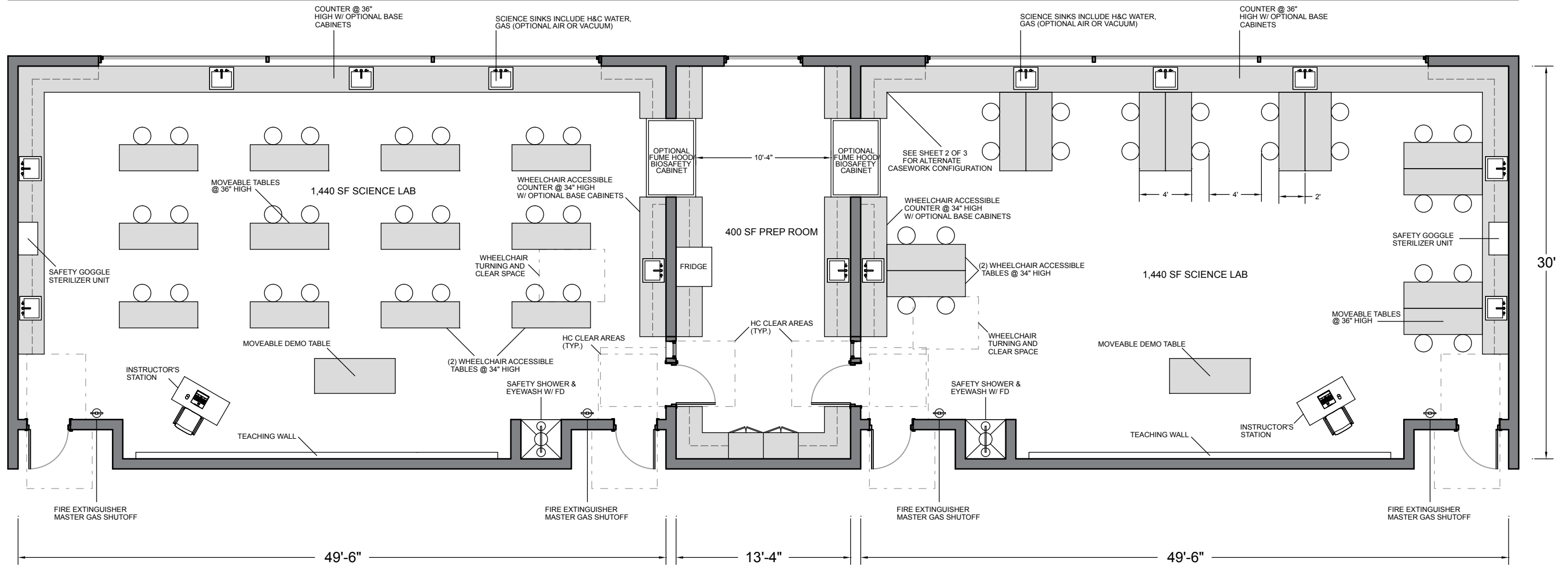


# HIGH SCHOOL SCIENCE LAB PLAN A



FRONT FACING / LARGE GROUP INSTRUCTION TEAMS OF 2 CONFIGURATION

LAB CONFIGURATION

**NOTES:**

1. THESE DIAGRAMS ARE EXAMPLES OF TABLE ARRANGEMENTS THAT CAN ACCOMMODATE A WIDE VARIETY OF ACTIVITIES, GROUPINGS, AND INSTRUCTIONAL CONFIGURATIONS THAT ARE TYPICAL OF LABORATORY WORK AND INSTRUCTION IN SMALL, MEDIUM, AND WHOLE-CLASS GROUPS. THE INTENT IS TO DESIGN SPACES WITH MAXIMUM FLEXIBILITY FOR VARIED USES WITHOUT EXTENSIVE RECONSTRUCTION.
2. THESE PLANS ARE TO BE CONSIDERED STANDARD TEMPLATE CONFIGURATIONS; SPECIFIC SCHOOL DESIGNS MAY VARY FROM THESE STANDARDS.
3. THE ITEMS DESCRIBED BELOW AS "REQUIREMENTS" ARE MANDATORY, OTHER ITEMS ARE MSBA RECOMMENDATIONS ARE TO BE CONSIDERED "BEST PRACTICES."

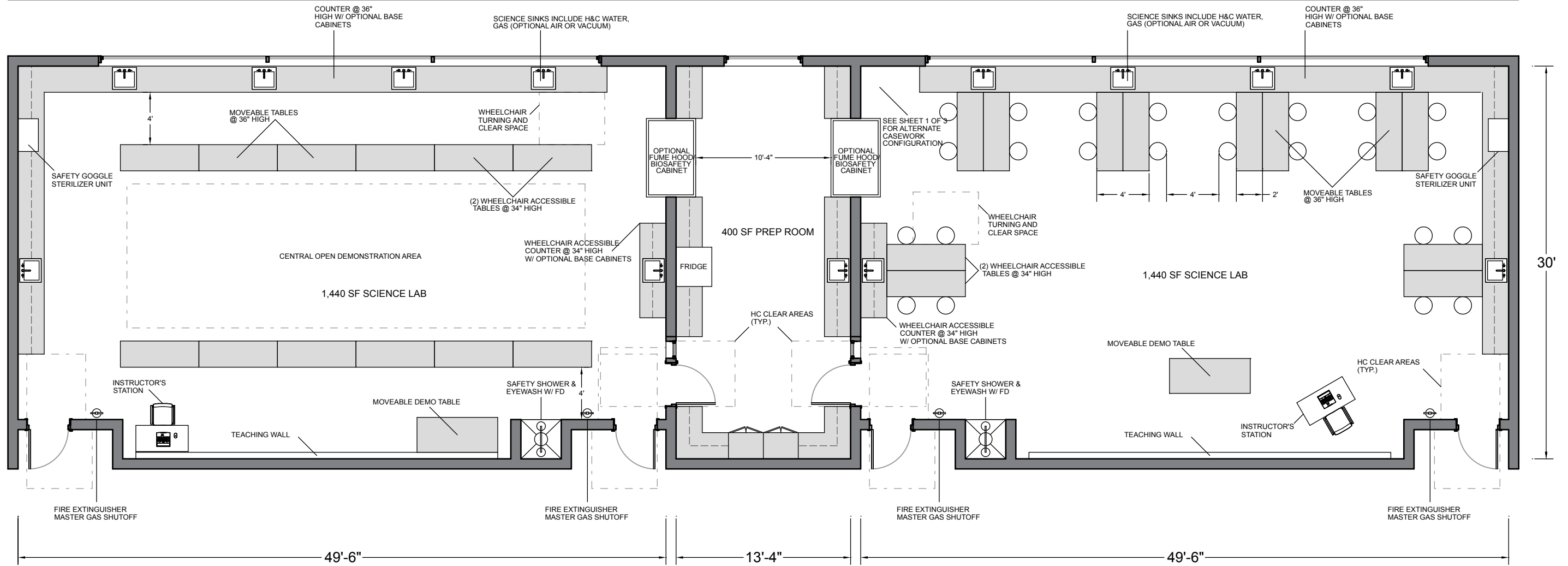
**REQUIREMENTS:**

1. THE MSBA ALLOTMENT OF 1,440 NSF FOR EACH SCIENCE LAB IS BASED ON 60 NSF PER STUDENT (24 STUDENTS). SMALLER SCIENCE CLASSROOMS MAY BE CONSIDERED IF THE CLASS SIZE IS SMALLER, WITH A MINIMUM OF 60 NSF PER STUDENT.
2. THE DISTRICT AND DESIGN TEAM SHOULD PROVIDE FOR A SCIENCE LAB LAYOUT THAT ALLOWS AS MUCH FLEXIBILITY AND UNIVERSALITY AS PRACTICAL, GIVEN THE DISTRICTS SCIENCE DEPARTMENT EDUCATIONAL PLAN.
3. BOTH LAB AND LECTURE CONFIGURATIONS MUST BE ACCOMMODATED IN EVERY DESIGNATED SCIENCE LAB ROOM. SEPARATE LABS AND LECTURE ROOMS ARE NOT PERMITTED.
4. NO LAB RAISED UTILITIES, THAT MAY RESTRICT FLEXIBILITY, ARE TO BE PROVIDED IN THE CENTRAL FLOOR AREA OF THE SCIENCE LABS. UTILITIES FROM A GRID SUSPENDED FROM THE CEILING MAY BE NEEDED FOR SOME DISCIPLINES, BUT ONLY IF THE PERIPHERAL UTILITIES CANNOT ACCOMMODATE MOST NEEDS.
5. NO FIXED CASEWORK IS PERMITTED IN THE CENTRAL FLOOR AREA.

**BEST PRACTICES:**

1. STURDY, STANDING-HEIGHT TWO-STUDENT TABLES SHOULD MATCH THE HEIGHT OF PERIPHERAL COUNTER TOPS SO THAT STUDENTS PERFORM LAB WORK STANDING (PREFERABLE) AND "SEAT WORK" ON STOOLS. TWO-STUDENT TABLES (NOT LARGER) ARE RECOMMENDED SO THEY CAN BE MOVED INTO A VARIETY OF CONFIGURATIONS. ADJUSTABLE-HEIGHT TABLES ARE NOT RECOMMENDED.
2. STUB UTILITIES WHERE NEEDED FOR POTENTIAL FUTURE CONFIGURATIONS.
3. SINKS SHOULD BE WIDE AND DEEP ENOUGH TO ACCOMMODATE BUCKETS AND OTHER LARGE CONTAINERS.
4. OPTIONAL FUME HOODS AND BIOSAFETY CABINETS SHOULD BE ACCESSIBLE FROM BOTH THE PREP ROOM AND THE CLASSROOM.
5. PROVIDE FULL BLACK-OUT WINDOW TREATMENT IN LABS.
6. PROVIDE MOVEABLE TEACHER DEMONSTRATION TABLES (NOT FIXED).
7. EACH LAB PREP ROOM SHOULD INCLUDE ONE REFRIGERATOR AND ONE DISHWASHER.
8. AT LEAST TWO MEANS OF EGRESS FROM EACH LAB SHOULD BE PROVIDED (THE BUILDING CODE MAY REQUIRE THIS, DEPENDING ON AREA).
9. PROVIDE VISUAL ACCESS BETWEEN LABS AND PREP ROOMS / PREP ROOM DOORS.
10. SHARED SPACES CAN BE REDUCED IN AREA, WITH SAVED AREAS REALLOCATED ELSEWHERE AS NEEDED.
11. PREP ROOMS AND CHEMICAL STORAGE SHOULD BE KEYS IN SUCH A WAY TO PROVIDE LIMITED ACCESS, FOR REQUIRED PERSONNEL ONLY.
12. AT THE DISTRICTS DISCRETION, CHEMICAL STORAGE CAN BE DIVIDED INTO SATELLITE STORAGE ROOMS, BUT CHEMICAL STORAGE IN PREP ROOMS IS DISCOURAGED.
13. SAFETY EQUIPMENT AND INFORMATION SUCH AS FIRE BLANKETS, STERILE EYE-PROTECTION, AND MATERIAL SAFETY DATA SHEETS (MSDS) SHOULD BE LOCATED IN HIGHLY-VISIBLE AND EASILY-ACCESSED PLACES, PREFERABLY NEAR EXITS AND OTHER REQUIRED SAFETY EQUIPMENT.
14. RATHER THAN GREEN HOUSES, CONSIDER DESIGNS THAT ALLOW PLANTS TO BE PLACED ON SHELVES OR MOVEABLE RACKS WITH ACCESS TO LIGHT FROM CLASSROOM WINDOWS.

# HIGH SCHOOL SCIENCE LAB PLAN B



**RAMP / MOTION STUDIES CONFIGURATION**

**LAB CONFIGURATION**

**NOTES:**

1. THESE DIAGRAMS ARE EXAMPLES OF TABLE ARRANGEMENTS THAT CAN ACCOMMODATE A WIDE VARIETY OF ACTIVITIES, GROUPINGS, AND INSTRUCTIONAL CONFIGURATIONS THAT ARE TYPICAL OF LABORATORY WORK AND INSTRUCTION IN SMALL, MEDIUM, AND WHOLE-CLASS GROUPS. THE INTENT IS TO DESIGN SPACES WITH MAXIMUM FLEXIBILITY FOR VARIED USES WITHOUT EXTENSIVE RECONSTRUCTION.
2. THESE PLANS ARE TO BE CONSIDERED STANDARD TEMPLATE CONFIGURATIONS; SPECIFIC SCHOOL DESIGNS MAY VARY FROM THESE STANDARDS.
3. THE ITEMS DESCRIBED BELOW AS "REQUIREMENTS" ARE MANDATORY, OTHER ITEMS ARE MSBA RECOMMENDATIONS ARE TO BE CONSIDERED "BEST PRACTICES."

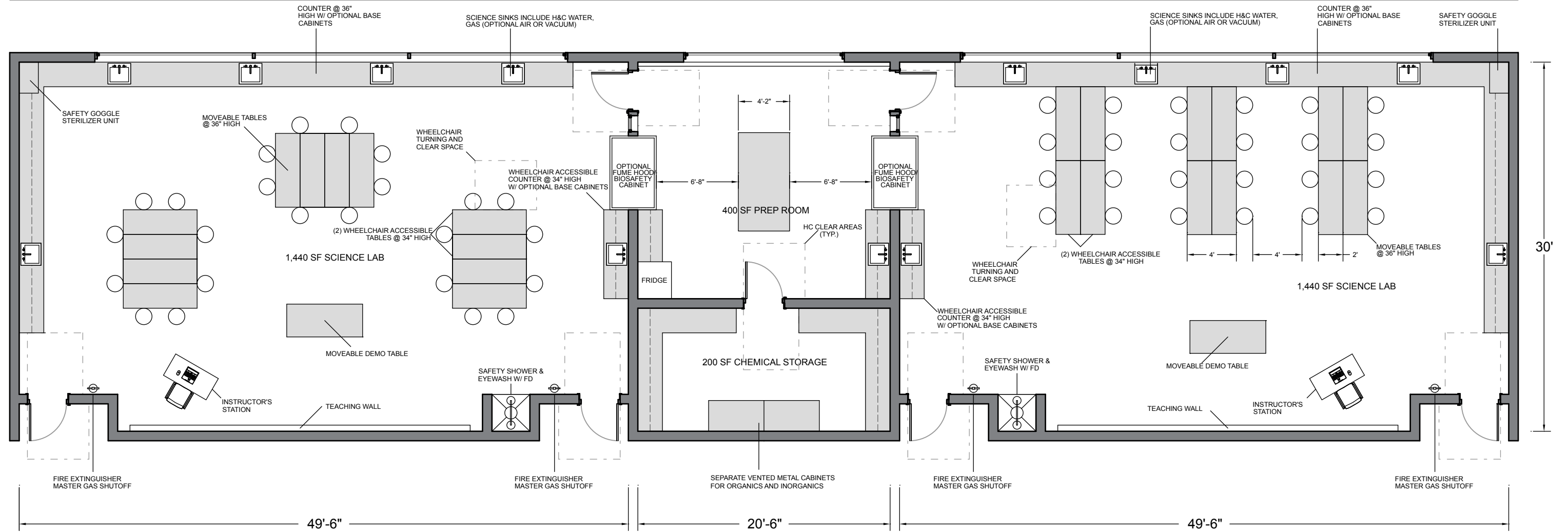
**REQUIREMENTS:**

1. THE MSBA ALLOTMENT OF 1,440 NSF FOR EACH SCIENCE LAB IS BASED ON 60 NSF PER STUDENT (24 STUDENTS). SMALLER SCIENCE CLASSROOMS MAY BE CONSIDERED IF THE CLASS SIZE IS SMALLER, WITH A MINIMUM OF 60 NSF PER STUDENT.
2. THE DISTRICT AND DESIGN TEAM SHOULD PROVIDE FOR A SCIENCE LAB LAYOUT THAT ALLOWS AS MUCH FLEXIBILITY AND UNIVERSALITY AS PRACTICAL, GIVEN THE DISTRICTS SCIENCE DEPARTMENT EDUCATIONAL PLAN.
3. BOTH LAB AND LECTURE CONFIGURATIONS MUST BE ACCOMMODATED IN EVERY DESIGNATED SCIENCE LAB ROOM. SEPARATE LABS AND LECTURE ROOMS ARE NOT PERMITTED.
4. NO LAB UTILITIES, THAT MAY RESTRICT FLEXABILITY, ARE TO BE PROVIDED IN THE CENTRAL FLOOR AREA OF THE SCIENCE LABS. UTILITIES FROM A GRID SUSPENDED FROM THE CEILING MAY BE NEEDED FOR SOME DISCIPLINES, BUT ONLY IF THE PERIPHERAL UTILITIES CANNOT ACCOMMODATE MOST NEEDS.
5. NO FIXED CASEWORK IS PERMITTED IN THE CENTRAL FLOOR AREA.

**BEST PRACTICES:**

1. STURDY, STANDING-HEIGHT TWO-STUDENT TABLES SHOULD MATCH THE HEIGHT OF PERIPHERAL COUNTER TOPS SO THAT STUDENTS PERFORM LAB WORK STANDING (PREFERABLE) AND "SEAT WORK" ON STOOLS. TWO-STUDENT TABLES (NOT LARGER) ARE RECOMMENDED SO THEY CAN BE MOVED INTO A VARIETY OF CONFIGURATIONS. ADJUSTABLE-HEIGHT TABLES ARE NOT RECOMMENDED.
2. STUB UTILITIES WHERE NEEDED FOR POTENTIAL FUTURE CONFIGURATIONS.
3. SINKS SHOULD BE WIDE AND DEEP ENOUGH TO ACCOMMODATE BUCKETS AND OTHER LARGE CONTAINERS.
4. OPTIONAL FUME HOODS AND BIOSAFETY CABINETS SHOULD BE ACCESSIBLE FROM BOTH THE PREP ROOM AND THE CLASSROOM.
5. PROVIDE FULL BLACK-OUT WINDOW TREATMENT IN LABS.
6. PROVIDE MOVEABLE TEACHER DEMONSTRATION TABLES (NOT FIXED).
7. EACH LAB PREP ROOM SHOULD INCLUDE ONE REFRIGERATOR AND ONE DISHWASHER.
8. AT LEAST TWO MEANS OF EGRESS FROM EACH LAB SHOULD BE PROVIDED (THE BUILDING CODE MAY REQUIRE THIS, DEPENDING ON AREA).
9. PROVIDE VISUAL ACCESS BETWEEN LABS AND PREP ROOMS / PREP ROOM DOORS.
10. SHARED SPACES CAN BE REDUCED IN AREA, WITH SAVED AREAS REALLOCATED ELSEWHERE AS NEEDED.
11. PREP ROOMS AND CHEMICAL STORAGE SHOULD BE KEYS IN SUCH A WAY TO PROVIDE LIMITED ACCESS, FOR REQUIRED PERSONNEL ONLY.
12. AT THE DISTRICTS DISCRETION, CHEMICAL STORAGE CAN BE DIVIDED INTO SATELLITE STORAGE ROOMS, BUT CHEMICAL STORAGE IN PREP ROOMS IS DISCOURAGED.
13. SAFETY EQUIPMENT AND INFORMATION SUCH AS FIRE BLANKETS, STERILE EYE-PROTECTION, AND MATERIAL SAFETY DATA SHEETS (MSDS) SHOULD BE LOCATED IN HIGHLY-VISIBLE AND EASILY-ACCESSED PLACES, PREFERABLY NEAR EXITS AND OTHER REQUIRED SAFETY EQUIPMENT.
14. RATHER THAN GREEN HOUSES, CONSIDER DESIGNS THAT ALLOW PLANTS TO BE PLACED ON SHELVES OR MOVEABLE RACKS WITH ACCESS TO LIGHT FROM CLASSROOM WINDOWS.

# HIGH SCHOOL SCIENCE LAB PLAN C (WITH SEPARATE CHEMISTRY STORAGE ROOM)



MID-SIZE GROUP / ROBOTICS CONFIGURATION 1

MID-SIZE GROUP / ROBOTICS CONFIGURATION 2

## NOTES:

1. THESE DIAGRAMS ARE EXAMPLES OF TABLE ARRANGEMENTS THAT CAN ACCOMMODATE A WIDE VARIETY OF ACTIVITIES, GROUPINGS, AND INSTRUCTIONAL CONFIGURATIONS THAT ARE TYPICAL OF LABORATORY WORK AND INSTRUCTION IN SMALL, MEDIUM, AND WHOLE-CLASS GROUPS. THE INTENT IS TO DESIGN SPACES WITH MAXIMUM FLEXIBILITY FOR VARIED USES WITHOUT EXTENSIVE RECONSTRUCTION.
2. THESE PLANS ARE TO BE CONSIDERED STANDARD TEMPLATE CONFIGURATIONS; SPECIFIC SCHOOL DESIGNS MAY VARY FROM THESE STANDARDS.
3. THE ITEMS DESCRIBED BELOW AS "REQUIREMENTS" ARE MANDATORY, OTHER ITEMS ARE MSBA RECOMMENDATIONS ARE TO BE CONSIDERED "BEST PRACTICES."

## REQUIREMENTS:

1. THE MSBA ALLOTMENT OF 1,440 NSF FOR EACH SCIENCE LAB IS BASED ON 60 NSF PER STUDENT (24 STUDENTS). SMALLER SCIENCE CLASSROOMS MAY BE CONSIDERED IF THE CLASS SIZE IS SMALLER, WITH A MINIMUM OF 60 NSF PER STUDENT.
2. THE DISTRICT AND DESIGN TEAM SHOULD PROVIDE FOR A SCIENCE LAB LAYOUT THAT ALLOWS AS MUCH FLEXIBILITY AND UNIVERSALITY AS PRACTICAL, GIVEN THE DISTRICTS SCIENCE DEPARTMENT EDUCATIONAL PLAN.
3. BOTH LAB AND LECTURE CONFIGURATIONS MUST BE ACCOMMODATED IN EVERY DESIGNATED SCIENCE LAB ROOM. SEPARATE LABS AND LECTURE ROOMS ARE NOT PERMITTED.
4. NO LAB UTILITIES, THAT MAY RESTRICT FLEXIBILITY, ARE TO BE PROVIDED IN THE CENTRAL FLOOR AREA OF THE SCIENCE LABS. UTILITIES FROM A GRID SUSPENDED FROM THE CEILING MAY BE NEEDED FOR SOME DISCIPLINES, BUT ONLY IF THE PERIPHERAL UTILITIES CANNOT ACCOMMODATE MOST NEEDS.
5. NO FIXED CASEWORK IS PERMITTED IN THE CENTRAL FLOOR AREA.

## BEST PRACTICES:

1. STURDY, STANDING-HEIGHT TWO-STUDENT TABLES SHOULD MATCH THE HEIGHT OF PERIPHERAL COUNTER TOPS SO THAT STUDENTS PERFORM LAB WORK STANDING (PREFERABLE) AND "SEAT WORK" ON STOOLS. TWO-STUDENT TABLES (NOT LARGER) ARE RECOMMENDED SO THEY CAN BE MOVED INTO A VARIETY OF CONFIGURATIONS. ADJUSTABLE-HEIGHT TABLES ARE NOT RECOMMENDED.
2. STUB UTILITIES WHERE NEEDED FOR POTENTIAL FUTURE CONFIGURATIONS.
3. SINKS SHOULD BE WIDE AND DEEP ENOUGH TO ACCOMMODATE BUCKETS AND OTHER LARGE CONTAINERS.
4. OPTIONAL FUME HOODS AND BIOSAFETY CABINETS SHOULD BE ACCESSIBLE FROM BOTH THE PREP ROOM AND THE CLASSROOM.
5. PROVIDE FULL BLACK-OUT WINDOW TREATMENT IN LABS.
6. PROVIDE MOVEABLE TEACHER DEMONSTRATION TABLES (NOT FIXED).
7. EACH LAB PREP ROOM SHOULD INCLUDE ONE REFRIGERATOR AND ONE DISHWASHER.
8. AT LEAST TWO MEANS OF EGRESS FROM EACH LAB SHOULD BE PROVIDED (THE BUILDING CODE MAY REQUIRE THIS, DEPENDING ON AREA).
9. PROVIDE VISUAL ACCESS BETWEEN LABS AND PREP ROOMS / PREP ROOM DOORS.
10. SHARED SPACES CAN BE REDUCED IN AREA, WITH SAVED AREAS REALLOCATED ELSEWHERE AS NEEDED.
11. PREP ROOMS AND CHEMICAL STORAGE SHOULD BE KEYED IN SUCH A WAY TO PROVIDE LIMITED ACCESS, FOR REQUIRED PERSONNEL ONLY.
12. AT THE DISTRICTS DISCRETION, CHEMICAL STORAGE CAN BE DIVIDED INTO SATELLITE STORAGE ROOMS, BUT CHEMICAL STORAGE IN PREP ROOMS IS DISCOURAGED.
13. SAFETY EQUIPMENT AND INFORMATION SUCH AS FIRE BLANKETS, STERILE EYE-PROTECTION, AND MATERIAL SAFETY DATA SHEETS (MSDS) SHOULD BE LOCATED IN HIGHLY-VISIBLE AND EASILY-ACCESSED PLACES, PREFERABLY NEAR EXITS AND OTHER REQUIRED SAFETY EQUIPMENT.
14. RATHER THAN GREEN HOUSES, CONSIDER DESIGNS THAT ALLOW PLANTS TO BE PLACED ON SHELVES OR MOVEABLE RACKS WITH ACCESS TO LIGHT FROM CLASSROOM WINDOWS.