



**Facilities Services Department/  
Operations Division**  
Eden Support Services Center  
925 Bear Corbitt Road  
Bear, DE 19701

(302) 454-2400  
TDD Relay (800) 232-5470  
FAX (302) 454-5440

# **FACILITY DESIGN STANDARDS**

# Christina School District

## **FACILITY DESIGN STANDARDS**

May 1, 2010

**TABLE OF CONTENTS**

<b>01</b>	<b>GENERAL REQUIREMENTS</b>	<b>7</b>
	Scope	
	Design Conflicts	
	Updates	
	General Project Requirements	
	Drawing Submission Requirements	
	Bidding & Negotiations	
	Project Closeout Checklist	
	Project Site Signage	
<b>02</b>	<b>SITE IMPROVEMENTS</b>	<b>14</b>
	General Requirements	
	Paving & Surfacing	
	Solid Waste Removal	
	Walls & Fences	
	Vehicular Circulation	
	School Bus Parking & Circulation	
	Pedestrian Circulation	
	Checklist for Driveway Design Safety	
	Outbuildings	
	School Building Sign	
	Lanscaping	
<b>03</b>	<b>EXTERIOR CONSTRUCTION</b>	<b>23</b>
	Exterior Walls	
	Air Barriers	
	Insulation	
	Flashings	
	Sealants & Caulking	
	Entrance Doors	
	Windows / Glazing	
	Loading Docks	
<b>04</b>	<b>ROOFING</b>	<b>28</b>
	General	
<b>05</b>	<b>INTERIOR CONSTRUCTION</b>	<b>30</b>
	Interior Partitions – Middle & High School	
	Interior Partitions – Elementary School	
	Doors	

	Hardware	
	Flooring	
	Ceilings	
	Toilet Partitions & Accessories	
	Signage	
	Floor mats	
<b>06</b>	<b>SPECIALTY CONSTRUCTION</b>	<b>35</b>
	Chalk & Marker Boards	
	Projection Screens	
	Elevators	
	Classroom Acoustics	
	Casework	
<b>07</b>	<b>MECHANICAL &amp; PLUMBING</b>	<b>37</b>
	General HVAC Requirements	
	Space Considerations for Mechanical & Boiler Rooms	
	Automatic Temperature Controls (ATC)	
	Energy Recovery System	
	Economizer	
	Chillers	
	Air Handlers	
	Terminal Units	
	Rooftop package A/C & Heat Pumps	
	Ductwork	
	Ductwork Insulation	
	Circulating Pumps	
	Piping Systems	
	Pipe Insulation	
	Vibration Isolation	
	Boilers, Boiler Control Systems & Breaching	
	Oil Tanks	
	Water Treatment	
	General Plumbing Requirements	
	Storm Drainage Systems	
	Sanitary, Waste and Vent Systems	
	Domestic Waste Drainage Systems	
	Gas Systems	
	Plumbing Fixtures	
	Plumbing Equipment	
	Piping System Material	
	Pipe Insulation	
	Space Requirements for Pipe Chases & Mechanical Rooms	

<b>15B TESTING/BALANCING/COMMISSIONING</b>	<b>54</b>
Building Commissioning	
<b>15C FIRE PROTECTION</b>	<b>58</b>
<b>16A ELECTRICAL</b>	<b>59</b>
General Electrical Requirements	
Temporary Electrical Services	
Grounding	
Hangers and Supporting Devices	
Wire and Cable Power System	
Power System Wire Connections and Devices	
Conduit	
Outlet Boxes / Receptacles / Switches	
Emergency Generator Systems	
Surge Arresters	
Circuit Breakers	
Safety Switches	
Switchgear	
Switchboards, Panelboards and Distribution Panels	
Dry Type Transformers	
Lighting	
Lamps, Ballast and Accessories	
Fire Alarm / Detection System	
Communication	
Exterior Lighting	
<b>16B SPECIAL SYSTEMS</b>	<b>71</b>
Security Access & Surveillance	
General Requirements	
Interior Fixed Cameras	
Exterior Cameras	
Digital Recorders	
Multiplexer	
Preferred System	
Food Service	
General Requirements	
Finishes	
Technology	
Equipment	
Signage	
Interior Signage	
Exterior Signage	

<b>SELECTIVE DEMOLITION</b>	<b>87</b>
<b>SPACE REQUIREMENTS – ELEMENTARY SCHOOLS</b>	<b>88</b>
<b>SPACE REQUIREMENTS – MIDDLE SCHOOLS</b>	<b>118</b>
<b>SPACE REQUIREMENTS – HIGH SCHOOLS</b>	<b>159</b>

## **01 GENERAL REQUIREMENTS**

### **SCOPE**

The primary purpose of the Christina School District Construction Guidelines is to consistently and comprehensively convey to all of the professional consultants retained by the District, our facility needs, preferences and desires. This document will serve as a repository for operational lessons learned, new ideas or simply a preferred way of doing business. The guidelines are not intended to prevent, stifle or inhibit architects, engineers and designers from exploring alternatives and providing the District with new and innovative ideas.

This standard is a guide for the design and construction of Christina School District public school facilities. Compliance is mandatory for all school projects and other projects as requested by the Christina School District. Deviations from this standard shall be requested in writing and approved by the district – Facilities Services Department.

Our goal is to:

- Consistently and efficiently communicate facility preferences to professional consultants
- Act as a single point of reference for all facility requirements related to construction
- Promote coordination between District departments regarding facility needs
- Minimize District generated changes during the construction process

The Guidelines will apply to new school facilities; new additions to existing buildings, and renovations to existing facilities. Construction should adhere to the Guidelines wherever possible.

There is no intent within the context of the Guidelines to restrict, encourage, or otherwise influence the requirements of the public bidding laws relative to entities bidding on labor, material, products, or services. Names of proprietary organizations are not stated within the Guidelines, and the intent is to encourage open, competitive bidding for all construction work within the Christina School District.

The Guidelines are the property of the Christina School District of the State of Delaware, and the School District reserves the right to add, delete, modify, or otherwise change the content of this manual at any time. Specific information contained within this manual will be periodically modified to reflect current economical, political, and social conditions.

### **DESIGN CONFLICTS**

Notify the Facilities Services Department in writing, of any and all conflicts associated with the use of this standard and/or requirements that are contrary to current design practice.

### **UPDATES**

This standard will be updated on a regular basis. Use the standard in effect at the time of A/E contract execution.

### **GENERAL PROJECT REQUIREMENTS**

1. The State of Delaware Construction Technical Assistance Manual issued by the State of Delaware Department of Education will be referred to as the State of Delaware Construction Manual from this point forward.
2. Whenever the term “General” is used in the title of a category (i.e.: General Information) it is universal information relevant and applicable to Elementary, Middle and High schools.
3. All references to Architect/Engineer (A/E) or Construction Manager (CM) throughout this guide specification shall mean Architect/Engineer, Construction Manager jointly or individually as appropriate.
4. The A/E or Construction Manager is expected to respond to requested inspection by Contractor in a timely manner as to not delay the progress of the project. This should be a maximum of 24 hours from Contractor’s request.
5. The Construction Manager or Contractor shall supply the local school district with a complete project construction schedule. The construction schedule shall show start date, middle point of construction and projected completion date. Construction schedules shall be re-issued as needed.
6. Record Drawings: The Contractor shall maintain a record set of prints of contract drawings and shop drawings in a clean, undamaged condition. Mark-up the set of record documents to show the actual installation. When shop drawings are used for mark-up, record a cross reference at the corresponding location on the record/working drawings.
7. An integral and vital part of job inspection shall be the maintenance and final submittal of a record set of construction plans (as-builts) to include by location and dimension all underground utility piping. Failure to furnish complete and accurate as-built plans shall be just cause for Owner to withhold appropriate payment to A/E, Construction Manager, and/or Contractor.
8. The A/E or Construction Manager will supply the Department of Education a copy of as-built floor plans (floor plans only) on electronic files as per the School Construction Manual. All files shall be copied, or translated to AutoCAD, Release 2000 or later.



9. A/E will supply the school district with 1 copy of archive quality as-built drawings and two copies of electronic files on CD-Rom in (Pdf format).
10. The contractor shall organize operating and maintenance data into binders of manageable size. Bind data into binders properly identified and indexed. Bind each site data in a heavy three ring vinyl covered binder with pocket folders for folded information. Mark the appropriate identification on both front and spine of each binder.
11. Include the following types of information in operation and maintenance manuals:
  - a. Emergency Instructions
  - b. Spare parts listing
  - c. Copies of warranties
  - d. Wiring diagrams
12. Bidding in the State of Delaware adheres to Title 29, Chapter 69 of the Delaware State code. In addition, bidding for Christina School District is coordinated by the CSD Facilities Services Department at 302-454-2400. All advertisements, release of bid documents, issuance of addenda and bid openings are to be coordinated through the CSD Facilities Services Department.
13. In addition to these design standards, all designs shall adhere to all federal, state and local design and building codes i.e. (but not limited to):

State Dept of Education  
State of Delaware Construction Manual  
Americans With Disabilities Act  
State of Delaware Accessibilty Standards  
State of Delaware Health Dept Regulations  
Current Building Code(s) of the local jurisdiction having authority  
State of Delaware Fire Prevention Regulations  
DELDOT - Division of Highways  
DNREC

## **DRAWING SUBMISSION REQUIREMENTS**

The following is a list identifying the submission process for all documentation to both the Christiana School District and the State of Delaware Department of Education. Specific information regarding each item is outlined in the subsequent sections.

- Educational Specification/Program
- Schematic Design (SD)
- Design Development (DD)
- Construction Documentation (CD)
- Bidding and Negotiation
- Contract Award
- Project Closeout

**A. Education Specifications**

1. Introduction
  - a. Purpose of Educational Specification
  - b. Scope of Project
2. Demographics
  - a. Population Data
  - b. Enrollment Projections
3. Educational Program
  - a. Implications for Educational Facilities
  - b. Education, Philosophy, Program and Methodology
  - c. School Access and Spatial Relationship
4. School Areas
  - a. Overall Spatial Relationship
  - b. Room Schedule (sq. ft.)
  - c. Shop Areas and spatial Relationship
5. General Building Needs
  - a. Design Concept
  - b. Environment Consideration
  - c. Education Technology
  - d. School Site
  - e. Community Use
6. Summary Statement
7. Approvals Process
  - a. Review and approval by local Christina School Board; then
  - b. Review and approval by Department of Education (DOE)

**B. Schematic Design (SD)**

1. Approval by the project Site Committee
2. Approval by the Christina School District Board of Education
3. Approval by the Department of Education
4. Courtesy copies to State Fire Marshal, State Division of Facilities Management

**C. Design Development (DD)**

1. Approval by the project Site Committee

2. Approval by the Christina School District Board of Education
3. Approval by the Department of Education
4. Courtesy copies to State Fire Marshal, State Division of Facilities Management

**D. Construction Documentation (CD)**

1. Approval by the project Site Committee
2. Approval by the Christina School District Board of Education
3. Approval by the Department of Education
4. Approval by the State Division of Facilities Management
5. Approval by all State and Local Agencies

**BIDDING & NEGOTIATIONS**

1. Following is a list of items that shall be included in all specifications and bid documents unless otherwise noted by the Christina School District Facilities Services.
  - a. Invitation to Bid
  - b. Instructions to Bidders (AIA B141 or equal)
  - c. State approved front end documents
  - d. Bid form (with alternates, unit prices, allowances if applicable)
  - e. Sub-contractor listing (names and address)
  - f. Non-collusion statement
  - g. Equal opportunity employment statement
  - h. Bid Security (Bid bond AIA 310)
  - i. General Conditions
  - j. Supplemental Conditions
  - k. Current Prevailing Wage rates as of March 15 of the same year
  - l. Acknowledgement of all Addendum
2. CSD Facilities Services will advertise the bid in County wide newspaper for two (2) consecutive weeks (minimum) prior to pre-bid meeting.
3. CSD Facilities Services will hold mandatory Pre-bid meeting a minimum 15 days prior to bid opening. The following steps shall be adhered too during mandatory pre-bid meetings.
  - a. Sub-contractor list must be addressed
  - b. Identify specific time and place for bid opening, alternates, unit prices, schedule and any special information.

- c. Document attendees (name, company, phone, and fax)
  - d. Introduce owner representative, assigned team.
4. All questions at pre-bid meeting are answered via written addenda (Addenda #1).
5. All addenda to the bid documents are issued through CSD Facilities Services or a Professional Services Firm.
6. Bid opening. All bid openings are coordinated by CSD Procurement Office.
7. Professional Services Firm will submit a Recommendation of Award letter to CSD Facilities Services.
8. Upon approval of bid by Christina School Board, letter of award is issued to the contractor.
9. Prepare contract for submission to Christina School District.

### **PROJECT CLOSEOUT CHECKLIST**

1. The following requirements must be met in order to process final payment for professional services and contractor under each construction project.
  - a. Proof of one (1) copy of as-built drawings has been submitted to State of Delaware, State Archives (Architect/Engineer).
  - b. All operations manuals have been submitted to CSD Facilities Management (General Contractor).
  - c. Release of liens and all warranty information has been submitted to CSD Facilities Services (General Contractor).
  - d. Electronic copy of AutoCAD files have been submitted to DOE and CSD Facilities Services (Architect/Engineer).

### **PROJECT SITE SIGN**

1. All construction site signs shall be constructed of Medium Density Overlay Plywood (MDO) with vinyl coating in accordance with any local signage ordinances and codes. CSD Facilities Services will supply a sample of the district standard construction sign.
2. The primary construction site sign shall be installed parallel to the main thoroughfare when possible. If there are several main thoroughfares, CSD will determine the final location of the sign.
3. All verbiage and/or text shall be exterior grade adhesive vinyl lettering

4. All images or graphics shall be thermal inkjet printing on exterior grade vinyl with ultraviolet inhibitor coating and appropriate lamination.
5. All construction site signs shall be constructed based on CSD standard construction sign. No other construction site signs shall be authorized.

**END OF SECTION**

## **02 SITEWORK**

### **GENERAL REQUIREMENTS**

1. All potential school sites shall be approved by the Department of Education, Office of State Planning, and the Office of Management & Budget.
2. All potential school sites shall be submitted through the Preliminary Land Use Services (PLUS) process for approval by all State agencies.
3. Review security surveillance during the site design with the district Project Manager. Special attention should be given to provide adequate visual control including elimination of potential concealed spaces near public pedestrian areas.
4. Walkways, Building Area and Accent Lighting:
  - a. Accent flood lighting of trees and/or architectural features are allowed only at the major building entries.
  - b. All building identification signs shall be lighted.
  - c. Direct burial or well lights are prohibited.
5. Building Identification Signs. A building identification sign should be located at or next to the main entrance walk of the building.
6. For security purposes, densely wooded site locations should be avoided whenever possible. Landscaping should be low lying (under 3 ft high).
7. The usage of adjacent properties should be considered positive for their ability to enhance or negatively if they detract from the potential site.
8. Screening of noise and views as well as exterior lighting disturbances should also be considered. Consideration to be given if school lighting will affect adjacent residential property.

### **PAVING & SURFACING**

1. Provide maneuvering room for trucks and service vehicles which require access to the building loading, recycling and dumpster areas.
2. Provide reinforced concrete paving for loading docks and dumpster areas.
3. Exterior slabs on grade and paving outside the building enclosure shall be sloped away from the building structure to prevent water build-up at the building perimeter. Specify that all such areas shall be hose-tested prior to acceptance of work to identify slope and drainage problems that may exist.

4. Sidewalks / Plazas
  - a. Sidewalks shall be concrete and a minimum of 5 feet wide. Surfaces shall be slip resistant under wet and dry conditions. Slope to drain away from the building.
  - b. Sidewalks/curb cuts that slope to a vehicular right-of-way shall have detectable warnings the full width of the sidewalk or curb cut.
  - c. All school sites shall include sidewalks (a) abutting all adjacent streets; (b) connecting the street sidewalks to all primary and secondary entrances to school buildings; and (c) connecting schools to primary entrances of adjoining residential subdivisions.
  - d. Walks and paths shall have a minimum cross slope of ¼ inch per foot, and not to exceed ¾ inch per foot or accessibility requirements, whichever is less.
  - e. Walks and paths shall be arranged to traverse steep areas at an angle to the contours, and with turns back and forth so runoff does not become concentrated in any one direction for long distances.
  - f. Plazas should have a minimum slope of 2% and a uniform surface that prevents ponding. Special attention shall be given to avoid ponding in the plaza area.
  
5. Pedestrian/Bicycle Paths
  - a. Jogging/bicycle paths shall be planned when school facilities are located adjacent to new or existing developments. Installation of pedestrian/bicycle paths will support multi-modal transportation options.
  - b. These paths should be a minimum of 8 feet wide and constructed of asphalt or other hard compacted surface approved by the school district.

## **SOLID WASTE REMOVAL**

1. Solid waste is collected in dumpsters located in the building service area. The dumpsters are sized to hold xxxxxx. Trash compactors are an acceptable alternative to standard dumpsters.
2. Space shall be provided for additional dumpsters for recycling purposes. Confirm requirements with the district Project Manager.
3. Pavement is heavy-duty with a concrete pad area for dumpster approach.
4. Direct vehicular access to dumpsters should be provided.

## **WALLS & FENCES**

1. Walls or screen fences are placed around all service areas and all large above-grade utility equipment such as central boilers, or sewer package treatment facilities. Walls or fences may also be placed along the property perimeter if adjacent to residential or industrial land uses, or if required by local ordinances.

2. Screen fences or walls should be of a material compatible with the main building.
3. Green vinyl coated perimeter fence should be installed to define property lines. Standard height for perimeter fencing shall be 6'-0". Provide 1 5/8" top and bottom rails .065 weight, 9 gauge fence wire, with 2 1/2 inch FS-40 weight posts. Ends and corners need to be braced
4. Provide gates for all bus parking lots whenever possible to avoid unnecessary parking lot use at non-designated times.
5. Provide gates at all student parking lots for High Schools

### **VEHICULAR CIRCULATION**

1. Appropriate directional signage and demarcation on pavement is required.
2. All parking lot sizes are a function of the anticipated number of students, faculty, visitors, support, service, and other vehicles necessary to support the school facility.
3. Wherever possible, separation should be maintained between student / bus traffic, and all other vehicular traffic on site
4. The following factors should be investigated when designing and laying out vehicular circulation as well as parking and school bus loading and unloading:
  - Total number of pupils and school personnel
  - Number of present and projected pupils to be transported
  - Number of buses
  - Method of transportation
  - Type of schedule: Staggered or single with one opening and one closing time
  - Extra-curricular activities that would necessitate use of school buses
5. Provide gates at Elementary and Middle schools for all Bus Parking lots to avoid non-essential parking lot use at non-designated times.
6. Visitor parking shall be located near main entrance of building close to administrative areas.
7. Provide a parking space for each staff member as well as volunteer, support and part time staff.
8. An appropriate size area should be allocated for special needs buses and van drop off in an inner circle driveway near the immediate main entrance of the building.
9. Parent drop off should be in closest proximity to primary or secondary main entrance and/or administrative areas without causing any interference with and preferably away from bus loading and unloading or special needs loading and unloading.



10. “Dual use” of the bus parking lot for playground activities and special event parking is possible when buses are not present.
11. For primary schools, a large concrete area is desirable immediately near the main entrance for students to line up during the loading and unloading of buses.
12. Avoid circular drives for loading and unloading of passengers.

### **SCHOOL BUS PARKING AND CIRCULATION**

1. All school bus traffic should be considered as one-way traffic flow, preferably with the service door side of the bus always next to the loading and unloading zone.
2. Angle diagonal bus parking spaces so the bus exit door will allow children to exit in front of the adjacent bus.
3. Diagonal bus parking spaces should be minimum 15 feet wide by the length of the bus long. Spaces should be aligned at a 45-degree to 60-degree angle to the curb.
4. There should be a minimum of 25’-0” free access between the end of the bus parking space(s) and the edge of the curb.
5. Turning radius at the end of the bus lot is to be sized to allow one smooth turn.
6. Buses should never be required to back up.
7. Bus parking lot and service vehicle areas shall be heavy-duty pavement.

### **PEDESTRIAN CIRCULATION**

1. All pathways and walkways should be concrete. Whenever possible, there should always be a hard surface connection between exterior doors and playgrounds.
2. There should be a minimum 5’-0” wide hard surface walkway surrounding the perimeter of the building connecting all means of egress with connections to the parking areas where students will collect in case of emergencies or during regular fire drills
3. Major connection walks and building entrance walkways should be a minimum 8’-0” wide.

**CHECKLIST FOR SCHOOL DRIVEWAY DESIGN SAFETY (DDOE)**

- Separate driveways for schools
- No crosswalks in bus loading zone;
- 50' centerline minimum turning radius for buses; loading area large enough to accommodate all buses;
- Maximum 8% grade for entrance/exit driveways and reasonably flat loading area;
- Service door toward the school
- In view of administrative office
- Aprons perpendicular to roadway; no fixed objects within four feet of curb line in bus areas such as signs, trees, awning supports
- Separate parent drop off areas are provided;
- Circular driveway area provided for parents for easy in and out;
- Direct access for students to building from drop off area
- Parking areas limit pedestrians crossing driveways;
- Loading dock located away from pedestrian, play areas, and bus loops;
- All walkways avoid crossing parking and loading areas;
- All crosswalks are painted with cross hatching;
- Crosswalks that must be located in driveways are where vehicle lanes are limited;
- All areas around school building are connected by walkways;
- Bus loading zone has an adequate waiting area and may have shelter and guard rail;
- Off-site approaches for traffic are adequate;
- Sight distance is adequate for approaching vehicles;
- Speed limits are in line with school zone safety;
- Turning radiuses allow for easy ingress/egress;

- ❑ Ingress/egress traffic patterns do not conflict on or off site;
- ❑ Appropriate signs are in place on site and off site;
- ❑ Sign height from ground is minimum 7' for single sign and 5' for double sign;
- ❑ Sidewalks in the immediate area of schools connect from all adjacent neighborhoods
- ❑ Sidewalks from bus loading to the entrance should be accessible (per ADA and IBC)
- ❑ Review of off-site plans by others should include:
  - State and local highway engineers;
  - Municipal planners;
  - Police department;
  - Fire department;
  - School transportation managers;
  - School facility planners;
  - School maintenance and operations managers; and
  - School safety/officers

## **OUTBUILDINGS**

1. All outbuildings façade and style shall match the building proportion, materials and colors of the primary facility building.
2. Both interior and exterior construction should be masonry construction.
3. Glass windows and doors should be avoided, therefore a skylight is preferred for daytime illumination and natural light
4. There should be at least (1) overhead service door and (1) personnel door.
5. The individual school maintenance department will dictate the appropriate size for all outbuildings

### **SCHOOL BUILDING SIGN**

1. Stand alone building identification sign shall be designed proportionately to the facility and is similar in construction, materials and colors. The sign is to be illuminated and landscaped appropriately.

### **LANDSCAPING**

1. For security purposes, densely wooded site locations should be avoided whenever possible. Landscaping should be low lying and avoid “niches.”

2. Trees

- Shade tree - Caliper should be a minimum 3 “ diameter
- Evergreen Tree - Height should be a minimum 7’
- Ornamental Tree - Caliper should be minimum 2 ½” diameter
- Branching height : One-third to one half of tree height
- Tree root should be balled and burlapped

3. Shrubs

- Height should be a minimum 18”
- Provide container-grown shrubs unless otherwise specified in plant schedule

4. Perennials

- Should be a minimum 1 gal. Container.

5. Seed

- Grass Seed: All seeds to be fresh, clean, dry, new-crop seed complying with State requirement.
- Species: State-certified seed of grass species, as follows with not less than 95 percent germination, not less than 85 percent pure seed, and not more than 0.5 percent weed.
- Full Sun Seed: Kentucky bluegrass (*Poa pratensis*), a minimum of three cultivars from the following cultivars: Princeton 104, Nassau, Baron, Glade, Haga, Merit, Marquis, Washington, Ram I, or Touchtown. Each cultivar shall be a minimum of 20 percent
- Sun and Partial Shade: Proportioned by weight as follows:  
50 percent Kentucky bluegrass (*poas pratensis*)

30 Percent chewings red fescue (*Festuca rubra* variety)  
10 percent perennial ryegrass (*Lolium perenne*)  
10 percent redtop (*Agrostis alba*)

- Shade: Proportioned by weight as follows:

50 percent chewings red fescue (*Festuca rubra* variety)  
35 percent rough bluegrass (*Poa trivialis*)  
15 percent redtop (*Agrostis alba*)

#### 6. Sod

- Sod of grass species as follows with not less than 95 percent germination, not less than 85 percent pure seed, and not more than 0.5 percent weed seed.

- Full Sun:

Kentucky bluegrass (*Poa pratensis*), containing a mix of four or five names varieties, one of which shall be Glade or A-34, each at a minimum 20% by weight

- Sun and Partial Shade: Proportioned by weight as follows:

50 percent Kentucky bluegrass (*Festuca rubra* variety)  
30 percent chewings red fescue (*Festuca rubra* variety)  
10 percent perennial ryegrass (*Lolium perenne*)  
10 percent redtop (*Agrostis alba*)

- Shade: Proportioned by weight as follows:

50 percent chewings red fescue (*Festuca rubra* variety)  
35 percent rough bluegrass (*Poa trivialis*)  
15 percent redtop (*Agrostis alba*)

- Sod sections shall be machine cut into pads between 12 inches and 16 inches wide and 24 inches to 36 inches long. Large areas sod may be furnished in rolls. Minimum thickness of sod shall be 3/4 inch excluding top growth and thatch. Broken, torn or uneven pieces are not acceptable.

#### 7. Planting Soil

- Soil should contain organic matter 10 to 20% , pH factor should be 6.0 to 7.0
- Soil shall be free from subsoil, stone larger than one inch, clods of hard earth, sod, plants, or roots, sticks or other extraneous materials. It should contain no toxic material.
- Total porosity of soil should be 40 to 55%

8. Irrigation

- Material specifications for all materials to be provide including, but not limited to sprinkler head, pipe, fittings, connections to existing water mains, controllers, electrical connections and sleeves (include method of installation)
- Layout of each area showing each sprinkler head (with type designation), the spacing between heads, interconnection piping (including depth of bury), controllers with controlled areas, location and detail of sleeves an power control wiring with details

9. Mulch

- Mulch should consist of fibrous material, resistant to displacement by wind and free of foreign materials, coarse stems, and any substance toxic to plant growth, and to be free of insects, mature seed bearing stalks or roots of prohibited and noxious weed.
- Mulch should be suitable double shredded, aged hardwood or pinewood bark, not decomposed, size passing 25mm square mesh 100% and retained 3mm square mesh 70%
- Apply 3 inch average thickness of organic mulch extending 12 inches beyond edge of plating pit or trench. Do not place mulch within 2 inches of trunks or stems.

10. Grading

- Grading is done preliminarily to control the runoff of surface water. All surfaces should have some slope for proper drainage.
- Recommended gradients follow.

Types of Areas	Maximum	Minimum, %	Preferred, %
Recreation Area	5%	1%	2-3%
Grassed athletic fields	2%	0.5%	1%
Lawn and grass area	25%	1%	5-10%
Berm and mounds	20%	5%	10%
Mowed slopes	25%	20%	
Planted slopes and beds	10%	0.5%	3-5%

11. Athletic Fields

- All athletic fields for secondary education facilities must adhere to the National Federation of State High School Associations (NFHS) Court and Field Diagram Guide, dated 2000.

**END OF SECTION**

## **03 EXTERIOR CONSTRUCTION**

### **EXTERIOR WALLS**

1. Cavity wall designs are required. Cavity wall designs based on pressure equalized rain screen walls are preferred.
2. Design weep holes and flashing to evacuate moisture entering the masonry wall. Weeps in brick cavity/veneer construction shall be open head joints. Prefabricated screens may be utilized at weeps to prevent insect infestation. Weep holes shall be a minimum 8" above grade.
3. Provide a 1-inch minimum width air cavity (exclusive of any cavity insulation). Utilize pull-up boards to prevent the build-up of mortar droppings and bridging in the cavity. There should be no obstructions within the cavity, allowing water to backup and drain into the back-up wall.
4. Detail flashing against parapets under copings, gravel stops, over shelf angles, windows, doors, horizontal relief joints and at changes from horizontal to vertical plane. Submittals should show three-dimensional flashing intersections in isometric detail.
5. Specify brick masonry with low moisture absorbency.
6. Brick masonry accessories:
  - a. Specify the type of tie design that will allow for vertical and horizontal differential movement between face brick and backup wall or structure without allowing water to bridge gaps.
  - b. Specify non-corroding hot-dipped galvanized anchors, ties, angles, and reinforcement. Design vertical and horizontal expansion joints in masonry wall.
7. For multi-story masonry construction, design steel shelf support angles which will allow for building movement and wall deflection.
8. Exterior façade for all school facilities shall be made of material with a minimum life cycle of 40 years. Preferred materials include brick, block or pre-cast concrete panels.
9. The use of any other building material shall have the approval of Christina School District (CSD) Facility Services, and the local school board on a project by project basis.
10. The use of an Exterior Insulated Finishing System (EIFS) is approved for installation 10'0" above ground. All other installations require approval of CSD Facility Services, and local School Board on a project by project basis.

11. The general contractor shall be required to erect a minimum 6'-0" long by 8'-0" high sample wall panel for approval by the local school district prior to beginning brick or block masonry work.
12. All exterior walls shall have a drainage plain installed between the exterior finish material and the substraat.

### **AIR BARRIERS**

1. Air barriers are made of durable, non-porous materials and are sealed to adjoining wall, ceiling or floor surfaces with a suitable long-life mastic. Taped and sealed drywall may constitute an air barrier but dropped acoustical tile ceilings (T-bar ceilings) may not. Batt insulation facings and asphalt-impregnated fiberboard and felt paper are not considered air barriers.
2. Exterior Joints in the Envelope. All exterior joints, cracks and holes in the building envelope shall be caulked, gasketed, weatherstripped or otherwise sealed. Such joints shall include, but not be limited to the following:
  - a. Around windows or door frames;
  - b. Between walls and foundations
  - c. Between walls and roof/ceilings
  - d. Through wall panels and top and bottom plates in exterior walls
  - e. At penetrations of utility services or other service entry through walls, floors and roofs
  - f. Between wall and floor where the floor penetrates the wall;
  - g. Between wall panels, particularly at corners and changes in orientation;
  - h. Around penetrations of flue vents, or attic hatches.

### **INSULATION**

1. Ceiling/Roof shall be R-19 minimum.
2. Wall Construction shall have the following minimum R values: Concrete R-7, Wood Frame R-11 and Metal Frame R-13.

### **FLASHINGS**

1. Use the latest edition of the "Architectural Sheet Metal Manual" published by the Sheet Metal and Air Conditioning Contractors National Association (SMACNA) as a design guide.
2. Galvanized metal shall not be used for flashing.



3. Verify substrate materials and joint compounds are compatible with flashing and will not cause corrosion of flashing material or staining of face veneers.
4. Flashing details on the Drawings to include:
  - a. Roof Flashing
    1. Against parapets
    2. At all penetrations through roof
    3. At gravel stops
    4. Expansion joints
    5. Corner conditions
    6. Non-typical design features
  - b. Wall Flashing
    1. Flashing under copings
    2. Thru-wall flashing
    3. At windows and doors
    4. Expansion joints
    5. Corner conditions
    6. Non-typical design features
5. Design metal flashing and coping caps to eliminate or minimize the use of sealants. Do not rely on sealants as the primary barrier to water penetration.
6. Where sealant joints are required, utilize sealants that are designed to accommodate the movement characteristics and are compatible with the flashing material selected.
7. Protect dissimilar metals against galvanic action.
8. Base flashing should be 8 inches minimum above roof, and be a minimum of 4 inches above a 4 inch cant. Metal counter-flashing should lap base flashing at least 4 inches.
9. Plan for counter-flashing to be removable and replaceable or renewable.

### **SEALANTS & CAULKING**

1. Specify sealant type to compensate for amount of anticipated joint movement and environmental conditions to be encountered.
2. Specify bond breakers to prevent three sided adhesion.
3. Specify sealants that are compatible with substrates. Verify that all sealants specified will not bleed onto building exterior skin.
4. Specify sealant primer if required for adhesion to substrate.

5. Do not use custom color sealants
6. If coatings or waterproofing compounds are specified on exterior building skin, verify that they are compatible with sealants and will allow for desired sealant adhesion.
7. Specify that the contractor shall have sealant manufacturers perform adhesion and compatibility tests for each type of sealant, using actual samples of sealant specified and substrate materials and coatings to be adhered to by sealant.
8. Use caulking only for interior joints that do not require waterproofing or movement capabilities.
9. Use acrylic latex caulk conforming with ASTM C 834.
10. Limit caulking joints to ¼ inch in width or less.

### **ENTRANCE DOORS**

1. Exterior doors other than main entrance doors shall be constructed utilizing heavy duty stile FRP doors with vision panels.
2. Door pulls other than main entrance doors shall be recessed type to meet handicap codes.
3. Hinges shall be full mortise continuous hinges with non-removable pins.
4. Aluminum frames are required with all RFP door installations.

### **WINDOWS / GLAZING**

1. All exterior windows shall be constructed of factory finished aluminum or vinyl.
2. All exterior windows shall be installed with pan flashing.
3. Provide windows with thermal break construction. Provide units which have been tested for thermal performance in accordance with AAMA 15003.1.
4. The installation of wood windows shall require the approval of CSD Facilities Services and local school board.
5. Glass must meet State of Delaware Energy Code requirements as a part of the exterior building envelope.

6. Provide windows with a shade coefficient of 0.32-0.45. The ratio of visible light transmittance to the shading coefficient should be equal or greater than 1. Use spectrally selective double pane glazing or tinted single or double pane glazing with a low E rating.
7. Verify that glass meets U-value and shading coefficients required by the mechanical equipment design.
8. Window sections to conform to current American Architectural Manufacturers Association (AAMA) standards for commercial or heavy commercial windows.
9. Insulated glass must conform to Sealed Insulating Glass Manufacturers Association (SIGMA) guidelines for vertical and sloped glazing.
10. Require warranty on insulated units covering seal and build-up of condensation.
11. It is desirable to replace / refurbish the window sills at the same time as the windows (if sills require replacement). Replace sills with one of the following materials: Epoxy resin, Solid surface material, or PLAM on plywood.

### **LOADING DOCKS**

1. Provide a concrete apron the full width of the loading dock. Edge of loading dock to have metal safety nosing. Standard height is 48" above grade.
2. Provide a canopy or covered area for loading and unloading.
3. Provide dock bumpers at loading dock & overhang.
4. Verify the number of loading berths as mandated by local zoning requirements.
5. Provide guardrails at all elevated surfaces (to meet code).
6. Provide post and chains at loading areas of the dock.
7. Where possible, slope grade away from building.
8. Provide drains to catch roadway run off per code.
9. Provide exterior lighting.
10. Provide steps to roadway from dock.
11. Consider draining in areas that can remain wet and icy in winter.

**END OF SECTION**

## **04 ROOFING**

### **GENERAL**

1. All new school facilities shall have either:
  - a. Standing seam metal roof
  - b. Architectural asphalt shingle
  - c. Three-ply with Modified Asphalt Cap sheet, built-up membrane roof with a minimum ¼" slope to meet district Standard construction.
2. School facilities that presently have low slope or single ply, fully adhered roof systems shall install one of the roof systems above when the current roof is replaced.
3. All other roofing systems shall require the approval of CSD Facilities Services, and the local School Board.
4. Mechanical/Plumbing/Maintenance
  - a. Provide for access to the roof.
  - b. Provide walk pads around maintenance items along the route from roof access points to the maintenance items.
  - c. Mechanical ventilation and plumbing penetrations through the roof should be limited wherever possible.
  - d. Through the roof penetrations shall be round pipe or round sleeve. Avoid shapes with corners where possible.
  - e. Maintain a minimum spacing of 4 feet between penetrating pipes and equipment to allow for the convenient and proper detailing work of the roofing application
5. Drainage considerations
  - a. Through-wall scuppers drains are preferred over emergency overflow which are not easy to construct or maintain. Provide a minimum 4 inch high leaf guards on drains.
  - b. Expansion joints shall be elevated upon a solid tapered base; drainage shall be positive and away from the joint at every side.
6. Detailing
  - a. Avoid use of uncapped pitch pockets.

- b. Limit the use of pitch pockets.
- c. Provide metal coping cap on parapet tops. Terminate roof membrane under this cap. Fascia and Coping shall be a minimum of .080 aluminum with a color from mfg standard choices (no custom colors).
- d. Drawings shall show:
  - 1. All penetrations through the roof.
  - 2. All roof ventilators, and any other types of equipment to scale
  - 3. Roof walk protection pads.
  - 4. Roof drains and overflow drains or scuppers.
- e. Submittals shall detail roof flashing at all types of roof penetrations and show three-dimensional flashing intersections in isometric detail.
- f. Solid blocking under coping or behind fascias to be pressure treated wood or wood resin composite products.

**7. Quality Assurance**

- a. Roofing membrane and flashing shall be from a single source manufacturer.
- b. Non-Prorated, no dollar limit, weather tight single sourced 20 year system warranty shall be available. Architectural shingle shall have a 40 year warranty.
- c. Third Party, RCI/IRWC certified inspections shall be available.

**END OF SECTION**

## **05 INTERIOR CONSTRUCTION**

### **INTERIOR PARTITIONS - Middle & High School**

1. All interior corridor walls shall be brick, block or glazed block.
2. All toilet room walls shall be full block or block base with stud partition above.
3. Interior partitions of gypsum board may be used for all non-rated partitions within administration areas, media centers, and library.
4. Gypsum wallboard thickness shall be 5/8 inch minimum when used in single layer applications.
5. Maximum spacing of partition studs and wall furring: 16 inches o.c.
6. Gypsum wall board is acceptable for use on areas of wall above 8'-0" high, such as high wall areas in cafeterias, lobbies, corridors, etc.
7. Gypsum wall board is acceptable for use on areas of wall behind lockers.
8. All other partitions shall be brick, block or glazed block. Alternate interior partition systems shall have the approval of the CSD Facilities Services and local school board.

### **INTERIOR PARTITIONS - Elementary School**

1. Interior partitions of gypsum board may be used for all non-rated partitions within administration areas, media centers, and library.
2. Gypsum wallboard thickness shall be 5/8 inch minimum when used in single layer applications.
3. Maximum spacing of partition studs and wall furring: 16 inches o.c.
4. Gypsum wall board is acceptable for construction of interior partitions in school facilities that house grades K through 5.
5. All other partitions shall be brick, block or glazed block. Alternate interior partition systems shall have the approval of the CSD Facilities Services and local school board.

**DOORS**

1. When replacing an interior door replace the hardware also.
2. All interior wood doors shall be minimum 5 ply.
3. All interior metal doors shall be hollow metal, 16 gauge
4. Glazing in doors to be clear ¼” laminated or tempered safety glass to meet local codes.

**HARDWARE**

1. Use only Grade 1 heavy duty hardware.
2. Use mortise type locksets and latch sets.
3. Lock cylinders shall be district standard Primus keying system.
4. All handles (knobs) to be lever style to comply with ADAAG.
5. All keying shall meet district standard keying system.
6. Provides full mortise type hinges and butts.
7. Closers to have through bolt fastening for closures with back plates.
8. Pivots shall be offset or center hung type.
9. All push/pull style handles shall be through bolt type.
10. All hardware shall have the district standard satin chrome, polished stainless, or satin stainless.
11. CSD project manager shall supply the standard keying system designators.
12. Provide locking hardware configuration at suite entrances, storage areas, building support spaces (such as telephone and electrical closets, and mechanical rooms), and where specifically required in building program.
13. Lockset/latchset levers on doors leading into hazardous areas shall have a tactile warning finish.

## **FLOORING**

1. Restroom floors shall be ceramic tile, self leveling floor system, or other sanitary type floor system used in restroom applications.
2. Restroom floors shall be non-slip.
3. Restrooms thresholds shall be marble with a maximum height of ½” and edges beveled at 1:2 to meet accessibility requirements.
4. Carpet shall be used in administrative office areas, library/media centers, runners for auditoriums, entrance walk off and area rugs for kindergarten classrooms. Non bound, fixed in place carpet is not approved for use in classrooms. Carpet shall be a minimum 26oz., 10<sup>th</sup> gauge, solution dyed material with a unitary back.
5. Portland cement terrazzo type material, ceramic tile, or thin set polyester composition terrazzo tile shall be installed on floor surfaces to include but not limited to lobby, and corridor.
6. Vinyl composite floor tile or sheet material shall be installed in all other floor areas as shown on the approved plans.
7. Stair towers, custodial closets and storage rooms may have a sealed concrete floor.
8. All other floor materials will need the approval of the CSD Facilities Services and the school board.
9. High School gym floors shall be wood.
10. Middle School gym floors shall be composite rubber floor.
11. Elementary School gym floors shall be VCT or similar.
12. Kitchen flooring shall be a hard surface, non-slip, heat resistant material acceptable in food service areas.

## **CEILINGS**

1. The standard system of a 2 foot x 2 foot flat, lay-in tile with exposed metal grid shall be used in all areas including but not limited to corridors, administrative areas, classrooms, and teacher rooms.
2. New tile to match existing shall be authorized when new ceiling directly joins existing ceiling.



3. Select a tile that will be available as a manufacturers standard material without requiring special ordering or fabrication.
4. Concealed-spline ceilings or fiberglass batt/scrim/vinyl face ceiling tiles are not permitted.
5. Special application ceilings shall be authorized in kitchen and food service areas.
6. Tegular or specialty ceiling tile shall only be used in detailed ceiling areas such as entrance lobby, cafeteria, auditorium, media centers and library.
7. Acoustical ceiling tiles may be used in restrooms that service grades K thru 5.
8. Drywall ceilings shall be used in restrooms and locker rooms in grades 6 thru 12.

### **TOILET PARTITIONS & ACCESSORIES**

1. Use solid polymer plastic partitions. Partitions to be overhead braced.
2. Plastic laminate partitions shall not be used.
3. Continuous hinge and stop is required on all partition doors.
4. Continuous channel is required when partitions are mounted to walls and attached to adjacent partitions.
5. All toilet accessories shall be district standard. All accessories can be purchased from  
INDCO, INC.  
P.O. Box 109  
N. Railroad & Essex Street  
Gloucester City, NJ 08030  
Phone 856-456-6100  
Fax 856-456-1904  
  
Impact 3312 Soft touch Soap Dispenser  
Impact 4099 Universal Roll Towel Cabinet  
Impact 2539 JRT Jr 9" Toilet Tissue Cabinet
6. Stainless steel sheet mirrors are authorized in facilities serving grades 6-12.

### **SIGNAGE**

1. All signage to meet the Delaware Architectural Accessibility Standards.
2. All signage shall meet district standard.

**FLOOR MATS**

1. Built in entrance mat systems are permitted. Mats should be modular and small enough for easy removal for cleaning.

**END OF SECTION**

## **06 SPECIALTY CONSTRUCTION**

### **CHALK & MARKER BOARDS**

1. The primary writing surface in the classroom shall be a porcelain enamel on steel dry marker board. It shall meet the following specifications:
  - a. Aluminum frame
  - b. Concealed anchoring system (not glued)
  - c. Chalk tray
  - d. White surface
  - e. Magnetic
  - f. 48" in height
  - g. Map rail at top
  - h. Map clips

### **PROJECTION SCREENS**

1. The primary projection screen in the classroom shall be surface mounted (or ceiling hung) and meet the following specifications:
  - a. 8'-0" x 8'-0"
  - b. Matte finish
  - c. Manual operation
  - d. 1" black edge
  - e. Surface mounted or ceiling mounted brackets shall allow for mounting over and in front of marker boards.
2. Project screens for media centers or conference rooms can be recessed type with electronic operation when possible.

### **ELEVATORS**

1. Hydraulic Passenger Elevators
  - a. Minimum capacity of 2500 lbs.
  - b. Pre-engineered
  - c. 150 FPM
  - d. Completely accessible emergency hatch.
  - e. Doors and frames shall be 36 inches wide center opening with satin stainless steel finish.
  - f. Wall finish shall be plastic laminate with stainless steel handrails on back and both side walls.

- g. Controls shall meet all requirements of the Delaware Architectural Accessibility Standards.
2. Elevator equipment room walls shall be acoustically insulated when adjacent to usable (tenant) space.
3. Chair lifts & modular lifts are approved in major renovations if the ability to install an elevator is not feasible and economical. Installation of chair lifts and modular lifts must meet all applicable codes.

### **CLASSROOM ACCOUSTICS**

1. The maximum reverberation time in an unoccupied, furnished classroom with a volume under 10,000 cubic feet is 0.6 seconds, and 0.7 seconds for a classroom between 10,000 and 20,000 cubic feet.
2. The maximum level of background noise allowed in the same classrooms is 35 decibels (dBA).
3. When items 1 & 2 can not be met with current construction methods while meeting all other standards, the installation of a sound distribution system is authorized. The sound distribution system shall be installed to provide a positive signal to noise ratio of 15 in all student occupied areas of the classroom.

### **CASEWORK**

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be High-pressure laminate.
3. No square edge or 90-degree corners on counter tops.
4. There should be a combination of base cabinets and overhead cabinets for storage in each classroom.
5. There should be (1) sink in addition to the individual bathroom sink in each classroom.
6. (1) Personal storage compartment or “Cubby” must be provided for each student per class. Either double prong or single prong clear anodized aluminum garment hooks should be installed in each cubby.
7. (1) Lockable, personal storage compartment with garment hooks, must be provided for an adult size coat and personal bag.

**END OF SECTION**

## **07 MECHANICAL & PLUMBING**

### **GENERAL HVAC REQUIREMENTS**

This standard indicates Christina School District's preferences for systems designed in both new construction and renovation work for schools within the District. The purpose is not to do the engineer's work, select specific manufacturers or to cover all possible design scenarios. Rather, the intent is to set baseline standards for consistency in system types throughout the District.

This standard shall be incorporated by the engineer into the overall design of all new construction through construction drawings and specifications. Since it is unlikely that these standards will apply to all circumstances, deviations are permitted when dictated by building constraints, code requirements or by direction of CSD Facilities Services. Any deviation shall be approved by CSD Facilities Services prior to continuing design work. Engineers are expected to conform to all applicable codes, standards and good engineering practice in their designs.

In renovation work on existing schools, some systems and equipment may be excluded from the project. Under these circumstances, only systems affected by the renovations are subject to this standard. Coordinate with the Christina School District representative.

Design documents (Plans and Specifications) shall incorporate the following items for Mechanical / Plumbing work:

- A complete scope of work for each trade.
  - Statements requiring contractors to provide shop drawings for all equipment provided.
  - Statements requiring the contractors to provide Operation and Maintenance Manuals and a complete set of as-built drawings for all systems and equipment. Provide (2) copies
  - Define warranty periods for all systems and equipment, with warranty to start with substantial completion of the punch list.
  - Statements requiring the contractor to provide tags for all system valves, a chart showing location of all system valves, and for all piping to be color-coded and identified with material and flow arrows.
  - Require contractor to notify the School District if any suspected asbestos containing material is found on the job.
1. The entire building including gyms, kitchens and locker rooms shall be air-conditioned.
  2. The administrative offices and the nurse's station shall have dedicated cooling systems that are separate from the building cooling system. Return air from the Nurse's area shall not be allowed to mix with other return air streams.
  3. HVAC systems are designed to ensure the essentials such as occupant comfort and good indoor air quality. Design indoor temperatures are 74 degrees for cooling and 70 degrees for heating. Control of space relative humidity at all times is required along with providing

outside air to all spaces in the building per current mechanical codes. Space relative humidity must be maintained below 60 % under all conditions. Humidification systems to raise space relative humidity levels in winter are not required.

4. The preferred HVAC system for all buildings consists of a four-pipe, hot/chilled water system. Outside ventilation air should be brought into the building from a roof mounted energy recovery ventilator. All new HVAC systems shall have separate fresh air and temperature controls.
5. For large, non-classroom areas, use demand control ventilation with CO<sub>2</sub> sensors for the control strategy, hot water re-heat for humidity control, DX based systems. Coordinate with the School District before completing the design for these areas, since expected use of the space may require different equipment and/or control strategy.
6. The preferred primary fuel source is natural gas. The preferred backup fuel supply is #2 fuel oil. Dual fuel fired burners are required even when natural gas is present. Oil can be used in emergency situations. An oil supply inlet shall be planned for.
7. Provide a laminated drawing labeled "Emergency Shutoff Diagram". The drawing should show shutoff valves for utilities such as water and gas, circuit breaker panels and any other relevant information.
8. Mechanical system designs should be based upon a Life-Cycle analysis. The Architect / Engineer shall review various applications with long term studies determining the most energy conservative design for each application. It should be noted, however, that operational and maintenance integrity should also be reviewed in the selection of the design.
9. All HVAC equipment specified shall have a local distributor who normally stocks repair parts for all major items of equipment, particularly compressors.
10. The use of a geo-thermal heating & cooling system is acceptable. Cast iron piping serving the geo-thermal system shall be insulated to avoid condensation damage to adjacent ceilings.
11. Provide comprehensive on-site training on HVAC equipment operation and safety concerns for personnel who will operate the buildings.

### **SPACE CONSIDERATIONS FOR MECHANICAL AND BOILER ROOMS**

1. Boiler and mechanical rooms shall be provided with sufficient space for all required equipment, accessories, ATC and electrical panels, maintenance clearances, walkways and code required clearances. This means that every boiler room or mechanical room is unique and space requirements must be evaluated based on the application. However, for the purposes of initial design, allow a minimum of 2% of the total building square footage for boiler and mechanical rooms. During the design phase, the space requirements will have to be evaluated and adjusted accordingly. All piping and ductwork in walkways shall be a minimum of 7' AFF.

### **AUTOMATIC TEMPERATURE CONTROLS (ATC)**

1. Direct Digital Control (DDC) Systems shall be specified on all new construction buildings. No pneumatic controls are permitted. Preferred DDC systems for all CSD facilities are Alerton & Johnson Controls.

Renovation work – DDC control shall be specified for all new equipment and systems installed in the renovation. Existing pneumatic controls on existing mechanical systems or components that are excluded from renovation may remain and be incorporated into the new DDC system. The decision of whether or not to upgrade controls on old remaining equipment will have to be made on a case by case basis during the design process. Coordinate all design decisions with the School District.

2. Specify an Operator Work Station (OWS) for use by building custodians and a laptop for use by maintenance personnel. Each computer should have a complete graphics package and operating systems software equal to the industry standard available at the time the controls contract is executed and be adequate to operate the system in accordance with the design intent.
3. Demand Control Ventilation control strategy should be used in spaces such as auditoriums, gyms, cafeterias and other similar areas where there is high ventilation air requirement but with intermittent occupancy.
4. Specify two (2), eight-hour training sessions for building maintenance staff. The first session should occur at system commissioning. The second session should occur at a time designated by the School District up to three (3) months after system start-up. A sign off on the training is required and advanced notice and scheduling will be set with the District during commissioning.
5. Systems that are specified shall have a minimum of 2 vendors authorized to install, service and supply parts within the State of Delaware.
6. Provide for tie-in to fire alarm system for equipment shutdown.
7. Provide for tie-in to security panel for low water temp alarm for boilers.

### **ENERGY RECOVERY SYSTEM**

1. Ventilation air must be pre-conditioned prior to introduction into the building. The preferred method is through a total enthalpy wheel followed by a cooling coil and heating coil for complete control of entering air conditions.

2. A duct distribution system distributes the conditioned neutral ventilation air to the terminal unit or directly into the space as dictated by the building design.
3. Exhaust air from the building is then used to supply energy for transfer at the wheel. A ducted, exhaust system is run parallel to the supply system ductwork for this purpose.

### **ECONOMIZER**

1. When an economizer is utilized on a system, control shall be by a total enthalpy sensor with adjustable set point and incorporated into the DDC control system. Initial set-point for economizer operation is a total enthalpy of 23 Btu/Lb. or less.

### **CHILLERS**

1. Air-cooled and water-cooled chillers should meet the minimum efficiency standards of ASHRAE 90-1-2001.
2. Rotary screw or scroll compressors are preferred. Larger tonnage systems may be specified as centrifugal.
3. Require factory start-up by a factory-trained technician for all systems.
4. For exterior installations, all water piping and chiller evaporator shall be insulated and heat traced.

### **AIR HANDLERS**

1. Double wall construction with a minimum of 1" insulation. Inner wall to be solid or perforated panel to suit conditions.
2. Internal isolators on fan assembly.
3. Access doors for all fans, filters, dampers, etc. and an access section for coil cleaning.

### **TERMINAL UNITS**

1. Slope top if vertical surface mounted.
2. Have tamperproof (lockable) access doors at valves, etc.



### **ROOFTOP PACKAGE A/C & HEAT PUMPS**

1. All systems should have an EER of 12 or better.
2. A total enthalpy heat wheel shall be used to precondition ventilation air passing through the unit.
3. Require a permanently installed work light and a convenience receptacle at each rooftop system.
4. All piping shall be brought up to the unit either inside the curb or through an insulated “sidecar” attachment to the unit so there is no exposed piping on the roof.

### **DUCTWORK**

1. All ductwork to conform to SMACNA standards for metal gauge, hanger spacing and duct sealing.
2. The minimum metal thickness for ductwork is 26 gauge.
3. Duct board is not permitted under any circumstances.
4. Require use of “Ductmate” system for joining duct. Drive slip joints are not permitted.
5. Use aluminum duct work for exhausting saturated air from showers, outside air intakes, dishwashers, and similar applications.
7. Use type 304 stainless steel for fume hood exhaust ducts and hoods. (Option: PVC, Schedule 40, Type 1/Grade1)
8. Use woven fiberglass flexible connectors between ductwork and suction and discharge connection of all fans and air handlers.
9. Flexible ductwork may be used as the final connection between main and branch ducts or register or diffuser. The flex duct may not exceed 5’ in length.
10. Use double wall spiral round duct for duct runs in exposed locations.

### **DUCTWORK INSULATION**

1. Require insulation to be installed on all new supply ductwork, all new return ductwork in unconditioned spaces, all new outside air intake and relief ductwork, and all exhaust air ductwork within ten feet of roof or wall opening.

2. For concealed ductwork, require use of 2” fiberglass duct wrap with aluminum foil face and a minimum R value of 5.6. Joints sealed with foil tape and sealed with Fosters 85-20.
3. For exposed ductwork, require use of 1½” rigid fiberglass duct insulation with vapor barrier. All seams should be sealed with Fosters 85-20.
4. Internal duct liner is not to be used under any circumstances.
5. Ductwork exposed to outside conditions shall be properly protected from weather and moisture.

### **CIRCULATING PUMPS**

1. Base-mounted pumps should be used except for very small pumps, which may be in-line style.
2. All pumps are to be installed in pairs for 100% redundancy utilizing a lead/lag control strategy
3. Specify a 4” concrete housekeeping pad for base mounted pumps and ball/butterfly shutoff valves (2).
4. Specify triple duty valves, flexible connectors and isolation valves at each pump.
5. Specify coil circulating pumps on all 100% outside air applications for freeze protection

### **PIPING SYSTEMS**

1. Welded carbon steel pipe, schedule 40 to be used for all hot and chilled water distribution piping. Branch piping 2” and under may be threaded. Type L hard copper pipe may also be specified as an alternate. No type “M” or soft copper allowed.
2. Victaulic fittings are permitted in the boiler and machinery rooms.
3. The Mechanical Engineer is responsible for designing all required expansion loops, compensators and moment guides. Locations must be shown on the construction drawings.
4. Specify isolation valves on all branch piping, at all major pieces of equipment, and as otherwise required to allow equipment isolation and system maintenance.
5. Specify flow regulating valves and strainers at all terminal units.
6. Refrigerant piping should be type ACR hard drawn temper, with all joints soldered using 15% silver solder. Require HVAC system manufacturer to either provide the final sizing of

- all field installed refrigerant piping, or to approve in writing the path, components and sizing of pipe prior to installation.
7. Condensate piping should be copper tubing type DWV and insulated (Armaflex).
  8. Water piping should be type L copper.
  9. When underground piping is required for the project, use a complete “engineered” piping system intended for direct burial. Require the manufacturer’s representative to inspect the installation and certify the pipe run was installed in conformance to manufacturers specifications.
  10. All exterior water piping in systems without glycol must be heat traced.

### **PIPE INSULATION**

1. Require either fiberglass insulation using preformed fiberglass that form circular pipe sleeves with a white all service jacket and foil vapor barrier, preformed closed cell foam. Use the following table for insulation thickness:
  - a. 1” fiberglass for domestic cold water 2” and below,
  - a. For heating hot water piping, use 1 ½” fiberglass for piping 2” and below, 2” fiberglass for piping 2½” through 6”, and 3½” fiberglass for piping 8” and up.
  - b. Use 1” fiberglass for chill water systems between 40 to 50 degrees Fahrenheit.
  - c. For hot gas and suction refrigerant piping use ½” closed cell foam for piping 1” and less and 1” closed cell foam for piping 1¼” and up.
  - d. Use ¾” closed cell foam for hot and chill water expansion tanks, cold surfaces of refrigeration equipment and chill water pumps.
  - e. ½” closed cell foam for condensate drain lines.
  - f. For freeze protection of exterior, above grade piping, use 1” fiberglass with metal jacket for all pipe 3” and below, and 1½” fiberglass with metal jacket for pipe 1 ½” and up. Insulation should be installed over electric heat tracing. The metal jacket should be embossed .016” aluminum with seams oriented down.
2. Use non-compressible insulation saddles at all piping hanger locations.
3. Pipe insulation should be continuous through walls, ceilings and floors.

### **VIBRATION ISOLATION**

1. All roof-mounted equipment with rotating or reciprocating parts as well as all fans, air handlers, and piping shall have vibration isolation specified by the designer unless provided directly by the manufacturer.

### **BOILERS, BOILER CONTROL SYSTEMS AND BREACHING**

1. Specify two (2) hot water boilers with full modulating burners with 5 to 1 turndown. Each boiler should be rated at 60% of the total building heating load and operate with a lead/lag control strategy. Require 4" house keeping pad under each boiler.
2. Boilers shall be dual fired with natural gas as the preferred primary fuel source.
3. Cast Iron sectional boilers are preferred for all buildings. Flex tube boilers are permitted where space is limited.
4. Fireye flame controllers are preferred. Provide all code related boiler trim.
5. Breaching and chimney should be double wall, with 2" insulation between inner and outer wall. Both the outer and inner wall should be type 304 stainless steel for all installations.
6. Require factory start-up for all boiler systems.
7. Require a minimum efficiency of 80% AFUE.

### **OIL TANKS – (WHEN FUEL OIL FIRED BOILERS ARE SPECIFIED)**

1. All oil tanks shall be double wall steel tanks with a ground level fill station. All tanks shall be installed above ground unless they are included in a boiler room that is constructed below grade.
2. Specify a 10,000-gallon tank if fuel oil is the primary fuel and a 3,000-gallon tank if fuel oil is the backup fuel.
3. Provide a circulating oil pump in the Tank Room and a separate lockable tank fill station or room, with fuel monitoring and alarm systems.

### **WATER TREATMENT**

1. Require all new piping systems to be flushed.
2. Boilers to be boiled out with an alkaline compound.

3. Closed loop re-circulating systems to be flushed with detergent and dispersant.

### **GENERAL PLUMBING REQUIREMENTS**

1. No domestic water or sanitary piping shall pass through communication rooms.
2. Specify floor drains with trap primers in all plumbing chases.
3. Domestic chilled and hot water mains, risers, and horizontal roof drainage piping shall be insulated.
4. All control valves shall be listed in a schedule on a drawing showing identification number, body size, port size, if applicable whether normally open or closed, spring rang and CV.
5. All control valves shall have an identification tag with an accompanying valve chart.
6. All supply piping shall be copper.
7. All sanitary piping shall be cast iron.

### **STORM DRAINAGE SYSTEMS**

1. When downspouts are provided, the piping discharge shall be extended and connected to the site storm drainage system. Provide a downspout boot or shoe connection with a cleanout at each downspout location. Specify a xxxxxx type RWC
2. Storm drain inlets should be located 25 feet minimum from all major building entrances. Special attention should be given to obtain appropriate ground slopes in order to eliminate the occurrence of temporary ponding during heavy rain and prevent runoff from entering the building. Do not conflict with any storm water requirements.
3. Parking Areas
  - a. Valley gutters shall be used to collect the flow of runoff in the parking lot if uniform sheet flow is determined not to be feasible. If valley gutters are used, they shall be placed along the island curbs at the side of an access aisle, and not down the center of the aisle.
  - b. The minimum slope in off-street parking lots without valley gutters is 1%. The maximum slope is 5%. Cross slopes in the parking area to be used by the disabled shall not exceed 2%.

### **SANITARY, WASTE AND VENT SYSTEMS**

1. All fixtures shall be provided with soil, waste and vent piping sized as per the local plumbing code.

2. When possible, the interior below-slab drainage system shall slope at 2%.
3. Cleanouts shall be provided in the system at all bends in the system and every 50' in the main building run, and the base of all stacks.
4. The kitchen shall be provided with a minimum 1000 gallon exterior concrete vault grease interceptor in accordance with New Castle Co. Dept. of L&I. The entire kitchen drainage system may discharge to the unit except for the dishwasher and food waste grinder.
5. Floor drains shall be provided in all main toilet rooms. Floor drains shall be provided with deep seal traps to maintain trap seal protection.
6. Science Rooms shall be provided with polypropylene acid waste and vent piping terminating at an acid dilution trap.

#### **DOMESTIC WATER SYSTEMS**

1. A main backflow preventer shall be provided in the water service. The unit shall be either a double check or a reduced pressure principal type (RP2) as required by the hazard design of the building.
2. RP2 backflow preventers shall be installed on all boiler and/or cold water HVAC make-up piping.
3. Isolation valves shall be provided on all branch service connections off the system distribution mains to the pipe chase or individual fixture.
4. All domestic water piping shall be thoroughly flushed, tested and sterilized. Sterilization shall be executed by an Independent Agency or Test Laboratory.
5. The hot water piping system shall be a recirculated line back to the water heater.
6. The general hot water system shall not exceed 110°F delivery temperature.
7. The kitchen shall be provided with 140°F hot water with a recirculated line back to the water heater.

#### **CONDENSATE WASTE DRAINAGE SYSTEM**

1. Provide a condensate waste drain discharge to any HVAC equipment unit requiring condensate discharge.
2. Piping shall either discharge independently to an approved location or be collected as a system with termination to the exterior or a storm drainage system.

### **GAS SYSTEMS**

1. Coordinate all service and metering with the Gas Co. Service pressure shall be low pressure 5-1/2" WC, 2 psi or 5 psi.
2. Verify the pressure requirements with all system equipment selections.
3. Low pressure 5-1/2" WC shall be used for general systems, Science Rooms, kitchen equipment and basic water heaters.
4. Elevated pressure 12" WC shall be used as a minimum for HVAC equipment and high-rated domestic water heaters.
5. All main gas pressure regulator valves shall be installed exterior of the building with relief vent piping to roof levels. Interior regulators, when installed, shall be individually vented to the roof.
6. Rooftop gas piping systems to HVAC units may be installed; however, they are to be reviewed with the Owner.
7. Gas piping shall be steel pipe with threaded fitting. Concealed pipe shall be welded. Gas valve shall not be permitted above ceilings.
8. Propane gas systems shall be coordinated with the Owner's selected gas supplier.

### **PLUMBING FIXTURES**

1. All general plumbing fixtures shall be china.
2. Water closets and urinals shall be wall-hung, flushometer type with fixture carrier.
3. Lavatories shall be wall-hung with faucet, and fixture carrier and/or countertop self-rim type.
4. Water coolers shall be hi/low electric type with all stainless steel exterior finish.
5. Countertop sinks shall be stainless steel, self-rim type with gooseneck faucet. Faucets shall be electrically operated hands-free style operation.
6. Art Room sinks shall be stainless steel, self-rim deep bowl with a solids interceptor.
7. All toilet room fixtures shall be provided with manually operated flush valves and electrically operated hands free faucets.

8. Mop receptor shall be molded stone, 24" x 36" receptor, wall-mounted service faucet with vacuum breaker.
9. Shower system shall be provided as necessary to selected program of the building. Handicap accessible shower, where provided or required, shall be one piece fiberglass or acrylic construction complete with retractable/fold-up seat, hand-held shower with thermostatic or pressure balance control valve, grab bars, dome light and shower curtains. Installation to include wet area floor drain directly outside the shower unit.

## **PLUMBING EQUIPMENT**

1. Domestic Water Heater
  - a. Domestic water heater shall be, unless otherwise requested, gas-fired units with a minimum 80% efficiency or better. Type or style shall be based on the size of the building and usage factor.
  - b. The water heater shall make minimum 140°F hot water and be blended to 110°F using a master thermostatic mixing valve.
2. Elevator Sump Pumps
  - a. Each elevator pit shall be provided with a submersible sump with discharge terminating to the building sanitary system. The sump pump shall include the installation of an "oil-smart" sensor that will sense hydrocarbons in the discharge water and shut the pump down. Each installation shall include an audible and visual high water alarm including a remote alarm in the Maintenance Office.
3. Recirculating Pumps
  - a. Recirculating pumps for the domestic hot water return shall be close-coupled, centrifugal type, all bronze construction. Pumps shall run continuously and be wired into building night setback.
4. Grease Interceptors (Exterior)
  - a. Grease interceptor shall be pre-cast, reinforced concrete with interior baffle. Size shall be minimum 1,000-gallon capacity and include two (2) 24" diameter access openings into each chamber. Each access opening to terminate with highway load 24" diameter, cast iron frame and cover set flush at grade. Vault shall be vented.



## **PIPING SYSTEM MATERIALS**

### 1. Steel Pipe & Fittings

a. Pipe: ASTM A-53, seamless, Schedule 40.

b. Fittings:

Cast iron, threaded, 175 psi, ANSI B-16.4.

Malleable iron, threaded, ASA B 16.3.

Steel, socket weld, ASTM A-53.

Wrought iron, socket weld, ASTM A-72.

c. Teflon tape shall not be permitted for use on gas piping systems.

### 2. Cast Iron Pipe and Fittings

a. Aboveground:

Pipe & Fittings: Hubless cast iron, CISPI 301.

Joints: Neoprene sleeve and stainless steel shield and clamp assembly, CISPI 310.

b. Below grade and/or slab:

Bell and Spigot: Service weight bell and spigot pattern ASTM-74 with compression type neoprene gaskets ASTM C-564.

Hubless: Hubless cast iron CISPI 301, with heavy duty 3.04.016 stainless steel bands for below-grade installation.

### 3. Copper Tubing

a. Domestic hot, cold and recirculated water:

Aboveground:

- Tubing: Hard-drawn, seamless ASTM B-88, Type "L".
- Fittings: Solder joint wrought copper ANSI B-16.22.
- Joints: Soldered 95/5 tin-antimony AWS 5.8.
- Flux: Non-toxic and non-corrosive.

Underground:

- Tubing: Soft-drawn, seamless ASTM B-88, Type "K".
- Fittings: Solder joint wrought copper ANSI B-16.22.
- Joints: Soldered 95/5 tin-antimony AWS 5.8.

b. Drainage and vent piping:

Aboveground:

- Tubing: Hard-drawn seamless ASTM B-88, Type "M" and DWV as pipe size permits.
- Fittings: Solder joint cast copper drainage type ANSI B-16.29.
- Joints: Soldered, 95/5 tin-antimony AWS 5.8.
- Flux: Non-toxic and non-corrosive.

4. Ductile Iron Pipe

- a. Pipe: Ductile iron, ANSI A-21.5, ANSI/AWWA C151.
- b. Joints: Rubber gasket, ANSI A-21.11, ANSI/AWWA C111.
- c. Fittings: Mechanical joint, ANSI A-21.11, ANSI/AWWA C110.
- d. Lining: Cement mortar, ANSI A-21.4, ANSI/AWWA C104.

5. PVC Gravity Sewer Pipe

- a. Pipe: Unplasticized polyvinyl chloride (PVC) with integral wall ball and spigot joints.
- b. Material: ASTM D-3034 for SDR 35, colored green for inground identification as sewer pipe.
- c. Joints: Two sections of pipe shall be assembled in accordance with manufacturer's recommendations and tested as per ASTM D 3212 for use with flexible elastomeric seals.

6. Polyvinyl Chloride (PVC) Pipe and Fittings

- a. Pipe:  
ASTM D 1785 Schedule 40/80 CLASS 12454-B
- b. Fittings:  
ASTM D 2466 Schedule 40.  
ASTM D 2464 Schedule 80.  
ASTM D-2665 DWV.
- c. Solvent Cement: ASTM D 2564

7. Polypropylene Pipe & Fittings

- a. Pipe & Fittings: Polypropylene flame retardant ASTM D-2146 Schedule (40) (80).
- b. Joints: (Aboveground)  
  
Mechanical  
Fusion welded socket ends.
- c. Joints: (Below ground) Fusion welded - socket ends

8. Valves

- a. Ball Valves: Two piece, 600 psi WOG rated, cold non-shock valve with reinforced TFE seals, 316 stainless steel ball, bronze body, solder ends, non-blowout stem design.
- b. Check Valves: Class 150, bronze swing type, Y Pattern, threaded cap access
- c. Balance Valves: Provide with memory stop feature with calibrated name plate to assure specific valve setting. Bronze body/brass ball, carbon filled TFE seat rings.

**PIPE INSULATION**

1. Closed Cell:

- a. Material: Flexible elastomeric foamed plastic closed cell structure insulation 25/50 rated with a flame spread rating of 25 or less and a smoke developed rating of 50 or less.
- b. Flexible pipe insulation shall be a foamed plastic closed cell structure material, with a thermal conductivity of not more than 0.27 Btu/Hr./Sq. Ft./Inch at a mean temperature of 75 degrees F. The insulation shall have an average density of at least 2 pounds per cubic foot, shall be self-extinguishing, and shall have a water vapor transmission rating of not more than 0.1 perms. Between temperature limits of -40 degrees F and plus 220 degrees F, the insulation shall not indicate any deviation from its original state.
- c. Specification Compliance:  
  
ASTM-E-84  
ASTM-C-534 Type 1  
ASTM-D-1056 RE-41  
MIL-C-3133B (MIL STD 6708) Grade SBE-3

- d. Covering of Pipe Insulation Outdoors:

Wrapping: Wrap insulation with embossed .016" aluminum jacket.

Fastenings: Cover shall be held in place with soft aluminum bands on 12" centers.

Valves and Fittings: Weatherproof all valves and fittings.

- e. Whenever electrical heat tracing is installed, coordinate the installation of the insulation with the electrical contractor. No insulation shall be installed until the heat trace wiring is completely installed, tested and approved. All insulation work shall be the responsibility of the Insulation Contractor.
- f. Provide flexible closed cell insulation of minimum thickness specified on:

Branch waste piping from chilled water drinking fountains. 1/2" thick

Condensate branch waste piping from all heat pumps, air conditioning units and/or fan coil units where indicated on the drawings. 1/2" thick

Domestic cold water, hot and recirculated hot water piping 3" and smaller. 1/2" thick. Piping larger than 3" shall be 3/4" thick.

Horizontal rainwater conductors and underside of roof drains. 1/2" thick.

### **SPACE CONSIDERATION FOR PIPE CHASES & MECHANICAL ROOMS**

1. Pipe chases must be provided with sufficient space for all fixtures to be installed on the wall.
2. Back-to-back, wall-hung water closets, battery installations shall require a minimum of 18" clear space within the pipe chase.
3. Wherever back-to-back battery installation requires concealed flush valves, a minimum of 32" clear space within the chase shall be required. Installation to include full access door.
4. Single, wall-hung lavatories shall require a minimum 6" partition outside face of wall to outside face of wall.
5. Single wall-hung urinals shall require a minimum 8" partition outside face of wall to outside face of wall.
6. Single wall-hung water closets shall require a minimum 10" partition outside face of wall to outside face of wall. This shall be based on using a stud mount fixture carrier. Plumbing fixtures installed on one side of chase walls using wall-hung water closets shall have a minimum 12" clear space within the pipe chase.

7. Plumbing fixtures shall not be installed on exterior walls without adequate space and wall insulation for freezing conditions.
8. Space within Mechanical Room shall be provided for domestic water and fire protection water services.
  - a. Provide minimum of 24"x48" clear space for a 3" domestic water service that will include an interior water meter.
  - b. Provide minimum of 36"x60" clear space for an 8" fire service water service that will include an interior water meter or detector check valve. The backflow preventer may be installed in the vertical position.

Note: Confirm all sizes of meters with the local Water Company for proper and/or additional clearances required.

**END OF SECTION**

## **15B TESTING/BALANCING/COMMISSIONING**

### **BUILDING COMMISSIONING**

1. Commissioning – A systematic process of ensuring that all building systems perform interactively according to the design intent and the owner’s operational needs – shall be incorporated where:
  - a) New construction over 10,000 s.f.
  - b) Renovated/replaced equipment/systems in buildings over 10,000 s.f.
  - c) As requested by the local school board.
2. The commissioning process does not reduce the responsibility of the system designers or installing contractors to provide a finished and fully functional product.
3. Commissioning of large or technically complicated projects shall begin at the preprogramming stage and last until the building has been occupied for two full seasons.
4. For large or technically complicated projects, a formal commissioning team shall be established and consist of the following:
  - a) Commissioning authority
  - b) School district Project Manager
  - c) School district maintenance representative
  - d) Representative of CM and/or GC
  - e) Representative of A/E
  - f) Mechanical contractor
  - g) Electrical contractor
  - h) TAB (Testing And Balancing) representative
  - i) Controls contractor
  - j) Others as required
5. Ideally, the commissioning authority shall be an independent authority, not otherwise associated with the A/E team or the contractor.
6. Responsibilities
  - a) The primary role of the commissioning authority is to develop and coordinate the execution of a testing plan, observe and document performance and determine whether systems function according to documented design intent and the contract documents.
  - b) If the owner is represented by a construction manager (CM), the CM shall ensure that commissioning activities are scheduled into the master schedule and facilitate coordination, ensure proper distribution of documents, submittals, changes, etc. and coordinate resolution of non-compliance.
  - c) The general contractor and relevant subcontractors shall attend all commissioning meetings, execute their commissioning responsibilities according to the contract documents and schedule, prepare O&M manuals and train owner personnel.

d) The A/E shall be responsible for preparing a Design Intent Document in the design development stage. This document will describe the “design intent” of the building and each major system. For small projects, the Design Intent Document may not be required at the discretion of the school district Project Manager. Suggested items in this document are:

1) General Description

- Project goals (major users, functions, consolidation, expansion, significant design constraints, etc.

2) Site Overview

- Underground utilities
- Storm drainage
- Field observations

3) Structural/Architectural Overview

- Summary of structural system key items
- Loading limitations
- Roofing
- Special systems
- Field observations

4) Plumbing Overview

- Domestic water
- Booster systems
- Sanitary/Vent
- Storm
- Laboratory Gasses
- Vacuum
- Chemical Treatment
- RO/DI water systems
- Field observations

5) HVAC Overview

- Ventilation
- Refrigeration
- Exhaust
- Air Handling
- Heating
- Energy Recovery
- Controls
- Special systems
- Chemical treatment
- BAS system
- Field observations

6) Fire/Life Safety Overview

- Sprinklers
- Fire pump
- Smoke evacuation
- Fan system interlocks
- Alarm system
- Field observations

7) Electrical Overview

- Power distribution
- Lighting
- Communications
- Emergency power
- Clock systems
- Field observations

NOTE: Overviews should include a brief description of the system in question and key design criteria including:

8) Appendix

- HVAC zone plans
- HVAC systems one line diagrams
- Actual vs. measured capacities of HVAC equipment
- Plumbing/piping/gas/fire riser diagrams
- Power distribution one line and riser diagrams
- Fire alarm and communications riser diagrams
- Fire alarm device location plans (w/device ID or zone number)
- Major electrical equipment location plans
- Actual vs. plan room names (if different)
- Owner and code requirements
- Assumptions
- Physical or other constraints
- Plans for future
- Indoor/outdoor design temperatures, humidities
- Indoor/outdoor design noise levels
- Expected equipment heat/power densities
- Air quality
- Lighting foot-candle levels
- A layman's description of expected function in each season or mode of operation. This description should include a specific section for the function of all safety controls.
- Figures that are 11 inch by 17 inch maximum

Design Intent Document shall be submitted at the end of the design development stage. An updated copy of the Design Intent Document with changes noted shall be submitted at the completion of construction document preparation stage.



**CHRISTINA SCHOOL DISTRICT**  
**FACILITY DESIGN STANDARDS 15B TESTING/BALANCING/COMMISSIONING**

---

- e) During the warranty period, all parties shall return to participate in required seasonal or deferred testing, deficiency corrections and 11-month walkthroughs with facility staff.
- 7. The project specifications shall be adapted to incorporate the commissioning process so that all bidders are aware of their responsibilities during the construction. The specifications shall generally follow ASHRAE guidelines, latest edition, “The HVAC Commissioning Process”.
- 8. Supplementary Conditions in contracts shall provide for a penalty if commissioning is not completed by the Functional Completion milestone.
- 9. Additional specification sections will need adapting as other building components are added to the commissioning process, for example vapor barrier and roofing systems.
- 10. Confirm scope of commissioning with school district Project Manager.
- 11. The commissioning authority shall prepare a construction phase commissioning plan including a detailed explanation of required tests, pre-functional checklist and tests, functional tests and verification procedures. Scheduling for execution of functional testing procedures, procedures for O & M manuals approvals, warranties and training and orientation of owner personnel.
- 12. All standard testing equipment necessary to perform required functional tests shall be provided by the contractor unless stated otherwise in the specifications.
- 13. The commissioning authority shall schedule and conduct required commissioning meetings and provide regular reports to the owner. The first meeting with the contractor(s) should be prior to the start of construction.
- 14. The commissioning authority shall witness and document the performance of all functional performance tests.
- 15. The costs for a contractor or subcontractor to repeat a pre-functional or functional test shall be theirs if they are responsible for the deficiency.

**END OF SECTION**

**15C FIRE PROTECTION**

**FIRE PROTECTION**

**No Available Specifications at This Time**

**END OF SECTION**

## **16A ELECTRICAL**

### **GENERAL ELECTRICAL REQUIREMENTS**

1. Provide an electrical system testing specification describing; tests to be performed, acceptance criteria, timely notice to the owner to witness tests, and furnishing test results to owner.
2. Provide maintenance schedules incorporating manufacturer's recommendations.
3. Circuit breakers in the emergency power system and optional standby system are coordinated so that a fault on the optional standby system will trip the correct circuit breaker and leave emergency power on and functioning.
4. Provide comprehensive on-site and factory training on electrical equipment operation and safety concerns for personnel who will operate the buildings.
5. Clean power systems for computers are only provided in computer rooms. Convenience outlets for offices, which may be used for desktop computers, are limited to four receptacles per circuit.
6. All new or renovated school buildings shall be equipped with an emergency power generator sized to support the use of the cafeteria, gym, kitchen, restrooms, and other areas as designated by the school district, and DOE.
7. Building lighting systems shall be designed so that all electrical panels containing lighting circuits only, as specified, can be connected into owner provided computerized energy management system with minimum effort and expense.
8. All classrooms, offices, and conference rooms shall be equipped with motion sensor operated light sources.

### **TEMPORARY ELECTRICAL SERVICES**

1. The Electrical Contractor shall furnish and install temporary electrical services as required for new and existing facilities using the following guidelines:
  - a. Ground fault circuit breakers
  - b. Main panelboard with disconnect
  - c. Temporary lighting
  - d. 120 volt receptacles with overcurrent protection.
  - e. Completed portions of work shall not be used for temporary work.
  - f. Solid grounding of temporary service
  - g. Ground temporary branch circuit for lighting and power.

## **GROUNDING**

1. The Electrical Contractor shall furnish and install a ground system using the following guidelines:
  - a. Minimum No. 12 AWG copper equipment grounding conductor insulated with green colored insulation.
  - b. Stranded cable grounding electrode conductors.
  - c. Bare copper conductors.
  - d. Copper 3/4" grounding rods.
  - e. Conduit is not an allowable grounding means.
  - f. Continuous grounding conductor carried throughout the power system.
  - g. Grounding of voice, video and data systems.
  - h. Provide grounding of circuits, equipment, conduits and etc., as required by the NEC.

## **HANGERS AND SUPPORTING DEVICES**

1. The Electrical Contractor shall furnish and install hanger and support devices using the following guidelines:
  - a. Hangers shall be individual steel ring or clevis type hangers.
  - b. Corrosion resistant finish in corrosive environments.
  - c. Concrete inserts rated per load for attachment to concrete.
  - d. Malleable iron C-clamp and retaining clip for attachment to steel beams.
  - e. Ring and turnbuckle attachment for steel pipe.
  - f. Trapeze hangers with clamps and hanger rods for parallel pipe runs.

## **WIRE AND CABLE POWER SYSTEM**

1. The Electrical Contractor shall furnish and install wire and cable power system using the following guidelines:
  - a. Cable and Wiring – 600V or Less
    - i. Conductor material shall be copper.
    - ii. Wire and cable shall be rated 600V.
    - iii. Minimum conductor size shall be #12 AWG.
    - iv. Type AC, 3 conductor, 75C insulation, copper conductor, armored cable.
    - v. Type MC, 3 conductor, 75C insulation, copper conductor, metal clad cable.

- b. Medium Voltage Cable
  - i. Cable material shall be copper.
  - ii. Voltage rating as appropriate for the application. Cable shall meet Power Company Standards.
- c. Performances
  - i. In raceway for service entrance wiring.
  - ii. In raceway for feeders and branch circuits.
  - iii. Minimum conductor size shall be #12 AWG for power circuits, #14 AWG for controls.

## **POWER SYSTEM WIRE CONNECTIONS AND DEVICES**

- 1. Connectors for Power Systems 600V or Less
  - a. Insulated connectors
  - b. Compression type connectors.
- 2. Connectors and Terminations for Medium-Voltage Cable
  - a. Terminations shall be made with thermo fit heat shrink type stress cones.
- 3. Performances
  - a. Splices, taps and other connections involving conductors less than #10 AWG shall be made with insulated connectors.
  - b. Splices, taps and other connections involving conductors less than #10 AWG shall be made with compression type connectors insulated with tape.

## **CONDUIT**

- 1. Materials
  - a. Rigid Metal Conduit
  - b. Electrical Metallic Tubing (EMT)
  - c. Liquid tight flexible metal
  - d. Underground Polyvinyl Chloride (PVC) Schedule 40
  - e. Compression fittings
- 2. Technology Conduit
  - a. From technology outlet box provide one (1) 1" or two (2) 3/4" conduits to 6" above ceiling. Turn toward corridor with plastic bushing.

- b. Utility Entrances
  - i. Two (2) 4" for telephone service from service pole to main technology equipment room.
  - ii. One (1) 3" for cable television service from service pole to main technology equipment room.
  - iii. One (1) 4" from service pole to main technology equipment room for wide area network (WAN).

3. Performances

- a. PVC conduit may be used under building slab on grade for branch feeder and branch circuits.
- b. PVC conduit may be for exterior branch circuits. Encase PVC conduit in concrete when under drives and parking areas.

**OUTLET BOXES / RECEPTACLES / SWITCHES**

1. Performances

- a. Metal outlet and device boxes.
- b. Watertight floor box with cover suitable for intended use.
- c. Boxes shall have a minimum depth of 2".
- d. Concealed outlet boxes shall be galvanized formed steel.
- e. Flush device boxes in drywall shall be equipped with extension rings.
- f. Exposed boxes shall be cast type FS or FSA.
- g. Outlet boxes for data/video and voice outlets shall be 2-gang with minimum depth of 3-1/2 inches.

2. Floor Boxes

- a. Cast iron with polyester corrosion resistant finish.
- b. Fully adjustable
- c. Brass cover plates to match gang of box.
- d. Cover to match floor type.

3. Receptacles

- a. 1-pole, 3 wire, grounding
- b. 20 AMP, 125 volt rated.
- c. Specification grade, duplex, back and side wired.
- d. Receptacles designated as general use shall be of a different *color* from those designated as *computer* receptacles.
- e. Ground fault protection where required, shall be built into receptacle.

4. Wall Plates

- a. Nylon in all areas except food service areas (stainless steel)
- b. Configuration of plates to match devices.

5. Wall Switches

- a. 20 AMP, 120/277 volt rated with ground screw.
- b. Specification grade.
- c. Toggle type in classrooms and key type in public areas.

**EMERGENCY GENERATOR SYSTEM**

1. Packaged Generator System Characteristics

- a. Type: Standby automatically started engine coupled to an AC generator unit.
- b. Ratings: Voltage, frequency, and power output ratings suitable for use.
- c. Maximum transfer time to assume full load: Per NEC.
- d. Fuel type: Diesel or natural gas dependent upon application.
- e. Fuel supply: Minimum per NEC.

2. Packaged Generator System Components

- a. Engine
- b. Cooling system: liquid-cooled unit-mounted radiator.
- c. Sub-base diesel *double wall fuel* storage tank *with leak monitor* or natural gas *supply*.
- d. For outdoor generator set, provide weatherproof steel housing, louvers and dampers.
- e. Transfer switches: Automatic, four pole, applicable to service required.
- f. Provide vibration isolators.

**SURGE ARRESTERS**

1. Surge Arresters

- a. Metal oxide varistor (MOV) with each fused.
- b. Line Protection
  - Line to line
  - Line to neutral
  - Line to ground
  - Neutral to ground
- c. One percent (1%) variation in metal oxide varistors.
- d. LED indicator light.
- e. Rated as an electromagnetic interference filter.

- f. NEMA 1 rated enclosure.
- 2. Lightning Arrester
  - a. 100,000 AMP minimum current rating.
  - b. 10 nanosecond clamp time at 50,000 AMPS.
  - c. Silicon oxide varistor.
- 3. Installation
  - a. Install lightning arrester at main electrical switchboard.
  - b. Install transient voltage surge arresters at main switchboard.

### **CIRCUIT BREAKERS**

- 1. Low Voltage Circuit Breakers
  - a. Continuous current, interrupting and short-time current rated suitable for use.
  - b. Voltage and frequency ratings same as system.
- 2. Molded Case Circuit Breakers
  - a. Combination circuit breaker and ground fault circuit interrupter type.
  - b. Solid-state trip device circuit breaker type.
  - c. Thermal magnetic type.
  - d. Rating suitable for use.
  - e. Bolt-on type in panelboards.

### **SAFETY SWITCHES**

- 1. Safety Switches
  - a. Rating suitable for use.
  - b. Totally enclosed with external operating handle and mechanical cover interlock.
  - c. Padlockable handle in the OFF position.
  - d. Fusible type switches.
  - e. Non-fusible type.
  - f. Integral ground lug.
  - g. NEMA 3R in weatherproof locations.
  - h. Heavy duty type.



## **SWITCHGEAR – Medium Voltage**

1. Switchgear
  - a. Switchgear Ratings: Nominal system voltage, main bus continuous amperes, nominal interrupting capacity class as applicable.
  - b. Switchgear Load-Interrupter Switches: Stationary mounted, gang operated.
  - c. Switchgear Circuit Breakers: Draw-out mounting with operation at rated voltage.
  - d. Grounding and Test Devices: Suitable for phasing out; testing or grounding the switchgear bus or feeder; test cabinet and circuit breaker emergency control station.
2. Metering
  - a. Furnish and install digital metering equipment on all main distribution panels in new construction and renovations. Metering to monitor the following as a minimum:
    - AMPs
    - Volts
    - Power Factor and Demand

## **SWITCHBOARDS, PANELBOARDS, AND DISTRIBUTION PANELS**

1. Switchboards
  - a. Nominal system voltage, main bus continuous amperage suitable for use. Short-circuit current ratings same as highest rated circuit breaker in switchboard assembly.
  - b. Three-phase, four-wire configuration.
  - c. Front connected, front accessible with fixed main device, panel-mounted branches and sections rear aligned.
  - d. Tin-plated copper or aluminum neutral and phase bussing.
  - e. Utility Metering Compartment: Acceptable to local utility company.
  - f. Integral fusible or circuit breaker type main switch.
  - g. NEMA 1 enclosure.

2. Panelboards/Distribution Panelboards

- a. Tin-plated copper or aluminum phase and neutral bussing.
- b. Integral ground bus.
- c. Panelboards to be provided with overcurrent protective devices, enclosure suitable for use and compression type main and neutral lugs.
- d. Typed panelboard directory of circuits.
- e. Cabinets for panelboards and distribution panels to have sufficient gutter space to meet NEC Tables 373.6(a) and (b) requirements.
- f. Bus bars in panelboard and distribution panel assemblies shall be adequately braced to withstand the maximum short circuit current at the point of application.
- g. All electrical panels and gear to be located to allow for access by District Staff only. Avoid locating panels and electrical equipment in hallways and public spaces.
- h. Electronic grade panelboards to be installed to serve all facility computer areas. The panels at a minimum shall contain a 200% neutral, isolated ground and built-in surge protection.
- i. Main switchgear shall not be located adjacent to a learning space where interference with classroom computers may occur. In addition, the main Electrical Room shall be a dedicated room separated from all Mechanical and Plumbing spaces.

**DRY TYPE TRANSFORMERS**

1. Transformers shall be dry type gravity ventilated for wall or floor mounting.
2. KVA rating shall be as denoted on the drawings.
3. Coils must be wound with continuous (no splices) magnet wire (no foil).
4. Coils shall be designed for Class H insulation of 150 deg. C. rise above a 40 degree C ambient with 100% of rated load connected to the secondary.
5. Cores shall be manufactured with silicon steel stacked without gaps and firmly clamped with structural angles.
6. The core and coil assembly shall be mounted on vibration pads and bolted to the enclosure.

7. Copper windings, two-winding type, enclosure type, insulation class, insulation temperature rise suitable for use; low-voltage surge arresters; electrostatic shielding.

## **LIGHTING**

1. All fluorescent lamps shall be T-8 cool white type.
2. No fixture requiring “U” shaped lamp or 8’ lamp shall be shown or specified.
3. Pendant style direct/indirect strip lights will be used in all classrooms unless otherwise approved by CSD Facilities Services.
4. Fluorescent Lighting Styles
  - a. Troffers
    - Static Recessed 2x4 ft., 2x2 ft. or 1x4 ft.
    - .125” prismatic virgin acrylic A12 lens.
    - Flat steel door
    - Number of lamps as required
    - Steel construction
  - b. Wraparound Fixtures
    - One piece acrylic prismatic
    - Number of lamps as required
    - Four (4) foot length
    - Steel construction
    - Surface mounted
  - c. Strip Fixtures
    - No lenses
    - Four (4) foot length
    - Asymmetric or symmetric reflectors as required.
    - Steel construction
  - d. Recessed Cans
    - Compact Fluorescent lamp
    - Minimum 6” diameter
    - Clear alzak reflector
    - Open lens unless required.

- e. Parabolic type
  - Static recessed 2x4 ft., 2x2 ft., or 1x4 ft.
  - Lens appropriate for insuring 80% visual comfort probability
  - Number of lamps as required
  - Steel construction
- 5. Wire hang troffer type fixtures from structural steel independent of grid or attach fixtures to grid with clips and grid support at each corner of grid. Hang grid from structure at every corner of fixture where fixtures are attached to the grid
- 6. High Intensity Discharge
  - a. Pendant Type
    - 12” minimum round
    - Steel stem or aircraft cable support
    - Open or enclosed bottoms
    - Clear alzak reflector
    - Steel construction
    - Porcelain socket
    - Color selection by design professional
    - 250 watt quartz restrike where appropriate.
  - b. Industrial type (Gymnasium)
    - Totally enclosed fixture
    - Glass reflector
    - Hook and loop hanging (fixture swing ability)
    - Porcelain sockets
    - 250-watt quartz restrike
    - Safety chain
    - Wireguards
  - c. Recessed Can Type
    - Fluorescent lamp
    - 8” round minimum
    - Open or glass lens bottom
    - Clear alzak reflector
    - Porcelain sockets
    - 250 watt quartz restrike
- 7. Exit Signs
  - White Polycarbonate, easy snap housing
  - 6” stroke red letters

- LED lamps with 25 year warranty.
- Wireguards as required
- Directional arrows

8. Emergency Lighting

- Provide from fixtures above connected to emergency generator.
- Provide from battery packs.

**LAMPS, BALLASTS AND ACCESSORIES**

1. Fluorescent Ballast

- a. Electronic type with maximum 10% total harmonic distortion
- b. Conform to FCC Regulations
- c. T-8 lamp type
- d. 90% minimum power factor

2. High Intensity Discharge Ballast

- a. Constant wattage autotransformer or high power factor regulator type.
- b. 40°C normal operating temperature
- c. Cold weather type where required
- d. Epoxy encapsulated for noise suppression on interior fixtures
- e. Single lamp operation

3. Lamps

- a. Spare lamps per local school district requirements.
- b. 3500 deg. Kelvin fluorescent lamps with minimum 70 CRI

4. Accessories

- a. Suspended fixture support components include stem, rod and hook hangers.
- b. Fixture support poles, mast arms and brackets shall be sized appropriately for the EPA of the fixture.

**FIRE ALARM/DETECTION SYSTEM**

1. Materials

- a. Addressable fully electronic.
- b. Main fire alarm control panel with remote LED display annunciator.
- c. Synchronized strobes
- d. Non-electronic framed plexiglass annunciator with floor plan and room numbers.

2. Installation
  - a. Design and install per NFPA requirements.
  - b. Wiring to be installed in conduit.

## **COMMUNICATION**

1. The communication system shall be functional as both a paging system for internal facility communications and as a digital phone system. Both shall be accomplished via a common handset. A master clock for class change functions shall also be included.

## **EXTERIOR LIGHTING**

1. Parking lot lighting and exterior lighting shall be on a separate controller.
2. All site lighting and signage shall be controlled by a photocell and timer located within the buildings, or by the Building Management System.
3. Entry doors shall be illuminated.
4. Marquise designating the school name shall be lighted.

**END OF SECTION**

## **16B SPECIAL SYSTEMS**

### **SECURITY ACCESS & SURVEILLANCE**

#### **GENERAL REQUIREMENTS**

1. Avoid “niches” and obstructed views in all corridors for all levels of schools.
2. One MAIN point of entry is desirable in all schools.
3. Provide “threshold” points between public and academic areas that will allow for the ability to lock off non-essential areas when school is in use for public programs, sporting events etc.
4. Minimize number of exterior entrance/exit locations.
5. Provide interior glazing where necessary to allow for continual monitoring of all areas. For example: Main office/reception area, media specialist office, and office space along main corridors.
6. Exterior and interior cameras must be provided to ensure coverage of all areas with an emphasis on entrance and exit doors as well as primary gathering locations of students. A minimum of 10 security cameras shall be installed at each school. Required areas of surveillance include exterior front entrance, exterior rear entrance, main lobby, library, cafeteria, auditorium and main corridors.
7. Pan to zoom, (PTZ) cameras are to be used sparingly and necessary locations ONLY due to high cost.
8. All digital cameras and Digital Video Recorders (DVR) shall be used.
9. Analog security systems are not be used
10. Provide adequate illumination for proper image production for all interior and exterior surveillance cameras. Consider camera activated lights at such locations
11. Provide keyless, card entry systems for all exterior and interior doors wherever applicable.
12. Camera server shall be accessible over a high speed internet connection and accessible form outside the client network.

#### **INTERIOR FIXED CAMERAS**

1. All interior cameras, viewing equipment, recorders, and monitors must be in a lockable, stand alone cabinet with exhaust fan.

2. All security camera servers shall be IP addressable to a DVR or an IP addressable camera.
3. All interior cameras must have auto iris lens.
4. Interior cameras should have 3 ½ -8 millimeter “very focal” lenses to allow for manually adjustable viewpoints with a minimum illumination level equal to .7 lux.
5. All interior cameras installed in location with suspended acoustical ceiling tile should be installed in appropriate “drop in” housing to protect cameras and equipment
6. Interior cameras installed in stairwells should be mounted at highest point in ceiling w/ vandal resistant housings

### **EXTERIOR CAMERAS**

1. Exterior cameras should have 3½ -8 millimeter “very focal” lenses to allow for manually adjustable viewpoints with a minimum illumination level equal to .7 lux.
2. All exterior cameras must be housed in weather tight units with heater and exhaust fan to maintain necessary equipment temperature and humidity
3. Provide necessary power on exterior façade of building for all exterior cameras

### **DIGITAL RECORDERS**

1. All digital recorders must have a minimum of 320 gigabyte memory-recording capacity
2. The number of digital recorders is a function of the number or cameras installed and the frames per second of recording.
3. All digital recorders must be able to continually record for up to three consecutive days.
4. Digital recorder must have accompanying software to be installed on all systems administering recorder(s).

### **MULTIPLEXER**

1. A multiplexer with a minimum of 16 camera capacity should be installed in close proximity with all other security equipment, preferably in or adjacent to main office.



**PREFERRED SYSTEM**

1. Sonitrol access and surveillance security system utilizing card access control and voice activated microphone surveillance is the system of choice for Christina School District.

**FOOD SERVICE**

**GENERAL REQUIREMENTS**

All equipment and construction must comply with current codes and regulations outlined by the Division of Public Health and the NSF International and approved by the Christina School District Food Service Department.

1. The Christina School District Food Service department should determine if a facility is to be designed as a “satellite” or a “cooking” kitchen.
  - a. **“Satellite Kitchen”**: All the food is prepared at a different facility and brought to that facility and held at proper temperatures and served.
  - b. **“Cooking Kitchen”**: A facility that actually prepares all meals and food preparation. It receives raw products and prepares them.
2. All trench drains should be positioned relative to the piece of equipment it is accommodating for proper drainage and to avoid excessive spillage.
3. There should be at least (1) floor drain in each compartmental area of the kitchen.
4. Consider the function of all activities above food service areas due to the loud acoustic level of kitchen areas.
5. Provide a residential washer and dryer unit in a separate area adjacent to kitchen. A lockable cabinet for detergent and cleaning supplies in this area should be supplied.
6. All tray slides should be solid, raised rib stainless steel.
7. Provide Dry Storage areas
8. Provide double tier metal lockers for employees.
9. Behind all serving lines, a worktable with drawer and shelf should be provided.
10. (1) Administrative office should be provided in food service area.
11. Pull down retractable electrical sources should not be installed.
12. Provide hand wash signage as required by Department of Public Health

**FINISHES**

1. Ceiling: Acoustical Ceiling Tiles (ACT) should be specifically made for food service areas. All ACT should be anti-microbial with vinyl coating.
2. Walls: All wall painted surfaces should be epoxy paint.
3. Floors: All flooring should be poured resinous surface with a “medium” grade aggregate compound with integral base.

**TECHNOLOGY**

All specifications should meet the current standards and guidelines as recommended by Delaware Center for Education Technology (DCET). The Christina School District Technology office must review and approve all specifications.

1. From service lines to administrative food service office, there should be a category 6 cable provided for each register.
2. At least (1) RJ45 (6) prong phone jack should be provided at each register area in food service lines.
3. All wiring at food service areas should be “home run” back to the food service administrative office.
4. In each food service administrative office, there should be (1) data drop and (1) phone modem line

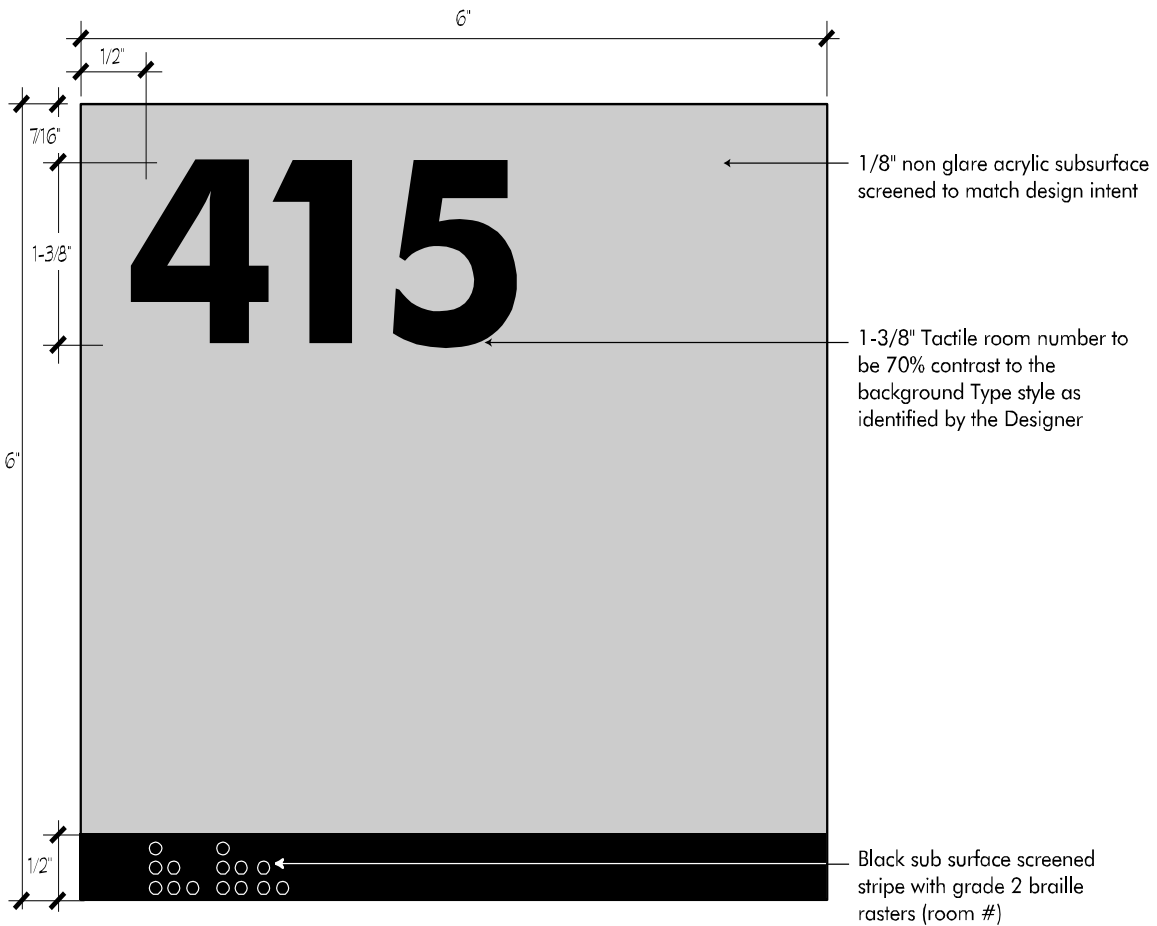
**EQUIPMENT**

The Christina School District Child Nutrition Food Service Department must approve all equipment. The size and quantities of all units specified is a direct function of the number of anticipated students in each school.

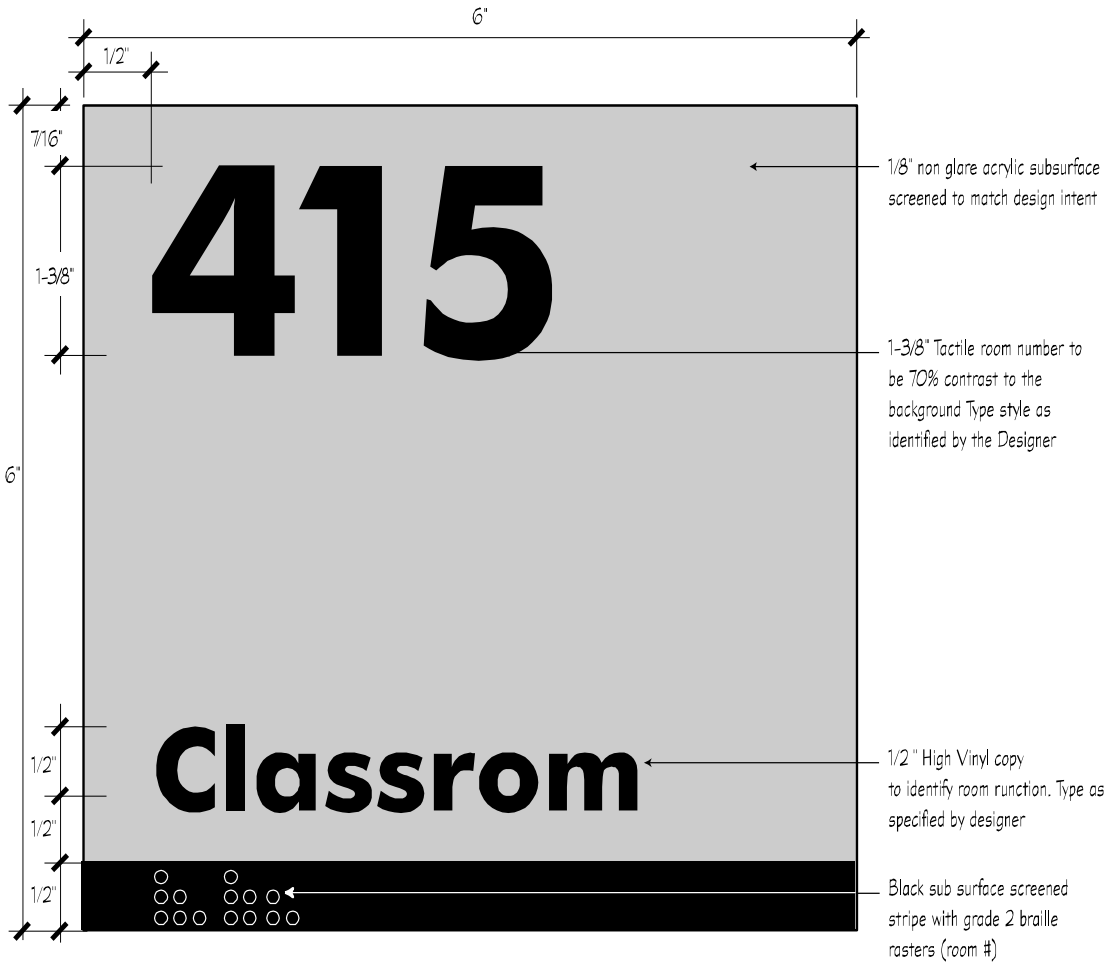
The following is a standard list of kitchen equipment required in all food preparation kitchens.

Table Top Kettle – Electric	Oven/Steamer Combination – Natural Gas
Convection Oven – Natural Gas	Milk Cooler
Steam table – Electric	Ice Cream storage
Cash Register Stand	Pass-thru Heated Cabinet
Pass-thru Refrigerator	Walk-in Refrigerator
Walk-in Freezer	Dry Storage area
Ice Maker and Bin	

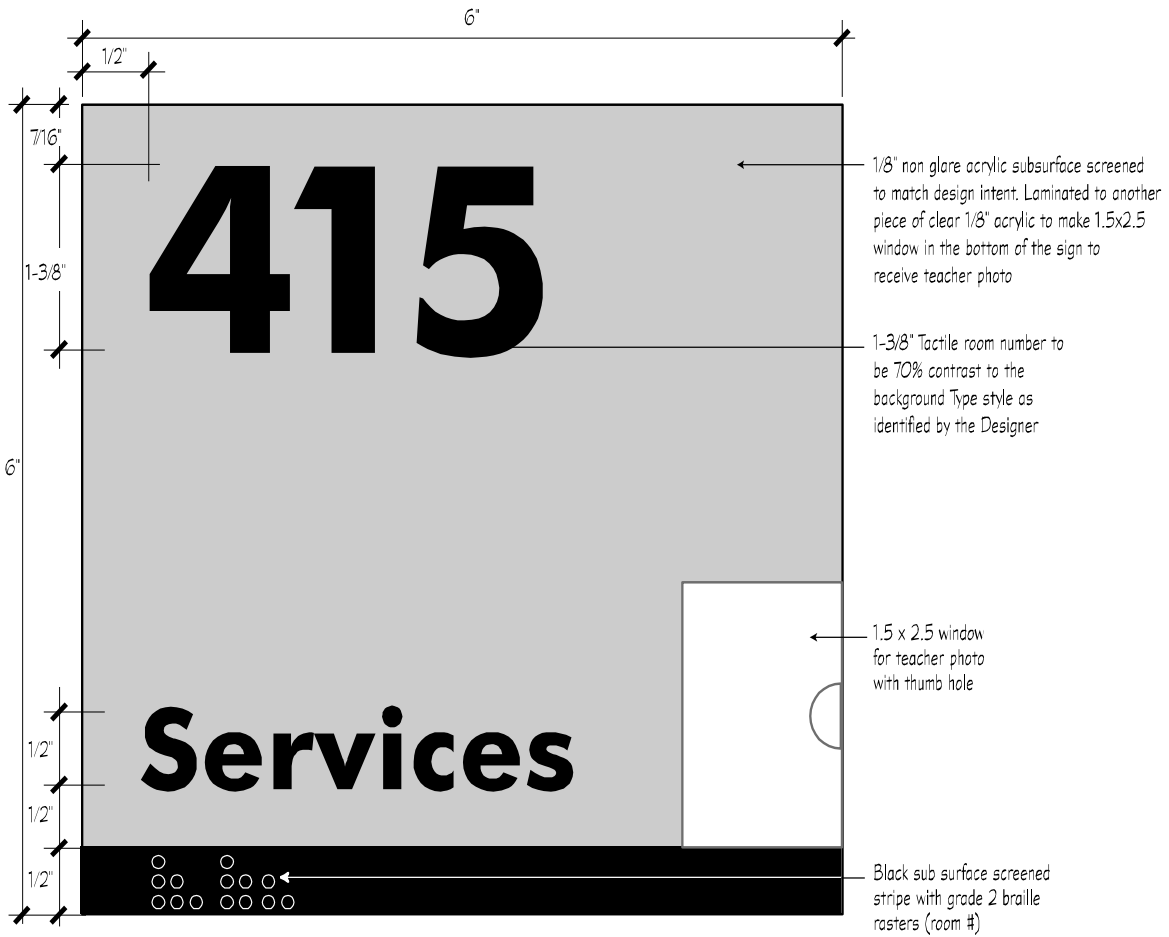
**INTERIOR SIGNAGE**



**Sign Type A**  
Standard Numerical  
Room Identification



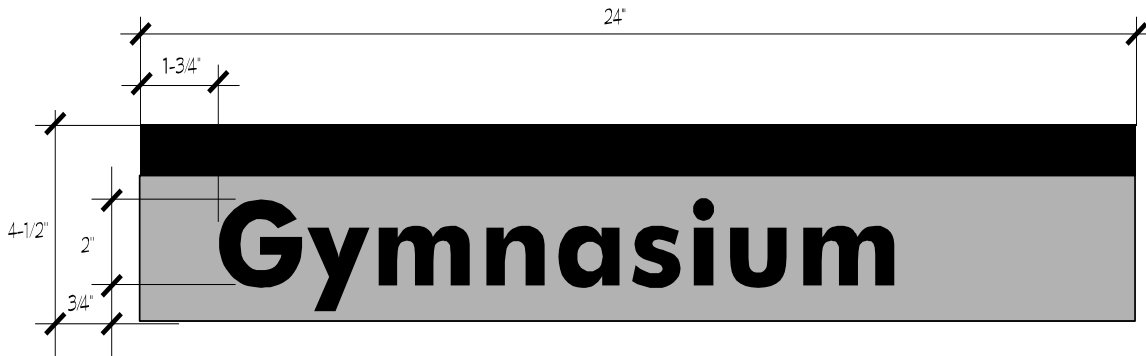
**Sign Type B**  
Standard Numerical  
Room Identification  
with Room Function



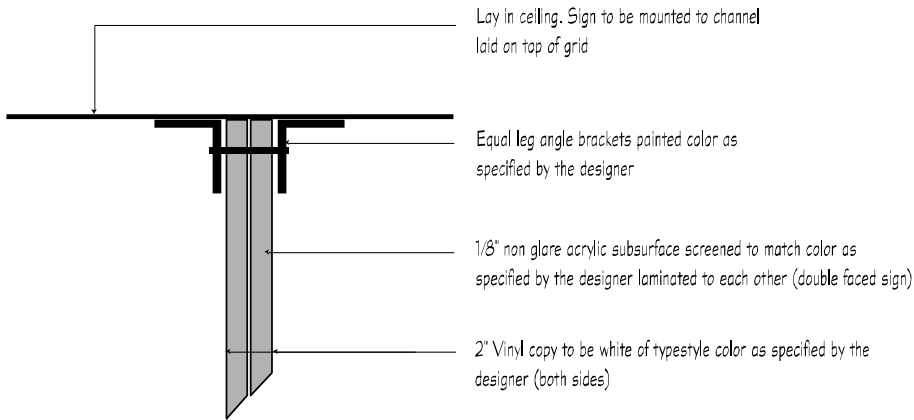
**Sign Type C**  
Standard Numerical  
Classroom Identification  
Elementary Schools only



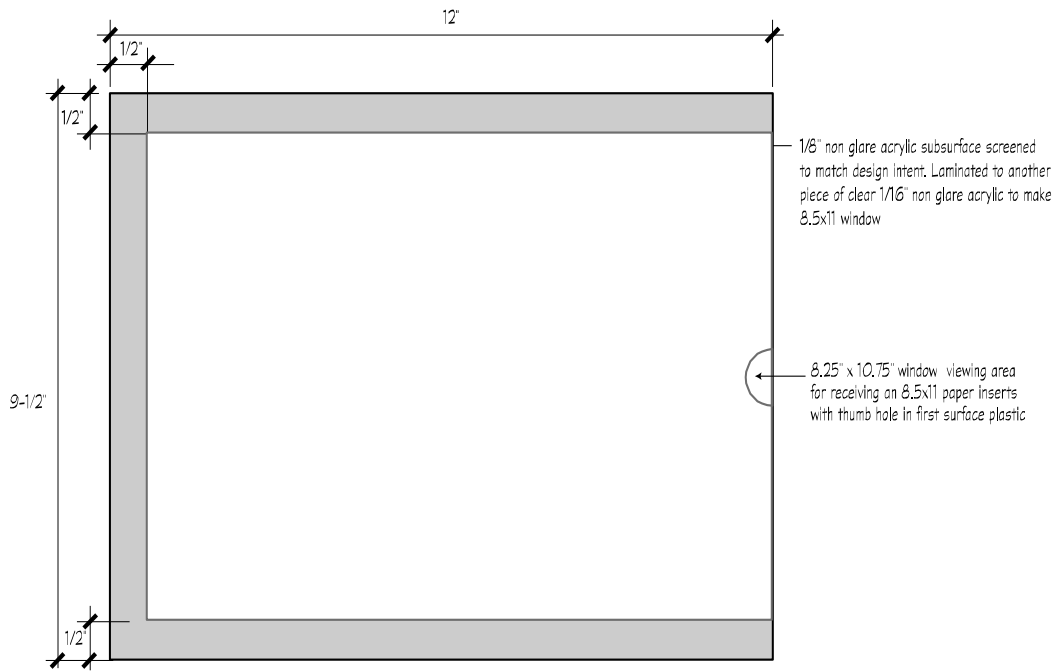
**Sign Type D**  
Restroom Identification



**Sign Type E**  
Ceiling Mounted  
Room Identification



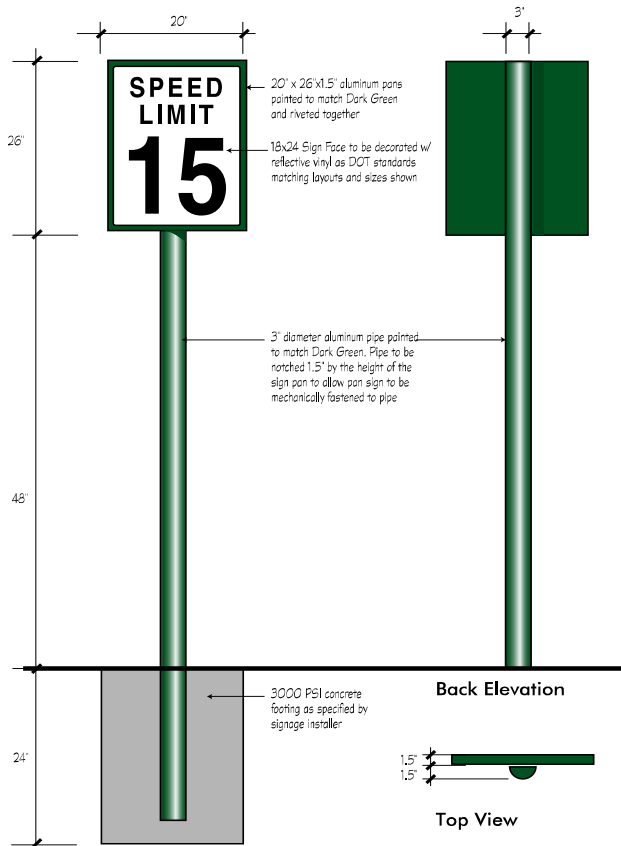
**Section**



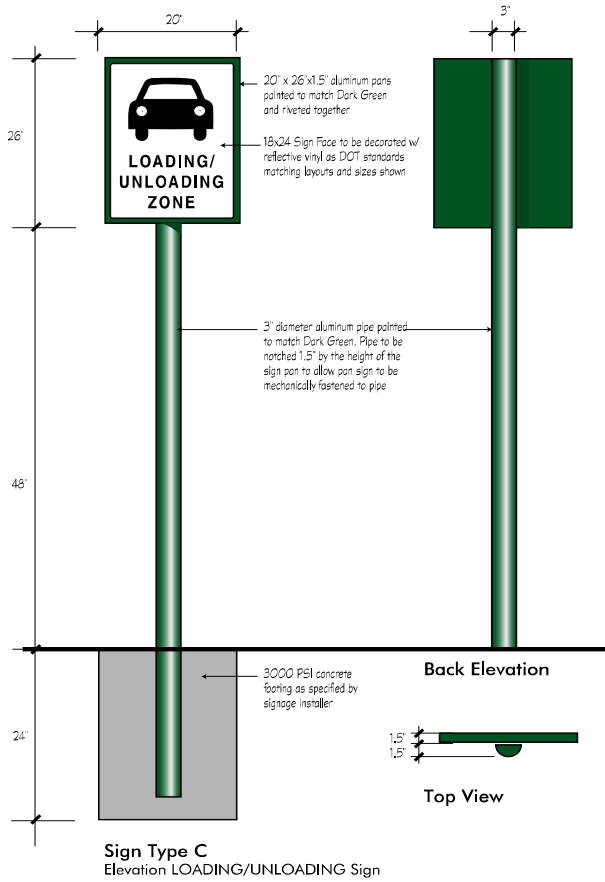
**Sign Type F**  
Standard Classroom  
Evacuation Map Holder

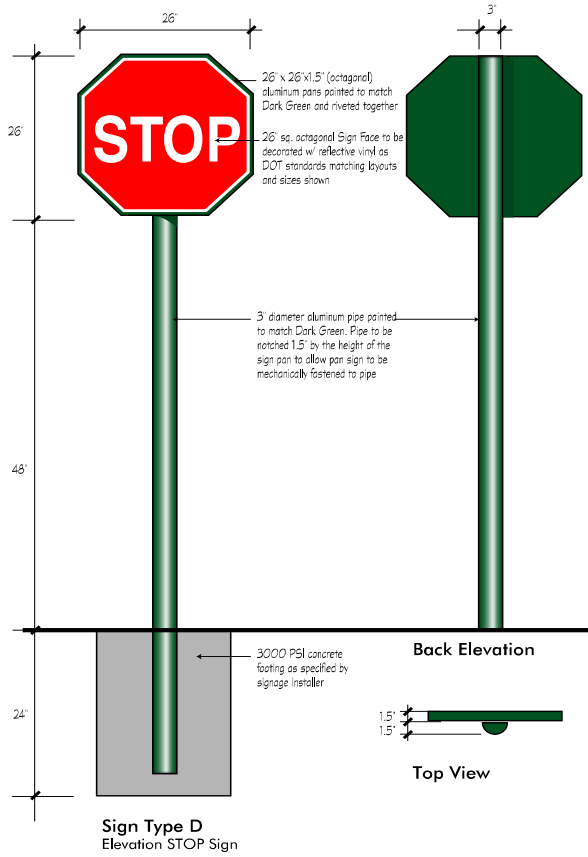


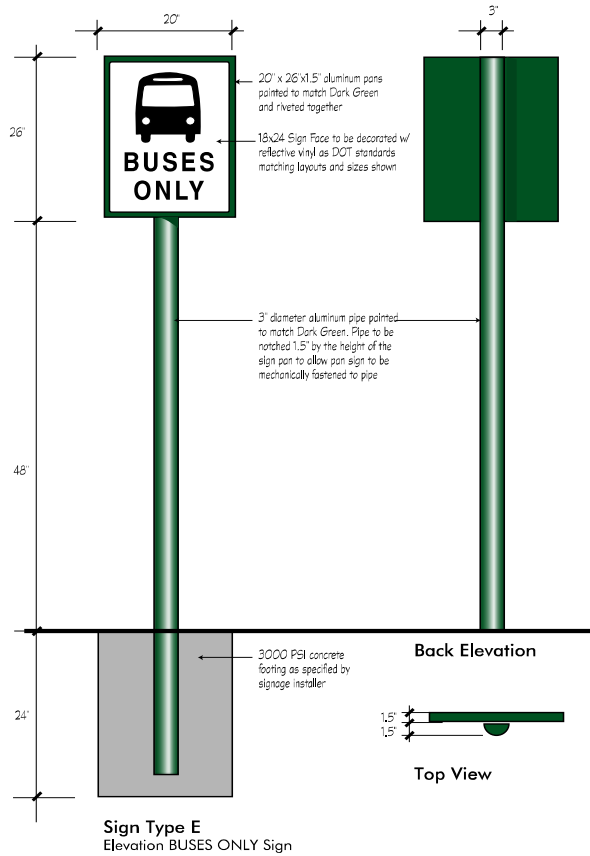
**EXTERIOR SIGNAGE**

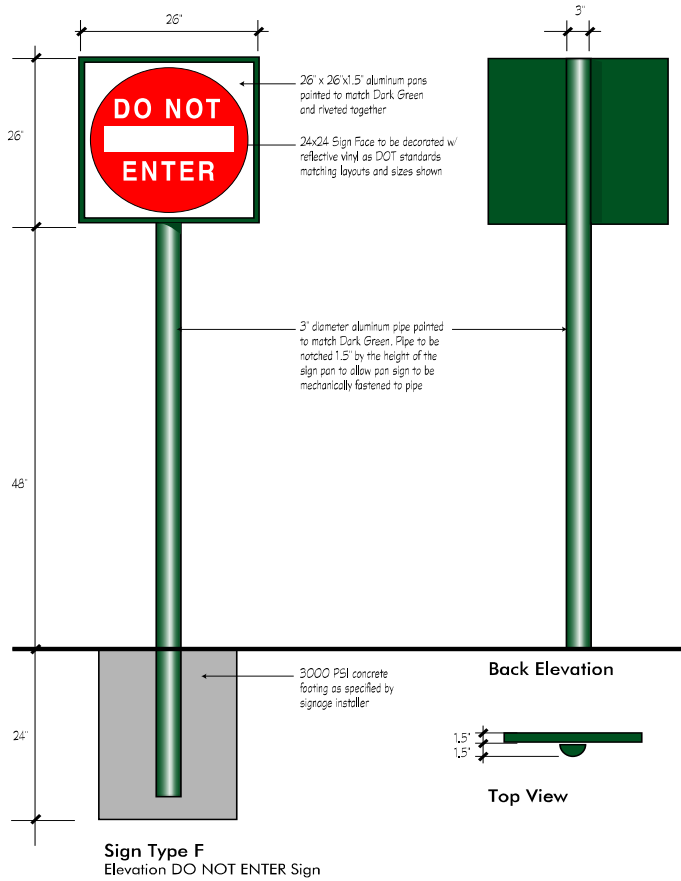


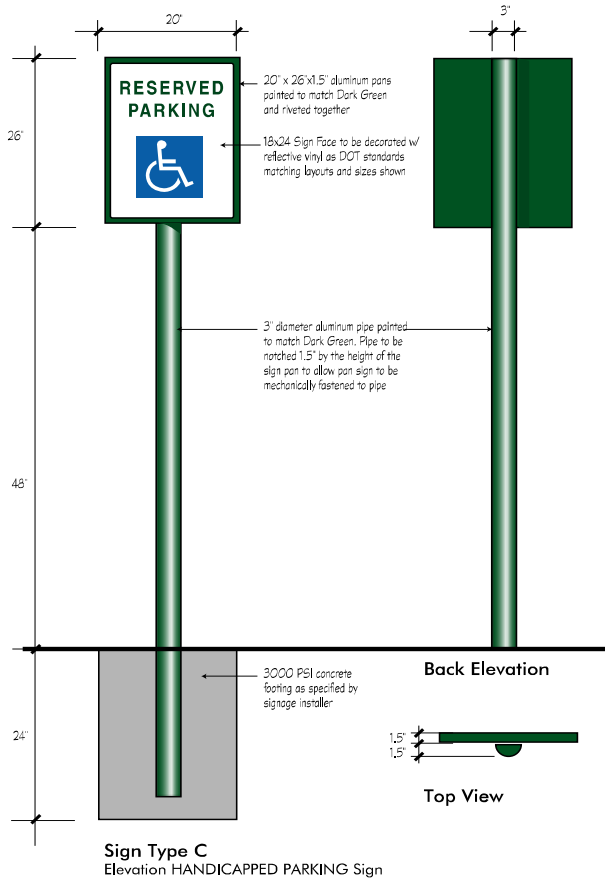
**Sign Type B**  
Elevation SPEED LIMIT Sign











**END OF SECTION**

**SELECTIVE BLDG DEMOLITION**

1. All cable/wire not terminated on both ends shall be removed.

**END OF SECTION**

## **SPACE REQUIREMENTS**

### **ELEMENTARY SCHOOL**

#### **GENERAL INFORMATION**

The following is a list of areas that should be included in each Elementary School but is not limited to the following spaces. An individual education specification committee will be assigned on a per school basis. This committee will develop additional spatial requirements that will reflect a schools specific program. This list is provided as a checklist and point of reference when designing an Elementary School.

Each space with specialized requirements is outlined in the following sections. If a space is identified in the following list, but no additional information is provided, it is assumed the education specification team assigned to a construction project will consider it on an individual basis. (For example: table storage has been identified as a space to acknowledge; however no specific information has been provided at this time.)

#### **ACADEMIC CORE** (Typically contained within each “Pod”)

1. Elementary Classrooms
2. Individual Student Restrooms
3. Elementary School Pod Areas
4. Conference Room/Teacher Work Room
5. Individual Staff Restroom
6. Material Storage
7. Science Closet
8. Custodial Closet

#### **ADMINISTRATIVE SPACES**

1. Reception Area/Main Office
2. Administrative Area/Main Office
3. Principal and Assistant Principal’s office
4. Administrative Conference Room
5. Mail/Work/ Copy Area
6. Storage

#### **MEDIA CENTER SPACES**

1. Media Center
2. Computer Lab (If applicable)
3. Media Specialist’s Office
4. Workroom/Storage
5. Audio/Visual Storage



### **ANCILLARY SPACES**

1. Art Room
2. Art Room Storage
3. Kiln Room
4. Music Room
5. Music Room Storage
6. Gymnasium
7. P.E. Workroom/Storage
8. Student Dining
9. Platform
10. Table Storage
11. Food Service (Kitchen)
12. Guidance Counselor's Office
13. Guidance Records/Storage
14. Special Education/Resource Room
15. Health Clinic
16. Custodial Office/Workroom
17. Custodial Closet
18. Communal Restrooms
19. Corridors
20. Time Out Room
21. Central Storage
22. Loading & Receiving

### **A. CLASSROOMS**

Having a large communal space referred to as a “pod” is strongly recommended. A pod is a group of classrooms arranged around a common area that is typically grouped by grade level or discipline. *See Chapter 10, Section 3. For specific information regarding “pod design.”*

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near teacher conference/work room
2. Near vehicle drop/off area
3. Access to outdoor playground area

### **LOOSE FURNISHINGS**

1. All student furniture is to be washable and fully adjustable.
2. All furnishings should have glides for hard surface flooring.

3. All teacher furniture must be movable

4. Recommended loose furnishings:

Teacher desk and Chair  
Student Desks and Chairs  
Portable computer stand  
(1) 4-drawer lateral file cabinet  
(1) 2-drawer pedestal file cabinet on casters  
Kidney Shaped reading table  
Waste Basket

### **SPECIALTY ITEMS**

tack-able surfaces.  
white magnetic dry erase board.

### **PLUMBING**

1. There should be (1) sink in addition to the individual bathroom sink in each classroom.

## **B. INDIVIDUAL STUDENT RESTROOMS**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. All classrooms should have a restroom adjacent to and only accessible from the classroom.

### **CASEWORK**

1. Casework is not recommended in individual elementary school restrooms.

### **FEATURES & FIXED EQUIPMENT**

36" long stainless steel grab bar  
48" long stainless steel grab bar  
Waste receptacle, surface mounted stainless steel  
Mirror, tempered glass, stainless steel angle frame

### **PLUMBING**

Both the water closet and the lavatory shall be wall mounted.

### **C. ELEMENTARY SCHOOL POD AREAS**

A pod is a group of classrooms and support areas that radiate out from a central, communal space. The incorporation of a pod promotes the linkage of spaces and creates a “school within a school” atmosphere. The general size of the pod should be large enough to gather students or faculty and be utilized as a supplemental space to the classrooms and various other functions in each area. A Pod should promote a communal environment and be in keeping with the overall building design.

Each pod should consist of the following items:

1. Classrooms
2. (1) Individual student restroom
3. (1) Staff Restroom
4. Lockable Material storage closet for teacher supplies etc.
5. (1) Conference Room/Teacher Workroom
6. (1) Custodial Close
7. (1) Science Closet

#### **CASEWORK**

1. Casework not recommended within communal pod area. If casework is specified, it should adhere to the Casework Section 05 of this manual:

#### **LOOSE FURNISHINGS**

1. Loose furnishings are not necessary within communal pod area

#### **PLUMBING**

1. Drinking water coolers must be provided in communal pod areas. All drinking fountains shall be wall mounted, refrigerated, ADA compliant.
2. Also note (1) individual student restroom and (1) staff restroom must be provided in each communal space of pod area

#### **D. CONFERENCE ROOM/TEACHER WORKROOM**

1. Located within communal space of pod
2. Near academic core classrooms
3. Near individual “adult” restroom
4. Near instructional or material storage

#### **CASEWORK**

Casework is not necessary in conference rooms. If casework is specified, it should adhere to the district standard casework.

#### **LOOSE FURNISHINGS**

Large table or work surface  
Chairs  
Computer workstation furniture if necessary  
Waste Basket

#### **FEATURES & EQUIPMENT**

Master clock/Public address system  
Phone System

#### **SPECIALTY ITEMS**

Magnetic, White Marker Board

#### **E. MATERIAL STORAGE**

#### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Located within communal space of pod
2. Near academic core classrooms
3. Near Teacher Conference Room/Work Room

**CASEWORK**

Casework is not necessary in Material Storage Rooms. If casework is specified, it should adhere to the district standard casework.

**LOOSE FURNISHINGS**

Provide open metal shelving, no less than 18” deep (if casework is not provided.)

**F. SCIENCE CLOSETS**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near academic core classrooms
2. Should be located within communal space of pod

**CASEWORK**

1. Provide base cabinets for storage

**FEATURES & FIXED EQUIPMENT**

Stainless steel sink  
2 Burner Range  
24” Under counter refrigerator  
Overhead lockable coiling grill

**PLUMBING**

1. As required by design

**G. CUSTODIAL CLOSET**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near academic core classrooms
2. Should be located within communal space of pod

**CASEWORK**

1. Casework is not recommended for custodial closets.

**LOOSE FURNISHINGS**

Open metal shelving, no less than 18" deep

**SPECIALTY ITEMS**

Shelves with mop and broom holder and hooks

**PLUMBING**

1. Minimum 30" square floor type mop receptor

**ADMINISTRATIVE SPACES**

**A. RECEPTION AREA**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Open to secretarial area
2. Direct visual access to main entrance of the building
3. Provide a 'secured' waiting area so visitors MUST go thru office

**CASEWORK**

1. Casework is not recommended in reception area

**LOOSE FURNISHINGS**

Visitors Chairs  
End Table  
Waste Basket

**B. ADMINISTRATION AREA/MAIN OFFICE**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Adjacent to secure reception area
2. Direct visual access to main entrance of building
3. Adjacent to all primary administrative functions (i.e. work/copy/mail room, kitchenette, principal's office, conference room, storage area.)
4. Provide designated area for lockable cabinet housing all security systems near necessary duplex receptacles as well as A-Jack

**CASEWORK**

1. All casework is to be plastic laminate with PVC edge
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate
3. No square edge or 90-degree corners on counter tops
4. There should be a combination of base cabinets and overhead cabinets

**LOOSE FURNISHINGS**

Task Chair(s)  
Systems furniture  
Wastebasket

**FEATURES & EQUIPMENT**

Master clock/Public address system  
Phone system

**SPECIALTY ITEMS**

White, magnetic marker board  
Location designated for security monitors and media distribution TVs

**C. PRINCIPAL’S & ASSISTANT PRINCIPAL’S OFFICE**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near reception area
2. Near secretarial area
3. Easy access to school circulation areas
4. Near main entrance to the building
5. Near conference room
6. Provide interior glazing with blinds for visual access to corridors or adjacent spaces when appropriate
7. Both the principal’s office and the vice principal’s should be large enough to accommodate a small (4) person conference table and guest chairs
8. Principal’s and vice principal’s office should be located near one another and within the main administration area of the building

**CASEWORK**

1. Casework is not recommended in either principal’s or vice principal’s office

**LOOSE FURNISHINGS**

Desk Chair(s)  
Task chair  
Guest Chairs  
Small conference table and chairs to accommodate 4 adults  
Bookcase and appropriate file storage  
Wastebasket

**FEATURES & EQUIPMENT**

Master clock/Public address system  
Phone system



**SPECIALTY ITEMS**

Magnetic white marker board  
Tack board  
Two-prong coat hook installed on back of door

**D. ADMINISTRATIVE CONFERENCE ROOM**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near Principal's and Vice Principal's office
2. Near Reception Area
3. Near Secretarial Area

**CASEWORK**

1. Casework is not necessary in conference room.

**SPECIALTY ITEM**

White, magnetic market board

**LOOSE FURNISHINGS**

Conference Table  
Chairs  
Waste basket

**E. MAIL/WORK/COPY AREA**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near Secretarial Area
2. Near Main Entrance
3. Provide small niche for record files, work surface, and a minimum of (8) fire safe 4 drawer file cabinets.

**CASEWORK**

1. All casework is to be plastic laminate with PVC edge
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate
3. No square edge or 90-degree corners on counter tops
4. There should be a combination of base cabinets and overhead cabinets
5. Provide (1) mailbox slot for each staff/faculty members plus 15 additional spares
6. Provide a 24" under counter refrigerator in Mail/Work/Copy area
7. Must provide an area for counter top microwave Mail/Work/Copy area

**LOOSE FURNISHINGS**

Multiple three-drawer file cabinets  
Provide small niche for record files and work surface  
Provide a minimum of (8) fire safe file cabinets.  
Provide combination safe for valuables or records.

**ELECTRICAL**

1. Provide duplex receptacles 44 inches above the finished floor for equipment on work surfaces

**F. STORAGE**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near Secretarial Area/Administrative support area
2. Near records storage
3. Near Mail/Work/Copy area

**CASEWORK**

1. Casework is not necessary in Administration Storage

## **LOOSE FURNISHINGS**

1. Open metal shelving, no less than 18” deep (if casework is not provided.)

## **SUPPORT SPACES**

### **A. MEDIA CENTER**

The library/media center provides multi-media information to the entire school. This area should encourage and allow for individual, small group, and classroom research.

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near academic center of school
2. Access to classrooms
3. Clear visual circulation throughout the entire space
4. Interior glazing with blinds should be included in library/media center is in an interior core space without natural light
5. Consider skylights

### **CASEWORK**

Casework is not necessary in the library/media center area, however various sizes of casework for dictionaries, magazines, displays, card catalog, etc. may be required. If casework is specified, it should adhere to the following criteria.

1. All casework is to be plastic laminate with PVC edge (wood laminate is acceptable)
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate
3. No square edge or 90-degree corners on counter tops
4. No casework is to be higher than 48” above the finished floor
5. Bookshelves shall be district standard Bretford shelving with wood sides and metal shelves. Bookshelves higher than 48” shall have metal or laminate tops. Bookshelves 48” or lower shall have wood tops to match sides. Any variations from the district standard shall be approved by CSD Facilities Services.

**LOOSE FURNISHINGS**

1. All student furniture is to be constructed of hardwood.
2. All furnishings should have glides for carpeted surfaces
3. Provide flexible options for arrangement of furniture to accommodate small or large groups. The following is a list of suggestions of loose furnishings

Student tables	Computer workstation, adjustable
Student chairs	Casual seating/tables
Lateral file	Circulation desk and task chair
Mobile book carts	Paperback bookracks
Magazine display	Newspaper rack
Study carrels	Wastebasket

**SPECIALTY ITEMS**

White, magnetic dry erase board  
Maximum amount of tackable surfaces where possible.  
Large, motorized projection screen

**B. MEDIA SPECIALIST OFFICE**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Within Library/Media Center
2. Provide interior glazing for clear visual access to library/media center
3. Near or adjacent to data closet that houses the media distribution system (MDS)
4. Near workroom or storage
5. Consider direct/indirect pendant lighting.

**CASEWORK**

1. Casework is not necessary in Media Specialist's Office

**LOOSE FURNISHINGS**

Desk and task chair  
Computer Desk  
Waste basket

**FEATURES & EQUIPMENT**

Vertical blinds on interior glazing  
Master clock/Public address system  
Phone system

**SPECIALTY ITEMS**

Tack board and/or magnetic white board

**C. MEDIA WORKROOM / STORAGE**

The workroom/storage area will be the location where all materials are received, processed and repaired for the library/media center as well as material storage.

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Within library / media center
2. Near or adjacent to media specialist office
3. Provide interior glazing for clear visual access to library/media center

**CASEWORK**

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate
3. No square edge or 90-degree corners on counter tops
4. Both base and overhead cabinets should be provided with stainless steel sink

**LOOSE FURNISHING**

Library Carts  
Wastebasket

**SPECIALTY ITEMS**

Tack board

**FEATURES & EQUIPMENT**

District standard paper towel and soap dispenser

**PLUMBING**

1. Stainless steel sink

**D. AUDIO / VISUAL STORAGE**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Adjacent to or within library/media center
2. Near or adjacent to media specialist office
3. Adjacent to or within the media workroom storage

**CASEWORK**

1. All casework is to be plastic laminate with PVC edge
2. All exposed and semi-exposed vertical and horizontal surfaces are to be High-pressure laminate
3. No square edge or 90-degree corners on counter tops
4. Consider lockable base cabinets for storage of smaller audiovisual equipment

**E. ART ROOM**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near academic core classrooms
2. Near art storage closet
3. Near or adjacent to kiln room
4. Easy access to outdoors

**CASEWORK**

1. All casework is to be plastic laminate with PVC edge.

2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate
3. No square edge or 90-degree corners on counter tops
4. There should be a combination of base cabinets and overhead cabinets for storage in each classroom
5. (1) Lockable, personal storage compartment with garment hooks, must be provided for an adult size coat and personal bag

### **LOOSE FURNISHINGS**

1. All student furniture is to be washable and fully adjustable.
2. All furnishings should have glides for hard surface flooring.
3. All teacher furniture must be movable.
4. Recommended loose furnishings:

Teacher desk and Chair  
Student Desks and Chairs  
Portable computer stand  
4-drawer lateral file cabinet  
2-drawer pedestal file cabinet on casters  
18" Waste Basket

### **FEATURES & EQUIPMENT**

District standard roller shades  
Master clock/Public address system  
Phone system

### **SPECIALTY ITEMS**

Tack-able surface from 36" above the finished floor to ceiling is preferred  
All visual display boards shall be magnetic dry erase boards

### **PLUMBING**

1. Stainless steel sink with solids inceptor

## **E. ART ROOM STORAGE**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near academic core classrooms
2. Near art room

### **CASEWORK**

1. Provide one wall of base and wall cabinets.

### **LOOSE FURNISHINGS**

Open metal shelving, no less than 18" deep (if casework is not provided.)  
Mobile Carts

## **F. KILN ROOM**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Adjacent to the art room
2. Near art storage closet

### **CASEWORK**

1. Casework is not recommended

### **LOOSE FURNISHINGS**

Open metal shelving 18" for storage and drying

### **FEATURES & EQUIPMENT**

Provide roller shades in room

### **HVAC**

1. Room must be fire rated.
2. Ventilation for kiln exhaust



## **G. MUSIC ROOM**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near other noise producing activities
2. Near stage or platform
3. Provide sound attenuation as necessary
4. Must include a student bathroom within Music room.

### **CASEWORK**

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate.
3. No square edge or 90-degree corners on counter tops.
4. There should be a combination of base cabinets and overhead cabinets for storage in each classroom.
5. Consider all types and sizes of musical instruments when designing specific casework.
6. There should be (1) sink in addition to the individual restroom sink in each classroom.

### **LOOSE FURNISHINGS**

1. All student furniture is to be washable and fully adjustable.
2. All furnishings should have glides for hard surface flooring.
3. All teacher furniture must be movable.
4. Recommended loose furnishings:

Teacher desk and Chair  
Student Desks and Chairs  
Portable computer stand  
4-drawer lateral file cabinet  
2-drawer pedestal file cabinet on casters  
Adjustable risers or platforms on lockable casters  
Music stands  
Conductor's podium

18" Waste Basket

### **SPECIALY ITEMS**

Provide maximum amount of tack-able surfaces.  
White magnetic dry erase boards

### **FEATURES & EQUIPMENT**

District standard roller shades  
Master clock/Public address system  
Phone system

### **PLUMBING**

1. Drinking water coolers should be provided in music room. All drinking fountains shall be wall mounted, refrigerated, ADA compliant.

### **H. MUSIC ROOM STORAGE**

#### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Adjacent to or within Music room

#### **CASEWORK**

1. All casework is to be plastic laminate with PVC edge
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate.
3. No square edge or 90-degree corners on counter tops
4. There should be a combination of base cabinets and overhead cabinets for storage in each classroom
5. Consider all types and sizes of musical instruments when designing specific casework

#### **LOOSE FURNISHINGS**

Open metal shelving if casework is not provided

## **I. GYMNASIUM**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near main entrance
2. Near, adjacent to or in conjunction with student dining (cafeteria)
3. Near other high activity ancillary spaces
4. Near Physical Education work room/storage
5. Near communal restrooms
6. Consider skylights if gymnasium is within interior core
7. Consider windows if gym along exterior w

### **CASEWORK**

1. Casework is not recommended for gymnasium

### **LOOSE FURNISHINGS**

Portable magnetic white marker board  
Portable bleachers should be avoided

### **FEATURES & EQUIPMENT**

1. Appropriate height basketball backstops must be provided.
2. Main end goals should be height adjustable
3. Practice side goals should be fixed at lower heights.
4. Motorized divider gym curtain for spatial separation
5. Provide wire guards on light fixtures and wall-mounted electrical devices
6. Provide acoustical treatment

### **PLUMBING**

1. Provide water cooler. All drinking fountains shall be recessed, refrigerated, ADA compliant.

## **J. PHYSICAL EDUCATION WORKROOM/STORAGE**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Adjacent to or within gymnasium
2. Workroom & storage can be separate on integrated spaces.

### **CASEWORK**

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate.
3. No square edge or 90-degree corners on counter tops.
4. There should be a combination of base cabinets and overhead cabinets for storage in each classroom.
5. Consider all types and sizes of physical education equipment when designing specific casework.

### **LOOSE FURNISHINGS**

Teacher desk  
Task chair  
(1) 4-drawer lateral file cabinet  
Open metal shelving, no less than 18" deep (if casework is not provided.)

### **SPECIALTY ITEMS**

White magnetic board  
Tack board

## **K. STUDENT DINING**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Adjacent to or connected with gymnasium
2. Adjacent to food service
3. Near Main entrance

4. Near communal restrooms
5. Adjacent to platform or stage
6. Consider skylights or windows for natural lighting

**CASEWORK**

1. Casework is not necessary in student dining

**LOOSE FURNISHINGS**

Foldable, tables with attached BENCH seating  
Large waste receptacle

**FEATURES & EQUIPMENT**

Master clock/Public address system  
Phone system

**PLUMBING**

1. Drinking water coolers must be provided in cafeteria. All drinking fountains shall be recessed mounted, refrigerated, ADA compliant

**L. STAGE**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Adjacent to student dining
2. Adjacent to gymnasium
3. Near music room
4. Near communal restrooms

**SPECIALTY ITEMS**

Large Projection Screen  
Front curtain and valance (Dark color fabric)  
Handrail wherever ramping occurs

### **M. TABLE STORAGE**

This area is designed for the storage of all tables and chairs used in the student dining/gymnasium area.

#### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near or adjacent to student dining area
2. Near Food Services

### **N. GUIDANCE COUNSELOR'S OFFICE**

#### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near main entrance of building
2. Near Academic core
3. Access to school circulation area

#### **LOOSE FURNISHINGS**

Teacher Desk  
Task Chair  
Guest chairs  
Waste Basket

#### **SPECIALTY ITEMS**

Magnetic, White Marker Board  
Two-prong coat hook installed on back of door  
Master Clock/Public Address system  
Phone system

### **O. GUIDANCE RECORDS STORAGE**

This area is designed to store, supplies, equipment and possibly confidential files.

#### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near Guidance Counselors Office

**LOOSE FURNISHINGS:**

Various sizes of file cabinets

**P. SPECIAL EDUCATION/RESOURCE ROOM**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near academic core classrooms
2. Near communal restrooms

**CASEWORK**

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate
3. No square edge or 90-degree corners on counter tops
4. There should be a combination of base cabinets and overhead cabinets for storage in each classroom
5. (1) Lockable, personal storage compartment with garment hooks, must be provided for an adult size coat and personal bag

**LOOSE FURNISHINGS**

1. All student furniture is to be washable.
2. All furnishings should have glides for hard surface flooring
3. All teacher furniture must be movable
4. Recommended loose furnishings:

Teacher desk and Chair  
Student desk and Chairs  
Portable computer stand  
Mobile bookcases or storage unit  
(1) 4-drawer lateral file cabinet  
(1) 2-drawer pedestal file cabinet on casters  
Waste basket

### **FEATURES & EQUIPMENT**

District standard roller shades  
Master Clock/Public Address system  
Phone System

### **SPECIALTY ITEMS**

1. On all exposed wall surfaces, a tack-able surface from 36" above the finished floor to ceiling is preferred
2. All visual display boards shall be white magnetic dry erase boards.

### **Q. HEALTH CLINIC**

The health clinic is to provide several services to the students that include the treatment of minor injuries or sickness, administration of medication and conduction of hearing and/or visual tests.

The following spaces should be included in a Health Clinic:

Office for processing of paperwork and file storage  
Small reception area  
Cot area  
(2) Student restrooms  
Material/Supply storage  
Medication storage area

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near main entrance of building
2. Near main office (administration area)
3. Near communal restrooms
4. (2) student bathrooms adjacent to or within health clinic with shower stalls
5. Provide appropriate location for administration of medication & lockable storage for materials, supplies and meds.

### **CASEWORK**

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate



3. No square edge or 90-degree corners on counter tops
4. There should be a combination of lockable base cabinets and overhead cabinets in a separate, lockable area for material and supply storage
5. In location where medication will be administered, provide casework that includes a small wash sink

### **LOOSE FURNISHINGS**

Teacher Desk  
Task Chair  
Guest chairs  
Various file storage options  
Wastebasket  
Master clock/public address system  
Phone System

### **SPECIALTY ITEMS**

Magnetic, white marker board in office area  
Two-prong coat hook installed on back of office door  
Tack board in reception area for display materials.

### **PLUMBING**

1. Provide (1) stall shower in student restroom
2. Provide small wash sink in area where medication will be administered

### **R. CUSTODIAL OFFICE/WORKROOM**

The custodial office/workroom is to provide space for all custodial equipment necessary to maintain the building

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near support area of building (i.e. mechanical room)
2. Near loading and receiving
3. Access to outside
4. Near central Storage area

5. Both custodial office and workroom may be either adjacent to one another or included in the same approximate space

### **CASEWORK**

1. Casework is not recommended for custodial areas

### **LOOSE FURNISHINGS**

Desk  
Task Chair  
Work Bench  
Large wastebaskets  
Master clock/Public address system

### **SPECIALTY ITEMS**

Locker for staff members  
Magnetic, white marker board  
Tack board

### **S. COMMUNAL RESTROOMS**

#### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near student dining area, gymnasium and platform
2. Near public usage areas such as spaces listed above
3. Near main entrance
4. Near academic core area
5. Several large, communal restrooms may be located throughout the building
6. Provide as much visual access while maintaining necessary privacy

#### **FEATURES & FIXED EQUIPMENT**

36" long stainless steel grab bar where applicable (ADA)  
48" long stainless steel grab bar where applicable (ADA)  
Large stainless steel waste receptacle  
District standard paper towel, toilet paper, and soap dispenser.  
Mirror, tempered glass, stainless steel angle frame.

## **PLUMBING**

1. All sinks should be solid surface counter top and integral sinks with infrared sensor operated faucets.
2. All toilets are to have battery operated, automatic flush valves.

## **T. CORRIDORS**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Avoid hard edge, 90-degree corners in corridors
2. All corners should be soft edged or bull nose
3. Provide an illuminated display case near main entrance and/or entrance to cafeteria, auditorium and/or gymnasium

### **FEATURES & FIXED EQUIPMENT**

1. Provide (1) personal locker per student
2. All lockers are to be heavy duty metal, with sloped tops. Dark colors are recommended
3. Provide appropriate fire extinguishers and cabinets
4. Master Clock/Public Address system

### **SPECIALTY ITEMS**

Provide tack strips or tack able surfaces throughout all corridors

## **PLUMBING**

1. Provide several water coolers. Drinking fountain shall be recessed in an alcove, refrigerated, ADA compliant

## **U. TIME OUT ROOM**

Time out Room is designed to be a supplemental instructional area for students who require time away from the standard classroom due to behavioral problems

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near administrative area
2. Near academic core area

### **CASEWORK**

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be High-pressure laminate.
3. No square edge or 90-degree corners on counter tops.
4. There should be a combination of base cabinets and overhead cabinets for storage in each classroom.

### **LOOSE FURNISHINGS**

1. All student furniture is to be washable and fully adjustable.
2. All furnishings should have glides for hard surface flooring.
3. All teacher furniture must be movable.
4. Recommended loose furnishings:

Teacher desk and Chair  
Student Desks and Chairs  
Portable computer stand  
Waste Basket

### **FEATURES & EQUIPMENT**

District standard roller shades  
District standard paper towel dispenser  
District standard soap dispenser  
Master Clock/Public address system  
Phone System

**SPECIALTY ITEMS**

Provide maximum amount of tack-able surfaces where possible  
White magnetic dry erase boards

**PLUMBING**

1. There should be (1) sink in addition to the individual bathroom sink in each classroom.

**V. CENTRAL STORAGE**

Central storage is the location where all custodial and building supplies, such as paper products used for entire building will be warehoused

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near loading and receiving area
2. Direct access to building circulation and outdoors

**CASEWORK**

1. Casework is not recommended for central storage

**LOOSE FURNISHINGS**

1. Provide a variety of open metal shelving, no less than 18” deep for flexible storage options.

**W. LOADING & RECEIVING AREA**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near food service spaces
2. Near central storage area
3. Near mechanical/custodial storage and workroom

**FEATURES & EQUIPMENT**

1. Loading dock leveler, if required, and dock bumper

**END OF SECTION**

## **SPACE REQUIREMENTS**

### **MIDDLE SCHOOL**

#### **GENERAL INFORMATION**

The following is a list of areas that should be included in each Middle School but is not limited to the following spaces. An individual education specification committee will be assigned on a per school basis. This committee will develop additional spatial requirements that will reflect a schools specific program. This list is to provide a checklist and point of reference when designing a Middle School.

Each space with specialized requirements is outlined in the following sections. If a space is identified in the following list, but no additional information is provided, it is assumed the education specification team assigned to a construction project will consider it on an individual basis. (For example: table storage has been identified as a space to acknowledge; however no specific information has been provided at this time.)

#### **ACADEMIC CORE** (Typically contained within each “Wing”)

- Middle School Classrooms
- Project Laboratory
- “Wing Design”
- Conference Room/Teacher Work Room
- Staff Restroom
- Material Storage
- Custodial Closet

#### **ADMINISTRATIVE SPACES**

- Reception Area/Main Office
- Administrative Area/Main Office
- Principal’s Office
- Assistant Principal’ Office
- Conference Room
- Mail/Work/ Copy Room
- Administrative Storage
- Individual Staff Restroom See 6.1 Section 5

#### **MEDIA CENTER SPACES**

- Library/Media Center
- Computer Lab (If applicable)
- Media Specialist’s Office

Workroom/Storage  
Audio/Visual Storage

**ANCILLARY SPACES**

Art Room  
Art Room Storage  
Kiln Room  
Instrumental Room/Band Room  
Music Room Storage  
Music Room  
Life Skills Laboratory  
Life Skills Storage  
Gymnasium  
Athletic Office  
Staff Shower Room  
Student Locker Room  
Student Shower Room  
Physical Education Workroom/Storage  
Auditorium  
Physical Education Workroom  
Student Dining  
Table Storage  
Food Service (Kitchen) See Chapter 14  
Staff Lounge  
General Office(s)  
Guidance Counselor's Office  
Guidance Records/Storage  
Health Clinic  
Custodial Office/Workroom  
Custodial Closets See Chapter 5.1-7  
Communal Restrooms  
Time Out Room (In school suspension ISS)  
Corridors  
Central Storage Area  
Loading /Receiving Area

## **A. MIDDLE SCHOOL CLASSROOMS**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Arranging of students by grade level in the form of “wings” is highly advantageous.
2. Direct access to communal restrooms, lockers and project laboratory.
3. Near teacher/prep workroom
4. Near instructional/material storage
5. (1) personal locker should be provided for each student within a classroom or in close proximity to classroom area.
6. Lockers should be heavy-grade metal with sloped tops. Dark colors are preferred.

### **CASEWORK**

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate.
3. No square edge or 90-degree corners on counter tops.
4. There should be a combination of base cabinets and overhead cabinets for storage in each classroom.
5. (1) Lockable, personal storage compartment with garment hooks, must be provided for an adult size coat and personal bag.

### **LOOSE FURNISHINGS**

1. All student furniture is to be fully adjustable and washable.
2. All furnishings should have glides for hard surface flooring.
3. All teacher furniture must be portable



4. Recommended loose furnishings:

Teacher desk and Chair  
Student desks and Chairs  
Portable computer stand  
(1) 4-drawer lateral file cabinet  
(1) 2-drawer pedestal file cabinet on casters  
Waste basket

**FEATURES & EQUIPMENT**

District standard roller shades in classrooms.  
Master clock/Public address system  
Phone system

**SPECIALTY ITEMS**

Tackable surfaces where possible  
White magnetic dry erase boards.

**B. PROJECT LABORATORY**

This laboratory may serve multi-discipline areas and will be used for lecture, experiments, and various activities

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Adjacent to at least one classroom with easy access to other academic core classrooms
2. Direct access to communal restrooms and lockers
3. Laboratory should have an area large enough for preparation of materials by students and staff

**CASEWORK**

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate.
3. No square edge or 90-degree corners on counter tops.
4. There should be a combination of base cabinets and overhead cabinets for storage in each project laboratory.

**LOOSE FURNISHINGS**

1. All student furniture is to be fully adjustable and washable.
2. All furnishings should have glides for hard surface flooring.
3. All teacher furniture must be portable
4. Recommended loose furnishings:

Teacher desk and Chair  
Student desks and Chairs  
Portable computer stand  
(1) 4-drawer lateral file cabinet  
(1) 2-drawer pedestal file cabinet on casters  
Waste basket

**FEATURES & EQUIPMENT**

District standard roller shades  
Master clock/Public address system  
Phone system

**SPECIALTY ITEMS**

1. On all exposed wall surfaces, a tack-able surface from 36” above the finished floor to ceiling is preferred.
2. Loose specialty items:
  - White magnetic dry erase boards.
  - Eye wash station
  - Provide appropriate safety glass storage for supplies (i.e. chemicals).
3. Provide exhaust for chemical storage.

### **C. WING DESIGN**

Wing” design encourages the housing or clustering of all disciplines and several supports spaces, by grade level. This method of organizing space creates a “school within a school” atmosphere. A larger area within the corridor or “wing” may be considered to enhance the communal environment.

#### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Each wing or cluster should consist of the following areas:

- Classrooms (multi-disciplinary)
- Communal restroom
- Staff Restroom
- Material storage closet
- Conference room/Teacher work room
- Custodial closet
- Project laboratory

#### **CASEWORK**

1. Casework is not recommended within “wing” pod area.

#### **LOOSE FURNISHINGS**

1. Loose furnishings and furniture are not recommended in “wing” areas.

#### **SPECIALTY ITEMS**

1. Provide a large tack-able surface to display information.

#### **PLUMBING**

1. Provide water cooler. All drinking fountains should be wall mounted, refrigerated, ADA compliant.

### **D. CONFERENCE ROOM – TEACHER WORKROOM AREA**

#### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

Near academic core classrooms

Near individual “adult” restroom

Near instructional or material storage

Minimum of (1) conference room/teacher workroom should be within each “wing” of building

### **CASEWORK**

1. Note: Casework is not necessary in conference rooms. If casework is specified, it should adhere to the following criteria:
2. All casework is to be plastic laminate with PVC edge
3. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate
4. No square edge or 90-degree corners on counter tops
5. There should be a combination of lockable base cabinets and overhead cabinets

### **LOOSE FURNISHINGS**

Large table and chairs  
Computer workstation furniture if necessary  
Waste Basket

If casework is not provided, and the room will be multi-functional as a workroom/teacher prep room, shelving or bookcases should be provided.

### **FEATURES & EQUIPMENT**

Master clock/Public address system  
Phone system

### **SPECIALTY ITEMS**

Magnetic, White Marker Board

## **E. STAFF RESTROOMS**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near academic core classrooms
2. Near Teacher Conference Room/Work Room

3. A single individual staff restroom should be located within main office area.

### **CASEWORK**

1. Casework is not recommended in restrooms.

### **FEATURES & FIXED EQUIPMENT**

36" long stainless steel grab bar  
48" long stainless steel grab bar  
Waste receptacle, surface mounted stainless steel  
District standard towel dispenser  
District standard toilet tissue dispenser  
District standard soap dispenser  
Mirror, tempered glass, stainless steel angle frame

### **SPECIALTY ITEMS**

Provide small stainless steel shelf to temporarily hold purse, books, folders, etc.  
Provide two-prong coat rack on back of door.

### **PLUMBING**

1. Both the water closet and the lavatory shall be wall mounted.

## **F. MATERIAL STORAGE**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near academic core classrooms
2. Near Teacher Conference Room/Work Room
3. Minimum of (1) material storage room should be within each "wing" of building.

### **CASEWORK**

Casework is not necessary in Material Storage Rooms. If casework is specified, it should adhere to the following criteria:

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate.

3. No square edge or 90-degree corners on counter tops.

**LOOSE FURNISHINGS**

Open metal shelving, no less than 18” deep (if casework is not provided)

**F. CUSTODIAL CLOSET**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near academic core classrooms
2. Should be located within communal space of pod.

**LOOSE FURNISHINGS**

Open metal shelving, no less than 18” deep

**FEATURES & FIXED EQUIPMENT**

30” square mop receptor  
Shelves with mop and broom and hooks

**G. RECEPTION AREA/MAIN OFFICE**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Open to secretarial area
2. Direct visual access to main entrance of the building, provide interior glazing where necessary
3. Provide either 42” high countertop/work surface or appropriate reception desk.

**CASEWORK**

1. Casework is not necessary in the reception area, unless designed as a reception desk.

**LOOSE FURNISHINGS**

Visitors chairs  
End table  
Wastebasket

**FEATURES & EQUIPMENT**

Master clock/Public address system  
Phone system

**SPECIALTY ITEMS**

Provide tack able surfaces for display materials.  
White, magnetic dry erase board

**H. ADMINISTRATIVE AREA/MAIN OFFICE**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Adjacent to or partially open to reception area
2. Non-direct visual access to main entrance of building
3. Adjacent to all primary administrative functions (i.e. work/copy/mail room, kitchenette, principal's office, conference room, storage area.)
4. Provide designated area for lockable cabinet housing all security systems near necessary duplex receptacles as well as A-Jack

**CASEWORK**

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high- pressure laminate.
3. No square edge or 90-degree corners on counter tops.
4. There should be a combination of base cabinets and overhead cabinets.

**LOOSE FURNISHINGS**

Task Chair(s)  
Systems furniture  
Wastebasket

**FEATURES & EQUIPMENT**

Master clock/Public address system  
Phone system

**SPECIALTY ITEMS**

White, magnetic marker board

**I. PRINCIPLE’S OFFICE**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near reception area
2. Near secretarial area
3. Easy access to school circulation areas
4. Near main entrance to the building
5. Near conference room
6. Provide interior glazing with blinds for visual access to corridors or adjacent spaces where appropriate.
7. The principal’s office should be large enough to accommodate a small (4) person conference table and guest chairs

**CASEWORK**

1. Casework is not recommended in either principal’s or vice principal’s office

**LOOSE FURNISHINGS**

Task Chair(s)  
Desk and task chair  
Guest Chairs  
Small conference table to accommodate 4 adults  
Bookcase and appropriate file storage  
Wastebasket

**FEATURES & EQUIPMENT**

Master clock/Public address system  
Phone System



**SPECIALTY ITEMS**

Small magnetic white marker board  
Two-prong coat hook installed on back of door

**I. ASSISTANT PRINCIPLE’S OFFICE**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Assistant Principal should be located in each wing, or strategically placed throughout the building.
2. Easy access to school circulation areas
3. Near conference room
4. Provide interior glazing with blinds for visual access to corridors or adjacent spaces when appropriate.
5. The Assistant Principal’s office should be large enough to accommodate a small (4) person conference table and guest chairs.

**CASEWORK**

1. Casework is not recommended in the Assistant Principal’s office

**LOOSE FURNISHINGS**

Task Chair(s)  
Desk and task chair  
Guest Chairs  
Small conference table to accommodate (4 )adults  
Bookcase and appropriate file storage  
Wastebasket

**FEATURES & EQUIPMENT**

Master clock/Public address system  
Phone system

**SPECIALTY ITEMS**

Small magnetic white marker board  
Two-prong coat hook installed on back of door

**J. ADMINISTRATION AREA CONFERENCE ROOM**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near Principal's
2. Near Reception Area
3. Near Secretarial Area
4. Within the administration area/main office

**CASEWORK**

1. Casework is not necessary in conference room

**LOOSE FURNISHINGS**

Conference Table  
Chairs  
Waste basket

**FEATURES & EQUIPMENT**

Master clock/Public address system  
Phone system

**SPECIALTY ITEMS**

Two-prong coat hook installed on back of door  
White, magnetic market board

**K. MAIL/WORK/COPY AREA**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near Secretarial Area
2. Near Main Entrance
3. Provide small niche for record files.

**CASEWORK**

1. All casework is to be plastic laminate with PVC edge
2. All exposed and semi-exposed vertical and horizontal surfaces are to be
3. high-pressure laminate
4. No square edge or 90-degree corners on counter tops
5. There should be a combination of base cabinets and overhead cabinets
6. Provide (1) mailbox slot for each staff/faculty member plus 20 additional slots.
7. Provide a 24" under counter refrigerator in Mail/Work/Copy area
8. Provide area for counter top microwave and other necessary equipment in Mail/Work/Copy area.
9. Provide adequate space for over size copier, and all necessary equipment and supplies.

**LOOSE FURNISHINGS**

Multiple three-drawer file cabinets should be provided  
A minimum of (8) fire-safe file cabinets  
Provide combination safe for valuable items & records.

**L. ADMINISTRATIVE STORAGE**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near Secretarial Area/Administrative support area
2. Near records storage
3. Near Mail/Work/Copy area

**CASEWORK**

1. Casework is not necessary in Administration Storage.

**LOOSE FURNISHINGS**

Open metal shelving, no less than 18" deep (if casework is not provided.)

## **J. LIBRARY/MEDIA CENTER**

The library/media center provides multi-media information to the entire school. This area should encourage and allow for individual, small group, and classroom research.

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near academic center of school
2. Access to classrooms
3. Clear visual circulation throughout the entire space
4. Interior glazing with blinds should be included in library/media center if it is in an interior core space without natural light
5. Consider skylights

### **CASEWORK**

Casework is not necessary in the library/media center area, however various sizes of casework for dictionaries, magazines, displays, card catalog, etc. may be required. If casework is specified, it should adhere to the following criteria

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate.
3. No square edge or 90-degree corners on counter tops.

### **LOOSE FURNISHINGS**

1. All student furniture is to be washable and fully adjustable
2. All furnishings should have glides for carpeted surfaces

3. Provide flexible options for arrangement of furniture to accommodate small or large groups. The following is a list of suggestions of loose furnishings

- Student tables
- Computer workstation furniture
- Student chairs
- Casual seating/tables
- Lateral files
- Circulation desk and task chair
- Mobile book carts
- Paperback bookracks
- Magazine display
- Newspaper rack
- Study carrels
- Wastebasket

#### **FEATURES & EQUIPMENT**

- Master clock/Public address system
- Phone system

#### **SPECIALTY ITEMS**

- White, magnetic dry erase board
- Wherever possible, provide maximum amount of tack able surfaces.
- Large motorized screen with projection capabilities

#### **K. MEDIA SPECIALIST OFFICE**

##### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Within Library/Media center area provide interior glazing for clear visual access to library/media center
2. Near or adjacent to data closet that houses the media distribution system (MDS)
3. Near workroom or storage

##### **CASEWORK**

1. Casework is not necessary in Media Specialist's Office

**LOOSE FURNISHINGS**

Desk and task chair  
Computer Desk  
Waste basket

**FEATURES & EQUIPMENT**

Master clock/Public address system  
Phone system

**SPECIALTY ITEMS**

Tack board and magnetic white board

**L. MEDIA CENTER WORKROOM/STORAGE**

The workroom/storage area will be the location where all materials are received, processed and repaired for the library/media center as well as material storage.

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Within library/media center
2. Near or adjacent to media specialist office
3. Provide interior glazing for clear visual access to library/media center

**CASEWORK**

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high- pressure laminate.
3. No square edge or 90-degree corners on counter tops.
4. Both base and overheard cabinets should be provided with stainless steel sink.

**LOOSE FURNISHING**

Library Carts  
Wastebasket

**SPECIALTY ITEMS**

Tack board and white, magnetic dry erase board.

**FEATURES & EQUIPMENT**

District standard towel dispenser  
District standard soap dispenser  
Stainless steel sink  
Audio/Visual Storage

**CASEWORK**

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate.
3. No square edge or 90-degree corners on counter tops.
4. Consider lockable base cabinets for storage of smaller audiovisual equipment

**M. ART ROOM**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near academic core classrooms
2. Near art storage closet
3. Near or adjacent to kiln room
4. Easy access to outdoors

**CASEWORK**

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate.
3. No square edge or 90-degree corners on counter tops.
4. There should be a combination of base cabinets and overhead cabinets for storage in each classroom.

5. Lockable, personal storage compartment with garment hooks, must be provided for an adult size coat and personal bag.

### **LOOSE FURNISHINGS**

1. All student furniture is to be fully adjustable and washable.
2. All furnishings should have glides for hard surface flooring.
3. All teacher furniture must be movable.
4. Recommended loose furnishings:

Teacher desk and Chair  
Student Desks and Chairs  
Portable computer stand  
(1) 4-drawer lateral file cabinet  
(1) 2-drawer pedestal file cabinet on casters  
18" Waste Basket  
Master clock/Public address system

### **FEATURES & EQUIPMENT**

Provide roller shades in room  
Master clock/Public address system  
Phone system

### **SPECIALTY ITEMS**

White magnetic dry erase boards.

### **PLUMBING**

1. Supply one (1) Stainless steel sink with solids inceptor



## **N. ART ROOM STORAGE**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near academic core classrooms
2. Near art room

### **CASEWORK**

1. Casework is not necessary in art room storage

### **LOOSE FURNISHINGS**

Open metal shelving, no less than 18” deep (if casework is not provided.)  
Mobile Carts

## **O. KILN ROOM**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Adjacent to art room
2. Near art storage closet

### **CASEWORK**

1. Casework is not recommended

### **LOOSE FURNISHINGS**

Open metal shelving 18” for storage and drying

### **HVAC**

1. Room must be fire rated
2. Ventilation for kiln exhaust in addition to appropriate ventilation to room

**P. INSTRUMENTAL ROOM/BAND ROOM**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near academic core classrooms
2. Near other noise producing activities
3. Near or adjacent to Instrumental/band room and music storage
4. Near stage or platform
5. Access to outdoors and parking

**CASEWORK**

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate.
3. No square edge or 90-degree corners on counter tops.
4. There should be a combination of base cabinets and overhead cabinets for storage in each classroom.
5. Consider all types and sizes of musical instruments when designing specific casework.

**LOOSE FURNISHINGS**

1. All student furniture is to be washable and fully adjustable.
2. All furnishings should have glides for hard surface flooring.
3. All teacher furniture must be movable.
4. Recommended loose furnishings:

Teacher desk and Chair  
Student Desks and Chairs  
Portable computer stand  
(1) 4-drawer lateral file cabinet  
(1) 2-drawer pedestal file cabinet on casters  
Adjustable risers or platforms on lockable casters  
Music stands  
Conductor's podium

18" Waste Basket

**FEATURES & EQUIPMENT**

District standard roller shades in classrooms  
Master clock/Public address system  
Phone system

**SPECIALTY ITEMS**

White magnetic dry erase boards.

**Q. MUSIC ROOM STORAGE**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Adjacent to instrumental/bank room and music room

**CASEWORK**

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate.
3. No square edge or 90-degree corners on counter tops.
4. There should be a combination of base cabinets and overhead cabinets for storage in each classroom.
5. Consider all types and sizes of musical instruments when designing specific casework.

## **R. MUSIC ROOM**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near academic core classrooms
2. Near other noise producing activities
3. Near or adjacent to Instrumental/band room and music storage
4. Near stage or platform
5. Access to outdoors and parking

### **CASEWORK**

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate.
3. No square edge or 90-degree corners on counter tops.
4. There should be a combination of base cabinets and overhead cabinets for storage in each classroom.
5. Consider all types and sizes of musical instruments, study supplies and sheet music when designing specific casework.

### **LOOSE FURNISHINGS**

1. All student furniture is to be washable and fully adjustable.
2. All furnishings should have glides for hard surface flooring.
3. All teacher furniture must be movable
4. Recommended loose furnishings:

Teacher desk and Chair  
Portable computer stand  
(1) 4-drawer lateral file cabinet  
(1) 2-drawer pedestal file cabinet on casters  
Music Chairs  
Adjustable risers or platforms on lockable casters  
Music stands

Conductor's podium  
18" Waste Basket

### **FEATURES & EQUIPMENT**

Provide roller shades in classrooms  
Master clock/Public address system  
Phone system

### **SPECIALTY ITEMS**

Provide maximum amount of tack able surfaces  
White magnetic dry erase boards.

## **S. LIFE SKILLS LABORATORY**

Life skills laboratory houses the facilities used for career path disciplines, home economics, family living programs and consumer science programs. Examples may include: Culinary Arts, Agriculture Science, Technology, and Business Education. These laboratories must provide a flexible environment for hands-on activities and demonstrations in an individual or group atmosphere.

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near other noise producing activities
2. Near or adjacent to storage area

### **CASEWORK**

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate.
3. No square edge or 90-degree corners on counter tops.
4. There should be a combination of base cabinets and overhead cabinets for storage in each laboratory.
5. Provide ample work surface or casework for microwave, refrigerator, range, ovens, dishwasher, sewing machine, laundry facilities or other necessary equipment to support specific programmatic functions.
6. Lockable, personal storage compartment with garment hooks, must be provided for an adult size coat and personal bag.

**LOOSE FURNISHINGS**

1. All student furniture is to be fully adjustable and washable.
2. All furnishings should have glides for hard surface flooring.
3. All teacher furniture must be movable
4. Recommended loose furnishings:

Teacher desk and Chair  
Student Desks and Chairs  
Portable computer stand  
(1) 4-drawer lateral file cabinet  
(1) 2-drawer pedestal file cabinet on casters  
18" Waste Basket

**FEATURES & EQUIPMENT**

Provide district standard roller shades in classrooms  
Master clock/Public address system  
Phone system

**SPECIALTY ITEMS**

White magnetic dry erase boards.  
Provide maximum amount of tack able surfaces

**ELECTRICAL**

1. Provide necessary duplex receptacles at 44" above the finished floor for various appliances.

**T. LIFE SKILLS STORAGE**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near or adjacent to Life Skills laboratory

**CASEWORK**

1. Casework is not recommended for life skills storage

**LOOSE FURNISHINGS**

Open metal shelving, no less than 18" deep

## **U. GYMNASIUM**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near main entrance
2. Near, adjacent to, or in conjunction with student dining (cafetorium)
3. Near other high activity ancillary spaces
4. Near Physical Education work room/storage
5. Near Locker rooms
6. Direct access to outdoors

### **CASEWORK**

1. Casework is not recommended for gymnasium

### **LOOSE FURNISHINGS**

Portable magnetic white marker board  
Portable bleachers should be avoided

### **FEATURES & EQUIPMENT**

Telescoping bleachers  
Regulation size basketball court  
Motorized divider gym curtain for spatial separation  
Provide wire guards on light fixtures and wall-mounted devices.  
Provide acoustical treatment.

### **PLUMBING**

1. Drinking water coolers must be provided in gymnasium. All drinking fountains shall be recessed, mounted refrigerated ADA compliant.

### **ELECTRICAL**

1. High Intensity Discharge lighting
2. Consider supplemental lighting that can quickly be turned on/off for emergency circulation
3. Central Sound System

4. Gymnasium sound system
5. Electrical connections to Physical Education equipment where necessary
6. Scoreboard

## **V. ATHLETIC OFFICE**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near or adjacent to gymnasium
2. Near or adjacent to student locker rooms
3. Near staff shower
4. Provide interiors glazing if necessary for visual access to adjacent corridors or spaces

### **CASEWORK**

1. Casework is not necessary in the Athletic Office

### **LOOSE FURNISHINGS**

Teacher desk and chair  
Visitor Chair  
(1) 4 drawer lateral file  
Wastebasket

### **SPECIALTY ITEMS**

White magnetic dry erase board  
Master clock/public address system  
Phone system



## **W. STAFF SHOWER ROOM**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Adjacent to, or near athletic office

### **LOOSE FURNISHINGS**

Waste Basket

### **FEATURES & EQUIPMENT**

36" long stainless steel grab bar  
48" long stainless steel grab bar  
Large stainless steel waste receptacle  
District standard towel dispenser.  
District standard toilet tissue dispenser  
District standard soap dispenser  
Mirror, tempered glass, stainless steel angle frame.  
Shower curtain and rod  
Towel hooks  
Lockers: Heavy duty metal lockers with sloped tops

## **X. STUDENT LOCKER ROOM**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Adjacent to student restrooms and showers
2. Near both gymnasium and outdoor area
3. Adjacent to Physical Education office

### **LOOSE FURNISHINGS**

Wastebasket  
Heavy duty metal athletic lockers with sloped tops  
Locker benches  
Master clock system  
Phone system

### **SPECIALTY ITEMS**

White magnetic dry erase board

**PLUMBING**

1. Provide water cooler. All drinking fountains shall be wall mounted, refrigerated, ADA compliant.

**Y. STUDENT RESTROOM/SHOWER ROOM**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Adjacent to student locker room.
2. Direct access to gymnasium and outdoor area.

**CASEWORK**

1. Casework is not recommended in student shower rooms

**LOOSE FURNISHINGS**

Wastebasket(s)

**FEATURES & EQUIPMENT**

Shower curtain and rod  
Towel hooks  
District standard soap dispensers  
Sanitary product receptacles  
Modesty shower partitions  
Toilet partitions  
District standard toilet tissue dispenser  
Mirror, tempered glass, stainless steel angle frame.  
District standard towel dispenser

**PLUMBING**

1. Wall mounted water closets, lavatories, and urinals

**Z. PHYSICAL EDUCATION WORKROOM/STORAGE**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Adjacent to or within gymnasium

**LOOSE FURNISHINGS**

Open metal shelving, no less than 18" deep

**AA. AUDITORIUM**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near main entrance
2. Near public parking
3. Auditorium should be able to accommodate a minimum of  $\frac{1}{2}$  the anticipated school capacity

**CASEWORK**

1. Casework is not necessary in auditorium

**LOOSE FURNISHINGS**

Auditorium style seating  
Podium

**FEATURES & EQUIPMENT**

Front curtain, track, and valance (preferably a dark color)  
Rear curtain  
Projection Screen  
Sound control console  
Lighting control console  
Handrail wherever ramping occur  
Master clock/Public address system  
Phone system

**ELECTRICAL**

1. High Intensity Discharge Lighting
2. Dimmable lighting
3. Theatrical lighting
4. Central sound system
5. Auditorium sound system

**BB. PHYSICAL EDUCATION/WORKROOM**

**ADJACENCES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near academic core classrooms
2. Should be located within communal space of pod.

**CASEWORK**

1. Casework is not recommended for custodial closets.

**LOOSE FURNISHINGS**

Open metal shelving, no less than 18" deep

**SPECIALTY ITEMS**

Shelves with mop and broom holder and hooks.

**PLUMBING**

1. Provide one (1) 30" square mop receptor.

## **CC. STUDENT DINING**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Adjacent to food service
2. Near Main entrance
3. Near communal restrooms
4. Consider skylights for natural lighting wherever possible.

### **LOOSE FURNISHINGS**

Foldable, tables with attached BENCH seating  
Large waste receptacles

### **PLUMBING**

1. Provide water cooler. Drinking fountain shall be recessed mounted, refrigerated, ADA compliant

## **DD. TABLE STORAGE**

This area is designed for the storage of all tables and chairs used in the student dining/gymnasium area.

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near or adjacent to student dining area
2. Near Food Services

## **EE. STAFF LOUNGE**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near other non-academic core areas
2. Adjacent to or within the staff lounge should be (1) staff restroom
3. Consider the location of various vending machines and necessary equipment (large copier, laminator etc).

4. Access to school circulation areas

#### **CASEWORK**

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate
3. No square edge or 90-degree corners on counter tops.
4. There should be a combination of base cabinets and overhead cabinets for storage as well as a large work surface
5. Provide enough work surface area to accommodate printer, fax, and other necessary equipment

#### **LOOSE FURNISHINGS**

Tables  
Chairs  
Lounge seating if applicable  
Wastebasket

#### **FEATURES & EQUIPMENT**

Stainless Steel Sink  
Microwave  
Full size residential refrigerator  
Master clock/Public address system  
Phone system

#### **SPECIALTY ITEMS**

Magnetic white marker board  
Large, tack board

**FF. GENERAL OFFICE**

Several offices will be necessary for a variety of functions that will be determined specifically by each educational program. For example, school psychologist, reading specialist, school therapist, and volunteer office etc. etc.

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Provide interior glazing to adjacent spaces or corridors if necessary

**LOOSE FURNISHINGS**

Teacher Desk  
Task Chair  
Guest chairs  
Various file storage options  
Wastebasket

**SPECIALTY ITEMS**

Magnetic, White Marker Board  
Two-prong coat hook installed on back of door

**FEATURES & EQUIPMENT**

Master clock/Public access address  
Phone system  
Systems furniture

**GG. GUIDANCE COUNSELOR'S OFFICE**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near main entrance of building
2. Accessible to academic core
3. Access to school circulation area
4. Provide interior glazing to adjacent spaces or corridors if necessary.

**LOOSE FURNISHINGS**

Teacher Desk  
Task Chair  
Guest chairs

Various file storage options  
Wastebasket

**FEATURES & EQUIPMENT**

Master clock/Public address system  
Phone system

**SPECIALTY ITEMS**

Magnetic, White Marker Board  
Two-prong coat hook installed on back of door

**HH. GUIDANCE RECORDS STORAGE**

This area is designed to store, supplies, equipment and possibly confidential files.

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near Guidance Counselors Office

**LOOSE FURNISHINGS:**

Various sizes of file cabinets

**II. HEALTH CLINIC**

The health clinic is to provide several services to the students that include the treatment of minor injuries or sickness, administration of medication and conduction of hearing and/or visual tests.

The following spaces should be included in a Health Clinic:

Office for processing of paperwork and file storage  
Small reception area  
Examination area  
Student restrooms  
Material/Supply storage  
Lockable Medication storage area  
(2) student bathrooms, each with shower adjacent to or within health clinic



**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near main entrance of building
2. Near main office (administration area)
3. Near communal restrooms
4. Provide a large storage closet for supplies and medication(s)

**CASEWORK**

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate.
3. No square edge or 90-degree corners on counter tops.
4. There should be a combination of base cabinets and overhead cabinets in a separate, lockable area for material and supply storage.
5. In location where medication will be administered, provide casework that includes a small wash sink with automatic faucet.

**LOOSE FURNISHINGS**

Teachers Desk  
Task Chair  
Guest Chair  
Filing Options  
Wastebasket  
Minimum (4) cots  
Master clock / PA System  
Phone System  
Refrigerator w/ icemaker  
Teacher Desk

**FEATURES & EQUIPMENT**

Master clock/Public address system  
Phone system

**SPECIALTY ITEMS**

Magnetic, white marker board in office area  
Two-prong coat hook installed on back of office door  
Tack board in reception area for display materials

**PLUMBING**

1. Provide (1) stall shower in student restroom
2. Provide small wash sink in area where medication will be administered

**JJ. CUSTODIAL OFFICE/WORKROOM**

The custodial office/workroom is to provide space for all custodial equipment necessary to maintain the building

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near support area of building (i.e. mechanical room)
2. Near loading and receiving
3. Access to outside
4. Near central Storage area

**LOOSE FURNISHINGS**

Desk  
Task Chair  
Work Bench  
Large wastebaskets  
Open metal shelving minimum 18" deep

**FEATURES & EQUIPMENT**

Master clock/Public address system  
Phone system

**SPECIALTY ITEMS**

Provide locker for staff members.  
Lockers should be heavy-duty metal with sloping tops.  
Magnetic, white marker board  
Tack board

**KK. COMMUNAL RESTROOMS**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near Student dining area, gymnasium and auditorium
2. Near public usage areas such as spaces listed above
3. (1) Communal restroom near main entrance
4. Several, large communal restrooms will be locate throughout the building
5. Provide as much visual access while maintaining necessary privacy.

**CASEWORK**

1. Casework is not recommended in restrooms

**FEATURES & FIXED EQUIPMENT**

36" long stainless steel grab bar where applicable (ADA)  
48" long stainless steel grab bar where applicable (ADA)  
Large stainless steel waste receptacle  
District standard towel dispenser  
District standard toilet tissue dispenser  
District standard soap dispenser.  
Mirror, tempered glass, stainless steel angle frame.  
Floor mounted overhead braced toilet partitions  
Toilet partitions should be dark color (i.e. charcoal gray speckle)  
Provide sanitary product receptacles only. No dispensers.

**PLUMBING**

All sinks should be solid surface counter top and integral sinks with infrared sensor operated faucets.

All toilets are to have battery operated automatic flush valves.

## **LL. IN SCHOOL SUSPENSION**

The ISS Room is designed to be a supplemental instructional area for students who require time away from the standard classroom due to behavioral problems

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

Near administrative area

Near academic core area

### **CASEWORK**

All casework is to be plastic laminate with PVC edge.

All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate.

No square edge or 90-degree corners on counter tops.

There should be a combination of base cabinets and overhead cabinets for storage in each classroom.

### **LOOSE FURNISHINGS**

1. All student furniture is to be washable and fully adjustable.
2. All furnishings should have glides for hard surface flooring.
3. All teacher furniture must be movable
4. Recommended loose furnishings:

Teacher desk and Chair  
Student Desks and Chairs  
Portable computer stand  
Waste Basket

### **FEATURES & EQUIPMENT**

Provide roller shades in classrooms  
Towel Dispenser to meet district standard  
Soap Dispenser to meet district standard  
Master clock/Public address system  
Phone system

**SPECIALTY ITEMS**

All visual display boards shall be white magnetic dry erase boards.

**MM. CORRIDORS**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Avoid hard edge, 90-degree corners in corridors
2. All corners should be soft edged or bull nose
3. Provide a display case near main entrance and/or entrance to cafeteria, auditorium or gymnasium.

**FEATURES AND EQUIPMENT**

Master clock/Public address system  
Phone system

**FEATURES & FIXED EQUIPMENT**

Provide (1) personal locker per student.

All lockers are to be heavy duty metal, with sloped tops. Dark colors are recommended.

Provide appropriate fire extinguishers and cabinets.

**PLUMBING**

1. Provide several water coolers. Drinking fountain shall be recessed, refrigerated, ADA compliant.

**NN. CENTRAL STORAGE**

Central storage is the location where all custodial and building supplies, such as paper products used for entire building will be warehoused

Near loading and receiving area

Direct access to building circulation and outdoors

Provide a variety of open metal shelving, no less than 18" deep for flexible storage options.

No ceiling required unless agreed upon by CSD Facilities Services

**OO. LOADING & RECEIVING AREA**

Near food service spaces

Near central storage area

Near mechanical/custodial storage and workroom

Adjacent to loading dock

Loading dock leveler, if required, and dock bumpers.

Provide bollards to protect railings, steps, building corners, etc.

## **SPACE REQUIREMENTS HIGH SCHOOLS**

### **GENERAL INFORMATION**

The following is a list of areas that should be included in each High School but is not limited to these spaces.

An individual educational specification committee will be assigned on a per school basis. This committee will develop additional spatial requirements that will reflect a schools specific program. This list is provided as a checklist and point of reference when designing a High School.

### **ACADEMIC CORE (Typically contained within each “Wing”)**

1. High School Classrooms
2. Science Classrooms-General
3. Science Classrooms-Chemistry
4. Science Classrooms-Biology / Science Prep Room
5. Special Education/Resource Room
6. Individual Staff Restroom
7. “Wing Design”
8. Conference Room/Teacher Work Room
9. Material Storage
10. Custodial Closet

### **ADMINISTRATIVE SPACES**

1. Reception Area/Main Office
2. Secretarial Area/Main Office
3. Principal’s Office
4. Assistant Principal’ Office
5. Conference Room/Teacher Workroom
6. Mail/Work/ Copy Room
7. Vault/Records Storage
8. Administrative Storage  
Individual Staff Restroom *See Chapter 12.6-6*

### **MEDIA CENTER SPACES**

1. Library/Media Center
2. Computer Lab (If applicable)
3. Media Specialist’s Office
4. Media Center Workroom/Storage
5. Audio/Visual Storage

**ANCILLARY SPACES**

1. Art Room
2. Art Room Storage
3. Kiln Room
4. Instrumental Room/Band Room
5. Music Room Storage
6. Music Room
7. Life Skills Laboratory
8. Life Skills Storage
9. In-School Suspension
10. Gymnasium
11. Athletic Office
12. Staff Shower Room
13. Student Locker Room
14. Student Restroom/Shower Room
15. Physical Education Workroom/Storage
16. Multi-Use Physical Education Room / Physical Health Classroom
17. Auditorium
18. Student Dining
19. Table Storage
20. Food Service (Kitchen)
21. Staff Lounge
22. General Office(s)
23. Guidance Counselor's Office
24. Guidance Records/Storage
25. Health Clinic
26. Custodial Office/Workroom
27. Custodial Closets
28. Communal Restrooms
29. Corridors
30. Central Storage Area
31. Loading /Receiving Area

**A. HIGH SCHOOL CLASSROOMS**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Arranging of students by grade level in the form of "wings" is highly advantageous. For specific information regarding "wing design" see Section 12.1-8.
2. Direct access to communal restrooms, lockers and laboratory.
3. Near teacher/prep workroom
4. Near instructional/material storage



5. (1) personal locker should be provided for each of the anticipated number of students within a classroom or in close proximity to classroom area.
6. Lockers should be heavy-grade metal with sloping tops. Dark colors are preferred.
7. All classrooms should be located in the academic core area, away from noise producing or public activities
8. Consider auditorium style seating in some alternative classroom environments. For example, designated lecture rooms etc.

### **CASEWORK**

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate.
3. No square edge or 90-degree corners on counter tops.
4. There should be a combination of base cabinets and overhead cabinets for storage in each classroom.
5. (1) Lockable, personal storage compartment with garment hooks, must be provided for an adult size coat and personal bag.

### **LOOSE FURNISHINGS**

1. All student furniture is to be fully adjustable and washable.
2. All furnishings should have glides for hard surface flooring.
3. All teacher furniture must be portable
4. Recommended loose furnishings:
  - Teacher desk and Chair
  - Student desks and Chairs
  - Portable computer stand
  - (1) 4-drawer lateral file cabinet
  - (1) 2-drawer pedestal file cabinet on casters
  - Wastebaskets

### **FEATURES & EQUIPMENT**

Provide roller shades in classrooms  
Phone system  
Master clock/Public address system

## **SPECIALTY ITEMS**

All visual display boards shall be white magnetic dry erase boards.

## **B. SCIENCE CLASSROOMS**

Science classrooms should be set up in a way that promotes group activities, individual instruction and laboratory experimentation. Demonstrations as well as data collection and analysis will also be a primary function of this space

All equipment must comply with current codes and regulations and be approved by the Christina School District Secondary Education Science Department.

CSD is currently evaluating science curriculum and instruction across the district. New science classroom layouts are being developed. Until the final plans and specifications are developed, science classroom layout and design will be approved by the science curriculum team.

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near other science classrooms
2. Proximity to large group restrooms
3. Flexibility of space
4. Provide perimeter sink base cabinets with duplex receptacles mounted at 44" above the finished floor for necessary equipment.

## **E. SPECIAL EDUCATION/RESOURCE ROOM**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near academic core classrooms
2. Near communal restrooms

### **CASEWORK**

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate.
3. No square edge or 90-degree corners on counter tops.

4. There should be a combination of base cabinets and overhead cabinets for storage in each classroom.
5. (1) Lockable, personal storage compartment with garment hooks, must be provided for an adult size coat and personal bag.

**LOOSE FURNISHINGS**

1. All student furniture is to be fully adjustable and washable.
2. All furnishings should have glides for hard surface flooring.
3. All teacher furniture must be movable
4. Recommended loose furnishings:

Teacher desk and Chair  
Student desk and Chairs  
Portable computer stand  
Mobile bookcases or storage unit  
(1) 2 – drawer lateral file cabinet  
(1) 2 – drawer pedestal file cabinet on casters  
(1) 4 – drawer lateral file cabinet  
Waste basket

**FEATURES & EQUIPMENT**

1. Provide roller shades in classrooms.
2. Master clock/Public address system
3. Phone system

**SPECIALTY ITEMS**

1. All visual display boards shall be white magnetic dry erase boards

## **F. INDIVIDUAL STAFF RESTROOMS**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Should be located within communal space of wing.
2. Near academic core classrooms
3. Near Teacher Conference Room/Work Room

### **FEATURES & FIXED EQUIPMENT**

1. 36” long stainless steel grab bar
1. 48” long stainless steel grab bar
2. Large stainless steel waste receptacle
3. Towel Dispenser to meet district standard
4. Toilet tissue dispenser to meet district standard
5. Soap Dispenser to meet district standard
6. Mirror, tempered glass, stainless steel angle frame.

### **SPECIALTY ITEMS**

1. Provide small stainless steel shelf to temporarily hold purse, books, folders, etc

### **G. “WING DESIGN”**

“Wing” design encourages the housing or clustering of all disciplines and several supports spaces, by grade level. This method of organizing space creates a “school within a school” atmosphere. A larger area within the corridor or “wing” may be considered to enhance the communal environment.

#### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Each wing or cluster should consist of the following items:
  - Classrooms (multi-disciplinary)
  - Communal restroom
  - Staff Restroom
  - Material storage closet
  - Conference room/Teacher work room
  - Custodial closet
  - Science laboratory
2. Consider a student lounge environment for senior students in the “senior wing”
3. Heavy-duty metal lockers with waterfall tops should be located in each wing. Dark colors are preferred.
4. Provide appropriate trash receptacles in each “wing”
5. Provide tack strips or tack-able surfaces in each wing for display materials

#### **PLUMBING**

1. Provide water coolers in each wing. All drinking fountains shall be recessed, in an alcove refrigerated, ADA compliant.

## **H. CONFERENCE ROOM/TEACHER WORK ROOM**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Located within communal space of wing.
2. Near academic core classrooms
3. Near individual “adult” restroom
4. Near instructional or material storage
5. Conference room should be large enough to accommodate departmental faculty and staff

### **CASEWORK**

Note: Casework is not necessary in conference rooms. If casework is specified, it should adhere to the following criteria:

1. All casework is to be plastic laminate with PVC edge
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate
3. No square edge or 90-degree corners on counter tops
4. There should be a combination of lockable base cabinets and overhead cabinets

### **LOOSE FURNISHINGS**

1. Large table or work surface
2. Chairs
3. Computer workstation furniture if necessary
4. Waste Basket
5. If casework is not provided, and the room will be multi-functional as a workroom/teacher prep room, shelving or bookcases should be provided.

### **FEATURES & EQUIPMENT**

1. Master clock/Public address system
2. Phone system

**SPECIALTY ITEMS**

1. Magnetic, White Marker Board

**I. MATERIAL STORAGE**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

3. Near academic core classrooms
4. Near Teacher Conference Room/Work Room
3. Minimum of (1) material storage room should be within each “wing” of building

**CASEWORK**

Note: Casework is not necessary in Material Storage Rooms. If casework is specified, it should adhere to the following criteria:

3. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate.
3. No square edge or 90-degree corners on counter tops

**LOOSE FURNISHINGS**

1. Open metal shelving, no less than 18” deep (if casework is not provided)

**J. CUSTODIAL CLOSET**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near academic core classrooms
2. Should be located within communal space of pod.

**LOOSE FURNISHINGS**

1. Open metal shelving, no less than 18” deep

**FEATURES & FIXED EQUIPMENT**

1. 30” square mop receptor.
2. Shelves with mop and broom and hooks

**K. RECEPTION AREA/MAIN OFFICE**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

3. Open to secretarial area
4. Direct visual access to main entrance of the building
3. Provide either 42” high countertop/work surface or appropriate reception desk

**FINISHES**

1. Ceiling: Suspended Acoustical Ceiling Tile (ACT)
2. Walls: All interior walls should be painted masonry construction wherever possible.
3. Floors: Carpet
4. Base: Resilient base.

**CASEWORK**

2. Casework is not necessary in the reception area, unless designed as a reception desk

**LOOSE FURNISHINGS**

- Visitors chairs
- End table
- Waste basket



**FEATURES & EQUIPMENT**

1. Master clock/Public address system
2. Phone system

**SPECIALTY ITEMS**

1. Provide tack able surfaces for display materials
2. White, magnetic dry erase board

**L. ADMINISTRATIVE AREA/MAIN OFFICE**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

3. Adjacent to or partially open to reception area
4. Non-direct visual access to main entrance of building
5. Adjacent to all primary administrative functions (i.e. work/copy/mail room, kitchenette, principal's office, conference room, storage area.)
5. Provide designated area for lockable cabinet housing all security systems near necessary duplex receptacles as well as A-Jack

**CASEWORK**

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high- pressure laminate.
3. No square edge or 90-degree corners on counter tops.
4. There should be a combination of base cabinets and overhead cabinets.

**LOOSE FURNISHINGS**

Task Chair(s)  
Systems furniture  
Wastebasket

**FEATURES & EQUIPMENT**

Master clock/Public address system  
Phone system

**SPECIALTY ITEMS**

White, magnetic marker board

**M. PRINCIPAL’S OFFICE**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near reception area
2. Near secretarial area
3. Easy access to school circulation areas
4. Near main entrance of building
5. Near conference room
6. Provide interior glazing with blinds for visual access to corridors or adjacent spaces when appropriate.
7. The principal’s office should be large enough to accommodate a conference table, and a minimum of (2) additional guest chairs

**CASEWORK**

2. Casework is not recommended in either principal’s or vice principal’s office

**LOOSE FURNISHINGS**

Task Chair(s)  
Desk and task chair  
Guest Chairs  
Conference table to accommodate a minimum of (6) adults  
Bookcase and appropriate file storage  
Wastebasket

**FEATURES & EQUIPMENT**

Master Clock/Public address system  
Phone system

**SPECIALTY ITEMS**

Small magnetic white marker board  
Two-prong coat hook installed on back of door

**N. ASSISTANT PRINCIPAL’S OFFICE**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. (1) Assistant Principal should be located in each wing, or strategically placed throughout the building.
2. Easy access to school circulation areas
3. Near main entrance to the building
4. Near conference room
5. Provide interior glazing with blinds for visual access to corridors or adjacent spaces when appropriate.
6. The Assistant Principal’s office should be large enough to accommodate a (4) person conference table and guest chairs

**CASEWORK**

1. Casework is not recommended in the Assistant Principal’s office

**LOOSE FURNISHINGS**

Task Chair(s)  
Desk and task chair  
Guest Chairs  
Small conference table to accommodate 4 adults  
Bookcase and appropriate file storage  
Wastebasket

**FEATURE & EQUIPMENT**

Master Clock/Public address system  
Phone system

**SPECIALTY ITEMS**

Small magnetic white marker board  
Two-prong coat hook installed on back of door

## **O. CONFERENCE ROOM/TEACHER WORKROOM**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Located within communal space of pod
2. Near academic core classrooms
3. Near individual “adult” restroom
4. Near instructional or material storage
5. Conference room should be large enough to accommodate departmental faculty and staff

### **CASEWORK**

Casework is not necessary in conference rooms. If casework is specified, it should adhere to the following criteria:

1. All casework is to be plastic laminate with PVC edge
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate
3. No square edge or 90-degree corners on counter tops
4. There should be a combination of lockable base cabinets and overhead cabinets

### **LOOSE FURNISHINGS**

Large table or work surface  
Chairs  
Computer workstation furniture if necessary  
Waste Basket

If casework is not provided and the workroom will be multi-functional, bookcases should be provided.

### **FEATURES & EQUIPMENT**

Master clock/public address system  
Phone system

**SPECIALTY ITEMS**

Magnetic, White Marker Board

**P. MAIL/WORK/COPY AREA**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near Secretarial Area
2. Near Main Entrance
3. Provide small niche for record files, work surface, and a minimum of (8) fire safe file cabinets.

**CASEWORK**

1. All casework is to be plastic laminate with PVC edge
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate.
3. No square edge or 90-degree corners on counter tops
4. There should be a combination of base cabinets and overhead cabinets
5. Provide (1) mailbox slot for all staff/faculty members
6. Provide a 24” under counter refrigerator in Mail/Work/Copy area
7. Provide area for counter top microwave and other necessary equipment in Mail/Work/Copy area.
8. Provide adequate space for over size copier, and all necessary equipment and supplies

**LOOSE FURNISHINGS**

Multiple three-drawer file cabinets should be provided  
Provide small niche for record files  
Work surface  
Minimum of (8) fire-safe file cabinet

## **P. VAULT/RECORDS STORAGE**

The vault/records storage area will house all student and security records and should be located in a secure area

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Access to guidance office
2. Access to secretarial personnel
3. Access to administrative personnel

### **LOOSE FURNISHINGS**

Open metal shelving no less than 18” deep  
Fire safe file cabinets  
Fire safe

## **Q. ADMINISTRATIVE STORAGE**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near Secretarial Area/Administrative support area
2. Near records storage
3. Near Mail/Work/Copy area

### **FINISHES**

1. Ceiling: Suspended Acoustical Ceiling Tile (ACT)
2. Walls: All interior walls should be painted masonry construction wherever possible.
3. Floors: Resilient or hard surface flooring
4. Base: Resilient base

### **LOOSE FURNISHINGS**

1. Open metal shelving, no less than 18” deep (if casework is not provided.)

## **R. LIBRARY/MEDIA CENTER**

The library/media center provides multi-media information to the entire school. This area should encourage and allow for individual, small group, and classroom research.

### **ADJACENCIES, SPAT RELATIONSHIPS & DESIGN ISSUES**

1. Near academic center of school
2. Access to classrooms
3. Clear visual circulation throughout the entire space
4. Interior glazing with blinds should be included in library/media center if it is an interior core space without natural light
5. Consider skylights
6. Easy access to public parking

### **CASEWORK**

Casework is not necessary in the library/media center area, however various sizes of casework for dictionaries, magazines, displays, card catalog, etc. may be required. If casework is specified, it should adhere to the following criteria

1. All casework is to be plastic laminate with PVC edge (wood laminate is acceptable)
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate.
3. No square edge or 90-degree corners on counter tops.

### **LOOSE FURNISHINGS**

1. All student furniture is to be washable and fully adjustable
2. All furnishings should have glides for carpeted surfaces
3. Provide flexible options for arrangement of furniture to accommodate small or large groups. The following is a list of suggestions of loose furnishings

- Student tables
- Computer workstation furniture
- Student chairs
- Casual seating/tables
- Lateral files

Circulation desk and task chair  
Mobile book carts  
Paperback bookracks  
Magazine display  
Newspaper rack  
Study carrels  
Wastebasket

**SPECIALTY ITEMS**

1. All visual display boards shall be white magnetic dry erase boards.
2. Large projection screen

**S. MEDIA SPECIALIST OFFICE**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Within Library/Media center area
2. Provide interior glazing for clear visual access to library/media center
3. Near or adjacent to data closet that houses the media distribution system (MDS)
4. Near workroom or storage

**CASEWORK**

1. Casework is not necessary in Media Specialist's Office

**LOOSE FURNISHINGS**

Desk and task chair  
Computer Desk  
Waste basket

**FEATURES & EQUIPMENT**

Master clock/Public address system  
Phone system

**SPECIALTY ITEMS**

Tack board and/or magnetic white board



## **T. MEDIA CENTER WORKROOM/STORAGE**

The workroom/storage area will be the location where all materials are received, processed and repaired for the librarian as well as material storage.

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Within library/media center
2. Near or adjacent to media specialist office
3. Provide interior glazing for clear visual access to library/media center

### **CASEWORK**

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high- pressure laminate.
3. No square edge or 90-degree corners on counter tops.
4. Both base and overhead cabinets should be provided as well as a large work surface area with stainless steel sink.

### **LOOSE FURNISHING**

Library Carts  
Wastebasket

### **SPECIALTY ITEMS**

Tack board or white, magnetic dry erase board.

### **FEATURES & EQUIPMENT**

Towel Dispenser to meet district standards  
Soap Dispenser: to meet district standards

### **PLUMBING**

1. Stainless steel sink

## **U. AUDIO/VISUAL STORAGE**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Adjacent to or within library/media center
2. Near or adjacent to media specialist office
1. Adjacent to or within the media workroom storage

### **CASEWORK**

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate
3. No square edge or 90-degree corners on counter tops
4. Consider lockable base cabinets for storage of smaller audiovisual equipment

## **V. ART ROOM**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near academic core classrooms
2. Near art storage closet
3. Near or adjacent to kiln room
4. Easy access to outdoors

### **CASEWORK**

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate
3. No square edge or 90-degree corners on counter tops
4. There should be a combination of base cabinets and overhead cabinets for storage in each classroom.

5. (1) Lockable, personal storage compartment with garment hooks, must be provided for an adult size coat and personal bag

### **LOOSE FURNISHINGS**

1. All student furniture is to be washable.
2. All furnishings should have glides for hard surface flooring.
3. All teacher furniture must be movable
4. Recommended loose furnishings:

Teacher desk and Chair  
Student Desks and Chairs  
Portable computer stand  
(1) 4-drawer lateral file cabinet  
(1) 2-drawer pedestal file cabinet on casters  
18" Waste Basket

### **FEATURES & EQUIPMENT**

Provide roller shades in room  
Master Clock/Public Address system  
Phone system

### **SPECIALTY ITEMS**

1. Wherever possible, provide maximum amount of tack able surfaces.
2. All visual display boards shall be white magnetic dry erase boards.

### **PLUMBING**

1. Stainless steel sink with solids inceptor

## **W. ART ROOM STORAGE**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

3. Near academic core classrooms
4. Near art room

### **CASEWORK**

2. Casework is not necessary in art room storage

### **LOOSE FURNISHINGS**

Open metal shelving, no less than 18” deep (if casework is not provided.)  
Mobile Carts

## **X. KILN ROOM**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Adjacent to art room
2. Near art storage closet

### **CASEWORK**

1. Casework is not recommended

### **LOOSE FURNISHINGS**

1. Open metal shelving 18” for storage and drying

### **FEATURES & EQUIPMENT**

Provide roller shades in room  
Master Clock/Public address system  
Phone system

### **HVAC**

1. Room must be fire rated
2. Ventilation for kiln exhaust in addition to appropriate ventilation to room

## **Y. INSTRUMENTAL/BAND ROOM**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near academic core classrooms
2. Near other noise producing activities
3. Near or adjacent to Instrumental/band room and music storage
4. Near stage or platform
5. Access to outdoors and parking

### **CASEWORK**

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate.
3. No square edge or 90-degree corners on counter tops.
4. There should be a combination of base cabinets and overhead cabinets for storage in each classroom.
5. Consider all types and sizes of musical instruments when designing specific casework
6. There should be (1) sink in addition to the individual bathroom sink in each classroom

### **LOOSE FURNISHINGS**

1. All student furniture is to be washable and fully adjustable.
2. All furnishings should have glides for hard surface flooring.
3. All teacher furniture must be movable
4. Recommended loose furnishings:

Teacher desk and Chair  
Student Desks and Chairs  
Portable computer stand  
(1) 4-drawer lateral file cabinet  
(1) 2-drawer pedestal file cabinet on casters  
Adjustable risers or platforms on lockable casters  
Music stands

Conductor's podium  
18" Waste Basket

### **FEATURES & EQUIPMENT**

Provide roller shades in classrooms  
Master clock/Public address system  
Phone system  
Consider acoustical treatment on walls, ceilings or floors

### **SPECIALTY ITEMS**

1. Wherever possible, provide the maximum amount of tack able surfaces.
2. All visual display boards shall be white magnetic dry erase boards.

### **Z. MUSIC ROOM STORAGE**

#### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Adjacent to instrumental/bank room and music room

#### **CASEWORK**

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate.
3. No square edge or 90-degree corners on counter tops.
4. There should be a combination of base cabinets and overhead cabinets for storage in each classroom.
5. Consider all types and sizes of musical instruments when designing specific casework.

## **AA. MUSIC ROOM**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near academic core classrooms
2. Near other noise producing activities
3. Near or adjacent to Instrumental/band room and music storage
4. Near stage or platform
5. Access to outdoors and parking

### **CASEWORK**

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate.
3. No square edge or 90-degree corners on counter tops.
4. There should be a combination of base cabinets and overhead cabinets for storage in each classroom.
5. Consider all types and sizes of musical instruments, study supplies and sheet music when designing specific casework.

### **LOOSE FURNISHINGS**

1. All student furniture is to be washable and fully adjustable.
2. All furnishings should have glides for hard surface flooring.
3. All teacher furniture must be movable
4. Recommended loose furnishings:

Teacher desk and Chair  
Portable computer stand  
(1) 4-drawer lateral file cabinet  
(1) 2-drawer pedestal file cabinet on casters  
Music Chairs  
Adjustable risers or platforms on lockable casters  
Music stands

Conductor's podium  
18" Waste Basket

### **FEATURES & EQUIPMENT**

Provide roller shades in classrooms  
Master clock/Public address system  
Phone system

### **SPECIALTY ITEMS**

1. Wherever possible, provide the maximum amount of tack able surfaces.
1. All visual display boards shall be white magnetic dry erase boards.

### **BB. LIFE SKILLS LABORATORY**

Life skills laboratory houses the facilities used for career path disciplines, home economics, family living programs and consumer science programs. Examples may include: Culinary Arts, Agriculture Science, Technology, and Business Education. These laboratories must provide a flexible environment for hands-on activities and demonstrations in an individual or group atmosphere.

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near other noise producing activities
2. Near or adjacent to storage area

### **CASEWORK**

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate.
3. No square edge or 90-degree corners on counter tops.
4. There should be a combination of base cabinets and overhead cabinets for storage in each classroom.
5. Consider providing ample work surface or casework for microwave, refrigerator, range, ovens, dishwasher, sewing machine, laundry facilities or other necessary equipment to support specific programmatic functions



6. (1) Lockable, personal storage compartment with garment hooks, must be provided for an adult size coat and personal bag.

### **LOOSE FURNISHINGS**

1. All student furniture is to be washable.
2. All furnishings should have glides for hard surface flooring.
3. All teacher furniture must be movable
4. Recommended loose furnishings:

Teacher desk and Chair  
Worktables and Chairs  
Portable computer stand  
(1) 4-drawer lateral file cabinet  
(1) 2-drawer pedestal file cabinet on casters  
18" Waste Basket

### **FEATURES & EQUIPMENT**

Provide roller shades in classrooms  
Master clock/public address system  
Phone system

### **SPECIALTY ITEMS**

1. Wherever possible, provide the maximum amount of tack able surfaces.
2. All visual display boards shall be white magnetic dry erase boards.

### **ELECTRICAL**

1. Provide necessary duplex receptacles at 44" above the finished floor for various appliances.

### **CC. LIFE SKILLS STORAGE**

#### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near or adjacent to Life Skills laboratory

### **CASEWORK**

1. Casework is not recommended for life skills storage

**LOOSE FURNISHINGS**

Open metal shelving, no less than 18” deep

**DD. IN SCHOOL SUSPENSION**

In School Suspension is designed to be a supplemental instructional area for students who require time away from the standard classroom due to behavioral problems

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

3. Near administrative area
4. Near academic core area

**CASEWORK**

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate.
3. No square edge or 90-degree corners on counter tops.
4. There should be a combination of base cabinets and overhead cabinets for storage in each classroom.

**LOOSE FURNISHINGS**

1. All student furniture is to be washable and fully adjustable.
2. All furnishings should have glides for hard surface flooring.
3. All teacher furniture must be movable
4. Recommended loose furnishings:

Teacher desk and Chair  
Student Desks and Chairs  
Portable computer stand  
Waste Basket

**FEATURES & EQUIPMENT**

Provide roller shades in classrooms  
Wherever possible, provide the maximum amount of tack able surfaces.

All visual display boards shall be white magnetic dry erase boards.

**SPECIALTY ITEMS**

1. Wherever possible, provide the maximum amount of tack able surfaces.
2. All visual display boards shall be white magnetic dry erase boards

**EE. GYMNASIUM**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

8. Near main entrance
9. Near, adjacent to or in conjunction with student dining (cafeteria)
10. Near other high activity ancillary spaces
11. Near Physical Education work room/storage
12. Near communal restrooms
6. Consider skylights if gymnasium is within interior core

**CASEWORK**

2. Casework is not recommended for gymnasium

**LOOSE FURNISHINGS**

Portable magnetic white marker board  
Portable bleachers should be avoided

**FEATURES & EQUIPMENT**

Appropriate height basketball backstops  
Motorized divider gym curtain for spatial separation  
Provide wire guards on light fixtures and wall-mounted electrical devices  
Telescoping bleachers  
Regulation size basketball court  
Motorized divider gym curtain for spatial separation  
Provide wire guards on light fixtures and wall-mounted devices.  
Provide acoustical treatment.

**PLUMBING**

1. Provide water cooler. All drinking fountains shall be wall mounted, refrigerated handicap style.

**FF. ATHLETIC OFFICE**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near or adjacent to gymnasium
2. Near or adjacent to student locker rooms
3. Near staff shower
4. Provide interiors glazing if necessary for visual access to adjacent corridors or spaces

**LOOSE FURNISHINGS**

Teacher desk and chair  
Visitor Chair  
(1) 4 drawer lateral file  
Wastebasket

**FEATURE & EQUIPMENT**

Master Clock/Public address system  
Phone system

**SPECIALTY ITEMS**

White magnetic dry erase board  
  
Two-prong coat hook installed on back of door

**EE. STAFF SHOWER ROOM**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Adjacent to, or near athletic office

**FINISHES**

1. Ceiling: Cement plaster

2. Walls: Tile wall from floor to ceiling
3. Floors: Poured resinous flooring
4. Base: Integral base

### **LOOSE FURNISHINGS**

Waste Basket

### **FEATURES & EQUIPMENT**

- 36” long stainless steel grab bar.
- 48” long stainless steel grab bar.
- Large stainless steel waste receptacle
- Towel Dispenser to meet district standard
- Toilet Tissue dispenser to meet district standard
- Soap Dispenser to meet district standard
- Mirror, tempered glass, stainless steel angle frame.
- Shower curtain and rod
- Towel hooks
- Provide heavy duty metal lockers with sloped tops

## **GG. STUDENT LOCKER ROOM**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Adjacent to student restrooms and showers
2. Near both gymnasium and outdoor area
3. Adjacent to Physical Education office with clear visual circulation into locker rooms.

### **FINISHES**

1. Ceiling: Drywall or exposed painted structure
2. Walls: All interior walls should be painted masonry construction wherever possible.
3. Floors: Sealed concrete, however alternative flooring options such as rubber tile should be considered
4. Base: Resilient base.

**LOOSE FURNISHINGS**

Wastebasket

**FEATURES & EQUIPMENT**

Heavy duty metal athletic lockers with sloped tops  
Locker benches

**SPECIALTY ITEMS**

White magnetic dry erase board

**PLUMBING**

1. Provide water cooler. All drinking fountains shall wall mounted, refrigerated, ADA compliant.

**HH. STUDENT RESTROOM/SHOWER ROOM**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Adjacent to student locker room.
2. Direct access to gymnasium and outdoor area.

**FINISHES**

1. Ceiling: Cement plaster
2. Walls: All interior walls should be painted masonry construction wherever possible. In shower area, all walls should be tile from floor to ceiling
3. Floors: Poured resinous flooring
4. Base: Integral base

**CASEWORK**

1. Casework is not recommended in student shower rooms

**LOOSE FURNISHINGS**

Wastebasket(s)

**FEATURES & EQUIPMENT**

Shower curtain and rod  
Towel hooks  
Soap dispensers  
Sanitary product receptacles  
Modesty shower partitions  
Toilet partitions  
Twin toilet tissue holders to meet district standard  
Mirror, tempered glass, stainless steel angle frame.  
Towel dispensers to meet district standard

**PLUMBING**

1. Wall mounted water closets, lavatories, and urinal

**II. PHYSICAL EDUCATION WORKROOM/STORAGE**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Adjacent to or within gymnasium

**FINISHES**

1. Ceiling: Painted exposed structure
2. Walls: All interior walls should be painted masonry construction wherever possible.
3. Floors: Hard surface or resilient flooring
4. Base: Resilient base

**LOOSE FURNISHINGS**

Open metal shelving, no less than 18” deep

## **JJ. MULTI-USE PHYSICAL EDUCATION ROOM**

This area will be used as an auxiliary space for wrestling, dance, aerobics etc. in physical education classes.

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near gymnasium
2. Near locker rooms

### **FINISHES**

1. Ceiling: Painted exposed structure
2. Walls: All interior walls should be painted masonry construction wherever possible.
3. Floors: Wood flooring is preferred, however sports flooring or other alternatives will be considered. All must provide appropriate court markings (i.e. for basketball or volleyball courts etc)
4. Base: Dependent on type of flooring specified.

### **FEATURES & EQUIPMENT**

Provide wire guards on light fixtures and wall-mounted devices.  
Provide acoustical treatment.  
Master clock/Public address system

### **PLUMBING**

1. Drinking water coolers must be provided in gymnasium. All drinking fountains shall be recessed, mounted refrigerated ADA compliant.

### **TECHNOLOGY**

1. Provide a minimum of (4) A-Jacks on opposite ends of room that consist of:
  - a. Fiber connection
  - b. Coaxial connection for video
  - c. Phone connection
  - d. Data connection
2. A duplex receptacle must be located adjacent to each data port
3. Provide additional data ports as required.



**ELECTRICAL**

1. High Intensity Discharge lighting
2. Consider supplemental lighting that can quickly be turned on or off for emergency circulation
3. Central Sound System
4. Electrical connections to Physical Education equipment where necessary

**KK. AUDITORIUM**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near main entrance
2. Near public parking
3. Auditorium should be able to accommodate a minimum of ½ the anticipated school capacity

**CASEWORK**

1. Casework is not necessary in auditorium

**LOOSE FURNISHINGS**

Auditorium style seating  
Podium  
Master clock/Public address system

**FEATURES & EQUIPMENT**

Front curtain, track, and valance (preferably a dark color)  
Rear curtain  
Projection Screen  
Sound control console  
Lighting control console  
Handrail wherever ramping occur

**ELECTRICAL**

1. High Intensity Discharge Lighting
2. Dimmable lighting

3. Theatrical lighting
4. Central sound system
5. Auditorium sound system

## **LL. STUDENT DINING**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Adjacent to food service
2. Near Main entrance
3. Near communal restrooms
4. Adjacent to platform or stage if auditorium is not included.
5. Consider skylights for natural lighting

### **LOOSE FURNISHINGS**

Foldable, tables with attached BENCH seating  
Large waste receptacles

### **PLUMBING**

1. Provide water cooler. Drinking fountain shall be recessed in an alcove mounted, refrigerated, ADA compliant.

## **MM. TABLE STORAGE**

This area is designed for the storage of all tables and chairs used in the student dining/gymnasium area.

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near or adjacent to student dining area
2. Near Food Services

## **NN. STAFF LOUNGE**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near other non-academic core areas
2. Adjacent to or within the staff lounge should be (1) staff restroom
3. Consider the location of various vending machines and necessary equipment (large copier, laminator etc.)
4. Access to school circulation areas
5. Provide an individual staff restroom within the staff lounge area.

### **CASEWORK**

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate
3. No square edge or 90-degree corners on counter tops.
4. There should be a combination of base cabinets and overhead cabinets for storage as well as a large work surface
5. Provide enough work surface area to accommodate printer, fax, and other necessary equipment

### **LOOSE FURNISHINGS**

Tables  
Chairs  
Lounge seating if applicable  
Wastebasket

### **FEATURES & EQUIPMENT**

Stainless Steel Sink  
Microwave  
Full size residential refrigerator  
Master clock/Public address system  
Phone system

**SPECIALTY ITEMS**

Magnetic white marker board  
Large, tack board

**OO. GENERAL OFFICE (S)**

Several offices will be necessary for a variety of functions that will be determined specifically by each educational program. For example, school psychologist, reading specialist, school therapist, and volunteer office etc. etc.

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Provide interior glazing to adjacent spaces or corridors if necessary

**LOOSE FURNISHINGS**

Teacher Desk  
Task Chair  
Guest chairs  
Various file storage options  
Wastebasket

**FEATURE & EQUIPMENT**

Master clock/public address system  
Phone system

**SPECIALTY ITEMS**

Magnetic, White Marker Board  
Two-prong coat hook installed on back of door

**PP. GUIDANCE COUNSELOR’S OFFICE**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near main entrance of building
2. Accessible to academic core
3. Access to school circulation area
4. Provide interior glazing to adjacent spaces or corridors if necessary

**LOOSE FURNISHINGS**

Teacher Desk  
Task Chair  
Guest chairs  
Various file storage options  
Wastebasket

**SPECIALTY ITEMS**

Magnetic, White Marker Board  
Two-prong coat hook installed on back of door  
Master clock/Public address system  
Phone system

**QQ. GUIDANCE RECORDS/STORAGE**

The storage of supplies, confidential files and equipment

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near guidance counselors office

**LOOSE FURNISHINGS**

Open metal shelving, no less than 18” deep  
File cabinet storage. Provide file safe cabinets if necessary

**RR. HEALTH CLINIC**

The health clinic is to provide several services to the students that include the treatment of minor injuries or sickness, administration of medication and conduction of hearing and/or visual tests.

The following spaces should be included in a Health Clinic:

Office for processing of paperwork and file storage  
Small reception area  
Cot area  
(2) Student restrooms  
Material/Supply storage  
Lockable medication storage area

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near main entrance of building
2. Near main office (administration area)
3. Near communal restrooms
4. (2) student bathrooms, each with shower adjacent to or within health clinic
5. Provide a large storage closet for supplies and medication(s)

**CASEWORK**

1. All casework is to be plastic laminate with PVC edge.
2. All exposed and semi-exposed vertical and horizontal surfaces are to be high-pressure laminate.
3. No square edge or 90-degree corners on counter tops.
4. There should be a combination of base cabinets and overhead cabinets in a separate, lockable area for material and supply storage
5. In location where medication will be administered, provide casework that includes a small wash sink

**LOOSE FURNISHINGS**

Teacher Desk  
Task Chair  
Guest chairs  
Various file storage options  
Wastebasket  
Minimum (4) cots  
Master clock system  
Phone system  
Provide refrigerator with icemaker capabilities

**SPECIALTY ITEMS**

Magnetic, white marker board in office area  
Two-prong coat hook installed on back of office door  
Tack board in reception area for display materials.  
Cubicle curtain and track  
Master clock/Public address system  
Phone system

**PLUMBING**

1. Provide (1) stall shower in student restroom
2. Provide small wash sink in area where medication will be administered

**SS. CUSTODIAL OFFICE/WORKROOM**

The custodial office/workroom is to provide space for all custodial equipment necessary to maintain the building

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near support area of building (i.e. mechanical room)
2. Near loading and receiving
3. Access to outside
4. Near central Storage area

**LOOSE FURNISHINGS**

Desk  
Task Chair  
Work Bench  
Large wastebaskets  
Open metal shelving minimum 18” deep.

**FEATURES & EQUIPMENT**

Master clock with public address system  
Phone system

**SPECIALTY ITEMS**

Provide locker for staff members  
Lockers should be heavy-duty metal with sloping tops.  
Magnetic, white marker board  
Tack board

## **SS. COMMUNAL RESTROOMS**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near Student dining area, gymnasium and auditorium
2. Near public usage areas such as spaces listed above
3. Near main entrance
4. Several, large communal restrooms will be locate throughout the building
5. Provide as much visual access while maintaining necessary privacy

### **CASEWORK**

1. Casework is not recommended in restrooms

### **FEATURES & FIXED EQUIPMENT**

- 36” long stainless steel grab bar where applicable (ADA)
- 48” long stainless steel grab bar where applicable (ADA)
- Large stainless steel waste receptacle
- Towel Dispenser to meet district standard
- Toilet Tissue dispenser to meet district standard
- Soap Dispenser to meet district standard
- Mirror, tempered glass, stainless steel angle frame.
- Floor mounted overhead braced toilet partitions
- Toilet partitions should be dark color (i.e. charcoal gray speckle)
- Sanitary product receptacles. No dispensers

### **PLUMBING**

1. All sinks should be solid surface counter top and integral sinks with infrared sensor operated faucets.
2. All toilets are to have battery operated, automatic flush valves



## **TT. CORRIDORS**

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Avoid hard edge, 90-degree corners in corridors
2. All corners should be soft edged or bull nose
3. Provide a display case near main entrance and/or entrance to cafeteria. Auditorium or gymnasium

### **FEATURES & FIXED EQUIPMENT**

Provide (1) personal locker per student  
All lockers are to be heavy duty metal, with sloped tops. Dark colors are recommended.  
Provide appropriate fire extinguishers and cabinets  
Master Clock/Public address system  
Phone system

## **PLUMBING**

1. Provide several water coolers. Drinking fountain shall be recessed in an alcove, refrigerated, ADA compliant

## **UU. CENTRAL STORAGE**

Central storage is the location where all custodial and building supplies, such as paper products used for entire building will be warehoused

### **ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near loading and receiving area
2. Direct access to building circulation and outdoors

## **LOOSE FURNISHINGS**

Provide a variety of open metal shelving, no less than 18” deep for flexible storage options

**VV. LOADING & RECEIVING AREA**

**ADJACENCIES, SPATIAL RELATIONSHIPS & DESIGN ISSUES**

1. Near food service spaces
2. Near central storage area
3. Near mechanical/custodial storage and workroom
4. Adjacent to loading dock

**FEATURES & EQUIPMENT**

1. Loading dock leveler, if required, and dock bumpers