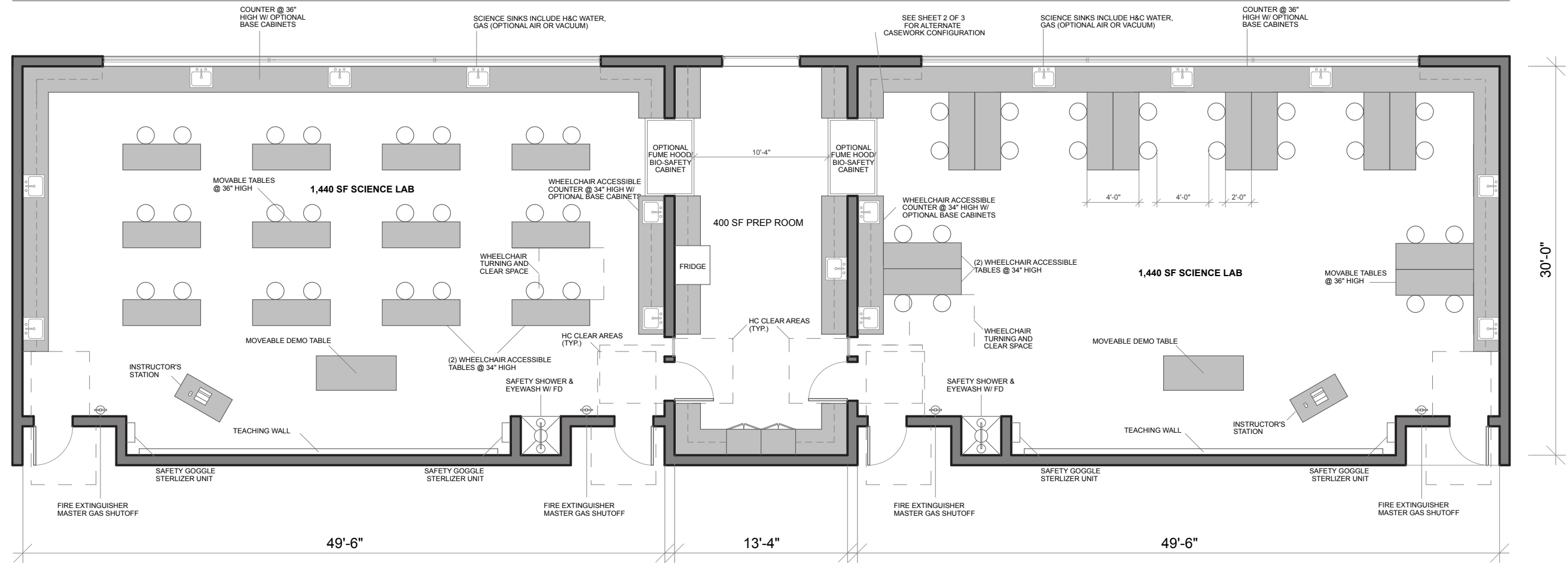


HIGH SCHOOL SCIENCE LAB PLAN A (WITH CHEMICAL STORAGE IN SECURE CABINETS)



FRONT FACING / LARGE GROUP INSTRUCTION TEAMS OF 2 CONFIGURATION

LAB CONFIGURATION

SCIENCE LAB GUIDELINES

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 CONSIDERED 'BEST PRACTICES'.

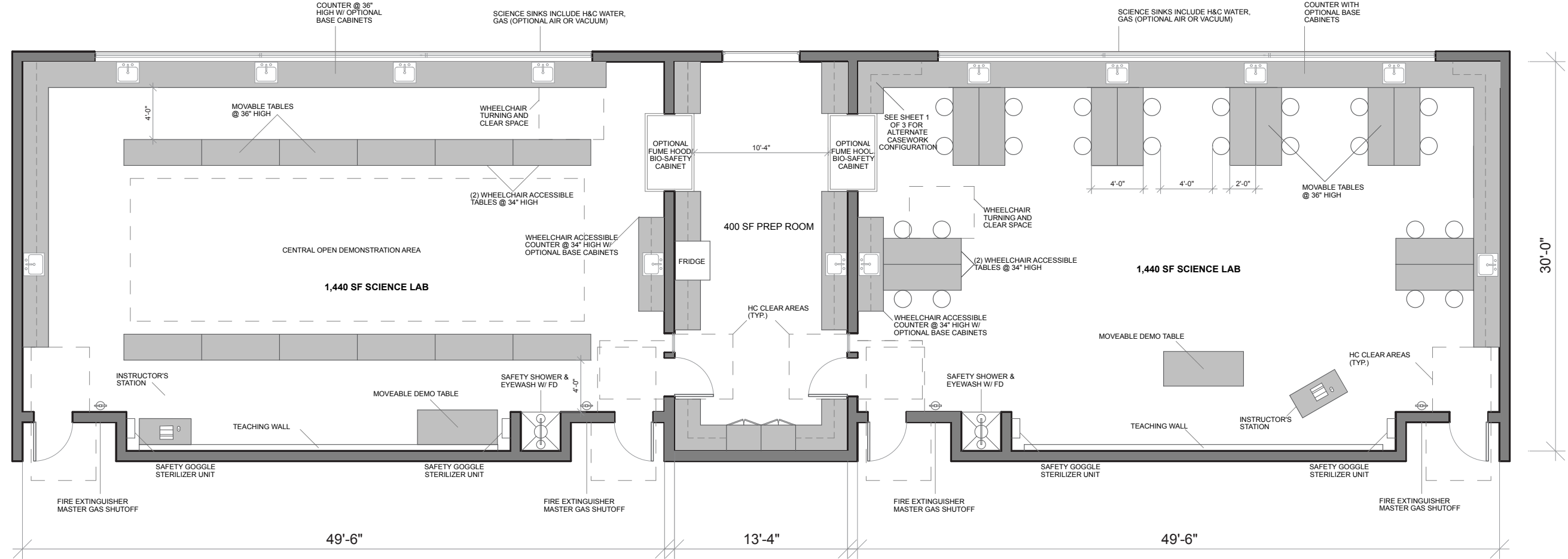
REQUIREMENTS:

1. THE MSBA ALLOTMENT OF 1,440 NSF FOR EACH SCIENCE LAB IS BASED ON A 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 DISTRICT'S 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.
6. FOR THOSE PROJECTS IN WHICH THE DESIGN TEAM HAS DETERMINED THAT A SINGLE EXIT ACCESS DOORWAY FROM EACH SCIENCE LAB COMPLIES WITH THE REQUIREMENTS FOR EGRESS AS STATED IN 780 CMR CHAPTER 10 MASSACHUSETTS STATE BUILDING CODE, THE DESIGNER SHALL PROVIDE, IN ADDITION TO THE REQUIRED EXIT ACCESS DOORWAY, A COMMUNICATING/CONVENIENCE DOOR FROM EACH LAB OR BETWEEN LABS, OR TO OTHER ADJACENT CLASSROOMS OR ACCESSIBLE SPACES THEREBY PROVIDING A SECOND MEANS TO ENTER AND EXIT EACH LAB. THIS SECOND DOOR SHOULD BE SEPARATED AS FAR FROM THE EXIT ACCESS DOORWAY AS PRACTICAL, AS DETERMINED BY THE DESIGN TEAM. DOORS USED FOR ACCESS TO STORAGE ROOMS, PREP ROOMS OR OTHER SPACES LOCKED OR OTHERWISE NOT TYPICALLY ACCESSED BY STUDENTS WILL NOT BE CONSIDERED TO MEET THIS REQUIREMENT. THE REQUIREMENT FOR THIS SECOND DOOR IS IN ADDITION TO, DOES NOT SUPERSEDE, AND THE DESIGN MUST NOT CONFLICT WITH, THE MINIMUM REQUIREMENTS OF 780 CMR, WHICH ARE THE RESPONSIBILITY OF THE DESIGN TEAM.

BEST PRACTICES:

1. STURDY, STANDING-HEIGHT TWO-STUDENT TABLES SHOULD MATCH THE HEIGHT OF PERIPHERAL COUNTERTOPS 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. AN OPTION FOR 34" TALL CASEWORK AND TABLES FOR OVER ALL ACCESSIBILITY IS ALSO AVAILABLE. 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 BIO-SAFETY CABINETS SHOULD BE ACCESSIBLE FROM BOTH THE PREP ROOM AND THE CLASSROOM.
5. PROVIDE FULL BLACK-OUT WINDOW TREATMENTS IN LABS.
6. PROVIDE MOVABLE TEACHER DEMONSTRATION TABLES (NOT FIXED).
7. EACH LAB PREP ROOM SHOULD INCLUDE ONE REFRIGERATOR AND ONE DISHWASHER.
8. PROVIDE VISUAL ACCESS BETWEEN LABS AND PREP ROOMS / PREP ROOM DOORS.
9. SHARED SPACES CAN BE REDUCED IN AREA, WITH SAVED AREAS REALLOCATED ELSEWHERE AS NEEDED.
10. PREP ROOMS AND CHEMICAL STORAGE SHOULD BE KEYED IN SUCH A WAY TO PROVIDE LIMITED ACCESS, FOR REQUIRED PERSONNEL ONLY.
11. AT THE DISTRICT'S DISCRETION, CHEMICAL STORAGE CAN BE DIVIDED INTO SATELLITE STORAGE ROOMS, BUT CHEMICAL STORAGE IN PREP ROOM IS DISCOURAGED.
12. 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.
13. 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 (WITH CHEMICAL STORAGE IN SECURE CABINETS)



RAMP / MOTION STUDIES CONFIGURATION

LAB CONFIGURATION

SCIENCE LAB GUIDELINES

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 CONSIDERED 'BEST PRACTICES'.

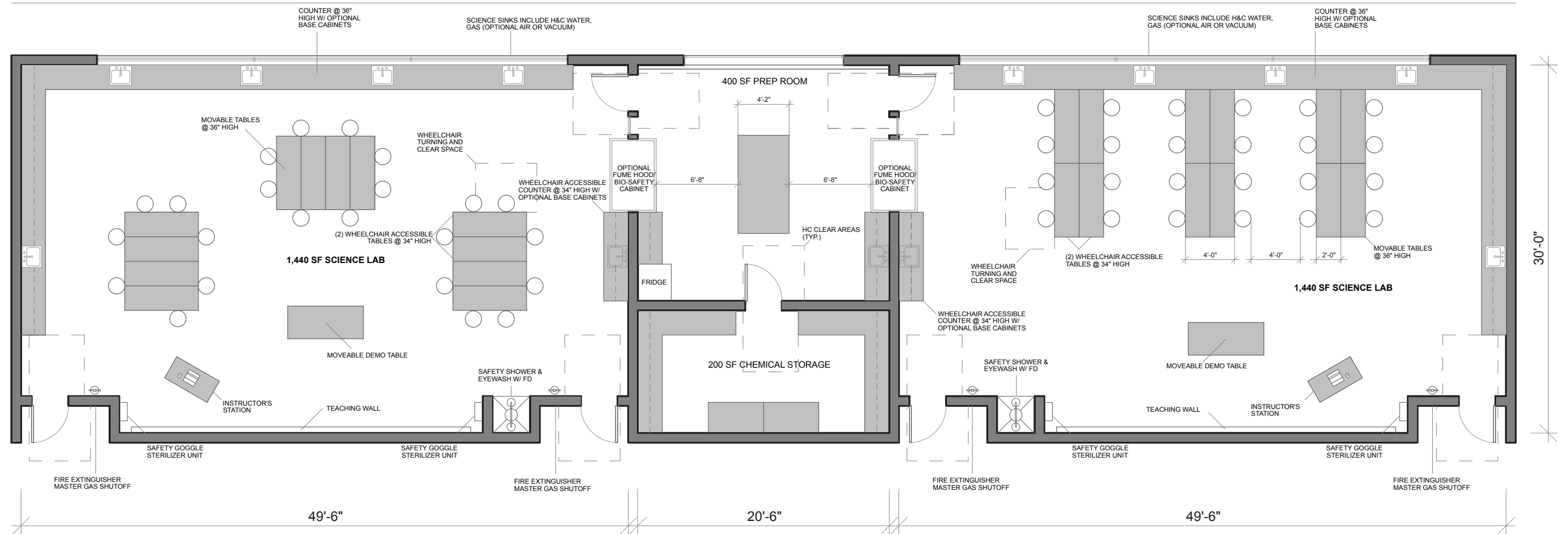
REQUIREMENTS:

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2. THE DISTRICT AND DESIGN TEAM SHOULD PROVIDE FOR A SCIENCE LAB LAYOUT THAT ALLOWS AS MUCH FLEXIBILITY AND UNIVERSALITY AS PRACTICAL, GIVEN THE DISTRICT'S 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.
6. FOR THOSE PROJECTS IN WHICH THE DESIGN TEAM HAS DETERMINED THAT A SINGLE EXIT ACCESS DOORWAY FROM EACH SCIENCE LAB COMPLIES WITH THE REQUIREMENTS FOR EGRESS AS STATED IN 780 CMR CHAPTER 10 MASSACHUSETTS STATE BUILDING CODE, THE DESIGNER SHALL PROVIDE, IN ADDITION TO THE REQUIRED EXIT ACCESS DOORWAY, A COMMUNICATING/CONVENIENCE DOOR FROM EACH LAB OR BETWEEN LABS, OR TO OTHER ADJACENT CLASSROOMS OR ACCESSIBLE SPACES THEREBY PROVIDING A SECOND MEANS TO ENTER AND EXIT EACH LAB. THIS SECOND DOOR SHOULD BE SEPARATED AS FAR FROM THE EXIT ACCESS DOORWAY AS PRACTICAL, AS DETERMINED BY THE DESIGN TEAM. DOORS USED FOR ACCESS TO STORAGE ROOMS, PREP ROOMS OR OTHER SPACES LOCKED OR OTHERWISE NOT TYPICALLY ACCESSED BY STUDENTS WILL NOT BE CONSIDERED TO MEET THIS REQUIREMENT. THE REQUIREMENT FOR THIS SECOND DOOR IS IN ADDITION TO, DOES NOT SUPERSEDE, AND THE DESIGN MUST NOT CONFLICT WITH, THE MINIMUM REQUIREMENTS OF 780 CMR, WHICH ARE THE RESPONSIBILITY OF THE DESIGN TEAM.

BEST PRACTICES:

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



MID-SIZED GROUP / ROBOTICS CONFIGURATION

MID-SIZED GROUP / ROBOTICS CONFIGURATION 2

SCIENCE LAB GUIDELINES

NOTES:

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