65 fpm (0.33 m/sec)
- Powder-coated steel exterior
- NSF International-Listed† and modified ASHRAE 110 compliant
- ETL listed†
- CE conformity marking† (230 volt models)
- Class 5 conditions per ISO 14644-1 and -2 (formerly Class 100)

Options

- Unassembled, NSF-Approved, powder-coated steel telescoping base stand with fixed feet
- Accessory Package: 254 nm UV lamp, ADA-compliant service fixture(s) with ball-type valve(s), and NSF-Approved Vacu-Pass™ Cord & Cable Portal
- 10" diameter stainless steel air-tight manual damper (recommended if connected to exhaust in Type B mode)
- Bag-In Bag-Out Exhaust Filter for use with radionuclides or harmful pharmaceutical compounding ingredients

Required Accessory

- Supporting base if unassembled stand option is not selected

*U.S. Patent No. 6,368,206 **Patent pending †Pending

Exclusive Labconco feature

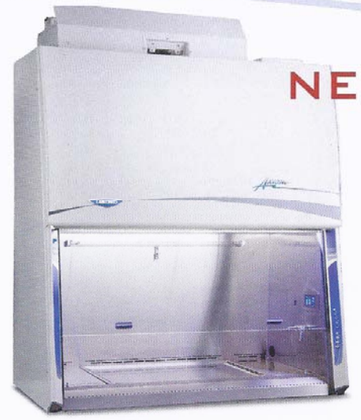
Complies with Americans with Disabilities Act Standard for height of controls and receptacles

Protecting your laboratory environment
LABCONCO

PURIFIER® AXIOM™ CLASS II BIOSAFETY CABINETS

CATALOG NUMBER CONFIGURATOR

Use this key to configure the **nine digit catalog number** to order your Purifier Axiom Class II Biosafety Cabinet. For example, a 304411100 is a 4' Purifier Axiom Class II Biosafety Cabinet with 10" sash opening, service fixture, UV lamp, Vacu-Pass Portal, unassembled base stand and North America, 115 volt electrical receptacle and plug.



STEP 1: Select the width of your cabinet. This number is the fourth digit of your catalog number.

4 = 4' (Actual width = 54.3"/138 cm)

6 = 6' (Actual width = 78.3"/199 cm)

STEP 2: Select the sash opening height. This number is the fifth digit of your catalog number.

1 = 10" (25.4 cm)

8 = 8" (20.3 cm)

3 0 4

STEP 3: Select the Accessory Package option: service fixture(s), UV lamp and Vacu-Pass™ Cord & Cable Portal. This number is the sixth digit of your catalog number.

0 = None

1 = Includes a right-side mounted factory-installed service fixture (two on 6' models, one on each side), UV lamp with timer, and right-side wall Vacu-Pass Portal.

STEP 4: Select non-welded telescoping base stand option. This number is the seventh digit of your catalog number.

0 = None

1 = Includes an non-welded telescoping base stand shipped with the cabinet.

STEP 5: Select the electrical receptacle and plug type. This number is the eighth and ninth digits of your catalog number.

00 = North America, 115 volts, 20 amps

10 = North America, 230 volts

20 = Japan, 100 volts, 20 amps

30 = Schuko, 230 volts

40 = China/Australia, 230 volts

50 = British (UK), 230 volts

70 = India, 230 volts

Technical Specifications

Nominal Width	4'	6'
Actual Width	54.2" (138 cm)	78.2" (199 cm)
Depth	32.0" (81 cm)	32.6" (83 cm)
Height	68.9" (175 cm)	68.9" (175 cm)
Shipping Weight (Cabinet only)	750 lbs. (340 kg)	1075 lbs. (488 kg)
Shipping Weight (Cabinet with Base Stand)	835 lbs. (379 kg)	1175 lbs. (533 kg)
Power Consumption	200 watts	325 watts
Exhaust Volume, 10" Sash Opening	480 CFM @ 0.3" s.p.	684 CFM @ 0.3" s.p.
Exhaust Volume, 8" Sash Opening	387 CFM @ 0.3" s.p.	556 CFM @ 0.3" s.p.

Protecting your laboratory environment
LABCONCO

LABCONCO CORPORATION • 8811 Prospect Avenue • Kansas City, MO 64132
800-821-5525 • 816-333-8811 • www.labconco.com

2-17-8/20/14

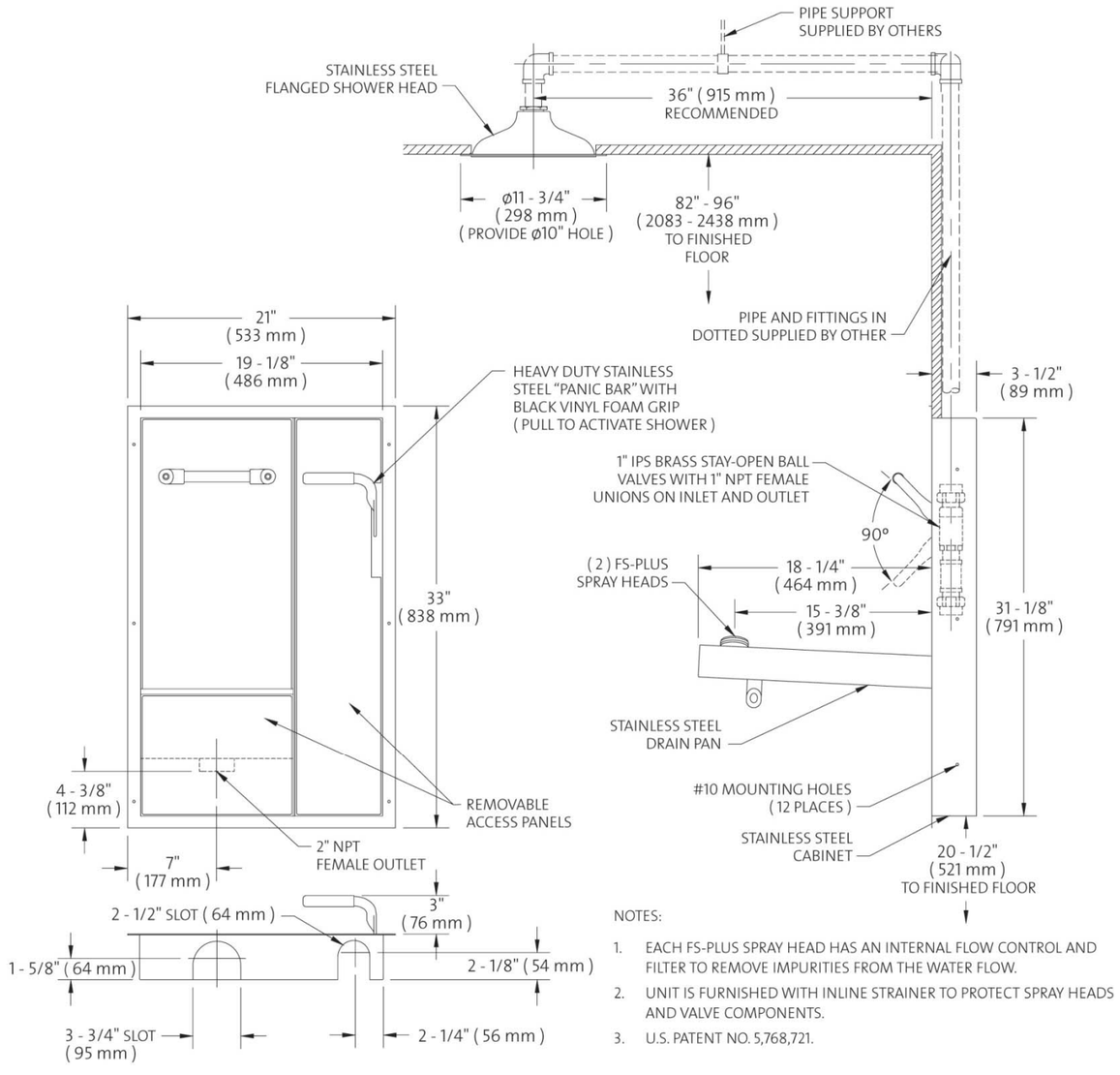
Safety Shower/Eyewash Cut Sheet

WaterSaver

Reccessed Laboratory Units

- **SSBF2160** Recessed Safety Station with Drain Pan, Stainless Steel Shower Head
- **SSBF2162** Recessed Safety Station with Drain Pan and Daylight Drain, Stainless Steel Shower Head

Requires drain connection at eyewash
Provide floor drain below shower



NOTES:

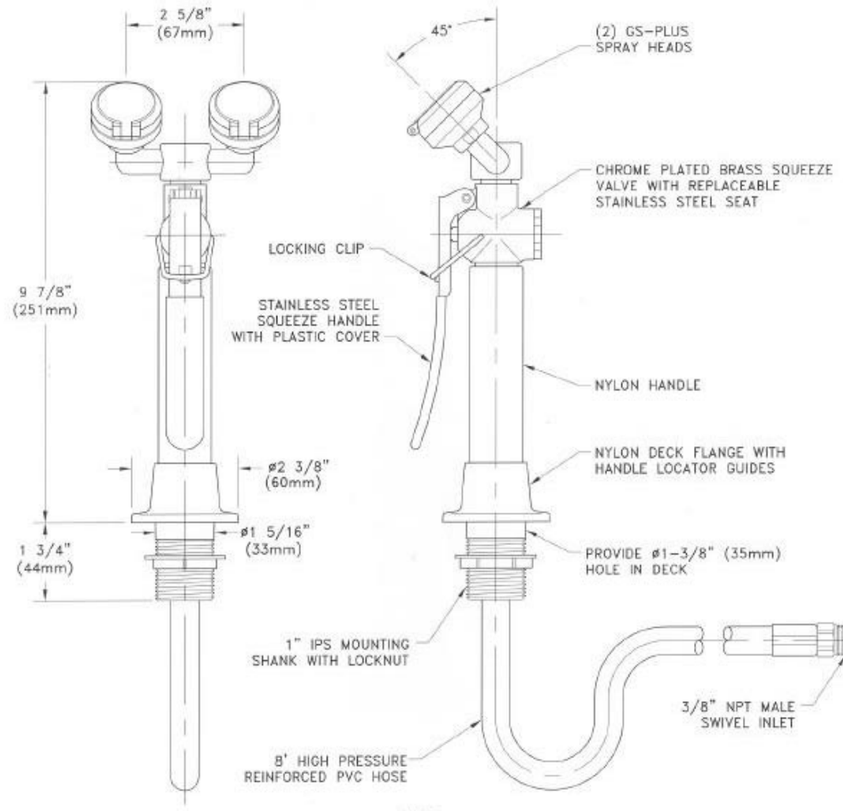
1. EACH FS-PLUS SPRAY HEAD HAS AN INTERNAL FLOW CONTROL AND FILTER TO REMOVE IMPURITIES FROM THE WATER FLOW.
2. UNIT IS FURNISHED WITH INLINE STRAINER TO PROTECT SPRAY HEADS AND VALVE COMPONENTS.
3. U.S. PATENT NO. 5,768,721.

Eyewash Cut Sheet

Located at Cadaver Room sink only

WaterSaver

EW1022
Eye Wash/Drench Hose Unit, Deck Mounted



NOTES:
1. EACH GS-PLUS SPRAY HEAD HAS A "FLIP-TOP" DUST COVER, INTERNAL FLOW CONTROL AND FILTER TO REMOVE IMPURITIES FROM THE WATER FLOW.
2. HOSE SHOULD NOT BE USED IN APPLICATIONS WHERE WATER PRESSURE EXCEEDS 90 PSI. HOSE SHOULD BE INSPECTED PERIODICALLY FOR DETERIORATION.

WaterSaver Faucet Company 701 West Erie Street Chicago, Illinois 60610 312.666.5500 Phone 312.666.8597 Fax watersaverfaucet.com

Hot/Cold Water Faucet Cut Sheet

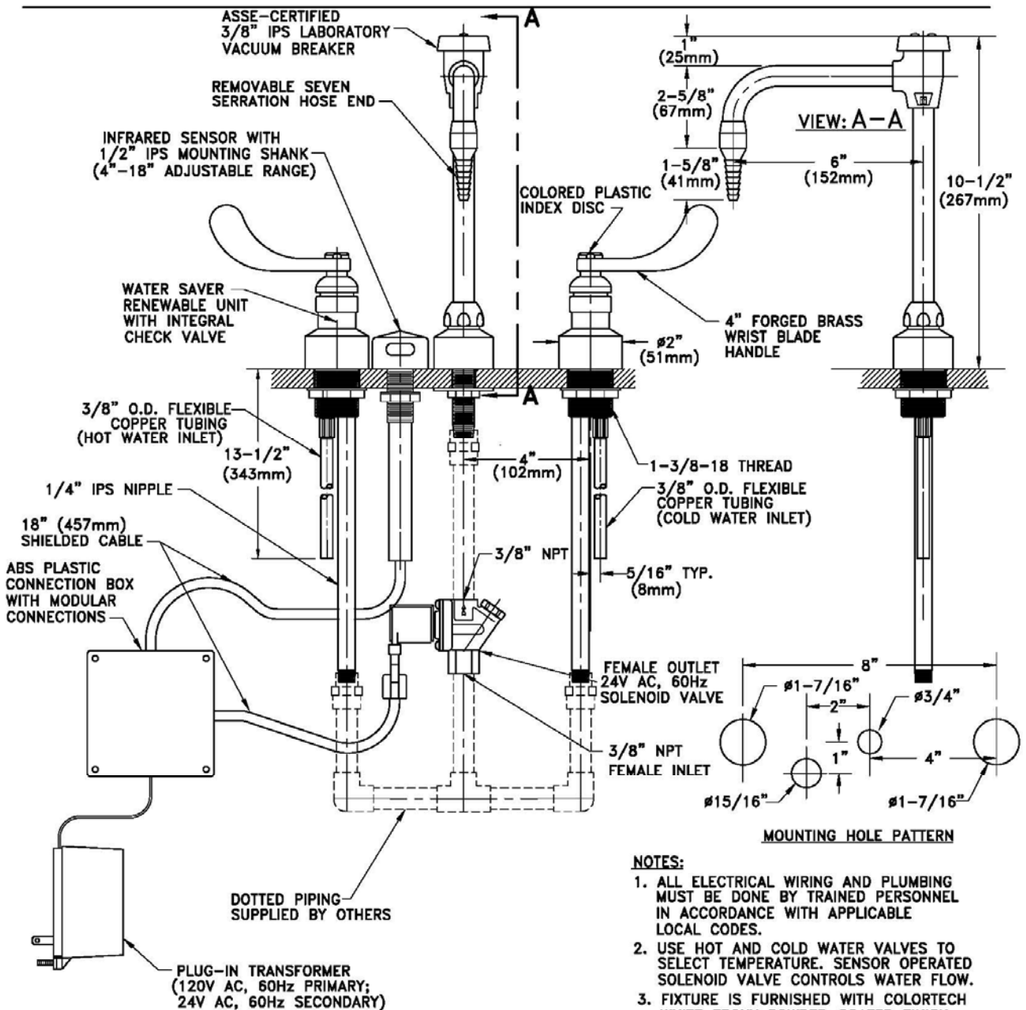
COLORTECH

Laboratory Service Fixtures by WaterSaver Faucet Co.

701 West Erie Street Phone 312 666 5500
Chicago, Illinois 60610 Fax 312 666 8597

CT4554VB–BH

DECK MOUNTED SENSOR OPERATED AUTOMATIC MIXING FAUCET WITH 6" RIGID VACUUM BREAKER GOOSENECK, WRIST BLADE HANDLES. AND MANUALLY OPERATED MIXING VALVES



MEASUREMENTS MAY VARY ±1/4".

NOTES:

1. ALL ELECTRICAL WIRING AND PLUMBING MUST BE DONE BY TRAINED PERSONNEL IN ACCORDANCE WITH APPLICABLE LOCAL CODES.
2. USE HOT AND COLD WATER VALVES TO SELECT TEMPERATURE. SENSOR OPERATED SOLENOID VALVE CONTROLS WATER FLOW.
3. FIXTURE IS FURNISHED WITH COLORTECH WHITE EPOXY POWDER–COATED FINISH.

Drawing Number: _____ Revision Number: 030806–KJS

Confirm with SWC if infrared sensor faucets are required at lab sinks

requires 120v outlet below each sink

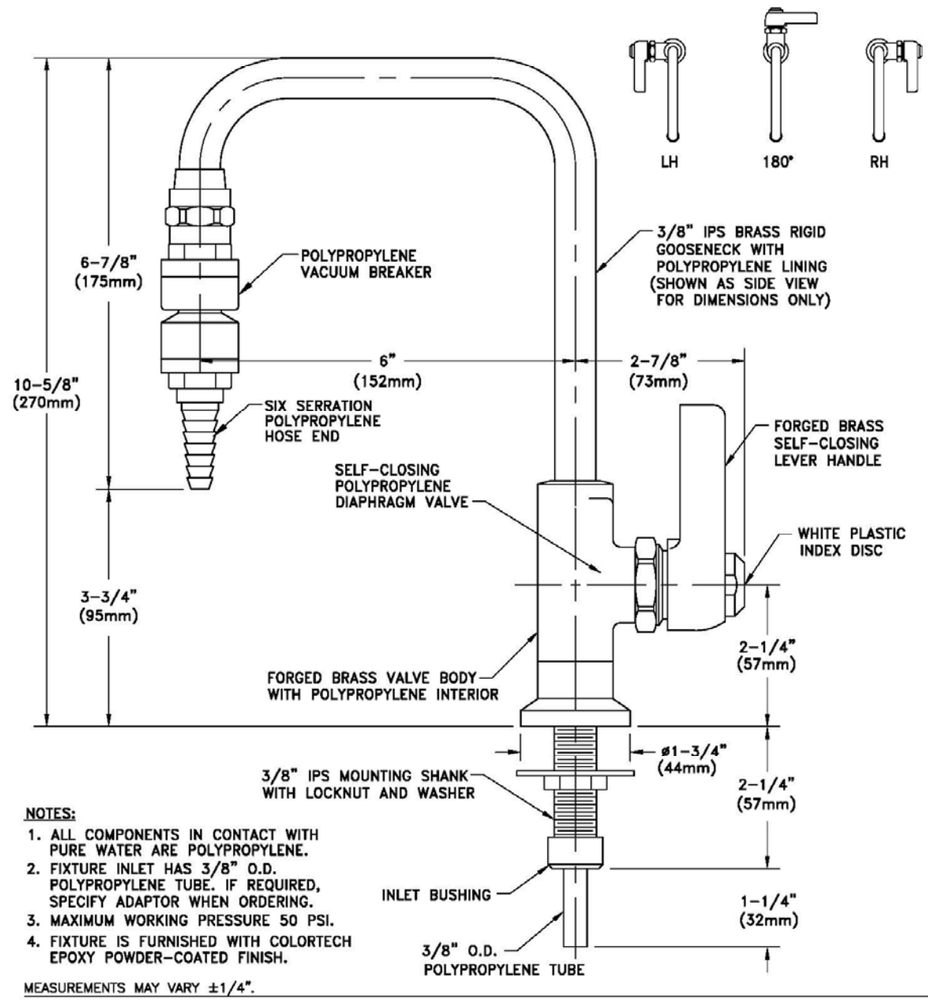
COLORTECH

701 West Erie Street Phone 312 666 5500
Chicago, Illinois 60610 Fax 312 666 8597

Laboratory Service Fixtures by WaterSaver Faucet Co.

CT7853SC-7110-LE

DECK MOUNTED FIXTURE FOR DISTILLED, DEIONIZED AND ULTRA-PURE WATER WITH ALL-POLYPROPYLENE INTERIOR LINING, 6" RIGID GOOSENECK, SELF-CLOSING OPERATION, POLYPROPYLENE VACUUM BREAKER AND LEVER HANDLE



NOTES:

1. ALL COMPONENTS IN CONTACT WITH PURE WATER ARE POLYPROPYLENE.
2. FIXTURE INLET HAS 3/8" O.D. POLYPROPYLENE TUBE. IF REQUIRED, SPECIFY ADAPTOR WHEN ORDERING.
3. MAXIMUM WORKING PRESSURE 50 PSI.
4. FIXTURE IS FURNISHED WITH COLORTECH EPOXY POWDER-COATED FINISH.

MEASUREMENTS MAY VARY ±1/4".

Drawing Number: _____ Revision Number: 090497-WK

Pure Water Station

Point-of-use water polishers to be provided at Level 1 lab sinks

Sink Cut Sheet

Accessible sink:
A26: 18"Lx15"Wx5/11"D
located at all accessible sink locations

Large Lab Sink:
D61: 30"Lx16"Wx17.8"D

Standard Lab Sink:
D59: 28"Lx15"Wx11.8"D

Chemistry Student Island Sink:
D06: 12"Lx12"Wx12"D

DURCON™ INCORPORATED

PRODUCT DIMENSIONS

DOMESTIC SIZES

Standard DropIn® Sinks

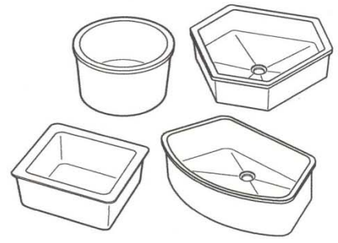
Sink No.	Outlet	Wgt (lb)	Dimensions (in)				
			Inside Bowl			Outlet Location	
			Length	Width	Depth	X	Y
D01C	Center	9	9.0	6.0	5.8	4.5	3.0
D03C	Center	16	12.0	8.0	5.8	6.0	4.0
♿ A05	Corner	18	14.0	10.0	5.0	3.5	3.5
D05	Corner	22	14.0	10.0	6.2	3.5	3.5
D05C	Center	24	14.0	10.0	6.2	7.0	5.0
D10	End	20	16.0	8.0	6.8	4.5	4.0
D10C	Center	22	16.0	8.0	6.8	8.0	4.0
D15	Corner	30	16.0	12.0	8.0	3.5	3.5
D15C	Center	31	16.0	12.0	8.0	8.0	6.0
D19	Corner	42	16.0	16.0	9.6	3.5	3.5
D20	Corner	32	16.0	16.0	7.5	3.5	3.5
D22C	Center	30	18.0	6.5	6.8	9.0	3.3
D24(C)	Center	30	18.0	14.0	10.5	9.0	6.8
♿ A25	Corner	35	18.0	15.0	5.0	3.5	3.5
D25	Corner	39	18.0	15.0	7.9	3.5	3.5
D30	Corner	53	18.0	15.0	11.0	3.5	3.5
D30C	Center	50	18.0	15.0	10.8	9.0	7.5
D33E	End	59	21.0	17.0	9.8	4.5	8.5
D45	Corner	64	21.5	15.5	11.0	3.5	3.5
D50C	Center	48	24.0	16.0	8.0	12.0	8.0
D52	Corner	77	24.0	18.0	11.0	3.5	3.5
♿ A55	Corner	47	25.0	15.0	4.8	3.5	3.5
D55	Corner	61	25.0	15.0	10.0	3.5	3.5
D59	Corner	61	28.0	15.0	11.8	3.5	3.5
DRS12	Center	18	12.0	Round	7.8	Center	

Special Order DropIn® Sinks

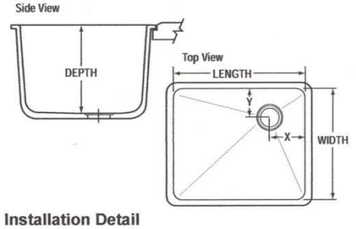
Sink No.	Outlet	Wgt (lb)	Dimensions (in)				
			Inside Bowl			Outlet Location	
			Length	Width	Depth	X	Y
D06*	Center	34	12.0	12.0	12.0	6.0	6.0
♿ A07*	Corner	24	14.0	14.0	5.0	3.5	3.5
D08*	Corner	25	15.0	8.0	6.0	3.5	3.5
D09*	Corner	25	15.0	8.0	10.8	3.5	3.5
D21*	Corner	58	16.0	16.0	15.0	3.5	3.5
♿ A26*	Corner	39	18.0	15.0	5/11	4.5	5.5
D32	Corner	49	18.0	15.0	15.8	3.5	3.5
D51*	Corner	60	24.0	16.0	9.6	3.5	3.5
D54*	Corner	45	25.0	15.0	8.0	3.5	3.5
D57*	Corner	71	25.0	15.0	13.6	3.5	3.5
D58*	Corner	79	25.0	15.0	17.8	3.5	3.5
D61	End	94	30.0	16.0	17.8	4.5	7.5
D65C*	Center	98	35.5	19.5	9.8	17.8	9.8
D68**	End	70	30.0	16.0	10.0	4.75	8.0
D70C*	Center	95	24.0	16.0	15.5	8.0	12.0
D100**	Center	29	22.5	Hexagon	5.0	Center	
D200**	End	64	30.9	Hexagon	7.0	15.5	8.0
DRS10*	Center	14	10.0	Round	7.8	Center	
DHC20*	End	82	30.0	Hexagon	7.0	Center	
D99*	End	56	32.0	Semi-Circle	10.0	11.5	4.5

All sinks are available at both plants unless they are Special Order Sinks, available as noted:
** Available only from Taylor, TX, plant (colors: Black Onyx, Gray, Graphite, Tan, Forest Green and Steel Blue).*
*** Available only from Canton, MI, plant (colors: Black Onyx, Gray and Alpine White)*
♿ *ADA compliant sinks are designated by this symbol.*
All Dimensions are nominal. Exterior dimensions vary by MFG location. Cutsheets available upon request.

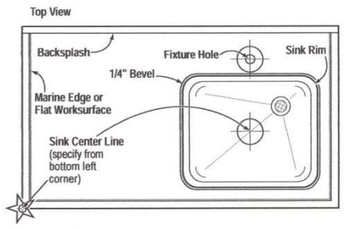
DropIn® Sink Styles



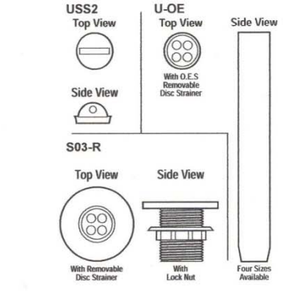
Dimensions Key



Installation Detail



Outlets & Accessories



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Rev. 02/08

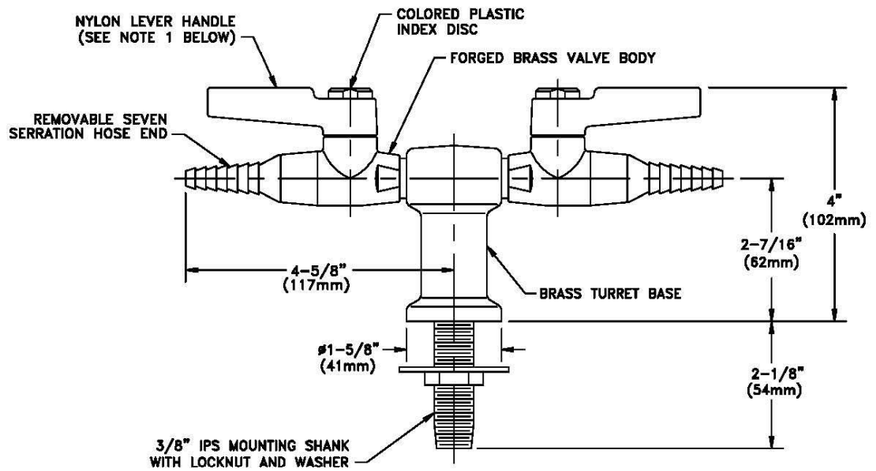
COLORTECH

Laboratory Service Fixtures by
WaterSaver Faucet Co.

701 West Erie Street Phone 312 666 5500
Chicago, Illinois 60610 Fax 312 666 8597

CT4200–232SWSA

DECK MOUNTED TURRET BASE WITH TWO LABORATORY BALL VALVES AT 180° AND MOUNTING SHANK



NOTES:

1. VALVE IS FURNISHED WITH A BLACK NYLON LEVER HANDLE AS STANDARD. A COLORED NYLON HANDLE AND A CHROME PLATED FORGED BRASS HANDLE ARE ALSO AVAILABLE.
2. VALVE IS FACTORY ASSEMBLED AND TESTED AT 125 PSI. MAXIMUM WORKING PRESSURE IS 75 PSI.
3. VALVE IS CERTIFIED FOR GAS SERVICE BY CANADIAN STANDARDS ASSOCIATION UNDER STANDARD ANSI Z21.15–1997/CGA9.1–M97.
4. FIXTURE IS FURNISHED WITH COLORTECH WHITE POWDER–COATED FINISH.

MEASUREMENTS MAY VARY ±1/4".

Drawing Number: _____ Revision Number: 082406–SJP

Single Turret Valve at wall bench or service column

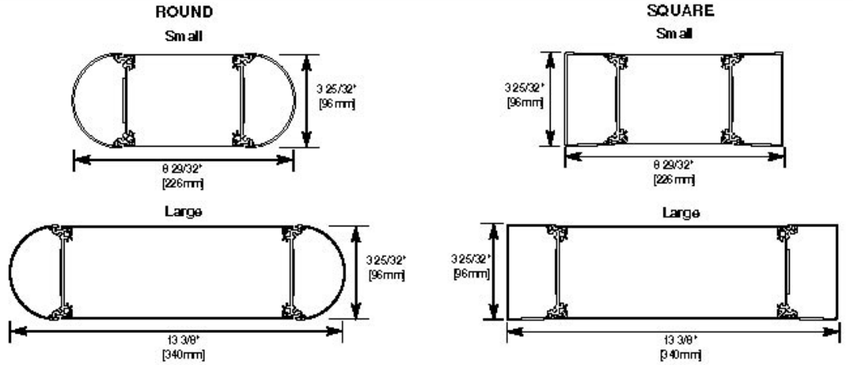
Double Turret Valve at island bench or peninsula bench

Service Column Cut Sheet

Size: Round-Large

Locate between mobile lab benches in Prep Areas

Overall Dimensions



Vista Series Wire Fill Capacity for Communication

	CABLE/WIRE SIZE	O.D. Inches	O.D. [mm]	ONE SQUARE END CHANNEL	ONE ROUND END CHANNEL	SMALL CENTER	LARGE CENTER	ONE SQUARE EXTENSION	ONE ROUND EXTENSION
UNSHIELDED TWISTED PAIR	Cat 3, 2-pair, 24 AWG	0.140	[3.6]	190	150	40	80	131	94
	Cat 3, 3-pair, 24 AWG	0.150	[3.8]	165	131	34	68	114	82
	Cat 3, 4-pair, 24 AWG	0.190	[4.8]	103	81	22	44	71	51
	Cat 3, 25-pair, 24 AWG	0.410	[10.4]	22	17	4	8	15	11
	Cat 5e, 4-pair, 24 AWG	0.220	[5.6]	77	61	16	32	53	38
	Cat 6, 4-pair, 24 AWG	0.250	[6.3]	59	47	12	24	41	29
SHIELDED TWISTED PAIR	Type1 22 AWG	0.390	[9.9]	24	19	4	8	16	12
	Type 2, 22 AWG	0.465	[11.8]	17	13	2	4	11	8
	Type 3, 24 AWG	0.245	[6.2]	62	49	12	24	42	30
COAXIAL	RG58/U, 20 AWG	0.195	[5.0]	98	77	20	40	67	48
	RG58/U, 22 AWG	0.242	[6.1]	63	50	12	24	43	31
	RG6/U, 22 AWG	0.242	[6.1]	63	50	12	24	43	31
	RG6/U, 18 AWG	0.270	[6.9]	51	40	10	20	25	25
TWINAXIAL	100 Ohm	0.330	[8.4]	34	27	60	12	23	71
FIBER OPTIC		0.180	[4.6]	103	81	22	44	71	51

** Capacity range is calculated at 40% of raceway area as stated in a proposed revisions to the Commercial Building Standard for Telecommunication Pathways & Spaces, EIA/TIA-569. Actual wire fill capacity may vary based on applications, cable types, and number, as well as type of fittings. (Fittings may cause additional variances to the fill capacity.)*

Vista Wire Fill Capacity for Power

Capacity of Compartment	WIRE SIZE THHN/THWN 6 AWG	8 AWG	10 AWG	12 AWG	14 AWG
One End Channel Round or Square	7	9	16	26	35
Center (Small)	14	18	32	52	70
Center (Large)	28	36	64	104	140
One Extension Round or Square	4	6	10	16	22

The Wiremold Company
U.S. and International:
60 Woodlawn Street ▪ West Hartford, CT 06110
1-800-621-0049 ▪ FAX 860-232-2062 ▪ Outside U.S. 860-233-6251
Canada:
850 Gartshore Street ▪ Fergus, Ontario N1M 2W8
1-800-741-7957 ▪ FAX 519-843-5980

ED1133R4 - September 2002 - For latest specs visit www.wiremold.com

Undercounter Washer Cut Sheet

Provide RO water for rinse cycle
Model 4400431- 208v

SteamScrubber® Laboratory Glassware Washers

SPECIFICATIONS & ORDERING INFORMATION

SteamScrubber Laboratory Glassware Washer 4400330 is shown with 48-Pin Insert 4591601, Petri Dish Insert 4589701, Bulk Tube Insert 4542100, Utensil Holder 4542500 and BOD Bottle Insert 4589201.

All models feature:

- Upper and lower standard open racks of Type 304 stainless steel
- LCD information center, Display button, Run/Cancel button, scroll buttons and selection buttons to program and monitor cycles
- Pump to recirculate 96 gal/min (363 liters) when operated on 115 Volts, 60 Hz and 230 Volts, 50 Hz and 112 gal/min (424 liters/min) on 230 Volts, 60 Hz
- Drain pump to evacuate over 7 gal/min (26 liters/min)
- Purified water pump to bring non-pressurized or pressurized purified water into the tank for up to six pure water rinses
- Steam generator that produces hot vapor before the WASH 2 cycle (RINSE ONLY and PLASTIC programs excluded)
- Aluminum-backed insulation and fiberglass blanket for thermal and sound insulation
- Operation at 58 decibels
- Manual-fill detergent dispenser for powder or liquid detergent
- Manual-fill rinse aid solution dispenser
- Forced air drying programmable up to 99 minutes and from 38-70°C (100-158° F)
- Seven factory-set cycle programs: RINSE ONLY, PLASTIC, GLASS, GLASS PLUS, SCIENCE, SCIENCE PLUS, and DRY ONLY. All 208/230 Volt models have three additional programs for a total of ten: INTENSE, INTENSE PLUS and EXTREME.
- Two user-set cycle programs
- Alarms with display for HOT GLASS, PLEASE WAIT, WATER LOW, WATER HIGH, OVERFLOW, LIQ DETER, RINSE AID DRAIN FAIL and LOW TEMP. Audible alarms self cancel after one minute.
- User-set delayed start (up to 8 hours)
- Type 304 stainless steel top, door, tank, upper, middle and lower wash arms. Freestanding models also have stainless steel exterior sides and top.
- One-piece, stainless steel, fine mesh particle drain filter
- Four leveling feet
- 3/8" Female NPT inlet fitting for hot tap water connection
- Factory-installed drain hose and band clamp
- Two year warranty on parts and labor
- Made in the U.S.A.
- IQ/OQ available. Visit www.labconco.com or call 800-821-5525.

All models conform to:

- UL 3101-1/61010-1
- CAN/CSA C22.2 No. 1010-1
- CE Conformity Marking (208/230 Volt models only)

All models require:

- Minimum inlet water temperature 49° C (120° F)
- Recommended inlet water temperature 60° C (140° F)
- Minimum purified water pressure 0 psi
- Water consumption per fill 3.4 gallons (13 liters)
- Hot tap water pressure at the washer 20-120 psi (138-827 KPa)
- Hot tap water flow rate 1.25 gallons (4.7 liters) per minute
- 3/8" OD copper tubing for connection to the water inlet valve
- Purified water with supply piping minimum 3/8" ID to permit at least 0.9 gallon (3.4 liters) per minute flow

Options include:

- Freestanding and undercounter styles
- Water temperature to 82° C (180° F) on 115 Volt models and 93° C (199° F) on 230 Volt models
- Clear tempered safety glass viewing window and 25-watt interior light that illuminates when door is latched

Optional accessories and companion products on pages 18 - 22 include:

- Base Stand
- Upper and Lower Spindle Racks
- Baskets and Inserts
- Freestanding-to-Mobile Conversion Kits
- Drain Water Cooling Kit
- LabSolutions Detergents and Rinse
- ScrubberMate Cart, Glassware Carts and Carboy Caddy
- WaterPro RO Stations and accessories

Catalog #	Style	Electrical Requirements	Maximum Internal Water Temperature	Viewing Window and Light	Overall Dimensions with Door Closed	Shipping Weight
4400320	Undercounter	115 Volts, 60 Hz, 16 Amps	82° C (180° F)	No	24.1" w x 27.4" d x 34.1-36.1" h	206 lbs. (93 kg)
4400321	Undercounter	208/230 Volts, 50/60 Hz, 12 Amps	93° C (199° F)	No	24.1" w x 27.4" d x 34.1-36.1" h	206 lbs. (93 kg)
4400330	Undercounter	115 Volts, 60 Hz, 16 Amps	82° C (180° F)	Yes	24.1" w x 27.4" d x 34.1-36.1" h	206 lbs. (93 kg)
4400331	Undercounter	208/230 Volts, 50/60 Hz, 12 Amps	93° C (199° F)	Yes	24.1" w x 27.4" d x 34.1-36.1" h	206 lbs. (93 kg)
4400420	Freestanding	115 Volts, 60 Hz, 16 Amps	82° C (180° F)	No	24.2" w x 27.5" d x 34.2-36.2" h	235 lbs. (107 kg)
4400421	Freestanding	208/230 Volts, 50/60 Hz, 12 Amps	93° C (199° F)	No	24.2" w x 27.5" d x 34.2-36.2" h	235 lbs. (107 kg)
4400430	Freestanding	115 Volts, 60 Hz, 16 Amps	82° C (180° F)	Yes	24.2" w x 27.5" d x 34.2-36.2" h	235 lbs. (107 kg)
4400431	Freestanding	208/230 Volts, 50/60 Hz, 12 Amps	93° C (199° F)	Yes	24.2" w x 27.5" d x 34.2-36.2" h	235 lbs. (107 kg)

Exclusive Labconco feature

SteamScrubber® Laboratory Glassware Washers

FEATURES & BENEFITS

For washing and drying primarily beakers and other wide-mouth or specialized glassware.

Steam generator. Produces hot vapor to penetrate and soften dried contaminants for more effective cleaning.

Forced air drying system. Hot air is blown into the tank to dry glassware. No separate dryer or oven is needed.

Dual pumps, one for washing and one for draining, reduce the potential for cross contamination.

Powerful pump recirculates water at a high rate to dislodge dried contaminants for thorough cleaning. Water recirculates at 96 gal/min (363 liters/min) on 115 Volt, 60 Hz and 230 Volt, 50 Hz models and 112 gal/min (424 liters/min) on 230 Volt, 60 Hz models.

Versatile rack options. The standard open racks are interchangeable with optional upper and lower spindle racks. Additional racks are sold separately. See page 18.

User-set delayed start (up to 8 hours) may be programmed so that the washer operates during off-peak hours when electricity may be less expensive and more plentiful.

Up to 6 pure water rinses may be programmed. A built-in purified water pump draws from a storage tank or pressurized source for final rinses.

360° rotating upper, middle and lower wash arms distribute water and detergent.

Full two year warranty. Is provided against defects in materials and workmanship.

Attractive and durable Type 304 stainless steel door and tank. Free-standing models also have stainless steel sides and top.

INCLUDES Upper and lower stainless steel standard open racks. Accommodate a variety of accessory inserts holding the broadest range of glassware. Inserts are sold separately. See pages 18 and 19.

Detergent dispenser for powder or liquid detergent. Releases a manually premeasured amount ensuring clean labware.

Sanitizing high heat. Water temperature reaches 93° C (199° F) on 230 Volt models to sanitize glassware and for enhanced washing, rinsing and faster drying.

Quiet, energy-efficient operation at 58 decibels. Aluminum-backed, sound-deadening insulation and fiberglass blanket absorb noise and optimize internal tank temperature to conserve energy.

Rinse solution dispenser. Allows manual addition of mildly acidic rinse to alter pH and eliminate alkaline detergent carry-over. The dispenser holds approximately 170 milliliters, enough for 40 or more cycles.

Alarms sound and/or display on the LCD to alert the user to abnormal or unsafe events such as HOT GLASS and OVERFLOW.

Optional clear tempered safety glass viewing window with 25-watt interior light allows observation of the cycle in progress. Available standard on some models.

ETL-listed. Washers carry the ETL mark signifying they are certified to UL Standard 3101-1/61010-1 and CAN/CSA C22.2 No. 1010.1.

CE Mark. Washers conform to the CE (European Community) requirements for electrical safety and electromagnetic compatibility.

Made in U.S.A.

Exclusive Labconco feature

PROJECT: UNIVERSITY OF IOWA, IOWA CITY
PBDB CONSTRUCTIONFACILITY
UI PROJECT NO. 0035301
PROJECT NO. 0728
IOWA CITY, IA 52242
SECTION 11 53 19
PARA. 2.02B. STEAM STERILIZER
EQUIPMENT NO. 115319.12
CONSOLIDATED MODEL 2-SSR-3A-ADVPRO

Consolidated Sterilizers

Designed to Transform Your Laboratory

Small Lab Series Steam Sterilizers General Specifications

General Specification

Steam Sterilizer, Radial-Arm Door(s), Hinged, Single Chamber, Double Wall

Consolidated Small Lab Series Sterilizers are designed to sterilize at temperatures between 212° F and 275° F (100° C and 135° C) through the use of steam. Choose from a stainless steel or nickel-clad steel vessel construction in a variety of sizes and programmable control options for pre-vacuum or gravity operation. Consolidated sterilizers offer a range of performance options to meet the most demanding applications in clinical, animal and life science, biotechnology, pharmaceutical, and commercial/industrial applications.

Model		Chamber Dimensions (w x h x f-b)	Volume (per chamber)
	SSR-2A	16" x 16" x 26" 40.6 x 40.6 x 66 cm	3.9 cu. ft. 109 liters
	SSR-3A	20" x 20" x 38" 50.8 x 50.8 x 96.5 cm	8.8 cu. ft. 249 liters
	SR-24A	24" x 24" x 36" 61 x 61 x 91.4 cm	12 cu. ft. 340 liters
	SR-24B	24" x 24" x 48" 61 x 61 x 122 cm	16 cu. ft. 453 liters
	SR-26A	26" x 26" x 39" 66 x 66 x 99 cm	15.25 cu. ft. 430 liters

Features and Benefits

Simplified Maintenance, Low Cost of Ownership.
All Consolidated sterilizers are manufactured in the USA and built from commonly available parts to allow quick and cost effective field-level service and maintenance.

Serviceability.
Easy access to replaceable components, local component availability and common electrical and plumbing parts permit qualified facility or area service companies to maintain the sterilizer. The radial-arm, solid-silicone door gasket is selected for durability; the gasket is easily replaced if required.

Control Flexibility.
A choice of programmable controllers allows a broad range of performance functions, complete with alarm, monitoring and communications required for internal or third-party compliance.

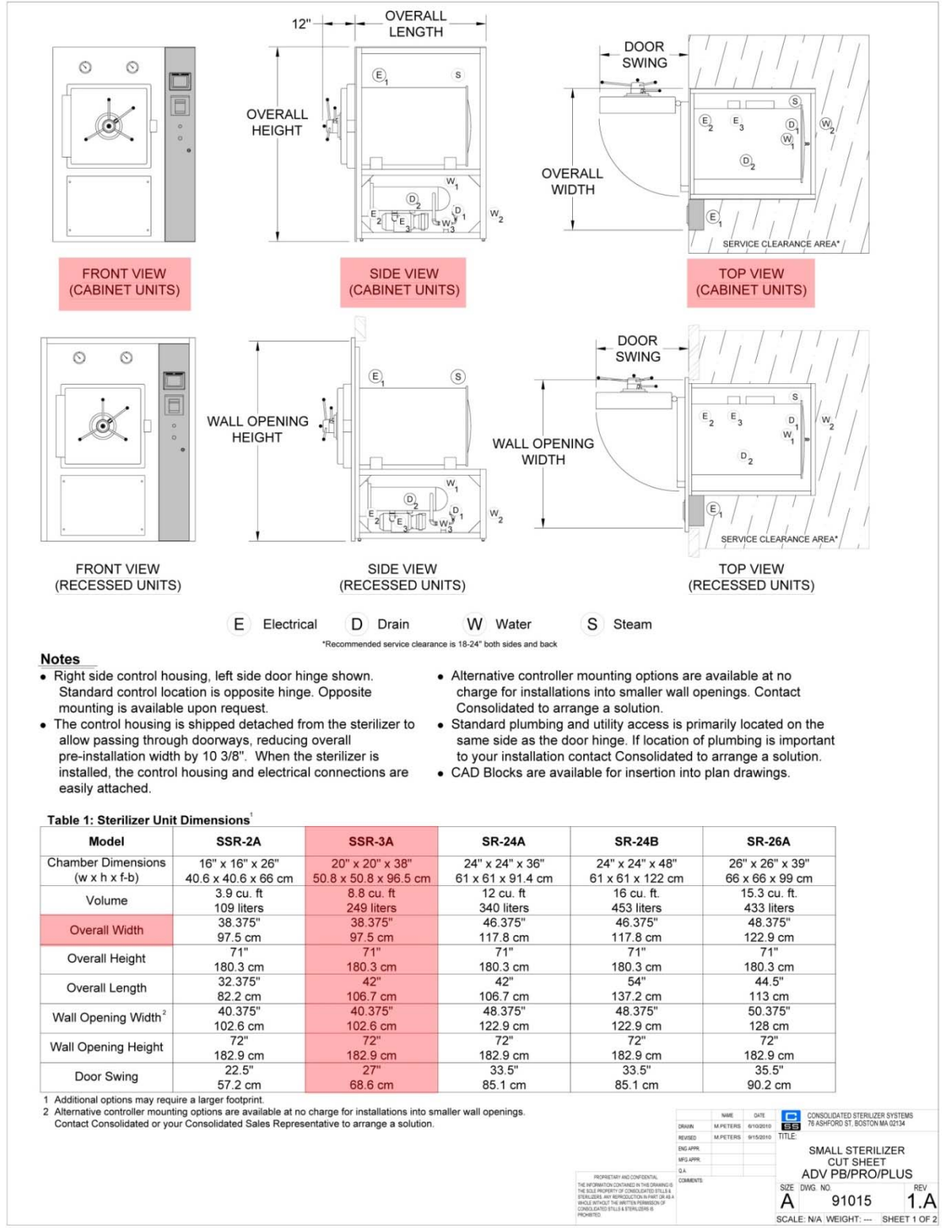
Performance Cycles—Basic to Advanced.
The fully-jacketed sterilizer design permits vacuum and pressure control when configured for pre-vacuum, post-vacuum, and more sophisticated functions such as air-over-pressure. Consolidated sterilizers are ideal for sterilizing wrapped and unwrapped goods, liquids, waste, and other applications. All cycles are easily managed and documented.

Green and Environmentally Friendly.
Unique, new water-saving technologies reduce water consumption without compromising performance.

Consolidated Small Lab Series Sterilizers are available in single door, pass-thru and dual (tower) models. A versatile control system offers a range of performance options to meet the most demanding applications in clinical, life science, biotechnology, pharmaceutical, and commercial/industrial applications. Model PT-24A-ADVPRO shown with ADV-PRO programmable logic controller.

Made in the U.S.A.

Featuring Green Technology for Energy Savings and Minimal Environmental Impact



Notes

- Right side control housing, left side door hinge shown. Standard control location is opposite hinge. Opposite mounting is available upon request.
- The control housing is shipped detached from the sterilizer to allow passing through doorways, reducing overall pre-installation width by 10 3/8". When the sterilizer is installed, the control housing and electrical connections are easily attached.
- Alternative controller mounting options are available at no charge for installations into smaller wall openings. Contact Consolidated to arrange a solution.
- Standard plumbing and utility access is primarily located on the same side as the door hinge. If location of plumbing is important to your installation contact Consolidated to arrange a solution.
- CAD Blocks are available for insertion into plan drawings.

Table 1: Sterilizer Unit Dimensions[1]

Model	SSR-2A	SSR-3A	SR-24A	SR-24B	SR-26A
Chamber Dimensions (w x h x f-b)	16" x 16" x 26" 40.6 x 40.6 x 66 cm	20" x 20" x 38" 50.8 x 50.8 x 96.5 cm	24" x 24" x 36" 61 x 61 x 91.4 cm	24" x 24" x 48" 61 x 61 x 122 cm	26" x 26" x 39" 66 x 66 x 99 cm
Volume	3.9 cu. ft 109 liters	8.8 cu. ft 249 liters	12 cu. ft 340 liters	16 cu. ft. 453 liters	15.3 cu. ft. 433 liters
Overall Width	38.375" 97.5 cm	38.375" 97.5 cm	46.375" 117.8 cm	46.375" 117.8 cm	48.375" 122.9 cm
Overall Height	71" 180.3 cm	71" 180.3 cm	71" 180.3 cm	71" 180.3 cm	71" 180.3 cm
Overall Length	32.375" 82.2 cm	42" 106.7 cm	42" 106.7 cm	54" 137.2 cm	44.5" 113 cm
Wall Opening Width[2]	40.375" 102.6 cm	40.375" 102.6 cm	48.375" 122.9 cm	48.375" 122.9 cm	50.375" 128 cm
Wall Opening Height	72" 182.9 cm	72" 182.9 cm	72" 182.9 cm	72" 182.9 cm	72" 182.9 cm
Door Swing	22.5" 57.2 cm	27" 68.6 cm	33.5" 85.1 cm	33.5" 85.1 cm	35.5" 90.2 cm

1 Additional options may require a larger footprint.
2 Alternative controller mounting options are available at no charge for installations into smaller wall openings. Contact Consolidated or your Consolidated Sales Representative to arrange a solution.

	NAME	DATE
DRAWN	M.PETERS	6/10/2015
REVISED	M.PETERS	9/15/2015
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		

CONSOLIDATED STERILIZER SYSTEMS
76 ASHFORD ST, BOSTON MA 02134

TITLE:
SMALL STERILIZER
CUT SHEET
ADV PB/PRO/PLUS

SIZE A | DWG. NO. 91015 | REV 1.A
SCALE: N/A WEIGHT: --- SHEET 1 OF 2

POLY ACID-CORROSIVE SAFETY STORAGE CABINET

CRAP-44 Poly Acid Safety Cabinet

EAGLE Poly Acid/Corrosive Safety Cabinet
Eagle's new non-metallic "Poly Acid Cabinets" are constructed of 100% polyethylene for excellent resistance to harmful acid vapors and spills, making these cabinets suitable for storing aggresive chemicals such as sulphuric, hydrochloric and nitric acids.

Independent upper and lower compartments allow for segregation of reactive chemicals. Includes two 3/8" threaded inserts on top sides for wall anchors. The base of the cabinet is flush to floor and sides. Bottom shelves remove for easy cleaning of sump areas. Available in blue, shown here, or white.

EAGLE Poly Acid/Corrosive Cabinet					
Model	Capacity	Door Specs	Shelves	Size (WxDxH)	Weight
CRA-P44	44 gal.	4 Manual Closing	8	35" x 22" x 65"	130 lbs.
CRA-P44W	44 gal.	4 Manual Closing	8	35" x 22" x 65"	130 lbs.

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New Products • Safety Cans • Safety Cabinets • Spill Containment • Guards & Protectors

External exhaust per Div. 23-
2" diameter exhaust at each side of cabinet- one for lower section; one for top section; each at 50 cfm exhaust

MODEL 4510 SAFETY CABINET

no external venting to be provided

EAGLE Model 4510 Safety Cabinet
Constructed of 18-gauge steel, sides, top, bottom, and doors are double-walled with a 1 1/2" air space between walls. Both vents, with 2" threaded fittings, have fire baffle and cap. Cabinets come in yellow high gloss powder finish with red warning, plus grounding attachment, 3-point key lock, and 2" raised, leakproof door sill. Each shelf is adjustable, supported by 4 brackets, and can support 350 pounds. Features 2 self-closing doors. FM approved.

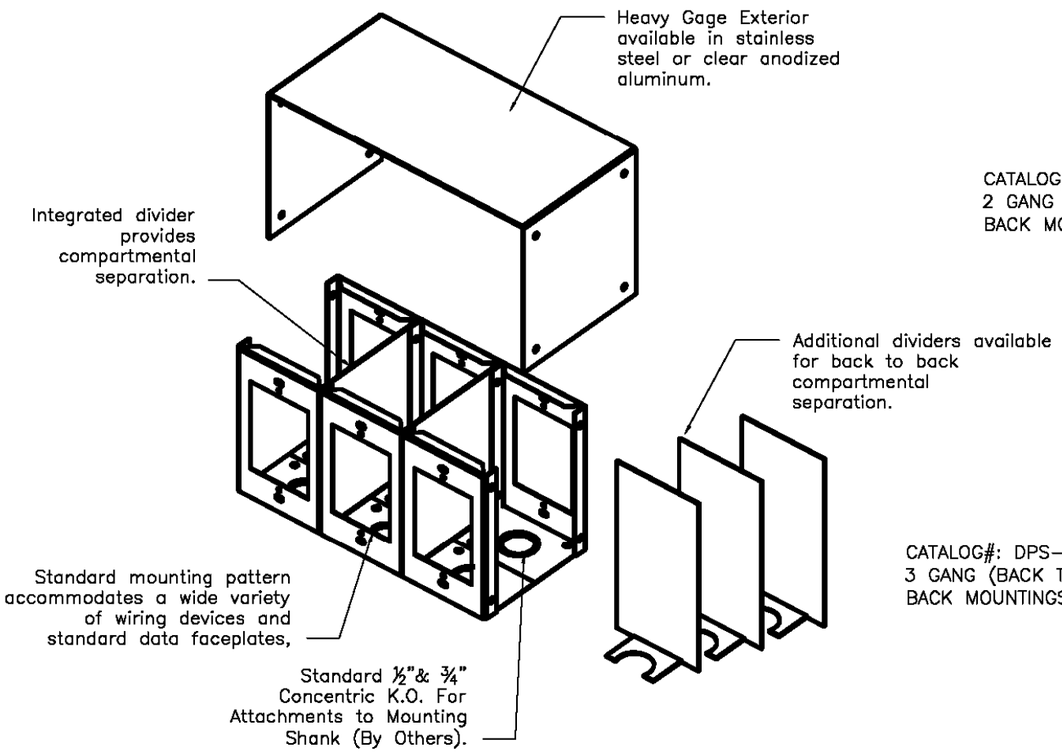
SPECIFICATIONS

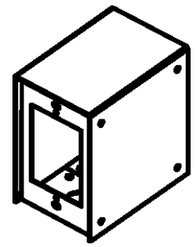
CAPACITY: 45 gallons
SHELF DEPTH: 14.75"
SHELVES: 2
DIMENSIONS: 43" x 18" x 65"
WEIGHT: 353 lbs.

Model 4510 Safety Cabinet

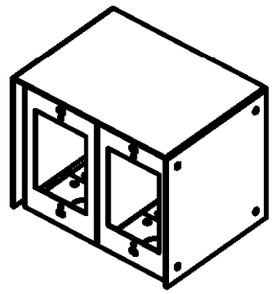
DSP-*

DESK PEDESTAL SYSTEM (CONCEPT A)

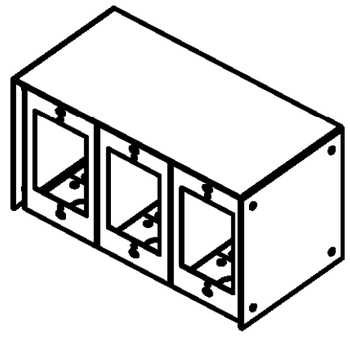




CATALOG#: DPS–1
1 GANG (BACK TO BACK MOUNTINGS)



CATALOG#: DPS–2
2 GANG (BACK TO BACK MOUNTINGS)



CATALOG#: DPS–3
3 GANG (BACK TO BACK MOUNTINGS)

MONO-SYSTEMS, INC.
UNIQUE CABLE DISTRIBUTION SOLUTIONS
4 INTERNATIONAL DRIVE
RYE BROOK, NEW YORK 10573
PHONE: (914)–934–2075
FAX: (914)–934–2190

FILENAME: DPS–CUT

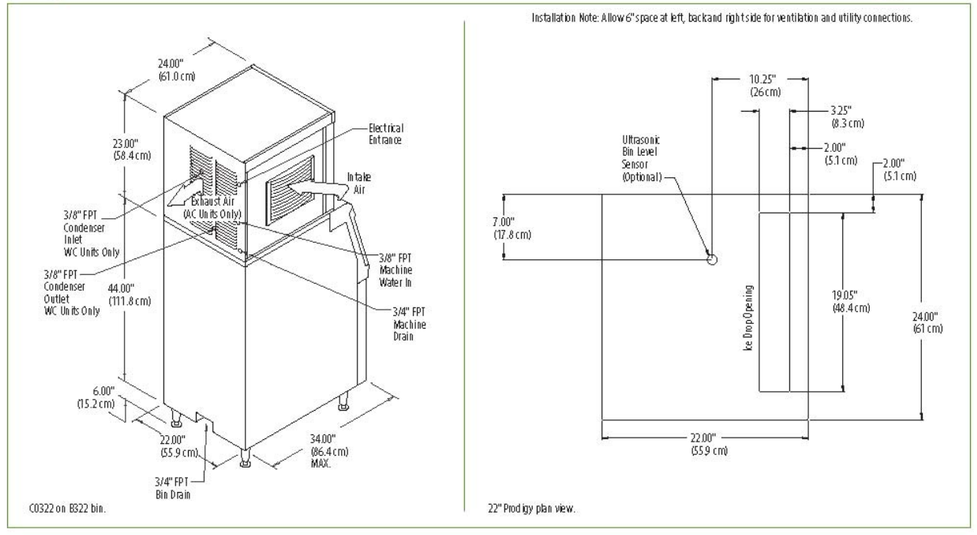
Ice Machine Cut Sheet

One Ice Machine per floor in prep area

Scotsman
Ice Systems

Revit drawings available at
www.scotsman-ice.com

REVIT BY Scotsman



Specifications

	Model Number* Cube Size: medium or small	Condenser Unit	Basic Electrical Volts/Hz/Phase	Max. Fuse Size or HACR Circuit Breaker (amps)	Circuit Wires	Min. Circuit Ampacity	Energy Consumption kWh/100 lb (45.4 kg) 90°F(32°C)/70°F(21°C)	Water Usage Gallons/100 lb (liters/45.4 kg) Potable 90°F(32°C)/ 70°F(21°C)	Water Usage Gallons/100 lb (liters/45.4 kg) Condenser 90°F(32°C)/ 70°F(21°C)
mod	C0322MA-1	Air	115/60/1	15	2	12.7	6.6	19.0/72.0	-
mod	C0322MA-32	Air	208-230/60/1	15	2	6.1	6.6	19.0/72.0	
mod	C0322MW-1	Water	115/60/1	15	2	11.9	5.2	18.3/69.4	163.0/617.0
sna	C0322SA-1	Air	115/60/1	15	2	12.7	6.6	19.0/72.0	-
sna	C0322SW-1	Water	115/60/1	15	2	11.9	5.2	18.3/69.4	163.0/617.0

= ENERGY STAR®

All Models

Dimensions (W x D x H):

Unit:
22"x 24"x 23"
(55.9 x 61.0 x 58.4 cm)

Shipping Carton:
25.5"x 27.5"x 28"
(64.8 x 69.9 x 71.1 cm)

Shipping Weight:
145 lb / 66 kg

BTUs per hour:
5,200

Accessories

Model Number	Description
KVS	Vari-Smart™ Ice Level Control - Program ice bin levels to match ice needs.
KSBU	Smart-Board™ Advaced Control - Use additional operational data for fast diagnosis.
KSBU-N	Smart-Board™ Advanced Control with Network - Network capable.
KPAS	Prodigy Advanced Sustainability kit- Includes KVS and KSBU-N

* Scotsman recommends all ice machines have water filtration. See Scotsman Sanitation Matrix for details.

Operating Requirements

	Minimum	Maximum
Air Temperatures	50°F (10°C)	100°F (38°C)
Water Temperatures	40°F (4.4°C)	100°F (38°C)
Remote Cond. Temps	-20°F (-29°C)	120°F (49°C)
Water Pressures	20 PSIG (1.4 bar)	80 PSIG (5.5 bar)
Electrical Voltage	-10%	+10%

Provide filter at ice machine in prep area on levels 1 and 2. Specified per Division 11, installed per Division 22.

EV9324-01

Insurice Single-i2000² System

Delivers premium quality water for ice applications

Insurice Single-i2000² System: EV9324-01

i2000² Replacement Cartridge: EV9612-22

BENEFITS

Reduces water-related ice machine problems caused by scale build-up from dirt and dissolved minerals (as tested by Everpure)

New and improved Micro-Pure II media inhibits the growth of bacteria

Reduces chlorine taste and odor and other offensive contaminants

Self-contained scale inhibitor feed keeps ice machines functioning at full capacity (as tested by Everpure)

Reduces maintenance and service costs by reducing scale* and clogging of distribution lines, evaporator plate and pump (*as tested by Everpure)

Precoat submicron technology reduces dirt and particles as small as 1/2 micron in size and reduces possible health contaminants such as cysts

Sanitary cartridge replacement is simple, quick and clean. Internal filter parts are never exposed to handling or contamination

NSF Certified under NSF/ANSI Standards 42 and 53

INSTALLATION TIPS

Choose a mounting location suitable to support the full weight of the system when operating

Never use saddle valve for connection

Use 3/8" water line

Do not connect system to water-cooled condenser

Install vertically with cartridges hanging down and allow 2-1/2" clearance below the cartridge for easy cartridge replacement

Flush cartridges by running water through system for five minutes at full flow

OPERATION TIPS

Change cartridges on a regular 6 month preventative maintenance program

Change cartridges when capacity is reached or when pressure falls below 10 psi

Service flow rate must not exceed 1.67 gpm

Always flush the filter cartridge at time of installation and cartridge change

APPLICATION/SIZING

For ice machine applications

Most cubers up to 750 lbs./day

Most flakers up to 1,500 lbs./day

Rated Capacity: 9,000 gallons

SPECIFICATIONS

Overall Dimensions:
26.69"H x 8.04"W x 5.25"D

Inlet connection: 3/8"

Outlet connection: 3/8"

Service Flow Rate:
Maximum 1.67 gpm (6.3 Lpm)

Rated Capacity: 9,000 gallons

Pressure Requirements:
10 - 125 psi (0.7 – 8.6 bar), non-shock

Temperature: 35 - 100°F (2 - 38°C)

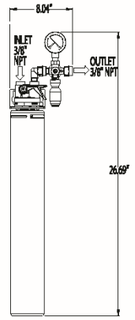
No electrical connection required

Shipping Weight: 6 lbs.

Operating Weight: 9 lbs.

The contaminants or other substances removed or reduced by this drinking water system are not necessarily in your water. Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system. Systems certified for cyst reduction may be used with disinfected water that may contain filterable cysts.

Insurice Single-i2000² System



WARRANTY

Everpure water treatment systems (excluding replaceable elements) are covered by a limited warranty against defects in material and workmanship for a period of five years after date of purchase. Everpure replaceable elements (filter cartridges and water treatment cartridges) are covered by a limited warranty against defects in material and workmanship for a period of one year after date of purchase. See printed warranty for details. Everpure will provide a copy of the warranty upon request.

INDEPENDENTLY CERTIFIED NSF

System Tested and Certified by NSF International against ANSI/NSF Standard 42 and 53 for the reduction of:

Standard No. 42: Aesthetic Effects
- Chemical Unit
  - Taste and Odor Reduction
  - Chlorine Reduction
- Mechanical Filtration Unit
  - Nominal Particulate Reduction, Class I:
    - 99.24% reduction of particles one-half micron and larger in size

Standard No. 53: Health Effects
- Mechanical Filtration Unit
  - Turbidity Reduction
  - Cyst Reduction
  - Asbestos Reduction

EVERPURE

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