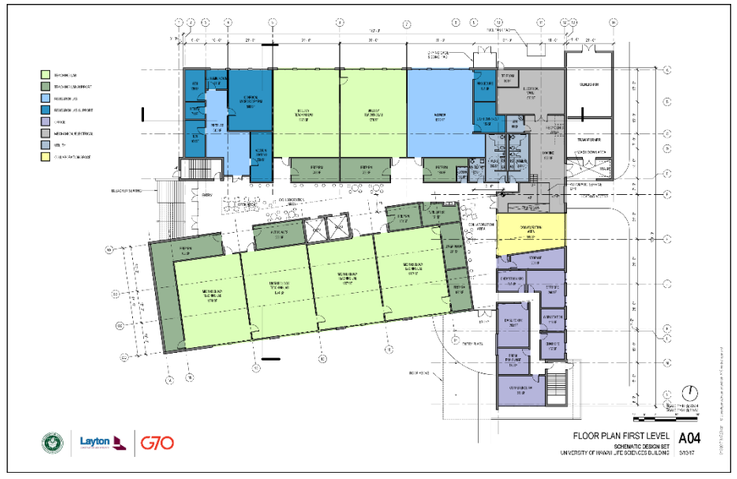
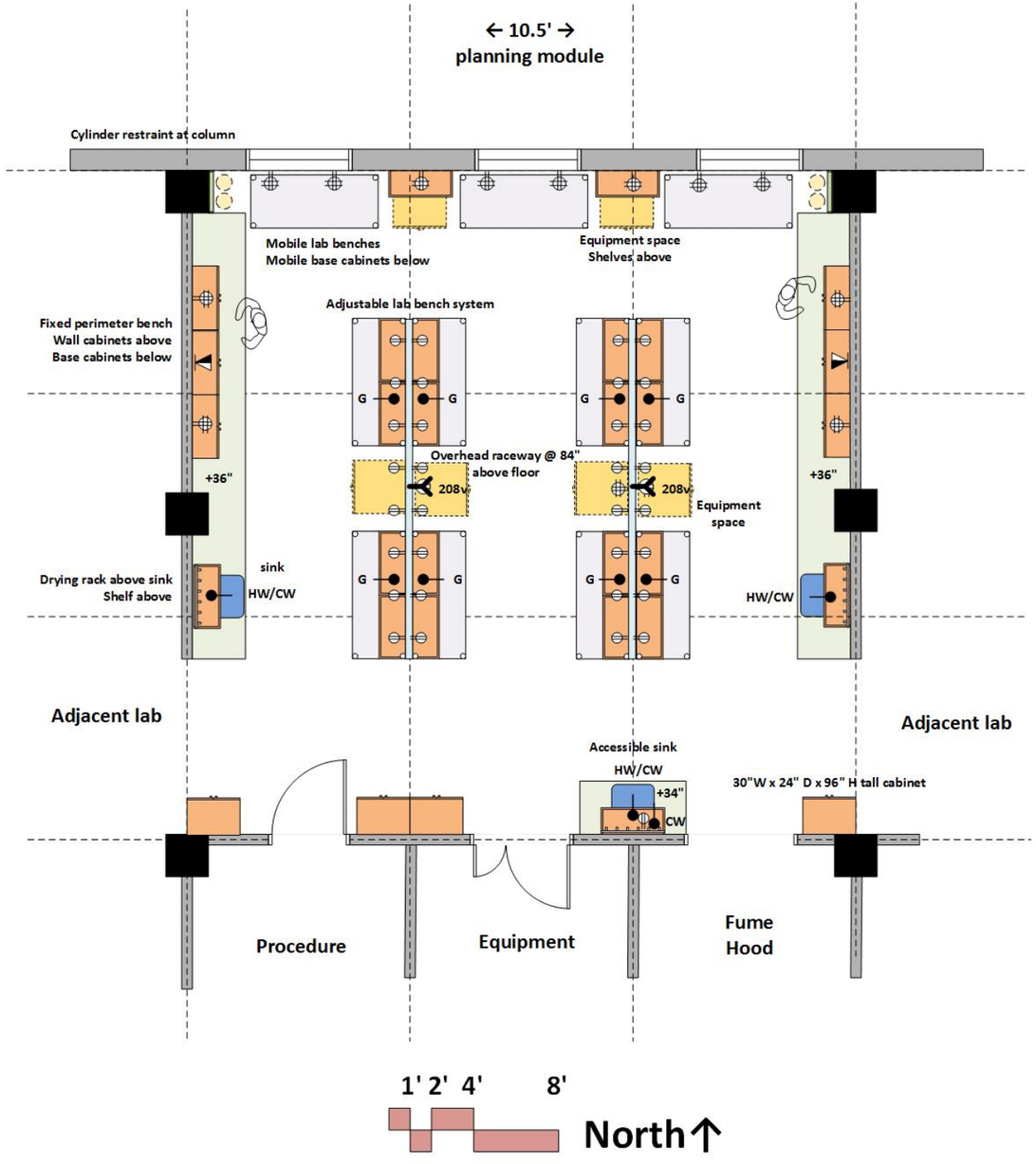


LAB DESIGN DEVELOPMENT

Life Science Building
University of Hawaii
2017 Jun 05- Draft #7

DESIGN for SCIENCE



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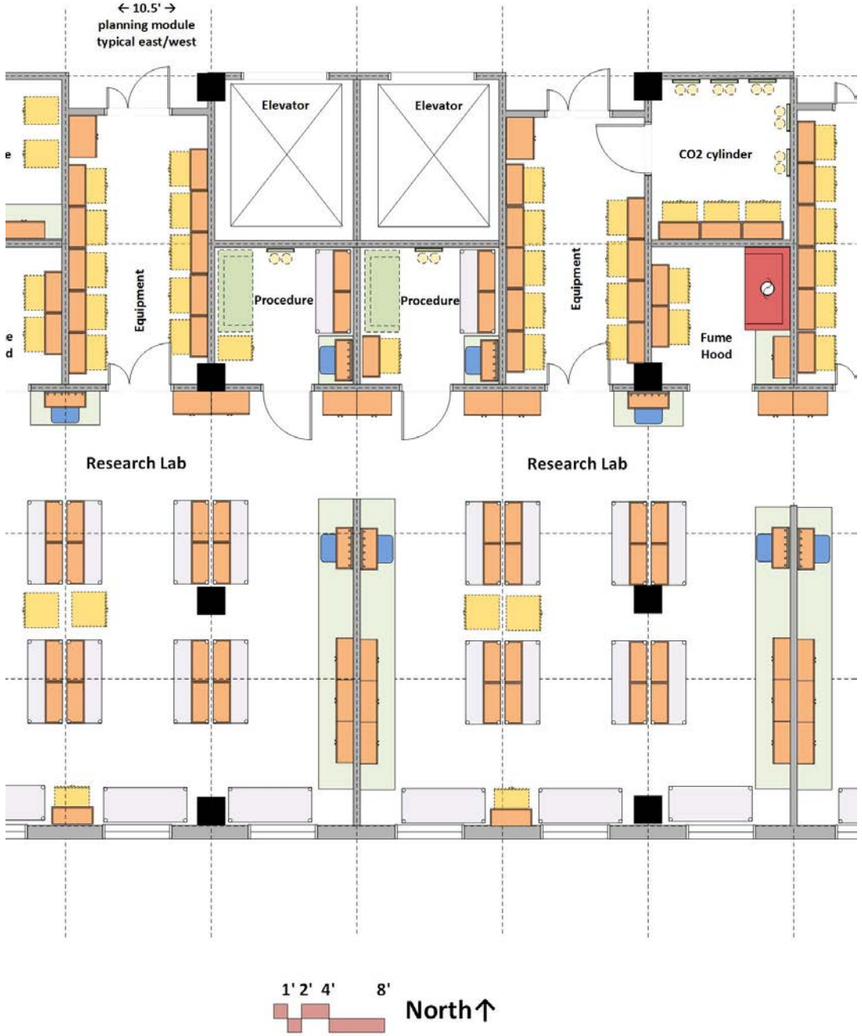


SUMMARY

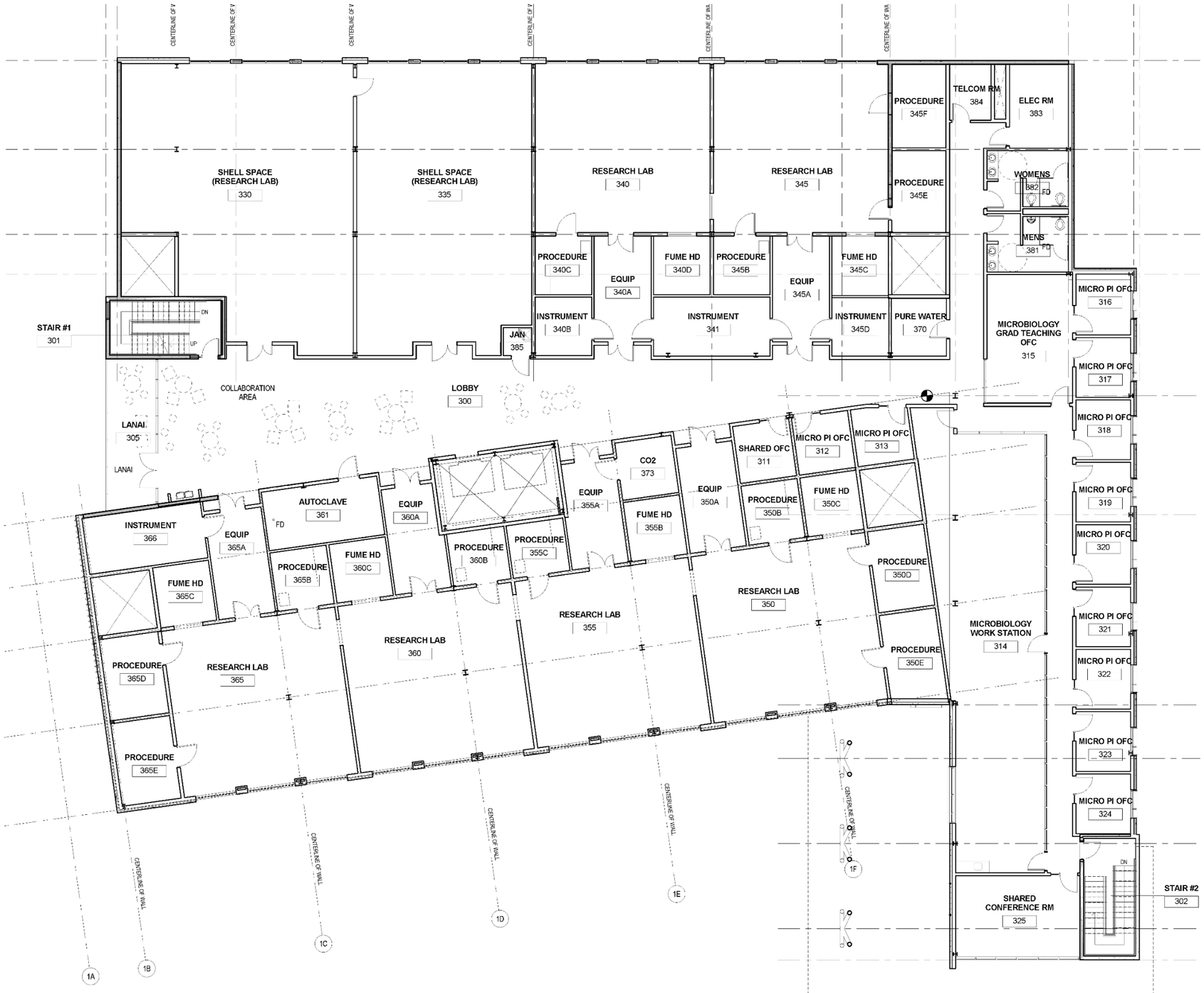
This document provides basis of design for the research and teaching labs for the new Life Science Building at University of Hawaii.
Each different type of lab space is illustrated herein. All mechanical, electrical, and plumbing requirements are noted.

This draft #7 includes revisions based on comments received to date from UH and the Layton/G70 design team. All interior lab elevations are included. Areas where elevations are not shown are illustrated with the section details. The latest G70 architectural plans have been included in this draft. There may be slight discrepancies between the lab drawings and the architectural floor plans. The lab drawings show design intent; the architectural floor plans will be actual design used for the preparation of construction documents.

Section details provide elevation information for the areas for which elevations are not indicated.

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

ARCHITECTURAL FLOOR PLAN
Level 3

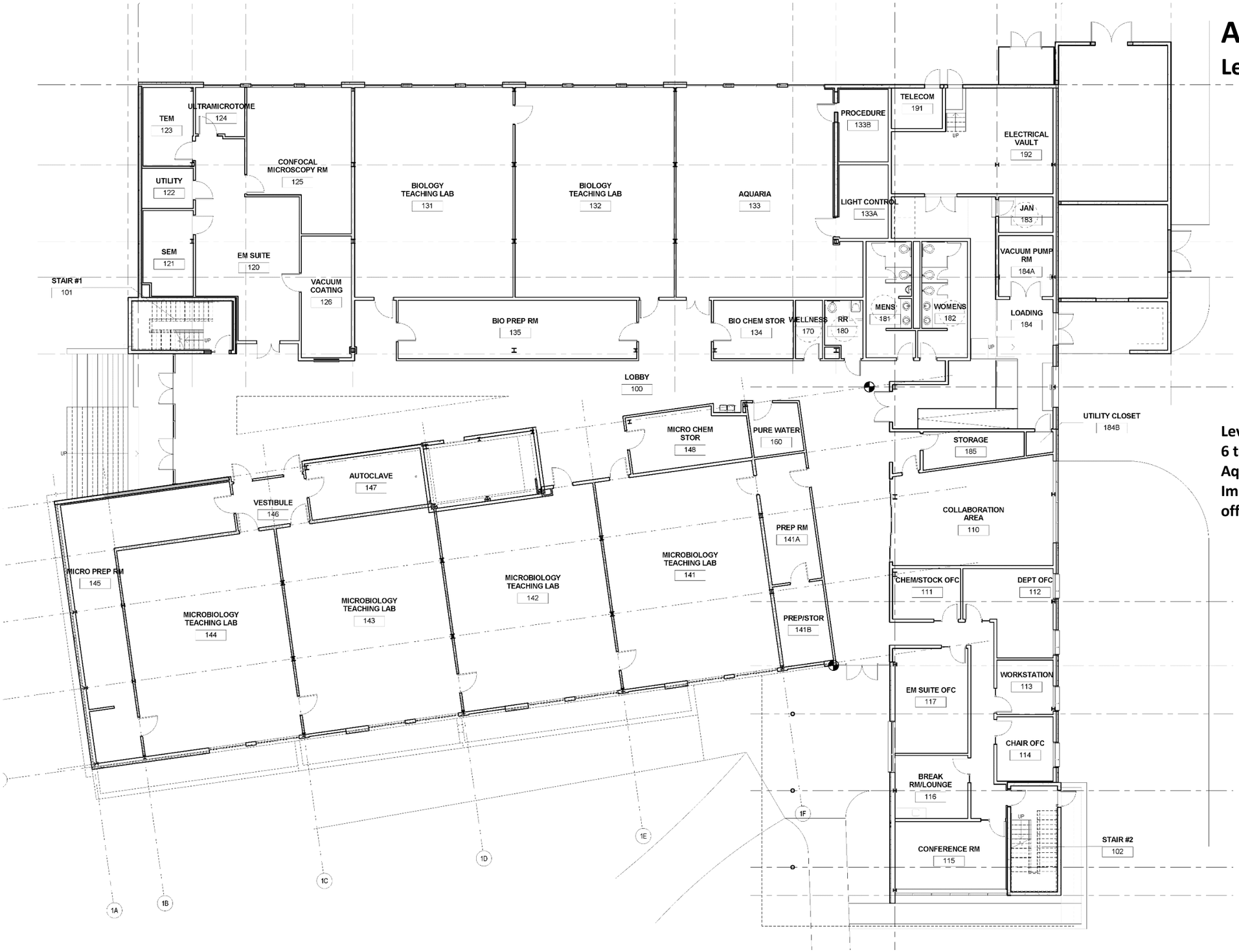


Level 3-
6 research labs
2 future research labs
Faculty offices
PD/GS offices

ARCHITECTURAL FLOOR PLAN
Level 2

Level 2-
5 research labs
1 PBRC research lab
1 teaching lab
Faculty offices
PD/GS offices

ARCHITECTURAL FLOOR PLAN
Level 1

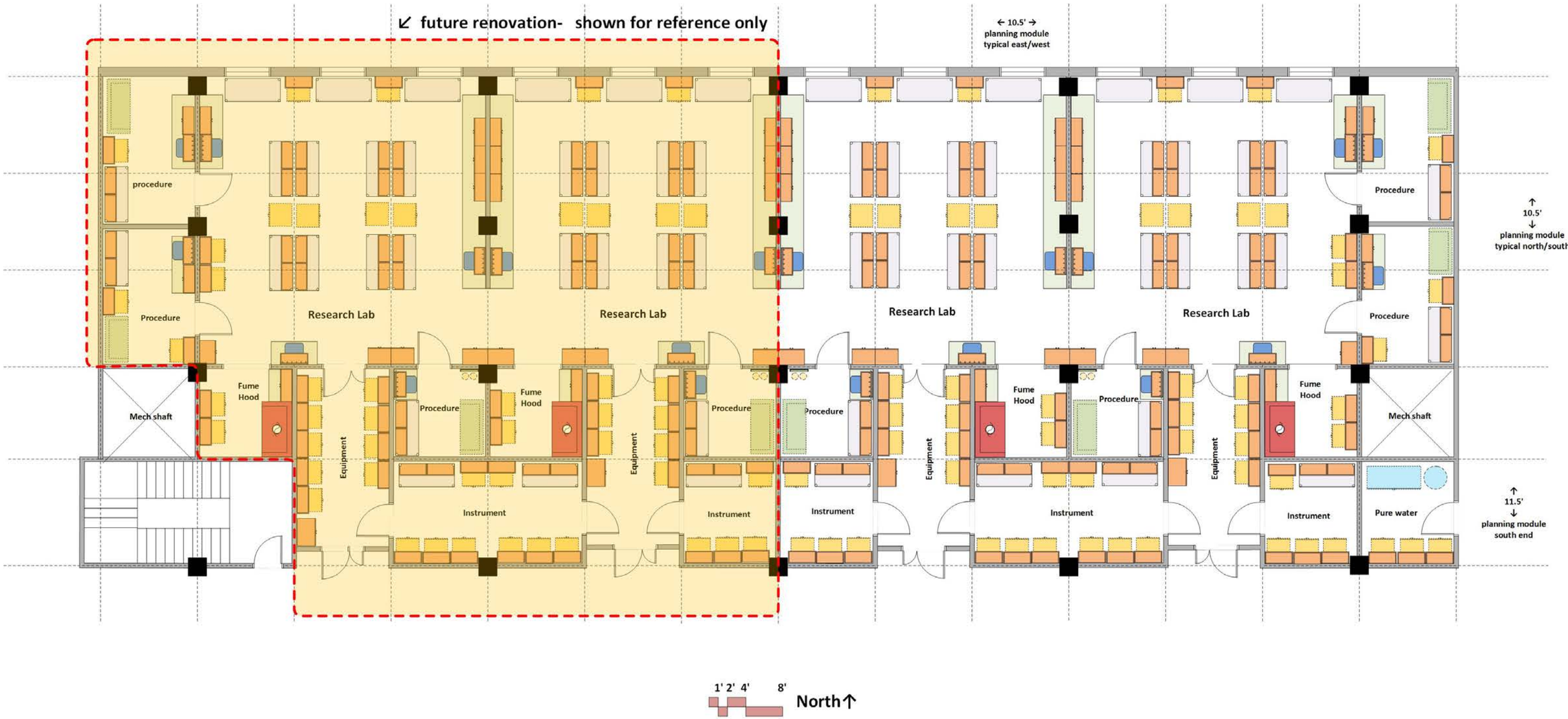


Level 1-
6 teaching labs
Aquatics suite
Imaging suite
offices

LEVEL 3 NORTH

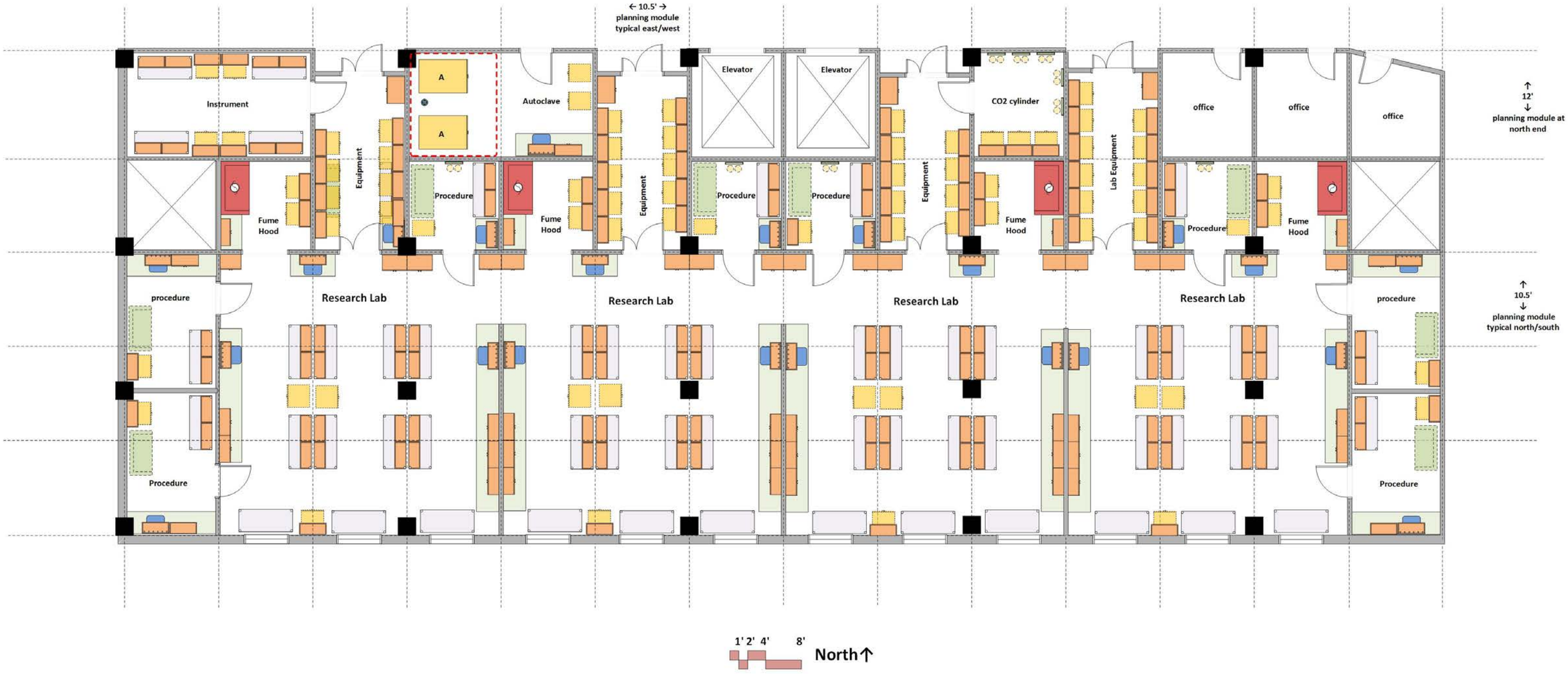
Research Lab Suite

West side of wing to be shelled for future renovation.
Size MEP systems to accommodate future lab renovation.



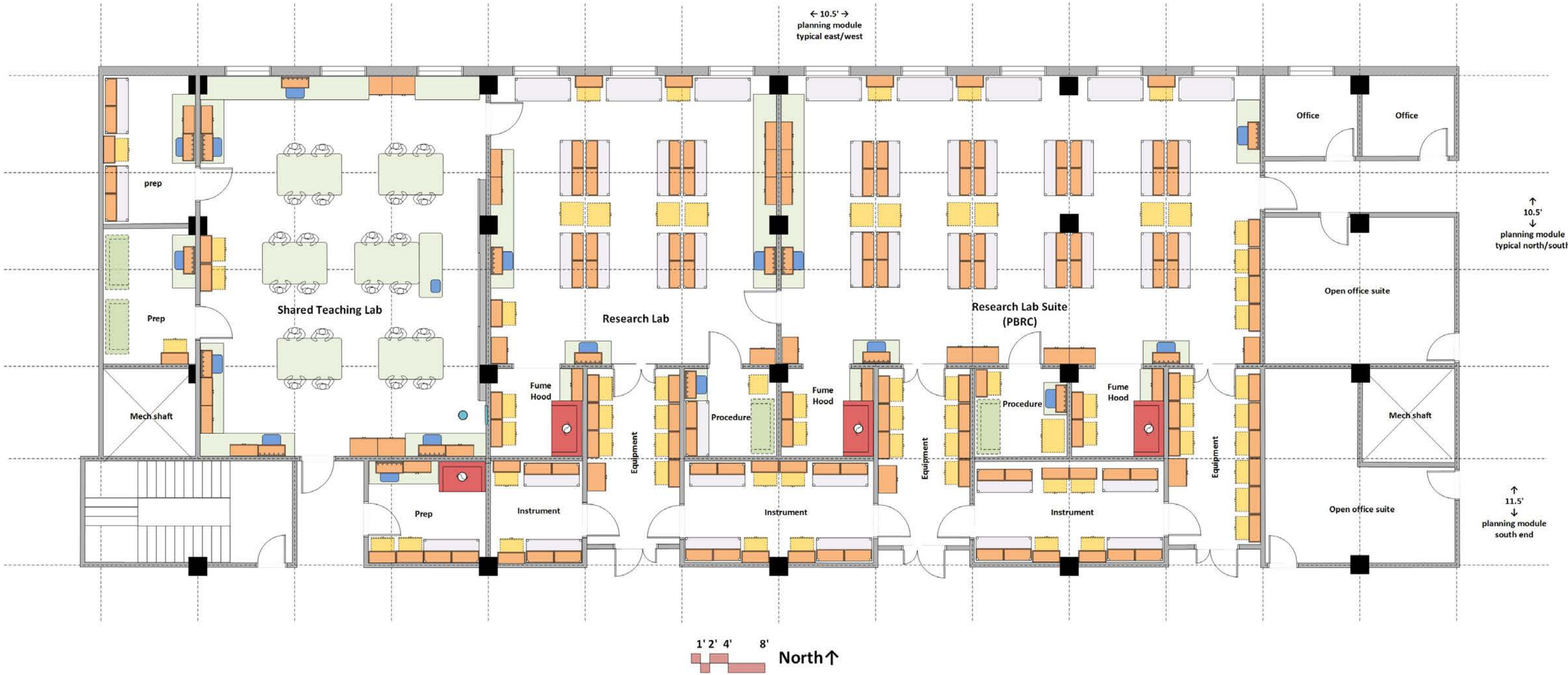
LEVEL 3 SOUTH

Research Lab Suite



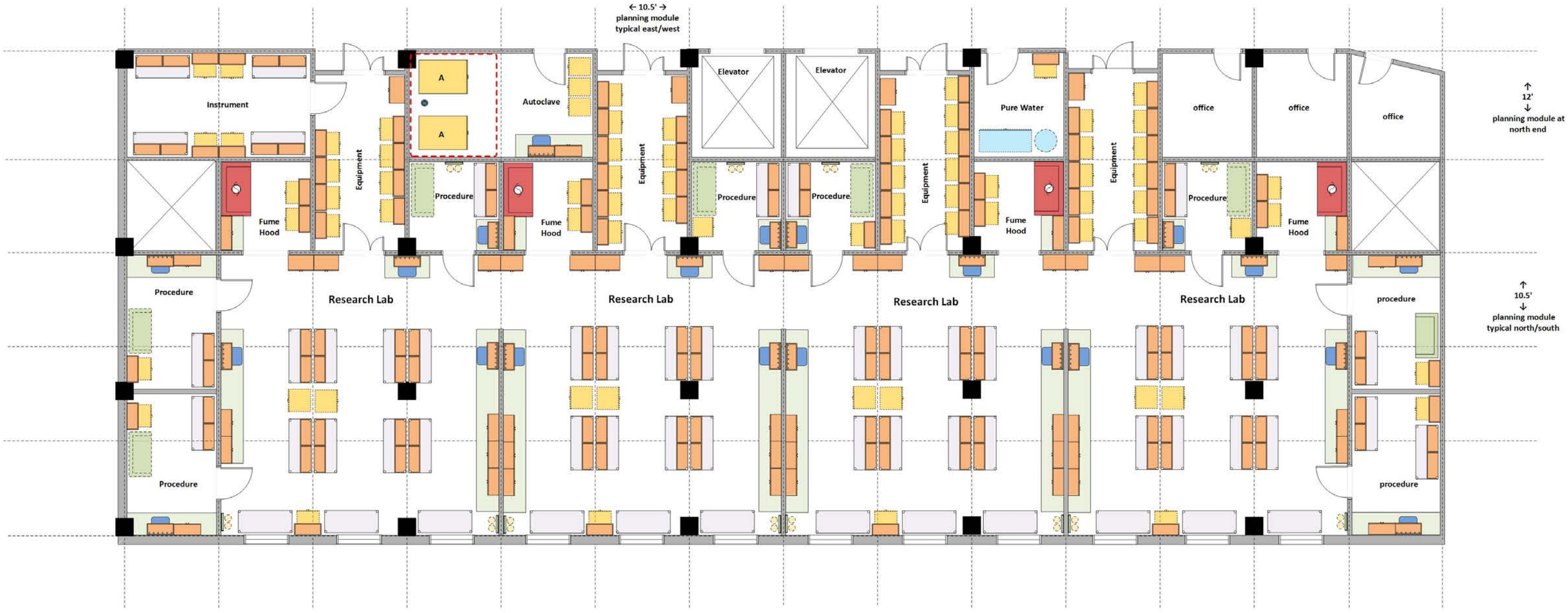
LEVEL 2 NORTH

Research Lab Suite



LEVEL 2 SOUTH

Research Lab Suite

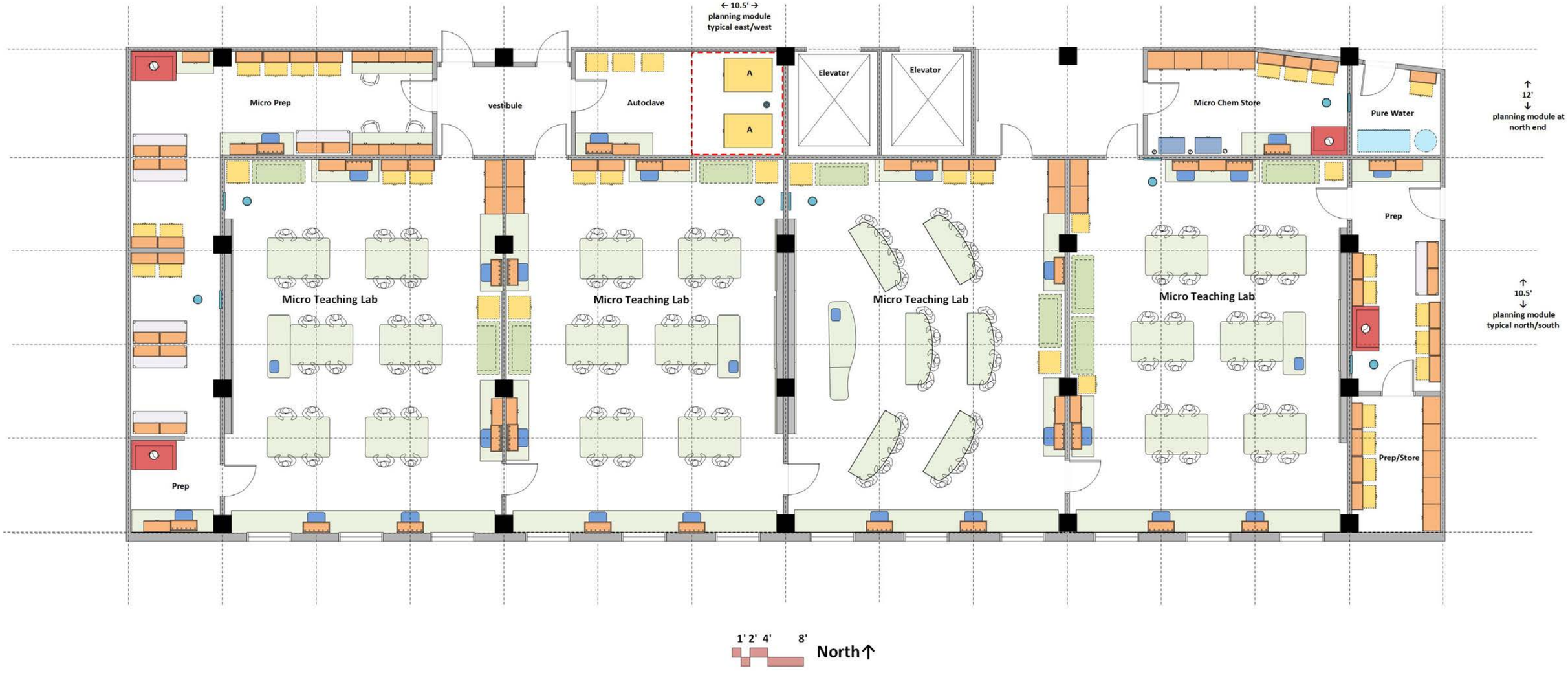


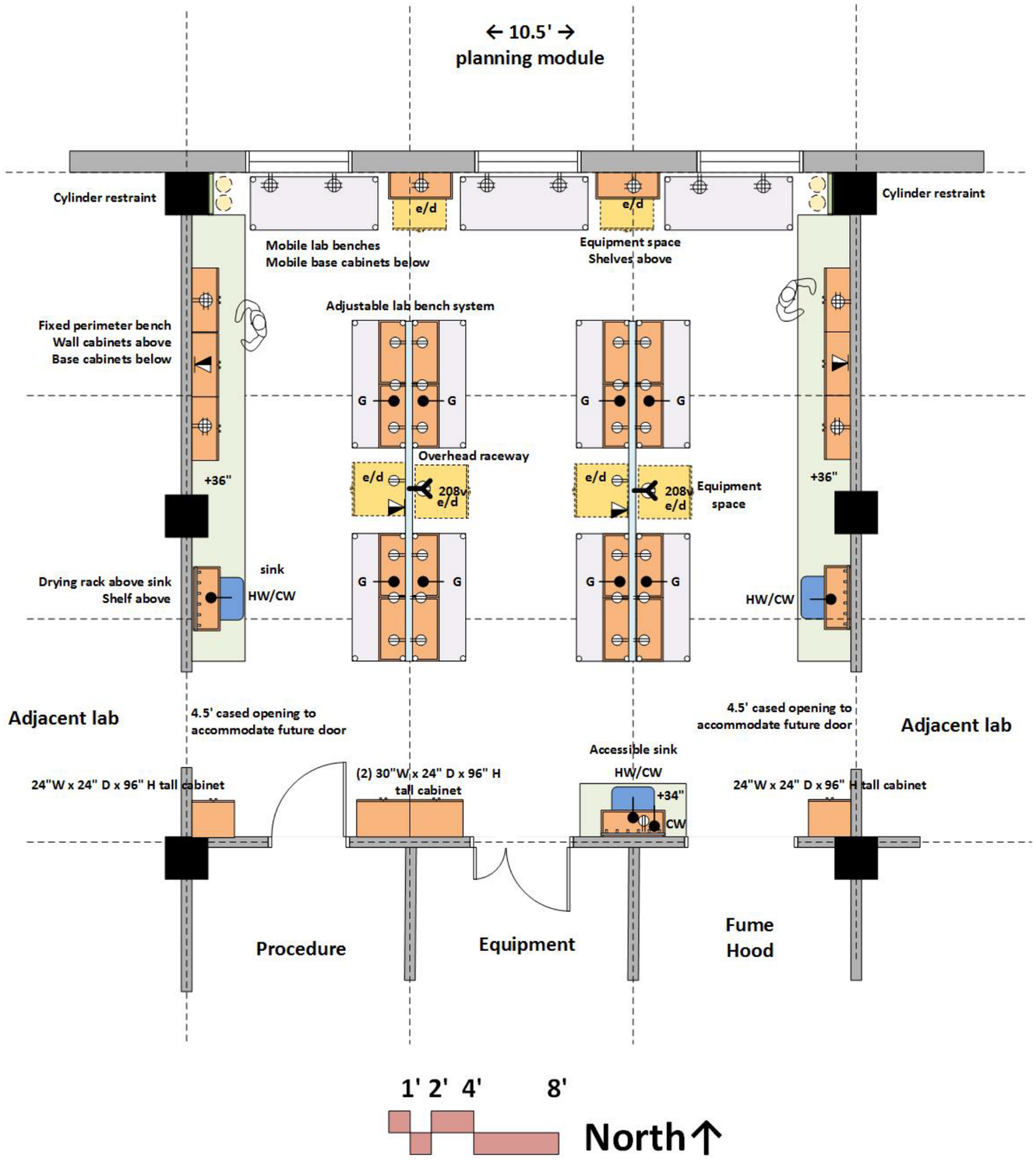
LEVEL 1 NORTH

Teaching Lab Suite

LEVEL 1 SOUTH

Teaching Lab Suite





RESEARCH LABORATORY

Applies to all rooms labeled as "Research Lab" on floor plans, and PBRC research lab at Level 2 north.

ARCHITECTURAL
Occupancy: B
Floor: vinyl composition tile
Walls: gypsum board and enamel paint
Ceiling: 10' acoustic tile
Doors: $3^0/1^6 x 7^0$ pair with window at corridor and main lab entry
$3^6 x 7^0$ single door at lab support rooms
Acoustic Attenuation: NC 45 or less
Security: key or card reader access

STRUCTURAL
Vibration attenuation: 2,000 microinches per second or less

MECHANICAL
Hours of operation: 24/7/365
Temperature: 72 deg. F, +/- 2 deg. F
100% exhaust- no recirculation of air
Minimum 6 air changes per hour occupied; 4 air changes per hour unoccupied
Pressure: Negative
Humidity: 50-75% relative
Equipment Heat Gain: 20 btuh/sf

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
208v30a1ph power at equipment spaces
equipment (ref's; freezers) space on emergency power (e)
Dedicated circuits at equipment space (d)
Data & Wireless data
Lighting: indirect LED @ 650 LUX
Provide light switches at doors

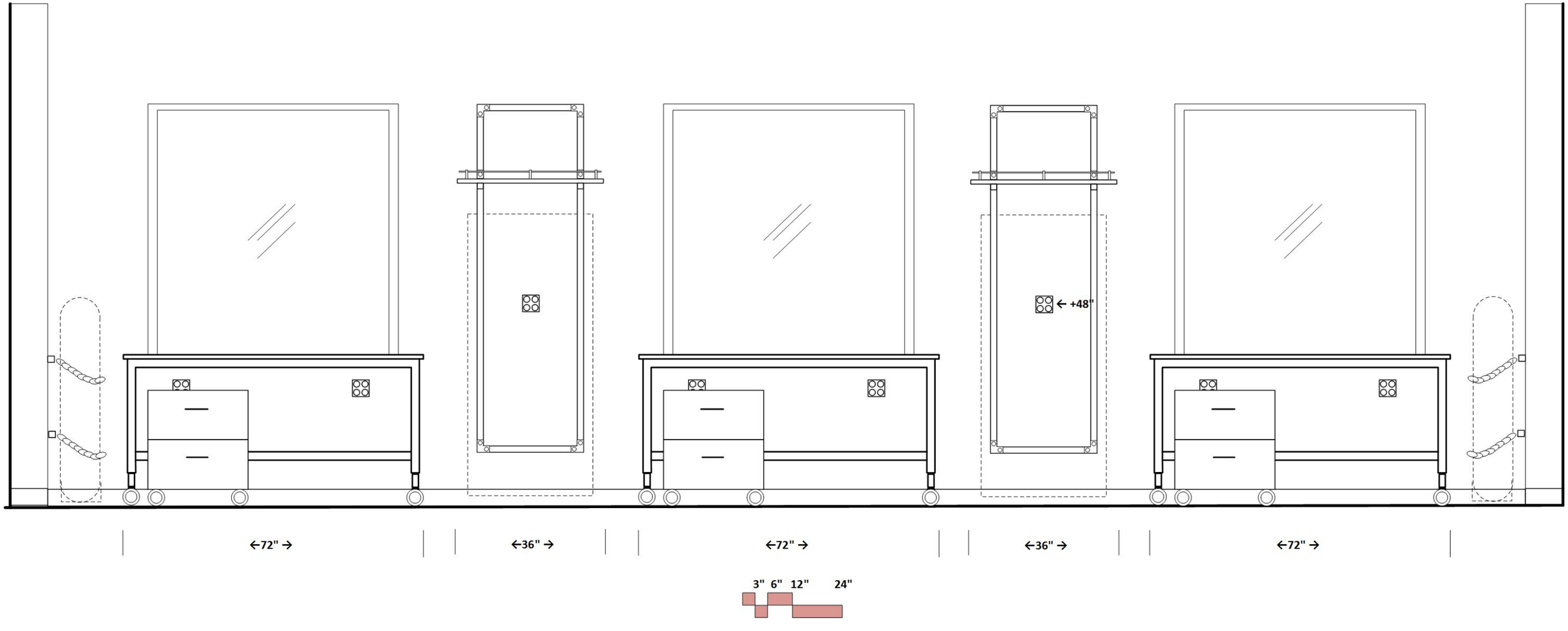
PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers
Natural gas at island benches
Cold water valve at one sink for future water polisher

CONTRACTOR FURNISHED EQUIPMENT
Laboratory casework- wall cabinets, base cabinets, tall cabinets
Epoxy resin tops and sinks; Faucets & fittings
Fire Extinguisher
Cylinder restraints

OWNER FURNISHED EQUIPMENT
Chairs
Benchtop analytical instruments
Scientific equipment
Refrigerators

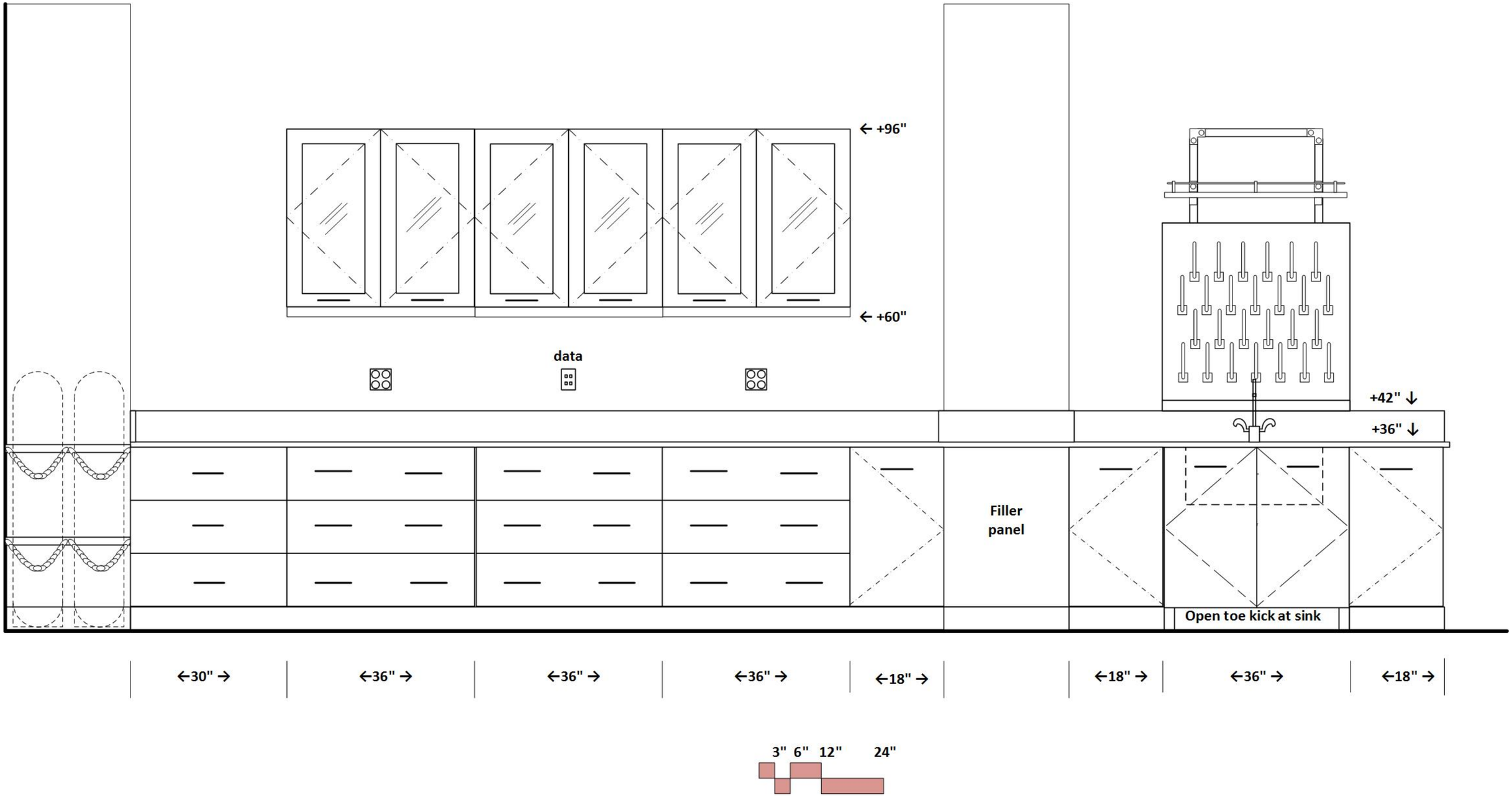
RESEARCH LABORATORY

Elevation North Wall



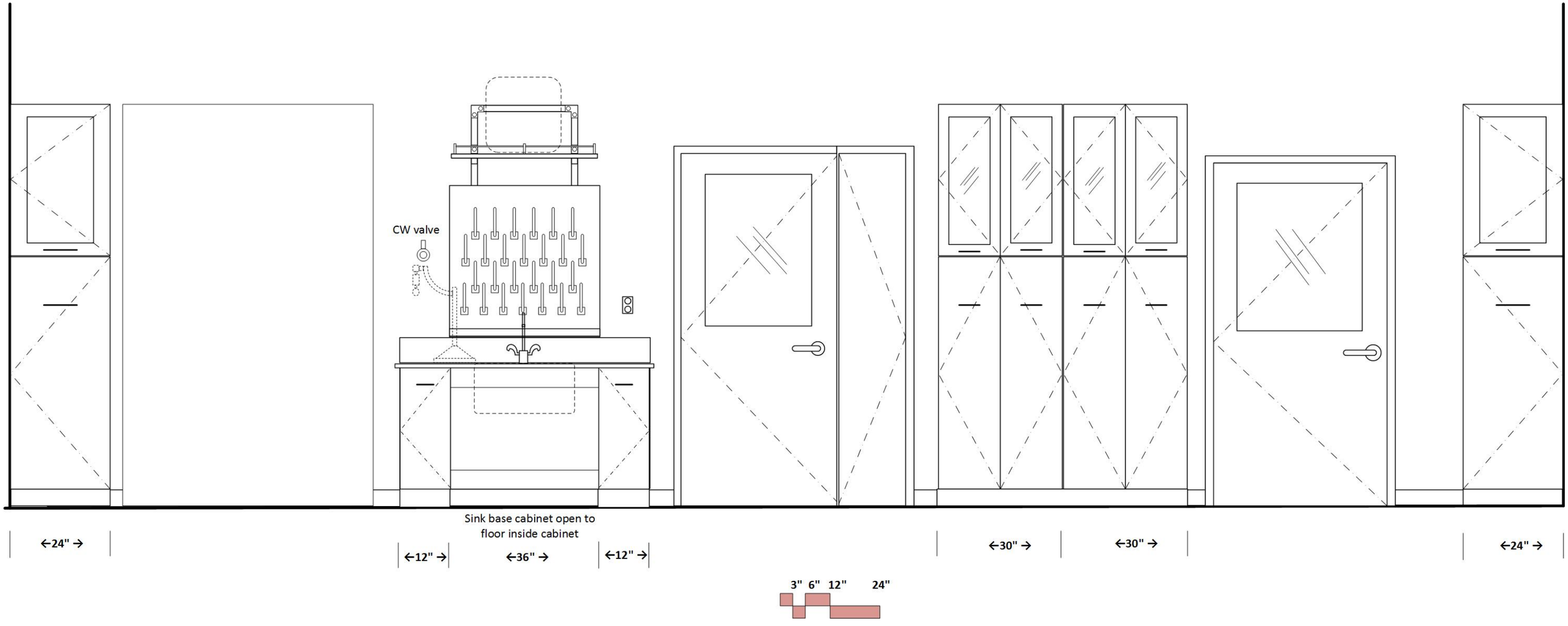
RESEARCH LABORATORY

Elevation East Wall



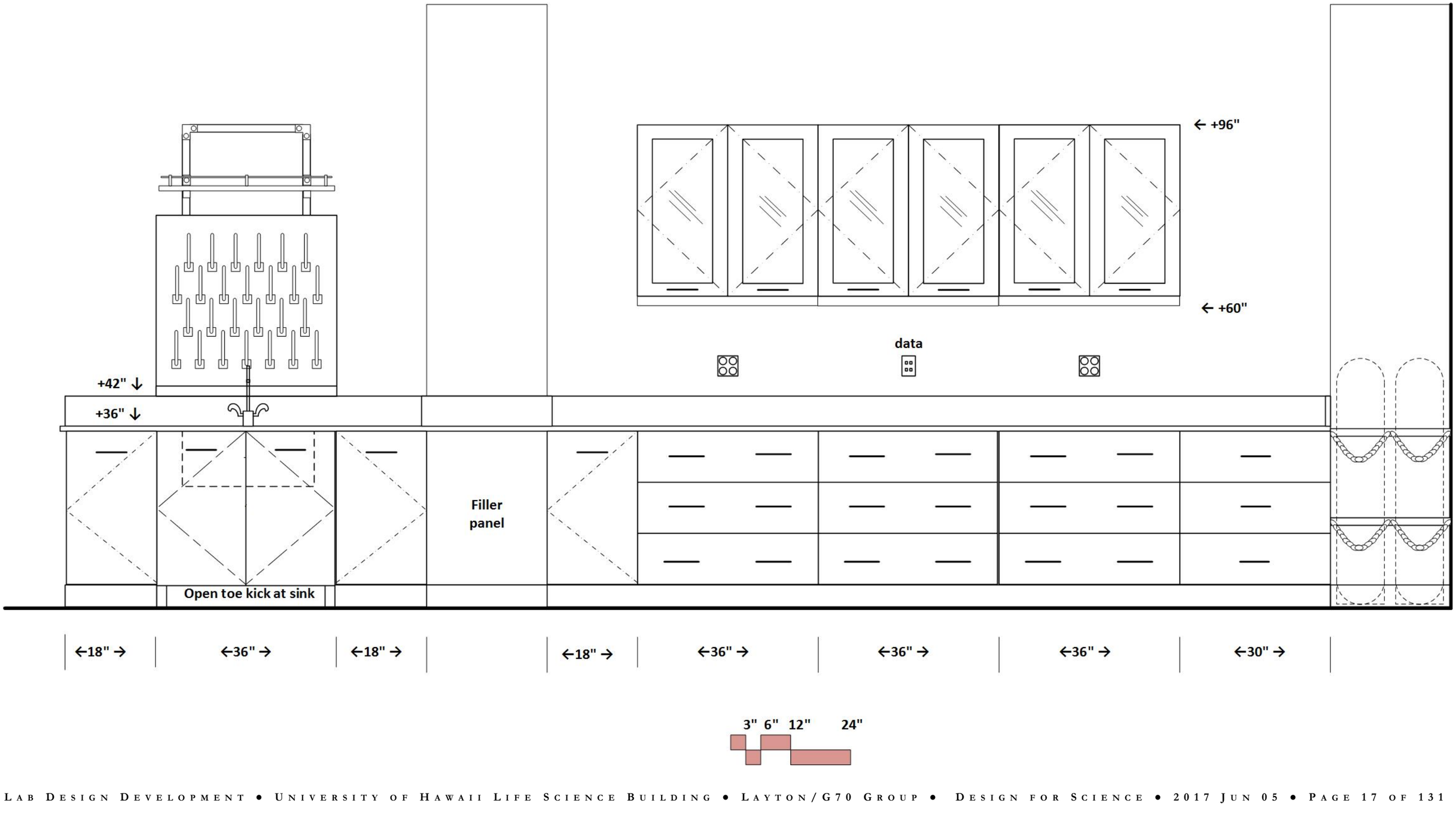
RESEARCH LABORATORY

Elevation South Wall



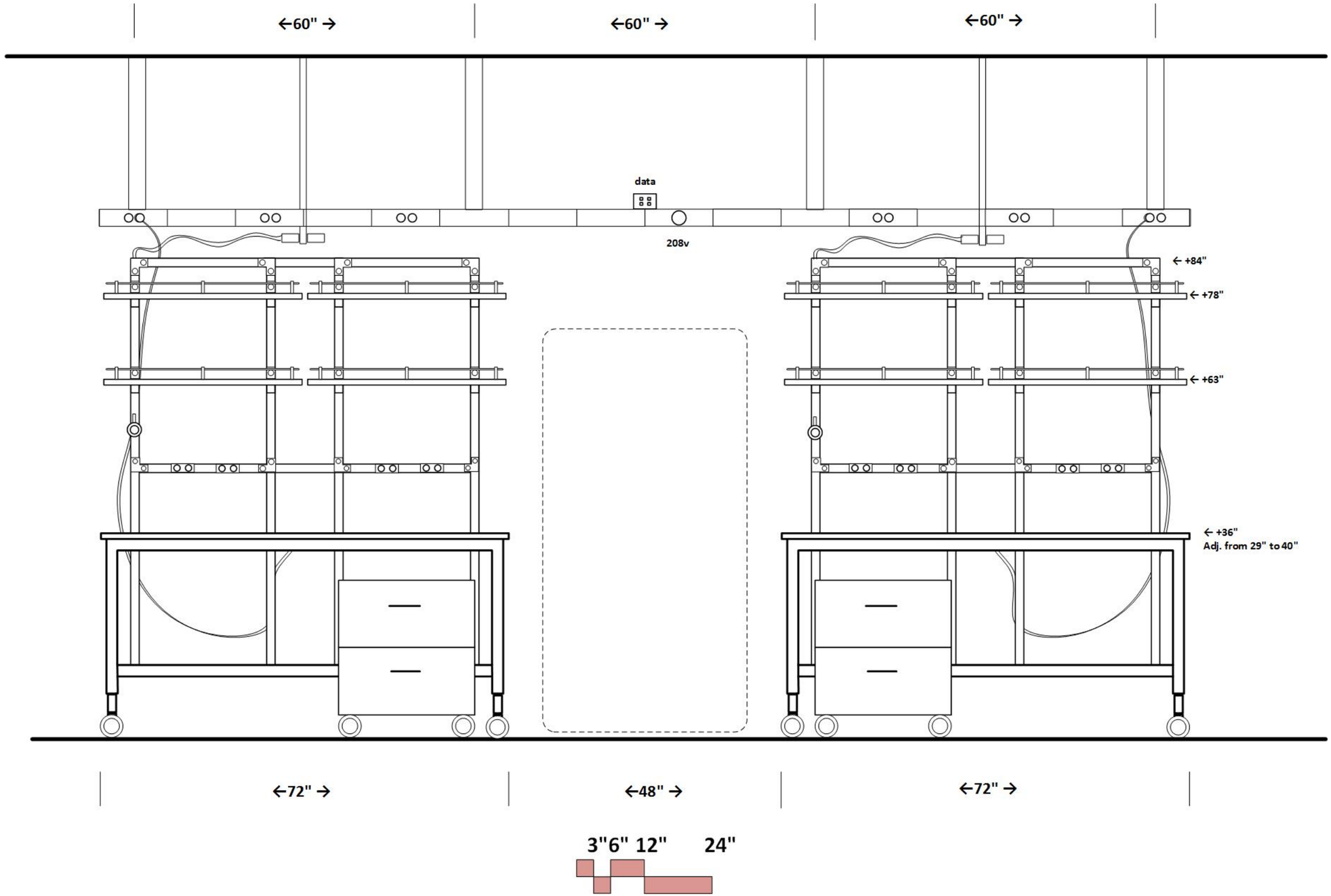
RESEARCH LABORATORY

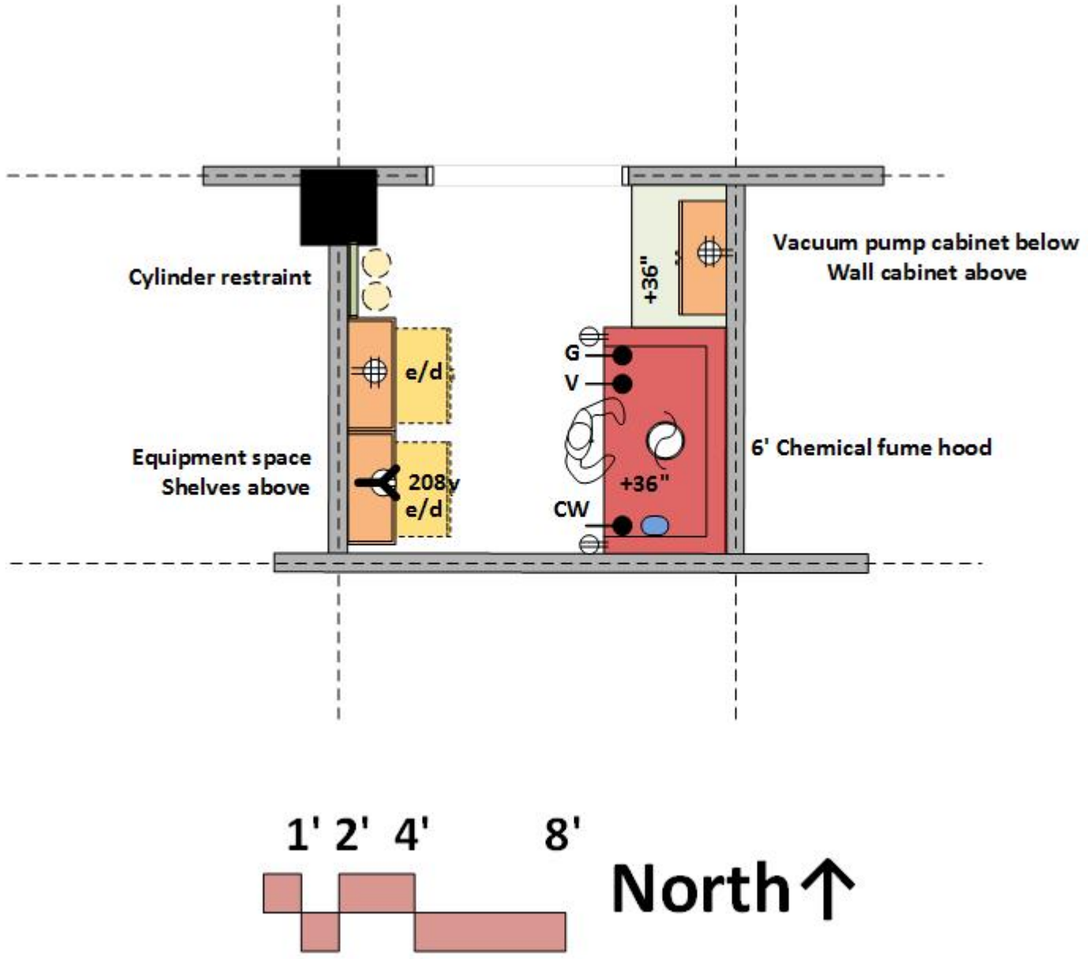
Elevation West Wall



RESEARCH LABORATORY

Center Island, East Side, looking west





FUME HOOD ALCOVE

Research Lab Support

Applies to all rooms labeled as "Fume Hood" on floor plans, adjacent to research lab suites.

ARCHITECTURAL
Occupancy: B
Floor: vinyl composition tile
Walls: gypsum board and enamel paint
Ceiling: 9' acoustic tile
Doors: None- open to research lab, 5' opening
Acoustic Attenuation: NC 45 or less

STRUCTURAL
Vibration attenuation: 2,000 microinches per second or less

MECHANICAL
Hours of operation: 24/7/365
Temperature: 72 deg. F, +/- 2 deg. F
100% exhaust- no recirculation of air
Minimum 6 air changes per hour occupied; 4 air changes per hour unoccupied
Pressure: Negative
Humidity: 50-75% relative
Equipment Heat Gain: 35 btuh/sf
800 c.f.m. exhaust at fume hood (VAV)

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
208v30a1ph power at equipment space
equipment (ref's; freezers) space on emergency power (e)
Dedicated circuits at equipment space (d)
Data & Wireless data
Lighting: indirect LED @ 650 LUX
Fume hood exhaust on emergency power

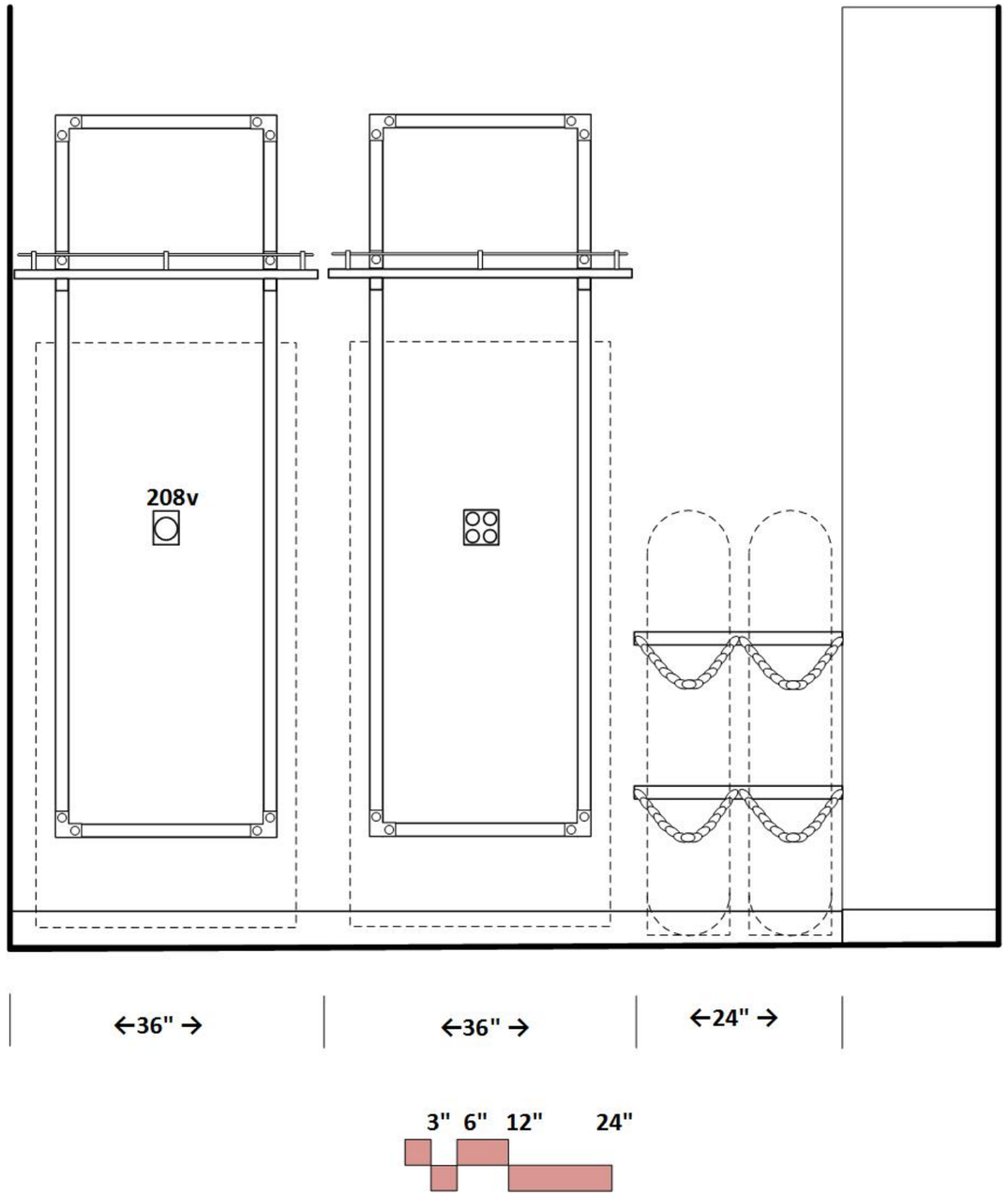
PLUMBING
Cold water at fume hood
Natural gas at fume hood
Vacuum at fume hood via vac pump cabinet adjacent to hood

CONTRACTOR FURNISHED EQUIPMENT
Laboratory casework- wall cabinets, base cabinets, tall cabinets
Epoxy resin tops; Faucets & fittings
Chemical fume hood
Cylinder restraint

OWNER FURNISHED EQUIPMENT
Chairs
Benchtop analytical instruments
Scientific equipment
Vacuum pump

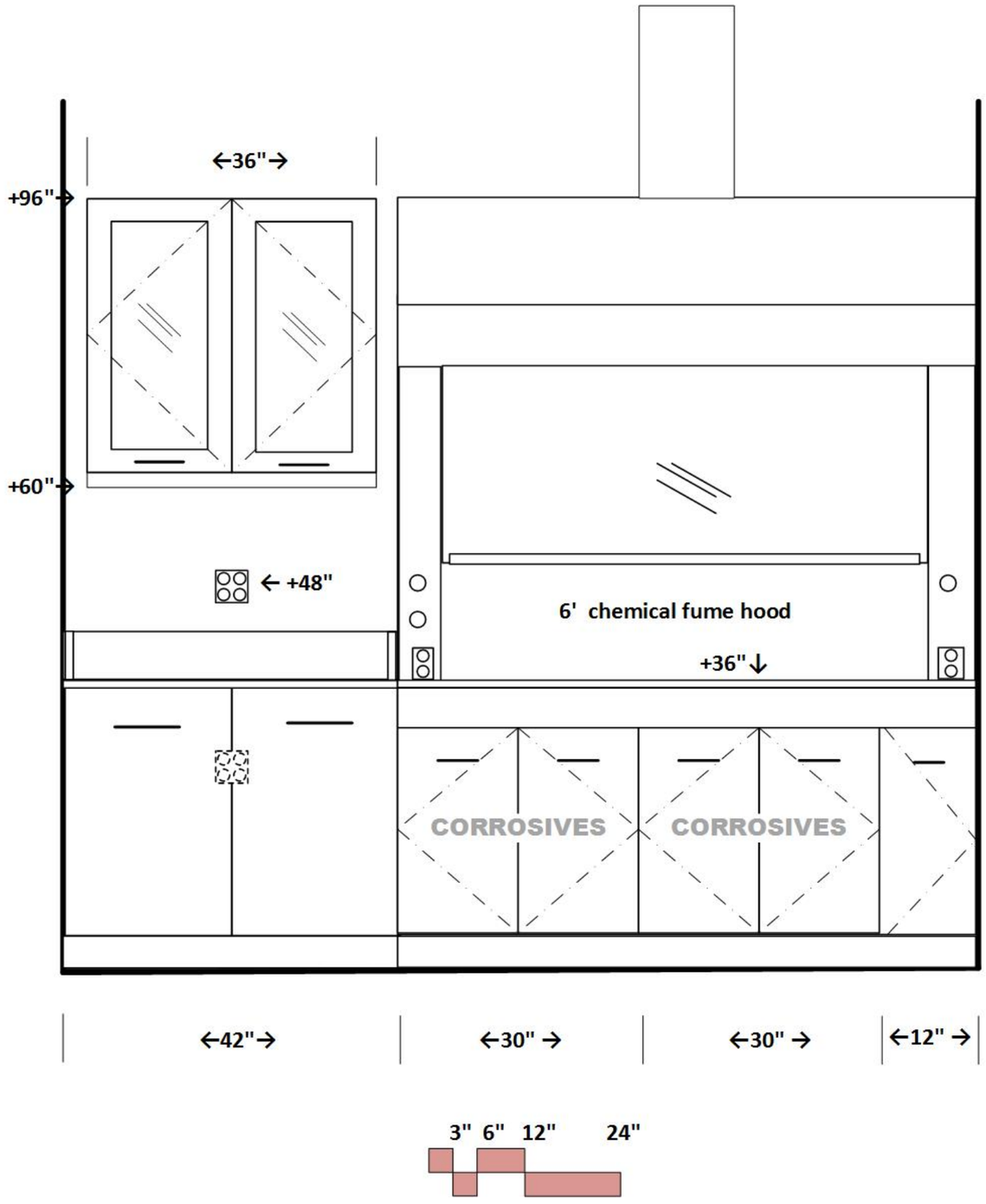
FUME HOOD ALCOVE

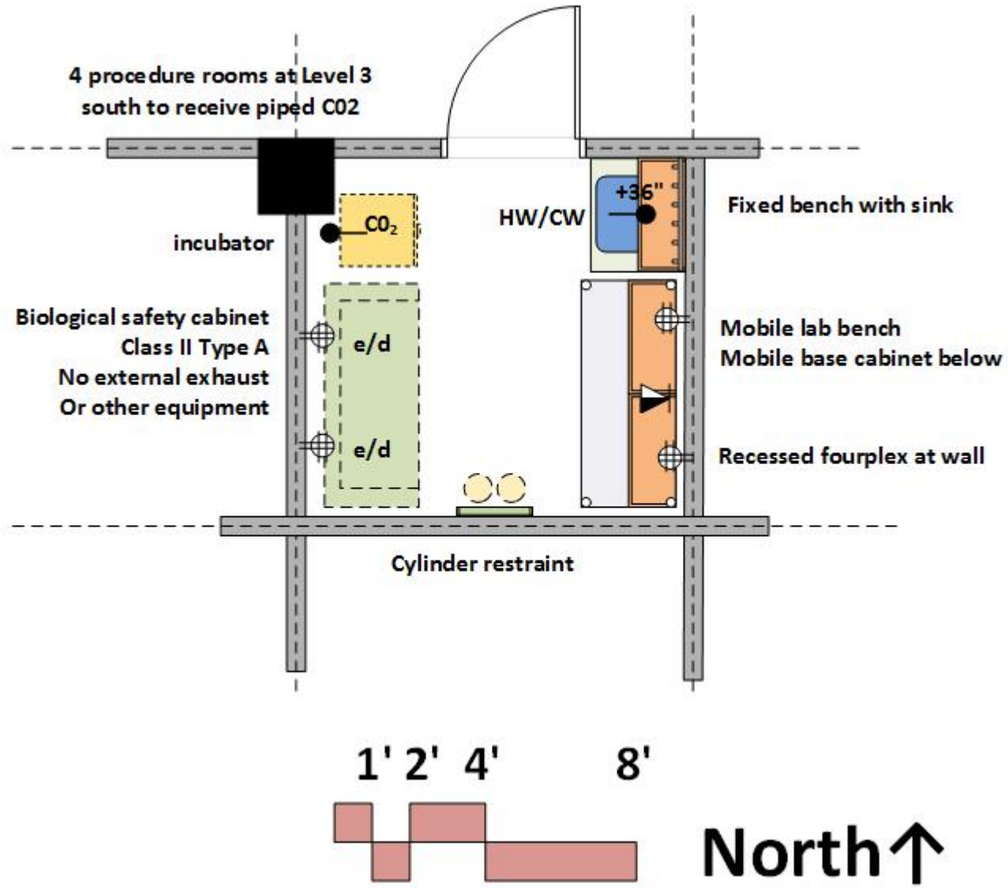
Elevation West Wall



FUME HOOD ALCOVE

Elevation East Wall





PROCEDURE ROOM

Research Lab Support

Applies to all rooms labeled as "Procedure" on floor plans, adjacent to research lab suites.

ARCHITECTURAL
Occupancy: B
Floor: vinyl composition tile
Walls: gypsum board and enamel paint
Ceiling: 9' acoustic mylar tile
Doors: 3^6x7^0 single door with window
Acoustic Attenuation: NC 45 or less
Security: key or card reader access

STRUCTURAL
Vibration attenuation: 2,000 microinches per second or less

MECHANICAL
Hours of operation: 24/7/365
Temperature: 72 deg. F, +/- 2 deg. F
100% exhaust- no recirculation of air
Minimum 6 air changes per hour occupied; 4 air changes per hour unoccupied
Pressure: Negative or positive depending upon use
Humidity: 50-75% relative
Equipment Heat Gain: 35 btuh/sf

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
equipment (ref's; freezers) space on emergency power (e)
Dedicated circuits at equipment space (d)
Data & Wireless data
Lighting: indirect LED @ 650 LUX
Provide light switches at doors

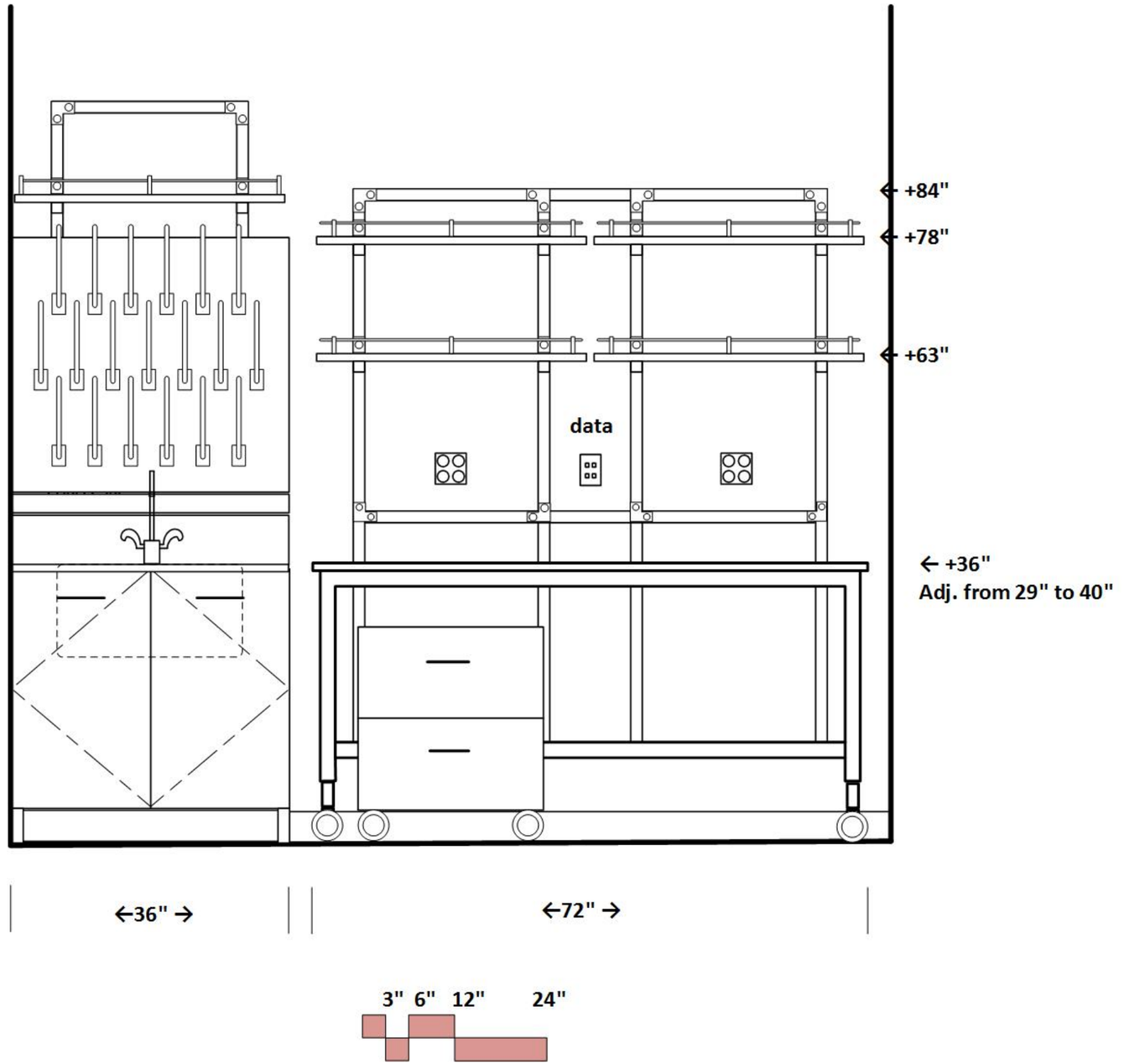
PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers
4 small rooms at Level 3 South to have CO2 piped from CO2 cylinder room at Level 3

CONTRACTOR FURNISHED EQUIPMENT
Laboratory casework- wall cabinets, base cabinets, tall cabinets
Epoxy resin tops and sinks; Faucets & fittings

OWNER FURNISHED EQUIPMENT
Chairs
Benchtop analytical instruments
Scientific equipment
Biological safety cabinets or other equipment
Refrigerators
Incubators

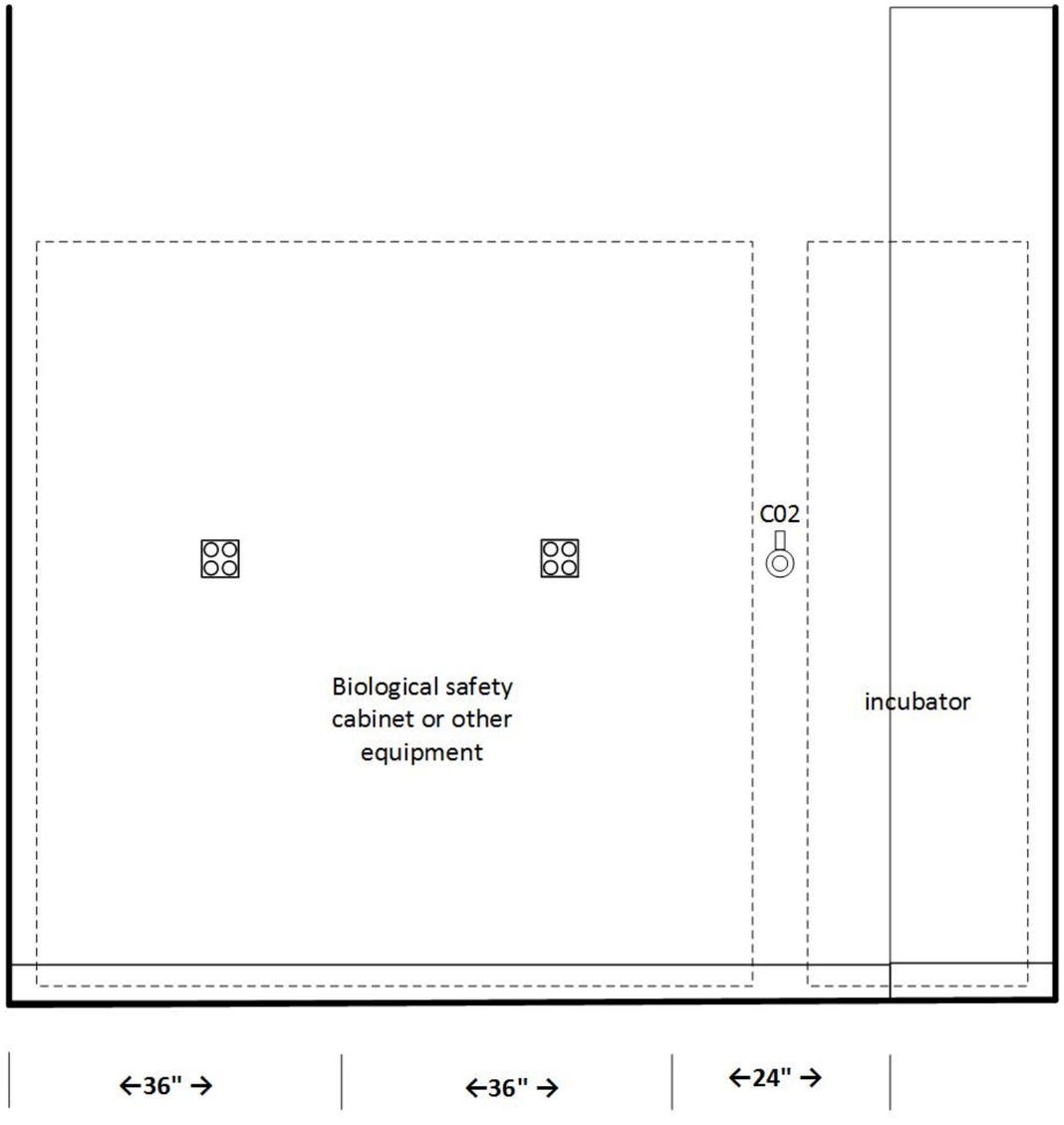
PROCEDURE ROOM

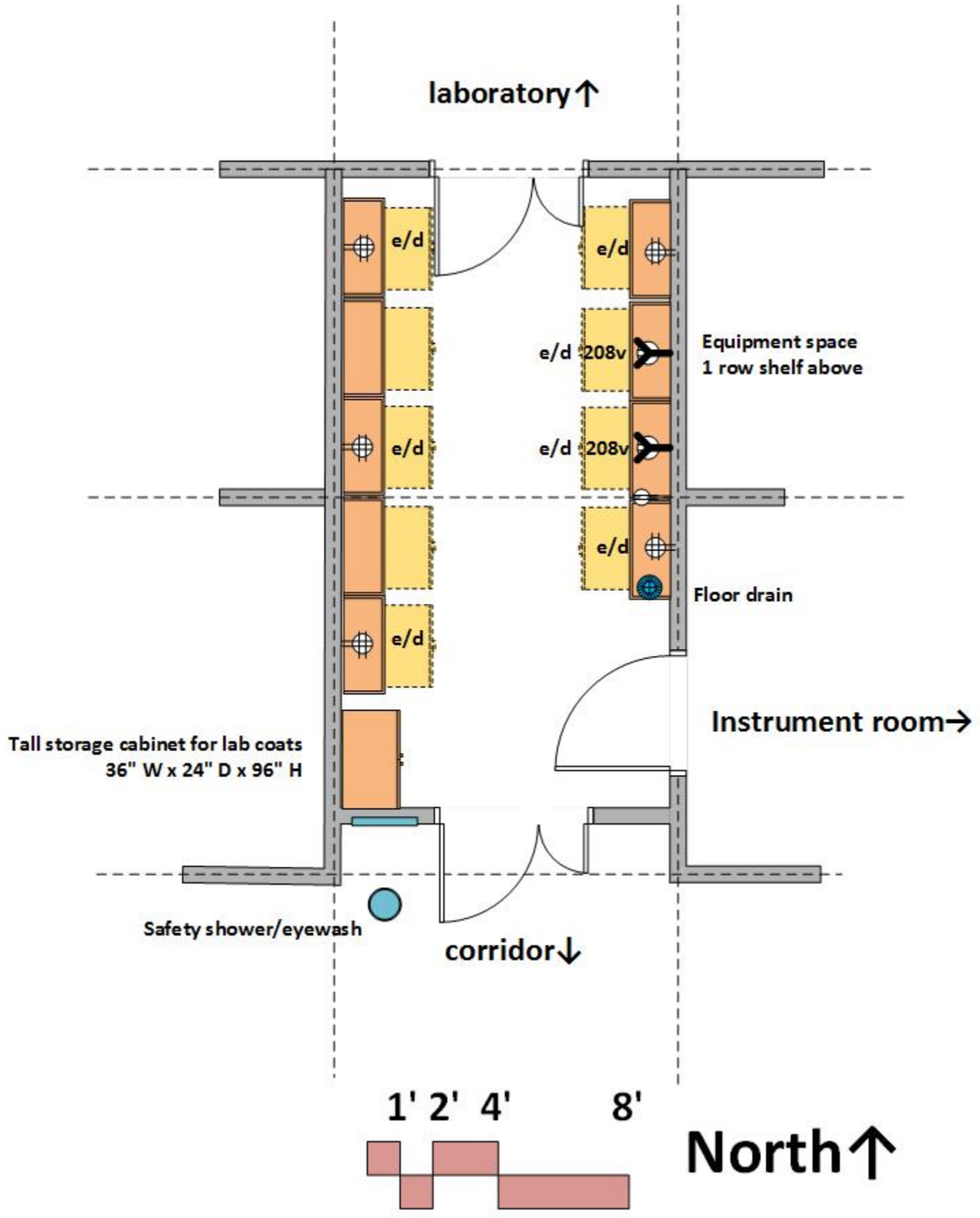
Elevation East Wall



PROCEDURE ROOM

Elevation West Wall





EQUIPMENT ROOM

Research Lab Support

Applies to all rooms labeled as "Equipment" on floor plans, adjacent to research lab suites.

ARCHITECTURAL
Occupancy: B
Floor: vinyl composition tile
Walls: gypsum board and enamel paint
Ceiling: 9' acoustic til
Doors: $3^0/1^6 x 7^0$ pair with window at corridor and main lab entry
$3^6 x 7^0$ single door at lab support rooms
Acoustic Attenuation: NC 45 or less
Security: key or card reader access

STRUCTURAL
Vibration attenuation: 2,000 microinches per second or less

MECHANICAL
Hours of operation: 24/7/365
Temperature: 72 deg. F, +/- 2 deg. F
100% exhaust- no recirculation of air
Minimum 6 air changes per hour occupied; 4 air changes per hour unoccupied
Pressure: Negative
Humidity: 50-75% relative
Equipment Heat Gain: 50 btuh/sf

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
208v30a1ph power at equipment space in lab support rooms
equipment (ref's; freezers) space on emergency power (e)
Dedicated circuits at equipment space (d)
Data & Wireless data
Lighting: indirect LED @ 650 LUX
Provide light switches at doors

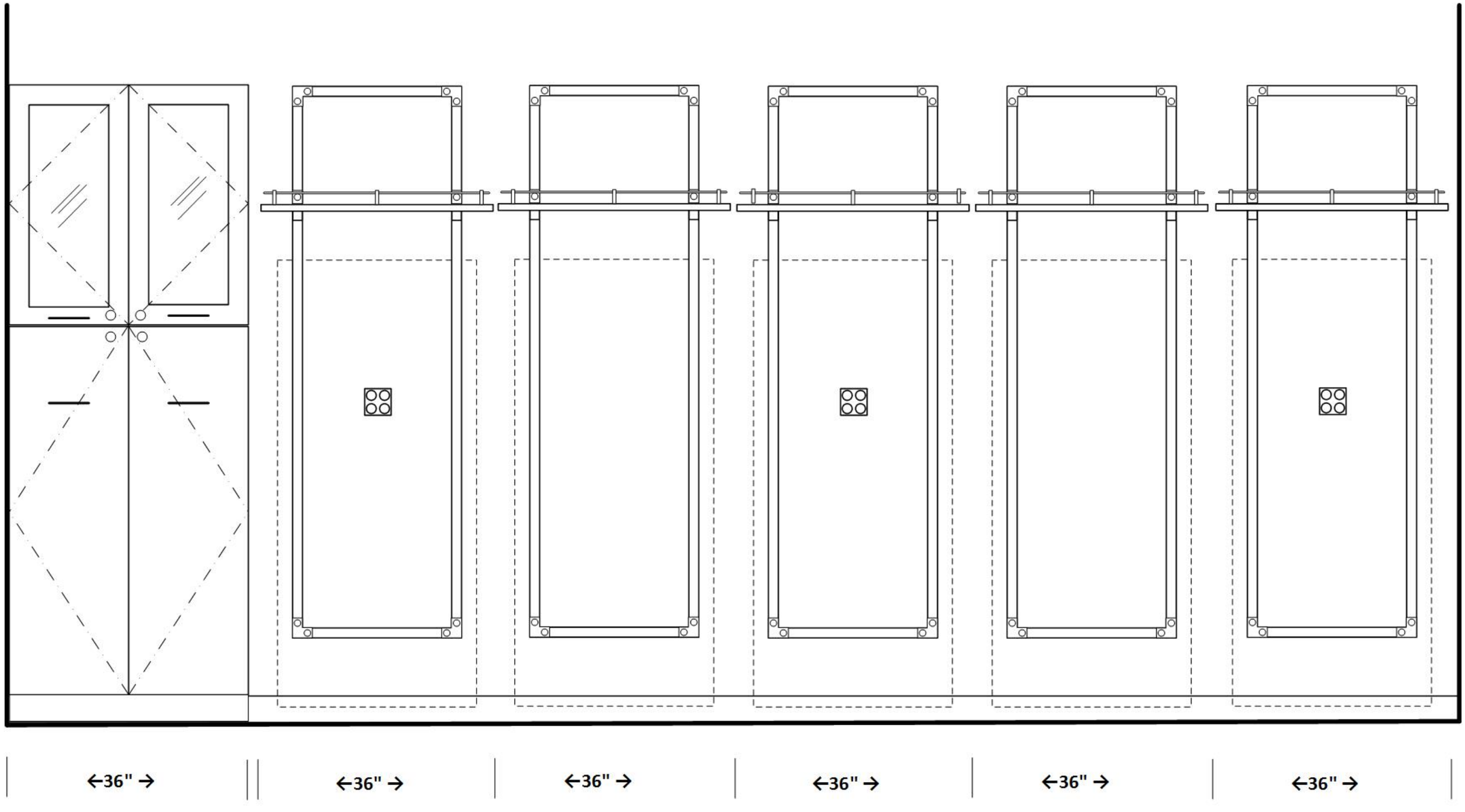
PLUMBING
Floor drain
Domestic tepid water and drain at safety shower/eyewash
4 safety showers per floor in corridor
Floor drain at safety shower

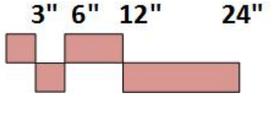
CONTRACTOR FURNISHED EQUIPMENT
Laboratory casework- wall cabinets, base cabinets, tall cabinets
Safety shower/eyewash
Fire Extinguisher

OWNER FURNISHED EQUIPMENT
Scientific equipment
Refrigerators
Growth chambers

EQUIPMENT ROOM

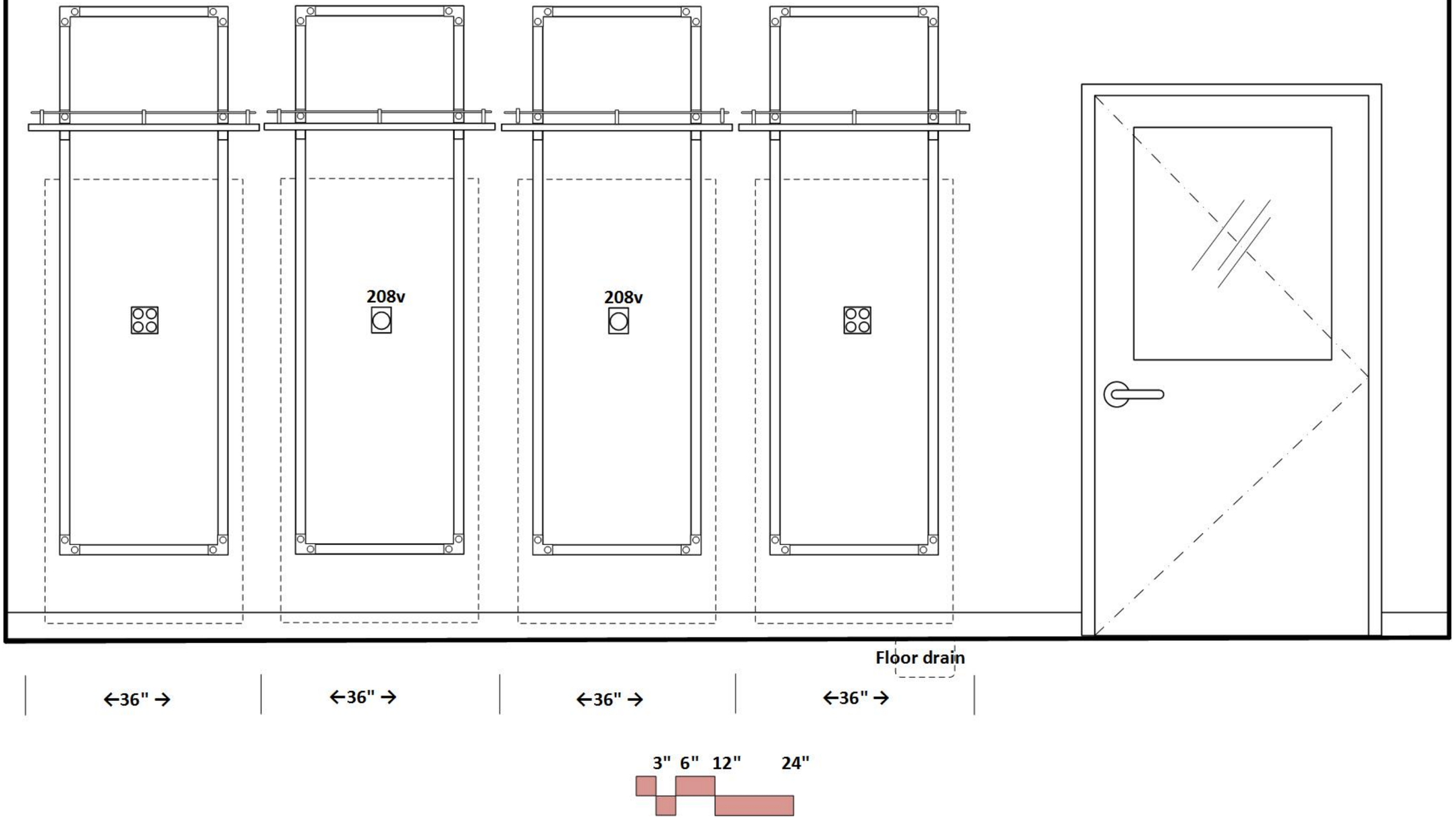
Elevation East Wall

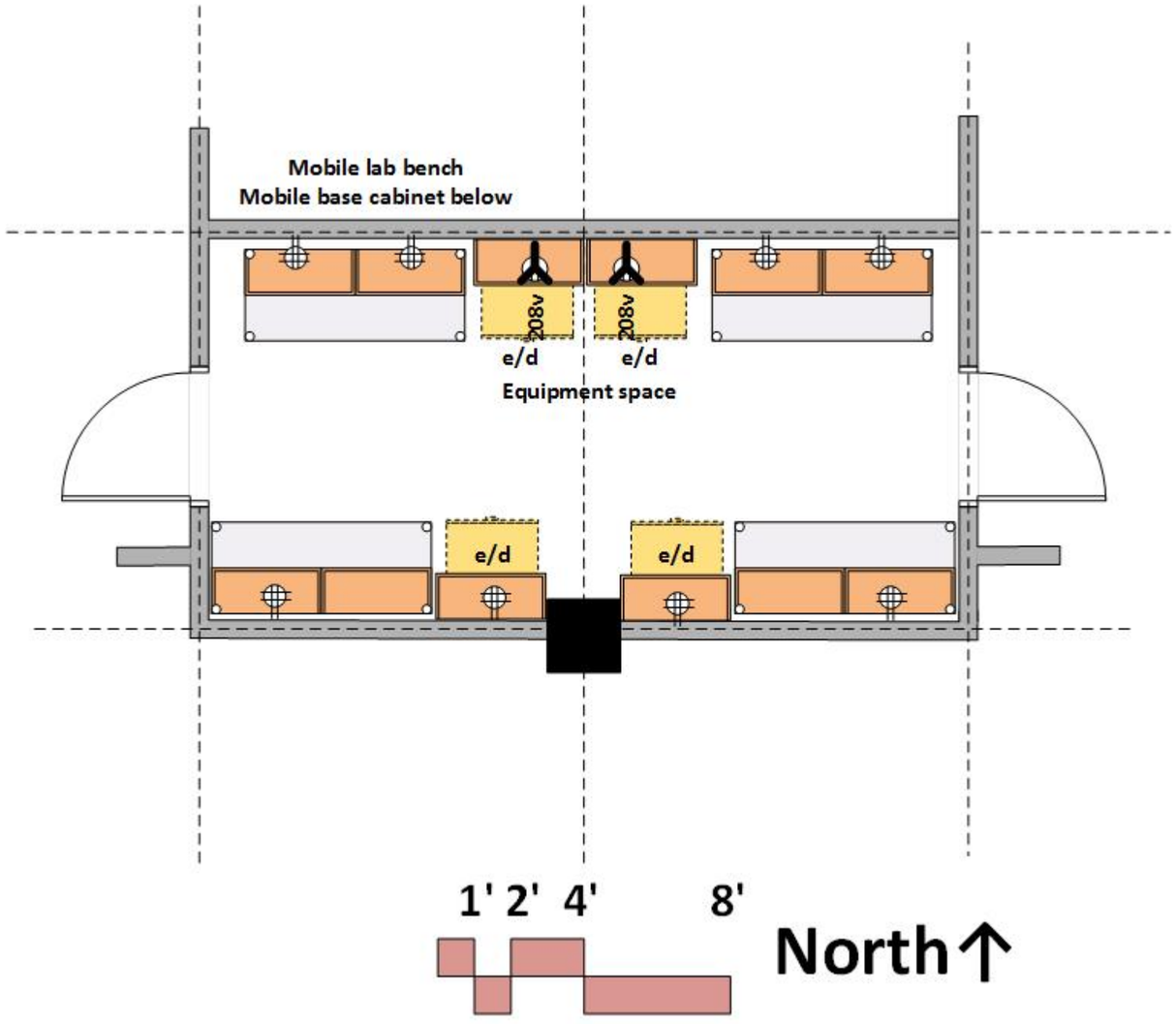




EQUIPMENT ROOM

Elevation West Wall





INSTRUMENT ROOM

Research Lab Support

Applies to all rooms labeled as "Instrument" on the floor plans, adjacent to research lab suites. Room size may vary by location.

ARCHITECTURAL
Occupancy: B
Floor: vinyl composition tile
Walls: gypsum board and enamel paint
Ceiling: 9' acoustic tile
Doors: $3^6 x 7^0$ single door with window
Acoustic Attenuation: NC 45 or less
Security: key or card reader access

STRUCTURAL
Vibration attenuation: 2,000 microinches per second or less

MECHANICAL
Hours of operation: 24/7/365
Temperature: 72 deg. F, +/- 2 deg. F
100% exhaust- no recirculation of air
Minimum 6 air changes per hour occupied; 4 air changes per hour unoccupied
Pressure: Negative
Humidity: 50-75% relative
Equipment Heat Gain: 75 btuh/sf

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
208v30a1ph power at equipment space in lab support rooms
equipment (ref's; freezers) space on emergency power (e)
Dedicated circuits at equipment space (d)
Data & Wireless data
Lighting: indirect LED @ 650 LUX
Provide light switches at doors

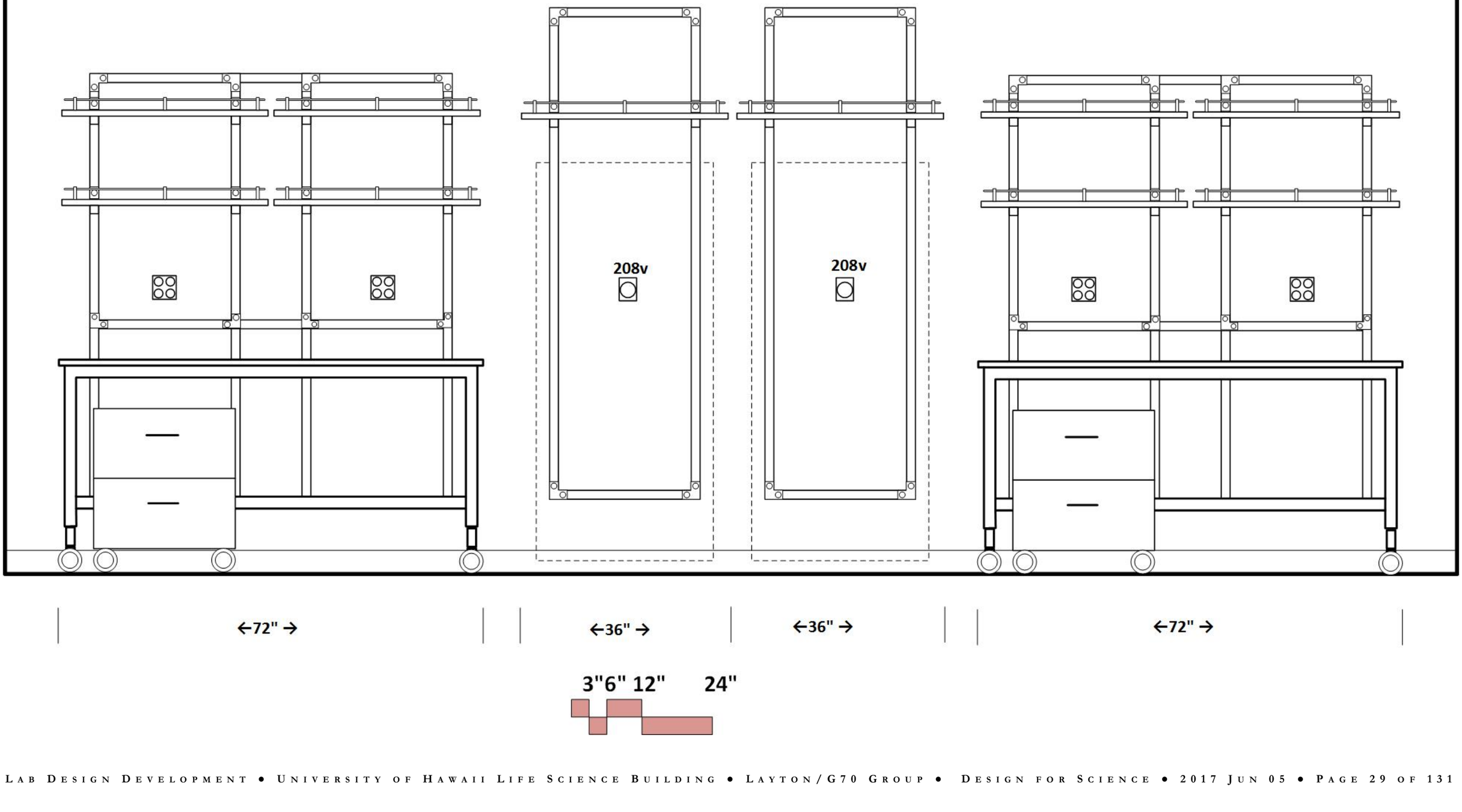
PLUMBING
None

CONTRACTOR FURNISHED EQUIPMENT
Laboratory casework- wall shelves

OWNER FURNISHED EQUIPMENT
Chairs
Benchtop analytical instruments
Scientific equipment
Refrigerators
Ultra low freezers

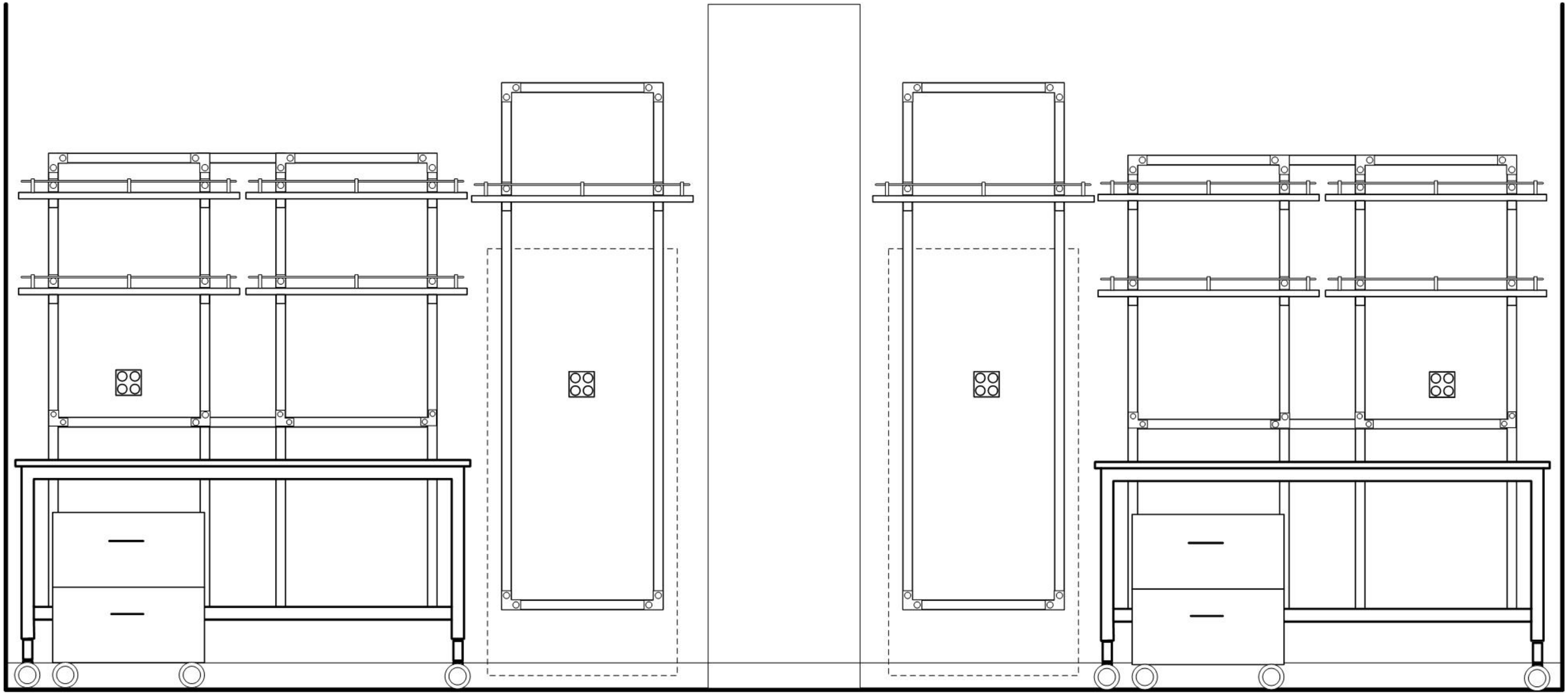
INSTRUMENT ROOM

Elevation North Wall



INSTRUMENT ROOM

Elevation South Wall

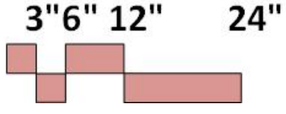


←72" →

←36" →

←36" →

←72" →

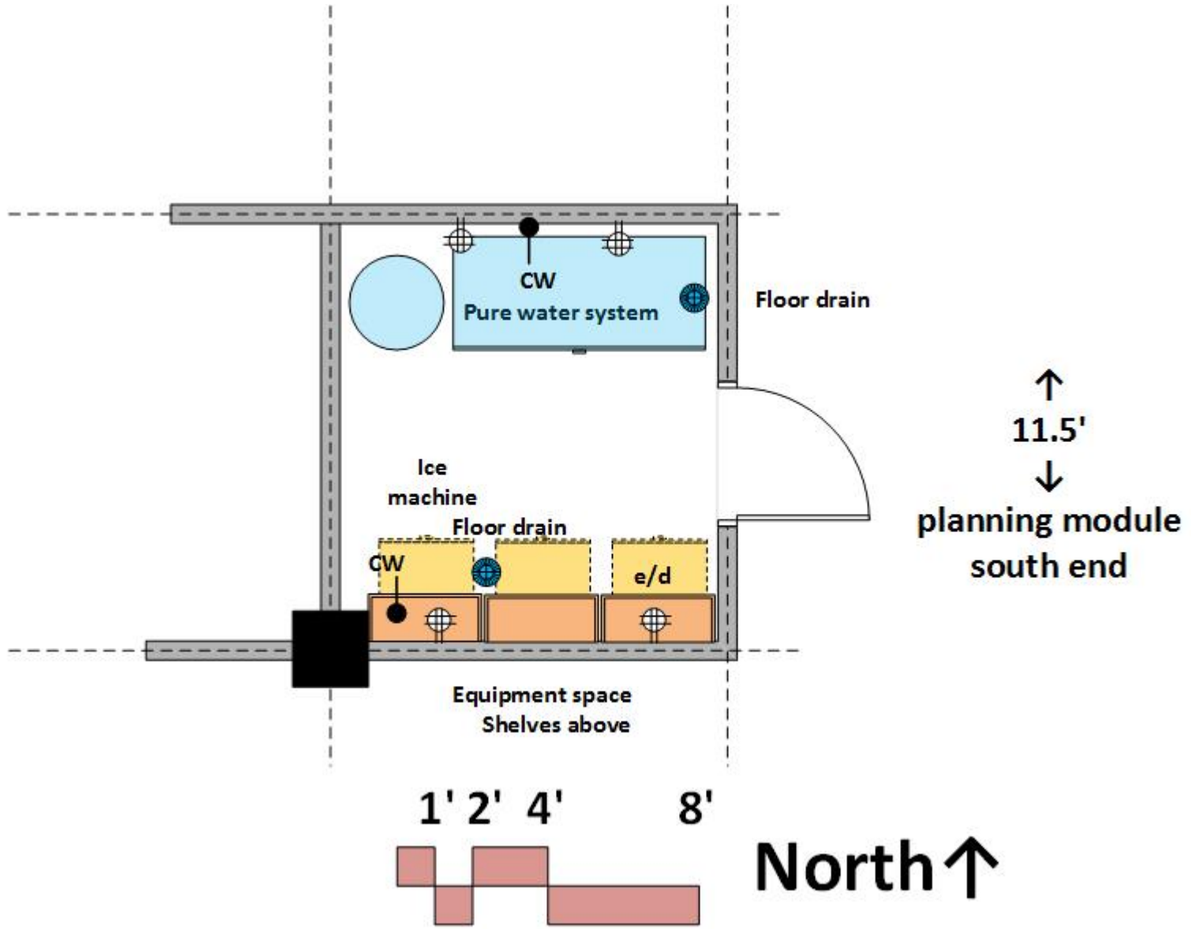


PURE WATER ROOM

Research & Teaching Lab Support

Quantity: 1 per floor

Layout varies slightly by location



ARCHITECTURAL
Occupancy: B
Floor: troweled on epoxy with non-slip finish
Walls: gypsum board and enamel paint
Ceiling: 9' acoustic mylar tile
Doors: $3^6 x 7^0$ single door with window
Acoustic Attenuation: NC 45 or less
Security: key or card reader access

STRUCTURAL
Vibration attenuation: 2,000 microinches per second or less

MECHANICAL
Hours of operation: 24/7/365
Temperature: 72 deg. F, +/- 2 deg. F
100% exhaust- no recirculation of air
Minimum 6 air changes per hour occupied; 4 air changes per hour unoccupied
Pressure: Negative
Humidity: 50-75% relative
Equipment Heat Gain: 35 btuh/sf

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
equipment (ref's; freezers) space on emergency power (e)
Dedicated circuits at equipment space (d)
Data & Wireless data
Lighting: indirect LED @ 650 LUX
Provide light switches at doors

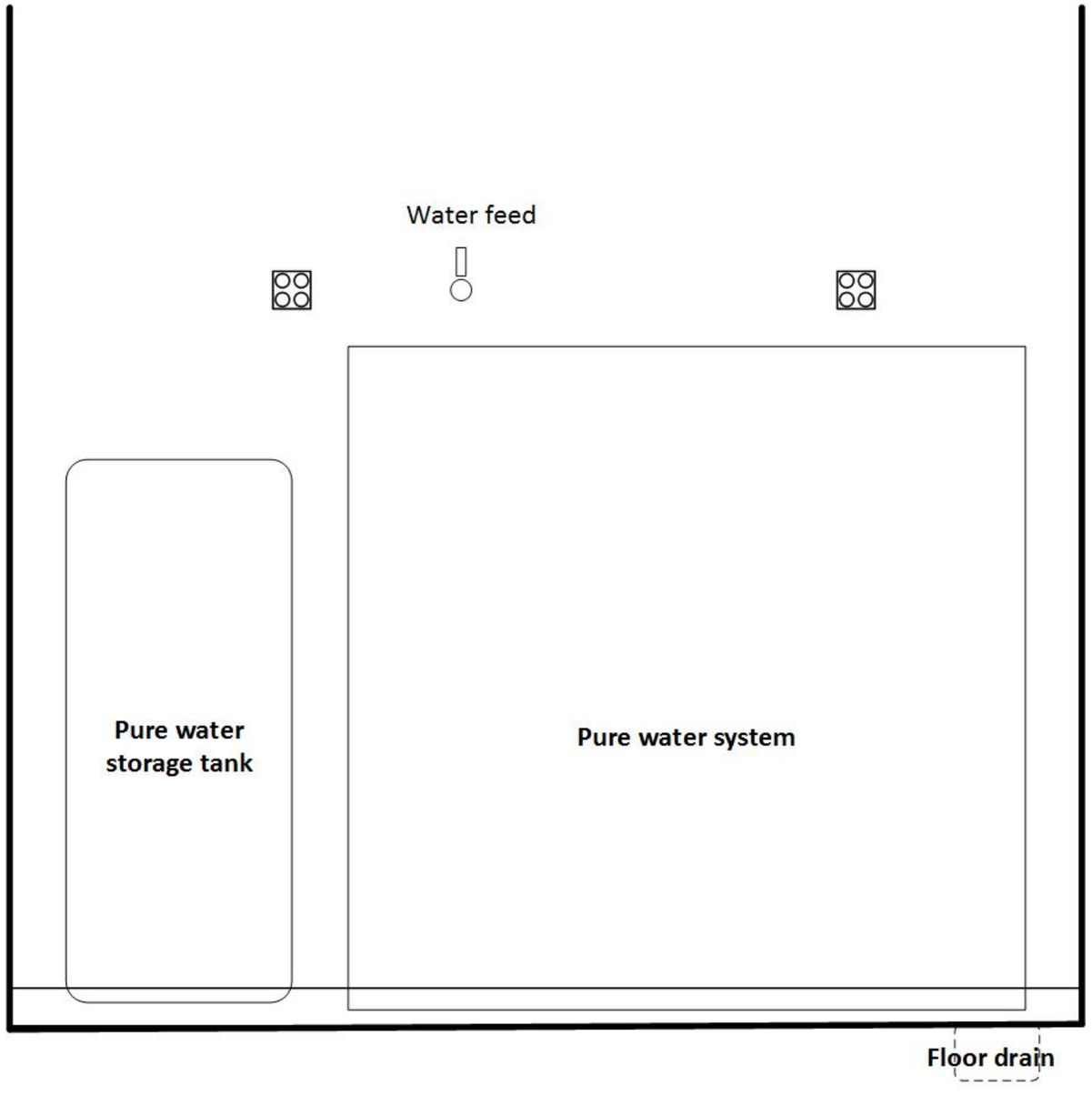
PLUMBING
Cold water valve at pure water system and ice machine
Floor drain at each side of room

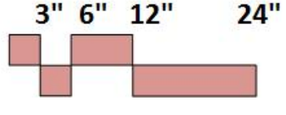
CONTRACTOR FURNISHED EQUIPMENT
Laboratory casework- wall shelves
Pure water system
Fire Extinguisher

OWNER FURNISHED EQUIPMENT
Scientific equipment
Ice machine

PURE WATER ROOM

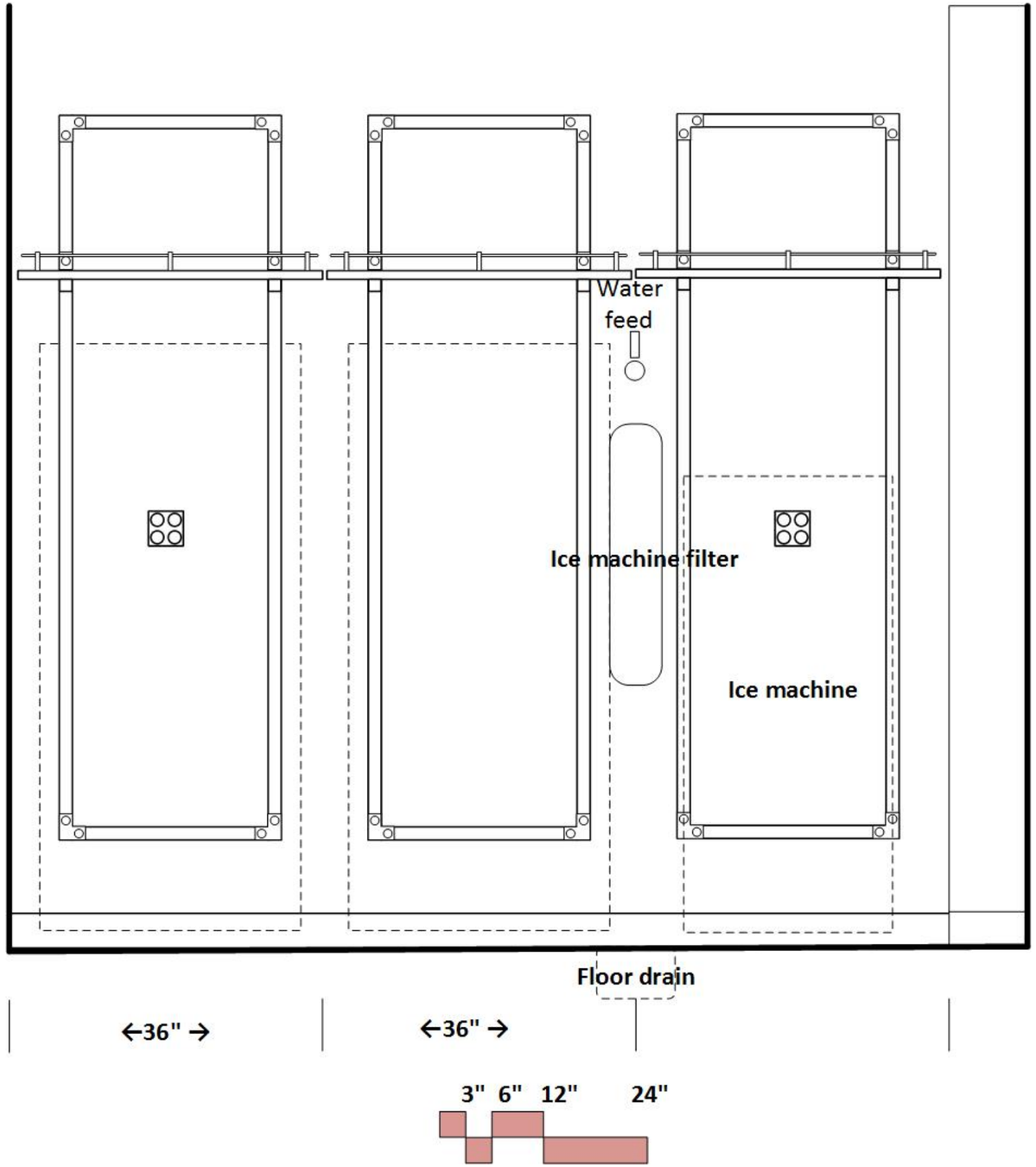
Elevation North Wall

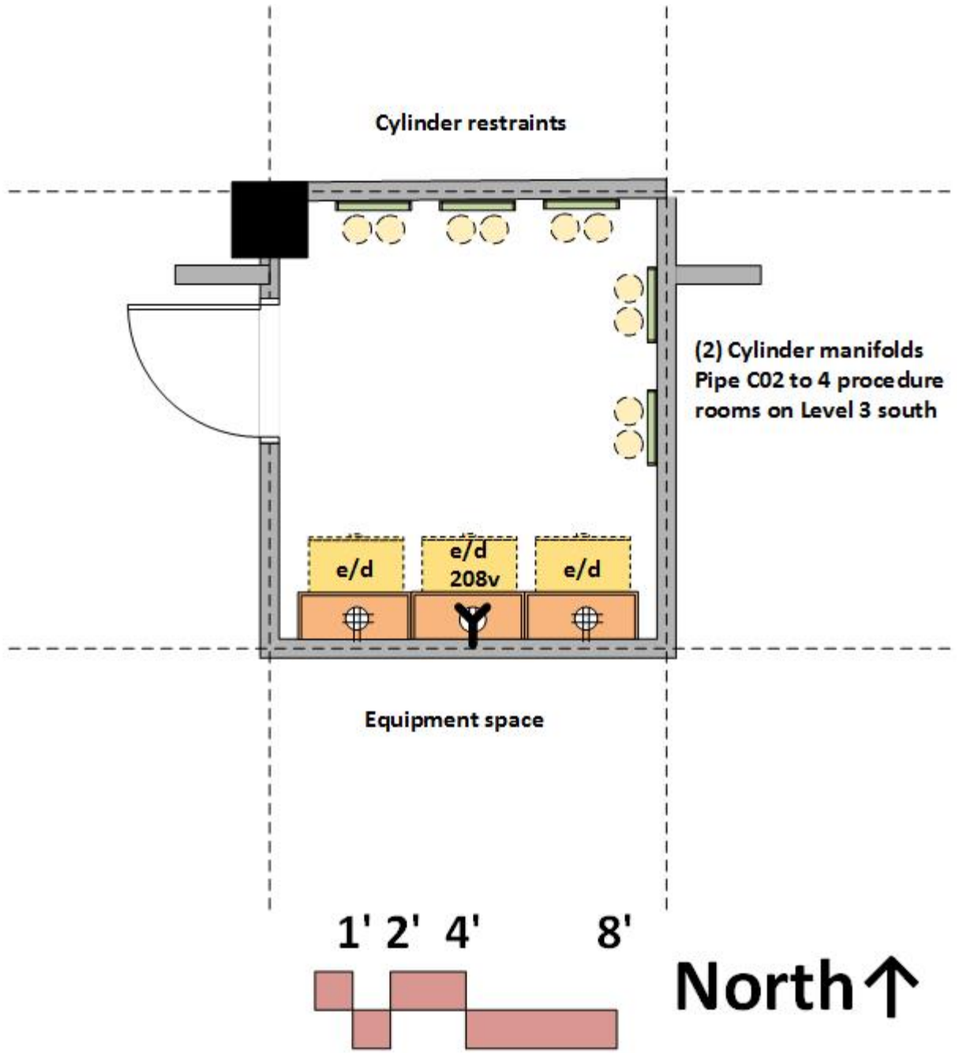




PURE WATER ROOM

Elevation South Wall





CO_2 Cylinder Room

Research Lab Support

Quantity: 1 at Level 3 south- pipe C02 to 4 small procedure rooms adjacent to lab suite

ARCHITECTURAL
Occupancy: B
Floor: vinyl composition tile
Walls: gypsum board and enamel paint
Ceiling: 9' acoustic tile
Doors: 3^6x7^0 single door with window
Acoustic Attenuation: NC 45 or less
Security: key or card reader access

STRUCTURAL
Vibration attenuation: 2,000 microinches per second or less

MECHANICAL
Hours of operation: 24/7/365
Temperature: 72 deg. F, +/- 2 deg. F
100% exhaust- no recirculation of air
Minimum 6 air changes per hour occupied; 4 air changes per hour unoccupied
Pressure: Negative
Humidity: 50-75% relative
Equipment Heat Gain: 35 btuh/sf in lab support rooms

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
208v30a1ph power at equipment space in lab support rooms
equipment (ref's; freezers) space on emergency power (e)
Dedicated circuits at equipment space (d)
Data & Wireless data
Lighting: indirect LED @ 650 LUX
Provide light switches at doors

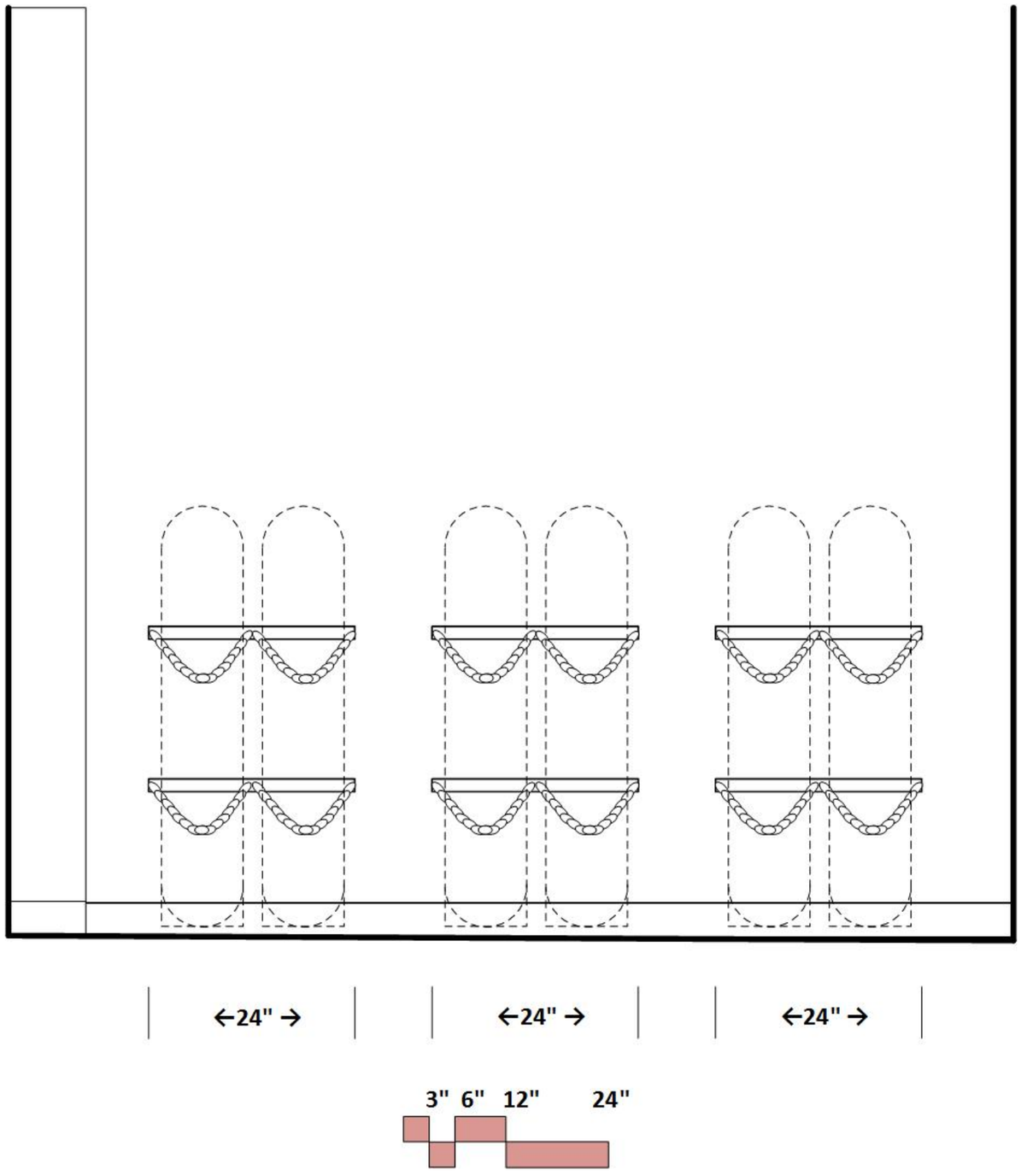
PLUMBING
Piping from 2 cylinder manifolds to small Procedure rooms adjacent to lab suite on Level 3 South

CONTRACTOR FURNISHED EQUIPMENT
Laboratory casework- wall shelves
Cylinder manifolds

OWNER FURNISHED EQUIPMENT
Scientific equipment
Refrigerators

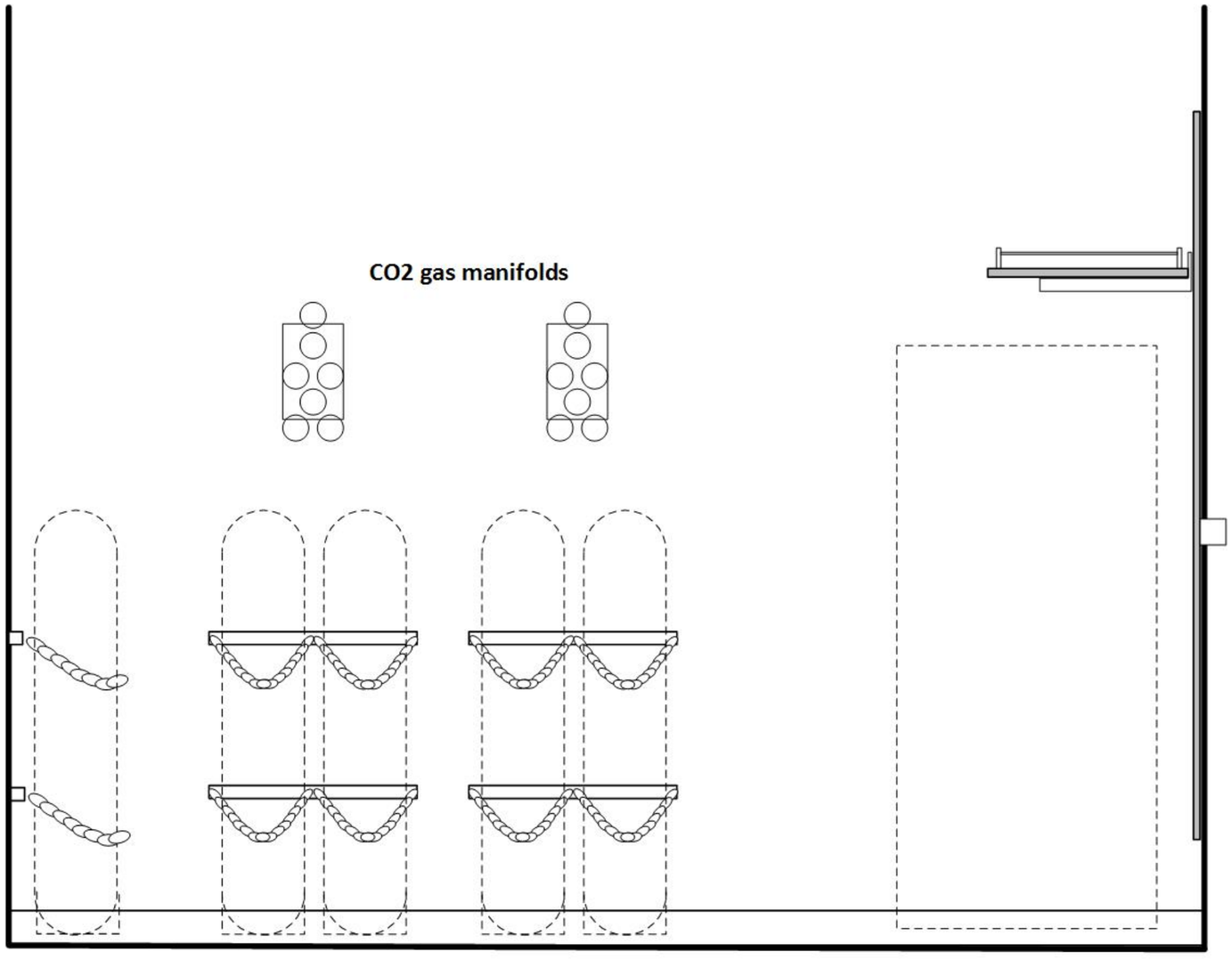
CO_2 Cylinder Room

Elevation North Wall



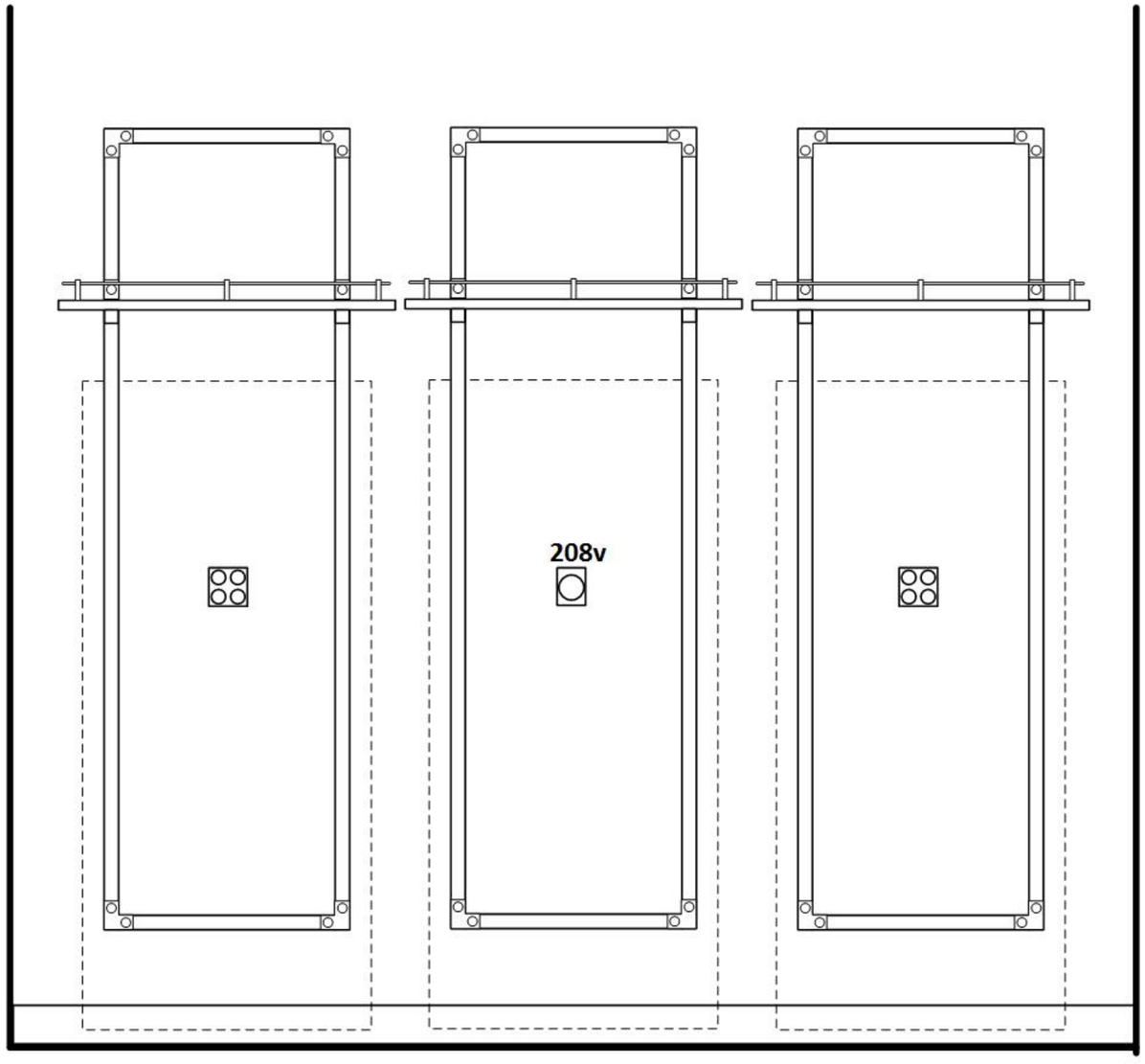
CO_2 Cylinder Room

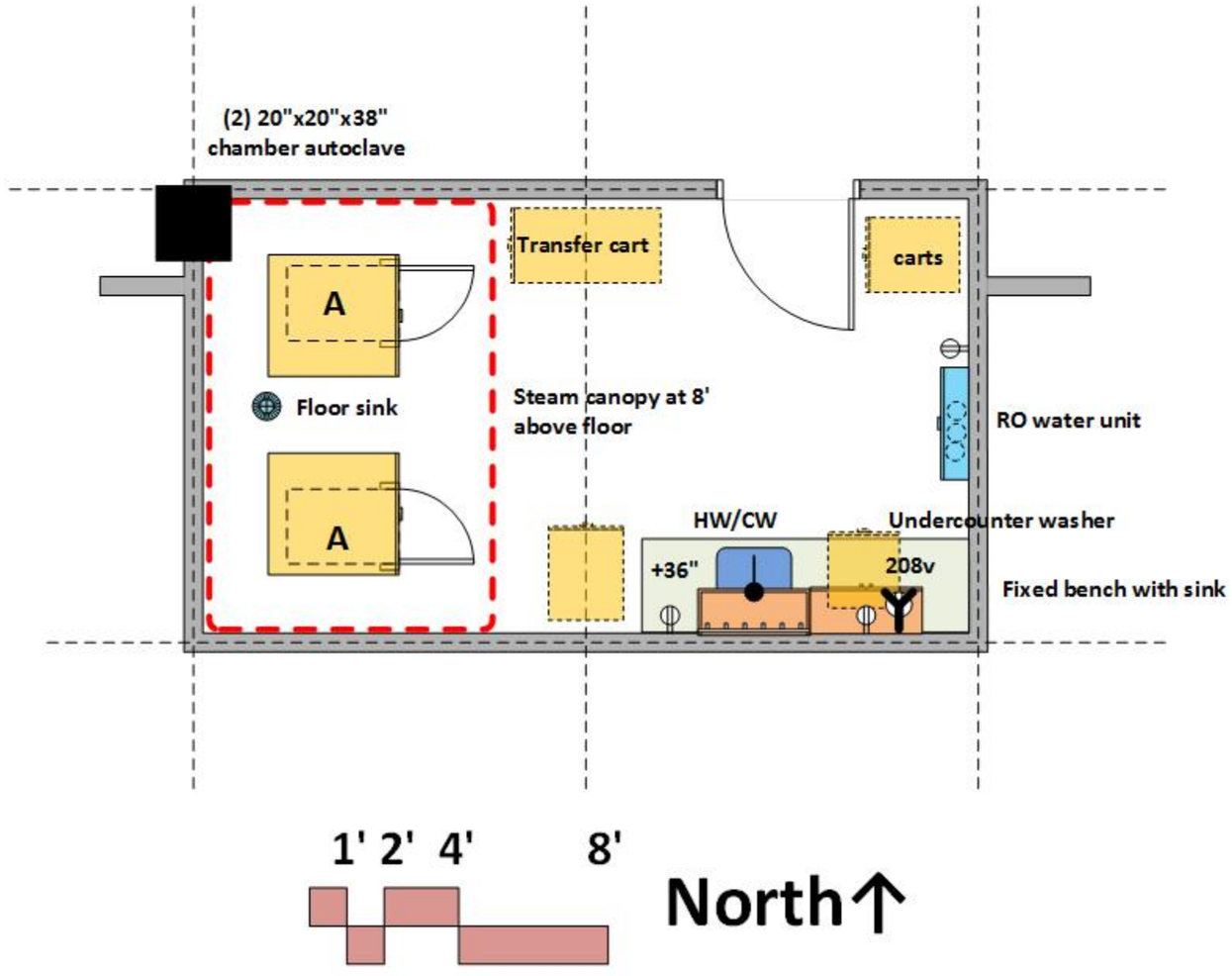
Elevation East Wall



CO_2 Cylinder Room

Elevation South Wall





AUTOCLAVE ROOM

Research & Teaching Lab Support

Quantity: 1 per floor

ARCHITECTURAL
Occupancy: B
Floor: troweled on epoxy with non-slip finish
Walls: water proof gypsum board and epoxy paint
Ceiling: 9' acoustic mylar tile
Doors: 3^6x7^0 single door at lab support rooms
Acoustic Attenuation: NC 45 or less
Security: key or card reader access

STRUCTURAL
Vibration attenuation: 2,000 microinches per second or less

MECHANICAL
Hours of operation: 24/7/365
Temperature: 72 deg. F, +/- 2 deg. F
100% exhaust- no recirculation of air
Minimum 6 air changes per hour occupied; 4 air changes per hour unoccupied
Pressure: Negative
Humidity: 50-75% relative
Equipment Heat Gain: 50 btuh/sf

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
480v power at autoclaves with disconnect swith
Data & Wireless data
Lighting: indirect LED @ 650 LUX
Provide light switches at doors

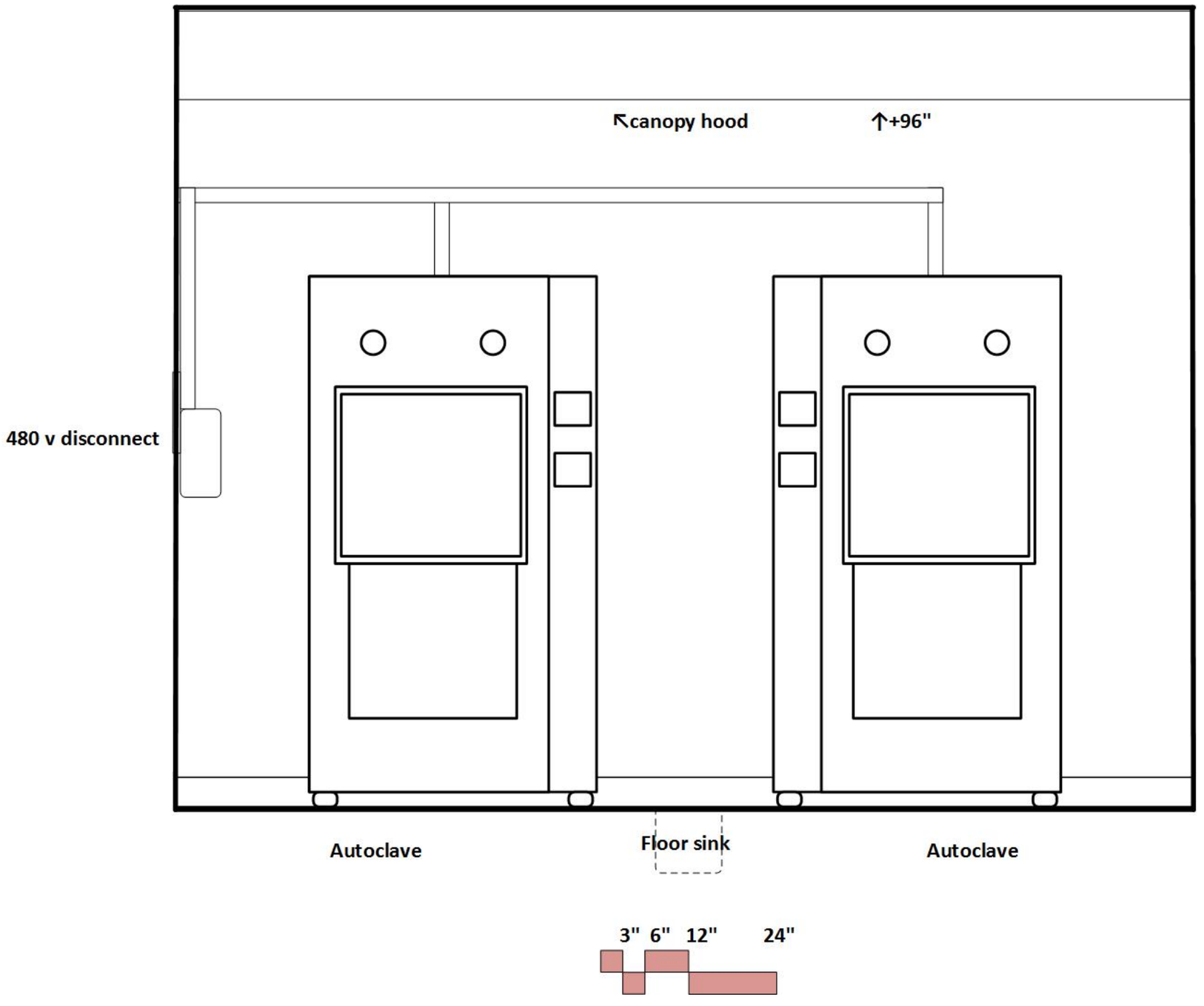
PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers
RO unit for washer rinse cycle
Domestic tepid water and drain at safety shower/eyewash (not shown)
Floor drain at safety shower

CONTRACTOR FURNISHED EQUIPMENT
Laboratory casework- wall cabinets, base cabinets, tall cabinets
Epoxy resin tops and sinks; Faucets & fittings
Autoclaves
Transfer cart
Steam canopy
RO Unit
Undercounter washer
Safety shower/eyewash
Fire Extinguisher

OWNER FURNISHED EQUIPMENT
Carts

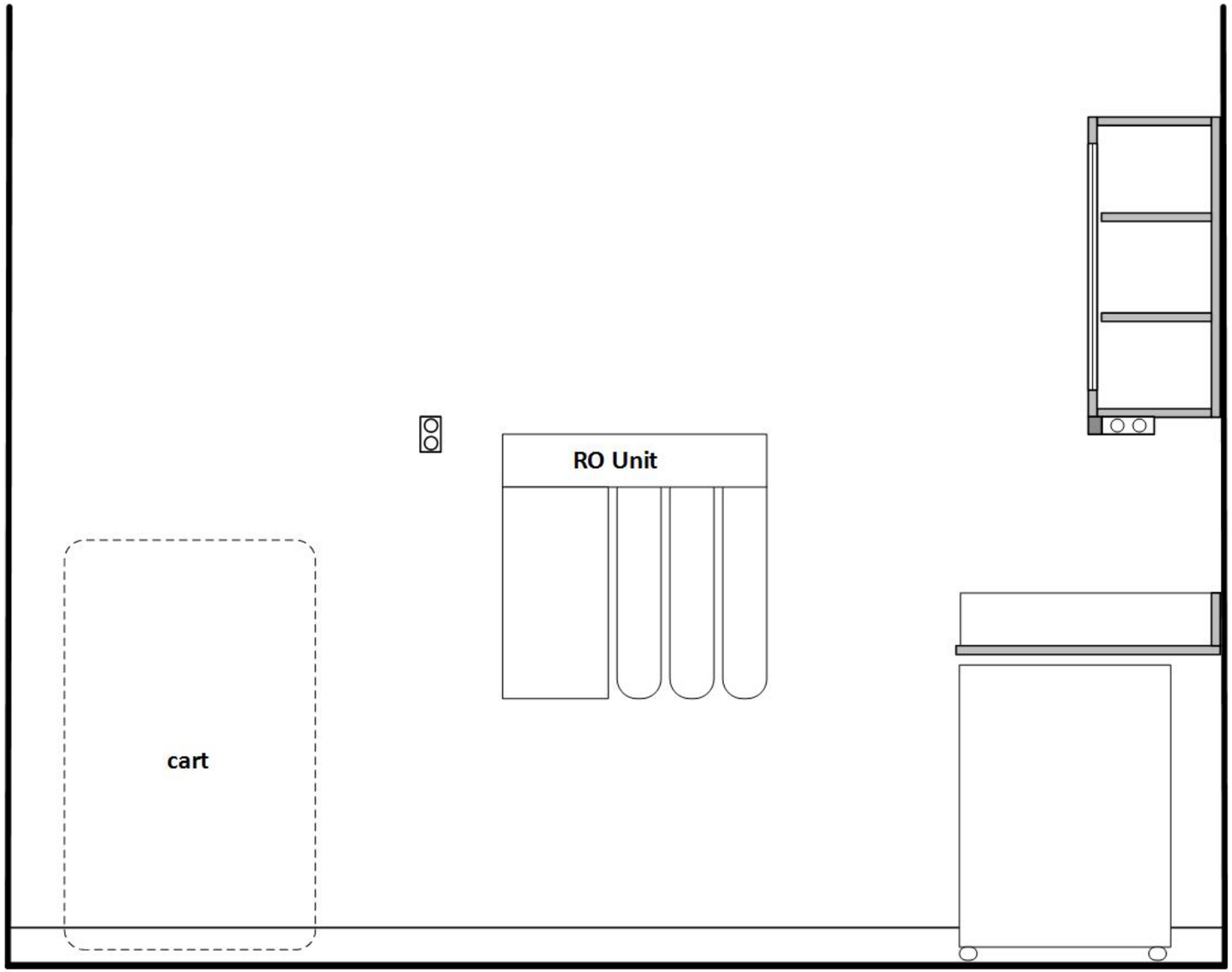
AUTOCLAVE ROOM

Elevation West Wall



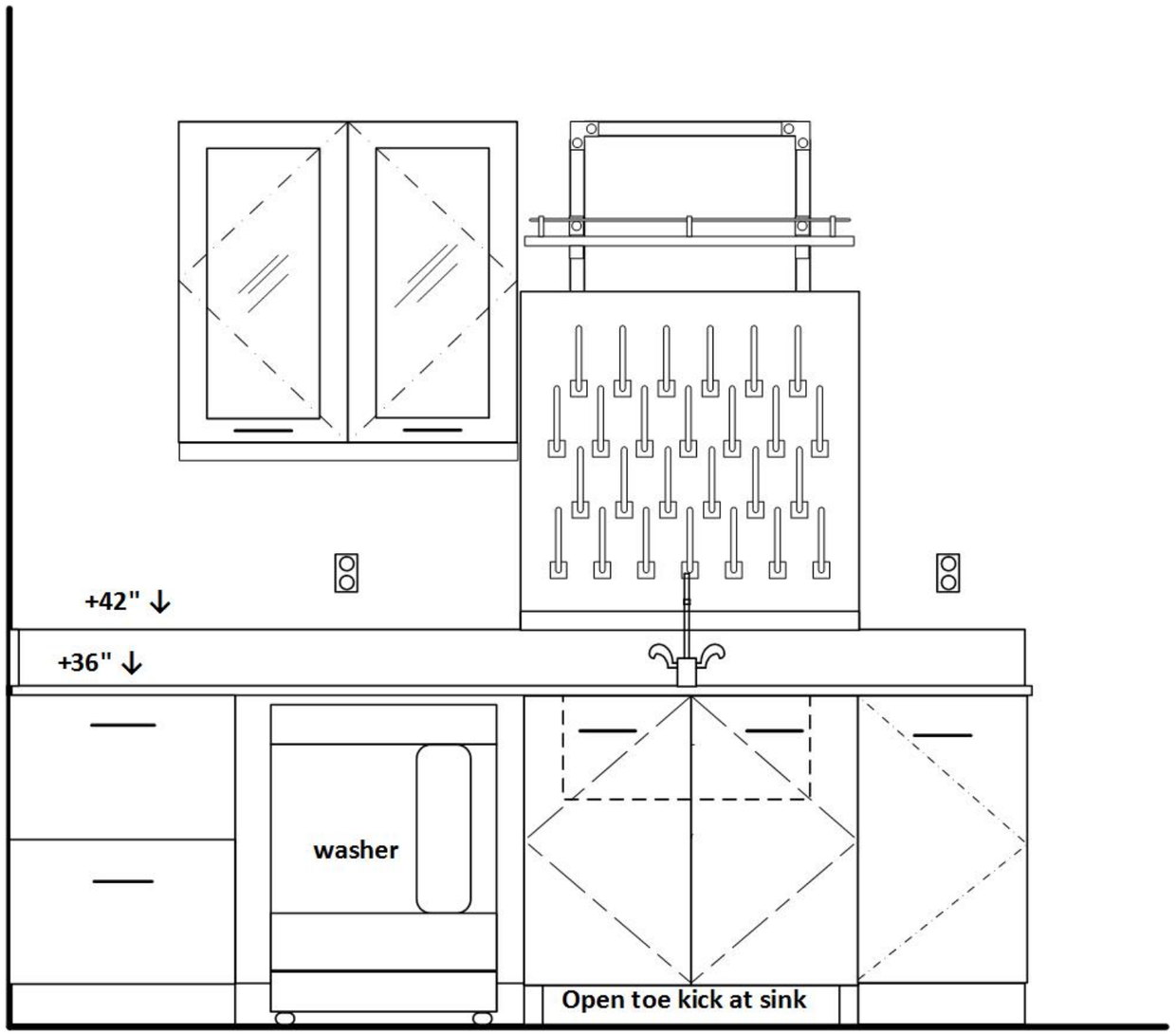
AUTOCLAVE ROOM

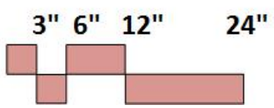
Elevation East Wall



AUTOCLAVE ROOM

Elevation South Wall





AQUATICS LABORATORY SUITE

Quantity: 1 at Level 1 north

ARCHITECTURAL
Occupancy: B
Floor: troweled on epoxy with non-slip finish
Walls: water proof gypsum board and epoxy paint
Fiberglass wall panel finish from floor to 5' above floor
Ceiling: 10' mylar acoustic tile
Doors: 3^6x7^0 with window
Acoustic Attenuation: NC 35 or less
Security: key or card reader access

STRUCTURAL
Vibration attenuation: 2,000 microinches per second or less

MECHANICAL
Hours of operation: 24/7/365
Temperature: 68-72 deg. F, +/- 2 deg. F
100% exhaust- no recirculation of air
Minimum 6 air changes per hour occupied; 4 air changes per hour unoccupied
Pressure: Negative
Humidity: 50-75% relative
Equipment Heat Gain: 35 btuh/sf

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit) equipment, including aquaria racks, on emergency power (e)
Dedicated circuits at equipment space (d)
Power reels at ceiling
Data & Wireless data
Lighting: indirect LED @ 650 LUX
Provide light switches at doors

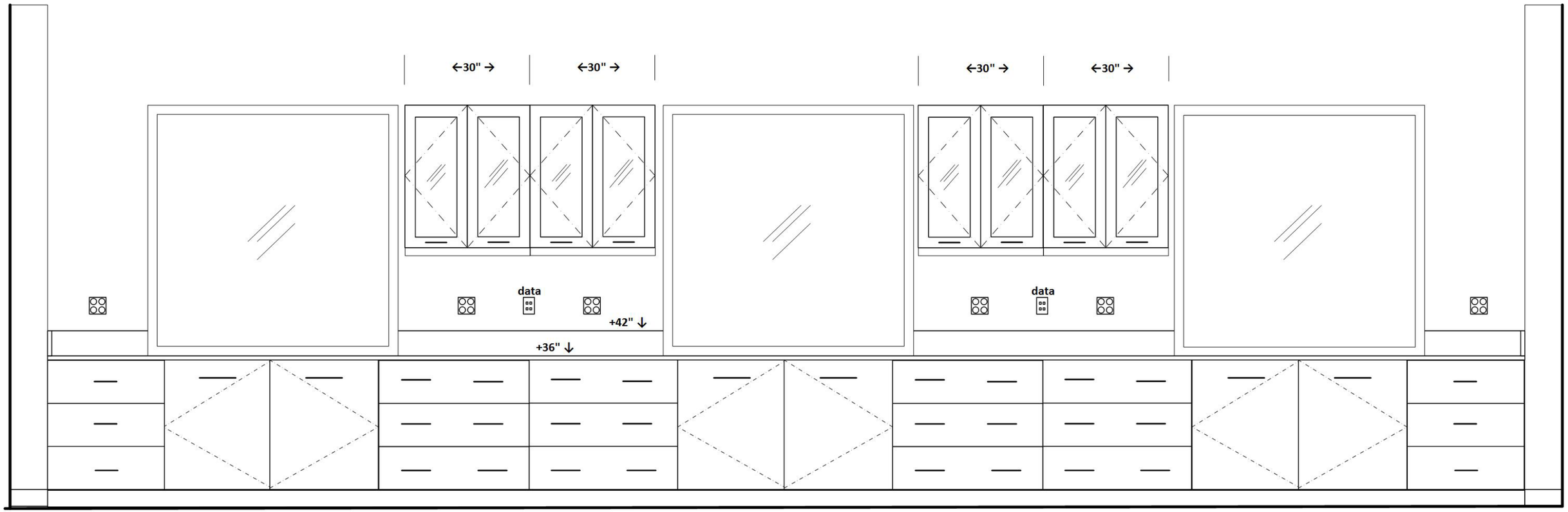
PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers
Cold water stub out at perimeter for tank systems and RO systems

CONTRACTOR FURNISHED EQUIPMENT
Phenolic resin casework- wall cabinets, base cabinets, tall cabinets
Stainless steel sinks
Fire Extinguisher

OWNER FURNISHED EQUIPMENT
Chairs
Benchtop analytical instruments
Aquaria racks
Aquaria

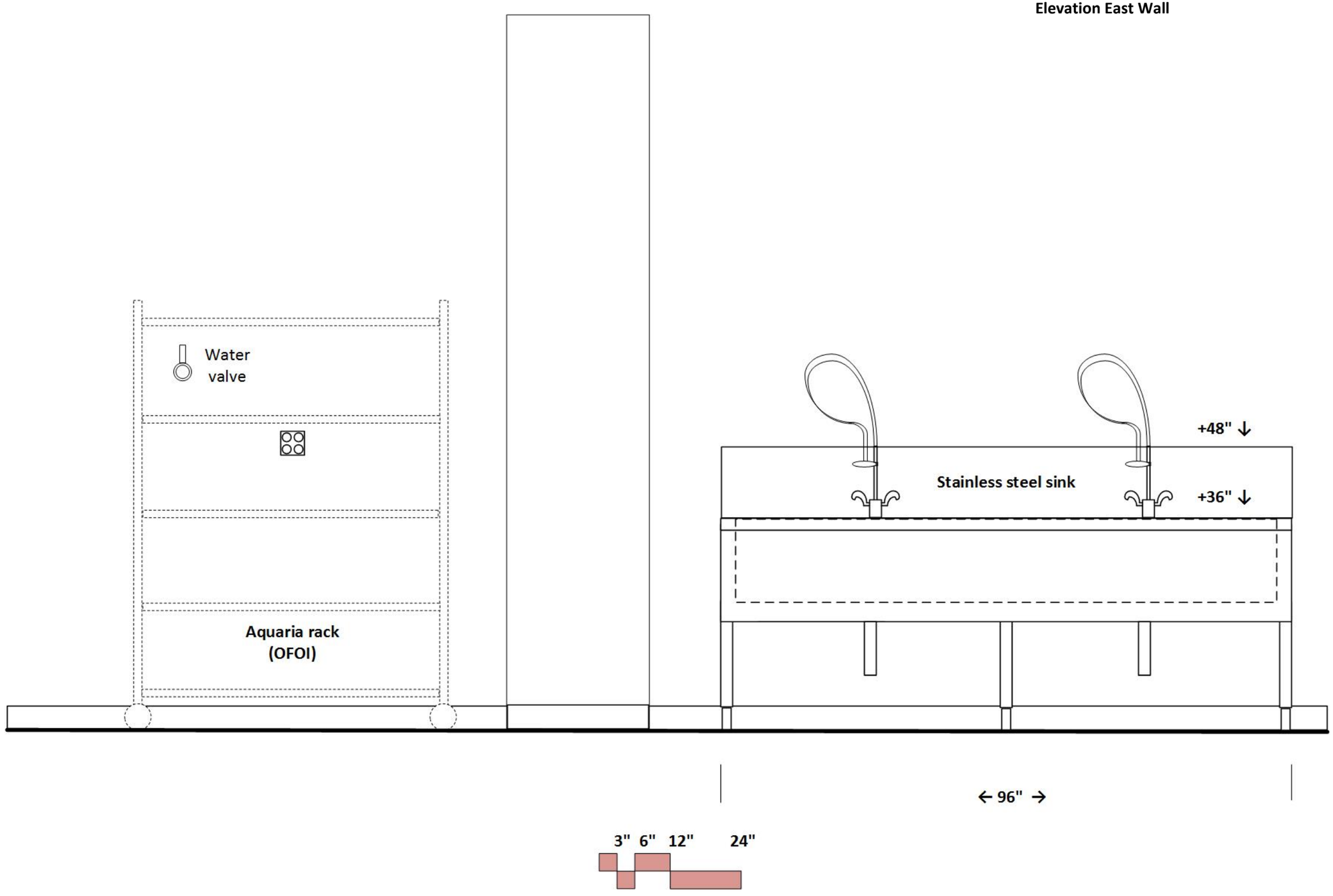
AQUATICS LABORATORY SUITE

Elevation North Wall



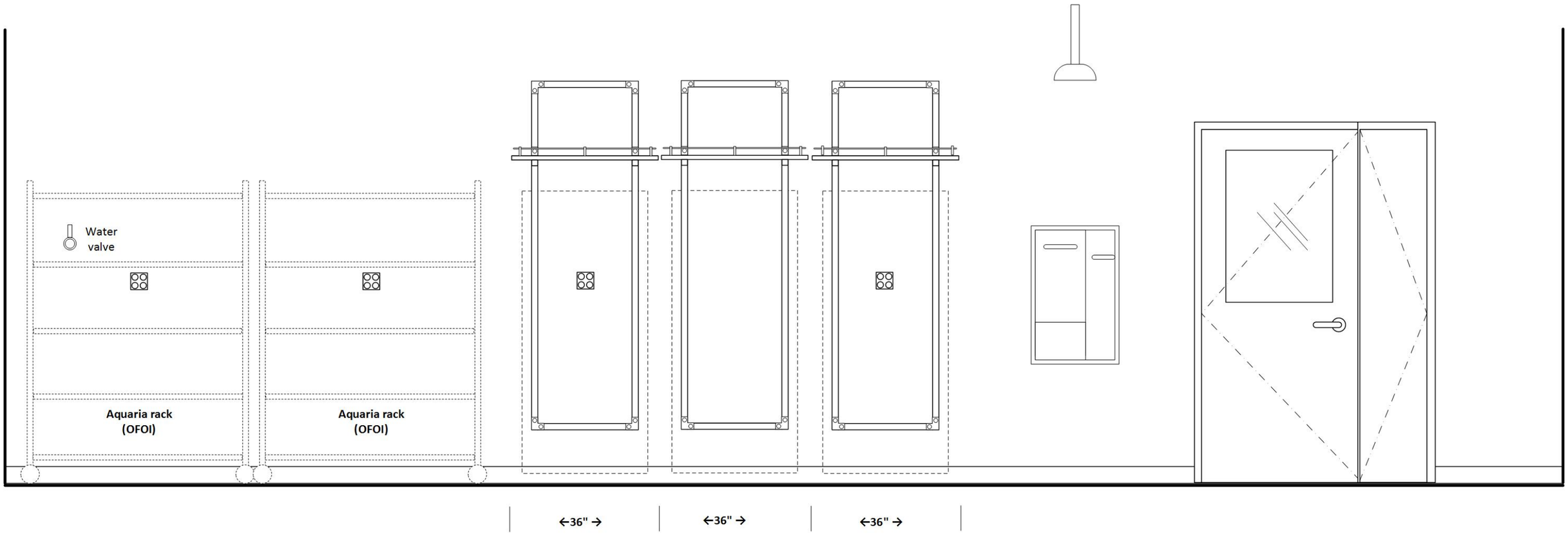
AQUATICS LABORATORY SUITE

Elevation East Wall



AQUATICS LABORATORY SUITE

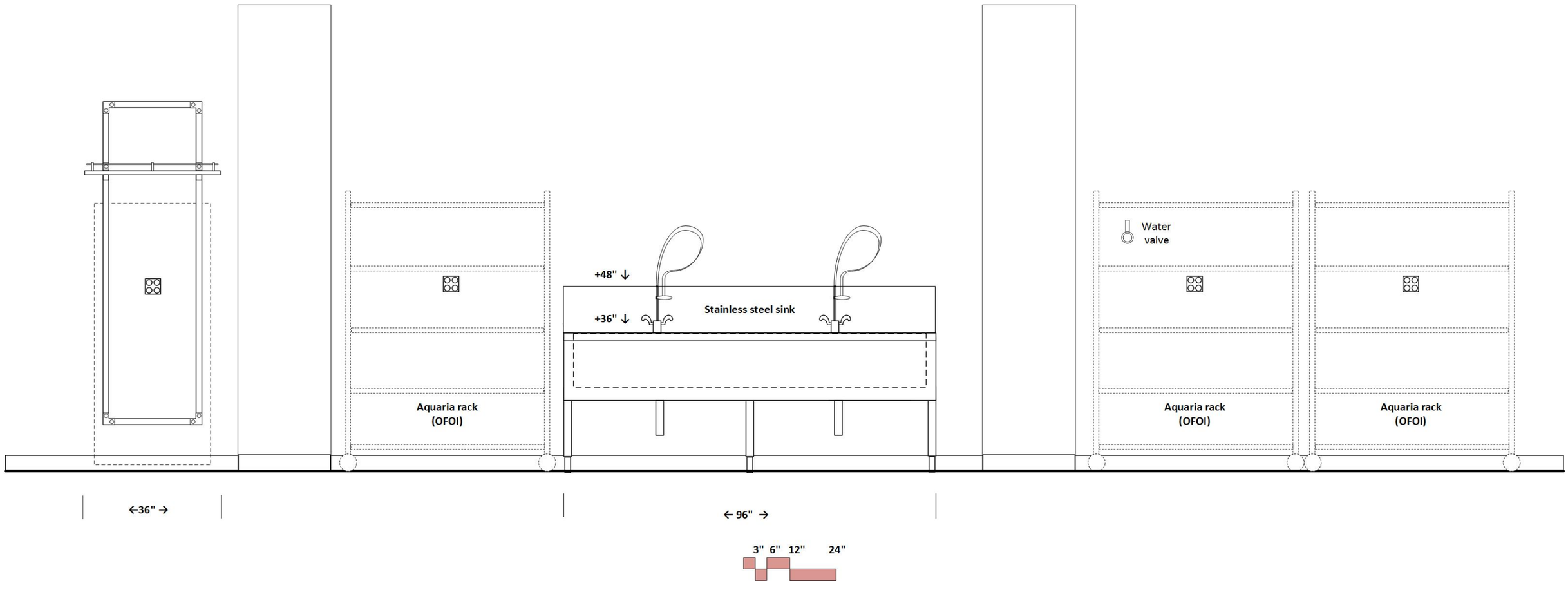
Elevation South Wall



3" 6" 12" 24"

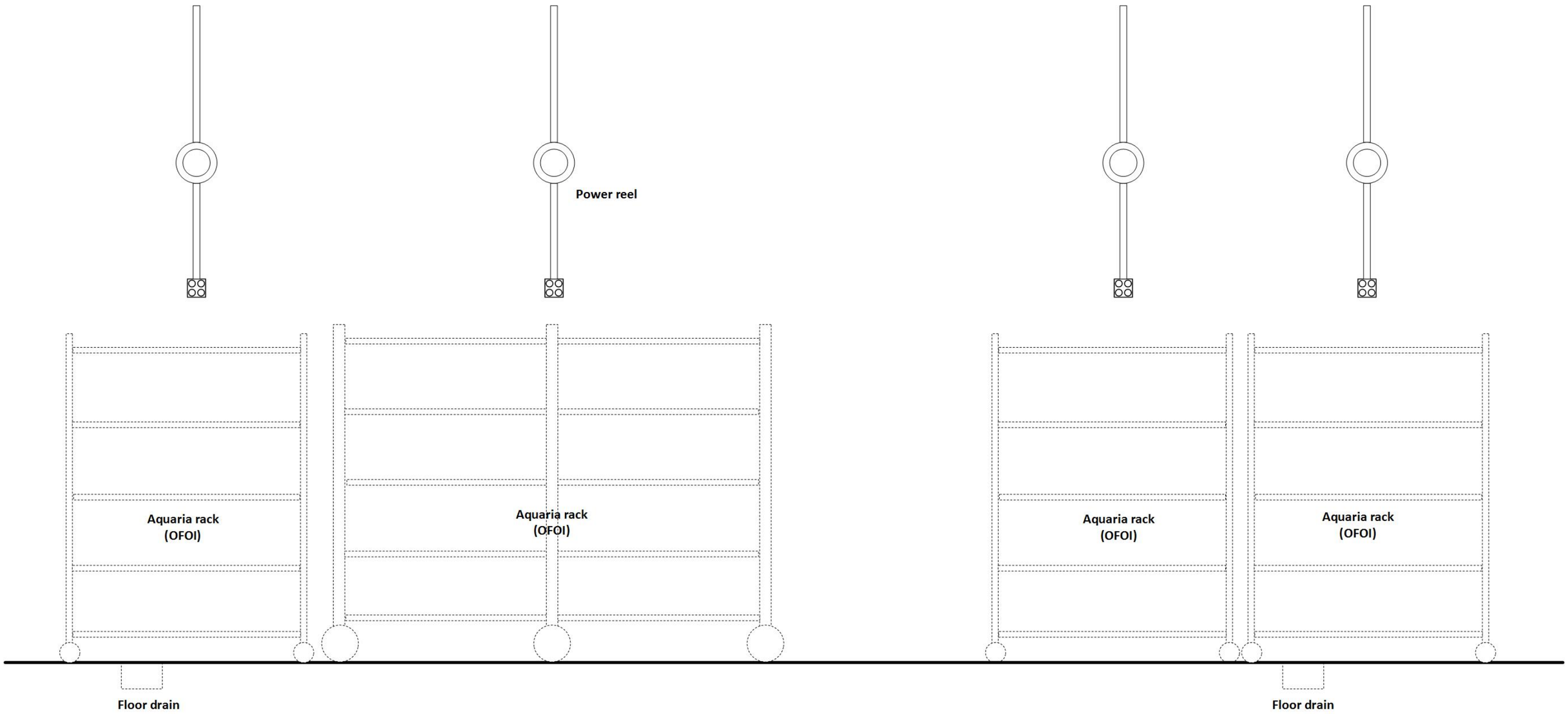
AQUATICS LABORATORY SUITE

Elevation West Wall



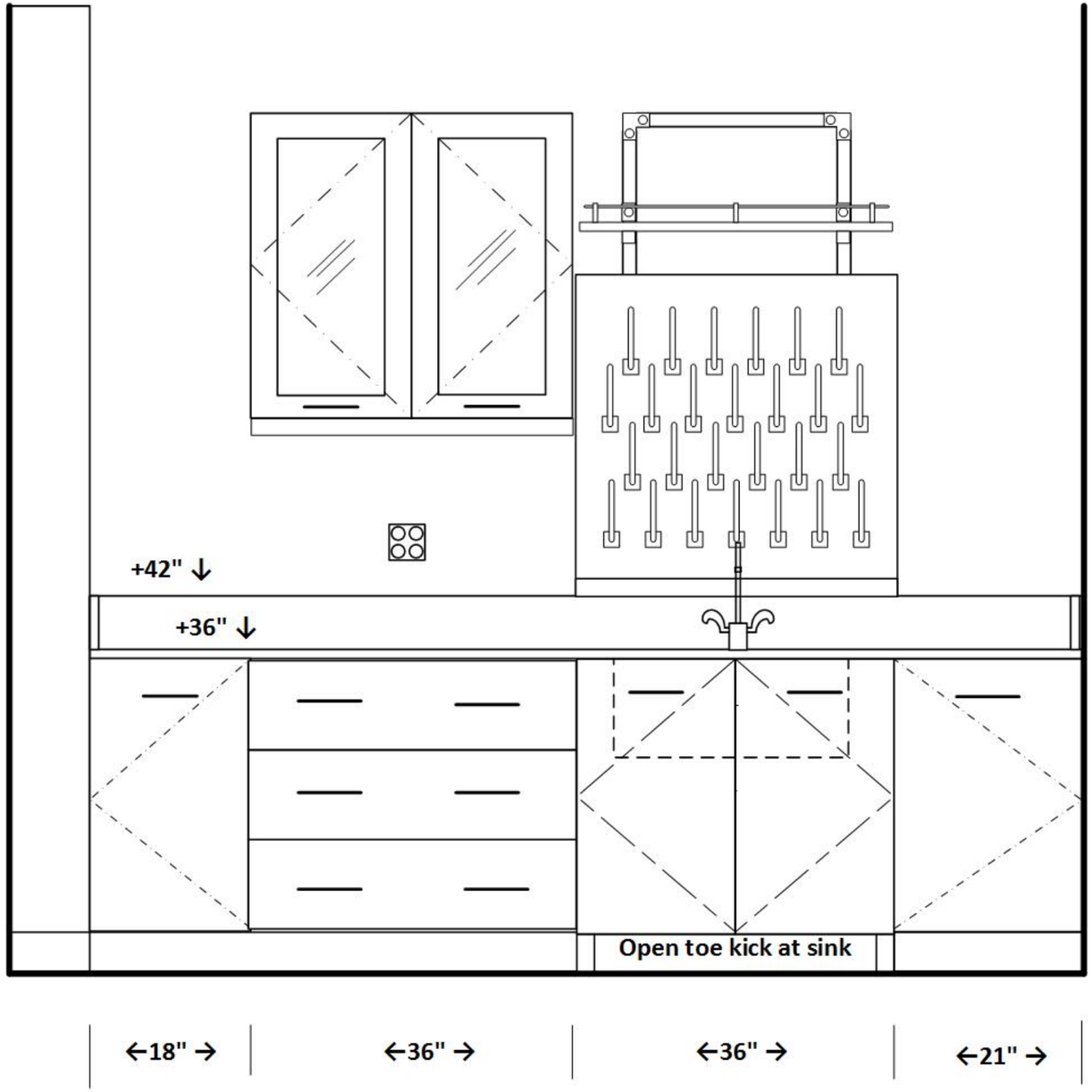
AQUATICS LABORATORY SUITE

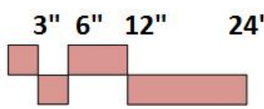
Elevation Center Island looking west



AQUATICS LABORATORY SUITE

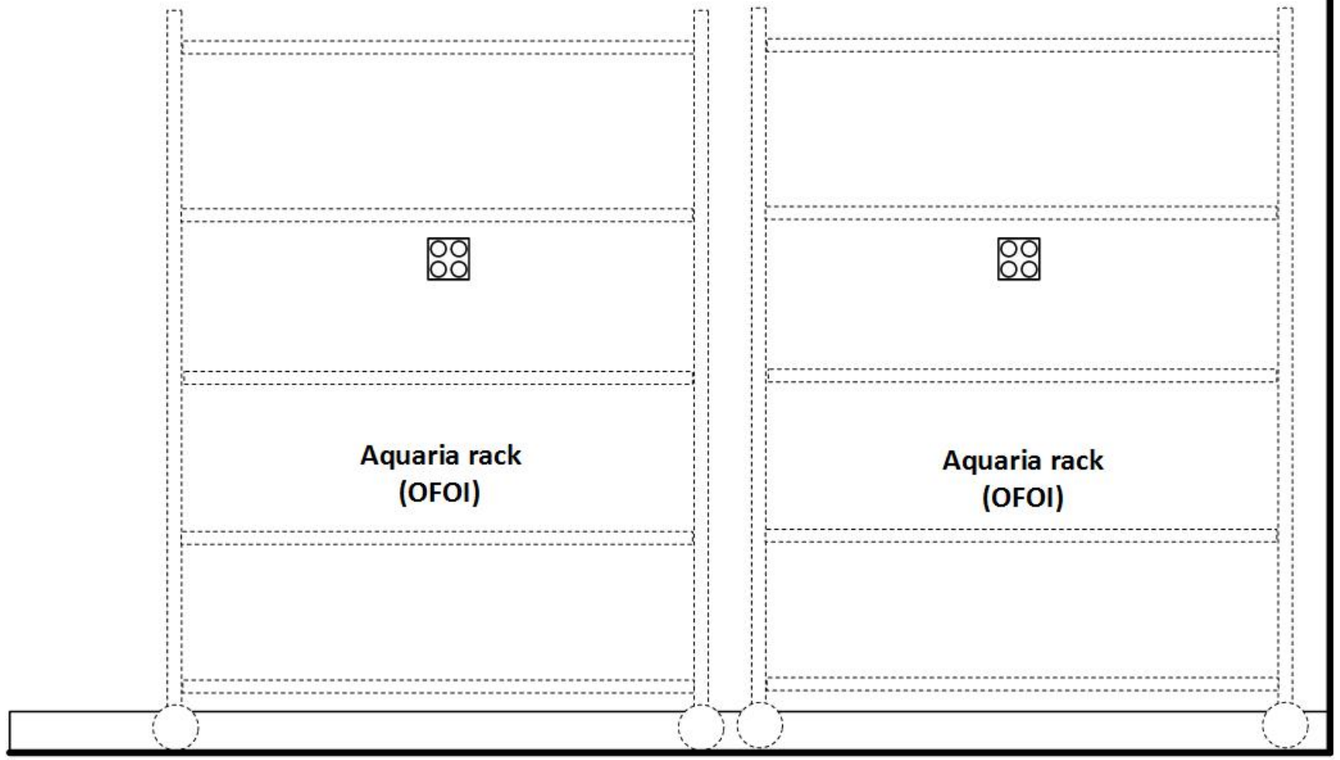
Elevation Procedure Room North Wall

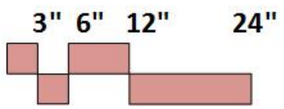




AQUATICS LABORATORY SUITE

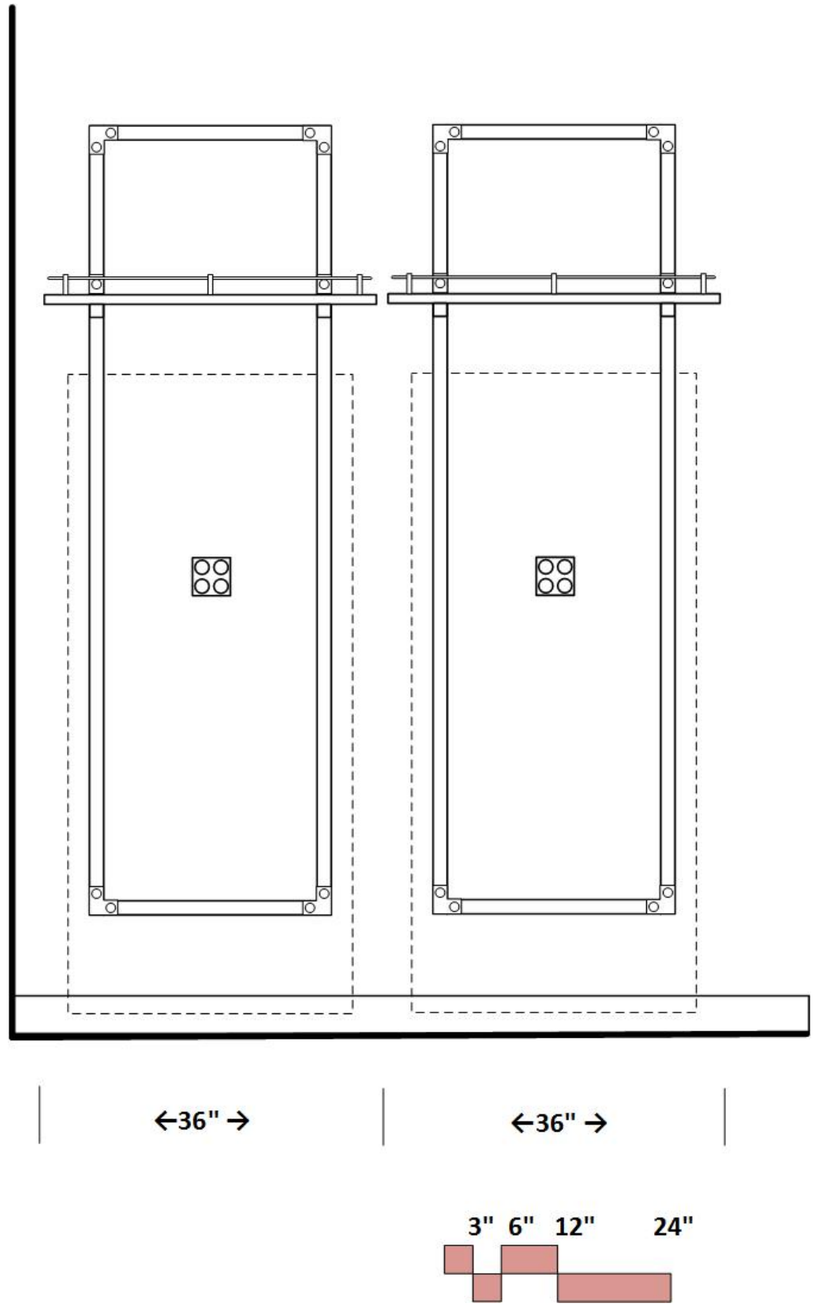
Elevation Procedure Room East Wall

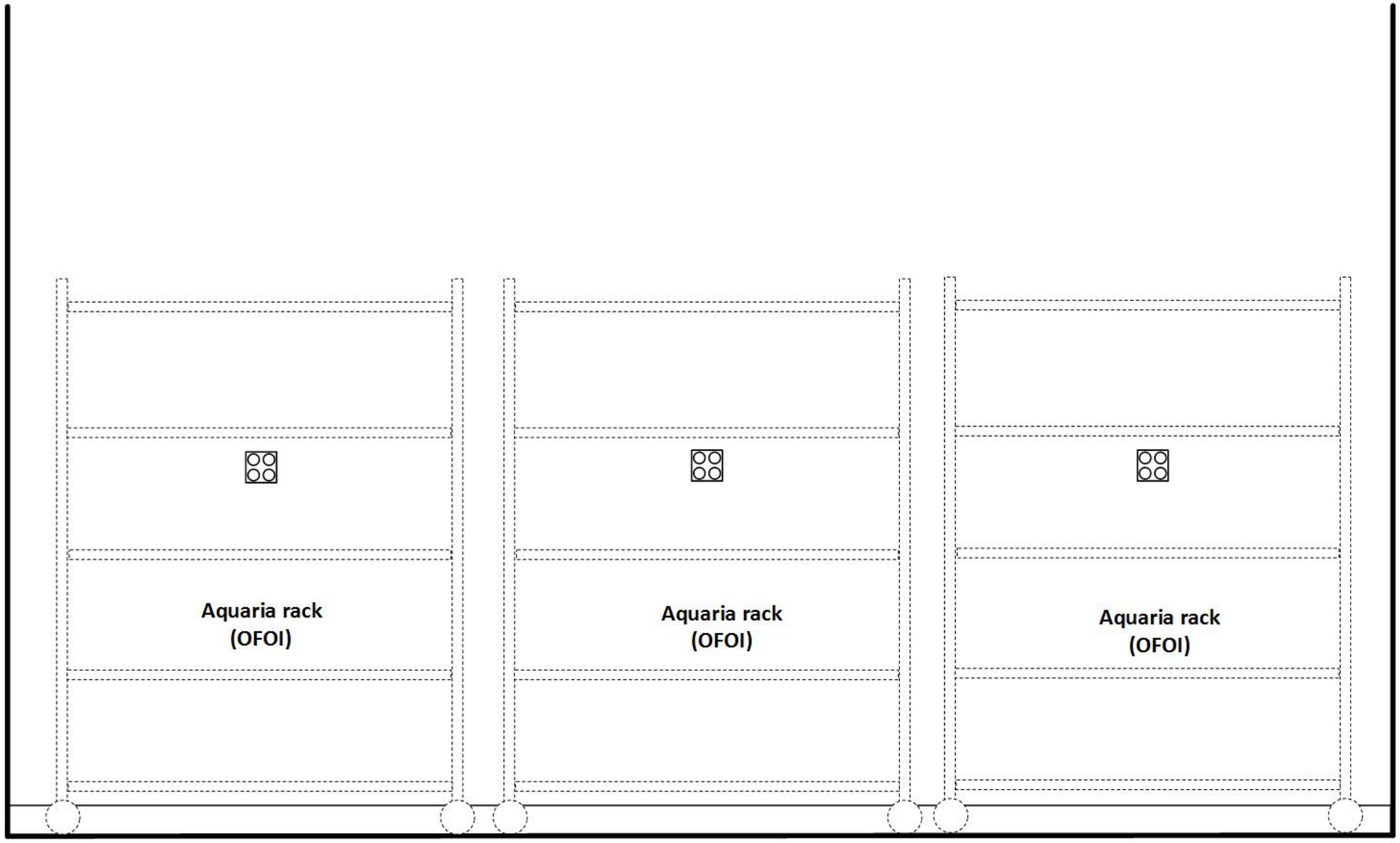




AQUATICS LABORATORY SUITE

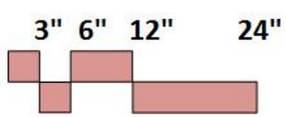
Elevation Procedure Room West Wall

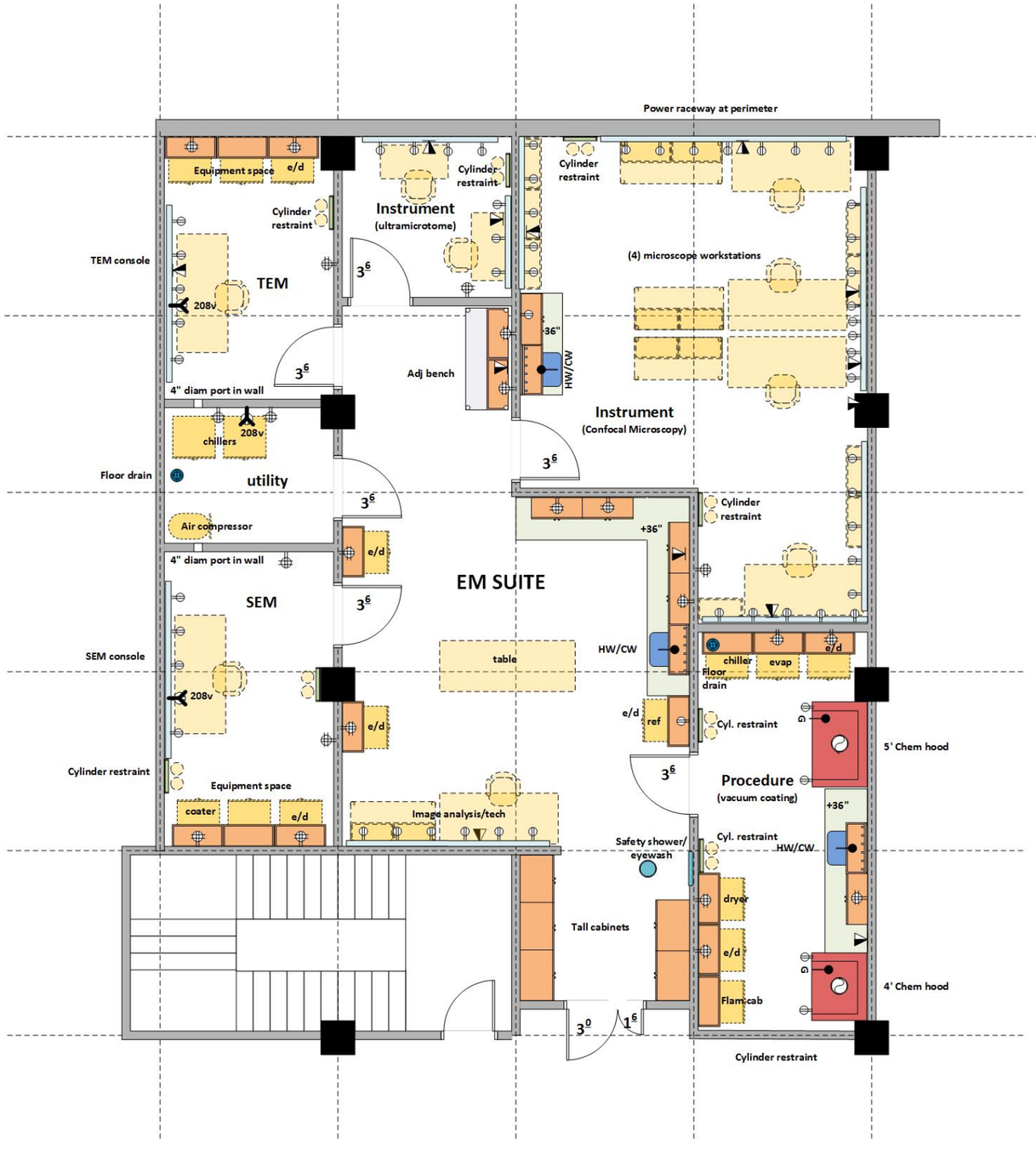



Aquaria rack
(OFOI)
Aquaria rack
(OFOI)
Aquaria rack
(OFOI)
3" 6" 12" 24"

AQUATICS LABORATORY SUITE

Elevation Light Control West Wall





EM LABORATORY SUITE

Quantity: 1 at Level 1 north

ARCHITECTURAL
Occupancy: B
Floor: vinyl composition tile
Walls: gypsum board and enamel paint
4" diameter port in walls between Utility and SEM and TEM for chilled water supply return piping
Ceiling: 10' acoustic tile
Doors: $3^0/1^6x7^0$ pair with window at corridor and main lab entry
3^6x7^0 with window
Windows: none required; provide spandrel glass for any exterior windows
Acoustic Attenuation: NC 45 or less
Security: key or card reader access

STRUCTURAL
Vibration attenuation: 500 microinches per second or less

MECHANICAL
Hours of operation: 24/7/365
Temperature: 68-72 deg. F, +/- 2 deg. F
100% exhaust- no recirculation of air
Minimum 6 air changes per hour occupied; 4 air changes per hour unoccupied
Pressure: Negative
Humidity: 50-75% relative
Equipment Heat Gain: 50 btuh for TEM, Utility, and SEM rooms; 35 Btuh for all other rooms in EM Suite.

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
208v30a1ph power at equipment space in lab support rooms
equipment (ref's; freezers) space on emergency power (e)
Dedicated circuits at equipment space (d)
Data & Wireless data
Lighting: indirect LED @ 650 LUX
Provide light switches at doors
Fume hood exhaust on emergency power

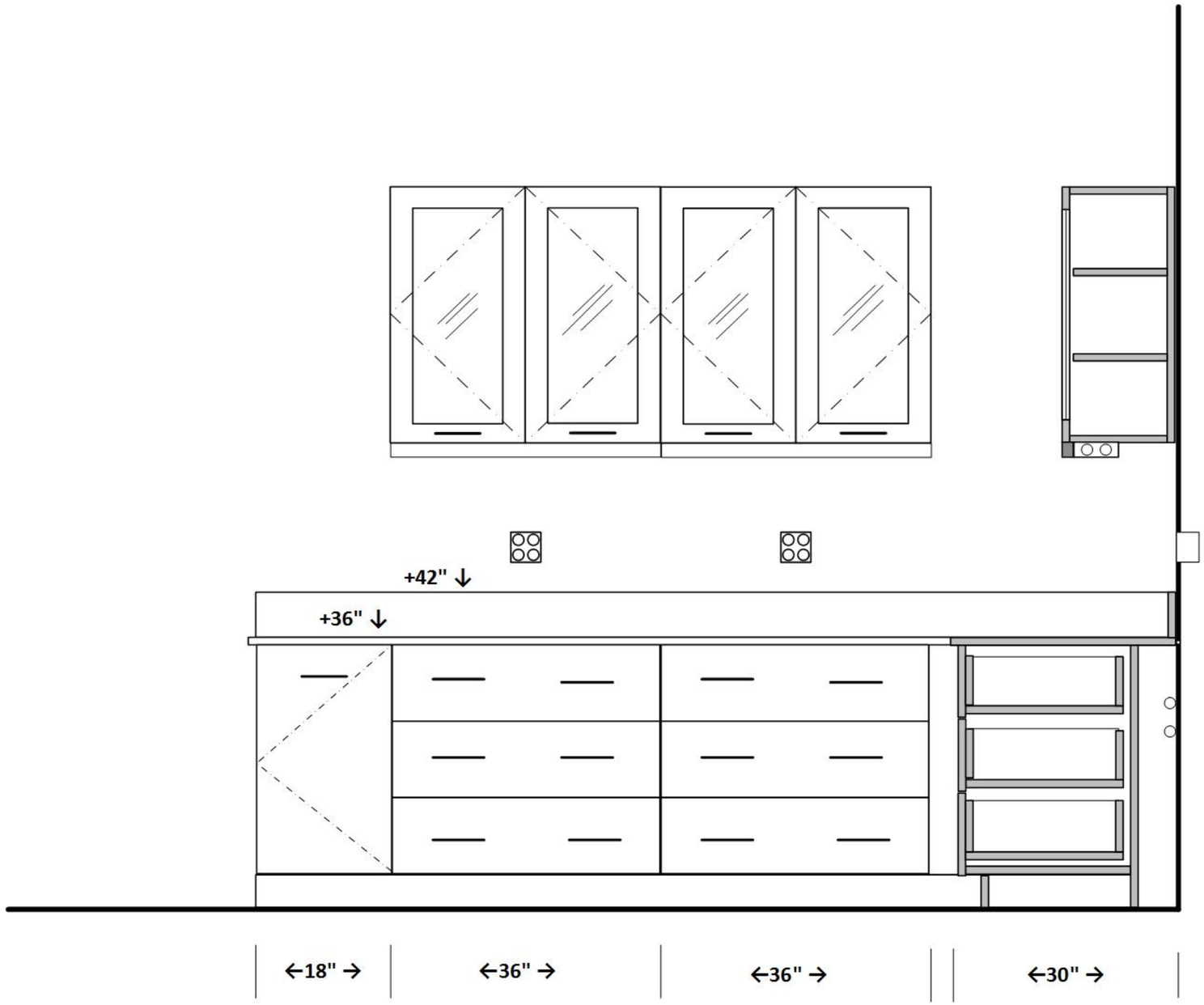
PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers
Natural gas at fume hoods
Cold water at one sink for local water polisher
Domestic tepid water and drain at safety shower/eyewash
Floor drain at safety shower

CONTRACTOR FURNISHED EQUIPMENT
Laboratory casework- wall cabinets, base cabinets, tall cabinets
Epoxy resin tops and sinks; Faucets & fittings
Chemical fume hoods
Safety shower/eyewash
Fire Extinguisher

OWNER FURNISHED EQUIPMENT
Chairs
Benchtop analytical instruments
Scientific equipment
Refrigerators
Microscope work stations; Electron microscopes
Chilled water return/supply piping from Utility Room to SEM and TEM
Chillers- air cooled

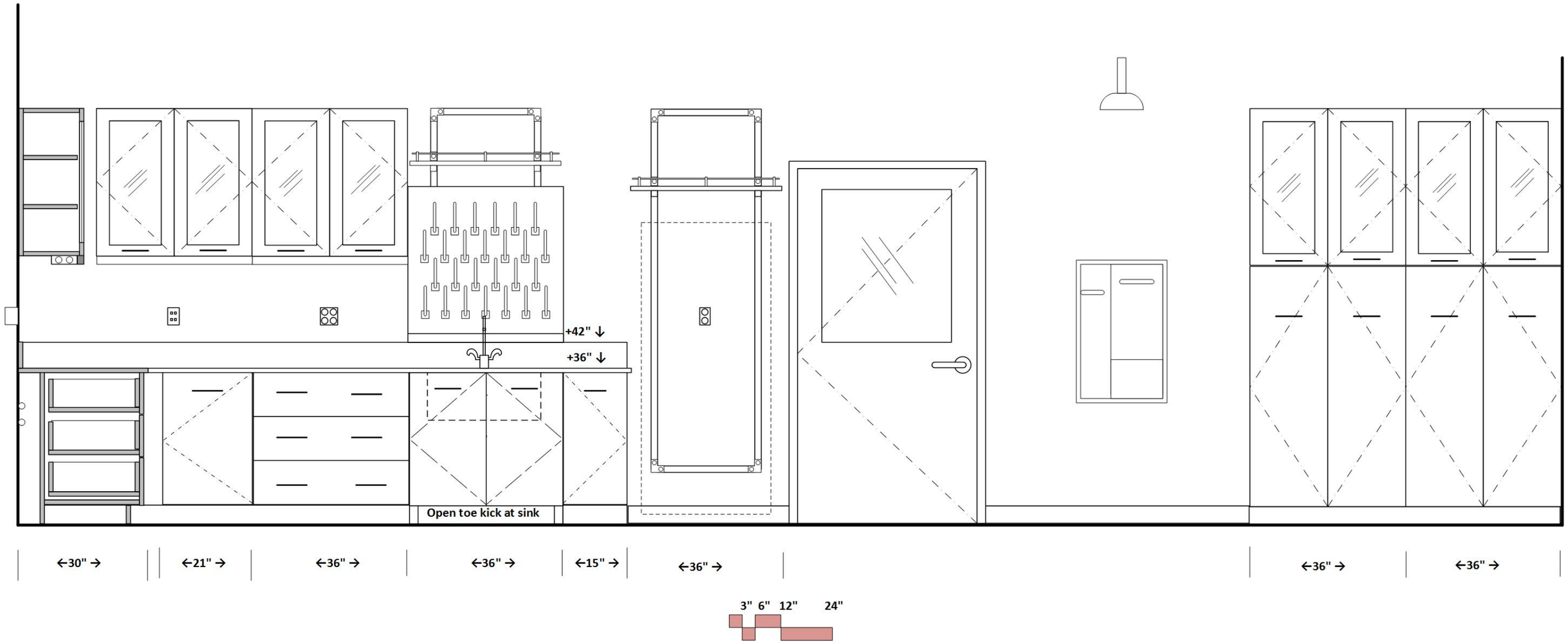
EM LABORATORY SUITE

Elevation EM Suite North Wall



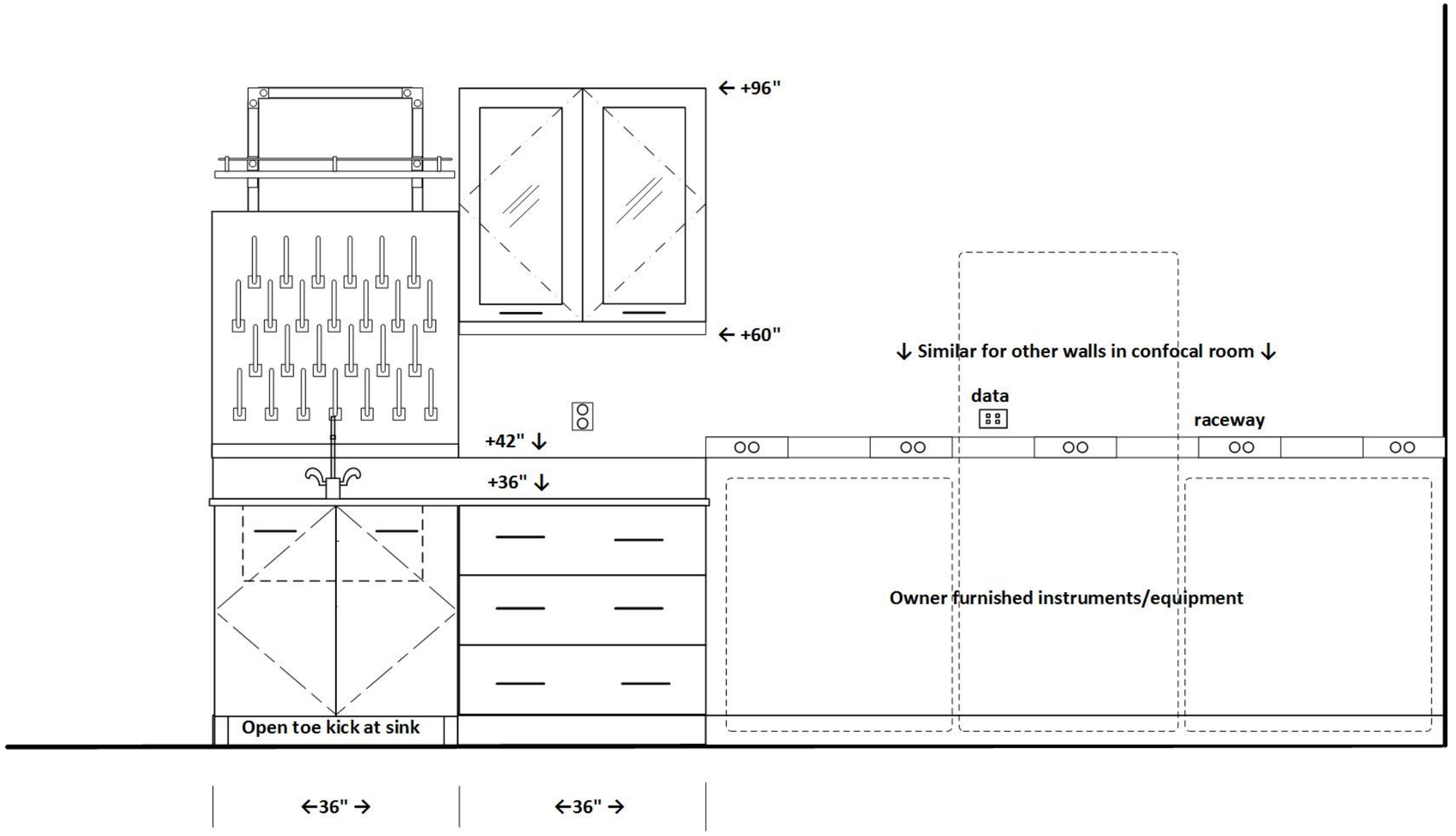
EM LABORATORY SUITE

Elevation EM Suite East Wall



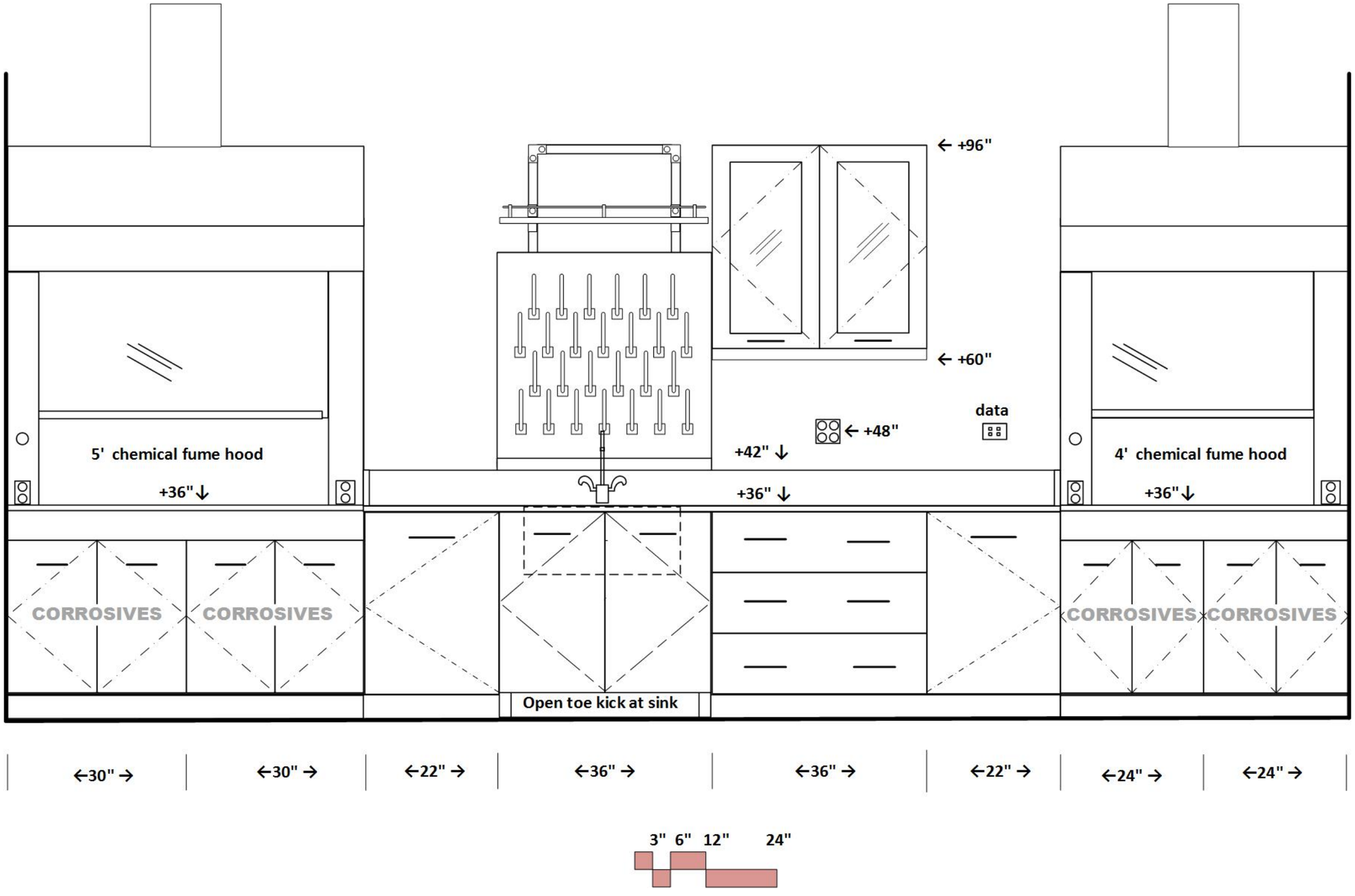
EM LABORATORY SUITE

Elevation Instrument (Confocal Microscopy) West Wall



EM LABORATORY SUITE

Elevation Procedure Room East Wall



SHARED TEACHING LABORATORY
& ADJACENT PREP ROOMS
Island Scheme
Location: level 2 North- west side

ARCHITECTURAL
Occupancy: B
Floor: vinyl composition tile;
Sheet vinyl with integral coved based in west side prep room which are above TEM and SEM on 1st floor below
Walls: gypsum board and enamel paint
Ceiling: 10' acoustic tile in lab; 9' in prep rooms
Doors: 3^6x7^0 with window
Acoustic Attenuation: NC 45 or less
Security: key or card reader access

STRUCTURAL
Vibration attenuation: 2,000 microinches per second or less

MECHANICAL
Hours of operation: 6 am to 10 pm
Temperature: 72 deg. F, +/- 2 deg. F
100% exhaust- no recirculation of air
Minimum 6 air changes per hour occupied; 4 air changes per hour unoccupied
Pressure: Negative
Humidity: 50-75% relative
Equipment Heat Gain: 20 btuh/sf

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
equipment (ref's; freezers) space on emergency power (e)
Dedicated circuits at equipment space (d)
Data & Wireless data
Lighting: indirect LED @ 650 LUX
Provide light switches at doors

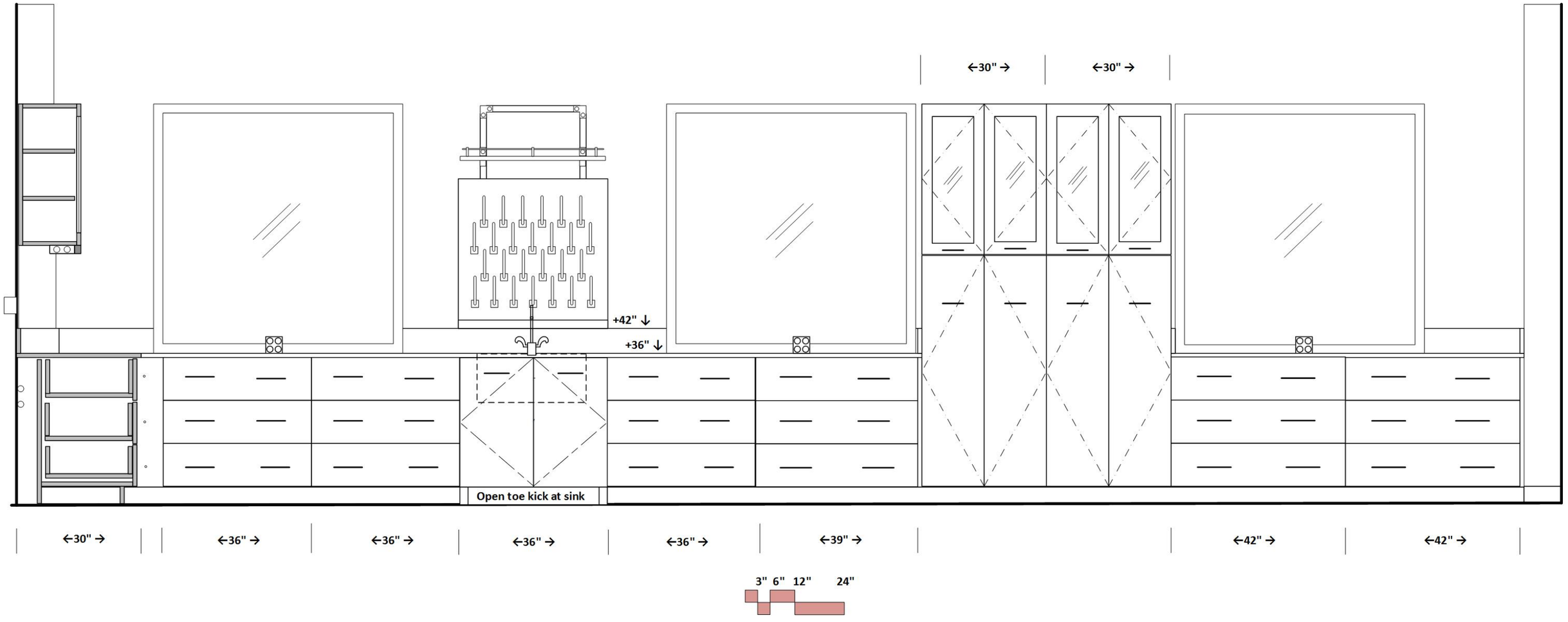
PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers
Cold water valve at one prep sink for future water polisher
Gas and vacuum at island benches
Gas at fume hood
Domestic tepid water and drain at safety shower/eyewash
Floor drain at safety shower

CONTRACTOR FURNISHED EQUIPMENT
Laboratory casework- wall cabinets, base cabinets, tall cabinets
Epoxy resin tops and sinks; Faucets & fittings
5' chemical fume hood
Marker boards
Safety shower/eyewash
Fire Extinguisher

OWNER FURNISHED EQUIPMENT
Chairs
Benchtop analytical instruments
Scientific equipment
Refrigerators; incubators
Flat panel monitors at marker board wall
Biological safety cabinets- Class II Type A (no external exhaust)

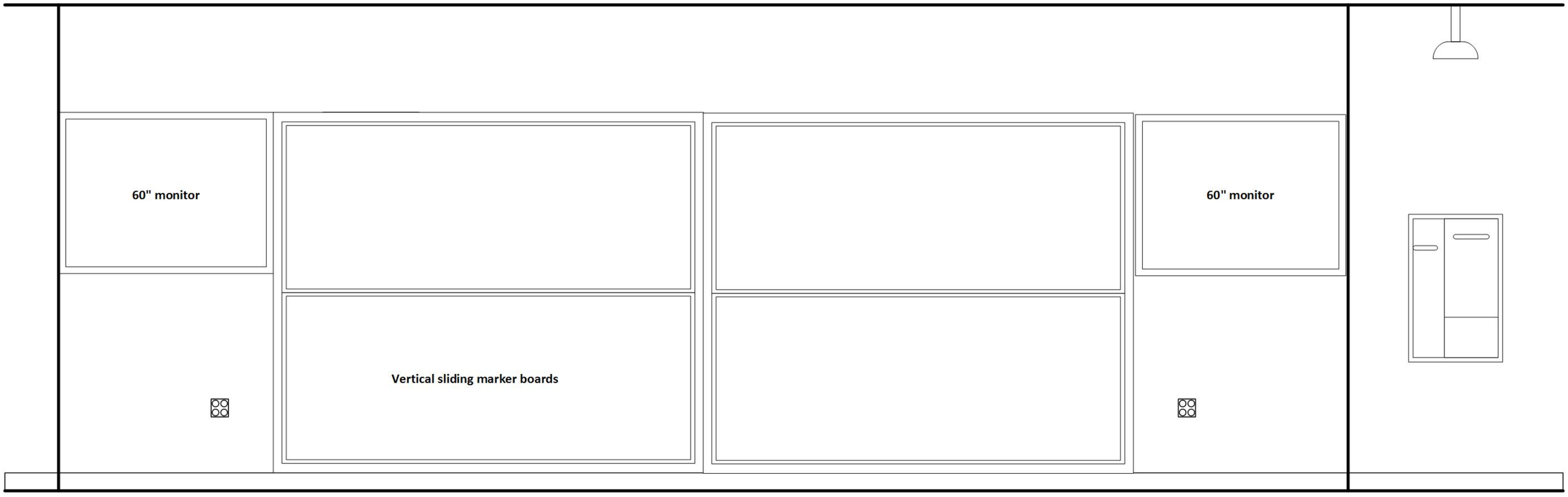
SHARED TEACHING LABORATORY

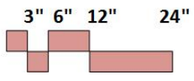
Elevation Teaching Lab- north wall



SHARED TEACHING LABORATORY

Elevation Teaching Lab- east wall



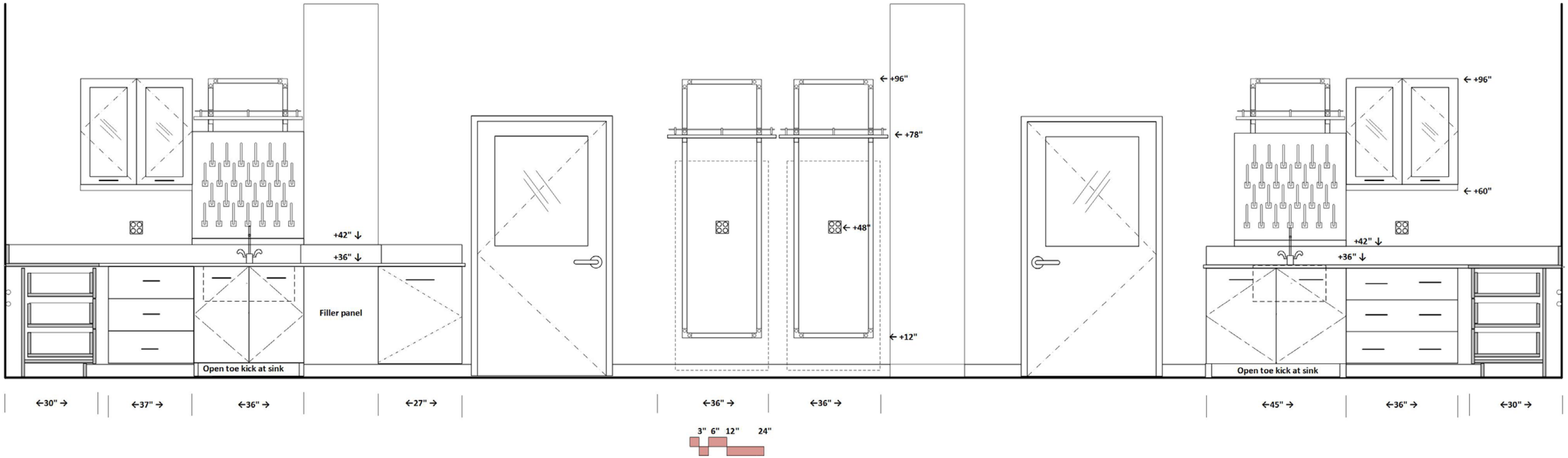


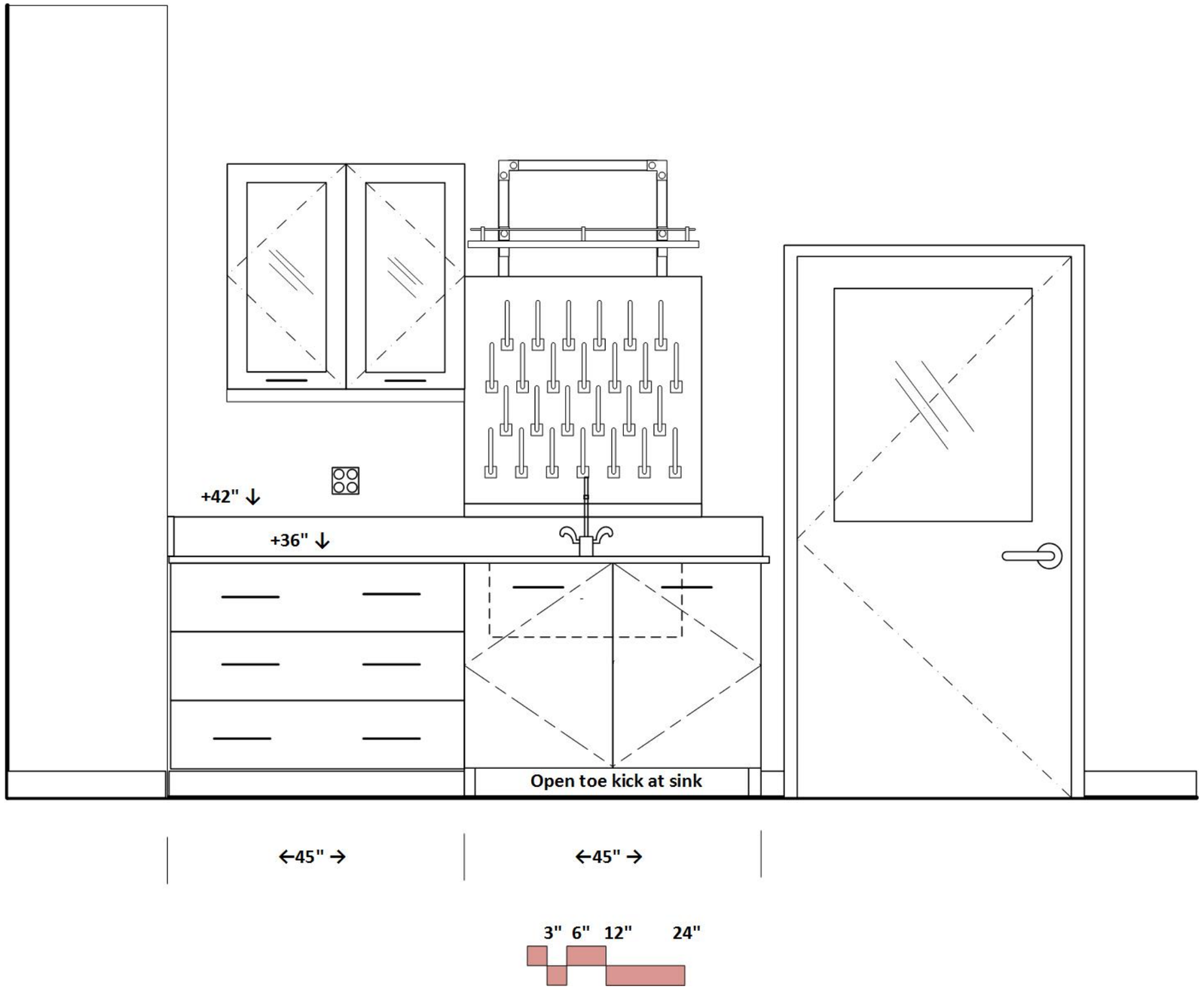
SHARED TEACHING LABORATORY

Elevation Teaching Lab- south wall

SHARED TEACHING LABORATORY

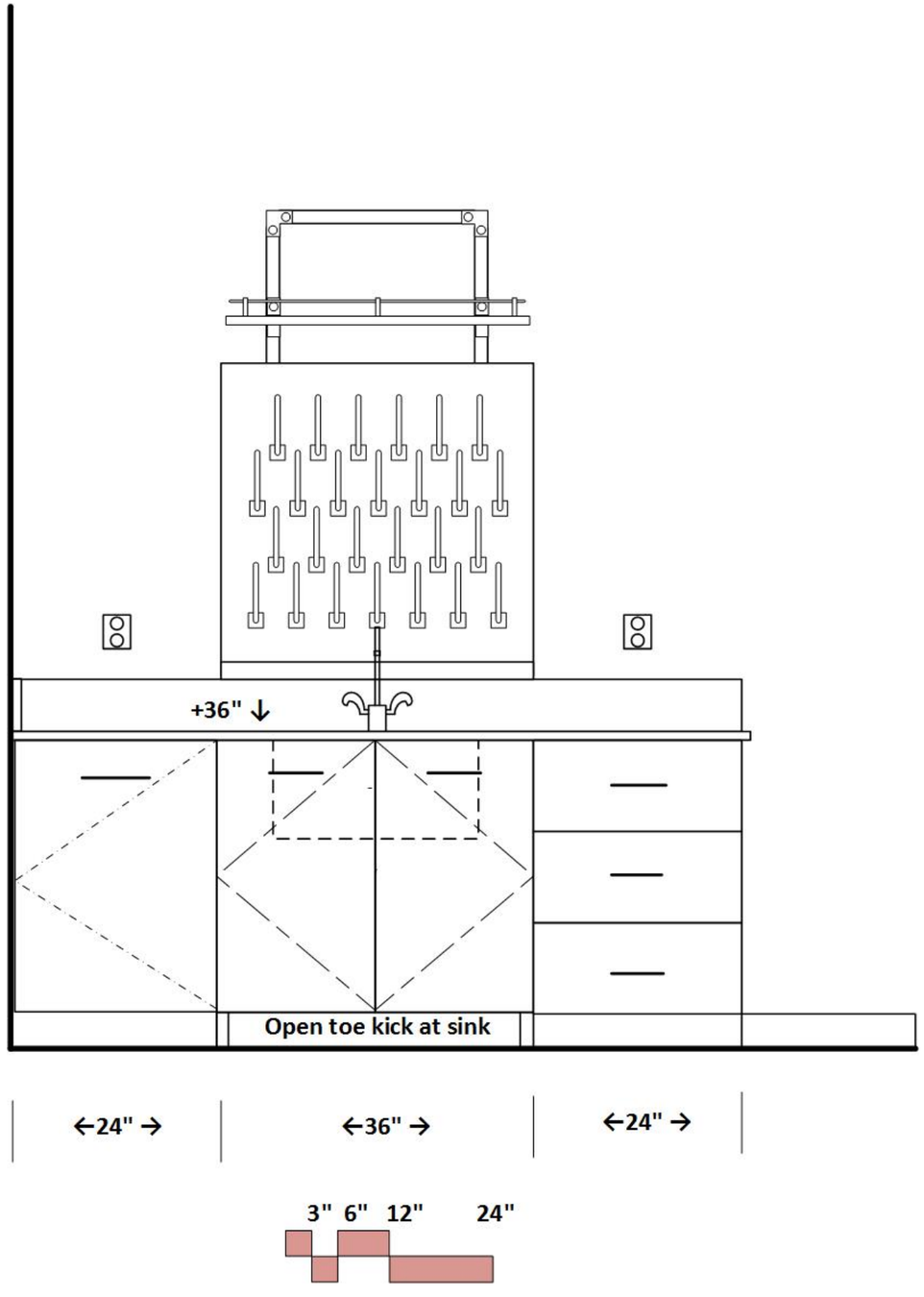
Elevation Teaching Lab- west wall




+42" ↓
+36" ↓
Open toe kick at sink
←45" →
←45" →
3" 6" 12" 24"

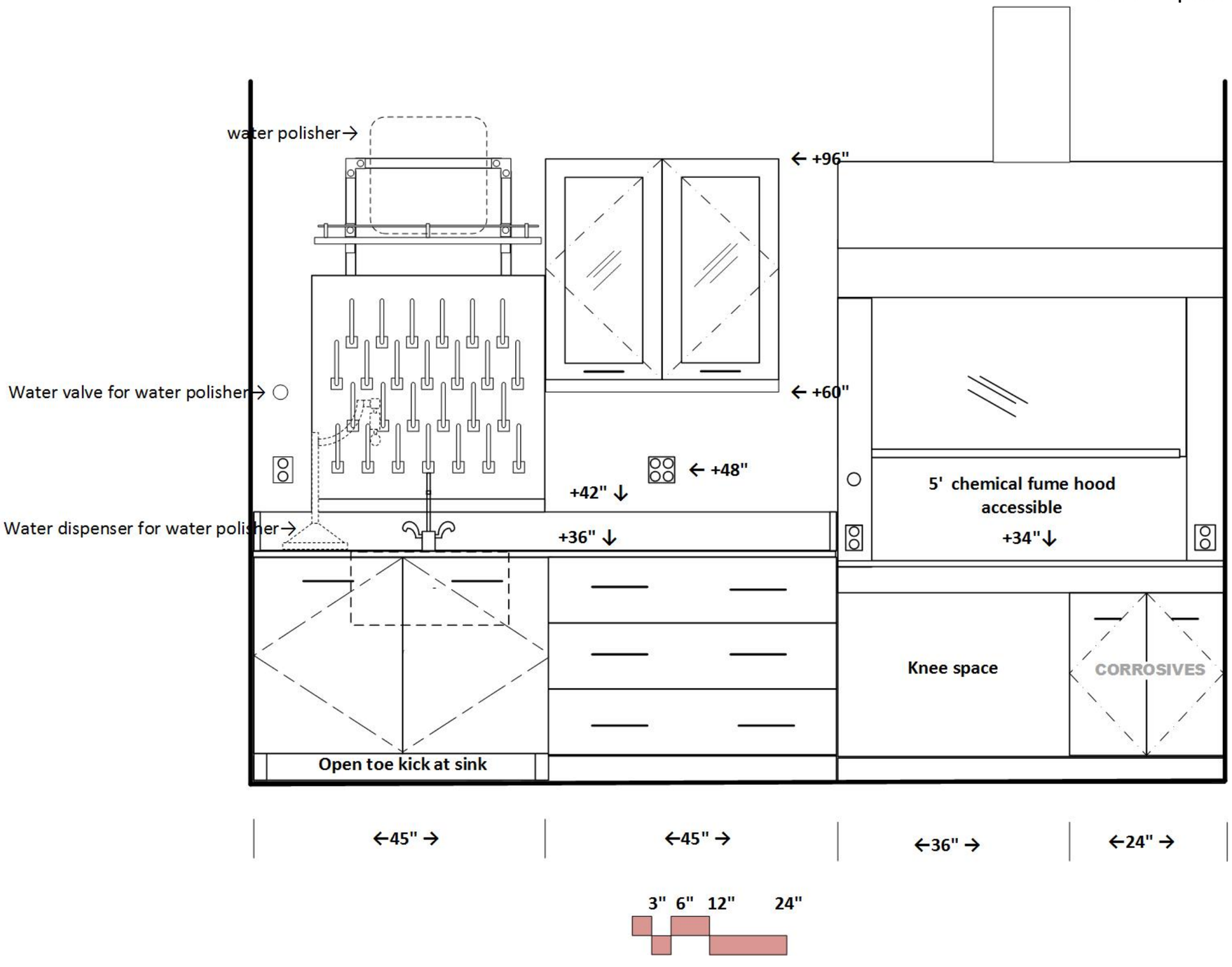
SHARED TEACHING LABORATORY

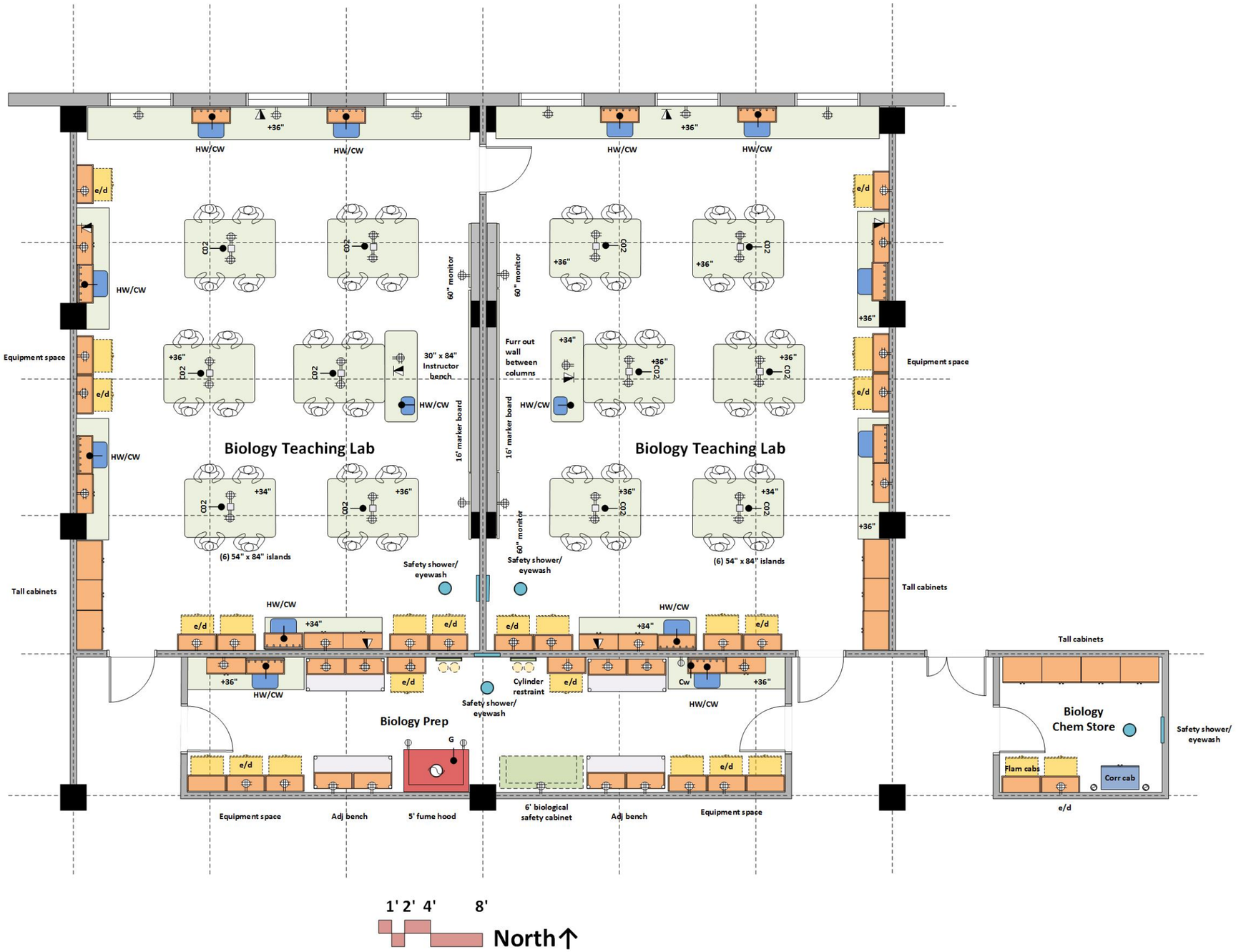
Elevation Prep Center- east wall



SHARED TEACHING LABORATORY

Elevation Prep South- north wall





BIOLOGY TEACHING LABORATORIES

& ADJACENT PREP ROOMS

Island Scheme

Location: level 1 North

ARCHITECTURAL
Occupancy: B
Floor: vinyl composition tile
Walls: gypsum board and enamel paint
Ceiling: 10' acoustic tile in labs; 9' in prep rooms
Doors: $3^6 x 7^0$ with window
Acoustic Attenuation: NC 45 or less
Security: key or card reader access

STRUCTURAL
Vibration attenuation: 2,000 microinches per second or less

MECHANICAL
Hours of operation: 6 am to 10 pm
Temperature: 72 deg. F, +/- 2 deg. F
100% exhaust- no recirculation of air
Minimum 6 air changes per hour occupied; 4 air changes per hour unoccupied
Pressure: Negative
Humidity: 50-75% relative
Equipment Heat Gain: 20 btuh/sf for labs; 35 btuh/sf for prep rooms

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
equipment (ref's; freezers) space on emergency power (e)
Dedicated circuits at equipment space (d)
Data & Wireless data
Lighting: indirect LED @ 650 LUX
Provide light switches at doors

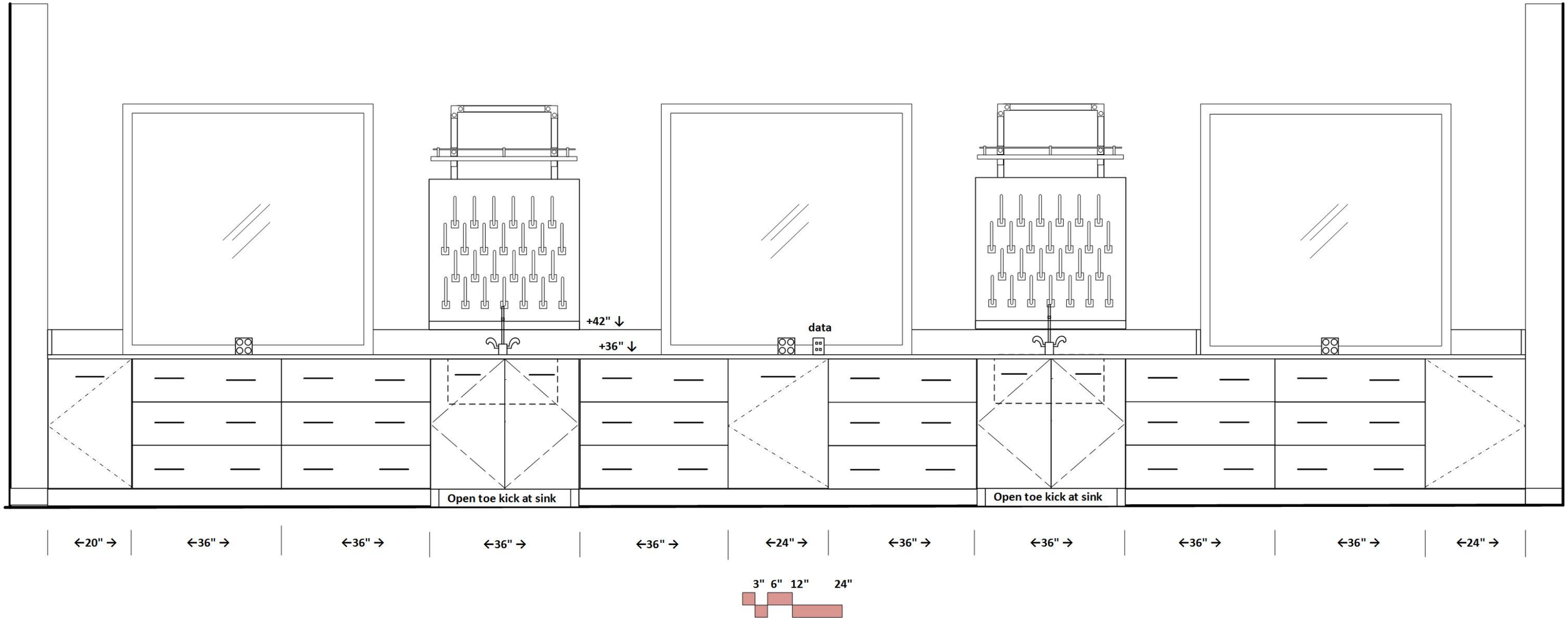
PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers
Cold water valve at one prep sink for future water polisher
CO2 at islands piped from cylinder manifold in Biology Prep Room
Gas at fume hood
Domestic tepid water and drain at safety shower/eyewash
Floor drain at safety shower

CONTRACTOR FURNISHED EQUIPMENT
Laboratory casework- wall cabinets, base cabinets, tall cabinets
Epoxy resin tops and sinks; Faucets & fittings
Marker boards
Safety shower/eyewash
Fire Extinguisher
Cylinder restraints for CO2 cylinders

OWNER FURNISHED EQUIPMENT
Chairs
Benchtop analytical instruments
Scientific equipment
Refrigerators
Flat panel monitors at marker board wall
Biological safety cabinets- Class II Type A (no external exhaust)

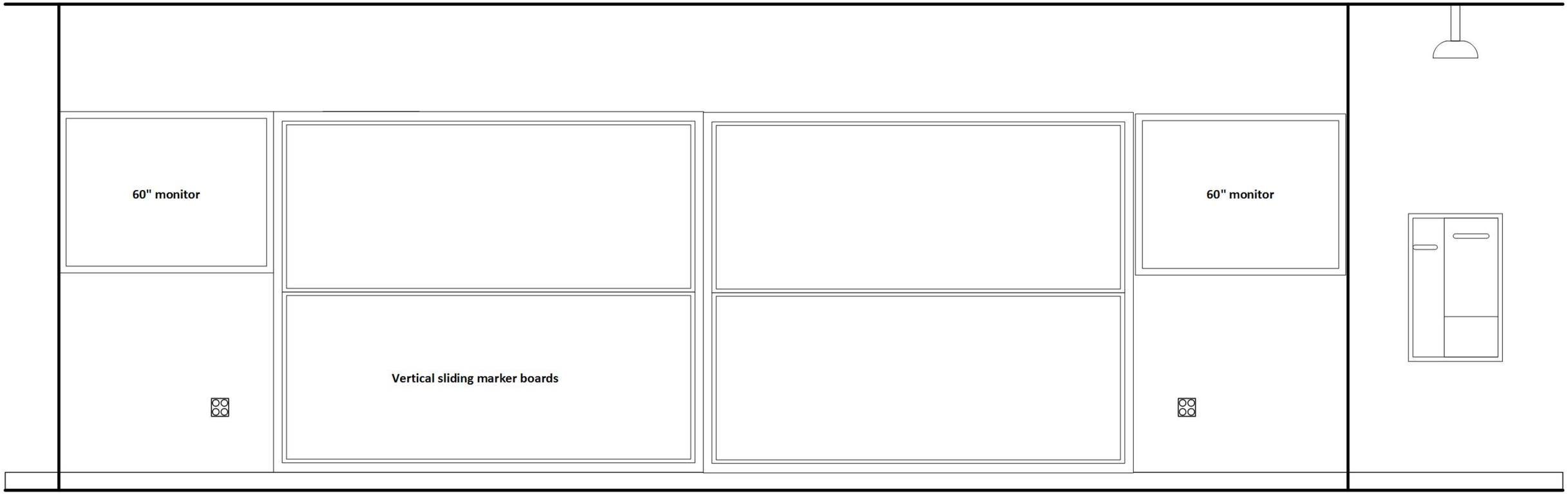
BIOLOGY TEACHING LABORATORIES

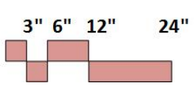
Elevation Teaching Lab West- north wall



BIOLOGY TEACHING LABORATORIES

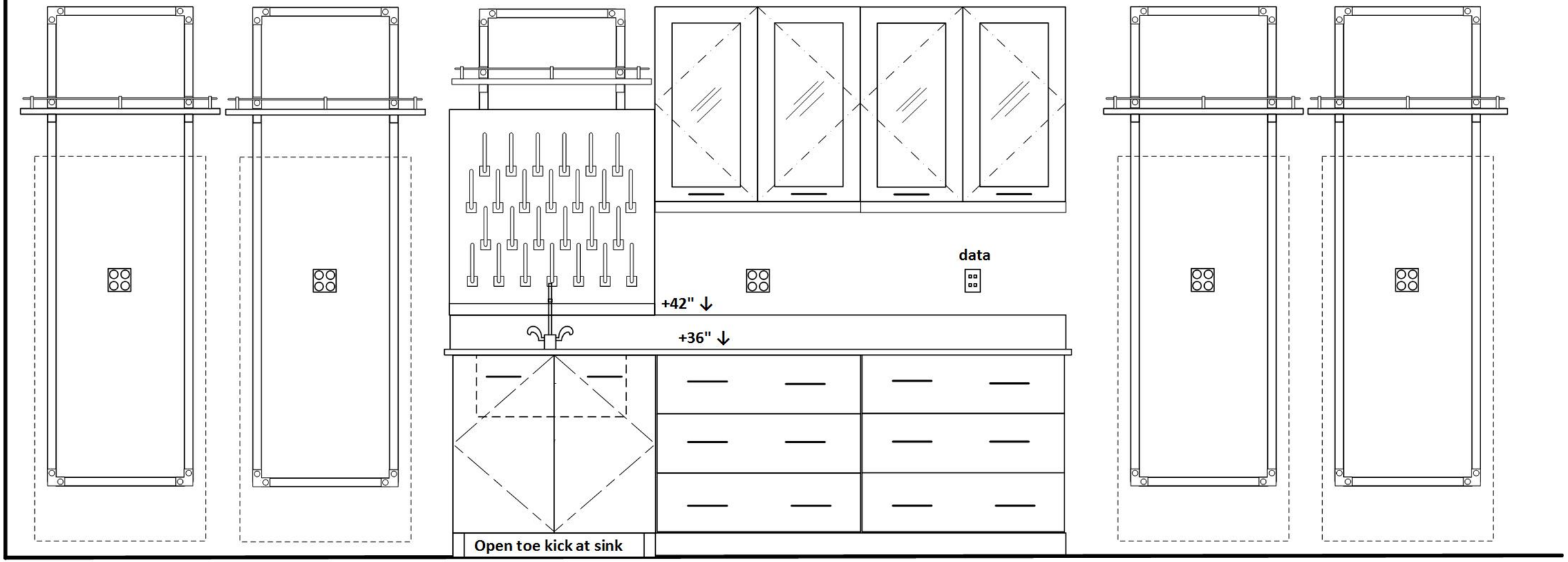
Elevation Teaching Lab West- east wall





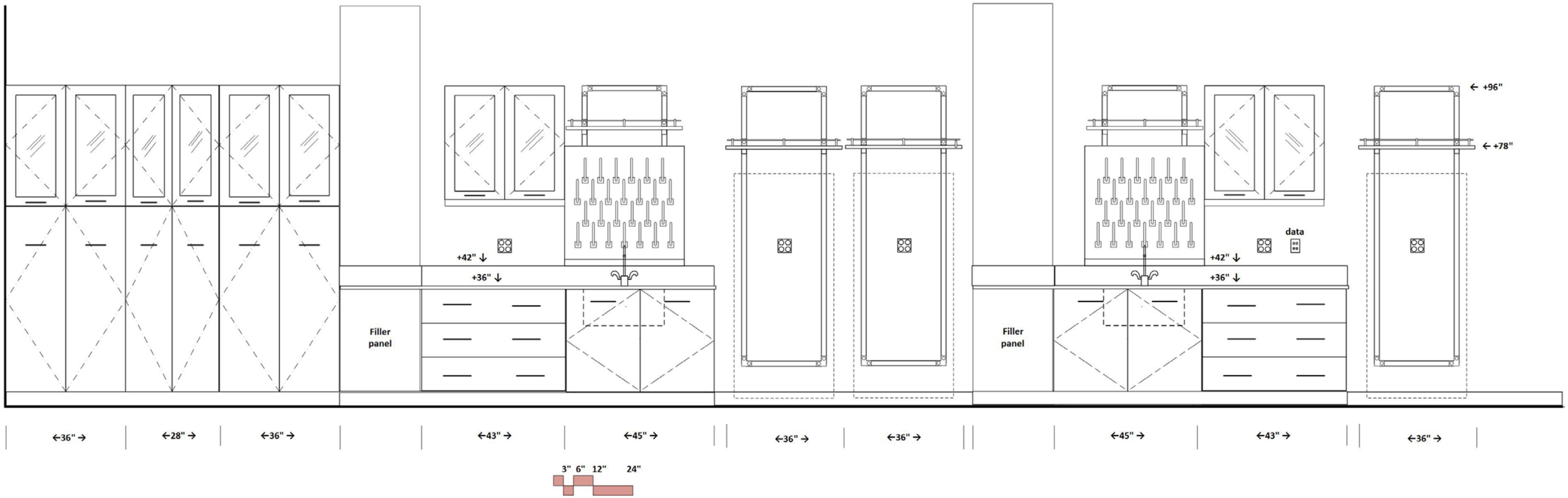
BIOLOGY TEACHING LABORATORIES

Elevation Teaching Lab West- south wall



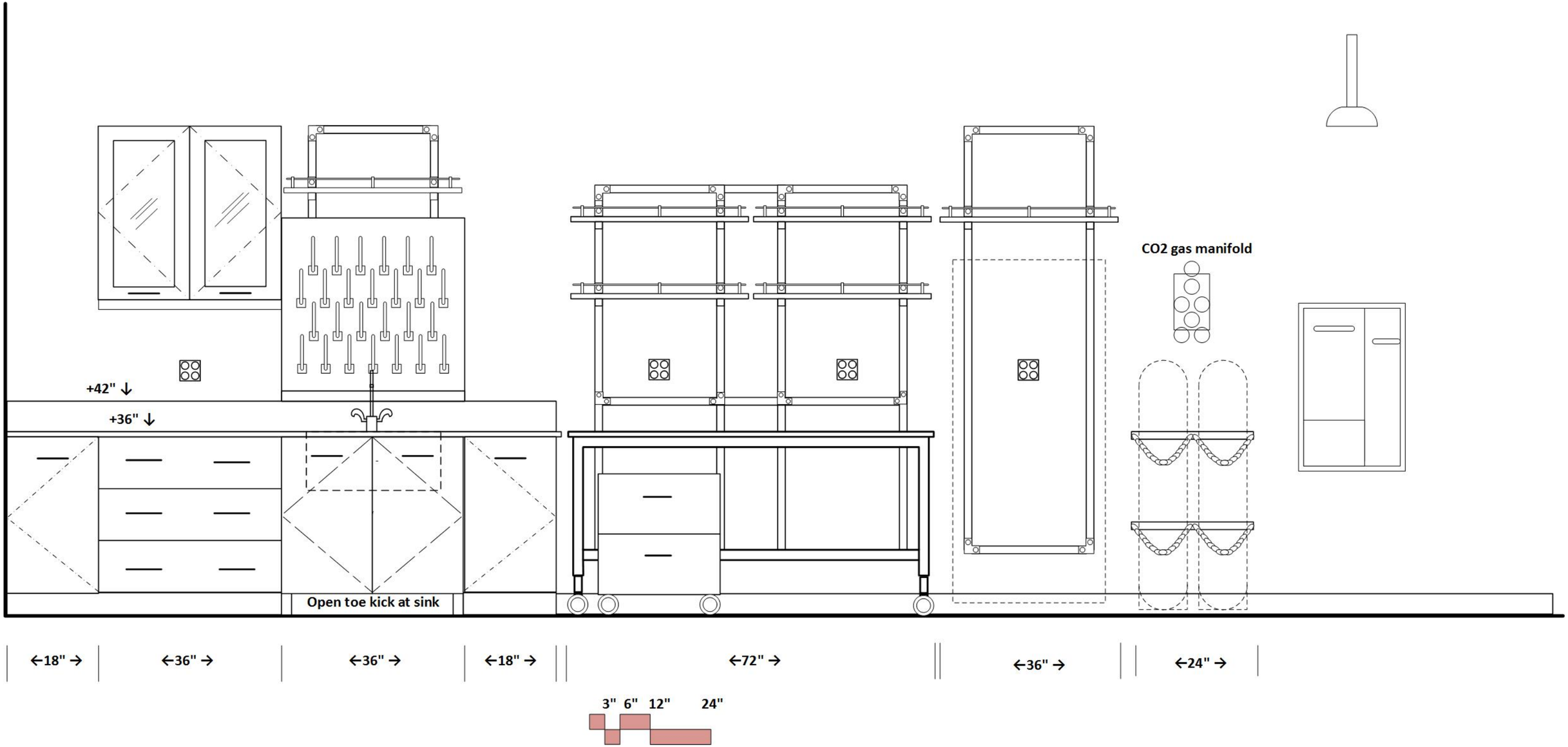
BIOLOGY TEACHING LABORATORIES

Elevation Teaching Lab West- west wall



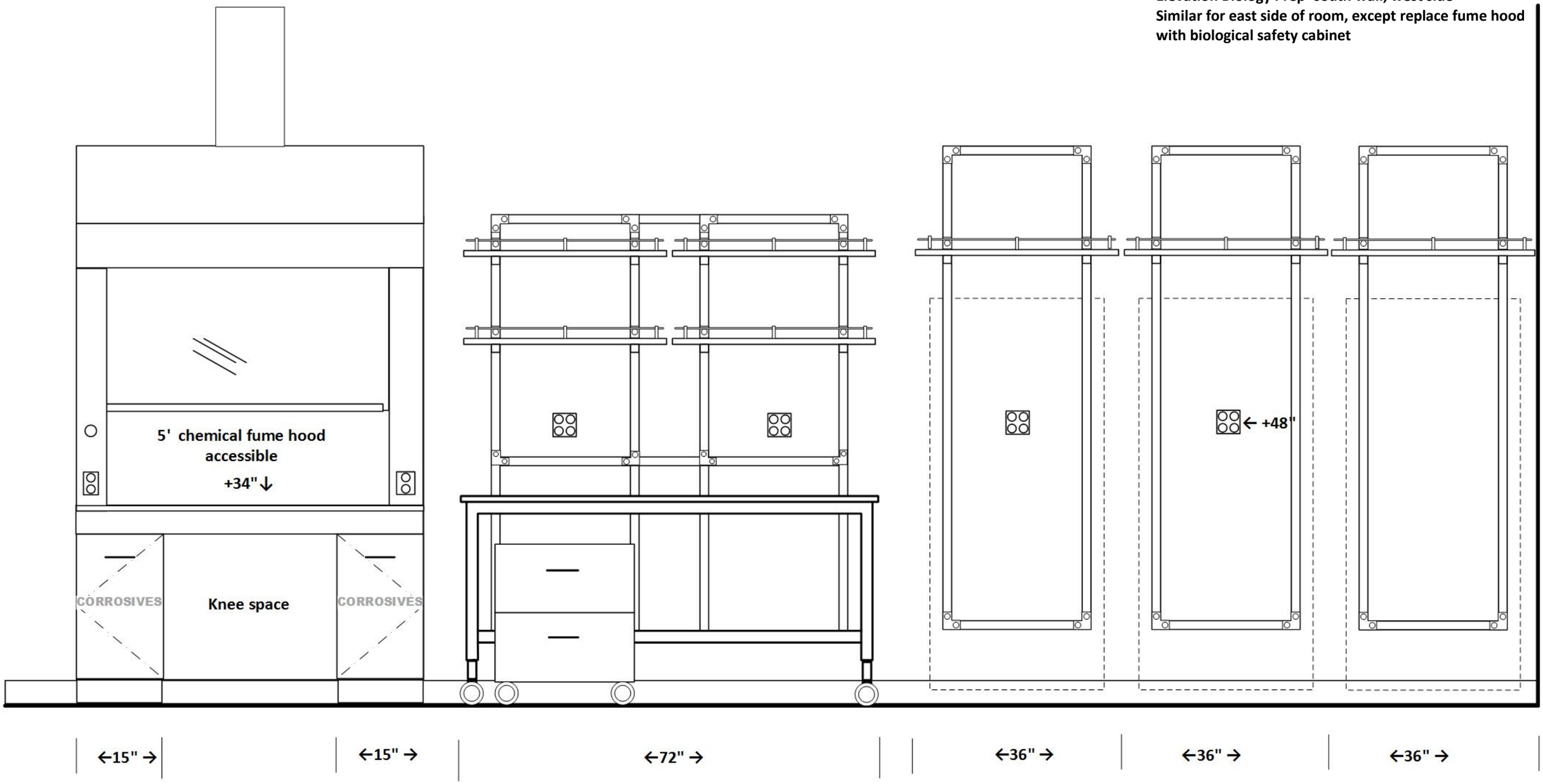
BIOLOGY TEACHING LABORATORIES

Elevation Biology Prep- north wall, west wide
Similar for east side of room

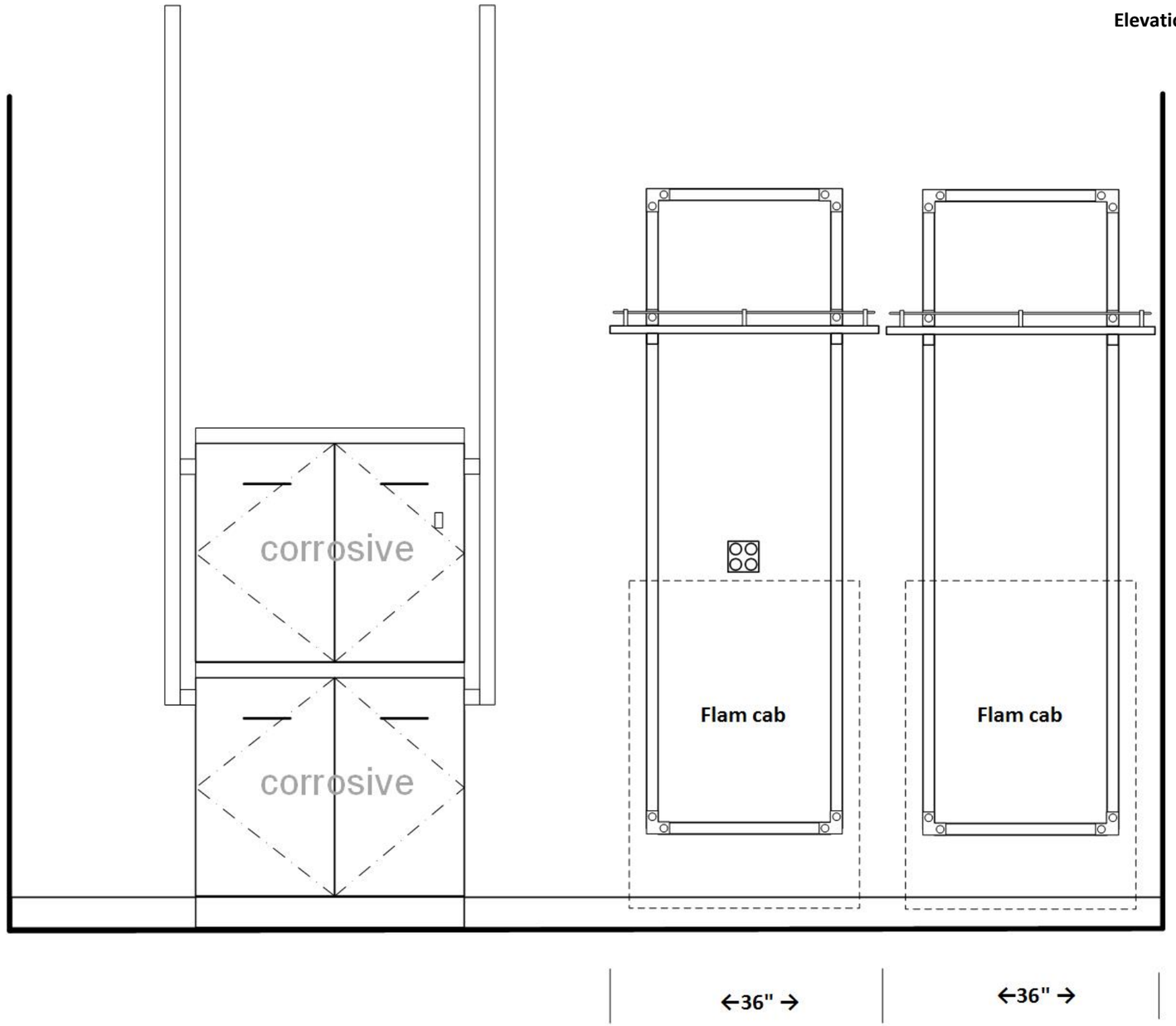


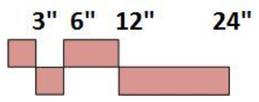
BIOLOGY TEACHING LABORATORIES

Elevation Biology Prep- south wall, west side
Similar for east side of room, except replace fume hood with biological safety cabinet




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


corrosive
corrosive
Flam cab
Flam cab
←36" →
←36" →


3"
6"
12"
24"

MICROBIOLOGY TEACHING LABORATORIES & ADJACENT PREP ROOM

Location: Level 1 South- west side

ARCHITECTURAL
Occupancy: B
Floor: vinyl composition tile
Walls: gypsum board and enamel paint
Ceiling: 10' acoustic tile
Doors: 3^6x7^0 with window
Acoustic Attenuation: NC 45 or less
Security: key or card reader access

STRUCTURAL
Vibration attenuation: 2,000 microinches per second or less

MECHANICAL
Hours of operation: 6 am to 10 pm
Temperature: 72 deg. F, +/- 2 deg. F
100% exhaust- no recirculation of air
Minimum 6 air changes per hour occupied; 4 air changes per hour unoccupied
Pressure: Negative
Humidity: 50-75% relative
Equipment Heat Gain: 20 btuh/sf for labs; 35 btuh/sf for prep room

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
equipment (ref's; freezers) space on emergency power (e)
Dedicated circuits at equipment space (d)
Data & Wireless data
Lighting: indirect LED @ 650 LUX
Provide light switches at doors

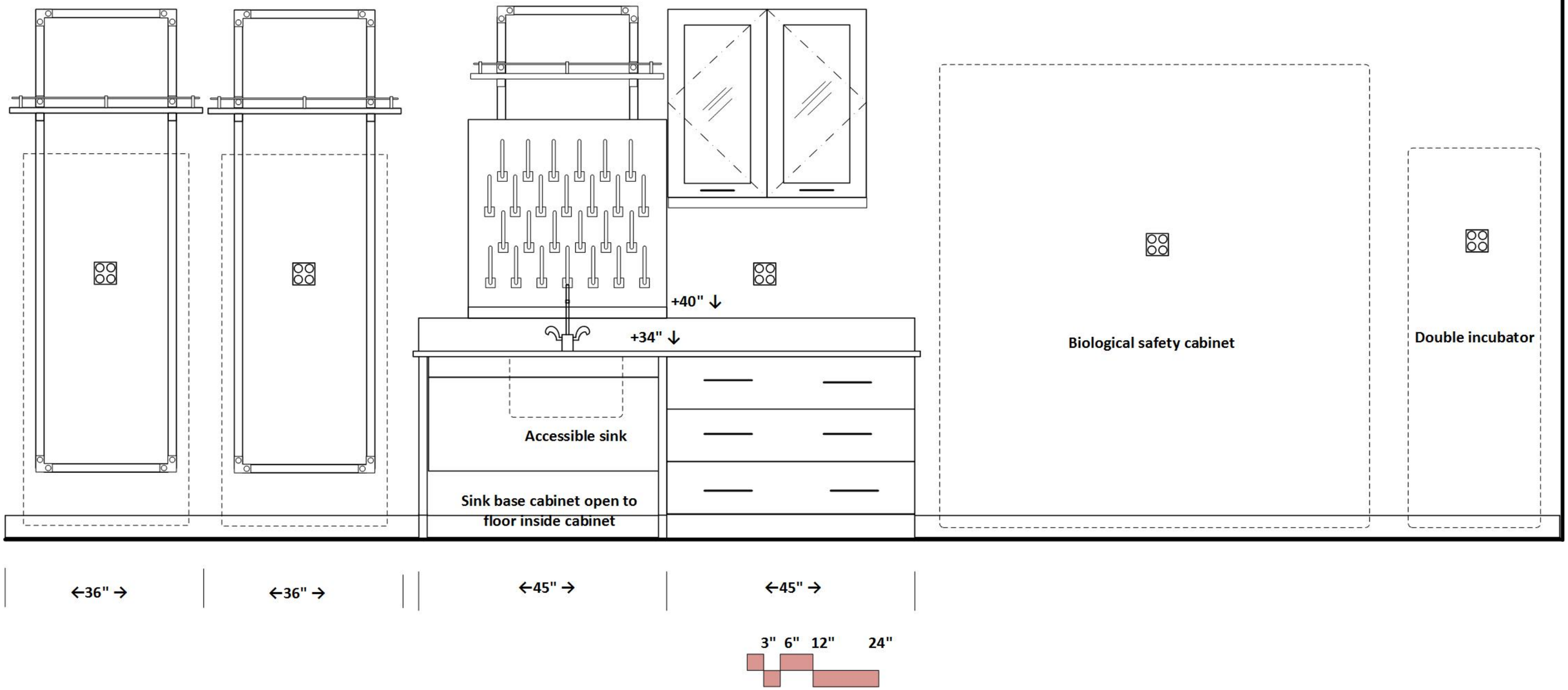
PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers
Cold water valve at one sink in prep room for future water polisher
Gas and vacuum at island benches (underground piping)
Domestic tepid water and drain at safety shower/eyewash
Floor drain at safety shower

CONTRACTOR FURNISHED EQUIPMENT
Laboratory casework- wall cabinets, base cabinets, tall cabinets
Epoxy resin tops and sinks; Faucets & fittings
Marker boards
Safety shower/eyewash
Fire Extinguisher

OWNER FURNISHED EQUIPMENT
Chairs
Benchtop analytical instruments
Biological safety cabinets- Class II Type A- no external exhaust
Incubators
Scientific equipment
Refrigerators
Flat panel monitors

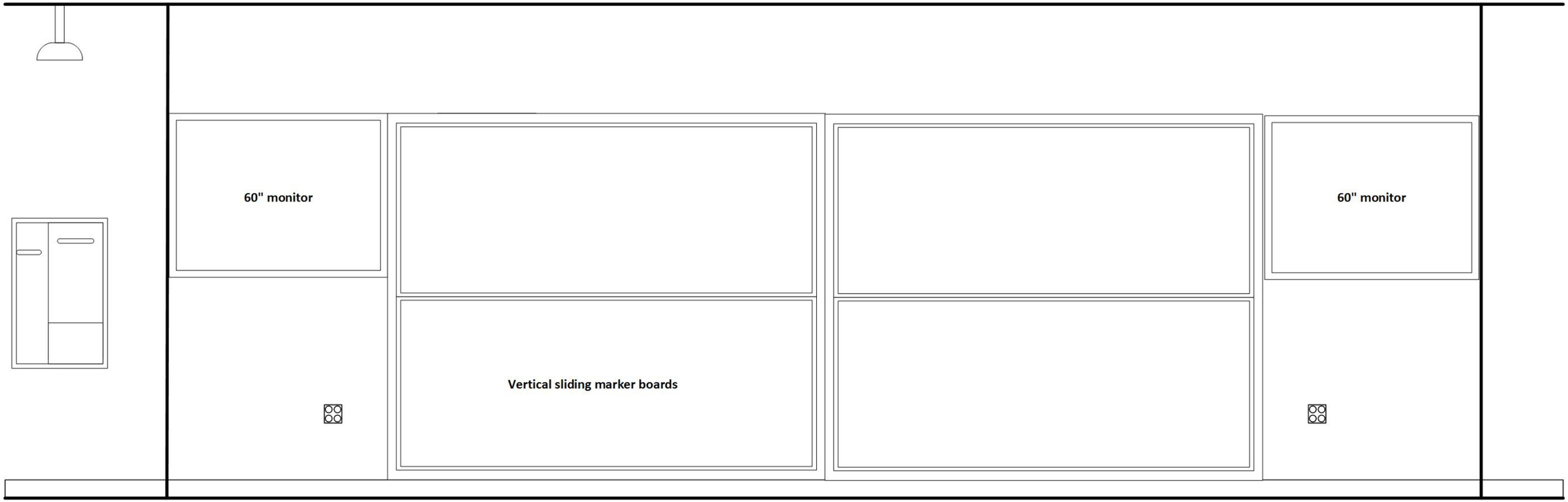
MICROBIOLOGY TEACHING LABORATORIES

Elevation East Lab- north wall



MICROBIOLOGY TEACHING LABORATORIES

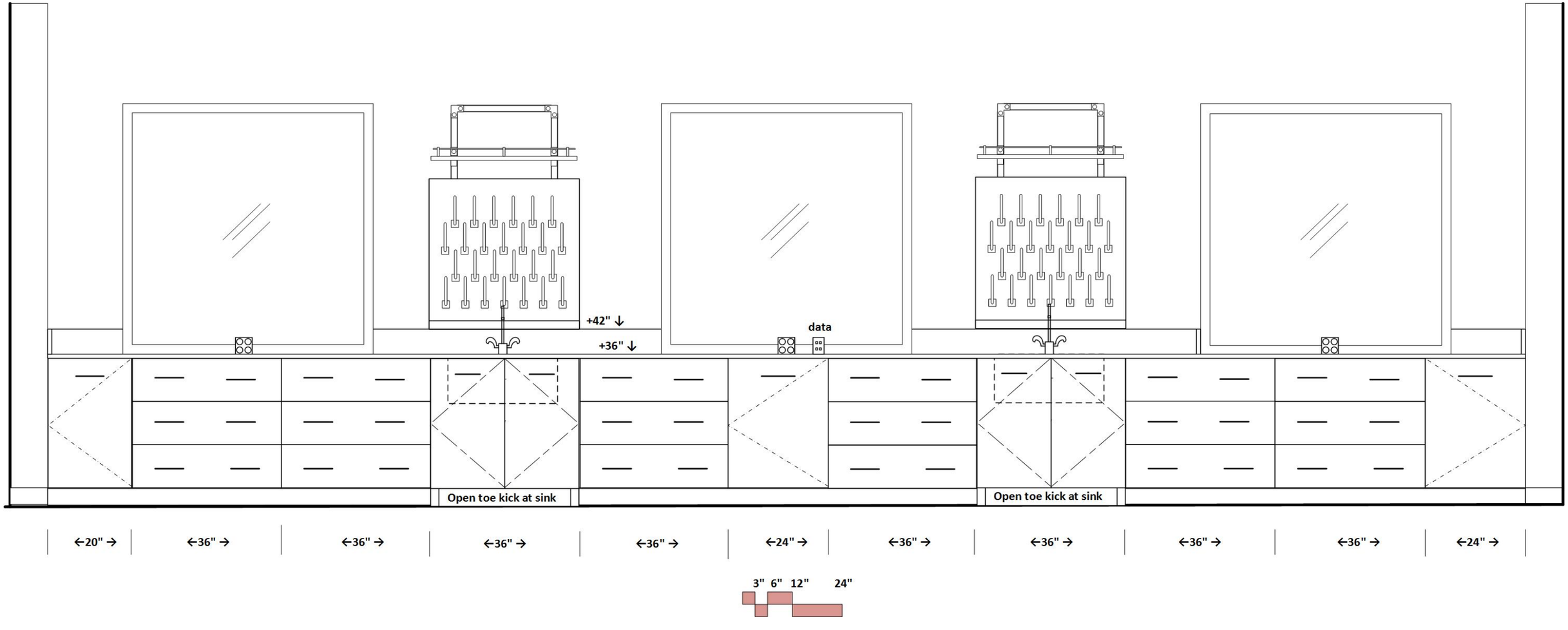
Elevation East Lab- east wall



3" 6" 12" 24"

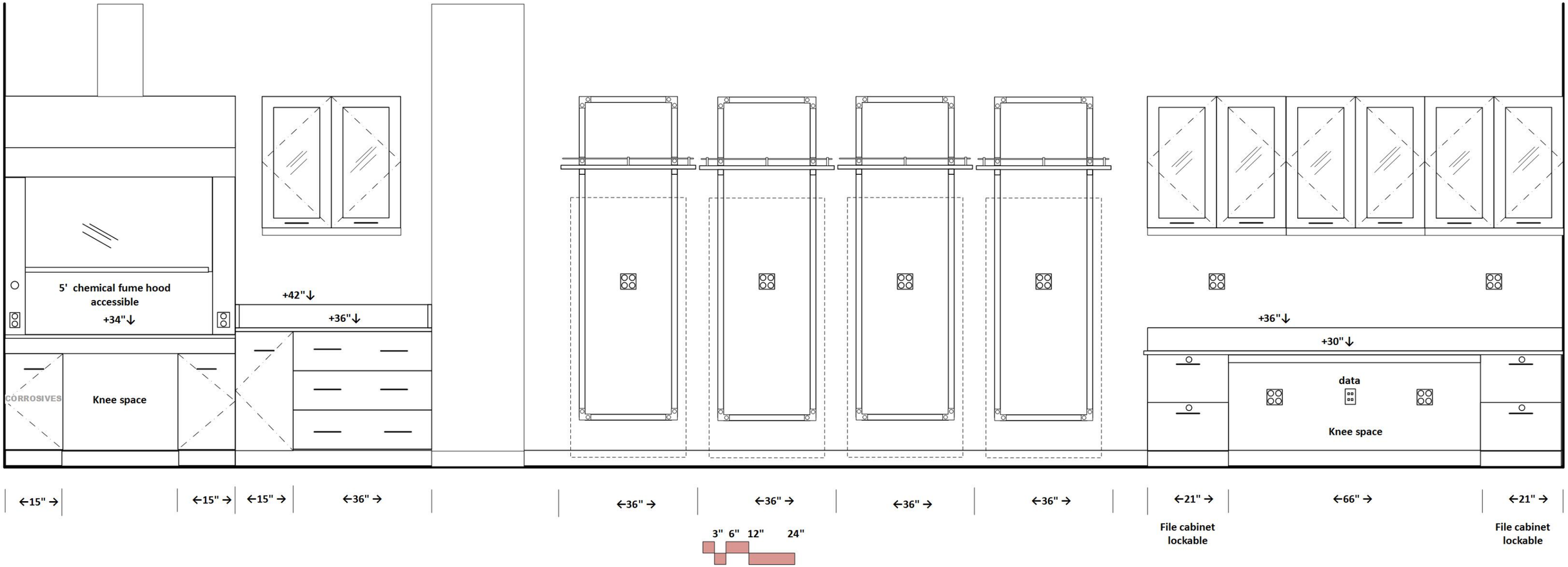
MICROBIOLOGY TEACHING LABORATORIES

Elevation East Lab- south wall



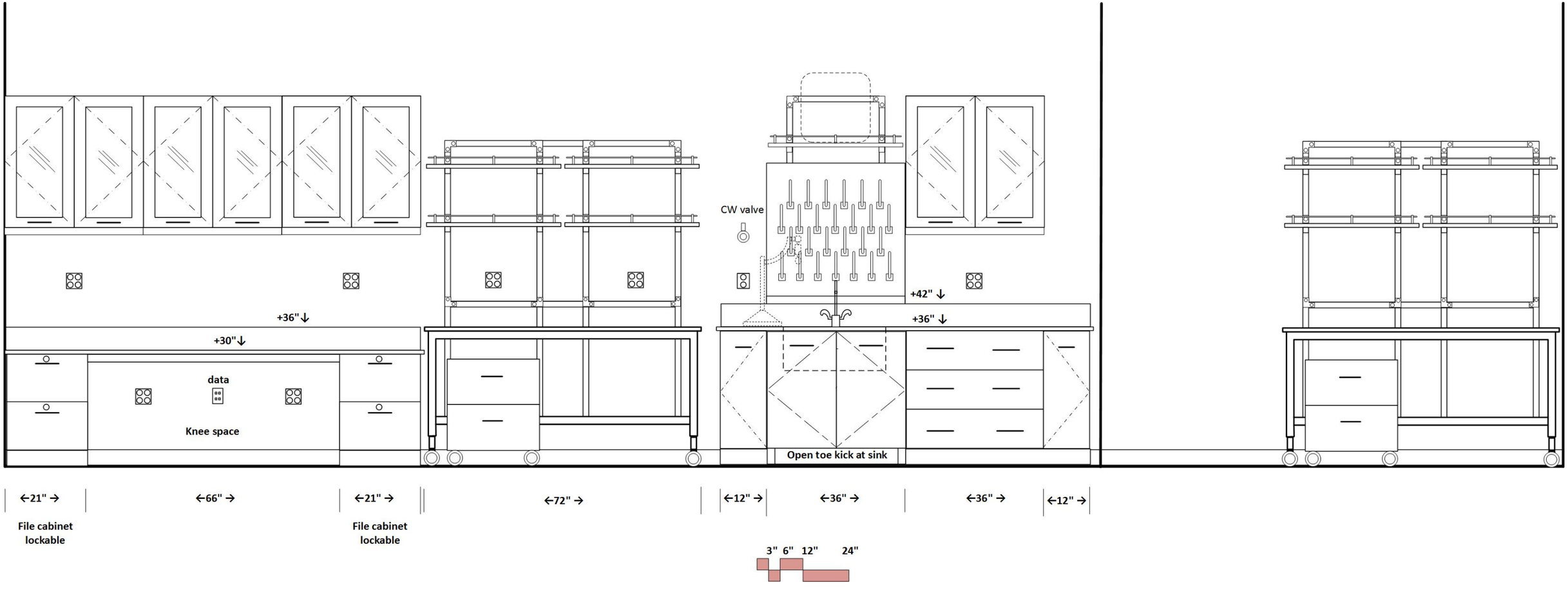
MICROBIOLOGY TEACHING LABORATORIES

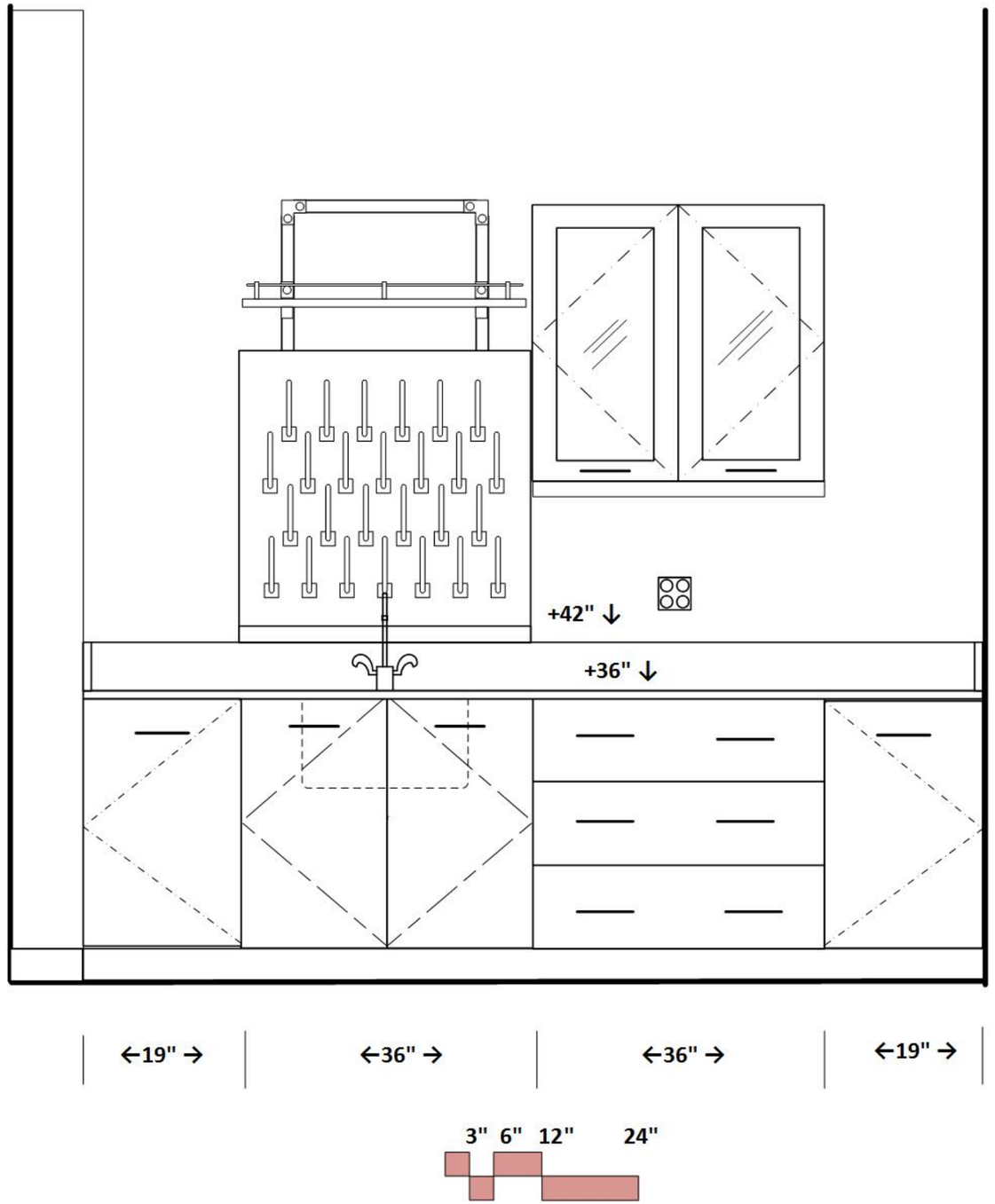
Elevation Microprep- north side, north wall



MICROBIOLOGY TEACHING LABORATORIES

Elevation Microprep- north side, south wall




+42" ↓
+36" ↓
←19" →
←36" →
←36" →
←19" →
3" 6" 12" 24"

MICROBIOLOGY TEACHING LABORATORIES
& ADJACENT PREP ROOMS
Location: Level 1 South- east side

ARCHITECTURAL
Occupancy: B
Floor: vinyl composition tile
Walls: gypsum board and enamel paint
Ceiling: 10' acoustic tile in labs; 9' in prep rooms
Doors: 3^6x7^0 with window
Acoustic Attenuation: NC 45 or less
Security: key or card reader access

STRUCTURAL
Vibration attenuation: 2,000 microinches per second or less

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Hours of operation: 6 am to 10 pm
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100% exhaust- no recirculation of air
Minimum 6 air changes per hour occupied; 4 air changes per hour unoccupied
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equipment (ref's; freezers) space on emergency power (e)
Dedicated circuits at equipment space (d)
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Gas at fume hoods
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Marker boards
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Fire Extinguisher

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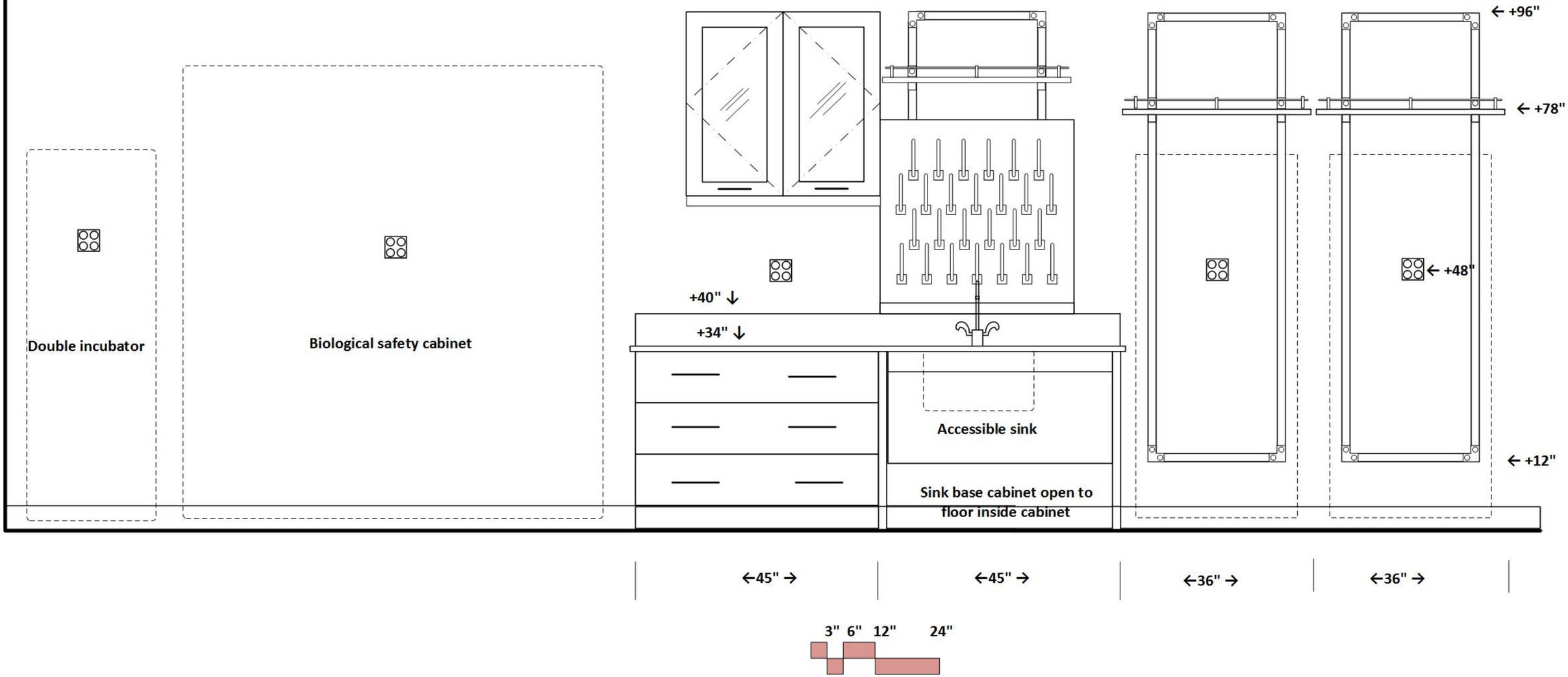
Benchtop analytical instruments
Biological safety cabinets- Class II Type A- no external exhaust
Incubators
Scientific equipment
Refrigerators
Flat panel monitors

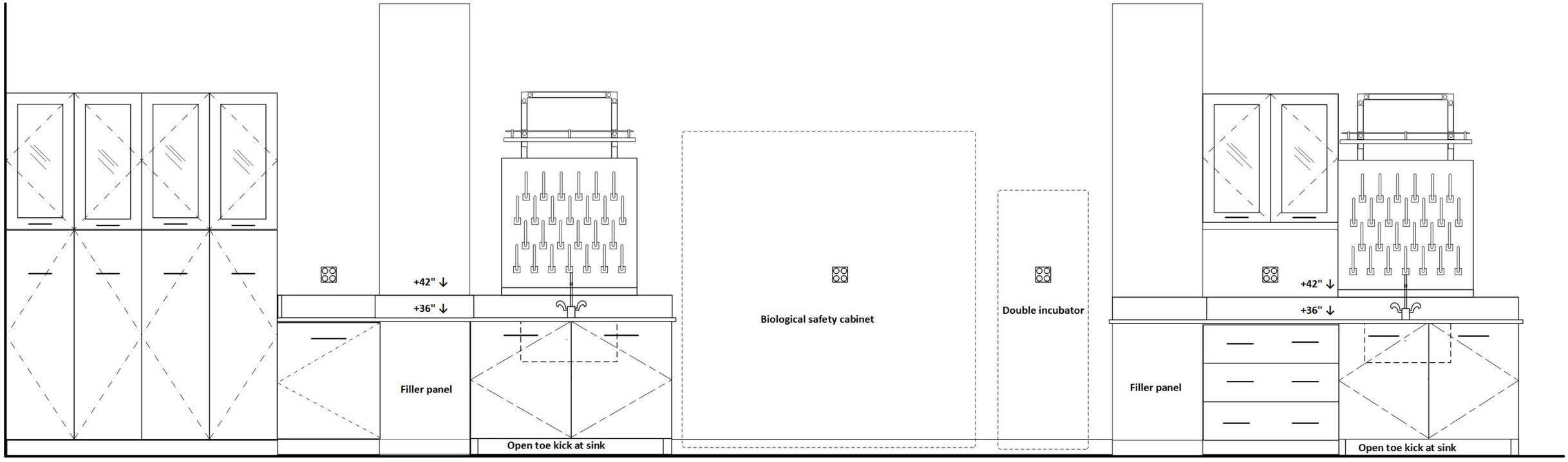
MICROBIOLOGY TEACHING LABORATORIES

Elevation West Lab- north wall



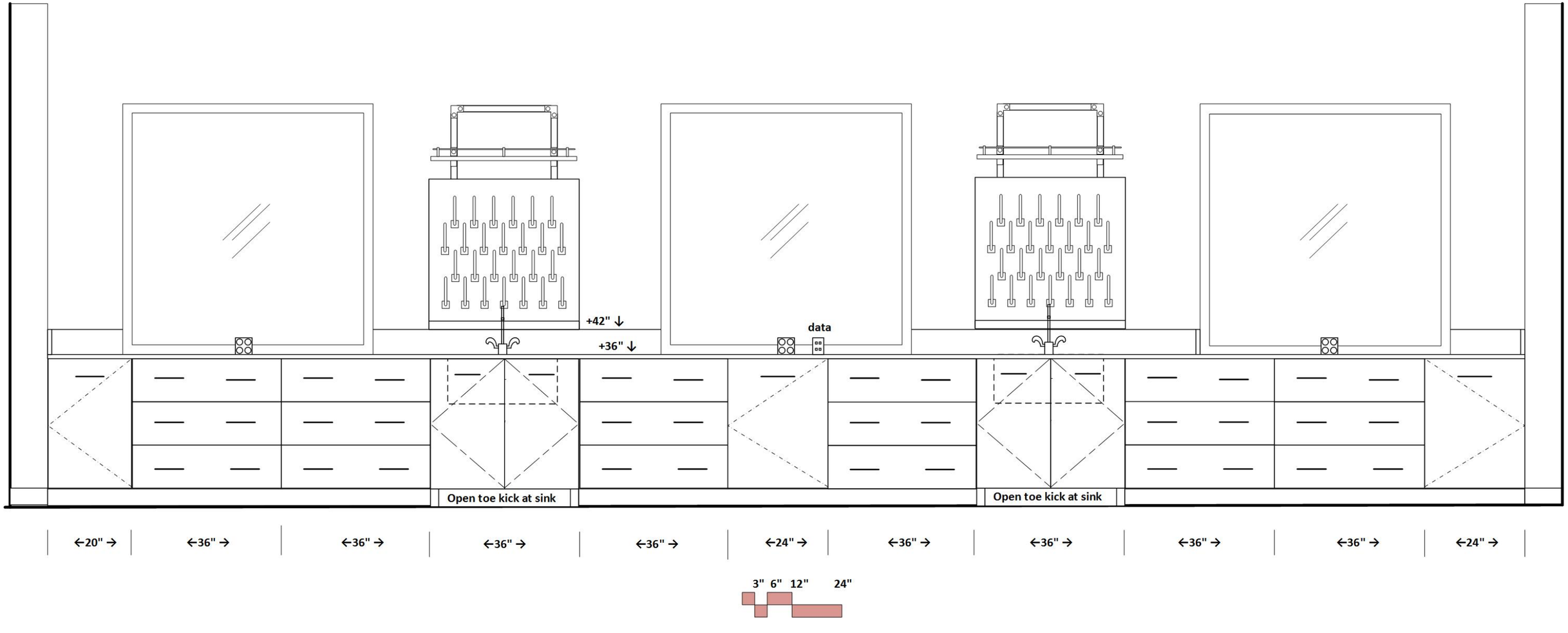
MICROBIOLOGY TEACHING LABORATORIES

Elevation West Lab- east wall



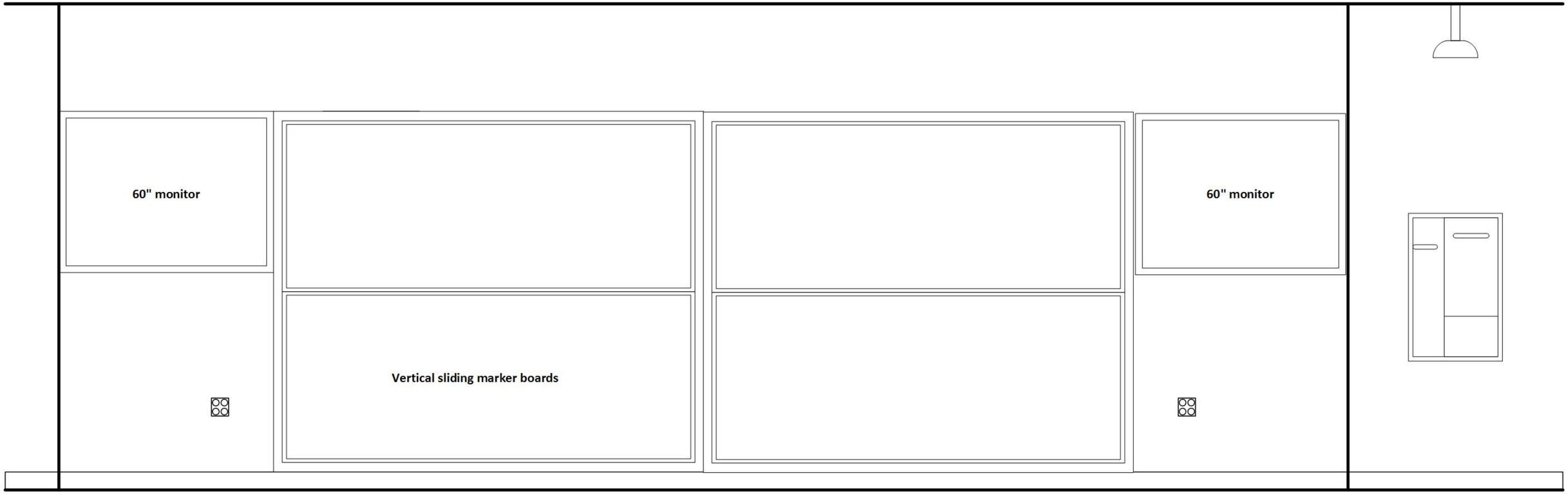
MICROBIOLOGY TEACHING LABORATORIES

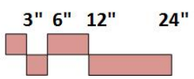
Elevation West Lab- south wall



MICROBIOLOGY TEACHING LABORATORIES

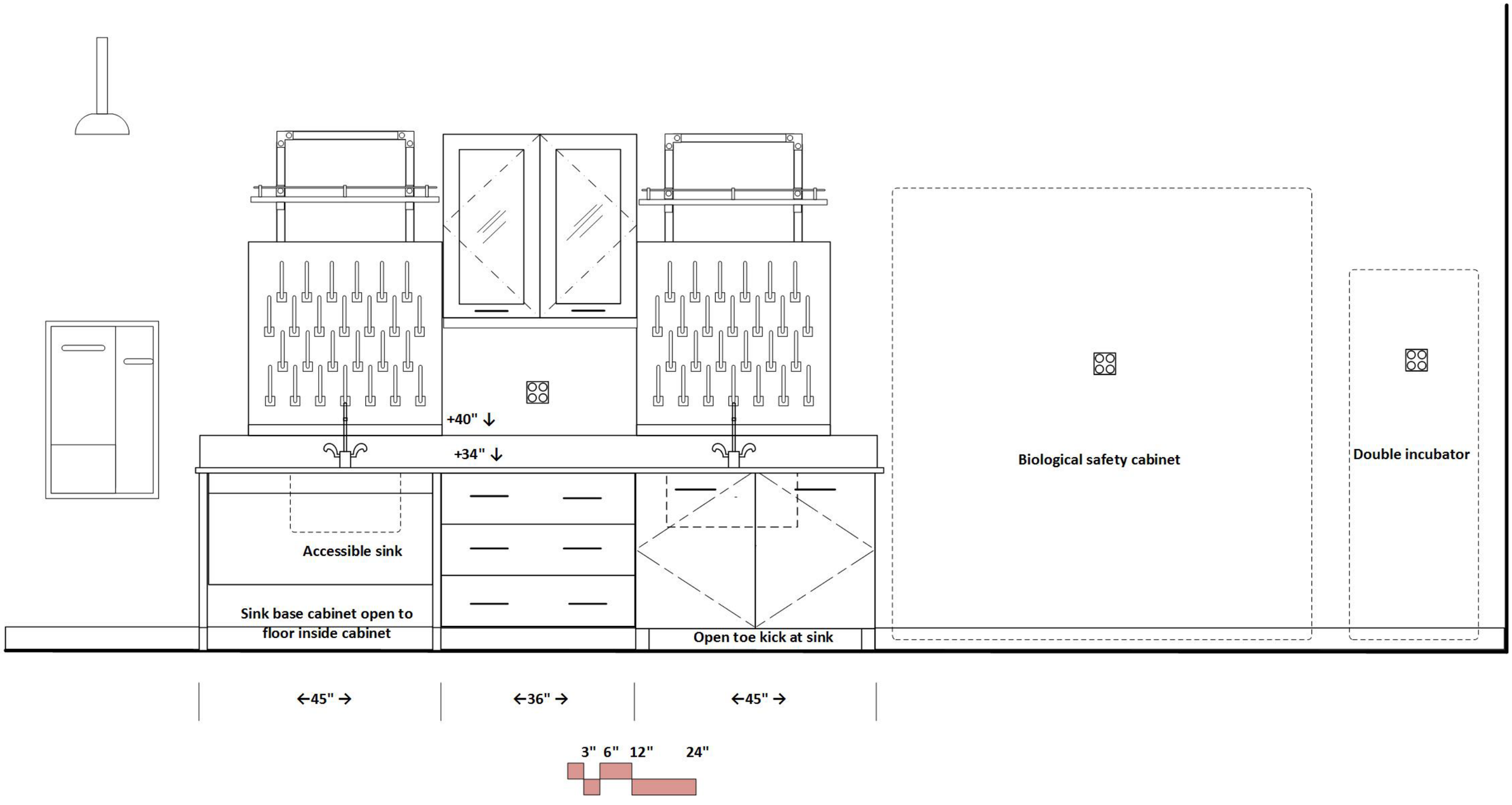
Elevation West Lab- west wall





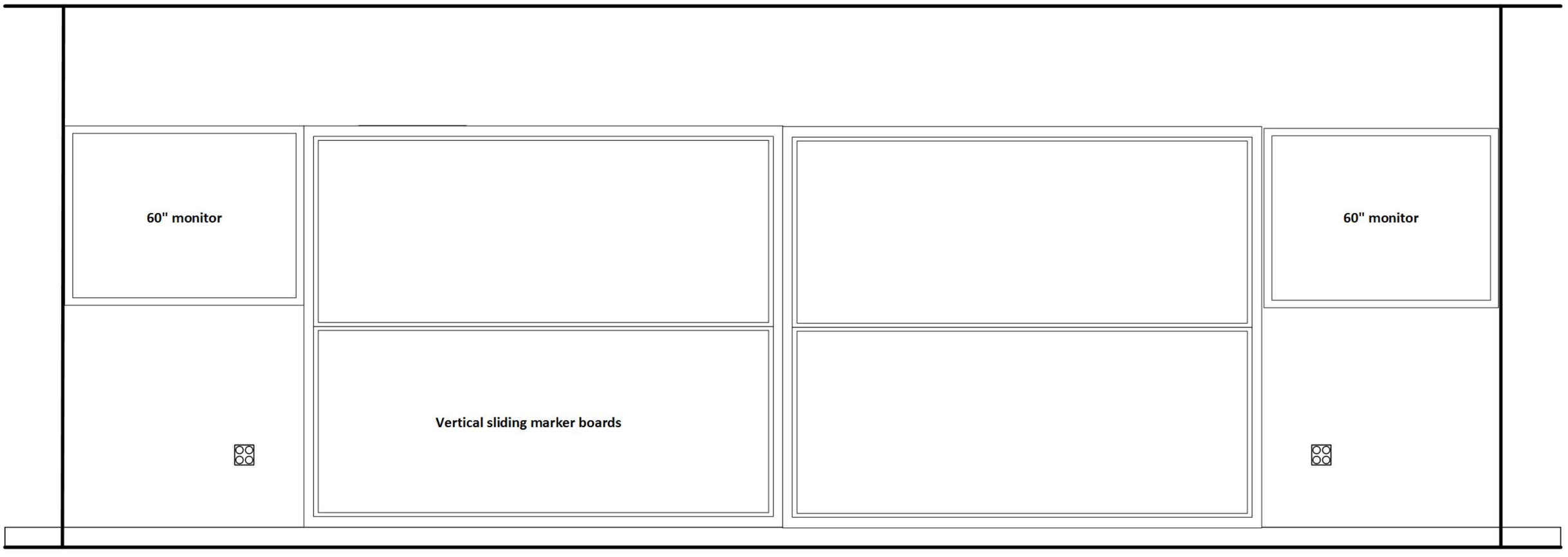
MICROBIOLOGY TEACHING LABORATORIES

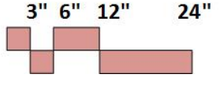
Elevation East Lab- north wall



MICROBIOLOGY TEACHING LABORATORIES

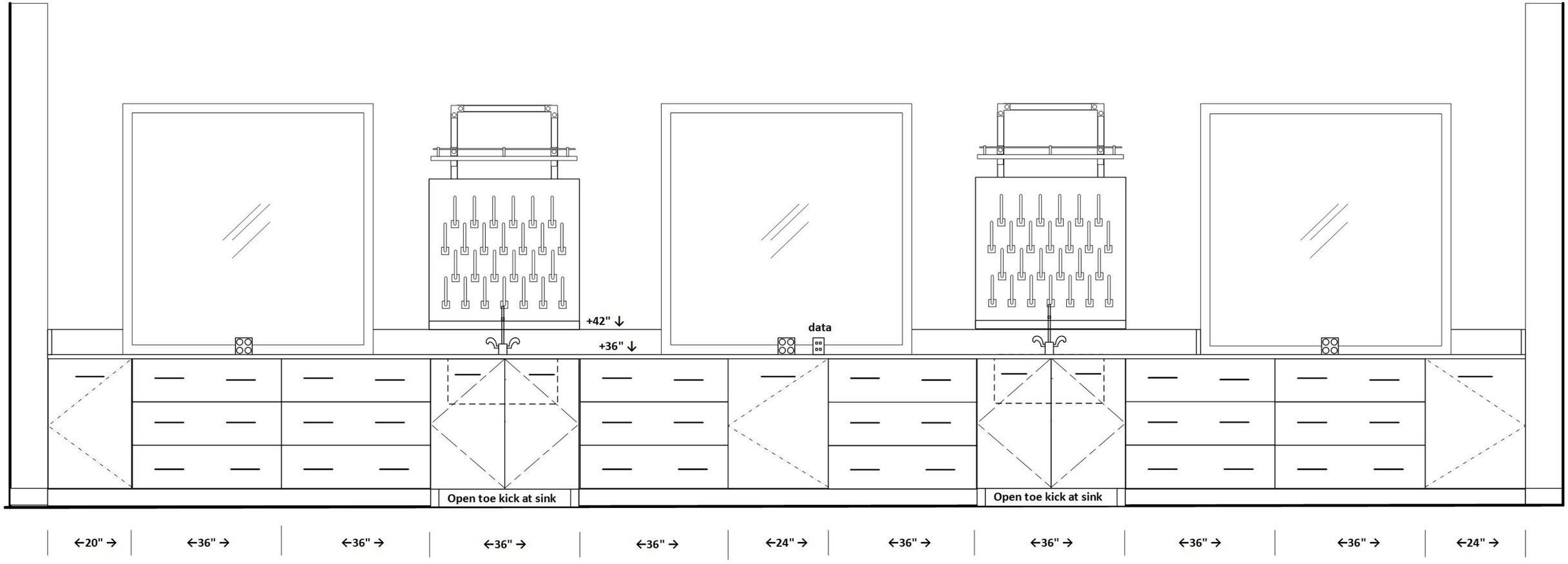
Elevation East Lab- east wall

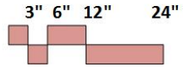




MICROBIOLOGY TEACHING LABORATORIES

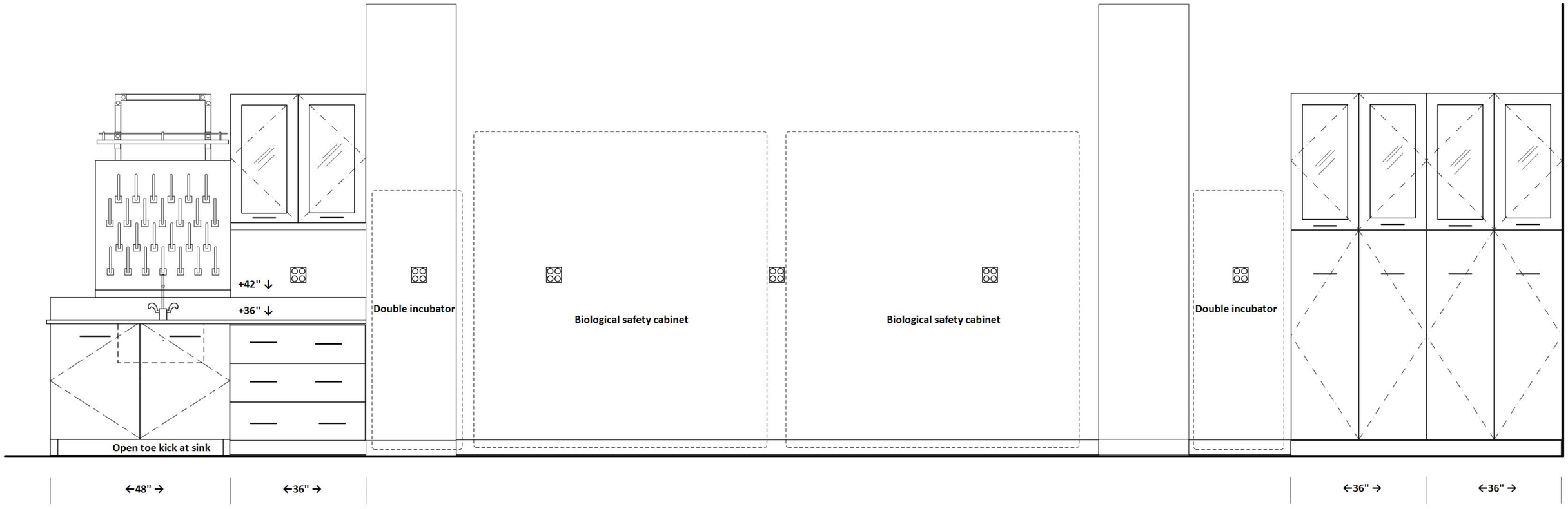
Elevation East Lab- south wall





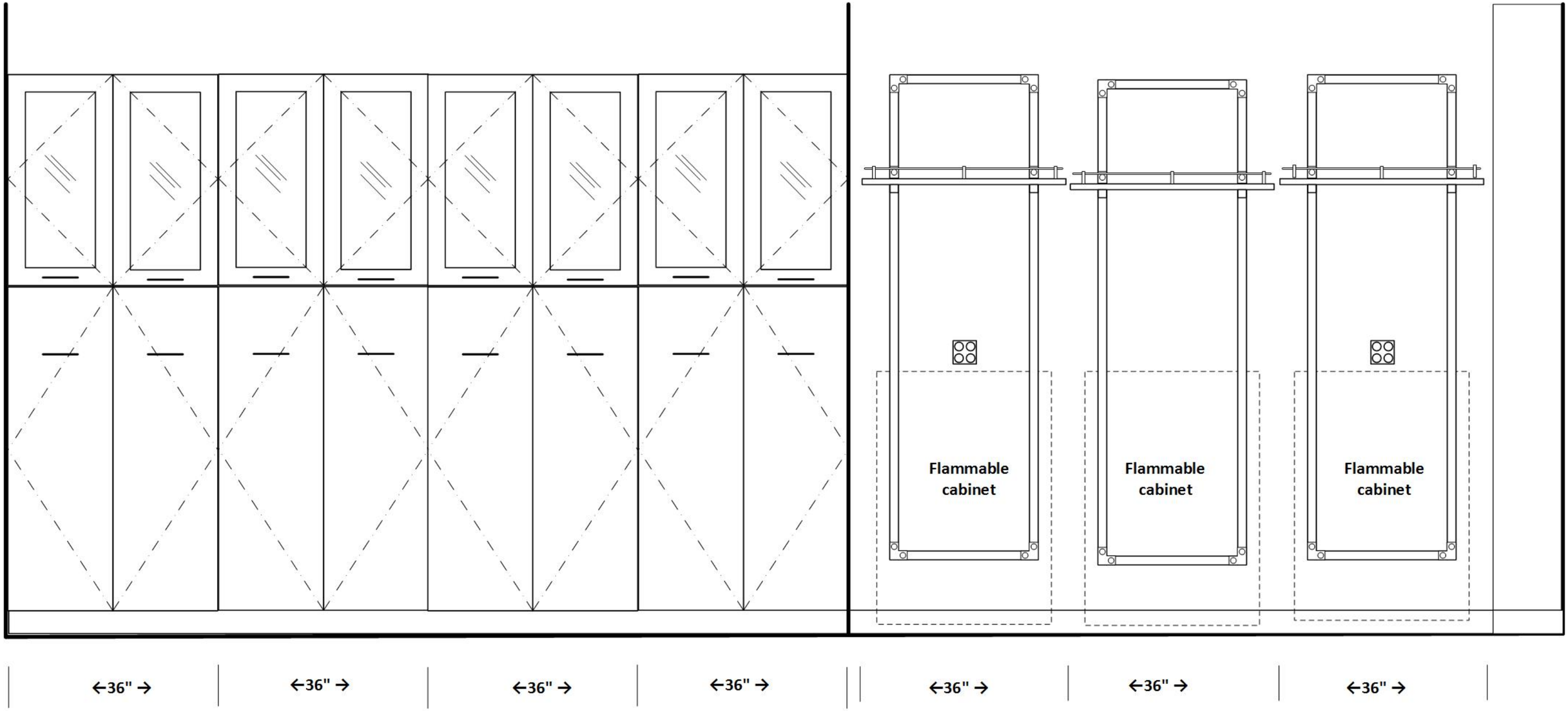
MICROBIOLOGY TEACHING LABORATORIES

Elevation East Lab- west wall



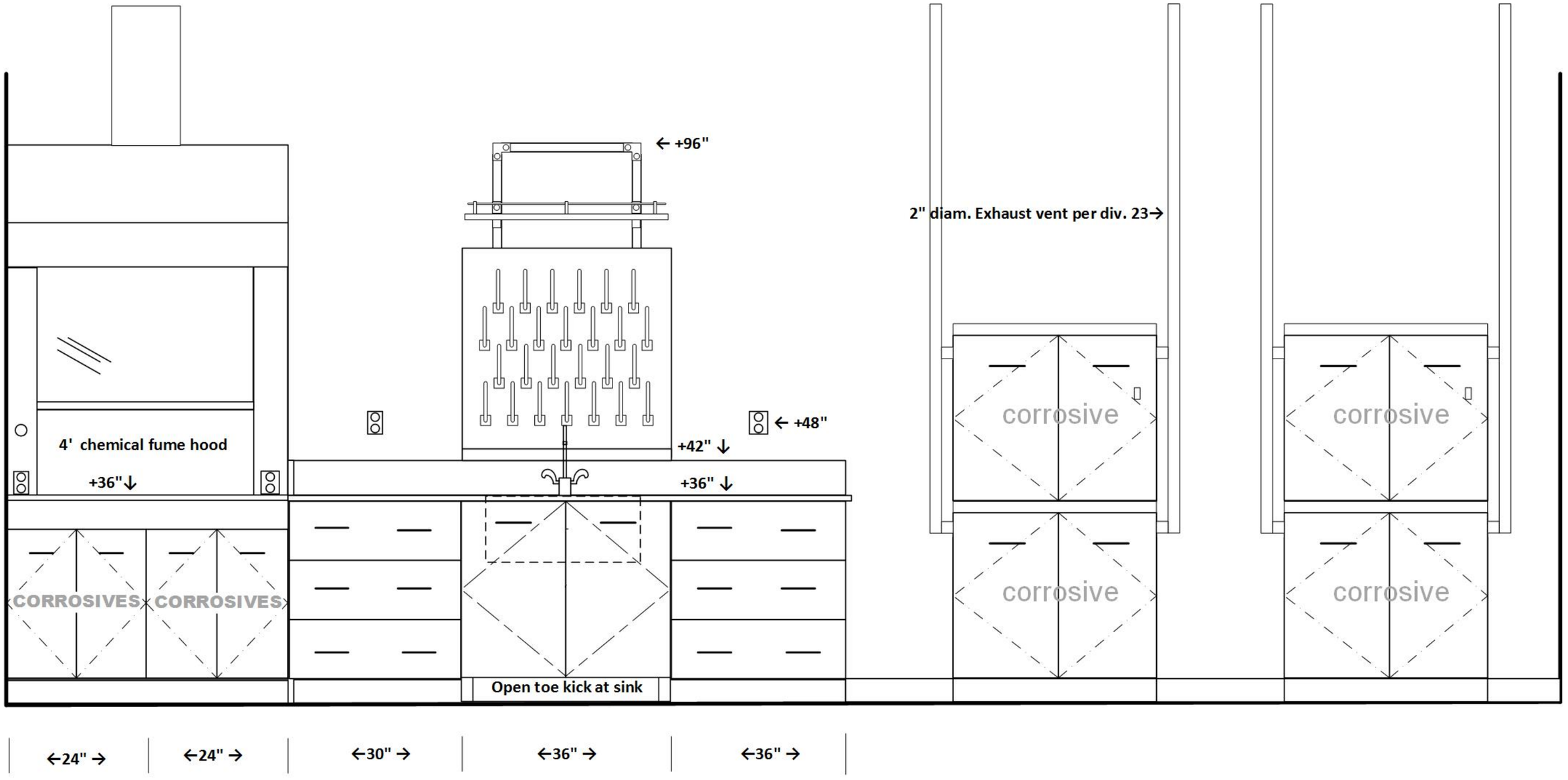
MICROBIOLOGY TEACHING LABORATORIES

Elevation Micro Chem Store- north wall

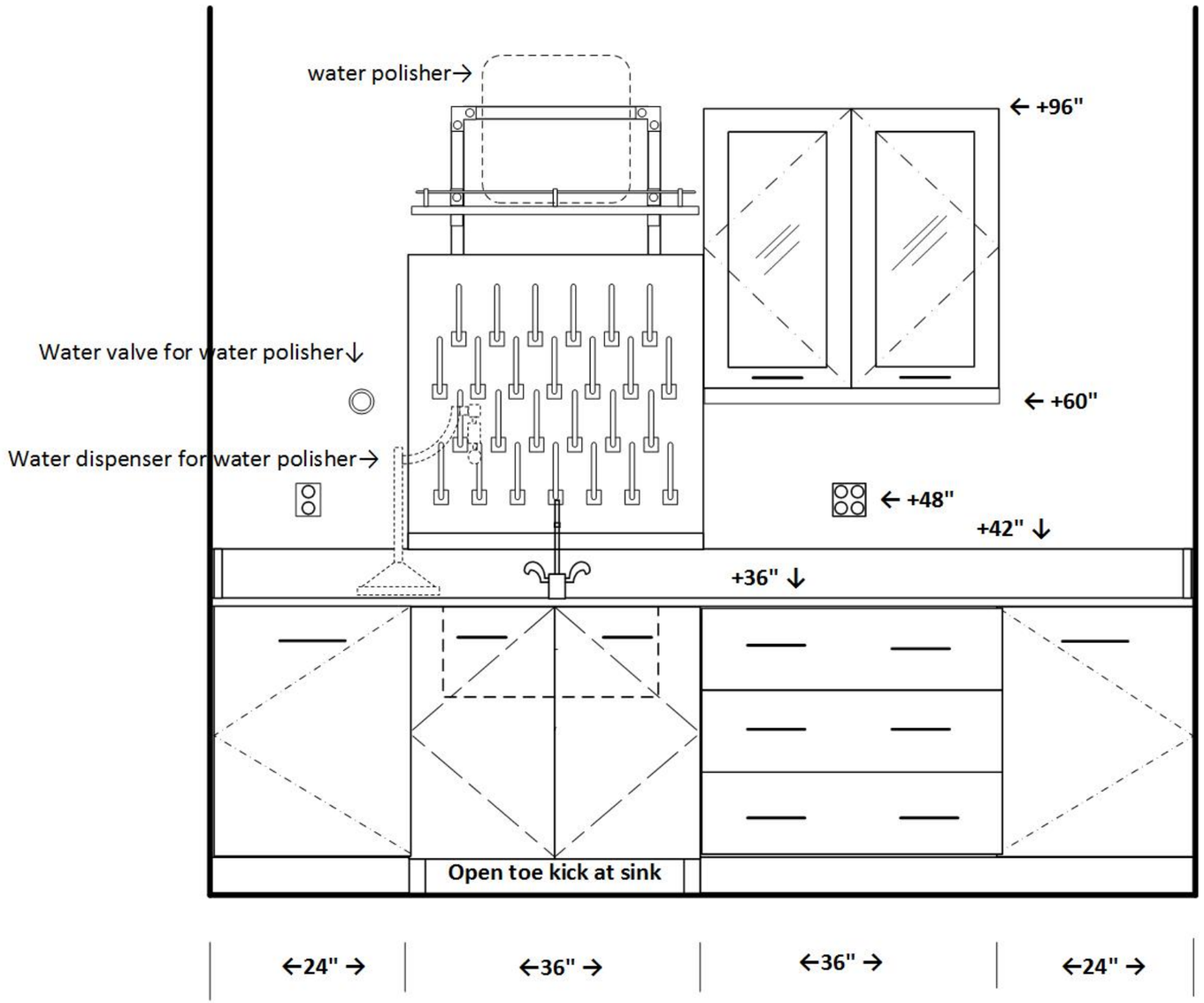


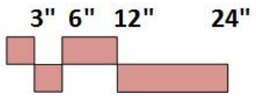
MICROBIOLOGY TEACHING LABORATORIES

Elevation Micro Chem Store- south wall



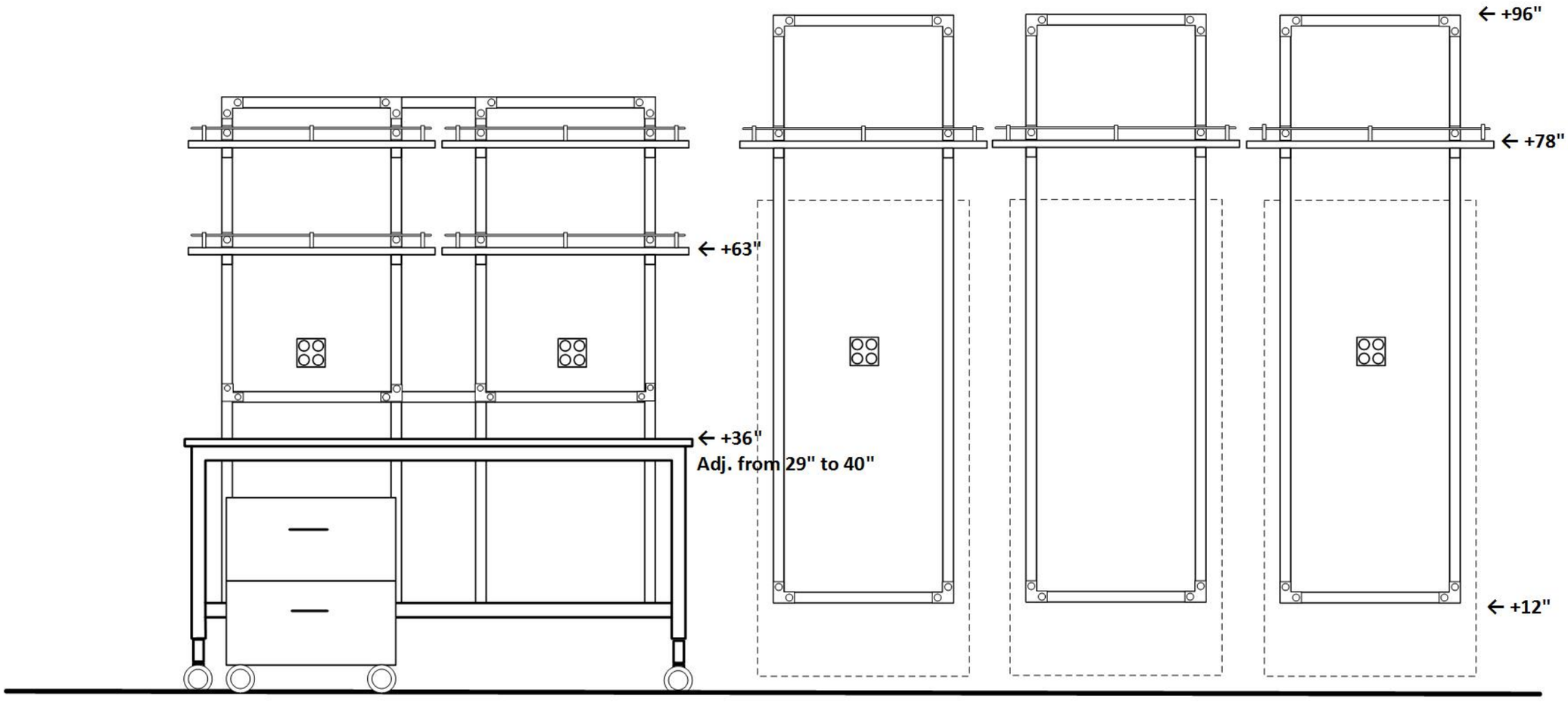
Elevation Micro Prep- north wall





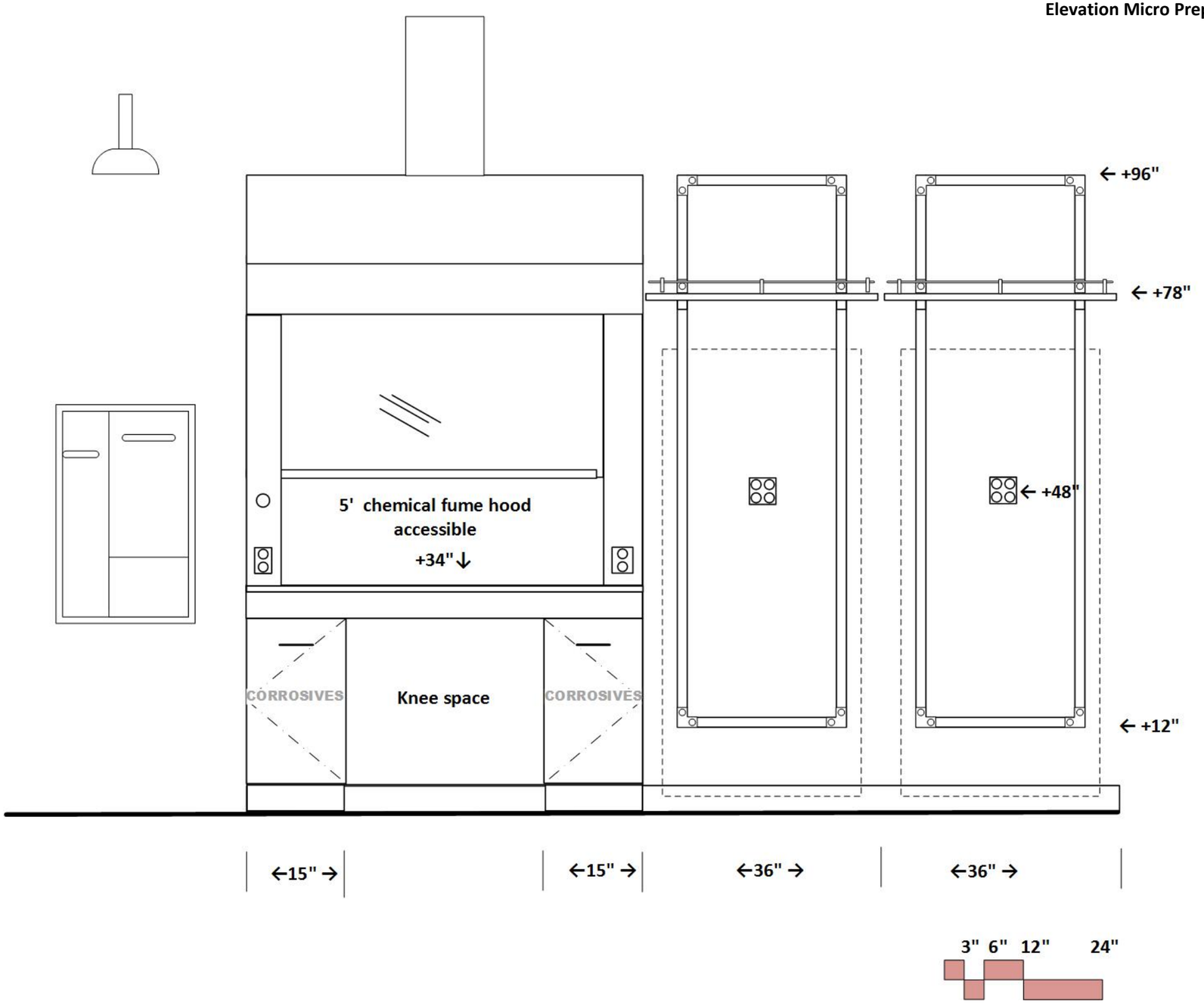
MICROBIOLOGY TEACHING LABORATORIES

Elevation Micro Prep- east wall



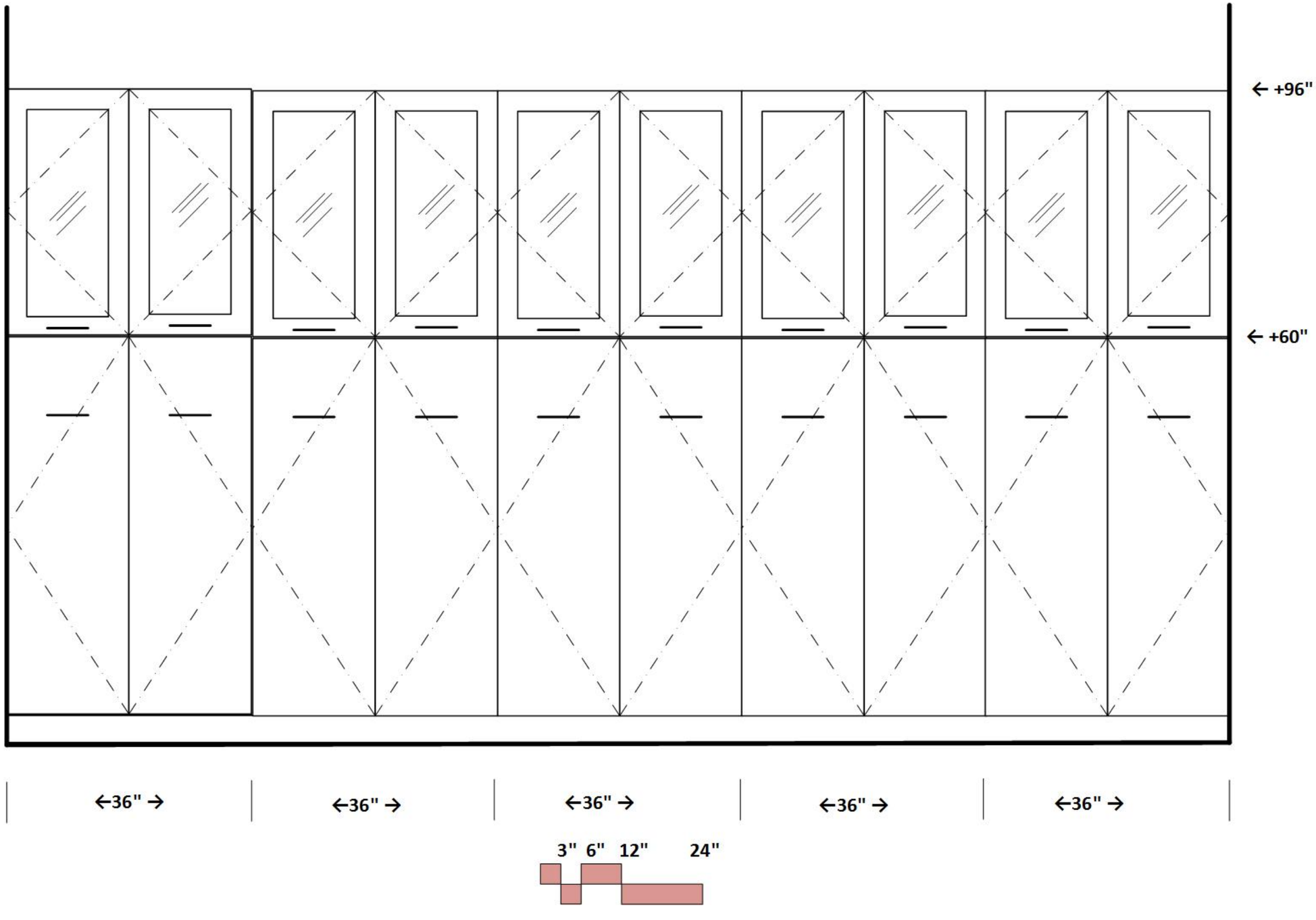
MICROBIOLOGY TEACHING LABORATORIES

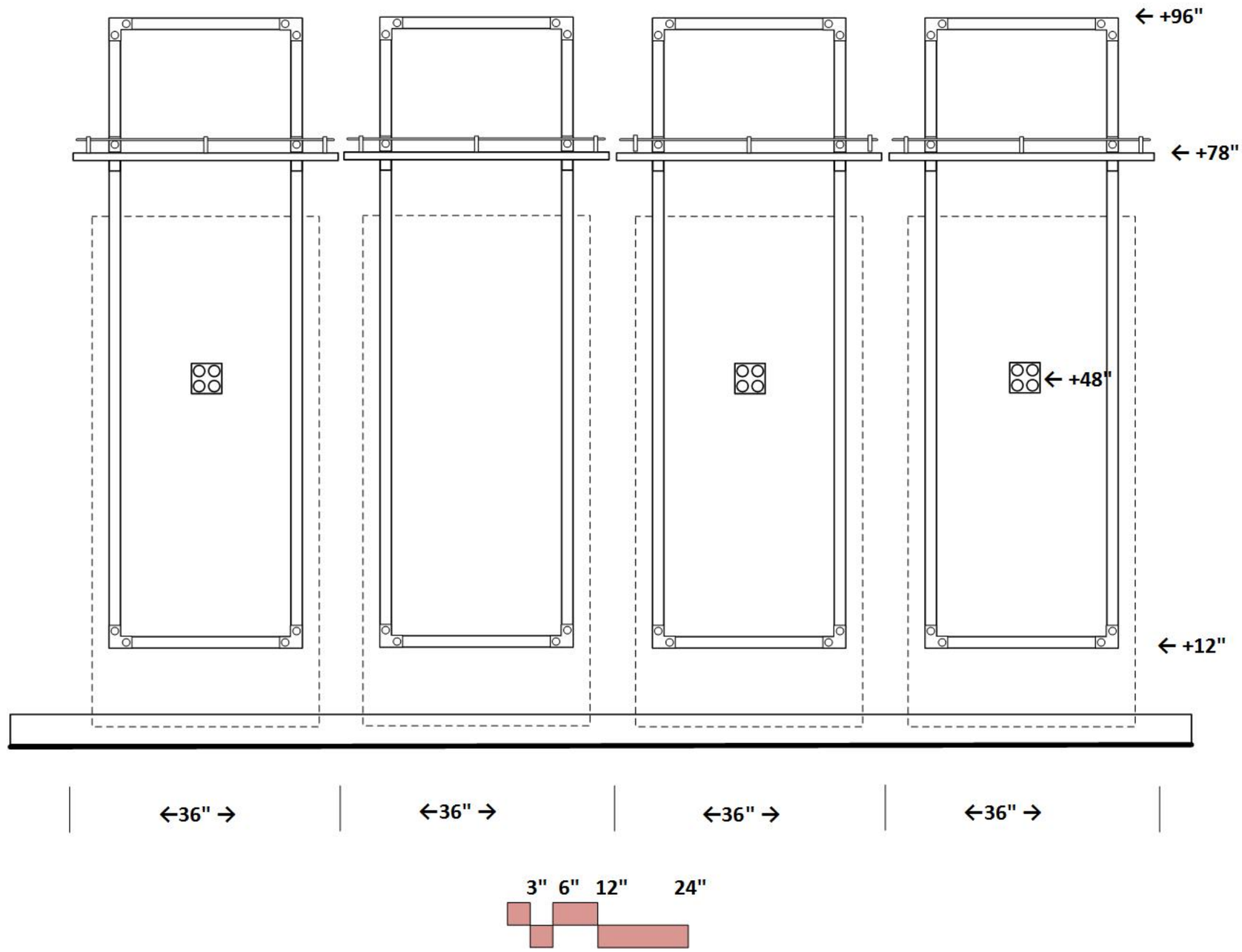
Elevation Micro Prep- west wall



MICROBIOLOGY TEACHING LABORATORIES

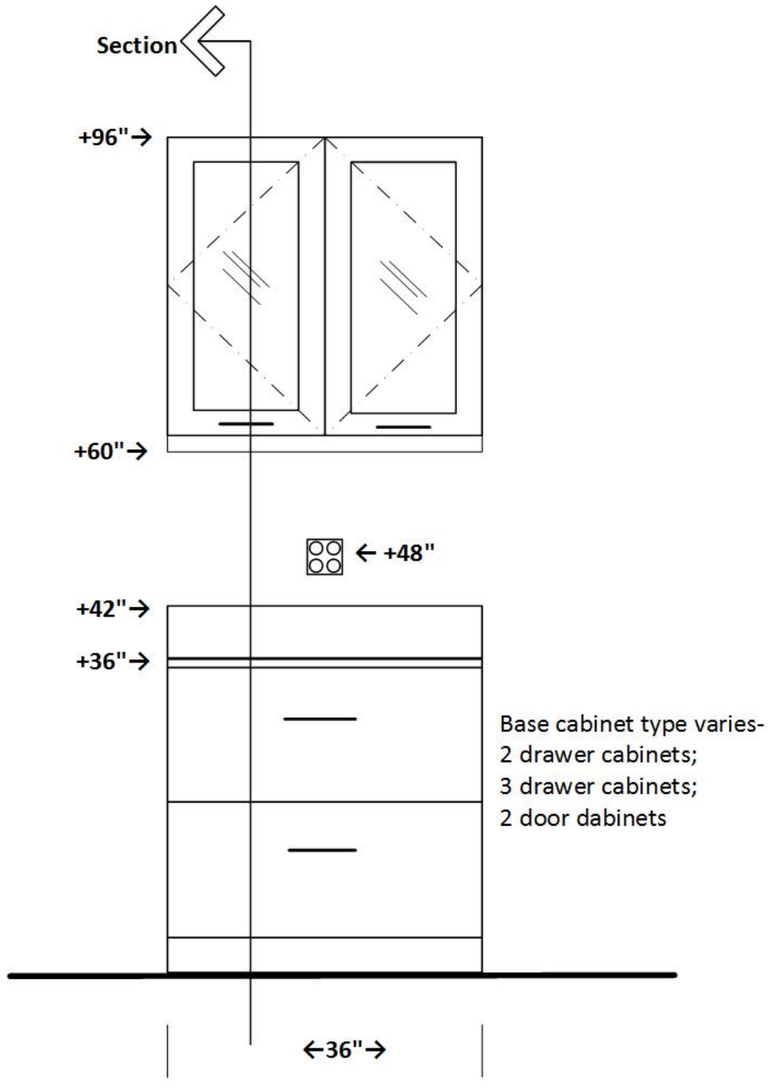
Elevation Micro Prep/Store- east wall



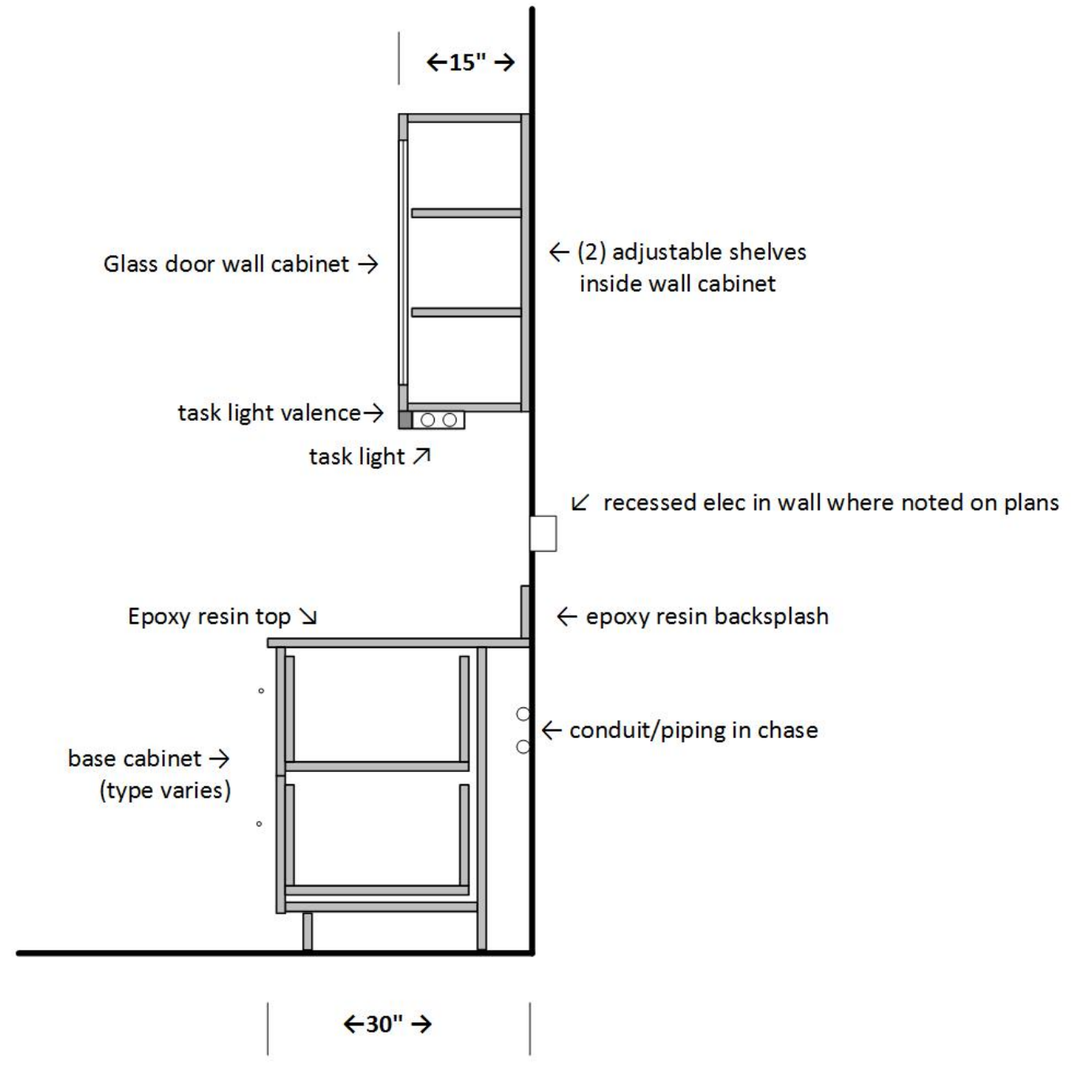

← +96"
← +78"
← +48"
← +12"
←36" →
←36" →
←36" →
←36" →
3" 6" 12" 24"

SECTION DETAIL 01

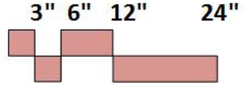
Wall bench- fixed



Elevation

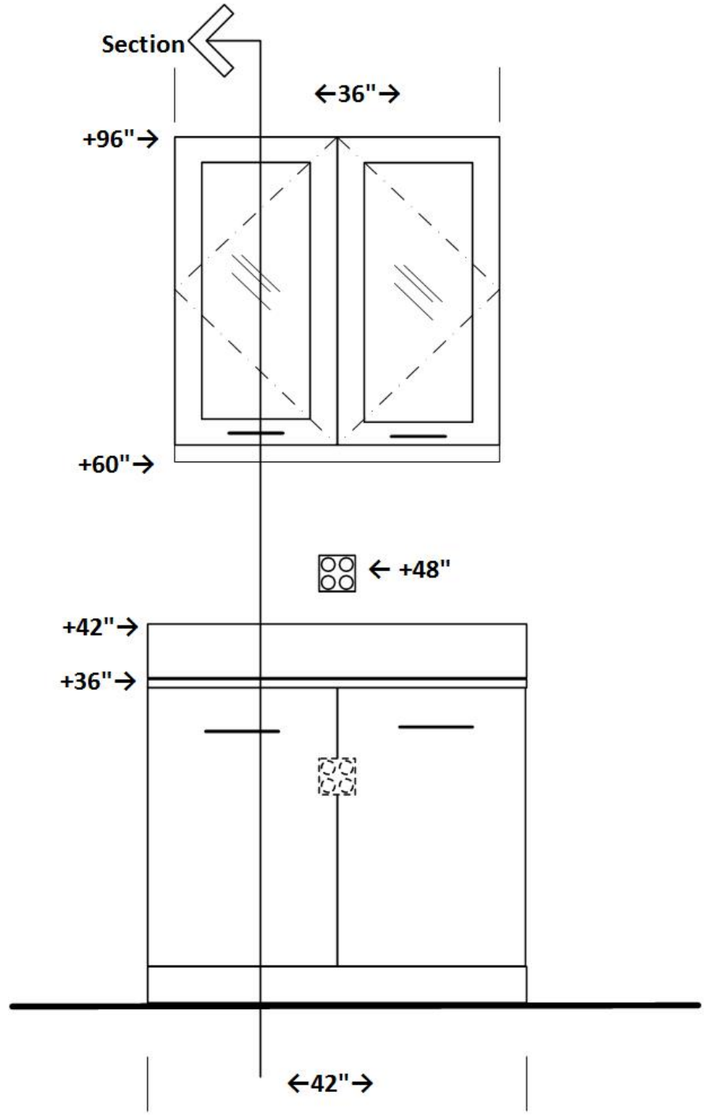


Section

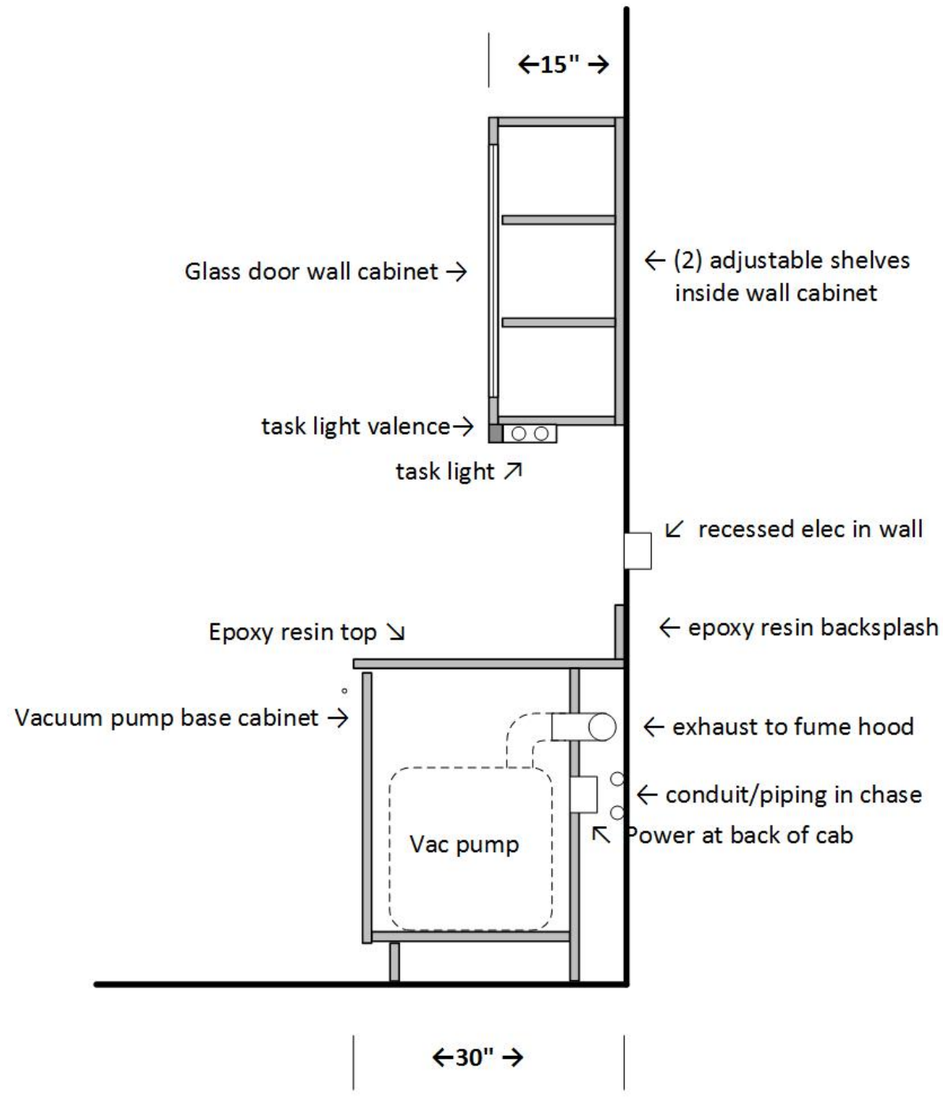


SECTION DETAIL 02

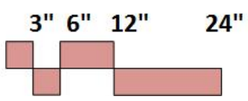
Wall bench with vacuum cabinet
Located in fume hood alcoves in research labs



Elevation

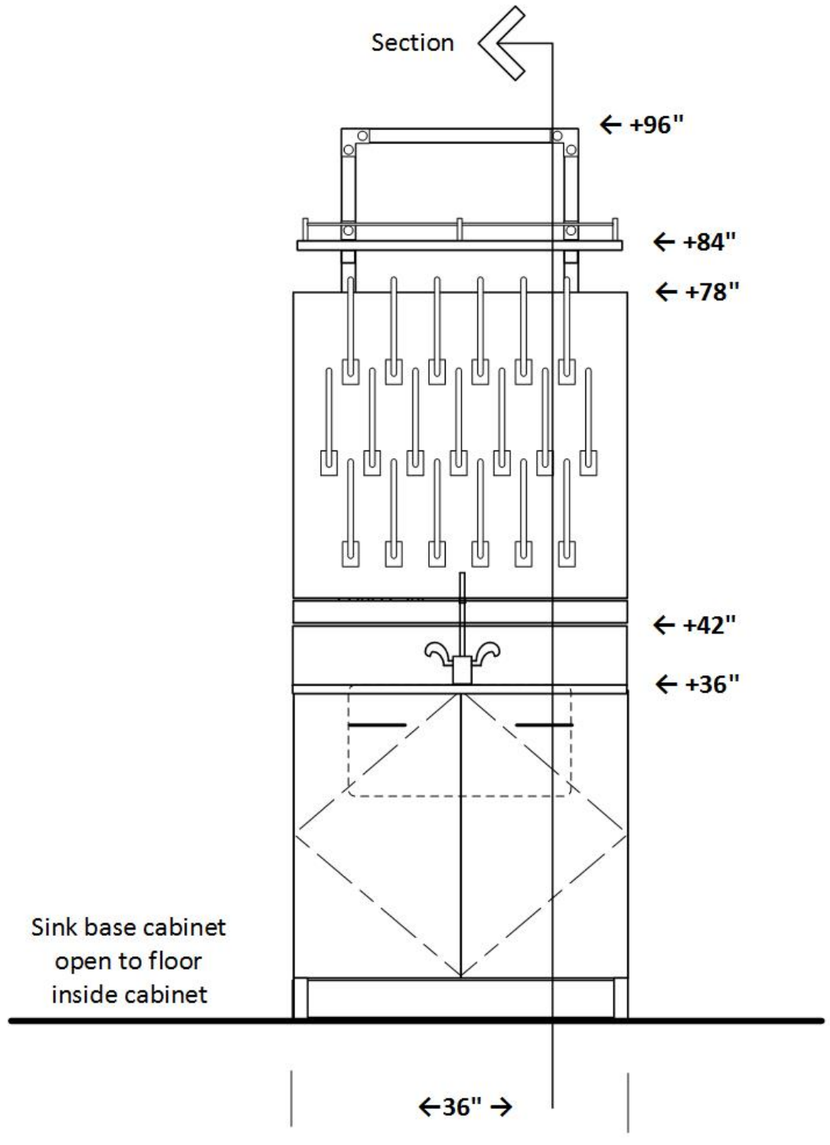


Section

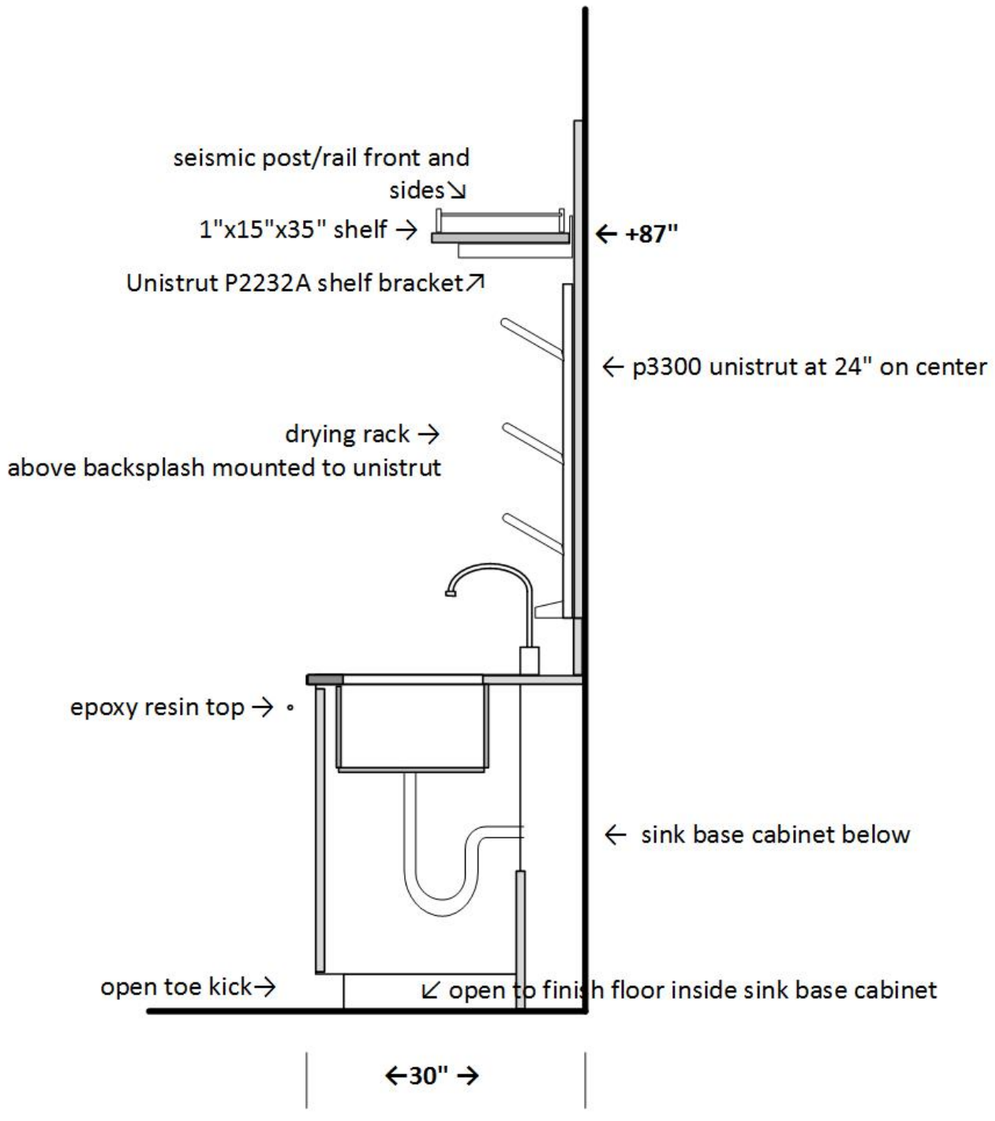


SECTION DETAIL 03

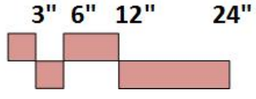
Sink bench



Elevation

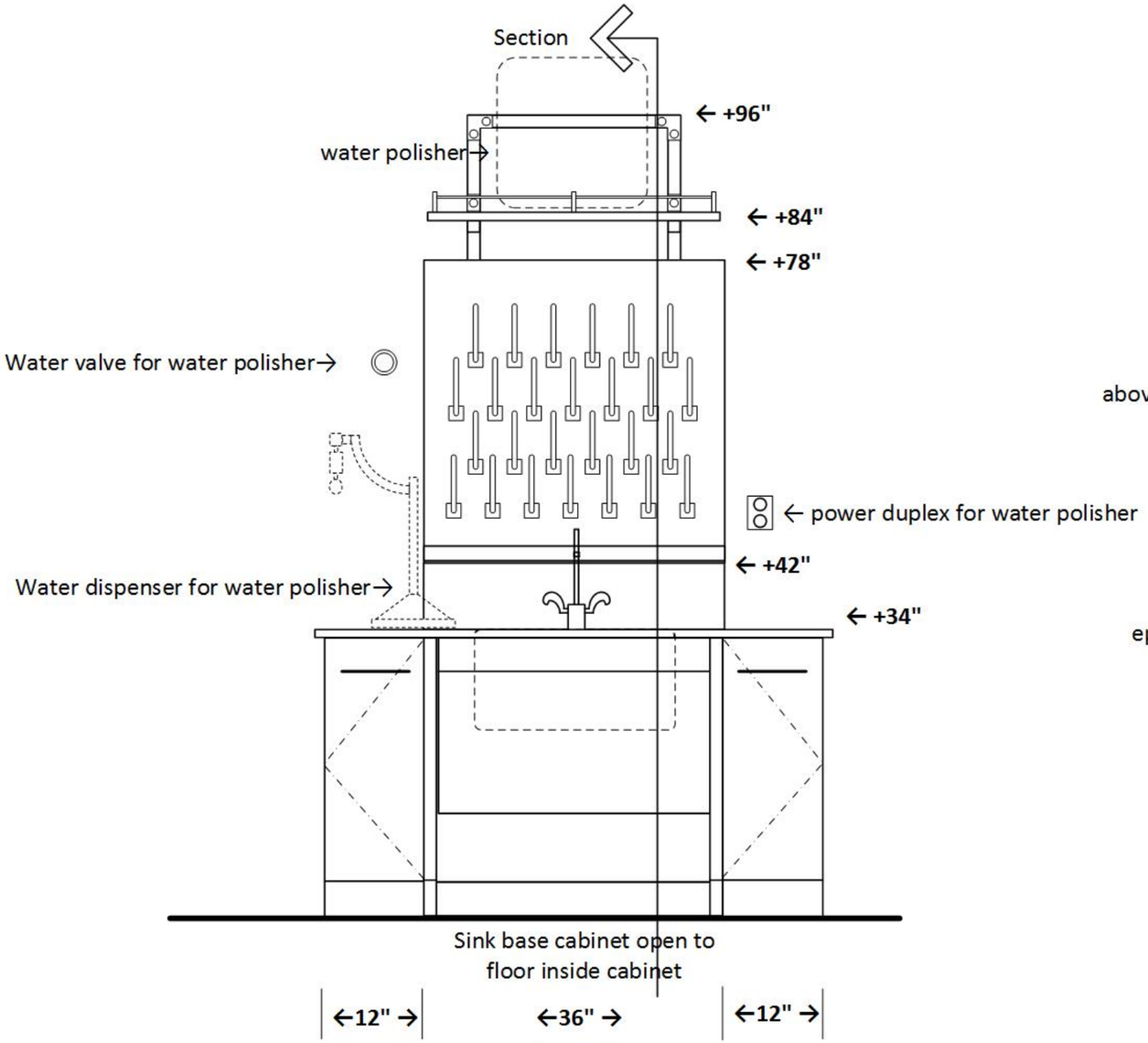


Section

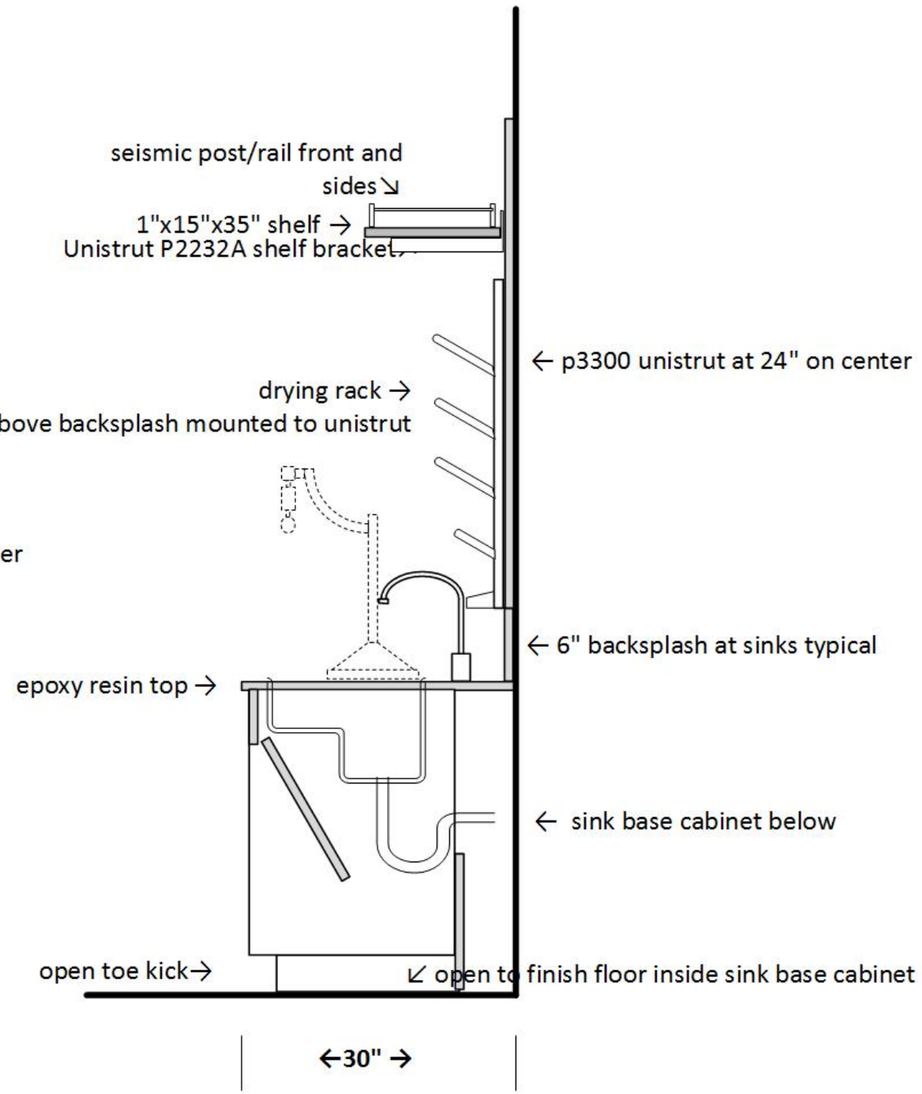


SECTION DETAIL 04

Accessible sink bench
One per research lab
One per teaching lab



Elevation



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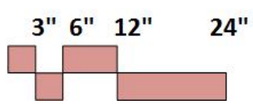
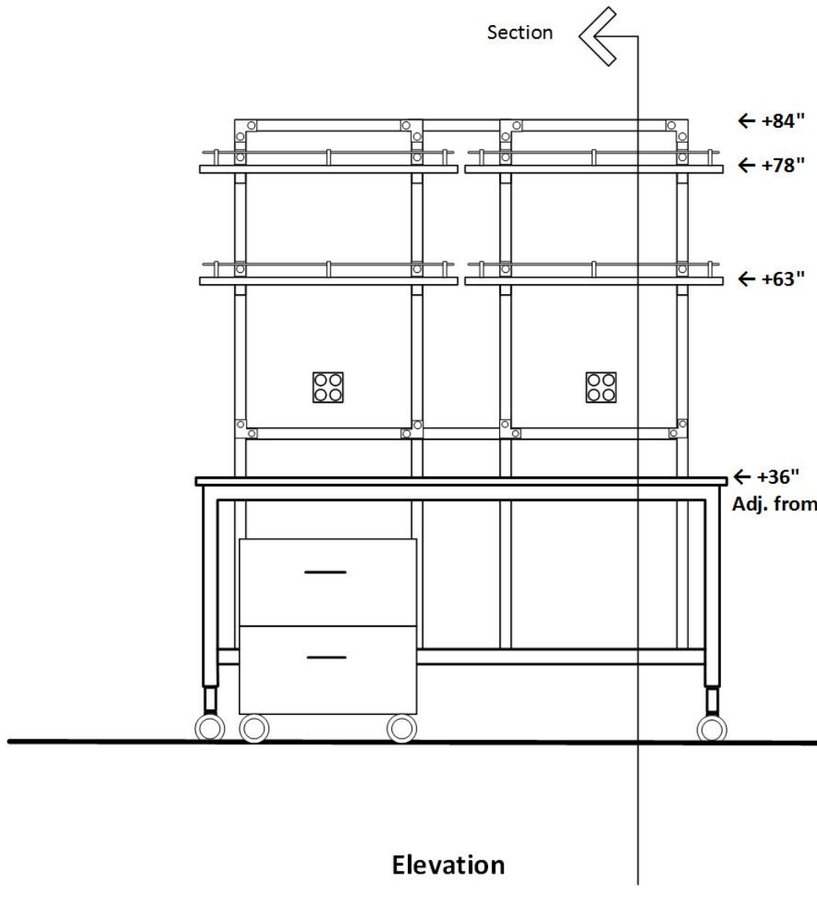


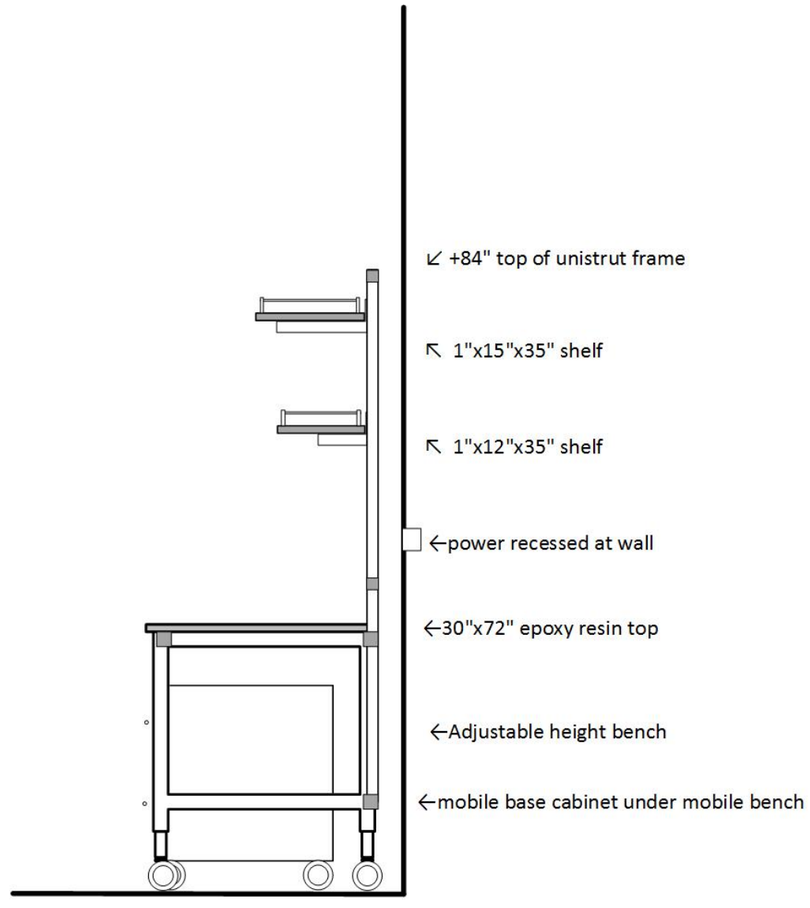
SECTION DETAIL 05

Adjustable lab bench at wall



Elevation

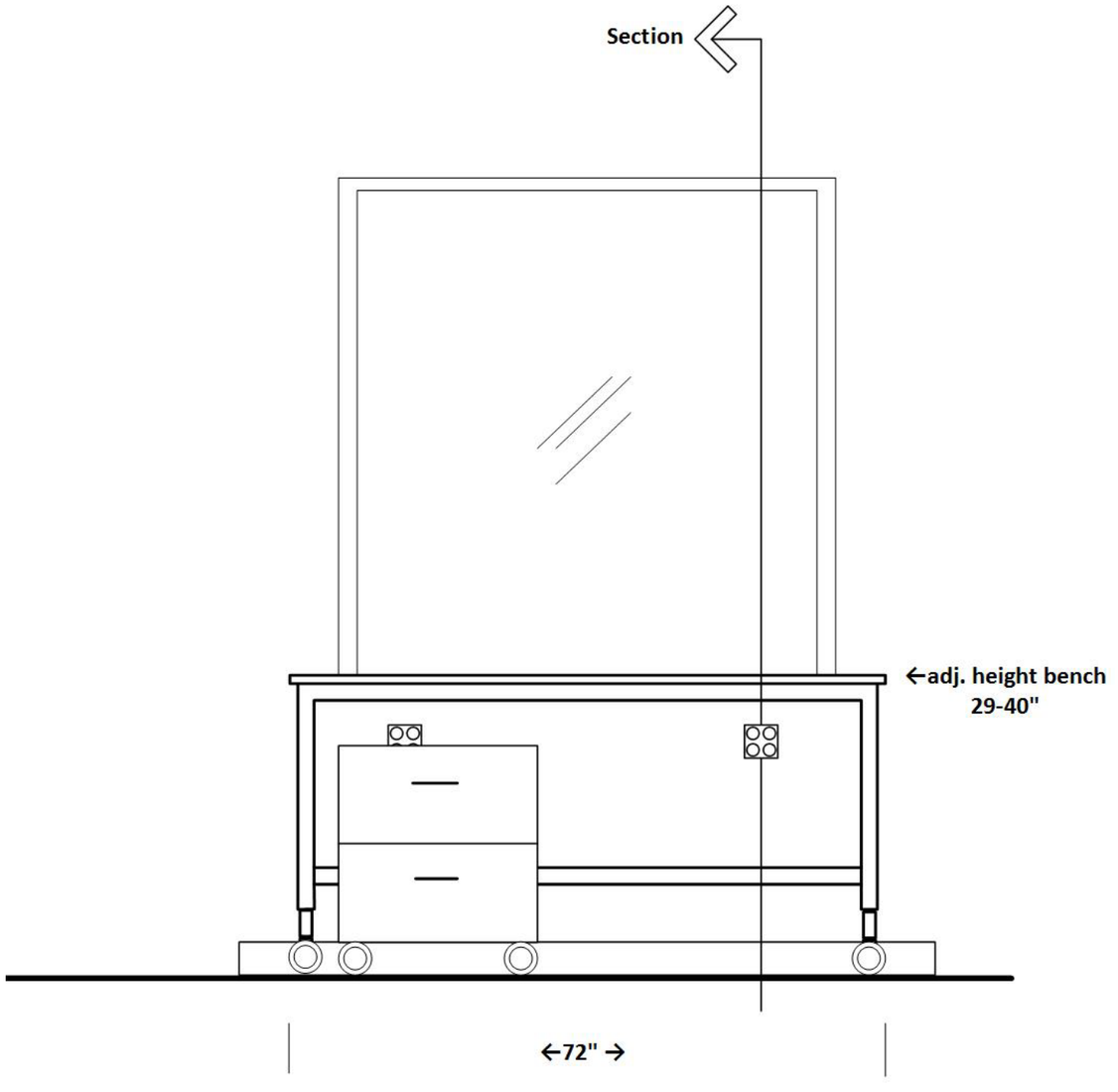
3"6" 12" 24"



Section

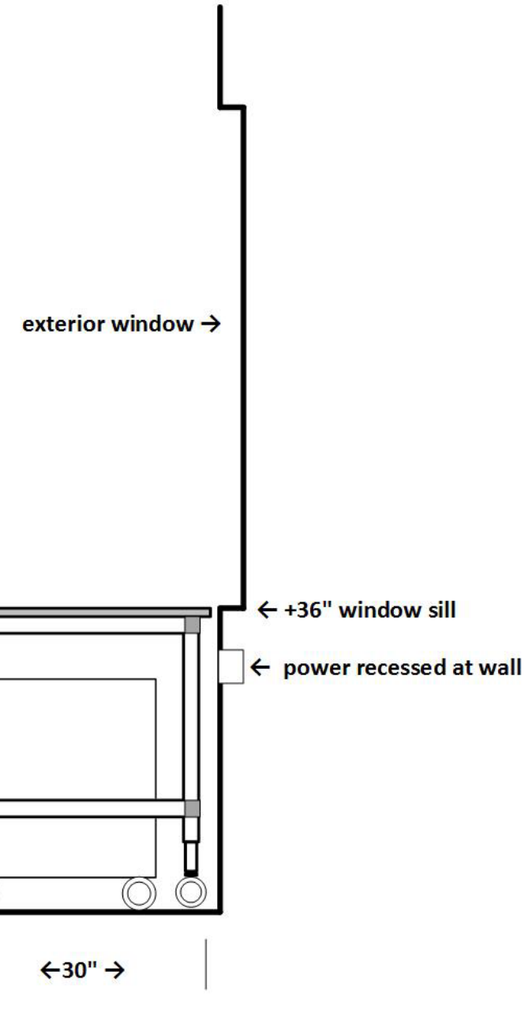
SECTION DETAIL 06

Adjustable lab bench at exterior window wall

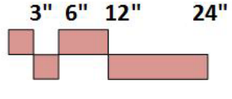


Elevation

Also consider locating power between windows

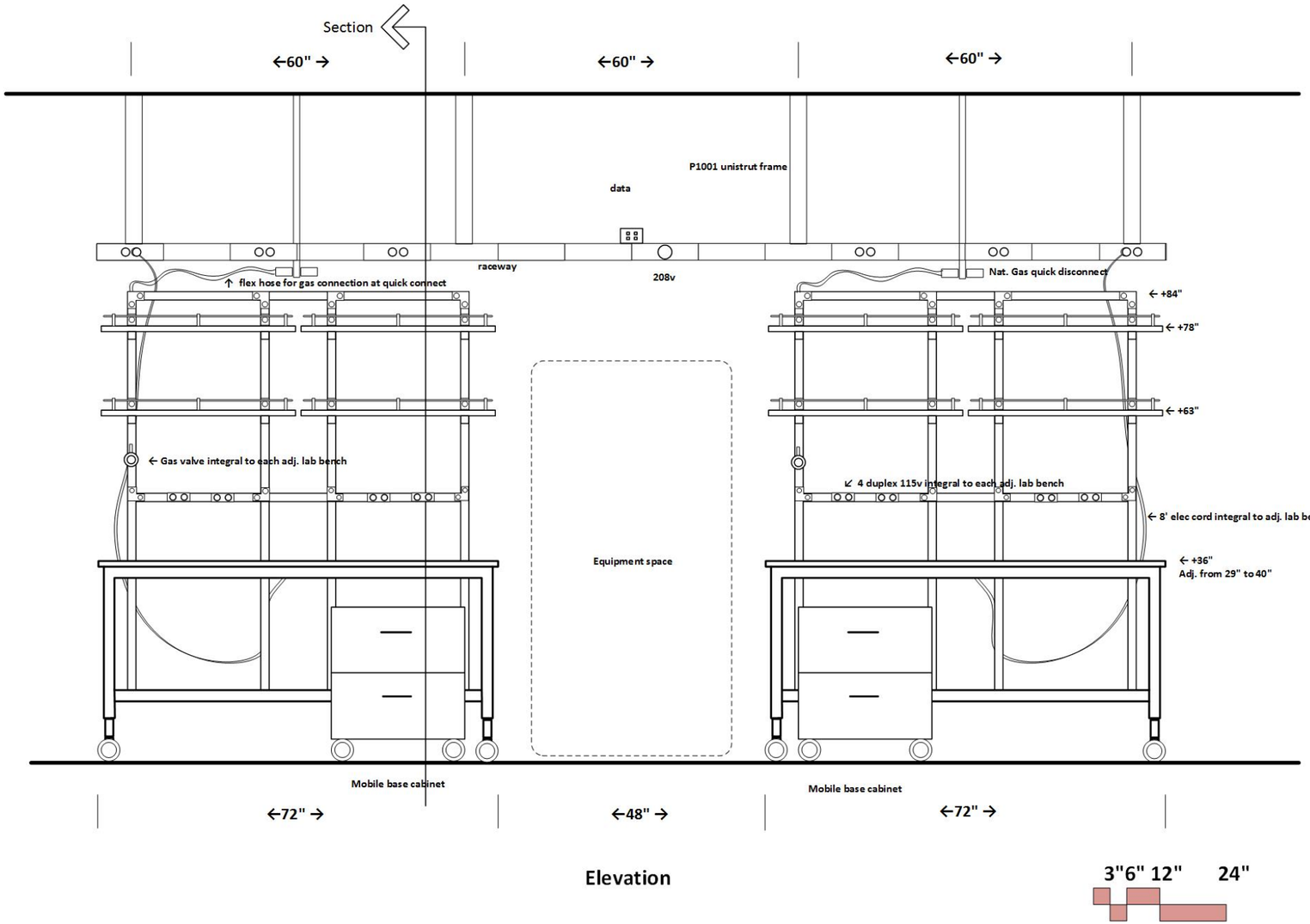


Section



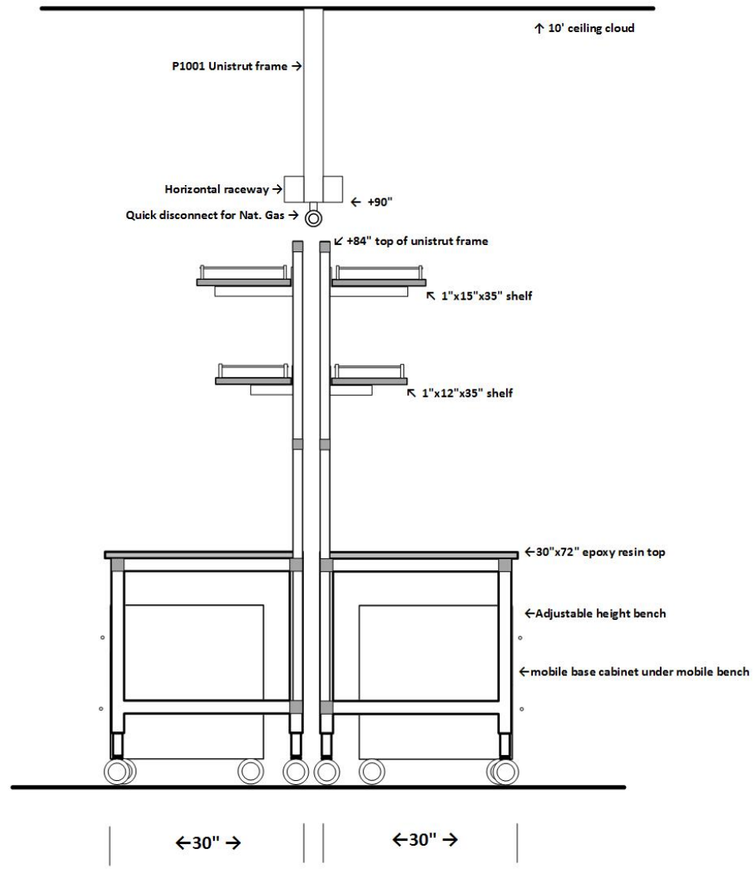
SECTION DETAIL 07

Adjustable lab bench at research island



Elevation

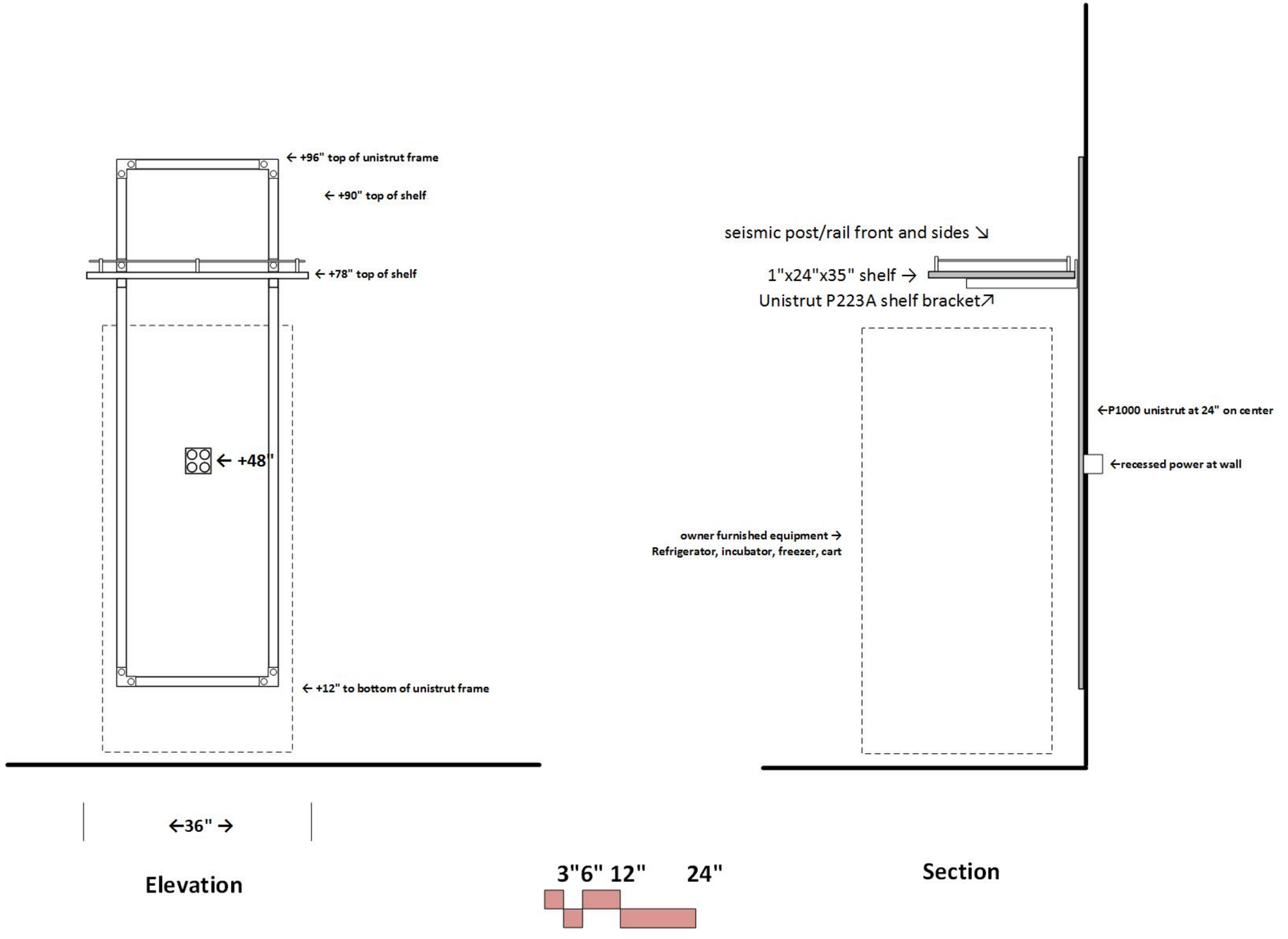
3"6" 12" 24"



Section

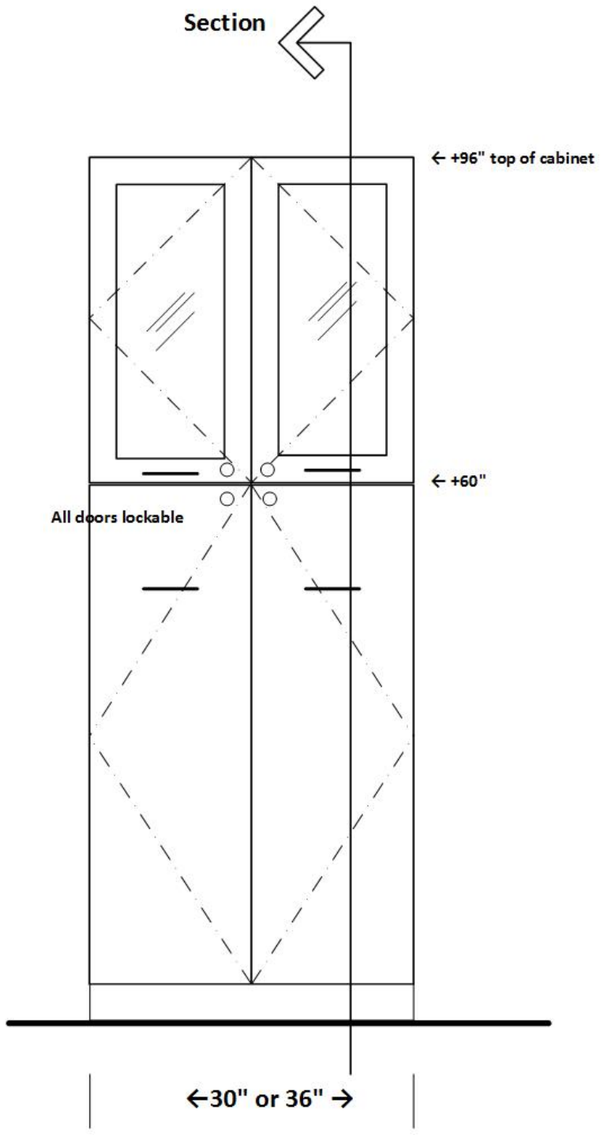
SECTION DETAIL 08

Equipment space at wall

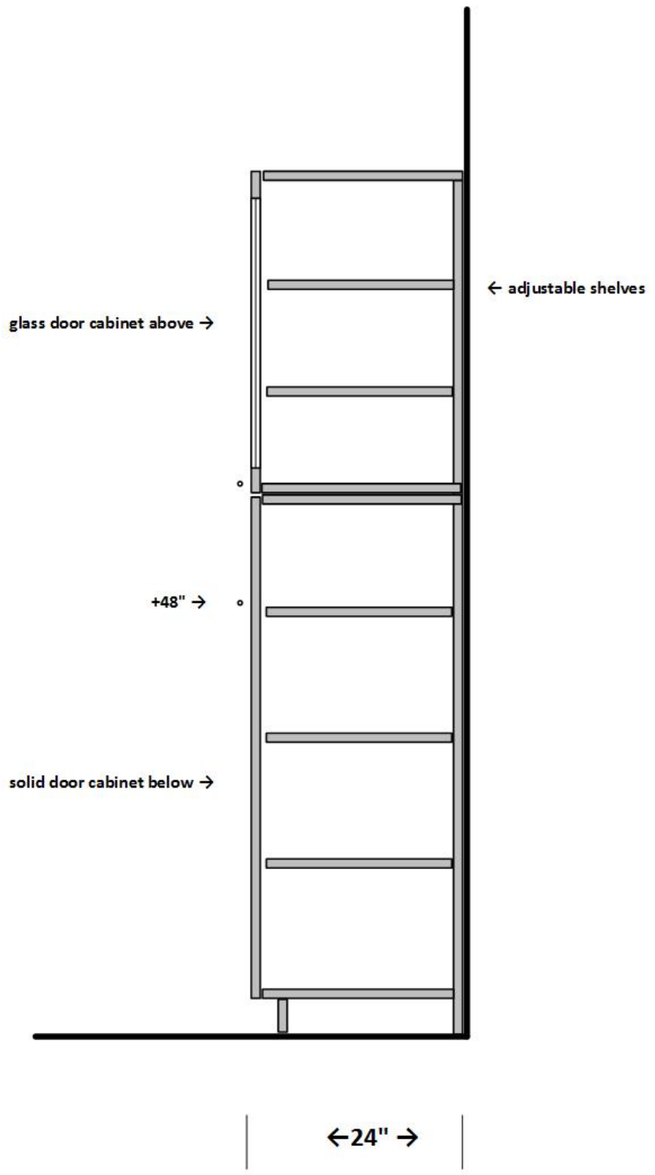


SECTION DETAIL 09

Tall storage cabinet



Elevation



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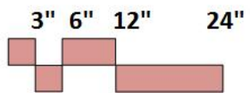
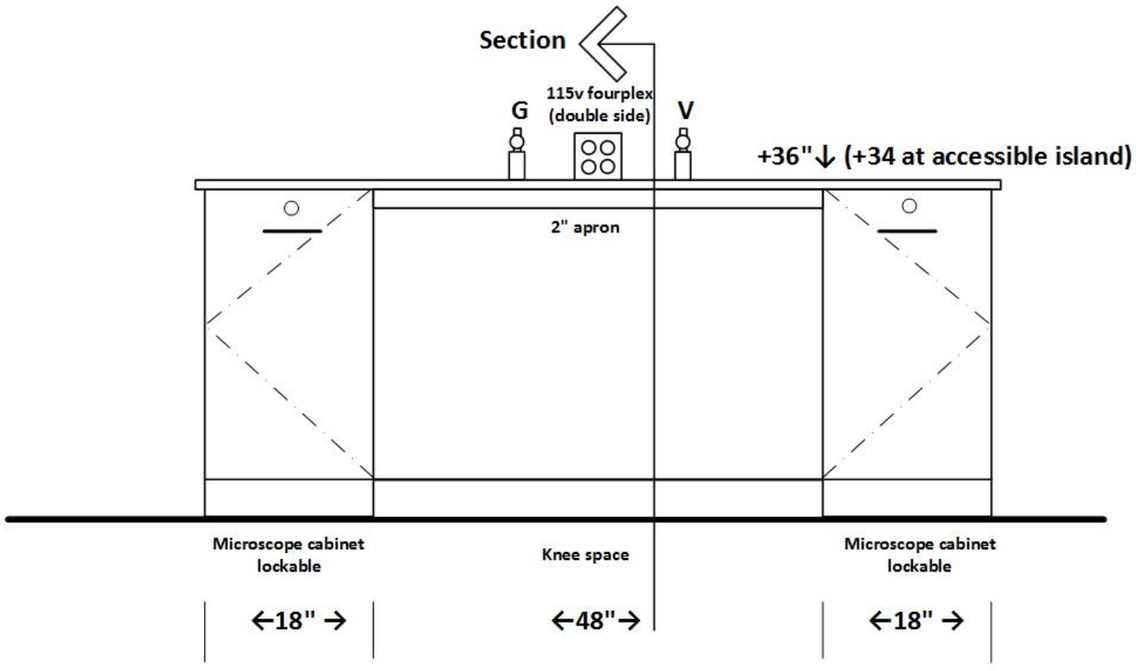
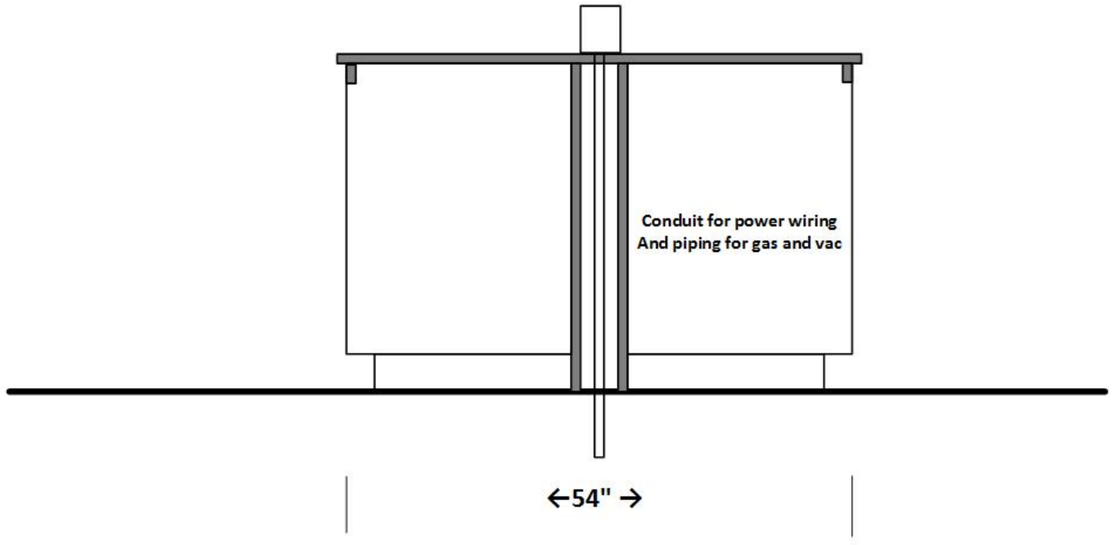


SECTION DETAIL 10

Student Island Bench at Microbiology Teaching Lab with short island pattern



Elevation



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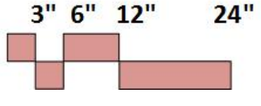
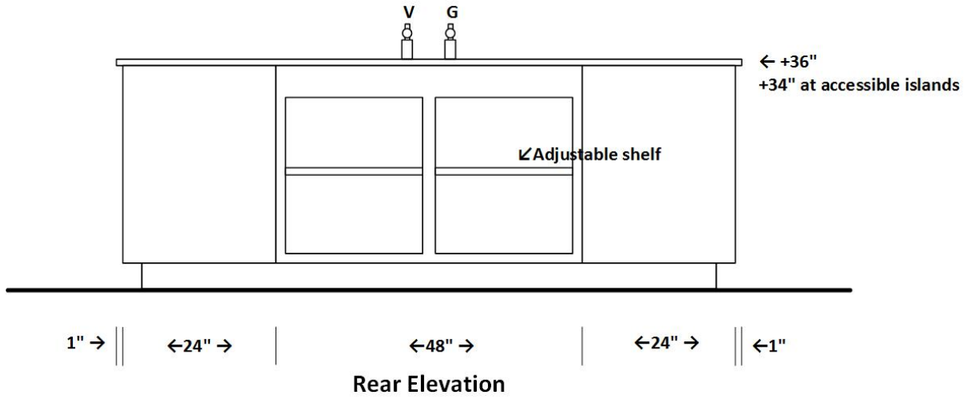
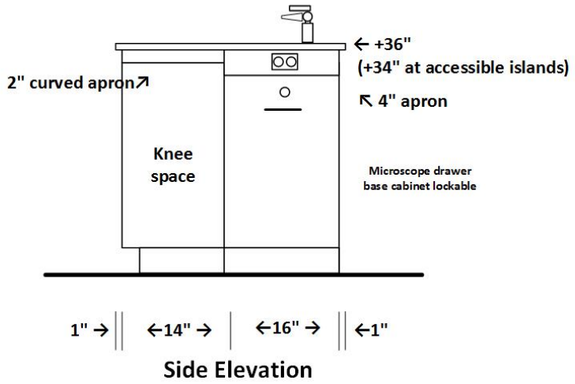


SECTION DETAIL 11

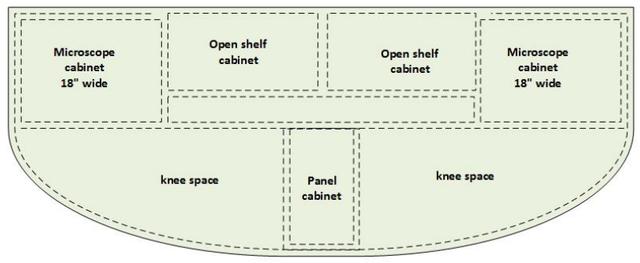
Student Curved Island Bench at Microbiology Teaching Lab with chevron pattern



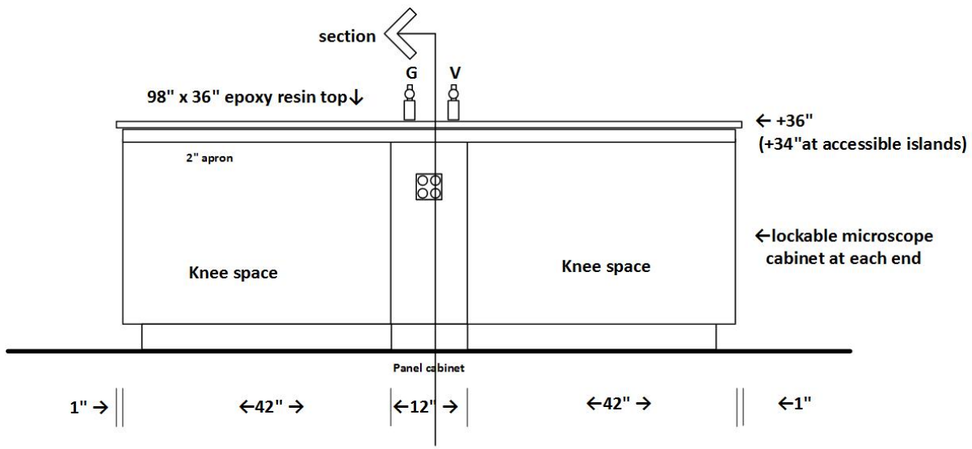
Rear Elevation



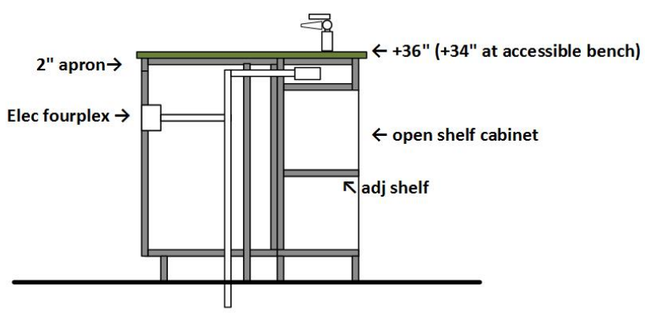
Side Elevation



Plan



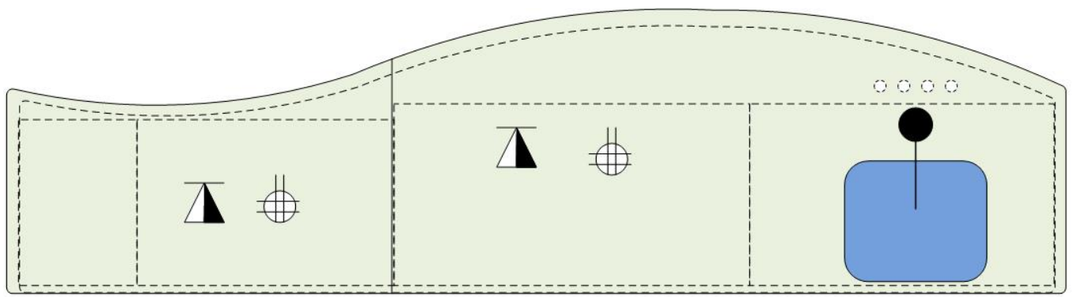
Front Elevation



Section

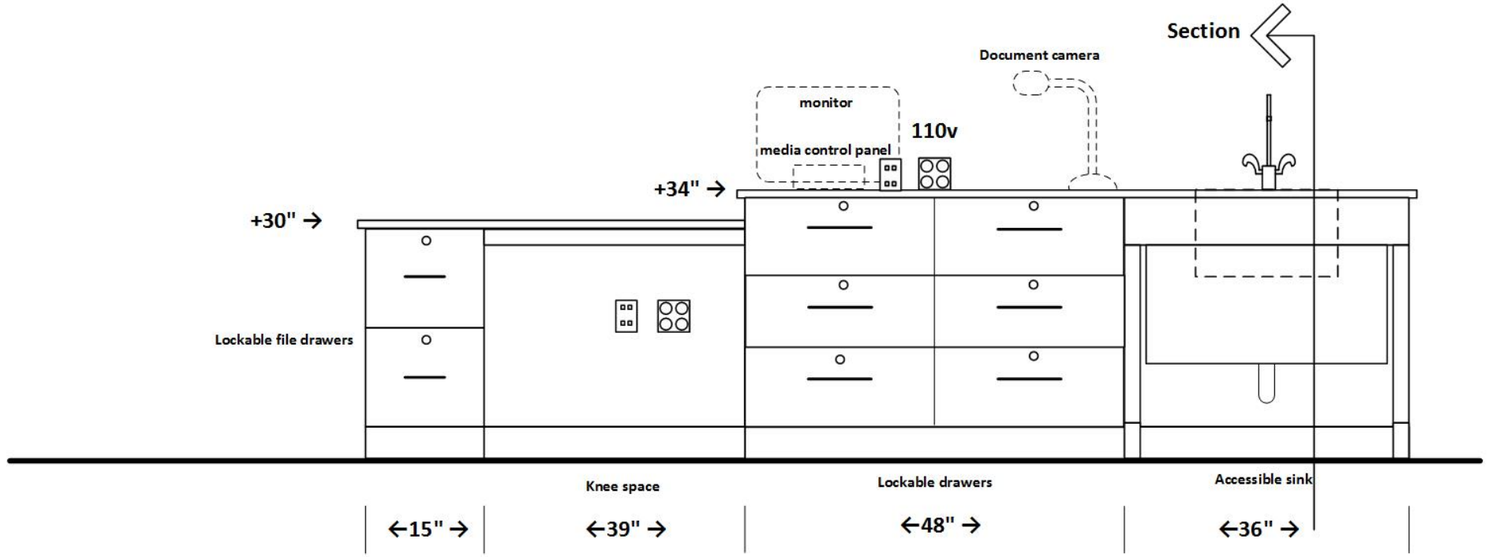
SECTION DETAIL 12

Instructor Bench at chevron pattern microbiology teaching lab

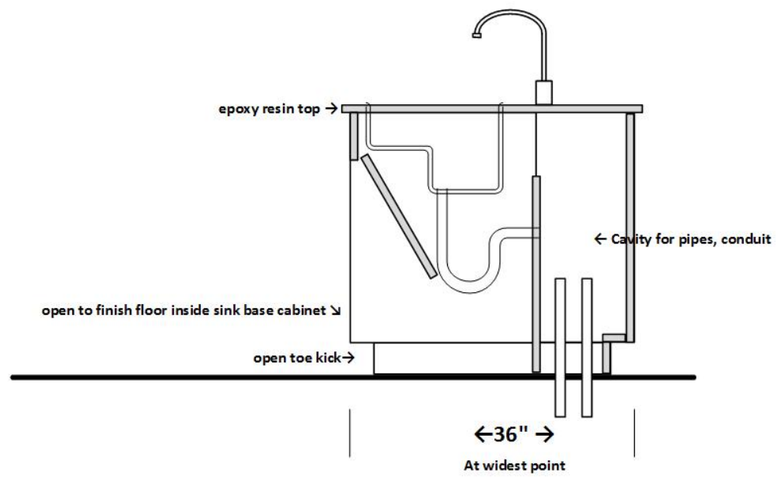


Plan

HW/CW



Elevation

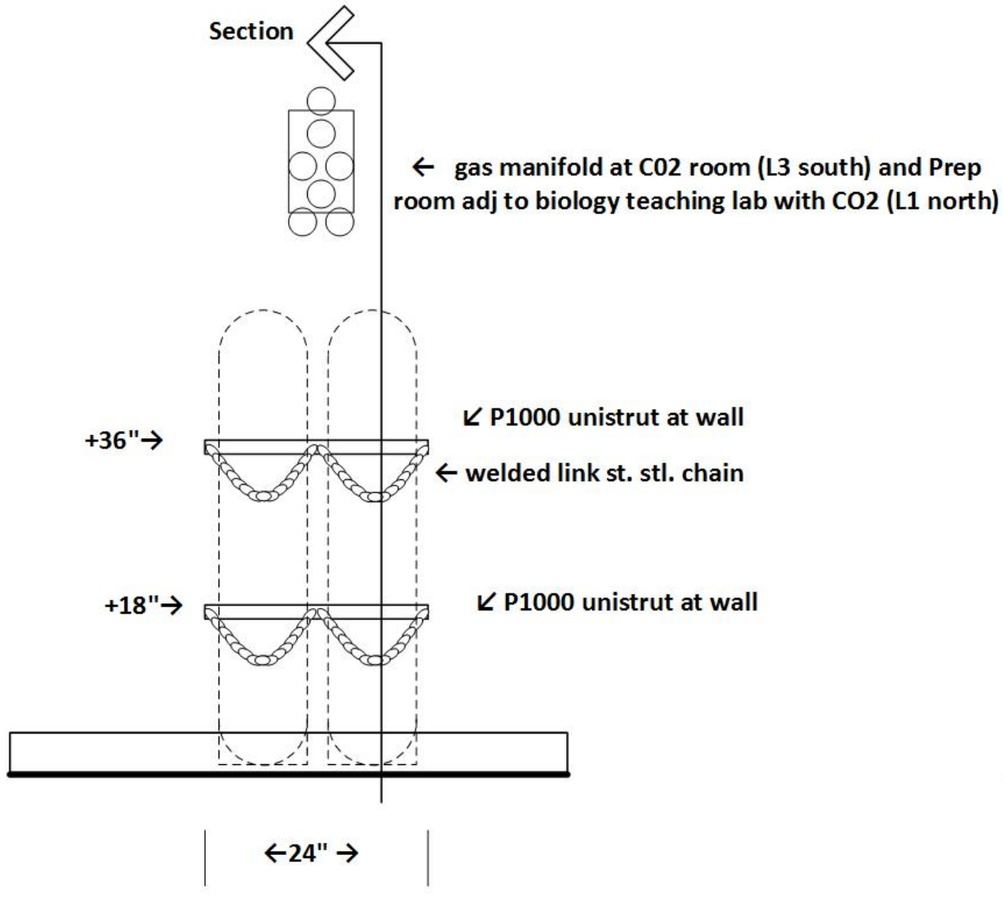


Section

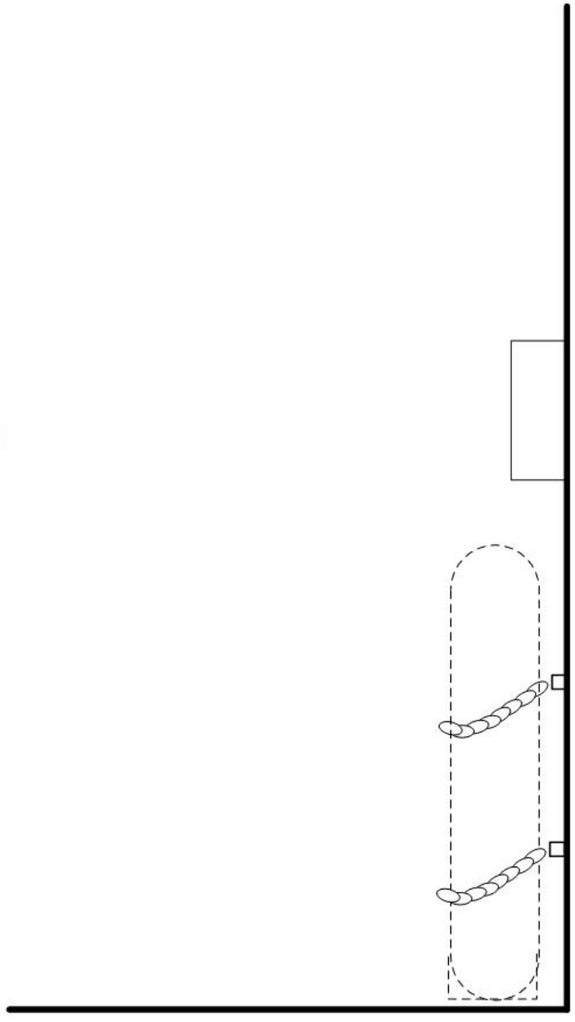
3" 6" 12" 24"

SECTION DETAIL 13

Cylinder restraint



Elevation



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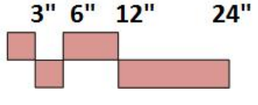
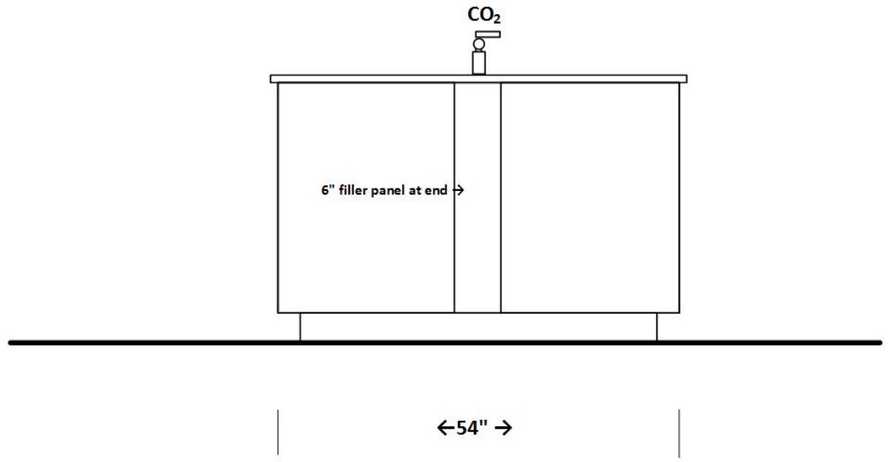
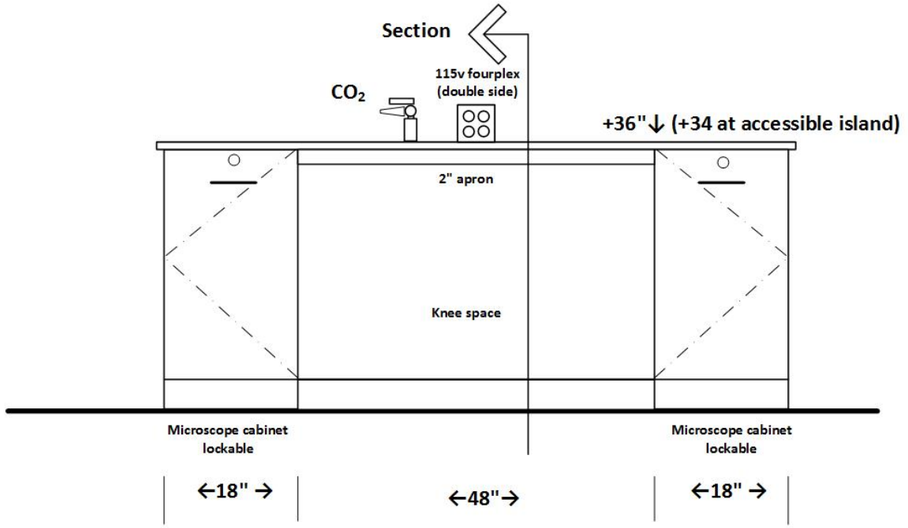


SECTION DETAIL 14

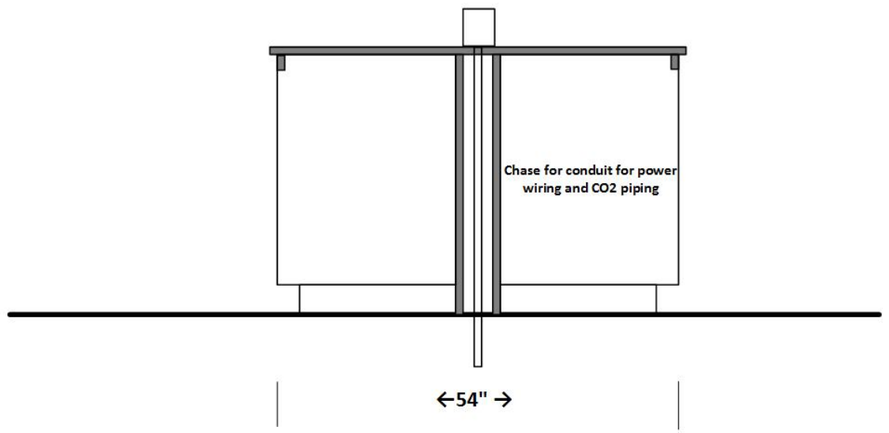
Biology Teaching Lab Island Bench



End View

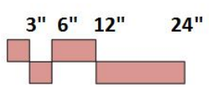


Elevation



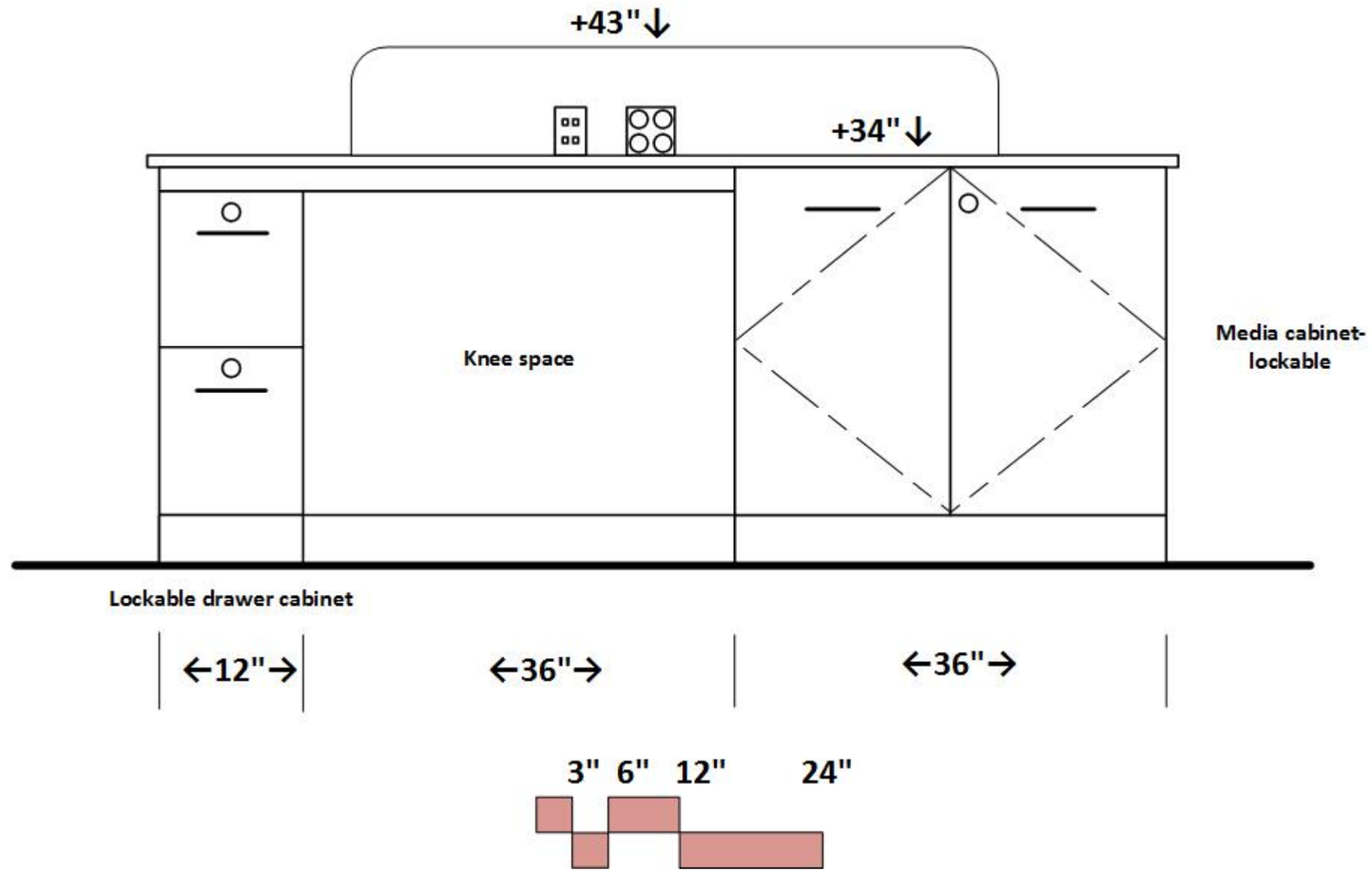
Section

CO_2 gas is distributed at each island bench via CO2 manifolds in adjacent Prep Room.



SECTION DETAIL 15

Instructor Bench at island pattern teaching lab



EQUIPMENT SCHEDULE

Item Number	Description	Dimensions	Electrical	Emer Power	Dedicated circuit	Data	Exhaust	Plumbing	Contractor Furnished/ Contractor Installed (CFCI)	Owner Furnished/ Contractor Installed (OFCI)	Owner Furnished/ Owner Installed (OFOI)	Spec by Div 11
1	Chemical Fume Hood- Research Labs	6' wide	115v' 20 amp	●	●		● 800 cfm VAV	Natural gas, vacuum via local vacuum pump	●			●
2	Chemical Fume Hood- Teaching Labs	5' wide	115V; 20 amp	●	●		● 700 cfm VAV	Natural gas, vacuum via local vacuum pump	●			●
3	Chemical Fume Hood- EM Suite; Micro Chem Store	4' wide	115v; 20 amp	●	●		● 500 cfm VAV	Natural gas	●			●
4	Biological Safety Cabinet- Class II Type A	6' wide	115v; 20 amp	●	●						●	
5	Safety Shower/Eyewash Unit	21" W x 33" H x 3.5" D						Tepid water	●			●
6	Pure Water System	~96" L x 30" W x 84" H	120V; 15 amp	●	●			Cold water feed, floor drain	●			●
7	Pure water polisher at lab sink Locate at 1 sink per research lab; one sink per teaching Prep Room with fume hood	~24" W x 24" H x 18" D	115V; 15 amp		●			hot/cold water feed, drain, RO water for rinse cycle			●	
8	undercounter washer	~25" W x 28" D x 35"H	208V; 12 amp	●	●	●			●			●
9	RO Unit for undercounter washer	~31" W x 8" D x 31" H	115v; 15 amp		●			cold water feed	●			●
10	Autoclave- SR24A	47" W x 71" H x 42" D	480V with disconnect		●	●	● canopy	hot/cold water feed; floor sink	●			●
11	Ice machine	~22" W x 34" D x 67" H	115v; 15 amp		●			cold water feed; floor drain			●	
12	Filter for ice machine	~8" W x 6" D x 27" H	120V; 12 amp					cold water feed; floor drain	●			●
13	Reach-in Cold Box	~55" W x 36" D x 80" H	208v; 15 amp	●	●						●	
14	Vacuum Pump- at each fume hood except for EM suite	~19" W x 9" D x 15" H	115v; 15 amp		●		● connect to fume hood exhaust				●	
15	Gas manifold for CO2 gas	~9" W x 9" D x 9" H			●			Pipe from manifold to labs per Div. 22	●			●
16	Refrigerators	varies	115V; 20 amp	●	●						●	
17	Minus 20 freezers	varies	115V; 20 amp	●	●						●	
18	Minus 80 freezers	varies	208v 20 amp	●	●						●	
19	Centrifuges	varies	208v; 20 amp	●	●						●	
20	SEM- EM Suite	~72" W x 36" D x 48" H	208v; 30 amp		●	●		Chilled water supply/return			●	
21	TEM- EM Suite	~72" W x 36" D x 48" H	208v; 30 amp		●	●		Chilled water supply/return			●	
22	Chillers (2)- EM Suite	~24" W x 36" D x 30" H	208v; 20 amp		●			Chilled water supply/return, floor drain			●	
23	Air compressor- EM Suite	~24" W x 36" D x 30" H	115v; 20 amp		●						●	
24	Imaging equipment- microscopes, computers; EM Suite	varies	115v; 20 amp		● where noted	●					●	

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.
6' chem hoods in research: 800 c.f.m.
5' chem hoods in teaching: 700 c.f.m.

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

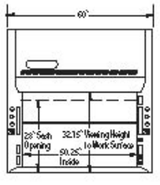
*Based on average annual dollars per CFM usage of $4.00; fume hood operating 24 hours a day and 5 days per week (6240 hours per year).

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

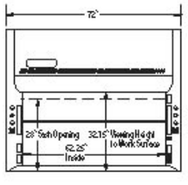
**International electrical configuration

4 Feet
98404 Series

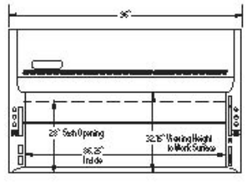
5 Feet
98405 Series



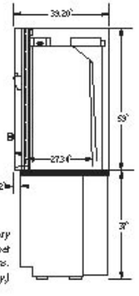
6 Feet
98406 Series



8 Feet
98408 Series



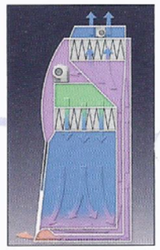
Side View/
All Models



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

PURIFIER® AXIOM™

CLASS II BIOSAFETY CABINETS



Side View: Airflow Diagram

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*

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

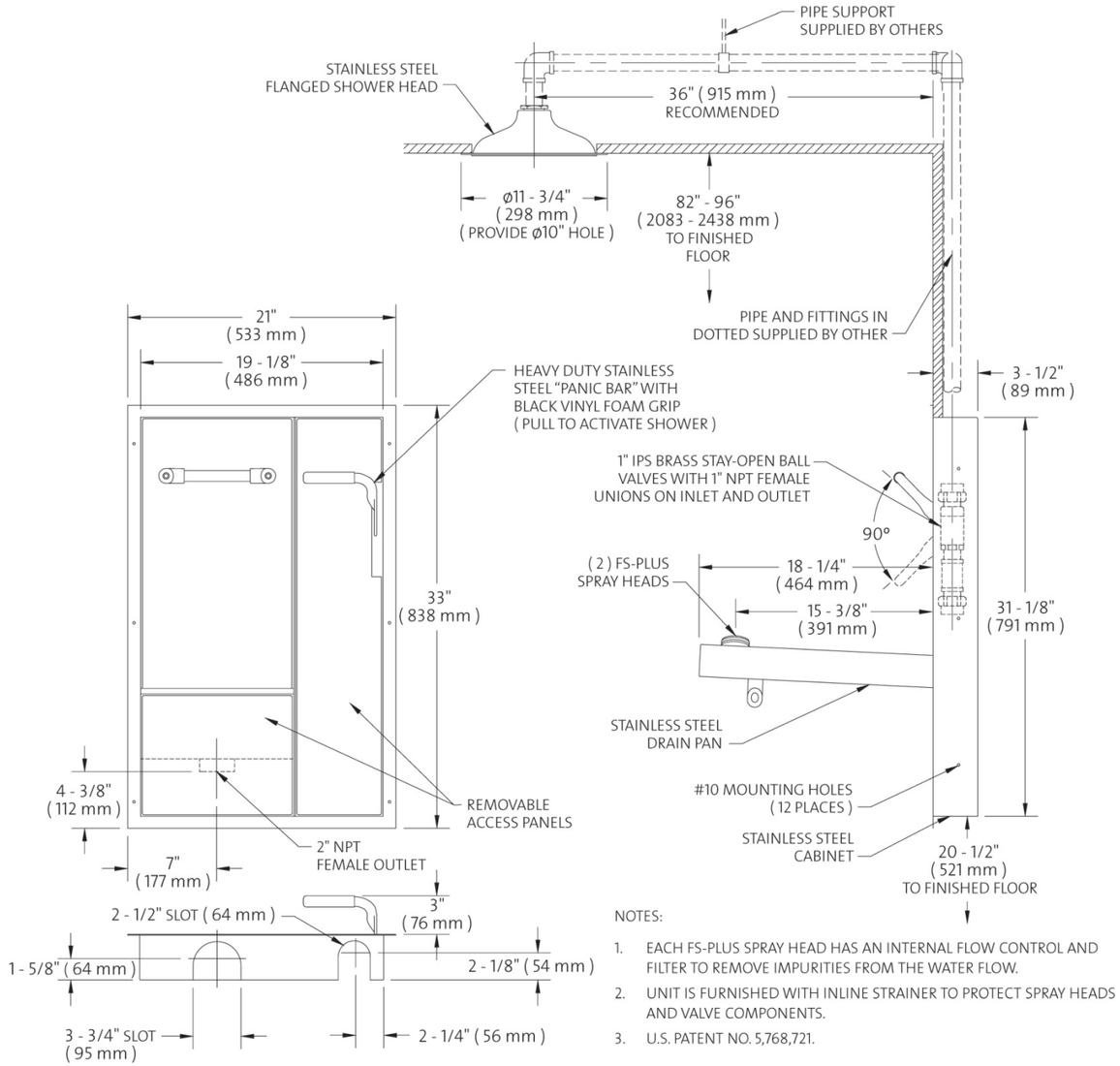
2-17-8/20/14

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



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.

Requires hard drain connection at eyewash inside wall cavity.

Provide floor drain below shower.

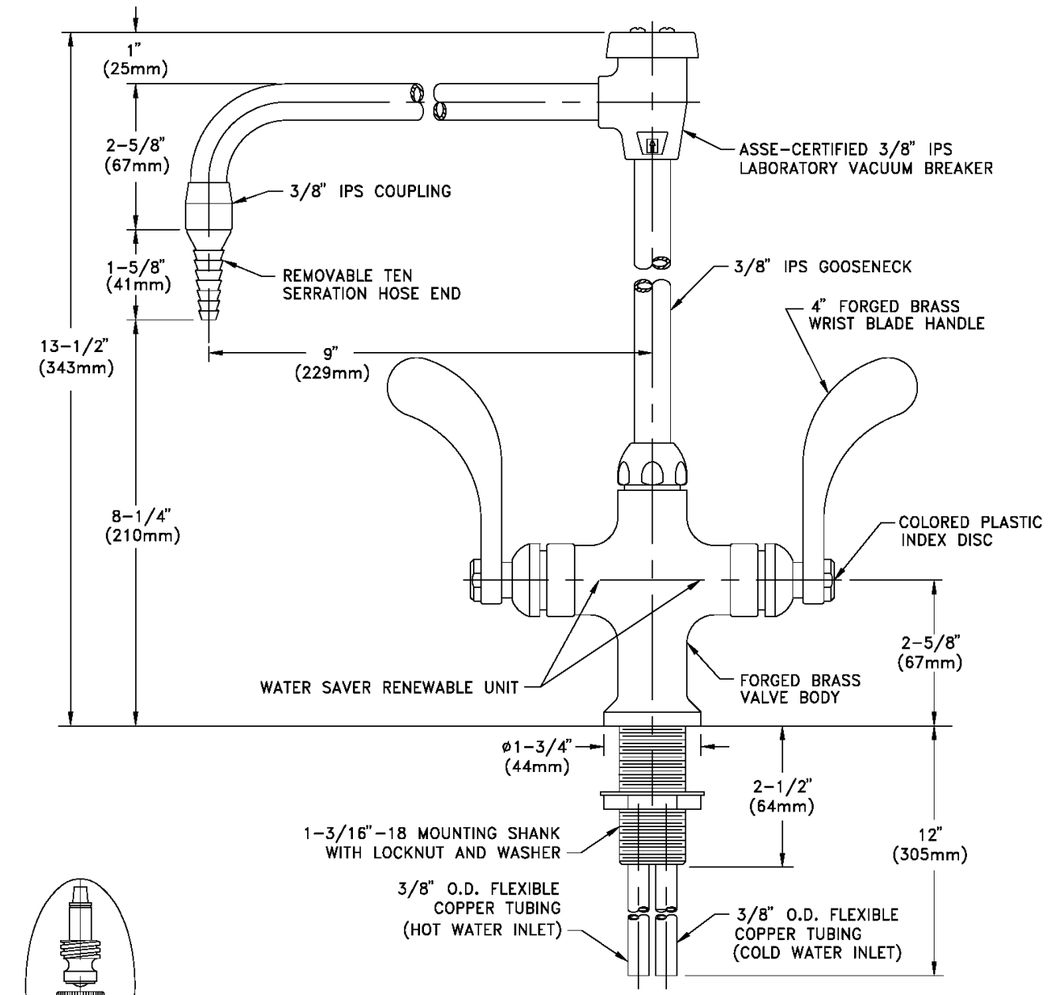
Daylight drain option not acceptable.

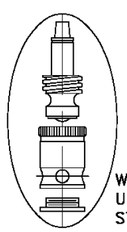
Hot/Cold Water Faucet Cut Sheet

COLORTECH
Laboratory Service Fixtures by
WaterSaver Faucet Co.

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

CT414-9VB-BH
LABORATORY MIXING FAUCET, DECK MOUNTED, 9" RIGID/SWING VACUUM BREAKER GOOSENECK, WRIST BLADE HANDLES





WATER SAVER RENEWABLE UNIT WITH REPLACEABLE STAINLESS STEEL SEAT

MEASUREMENTS MAY VARY ±1/4".

NOTES:
1. CSA CERTIFIED UNDER CAN/CSA B125.M89. COMPLIES WITH ANSI/ASME A112.18.1M.
2. FIXTURE IS FURNISHED WITH COLORTECH POWDER-COATED FINISH.

Drawing Number: _____ Revision Number: 031803-KJS

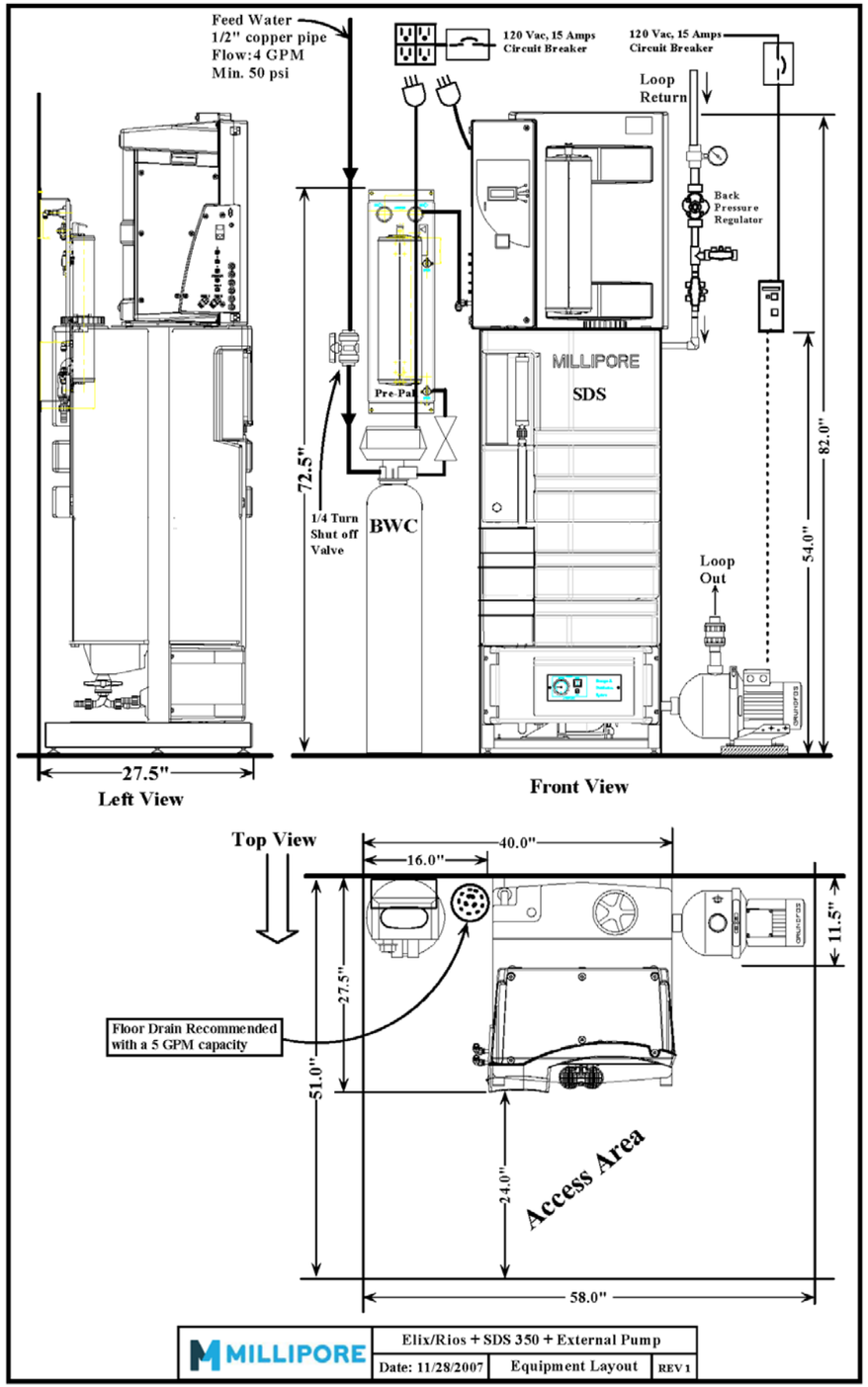
Blade handles.

9" swing gooseneck.

Satin chrome finish.

Pure Water Station Cut Sheet

Locate at Pure Water Room.
1 per floor.
No piping to lab sinks.
Lab personnel pick up water unit and take back to labs.
Unit can provide both Type I and Type II water.
Requires additional storage tank not shown in cut sheet.



Water Purification

Elix® 20/35/70/100

WaterPro BT Water Purification System, 115V

View online: http://www.labconco.com/product/waterpro-bt-115v/5001

Catalog Number: 9015020

Overview

Turns almost any laboratory sink into an on-demand, ultrapurified water station. A quick disconnect coupler with bypass allows this portable benchtop unit to produce Type III RO-purified water or Type I lab grade water from standard tap water.

- Compact all-in-one benchtop design
- Ultrapure Type I water, up to 18.2 megohm-cm
- Pure Type III RO water
- Typical rate of >0.5 liters per minute
- Optional UV lamp available

Type I water is ideal for many applications including instrumental trace element analysis, mixing standardized acid/base solutions, and media solutions. An optional UV lamp further reduces the bacteria and TOC levels necessary for life science applications.

Specifications

- **Weight:** 38.8 lbs
- **Weight metric:** 17.6 kg
- **Dimensions:** 11.4"w x 16.6"d x 21.2"h
- **Electrical:** 115 volts, 60 Hz, 2 amps
- **Water Purity Desired:** Pyrogen-free, Type I, TOC
- **Purification Method:** Carbon Filtration, Deionization, Reverse Osmosis
- **Flow Rate:** > 0.5 liters per minute Type I water
- **Region:** U.S. and Canada
- **Conformance:** CAN/CSA C22.2, CE, UL
- **Feedwater Source:** tap
- **Power Cord & Plug:** North America, 115 volts, 15 amps
- **Required Accessories:** WaterPro BT Filter Pack

Locate at one sink per research lab and one sink per teaching prep room.

Owner Furnished/Owner Installed.

Shown for reference only.

Actual unit may vary.

Provide water valve and 115v power duplex at each location.

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

DURCON INCORPORATED™

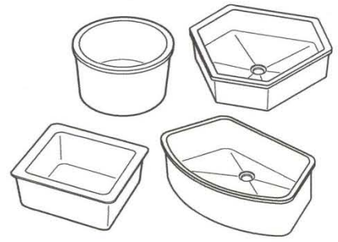
PRODUCT DIMENSIONS

DOMESTIC SIZES

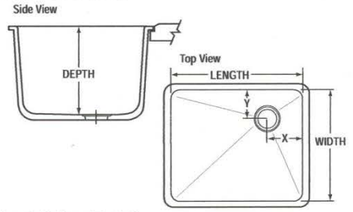
Standard DropIn® Sinks

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	

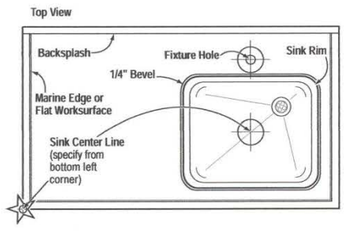
DropIn® Sink Styles



Dimensions Key



Installation Detail

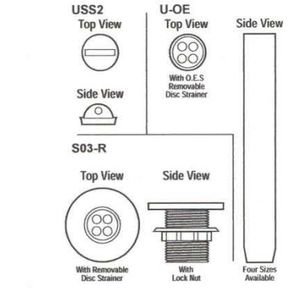


Special Order DropIn® Sinks

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.

Outlets & Accessories



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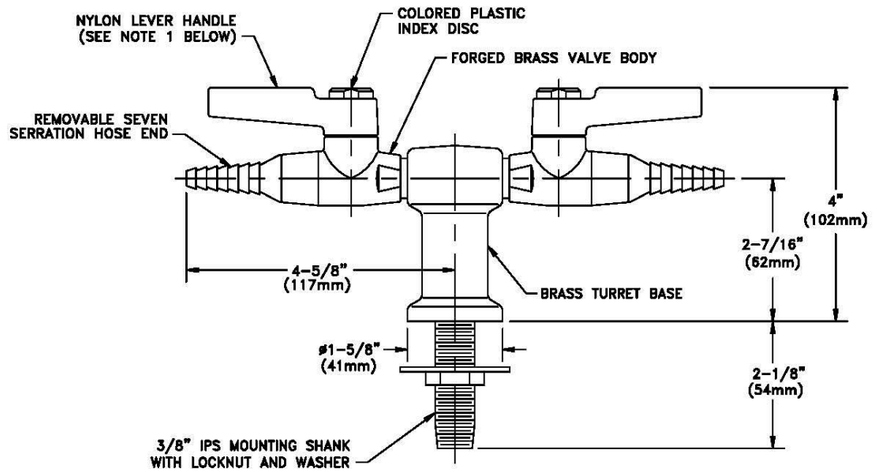
Rev. 02/08

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

Double Turret Valve at island bench or peninsula bench

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

RO Unit Cut Sheet

Locate at each Autoclave Room
Provides RO water for undercounter washer rinse cycle

WaterPro RO System

View online: http://www.labconco.com/product/waterpro-ro-system/4875

Catalog Number: 9075020

Overview

WaterPro RO Stations feature large capacity filters and membrane to deliver high-quality reverse osmosis (RO) purified water. RO purified water is ideal for laboratory applications such as reagent preparation and glassware rinsing. They may be connected to glassware washers such as Labconco's SteamScrubber, FlaskScrubber and FlaskScrubber Vantage Series Washers to provide purified rinse water. WaterPro RO Stations may also be used to produce laboratory grade feedwater for ultimate purification by a polishing system such as the WaterPro PS Polishing Station.

Water may be dispensed manually from a valve or optional dispensing gun. Water from the valve may also be activated automatically by using the exclusive timed dispense feature that allows for unattended operation.

Specifications

- **Weight:** 90.0 lbs
- **Weight metric:** 41.0 kg
- **Dimensions:** 31.1"w x 7.6"d x 30.8"h
- **Electrical:** 115 volts, 60 Hz, 12 amps, Domestic
- **Water Purity Desired:** Type III
- **Purification Method:** Carbon Filtration, Reverse Osmosis
- **Flow Rate:** 1.1 liters per minute
- **Region:** U.S. and Canada
- **Conformance:** CE, ETL
- **Feedwater Source:** tap
- **Power Cord & Plug:** North America, 115 volts, 15 amps
- **Required Accessories:** Prefilter/Carbon Filter Kit, Reverse Osmosis Membrane

Description

Features
- Timed dispense from 1 to 99.9 minutes for unattended operation
- Large capacity white polypropylene bowls with threaded heads
- Integral 17 liter polyethylene storage tank
- Attractive and durable Type 304 stainless steel front panel; epoxy-coated steel cabinet
- Temperature compensated conductivity LED monitor displays water quality in microsiemens from 1 to 999.
- Quiet 1/4 hp motor/rotary vane pump
- Storage tank air vent filter removes bacteria, maintaining water quality.
- Automatic flush valve extends RO membrane life by automatically flushing the RO membrane and tank for 3 minutes after each 12 hour period of inactivity.
- Internal pressure gauge monitors and displays RO-purified water pressure from 0 to 160 psi.
- Dispensing valve
- Wall mountable
- ETL listed

Options
- International electrical configuration

Required Accessories
- Prefilter/Carbon Filter Kit
- Reverse Osmosis Membrane

Optional Accessories
- WaterPro RO/PS Electrical Connection Cord
- WaterPro RO/PS Mobile Stand
- Support Stand
- Dispensing Gun
- 70 Liter Storage Tanks

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.

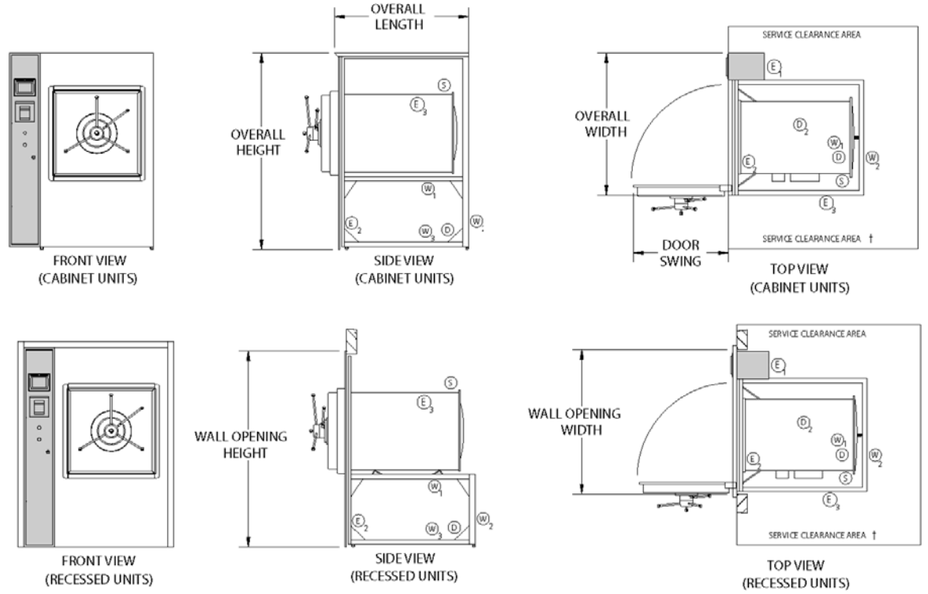
Green and Environmentally Friendly.

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.

Autoclave Cut Sheet

Model SSR-3A
240x20x38 chamber size
Electric Steam Generator



(E) Electrical (D) Drain (W) Water (S) Steam

† *Recommended service clearance is a minimum 18–24" both sides and back.*

Notes

- Left side control housing (shaded area above), right side 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 10.375". 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.

Table 5.

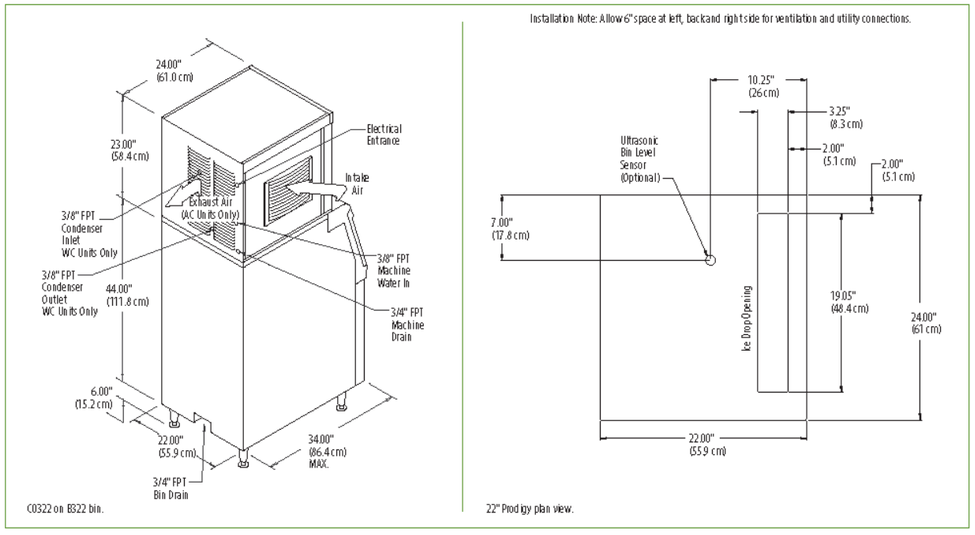
Model	SSR-2A	SSR-3A	SR-24A	SR-24B	SR-26A
Chamber Dimensions (w x h x f-b)	16" x 16" x 26" 40.6 x 40.6 x 66 cm	20" x 20" x 38" 50.8 x 50.8 x 96.5 cm	24" x 24" x 36" 61 x 61 x 91.4 cm	24" x 24" x 48" 61 x 61 x 122 cm	26" x 26" x 39" 66 x 66 x 99 cm
Volume (cu. ft.)	3.9 cu. ft. 109 liters	8.8 cu. ft. 249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

* *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.*

Ice Machine Cut Sheet

Scotsman Ice Systems

Revit drawings available at www.scotsman-ice.com



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%

One Ice Machine per floor in Pure Water Room
Owner Furnished/Owner Installed
Shown for reference only
Actual unit may vary

Provide filter at ice machine in Pure Water Rooms

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)

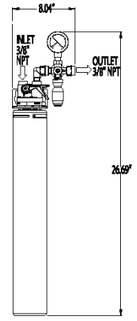
No electrical connection required

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

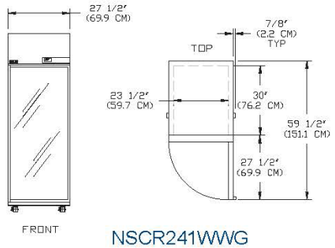
Standard No. 53: Health Effects
- Mechanical Filtration Unit
  - Turbidity Reduction
  - Cyst Reduction
  - Asbestos Reduction

EVERPURE

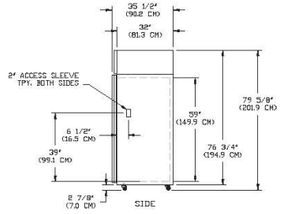
Worldwide Headquarters:
EVERPURE, LLC
1040 Muirfield Drive
Hanover Park, Illinois 60133
Toll Free (800) 323-7873
Tel (630) 307-3000
Fax (630) 307-3030
http://www.everpure.com

In Europe:
Pentair Water Belgium B.V./B.A.
Industriepark Wolfstee
Toekomstlaan 30
B-2200 Herentals
BELGIUM
TEL: +32.(0).14.283.500
FAX: +32.(0).14.283.505

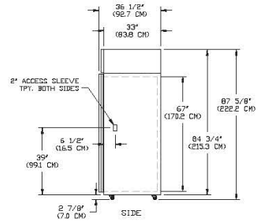
In Japan:
Hashimoto MN Bldg. 7F
3-25-1 Hashimoto Sagamihara-Shi
Kanagawa 229-1103
JAPAN
TEL: 81.(0)42.775.3011
FAX: 81.(0)42.775.3015



NSCR241WWG



NSCR241, NSCR522, NSCR803

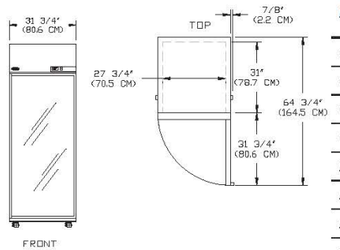


NSCR331WWG

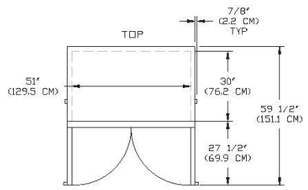
SPECIFICATIONS

Models	*NSCR241WWG/0* *NSCR241WWG/5*	*NSCR331WWG/0* *NSCR331WWG/5*	*NSCR522WWG/0* *NSCR522WWG/5*	*NSCR803WWG/0* *NSCR803WWG/5*
Crated Weight (lbs) (kg)	330 (166)	396 (284)	536 (247)	750 (340)
Crated Height (in) (cm)	84 (213)	92 (233)	84 (213)	84 (213)
Crated Width (in) (cm)	34 (86)	37 (93)	61 (154)	89 (226)
Crated Depth (in) (cm)	43 (109)	43 (109)	43 (109)	43 (109)
Interior Height (in) (cm)	59 (149)	67 (170)	59 (149)	59 (149)
Interior Width (in) (cm)	23-1/2 (59)	27-3/4 (70)	51 (129)	78-1/2 (199)
Interior Depth (in) (cm)	30 (76)	31 (78)	30 (76)	30 (76)
Overall Height (in) (cm)	79-5/8 (202)	87-5/8 (222)	79-5/8 (202)	79-5/8 (202)
Overall Width (in) (cm)	27-1/2 (69)	31-3/4 (80)	55 (139)	82-1/2 (209)
Overall Depth (in) (cm)	35-1/2 (90)	36-1/2 (92)	35-1/2 (90)	35-1/2 (90)
Gross Cubage (CuFt) (L)	24.0 (679)	33.0 (934)	52.0 (1472)	80.0 (2265)
Epoxy Coated Shelves	Optional	Optional	3	6
Solid Stainless Steel Shelves halfsize	3	3	3	3
Casters	4 (2 Locking)	4 (2 Locking)	4 (2 Locking)	6 (3 Locking)
Condensing Unit Size	1/4 HP	1/3 HP	1/3 HP	1/2 HP
Refrigerant	R-134a	R-134a	R-134a	R-134a
Total Amp Draw /0	4.9	8.0	8.0	9.1
Total Amp Draw /5	3.2	3.2	4.2	8.1

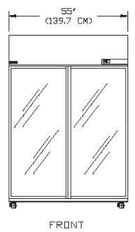
Specifications subject to change without notice.



NSCR331WWG

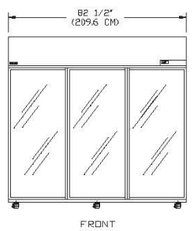


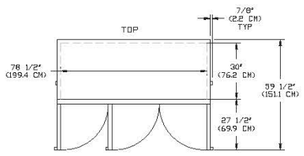
NSCR522WWG



NSCR522WWG

Voltage Model Suffix Code	Voltage Description	NEMA Plug	NEMA Receptacle
/0	115V, 1PH, 60HZ	5-15P	5-15R
/5	230V, 1PH, 50HZ	Power Inlet (IEC 60320) Module	Cord Supplied Locally





NSCR803WWG

NORLAKE
Proudly
Made in the USA

Standex
Food Service Equipment Group

NORLAKE SCIENTIFIC

Revision Date: 09/13

Printed in the U.S.A.
Part Number: 077435

Cold Box Cut Sheet

Location: Any of the Instrument Rooms located near research lab suites. The reach-in cold box is in lieu of walk-in cold rooms identified in the RFP.

Advantages: Lower first cost, lower maintenance, flexibility for location.

NOR-LAKE® SCIENTIFIC
CHROMATOGRAPHY LABORATORY AND SCIENTIFIC REFRIGERATOR

Designed to meet the demanding requirements for scientific and laboratory research. Advanced engineered design incorporates the latest in cabinet, refrigeration, temperature control and monitoring features. Provides energy efficient, convenient, safe and reliable performance for optimal storage temperature environments necessary for a wide range of life science, pharmacy, biological, medical, clinical, and industrial applications.

Standard Features:
- Digital LED display microprocessor temperature controller
- Audible and visual Hi/Lo temperature alarm
- Adjustable control range: +2°C to +10°C; factory preset at +4°C
- Remote alarm contacts
- Continuous product temperature display
- Product sensor with glycerin bottle
- Power supply switch
- Exterior cabinet front, sides and back are painted white
- Exterior cabinet top and bottom are galvanized steel
- Interior cabinet liner is painted white
- Cabinet is foamed-in-place with CFC free high density polyurethane foam insulation
- Glass door(s), full size, double pane
- Heavy duty door pivot hinges
- Pull door handle(s), full length, painted white
- Magnetic door gaskets
- Centered key door lock(s) (2 keys)
- Four casters (2 locking) on one and two door models, six casters (3 locking) on three door models
- 3 half-size solid stainless steel shelves per model
- 3 coated wire shelves per door section per additional door section on 2 and 3 door models
- Interior LED light, switch activated
- Internal electrical outlet
- Two access ports 2" sleeve with cover
- Air cooled condensing unit
- Top mounted forced air refrigeration system
- Automatic defrost and condensate evaporation
- Warranties: 18 month parts and labor, 5 year compressor (US and Canada), 18 months parts (International)
- UL, C-UL listed

Optional Features:
- Extra shelf
- Stainless steel drawer (8 maximum)
- Wire basket drawer (8 maximum)
- Sensor access port 1" diameter
- Legs in lieu of casters
- Stainless steel interior
- Temperature chart recorder with chart paper
- 4-20ma output
- Export crating

NSCR331WWG/

NSCR241WWG/ NSCR331WWG/ NSCR522WWG/ NSCR803WWG

NORLAKE SCIENTIFIC
Committed to our environment

Nor-Lake, Inc.
Registered to ISO 9001:2008
File No. 10001816

NOR-LAKE SCIENTIFIC
A Division of
NOR-LAKE, INCORPORATED
727 Second Street
Hudson, Wisconsin 54016
800-477-5253
715-386-2323
800-388-5253 PARTS
715-386-4290 FAX
www.norlakescientific.com

Power Raceway Cut Sheet

Provide single compartment extruded aluminum raceway at all locations where raceway is required- ALA3800
2.25” deep x 3” high.

Provide 12” removable cover plates.

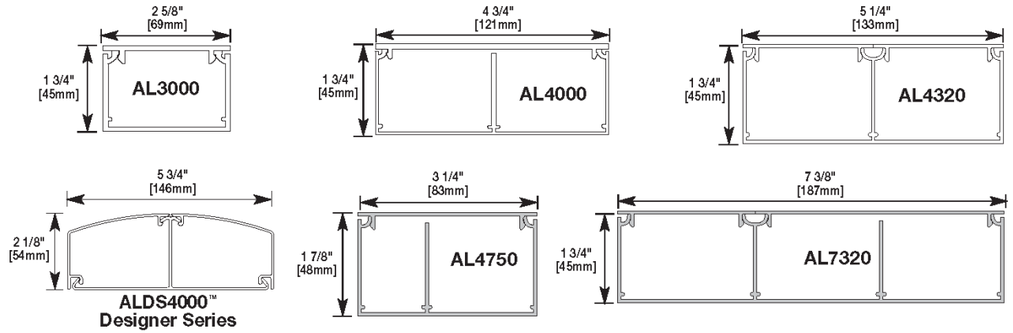
To be specified per Division 26.

WIREMOLD

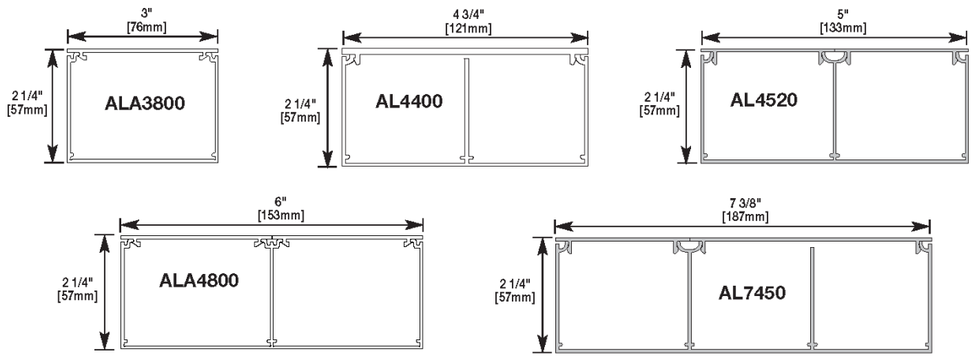
legrand®

PREWIRED RACEWAY
QUICK SELECTION GUIDE

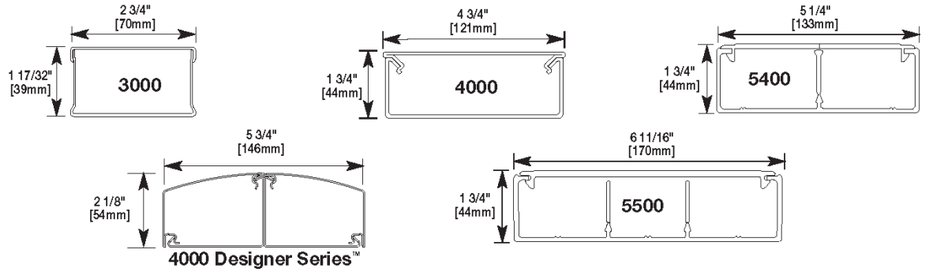
Isoduct® Aluminum Low Profile



Isoduct® Aluminum Large Capacity



Steel & Nonmetallic



ED317R7 – Updated April 2006 – For latest specs visit www.wiremold.com

Vacuum Pump Cut Sheet

Locate at each vacuum pump cabinet in each research lab fume hood alcove.

Design for Science recommends that vacuum pumps be Owner Furnished and Installed.

Div. 22 to provide piping from vac pump to vac valve at adjacent fume hood.

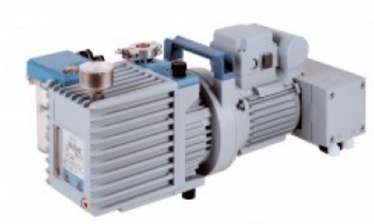
Div. 23 to provide venting of vac pump cabinet.

Div. 26 to provide fourplex 115v outlet at back of cabinet.

Combination Vacuum Pump

Protecting your laboratory environment
LABCONCO

View online: http://www.labconco.com/product/vacuubrand-hybrid-pump-4/2135



Catalog Number: 7584000

Overview

Combination vacuum pumps integrate a high performance rotary vane pump with a chemical-resistant diaphragm pump to create a low maintenance, longer-lasting pump. The diaphragm pump removes the condensable vapors in the rotary vane pump before they can contaminate the oil, thus extending the life of the oil and ultimately the life of the pump. Pump oil lasts up to 10 times longer than in conventional rotary vane pumps under virtually any condition. Long periods between oil changes reduce cost and down time.

These combination rotary vane/diaphragm vacuum pumps are designed for use with acids and other harsh chemicals including TFA, TFA by-products and acetonitrile. The pumps consist of a two-stage rotary vane pump and two-stage, chemically-resistant diaphragm pump. The rotary vane pump provides the deep vacuum required for good freeze drying results and other evaporation needs. The diaphragm pump removes the condensable vapors in the rotary vane pump before they can contaminate the oil, thus extending the life of the oil and ultimately the life of the pump. Pump oil lasts up to 10 times longer than in conventional rotary vane pumps.

Specifications

- **Weight:** 66.0 lbs
- **Weight metric:** 30.0 kg
- **Dimensions:** 18.9"w x 9.0"d x 15.0"h
- **Dimensions metric:** 48 x 22.9 x 38.1 cm
- **Electrical:** 115V, 60Hz, 3.2 amps, Domestic
- **Pump Type:** Combination Vacuum Pump
- **Region:** U.S. and Canada
- **Works With These Products:** FreeZone 1 Liter Freeze Dry Systems, FreeZone 12 Liter Freeze Dry Systems, FreeZone 18 Liter Freeze Dry Systems, FreeZone 2.5 Liter Freeze Dry Systems, FreeZone 4.5 Liter Freeze Dry Systems, FreeZone 6 Liter Freeze Dry Systems
- **Displacement Capacity at 60 Hz (50 Hz):** 115 (98) Liters/minute
- **Ultimate Vacuum:** -3 mBar

Description

Features

- Designed for use with acids and other chemicals including TFA, TFA by-products, acetonitrile, HBr and HNO3, present in samples such as HPLC-prepared and peptide purified materials
- Combination pump system consists of a two-stage rotary vane pump and two-stage, chemically-resistant diaphragm pump.
- A pressure control valve compensates for the different volumes displaced by the two pumps.
- Ultimate vacuum (partial pressure) <3 × 10 ^ (-3) mBar (2.25 micron)
- Ready to use and fully charged with vacuum pump oil (approximately 1 liter)
- ¾? OD inlet adapter
- Includes power switch, power cord and plug.

Spectra Equipment Division

Automatic Changeover Regulator System

F7900 Series

F7900 Series

SPECTRA GASES 7900 and 7910 semi-automatic changeover system is designed to allow the user to replace expended gas cylinders while maintaining a continuous gas supply to the point of use.

Standard Features

- CHANGEOVER REGULATOR: Made of high quality materials and cleaned for high purity service. When adjusting the selection knob on the face of the system, the variable regulator pressure is changed from one side of the fixed pressure to the other. The low and high pressures are set at equal values on either side of the fixed regulator, resulting in a swapping of the source gases from on-line to standby whenever the control knob is rotated.
- LINE REGULATOR: It is installed on the outlet of the changeover regulator to provide the user with a constant delivery pressure. This regulator is adjustable by the user and delivery pressure is displayed via an outlet pressure gauge.
- RELIEF VALVE: It has been installed on the low-pressure side of the line regulator to protect downstream components from damage in the improbable event of a catastrophic regulator failure.
- FLEXIBLE HOSE ASSEMBLY: Source gas is supplied to the changeover system via high-pressure flexible hoses. These hoses are provided with the appropriate cylinder connection for the intended gas application.
- PRESSURE GAUGES: For low cylinder pressure. (Optional indicating pressure switches are available).

(continued)

Spectra Gases, Inc. • Phillipsburg, NJ 08865
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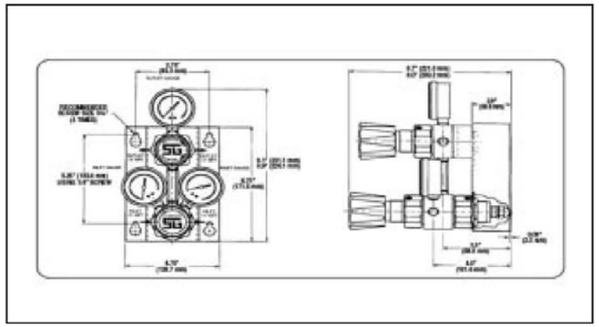
Automatic Changeover Regulator System (continued)

F7900 Series

Features

- Outlet Valve(s)
- Inlet Valves
- Pressure Switches (optional)
- Purge capability
- Pigtail provided



Specifications

Regulators: All Single Stage
Series 7900 - Brass Regulators
Series 7910 - Stainless Steel Regulators
Overall Dimensions: 8 1/4" W x 8 3/4"D x 9"H
Shipping Weight: 8 lbs.
Inlet Connection: Specify
Outlet Connection: 1/4" compression
Regulator Inlet Gauges: 0-4000 psig
Max. Inlet Pressure: 3000 psig
Operating Temperature: -40°F to +165°F
Flow Coefficient: Cv = 0.06 (All Modules)

Materials of Construction:

Body: Brass (7900), stainless steel (7910)
Bonnets: Nickel-plated brass
Diaphragms: Stainless Steel
Note: These regulators are oxygen cleaned to 3000 psig and have a leak integrity of less than 2 x 10-8 atm. cc/sec. Helium.

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WaterSaver

Flexible Laboratory Fittings
Quick Connects - Bodies

QCBL Series Quick Connect Bodies

WaterSaver keyed quick connect fittings are designed specifically for laboratory applications. They are designed to provide maximum performance and durability for the life of the lab.

Features of WaterSaver keyed quick connect bodies include the following:

- Quick connect bodies are available in either polished chrome plated brass or Type 316 stainless steel.
- Bodies have an internal shut-off valve that closes when the plug is disengaged. Internal valve components are stainless steel to assure compatibility with the service and to assure durable performance.
- Quick connects are certified by CSA International for use with natural gas.
- The quick connect keying system is based upon the inner and outer diameters of the sleeves on the body and plug. Therefore, quick connect plugs can be assembled only into the correct body. There is no possibility of inadvertently mixing services.
- Quick connect bodies and plugs are color coded to designate the service and to facilitate matching the correct body and plug.
- Quick connect bodies are furnished with an internal locking feature. When used with a locking plug, the plug can be installed in a fixed orientation. When used with a non-locking plug, the plug may be installed in any orientation and will rotate in the body.
- Quick connect bodies are designed to be installed on piping systems, gas manifold systems or directly to valves or instrumentation. Bodies are available with a choice of inlet connections to facilitate installation.

WaterSaver Faucet Co. 312 666 5500 telephone
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WaterSaver

Flexible Laboratory Fittings
Stainless Steel/Stainless Steel Hose Assemblies

Stainless steel braided hose with corrugated stainless steel inner core

Corrugated Stainless Steel Hose with Stainless Steel Overbraid

WaterSaver stainless steel/stainless steel hose assemblies are designed for use with our keyed quick connect fittings. Features of WaterSaver hose assemblies include the following:

- Hose has an inner core of corrugated stainless steel and a braided stainless steel exterior layer. Hose is thus resistant to cutting or abrasion. Hose is rated to 1000 PSI burst pressure, 300 PSI maximum working pressure.
- End fittings are permanently attached to hose with a barb fitting and crimped ferrule. End connections swivel to prevent kinking or twisting of hose. Hoses are available with a variety of end connections for maximum flexibility.
- Braided stainless steel hose assemblies may be specially cleaned and packaged for high purity gas applications.

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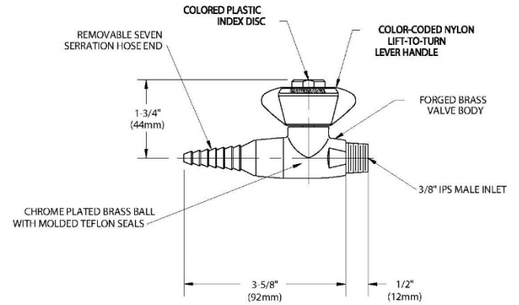
Gas Quick Disconnect

At research lab islands

WaterSaver | ColorTech

CT4260
LABORATORY BALL VALVE WITH LIFT/TURN LEVER HANDLE, REMOVABLE SERRATED HOSE END



NOTES:
1. LABORATORY BALL VALVE ASSEMBLY IS CERTIFIED BY CSA INTERNATIONAL TO COMPLY WITH ANSI Z21.15 AND CGA 9.1.
2. HANDLE LOCKS IN CLOSED POSITION. LIFT HANDLE TO UNLOCK AND OPEN VALVE.
3. FIXTURE IS FULLY ASSEMBLED AND FACTORY TESTED AT 125 PSI AIR PRESSURE. MAXIMUM WORKING PRESSURE IS 75 PSI.
4. SPECIFY IF CLEANING FOR OXYGEN AND HIGH PURITY GASES IS REQUIRED
5. VALVE HAS COLORTECH EPOXY POWDER COATED FINISH. SPECIFY COLOR (WHITE, GRAY OR TAN) WHEN ORDERING.

MEASUREMENTS MAY VARY ±1/4" (6mm).

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Drawing Number:

Revised: 121312-TEC