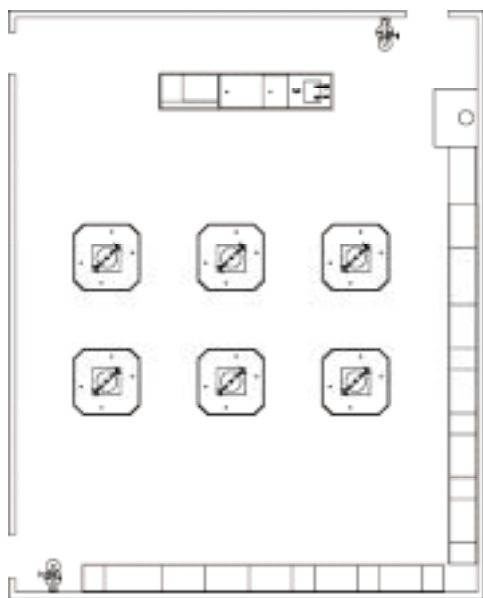


**SECTION CONTENTS**

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Lecture/Laboratory Designs	24
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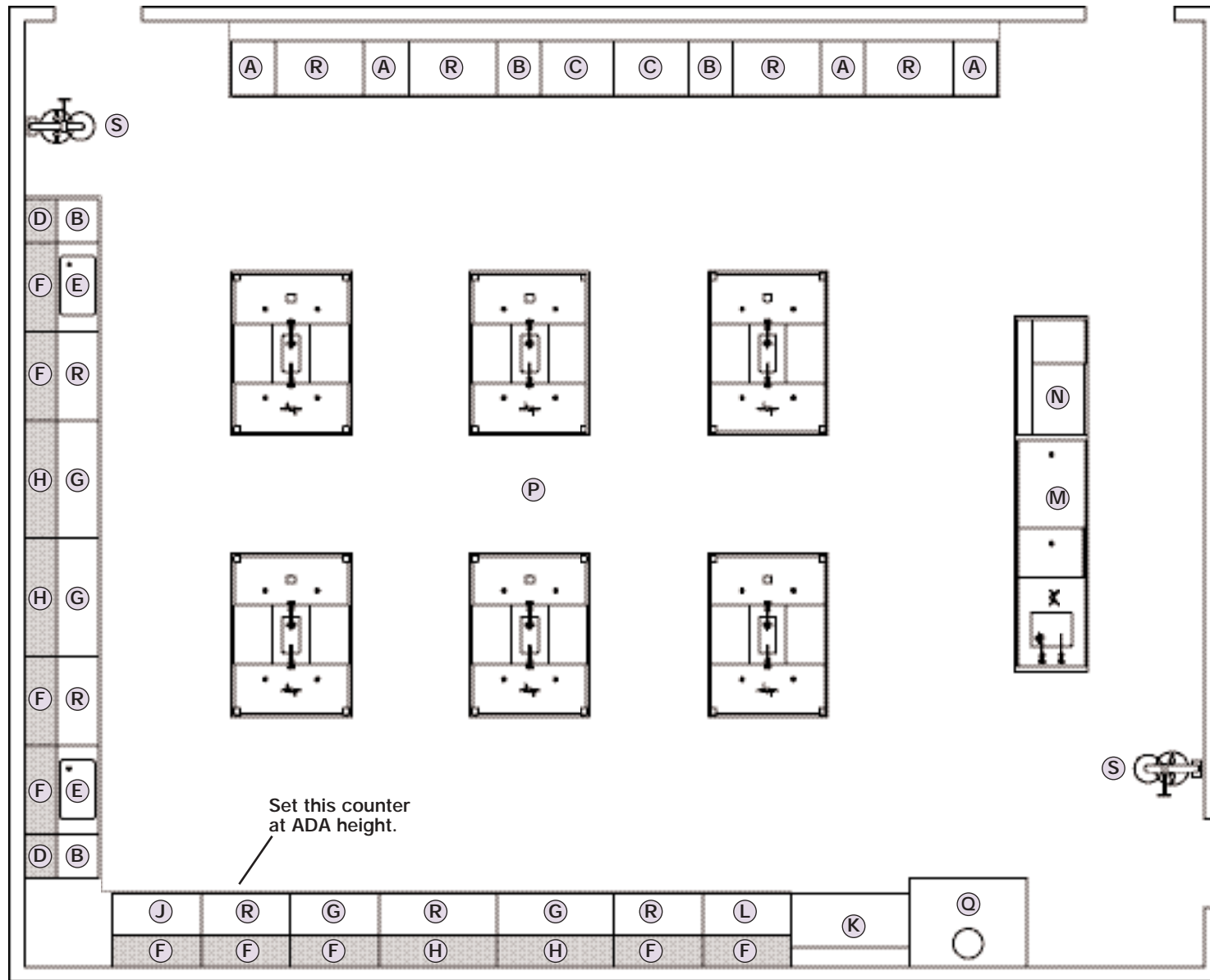


**Laboratory Designs**

These lab designs are based upon a 30' x 40' room for lab only (1200 ft<sup>2</sup> or 50 sq. ft./student) and 30' x 48' (1440 ft<sup>2</sup> or 60 sq. ft./student) for a combination lecture/laboratory. Assuming a class size of 24 students, these rooms meet the NSTA guidelines.

Use these designs as a starting point. Once you have a concept in mind that you like, alter it to meet your needs.

### Concept #1 — 4-Student Tables — Lab Only



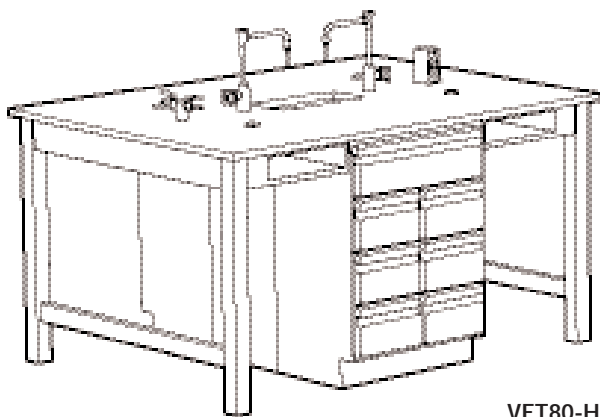
Wall cabinets in shaded area

## Concept #1 — Laboratory with Four-Student Tables Plus Instructor's Demonstration Table

This lab-only concept is useful for a variety of disciplines, especially Biology and Chemistry. It can also be used for middle school general science. The design is for 24 students, and the room size is 32 x 40 ft.

This concept includes a variety of wall cabinet storage (both base cabinets and wall cabinets), a fume hood, and an ADA-height countertop with proper clearances. Additional ADA space could be created by substituting a base cabinet with a countertop stretcher and an appropriate countertop. Additional Four-student Workstations can be added by taking out the Instructor's Demonstration Table.

The major advantage of this concept is that the room is lab only, allowing focus on lab work at all times. The major disadvantage of this concept is that when students are working, one-half of them are not facing the instructor at all times.



VFT80-H3695

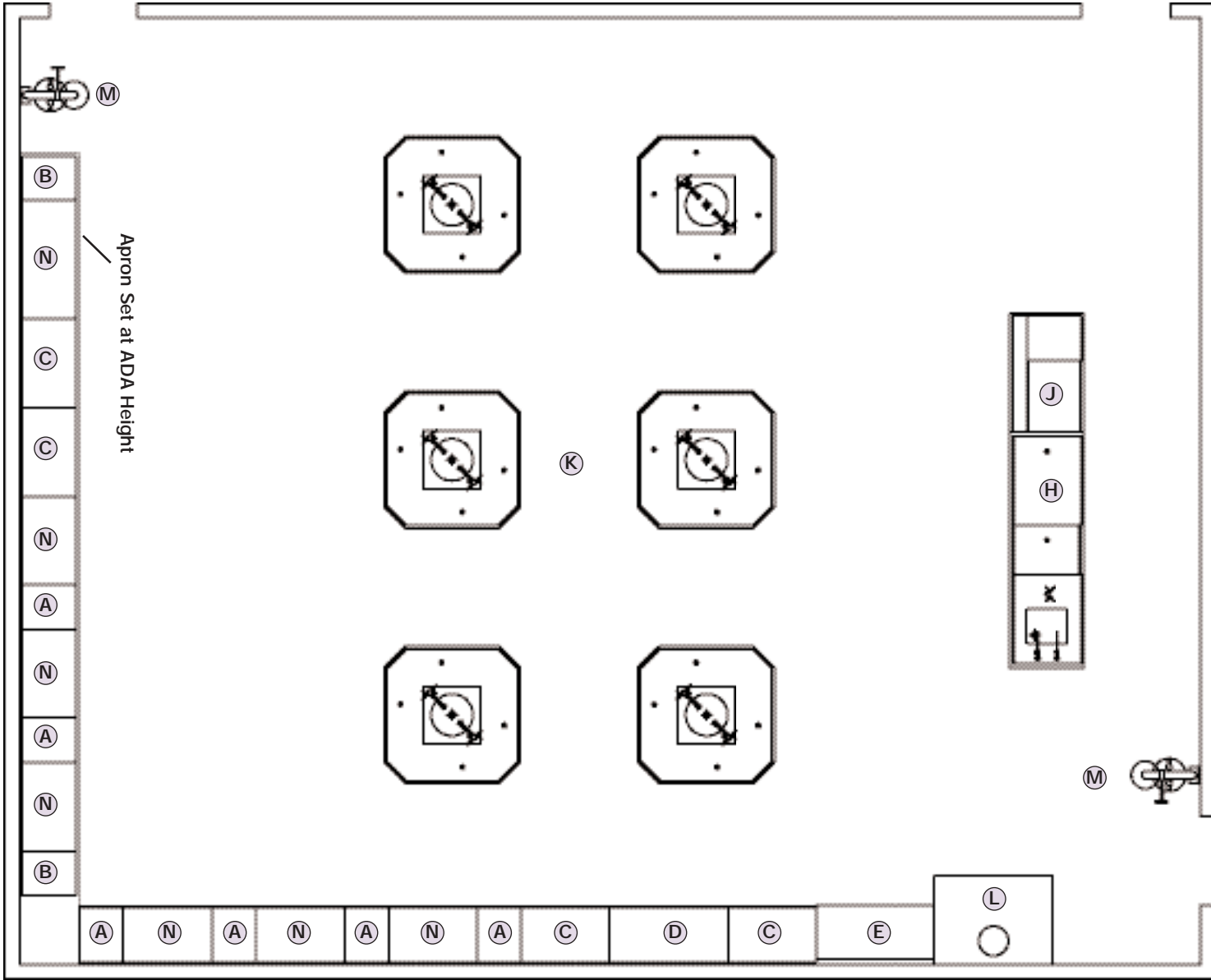
### Bill of Material

Item	Units	Catalog No.	Description	Page
A	4	VFD30-H3618	Base Cabinet, Standing Height	48
B	2	VFE60-H3618	Base Cabinet, with Cupboard, Standing Height	49
C	2	VFE56-H3630	Base Cabinet, Standing Height	49
D	2	VFW20-H3018	Wall Storage Cabinet, with Glazed Doors	51
E	2	VFG00-H3636	Sink Cabinet	49
F	4	VFW20-H3036	Wall Storage Cabinet	51
G	4	VFE56-H3648	Base Cabinet, Standing Height	49
H	2	VFW20-H3048	Wall Storage Cabinet, with Glazed Doors	51
J	1	VFC03-H3636	Cupboard Cabinet	49
K	1	VFS25-H2248	Storage Cabinet with Panel Doors	52
L	1	VFE56-H3636	Base Cabinet, Standing Height	49
M	1	VFT31-H3696	Instructor's Demo Bench	46
N	1	VFT24-H3048	Desk Assembly	46
P	6	VFT80-H3695	Four Student Table	41
Q	1	H50K5448-00	4 ft. Low-Volume Fume Hood	60
R	9	VFA00-H2236	Apron Rail	50
S	2	VF-0603-SE	Eye Wash/Safety Shower	85

#### Not Shown:

Countertop Material  
Student Chairs/Stools  
Instructor's Chair  
Markerboard/Chalkboard  
Safety Equipment

Concept #2— Octagonal Tables — Lab Only

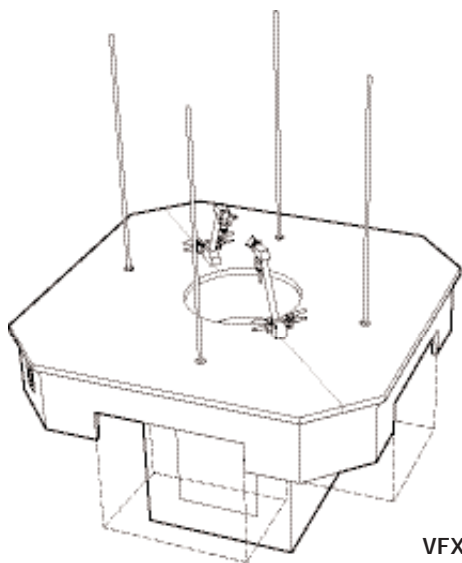


## Concept #2 — Laboratory with Octagonal Student Workstations

This lab-only concept is especially useful for general science. The design is for 24 students, and the room size is 32 x 40 ft.

This concept includes a variety of wall cabinet storage (both base cabinets and wall cabinets), and a fume hood. Sitting height benches are provided on one wall.

The major advantage of this concept is that the room is a lab only, allowing focus on lab work at all times. The major disadvantage of this concept is that when students are working, one-quarter of them are not facing the instructor at all times.



VFX83-H3656

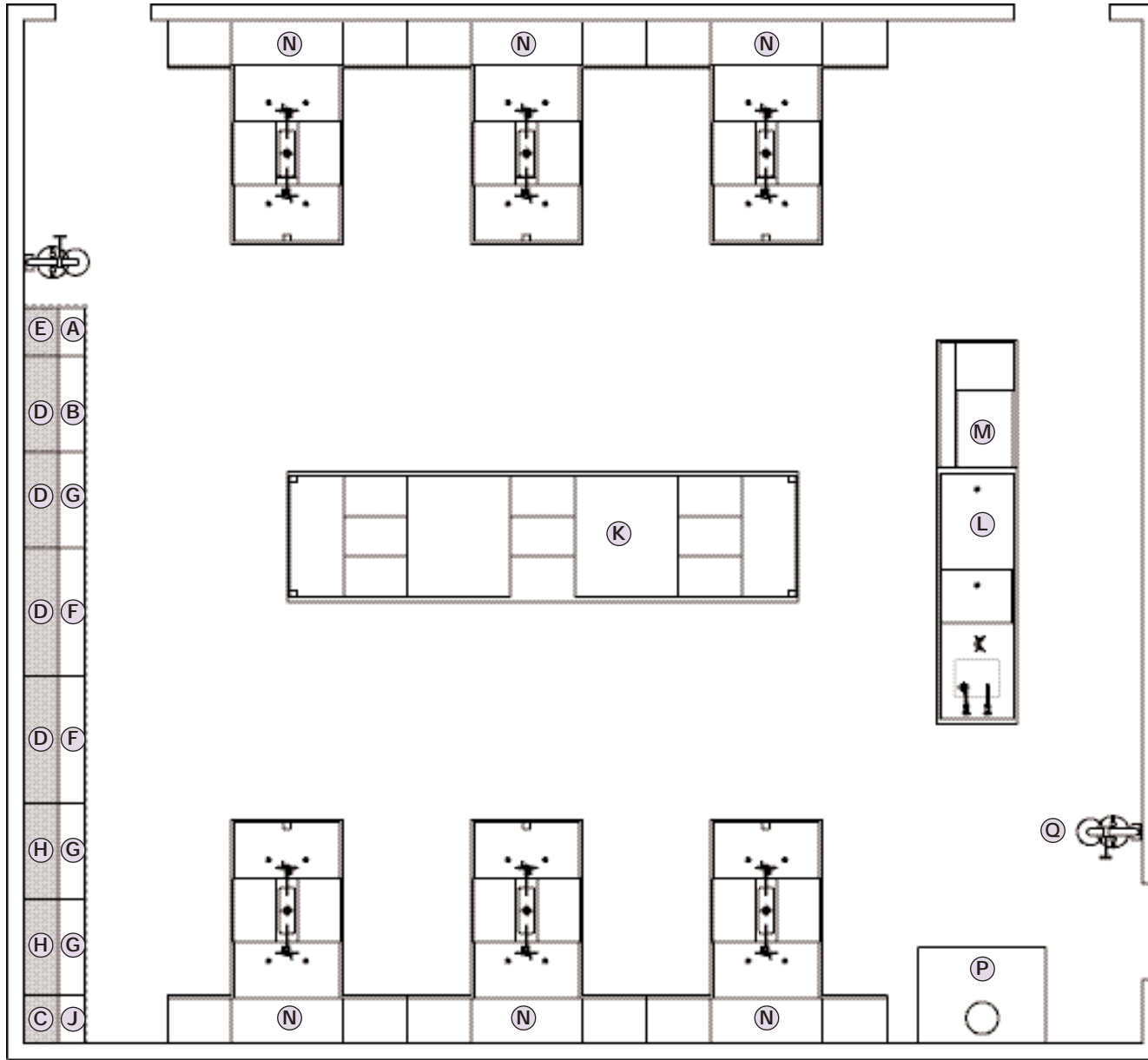
### Bill of Material

Item	Units	Catalog No.	Description	Page
A	6	VFD00-H3018	Base Cabinet, Sitting Height	47
B	2	VFD00-H3318L	Base Cabinet, Sitting Height	47
C	4	VFE56-H3036	Cupboard/Drawer Cabinet, Sitting Height	49
D	1	VFC03-H3048	Cupboard Cabinet, Sitting Height	49
E	1	VFS25-H2248	Tall Storage Case, Solid Door	46
H	1	VFT31-H3696	Instructor's Demonstration Table	46
J	1	VFT24-H3048	Instructor's Desk	46
K	6	VFX83-H3656	Octagonal Student Workstation	42
L	1	H50K5448-00	4 ft. Low Volume Fume Hood	60
M	2	VF-0603-SE	Eye Wash/Safety Shower	85
N	7	VFA00-H2236	Apron Rail	50

#### Not Shown:

Countertop Material  
 Student Chairs/Stools  
 Instructor's Chair  
 Markerboard/Chalkboard  
 Safety Equipment

### Concept #3— Peninsula Student Workstations— Lab Only

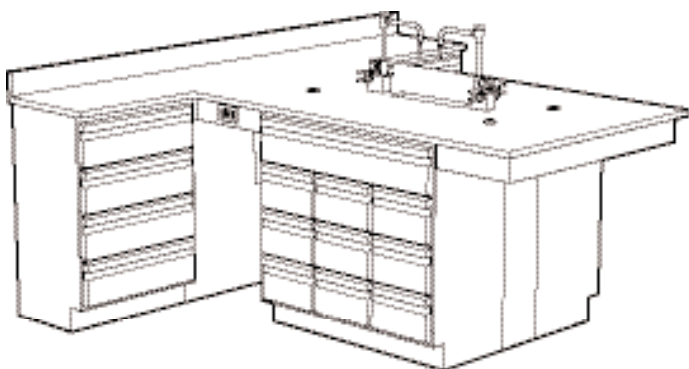


## Concept #3 — Laboratory with Peninsula Student Workstations

This lab-only concept is used widely for middle and high school science. The design is for 24 students, and the room size is 32 x 40 ft.

This concept includes a variety of wall cabinet storage (both base cabinets and wall cabinets), and a fume hood. The center bench is placed to provide computer access away from water usage.

The major advantages of this concept are that the room is lab only, allowing focus on lab work at all times and a large space is provided for computer equipment. The major disadvantage of this concept is that when students are working, one-half of them are not facing the instructor at all times.



VFX75-H3695

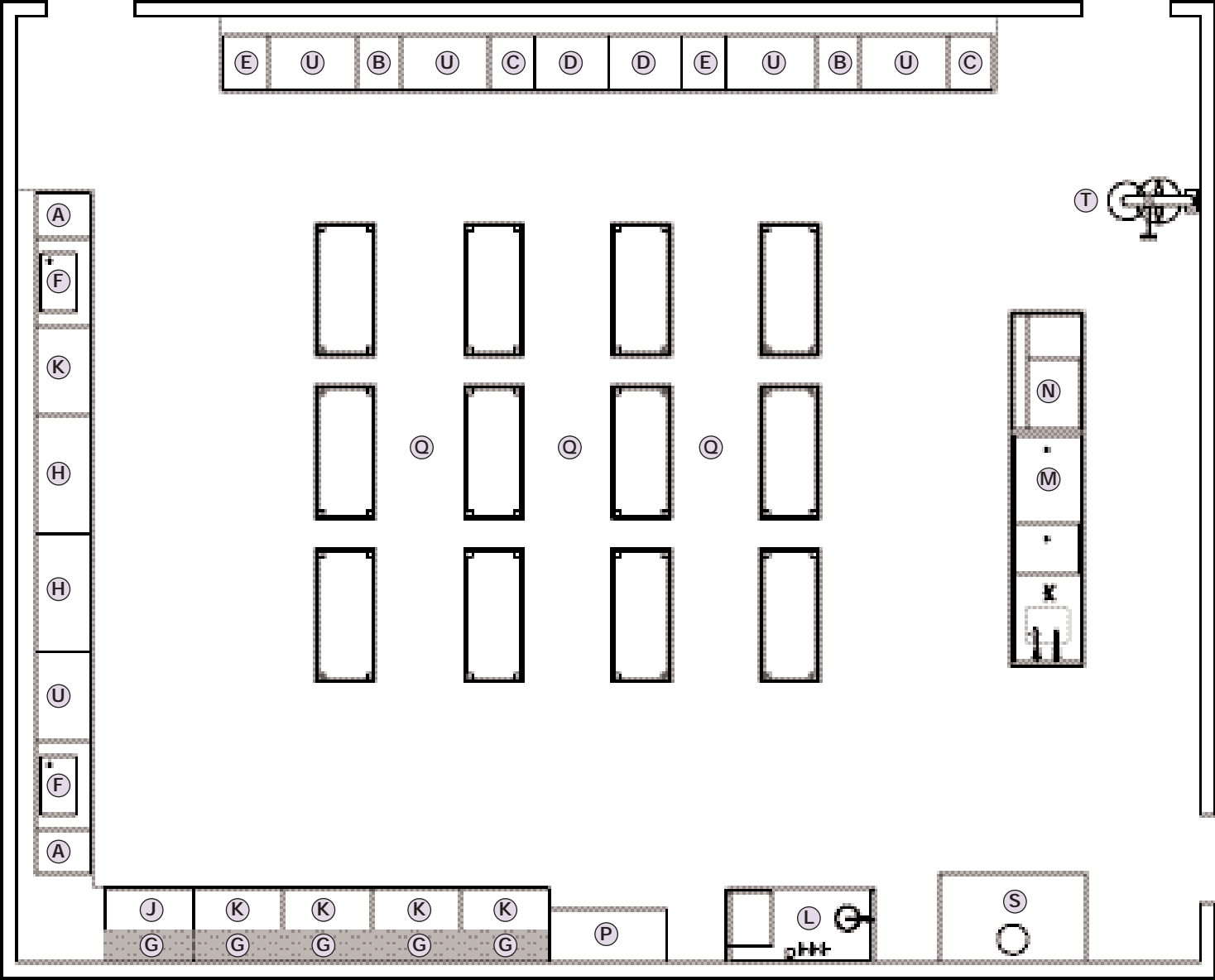
### Bill of Material

Item	Units	Catalog No.	Description	Page
A	1	VFE40-H3618	Base Cupboard Cabinet, Standing Height	49
B	1	VFA00-H2236	Apron Rail	50
C	1	VFW20-H3018L	Wall Cabinet	51
D	4	VFW20-H3036	Wall Cabinet	51
E	1	VFW20-H3018	Wall Cabinet	51
F	2	VFE56-H3648	Cupboard/Drawer Cabinet, Standing Height	49
G	3	VFE56-H3636	Cupboard/Drawer Cabinet, Standing Height	49
H	2	VFW20-H3048	Wall Cabinet with Glazed Door	51
J	1	VFC03-H3618L	Cupboard Cabinet	47
K	1	VFT82-H3695-T	12-Student Bench, Plain Top	41
L	1	VFT31-H3696	Instructor's Demonstration Table	46
M	1	VFT24-H3048	Instructor's Desk	46
N	6	VFX75-H3695	Peninsula Workstation	44
P	1	H50K5448-00	4 ft. Low Volume Fume Hood	60
Q	2	VF-0603-SE	Eye Wash/Safety Shower	85

#### Not Shown:

Countertop Material  
 Student Chairs/Stools  
 Instructor's Chair  
 Markerboard/Chalkboard  
 Safety Equipment

# Concept #4 — Laboratory Using Student Tables

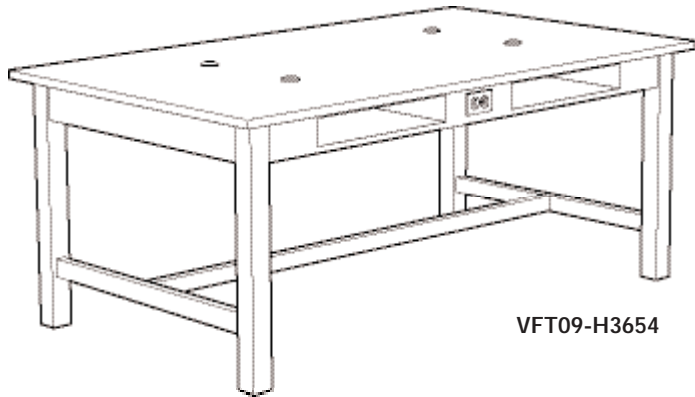


## Concept #4 — Laboratory with Student Tables

This lab-only concept is used widely for physics instruction, as the tables can be re-arranged easily to accommodate larger experiments such as mechanics and optics. The design is for 24 students, and the room size is 32 x 40 ft.

This concept includes a variety of wall cabinet storage (both base cabinets and wall cabinets). A fume hood is provided for cases where general science is taught, and a portable ADA workstation is also provided. One wall of cabinets is provided at sitting height for computer use.

The major advantages of this concept are that the room is lab only, and the flexibility of the room. The major disadvantage of this concept is that there are no utilities at each student table.



VFT09-H3654

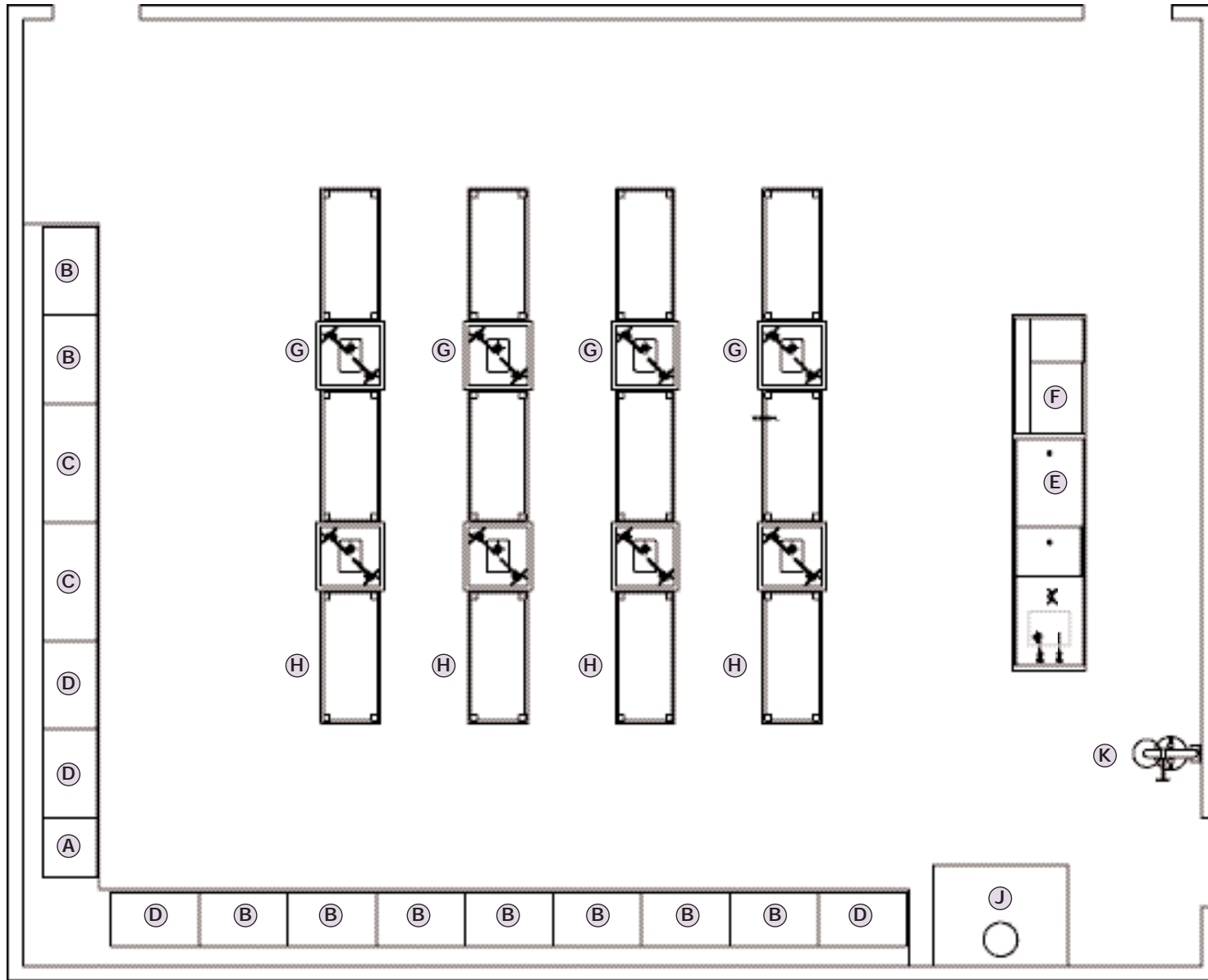
### Bill of Material

Item	Units	Catalog No.	Description	Page
A	2	VFD30-H3618	Base Cabinet, Standing Height	48
B	2	VFD30-H3018	Base Cabinet, Sitting Height	47
C	2	VFE40-H3018	Base Cabinet, Sitting Height	47
D	2	VFE41-H3030	Base Cabinet, Sitting Height	47
E	2	VFE40-H3018L	Base Cabinet, Sitting Height	47
F	2	VFG00-H3636	Sink Cabinet	49
G	5	VFW20-H3036	Wall Cabinet with Glazed Doors	51
H	2	VFE56-H3648	Cupboard Cabinet, Standing Height	47
J	1	VFC03-H3648	Cupboard Cabinet, Standing Height	47
K	5	VFE56-H3636	Base Cabinet, Standing Height	49
L	1	VFT05-H3760	ADA Workstation	45
M	1	VFT31-H3696	Instructor's Demonstration Table	46
N	1	VFT24-H3048	Instructor's Desk	46
P	1	VFS25-H2248	Tall Storage Cabinet	
Q	12	VFT09-H3654	Student Table, 24" x 54"	36
S	1	H50K5460-00	5 ft. Low Volume Fume Hood	60
T	2	VF-0603-SE	Eye Wash/Safety Shower	85
U	5	VFA00-H2236	Apron Rail	27

#### Not Shown:

Countertop Material  
 Student Chairs/Stools  
 Instructor's Chair  
 Markerboard/Chalkboard  
 Safety Equipment

# Concept #5 — Laboratory With Student Tables and Service Islands

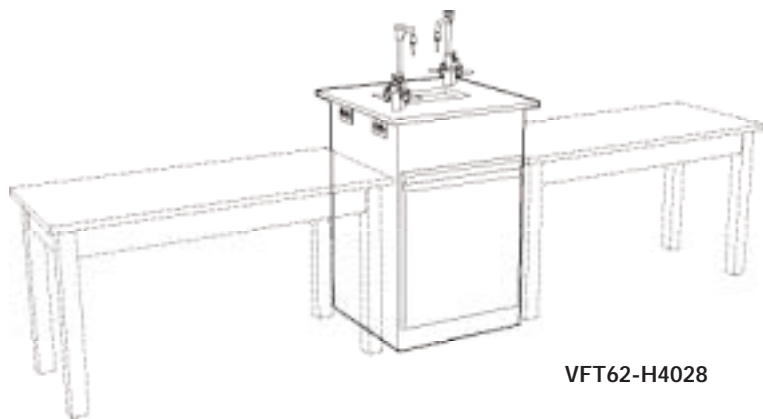


## Concept #5—Laboratory with Student Tables and Service Islands

This lab-only concept is used widely for physics instruction, as the tables can be re-arranged easily to accommodate larger experiments such as mechanics and optics. The design is for 24 students, and the room size is 32 x 40 ft.

This concept includes a service island next to each student table, allowing utilities close to the experiments plus allowing the flexibility of rearranging the tables. This concept includes a variety of wall cabinet storage (both base cabinets and wall cabinets). One wall of cabinets at sitting height for computer use could easily be added.

The major advantages of this concept are that the room is lab only, all students face the instructor, the room is flexible and the use of service islands. The major disadvantage of this concept is that the service island is fixed, which can cause problems if large unobstructed spaces are needed.



VFT62-H4028

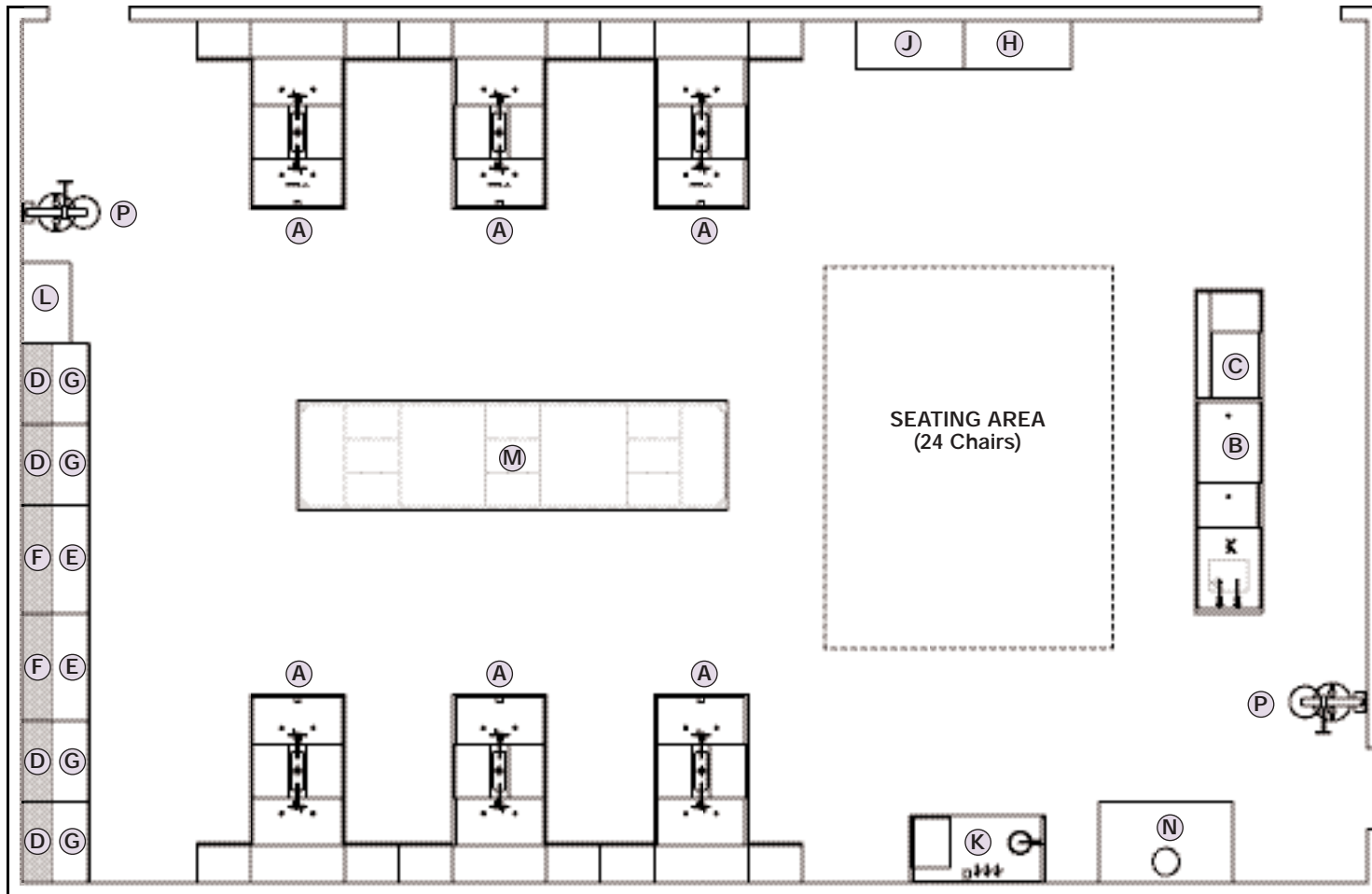
### Bill of Material

Item	Units	Catalog No.	Description	Page
A	1	VFD30-H3624	Base Cabinet, Standing Height	48
B	9	VFE56-H3636	Cupboard/Drawer Cabinet, Standing Height	49
C	2	VFE56-H3648	Cupboard/Drawer Cabinet, Standing Height	49
D	2	VFC03-H3636	Cupboard Cabinet, Standing Height	47
E	1	VFT24-H3048	Instructor's Demonstration Table	46
F	1	VFT31-H3696	Instructor's Desk	46
G	8	VFT62-H4028	Service Center	43
H	12	See Page 36	Student Tables, 24" x 54"	36
J	1	H50K5460-00	5 ft. Low Volume Fume Hood	60
K	1	VF-0603-SE	Eye Wash/Safety Shower	85

#### Not Shown:

- Countertop Material
- Student Chairs/Stools
- Instructor's Chair
- Markerboard/Chalkboard
- Safety Equipment

# Concept #6 — Laboratory/Lecture Combination with Peninsula Workstations

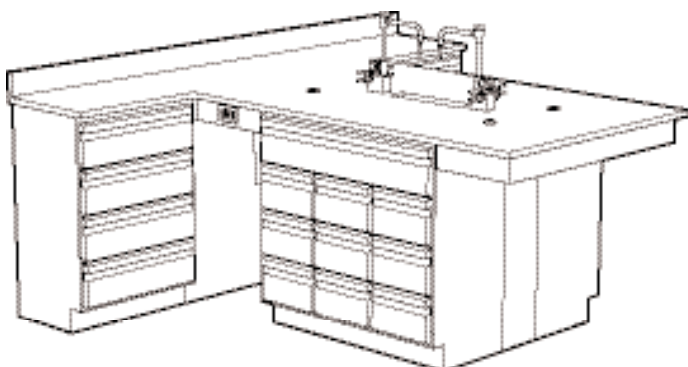


## Concept #6 — Laboratory/Lecture Combination with Peninsula Student Workstations

This lecture/laboratory combination adds a lecture seating area to concept #3, and is used widely for general science. The design is for 24 students, and the room size is 32 x 48 ft.

This concept includes a center island that has no gas, water, etc. and is designed for computer use.

The major advantages of this concept are the center island for computer work and the large per student workspace. The major disadvantage of this concept is that one-half of the students can be facing away from the instructor..



VFX75-H3695

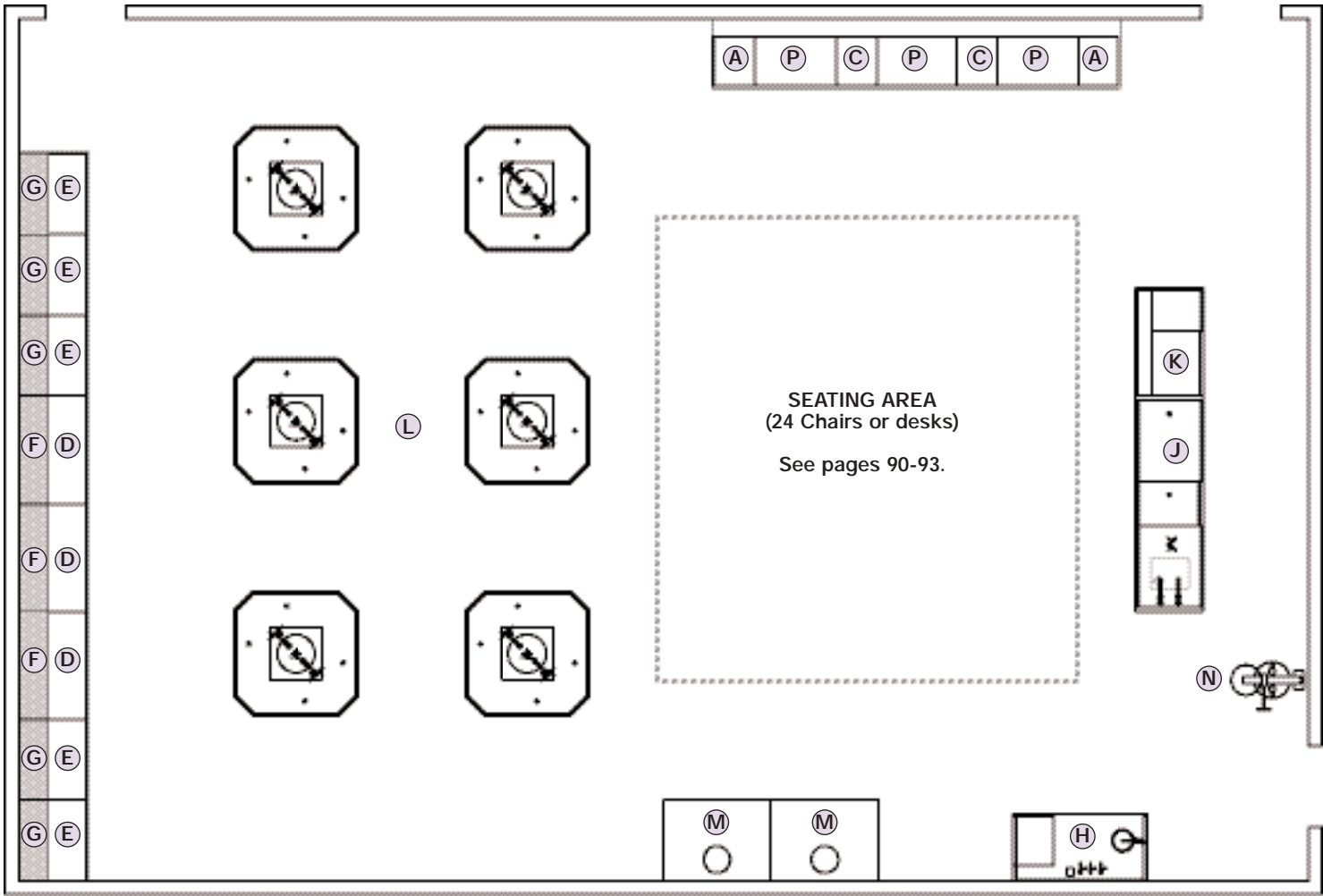
### Bill of Material

Item	Units	Catalog No.	Description	Page
A	6	VFX75-H36	Peninsula Workstation	44
B	1	VFT24-H3048	Instructor's Demonstration Table	46
C	1	VFT31-H3696	Instructor's Desk	46
D	4	VFW20-H3036	Wall Cabinet with Glazed Doors	51
E	2	VFE56-H3648	Base Cupboard/Cabinet, Standing Height	49
F	2	VFW20-H3048	Wall Cabinet with Glazed Doors	51
G	4	VFE56-H3636	Base Cupboard/Cabinet, Standing Height	49
H	1	VFS20-H2248	Tall Cabinet with Swinging Glazed Doors	52
J	1	VFG81-H2236	Safety Center	45
K	1	VFT05-H3760	ADA Workstation	45
L	1	VFS25-H2248	Tall Case, Solid Door	52
M	1	VFT82-H3695-T	12 Student Workstation, Plain Top	41
N	1	H50K5460-00	5 ft. Low Volume Fume Hood	60
P	2	VF-0603-SE	Eye Wash/Safety Shower	85

#### Not Shown:

- Countertop Material
- Student Chairs/Stools
- Instructor's Chair
- Markerboard/Chalkboard
- Safety Equipment

# Concept #7 — Laboratory/Lecture Combination with Octagonal Student Tables

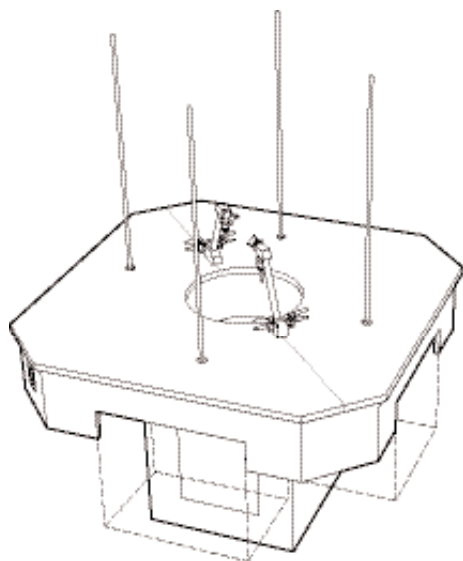


## Concept #7 — Laboratory/Lecture Combination with Octagonal Student Workstations

This lecture/laboratory combination is especially useful for general science. The design is for 24 students, and the room size is 32 x 48 ft.

This concept includes a variety of wall cabinet storage (both base cabinets and wall cabinets), and a fume hood. Sitting height benches are provided on one wall.

An advantage of this concept is that there are two distinct areas in the room, and two projects can be going on at once. The major disadvantage of this concept is that when students are working, one-quarter of them are not facing the instructor at all times.



VFX83-H3695

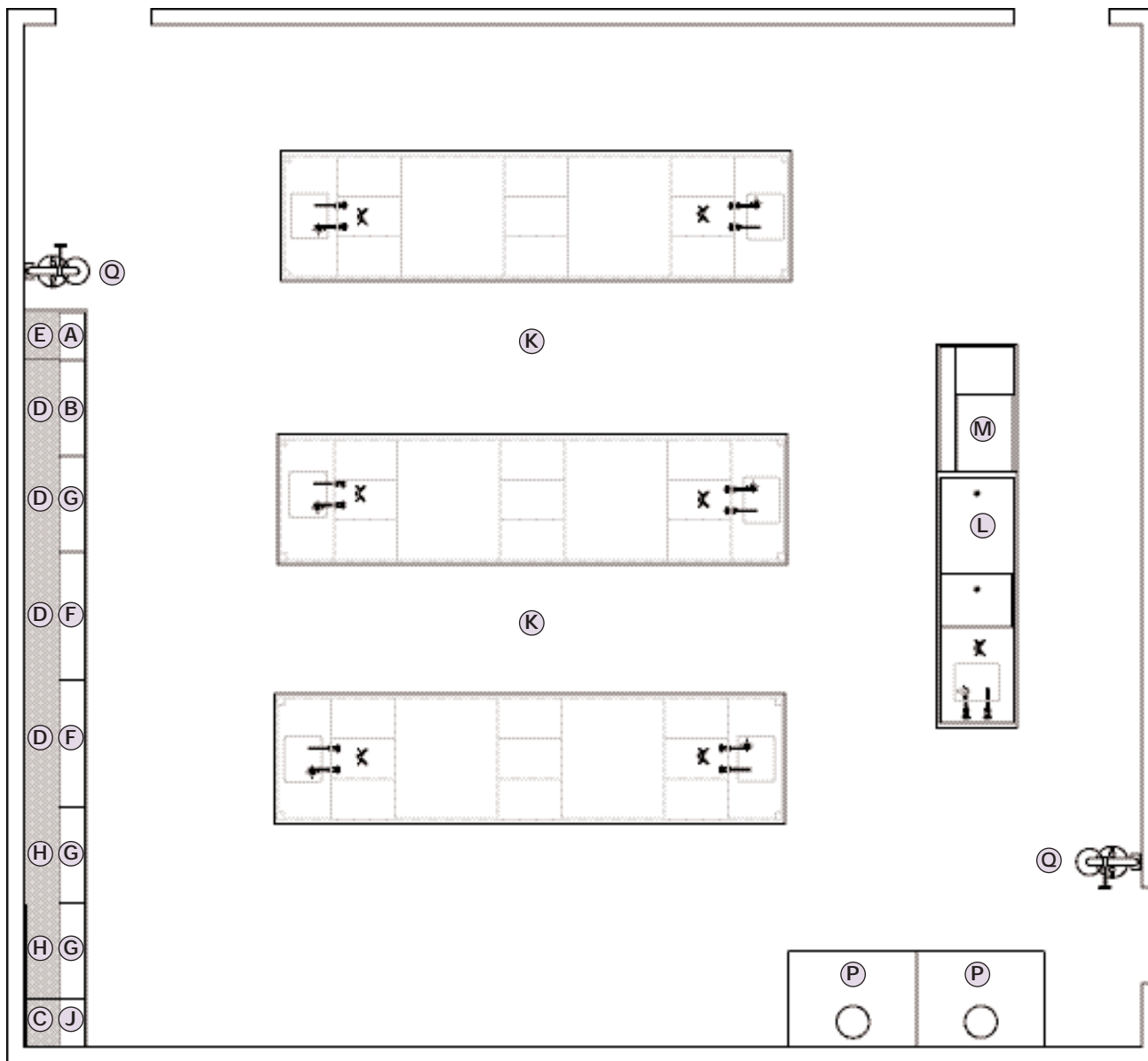
### Bill of Material

Item	Units	Catalog No.	Description	Page
A	2	VFD00-H3018L	Base Cabinet, Sitting Height	47
C	2	VFD00-H3018	Base Cabinet, Sitting Height	47
D	3	VFE56-H3648	Cupboard/Drawer Cabinet, Standing Height	49
E	5	VFE56-H3636	Cupboard/Drawer Cabinet, Standing Height	49
F	3	VFW20-H3048	Wall Cabinet with Glazed Door	51
G	5	VFW20-H3036	Wall Cabinet with Glazed Door	51
H	1	VFT05-H3760	ADA Workstation	45
J	1	VFT31-H3696	Instructor's Demonstration Table	46
K	1	VFT24-H3048	Instructor's Desk	46
L	6	VFX83-3656	Octagonal Student Bench	42
M	2	H50K5448-00	4 ft. Low Volume Fume Hood	60
N	1	VF-0603-SE	Eye Wash/Safety Shower	85
P	3	VFA00-H2236	Apron	50

#### Not Shown:

Countertop Material  
Student Chairs/Stools  
Instructor's Chair  
Markerboard/Chalkboard  
Safety Equipment

## Concept #8 — Laboratory Using 8-Student Center Benches



## Concept #8 — Laboratory Using 8-Student Center Benches

This standard laboratory design uses 8-student double-width benches. Two fume hoods are provided, as is an Instructor's Demonstration Table. Supplies storage is provided at the back of the room. This concept does not lend itself to becoming a combination laboratory/lecture room. A slightly larger room would allow computer usage away from the water and drains of the center benches



VFT65-H3660

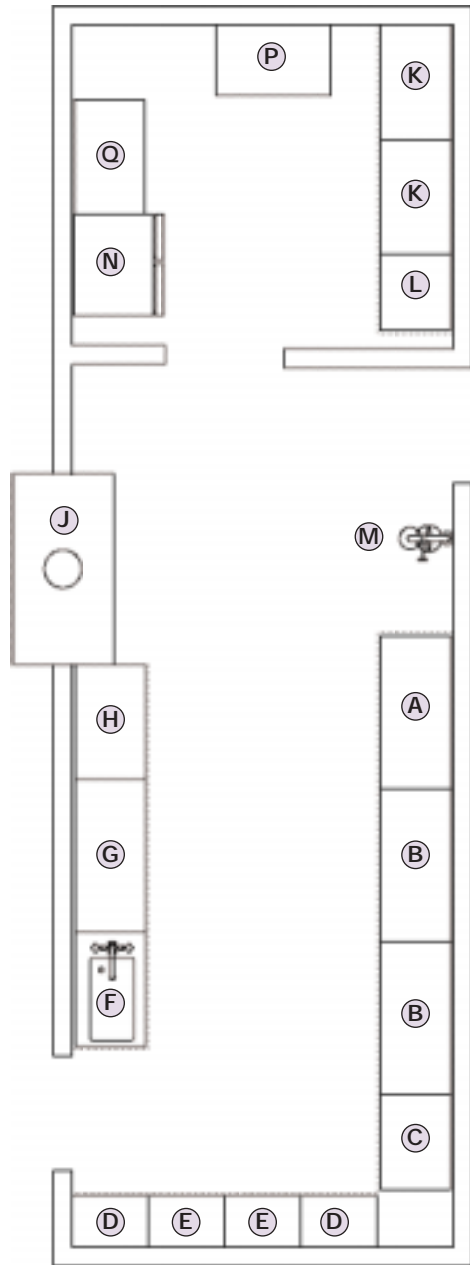
### Bill of Material

Item	Units	Catalog No.	Description	Page
A	1	VFE60-H3618	Base Cupboard Cabinet, Standing Height	49
B	1	VFA00-H2236	Apron Rail	50
C	1	VFW20-H3018L	Wall Cabinet	51
D	4	VFW20-H3036	Wall Cabinet	51
E	1	VFW20-H3018	Wall Cabinet	51
F	2	VFE56-H3648	Cupboard/Drawer Cabinet, Standing Height	49
G	3	VFE56-H3636	Cupboard/Drawer Cabinet, Standing Height	49
H	2	VFW20-H3048	Wall Cabinet with Glazed Door	51
J	1	VFC03-H3618L	Cupboard Cabinet	47
K	3	VFT82-H3695-T	12-Student Bench	41
L	1	VFT31-H3696	Instructor's Demonstration Table	46
M	1	VFT24-H3048	Instructor's Desk	46
P	2	H50K5448-00	4 ft. Low Volume Fume Hood	60
Q	2	VF-0603-SE	Eye Wash/Safety Shower	85

#### Not Shown:

- Countertop Material
- Student Chairs/Stools
- Instructor's Chair
- Markerboard/Chalkboard
- Safety Equipment

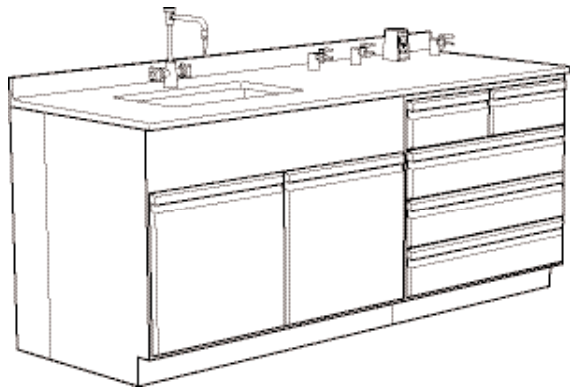
### Concept #9 — Preparation Room



## Concept #9 — Preparation Room

The Prep Room needs lots of open counter space, a separate chemical storage area, a fume hood, refrigerator, and acid and flammables cabinets. This room has two exits, a safety shower/eyewash combination and a pass-through hood.

Under counter storage is provided for Prep Room supplies. A drying rack is needed over the sink. A useful addition to this design would be a dishwasher under the counter next to the sink.



VFT32-H3684  
Preparation Wall Bench  
(Could replace **F** & **G** in concept)

### Bill of Material

Item	Units	Catalog No.	Description	Page
A	1	VFG86-H3648	Tote Tray Cabinet, Standing Height	--
B	2	VFD00-H3648	Base Cabinet, Standing Height	47
C	1	VFE40-H3630	Cupboard/Drawer Cabinet, Standing Height	47
D	2	VFG91-H3624	Open Storage Cabinet, Standing Height	
E	2	VFG93-H3624	Drawer Cabinet, Standing Height	
F	1	VFG00-H3636	Sink Cabinet, Standing Height	48
G	1	VFE41-H3648	Base Cabinet, Standing Height	49
H	1	VFE41-H3636	Base Cabinet, Standing Height	49
J	1	VFT95-K8460	Pass-Through Fume Hood	--
K	2	VFB00-H3636	Open Storage Shelving	48
L	1	VFB00-H3624	Open Storage Shelving	48
M	1	VF-0603-SE	Eye Wash/Safety Shower	80
N	1	55703-145	Flammable-rated Refrigerator	96
P	1	See Page 80	Acid Storage Cabinet	80
Q	1	55610-563	Flammable Storage Cabinet	82

#### Not Shown:

Countertop Material  
Chairs/Stools  
Safety Equipment  
Drying Rack over Sink  
Dishwasher (undercounter by sink)

# 34 Laboratory Concepts

## What You Can Expect From Us

With a concept in mind, you can now proceed to looking at the furniture and equipment you need in your science room.

Your Sales and Furniture Representatives can help by working with you to:

- Refine the concept by suggesting:
  - Furniture modules that work best for your teaching and storage requirements
  - Equipment that should be a part of the total lab package
  - Fume hood specifications
  - ADA items
  - Safety equipment
  - Audio/Visual items
- Review\* the concept for:
  - Safety issues (fire extinguishers, eye wash/shower, ...)
  - ADA issues
  - Traffic flow issues
  - Line of Sight issues
  - Technology Integration
- Provide "concept" drawings such as the previous concept drawings and a budget estimate for your use in getting the project approved
- Provide a complete quotation after the project is approved, including non-mechanical installation
- Provide detailed site drawings for your approval once the order is placed
- Provide the best possible science room, one that meets your needs now and in the future



\* This does not replace full reviews that you should perform with the project team and local authorities.