Albuquerque Public Schools
Capital Master Plan Office

Middle School Planning Standards

Revised October 2012

TABLE OF CONTENTS

APPENDICES

School & Site Factors Specific to Different Schools

The information is for specific site and facility parameters not covered in the more "performance based" standards that follow.

The requirements for the Middle School project are as follows:

1. The contract Architect / Engineer (A/E) will coordinate their work with the Department of Facilities Design and Construction (FD+C) Project Manager and participate in the School Building Committee process.
2. Middle School Facility
   - The school facility shall be capable of educating any child, including severely behavior disordered students and / or the intensive support system (ISP) for special needs students with multiple, profound disabilities. Standard "neighborhood" special education requirements are separately defined programs for the purpose of this document and are included in this facility. A new school will be completely accessible to all students, staff, and visitors to the extent stipulated in the building codes.
   - Middle schools will house 6th, 7th and 8th grade programs. The grade levels may be arranged in "academies" for each grade level separating the various grades one from the other. The district may elect to design schools for K – 8 grades in which event the Middle School Standards would be used in conjunction with the Elementary School Standards.
3. If this new facility is in multiple phases, the permanent core in Phase 1 shall provide all specialized spaces to operate as a fully functioning school and be sized to handle 1,200 students. The construction of the Phase 2 is to be possible with as little disruption as possible of permanent and portable spaces in Phase 1.
4. The contract A/E will thoroughly review files of the APS Real Estate Director to ensure that legal description, boundary description, vacations, easements, rights-of-way, property lines, and zoning issues are clarified. If available, existing surveys, drainage plans, and public infrastructure plans are generally on file with FD+C.
   a. The contract A/E will meet with the city / county / utility companies on drainage, street access, zoning, utility availability, sector development (or other area plan restrictions), fire protection, easements, right-of-way, and other applicable considerations.
   b. Where known, APS will notify the A/E of extension requirements for telephone, cable, or power from substation; water / sewer line taps requirements; fire hydrant requirements; up and down stream storm water requirements; number of meters APS will allow; and street extensions.
5. These standards do not specifically address furnishings. The contract Architect will coordinate the configuration of spaces requiring furnishings with FD+C.
6. The A/E and FD+C will agree on colors, surfaces, and level of material quality based on these standards and the budget. Then FD+C will share the information with the School Building Committee.

7. All new stand alone buildings shall follow the sustainability process developed by the U.S. Green Building Council called Leadership in Energy and Environmental Design or *LEED® for Schools for New Construction and Major Renovations*. The district strives for all stand alone new school buildings to meet a minimum of LEED® for Schools Silver Certification. Policies and Standards influenced by the LEED® process are noted when possible.
8. Designers of all new construction shall consider the principles of Universal Design. Designing buildings and the environment around them should be more than compliant with codes relating to persons with functional limitations. Ron Mace defined the term as, *"Universal design is an approach to design that incorporates products as well as building features which, to the greatest extent possible, can be used by everyone."*

Noteworthy

The following policies and standards are written in a "performance" language rather than a "prescriptive" language, except where APS lessons learned require more detail. The following types of notes occur in the document:

NOTE: Refers to information complementing or expanding the more general policy or standard.

LEED®: Refers to elements of the *LEED® for Schools* process that will possibly influence the approach, execution, or options evaluated for the referenced policy or standard.

FD+C and M&O Notes: Refers to information that directly impacts the department of Facilities Design + Construction (FD+C) and Maintenance & Operations (M&O) and often provides some restrictions or lessons learned to be used in executing the standard.

Refer to latest version of design standards on the FD+C webpage at www.apsfacilities.org/facilities.

OVERVIEW

This document contains policies and standards that guide the design of APS middle schools. As schools serve a vital role in the community, their design impacts the lives of thousands: as a learning environment for our children; a place of employment for teachers, administrators, and staff; and as a focus of neighborhood and community activities. For all endeavors, APS seeks to provide facilities that are safe and appropriate for the activities taking place.

APS facility policies and standards are explicit statements about how school facilities are to perform to support the educational and other needs of the district. Facility **policies** are broad statements of intent while **standards** are specific factors to measure the implementation of the policies. All standards are based on the assumption that facilities exist to support the instructional (curricular) needs of the district.

The facility policies and standards are used to:

- Serve as a basis for new school design.
- Provide crosswalk between these standards and the N.M. Public School Facilities Authority (PSFA) Statewide Adequacy Standards.

The policies and standards address concerns at the district-wide scale (primarily the location and distribution of facilities) and at the site and facility scale (primarily concerned with the adequacy and environment of the spaces provided, health/safety issues, and maintenance concerns). It is anticipated and encouraged that the policies and standards will be reviewed and refined as time goes on. The intent of this document is to make explicit the ideas that are important in new APS facilities.

The policies and standards contained in this document were compiled from an assessment of national standards, current APS facility and curriculum practices, and input from a committee composed of key APS administrative personnel, content area experts, principals, and community representatives.

The APS Policies and Standards equal or exceed N.M. Public School Facilities Authority (PSFA) Statewide Adequacy Standards.

GENERAL SITE & FACILITY DESIGN CONCEPTS

Through an evolutionary process, APS has developed site and facility concepts that all new middle schools are to possess. Design of each school will vary in response to specific enrollment characteristics and the site. However, major concepts are provided in this document for standards-based middle schools.

□ School Sites

- Situated on about 25 acres of land in a primarily residential area.
- Provide clear, safe, and separate roadways to and for the following:
  - Buses.
  - On-site staff and visitor parking.
  - Student drop-off / pick-up.
  - Service access.

□ School Facilities

- An enclosed circulation school with about 170,000 gross square feet of permanent facilities. The site should be able to accommodate 8 to 12 portables. The core facilities to be designed to accommodate potential future growth and the student population in specialized programs.
- Provide a safe environment that promotes learning opportunities in accordance with relevant codes and ordinances.
- Provide opportunities to adjust to programmatic (instructional and community) and technological changes:
  - Flexibility of existing spaces to meet a number of purposes.
  - Ability to expand.
  - Ability to accommodate new communication and information technologies into learning environments.
- Organized in a clear and consistent manner that:
  - Centralizes common-use facilities (media center, cafeteria/kitchen, restrooms, and work rooms).
  - Provides natural light to learning areas.
  - Separates noisy from quiet activities.
  - Promotes ease of supervision and security (controlled building access - control of functions, after-hour use).
  - Provides accessibility for physically impaired.
  - Provides covered (protected) circulation between separate permanent buildings.
- Meet specific instructional and functional needs of specified activities.
- For new free-standing buildings follow the LEED® process (design, construction, and operation) as required to meet the minimum LEED® silver certification level. Consider materials for schools that are reusable, returnable for reuse, recyclable, or disposable (with limited negative impact on the environment).
- Devote about 60% of its interior space to direct instructional use; about 32% to instructional support activities (media center, cafeteria); and about 8% to administrative functions.

- At least 38 - 40 regular classrooms (full-size equivalences in permanent and portables) that consider/include:
  - Science laboratories.
  - Specialized rooms for band and chorus with practice rooms and storage rooms for each. Drama with large classroom, performance stage, office and storage. A large classroom for Art with office, kiln, storage and exterior patio.
  - Classrooms for Family and Consumer Science which includes an area for sewing with storage and washer/dryer and cooking laboratory with storage pantry.
  - Computer lab which is a larger specialized classroom with storage. Technology Education lab with storage.
- General instructional support spaces such as a conference room, media center, storage, and teachers' workroom.
- Administrative space for all staff including Principal, Assistant Principal, school secretary, clerk area, reception, and nurse.
- Other support areas such as a cafeteria, kitchen (for serving of food prepared on site), teachers' lounge, teachers' workroom, parents' room, and storage.
- If applicable, provide optional support spaces for New Mexico Human Services Department, before and after-school education, and community programs.
- 1 gym (teaching only, unless another source funds an expanded gym).
- Space for special education classrooms as required by district. Time-out spaces may be required if school is designed to have ISP, DD, or IEP programs. ISP demographics may increase size/design of school.
  - 2 regular classrooms (Special Education – many schools are going to full inclusion model so increasing the number of full-size classrooms.
    - One regular classroom needs a time-out room.
  - 0.5 classroom equivalent for special education resource specialist.
  - 2 classrooms equivalent for federal categorical, reading, or bilingual type programs.
  - 0.5 classroom equivalent as large office spaces for speech and language pathologists. Assume 2 minimum at 200 sf each, could need up to 4 spaces (equal to 1 classroom). Psychologist, social worker, and counselor are covered under administration area.
  - 1.5 classroom equivalent as a half classroom sized space each for special education head teacher and individual education plan (IEP), for the instructional coach, and for occupational therapy / physical therapy (OT/PT).

School Sites and Schools

- Accommodate the 1,200 student-base population with ability to increase to 1,500 students using portable classrooms (permanent area for 8 to 12 portable classrooms).
- Be adaptable as center for community use and education, fine arts education, and/or before and after-school program development.

- Be located in areas convenient to the student population in a manner that minimizes busing and provides student, parent, and community controlled safe pedestrian and vehicle access to the school.
- Be designed for cost effective operation and maintenance.
- Provide a pleasant environment for students, teachers, and staff and be a positive addition to the community.
- Address PSFA Statewide Adequacy Standards (design and permitting process). APS reserves the right to exceed the Adequacy Standards for site and facility areas noted in this document, desired by the Design Assistance Committee, and approved by APS FD+C.

Positive Features of Recent Designs

APS schools come in many shapes and sizes. There are many different facility design options to meet the facility policies and standards contained in this document. Some of the positive features of recent designs follow.

Facility

- Permanent construction with interior circulation to all school areas. Give consideration for the uninterrupted day-to-day operation of the school.
- Consider combining the Drama/Performance spaces with the cafeteria.
- Consider phased construction process at existing sites.
- General and special education classrooms distributed from the "core" area in a manner that takes advantage of natural light and access to the outside.
- Allow for team teaching options in part of each group of classrooms
- Restrooms distributed to be convenient to students and staff.
- Teaching gymnasium centrally located.

Site

- Separate areas and roadways for buses, parents to pick-up / drop-off students, staff, and visitors.
- Extensive staff and visitor parking. (See requirements on page 18.)
- Extensive site development including landscaped and hard-surface play areas.
- Grass or artificial turf recreation field(s) and track.
- Variety of courtyards that can be used for educational purposes.
- Areas planned for portable classrooms.

SITE AND FACILITY DESIGN POLICIES AND STANDARDS

1.0 SCHOOL SITE

This section discusses standards for the school site in terms of:

- Location / Surroundings / Size
- Pedestrian and Vehicular Accessibility
- Site Features
- Safety / Security
- Maintenance

Policy 1.1 School Location

Schools to be conveniently located for the student populations they serve.

Schools serve as an important part of a residential neighborhood and are located in manner that minimizes busing and promotes student, parent, and community access to the school. According to the State regulations that identify school bus eligibility based on a walking radius of students to their school, middle school children should not walk more than 1-1/2 miles to school. Past this distance, students are eligible for bus transportation. Most students within APS travel no more than 20-25 minutes on the bus.

Existing APS policy dictates the primary considerations that govern the establishment of a school attendance boundary:

- Instructional – effective use of each school's physical capacity.
- Geographic – location of each school in relationship to the surrounding student population.
- Optimization of safe walking patterns consistent with school district and State transportation policies.

Also,

- Where possible, major thoroughfares and natural barriers will be used as boundaries for the preservation of neighborhood integrity and equity of educational experiences and programs available to the students at schools involved.

Standard 1.1.1 Expansion Options

Campus is to allow options for on-site expansion of facilities.

Factors to evaluate the capacity to expand:

- Size of site.
- Relationship to other site activities.
- Infrastructure (water, sewer, gas, electricity) to serve portables or new structures.
- Ability to accommodate a minimum of 8 portables without disrupting essential site functions. Ability to expand portable area for high growth areas to 1,500 students temporarily.

NOTE: For middle schools in high growth areas, increases up to 20 portable classroom units may be required for a school with base 42+ classroom equivalent spaces.

NOTE: Portables are needed to handle aging of a community. Continuous enrollment of over 1200 students and presence of over 8 portable units is not desired policy, generating the need for construction of a new school or an addition to the school.

LEED®: Designing the site to accommodate future build-out qualifies for points.

Standards-based Middle School (1200 students)

Site Requirements	**#**	**(G.S.F.)**	**Acres**
Permanent Buildings*		171,370	3.98
Integrated Portable Buildings***	8	7,680	0.18
Overflow Portable Staging Area***	4	3,840	0.09
Visitor / Staff / Parking	160	400	1.46
Special Event Parking	155	400	1.42
Bus Area	28	1,344	0.87
Grassed Main Field (210' x 360) w/ track	1	75,600	2.89
Grassed Auxiliary Field (220' x 220')	1	48,400	1.11
Shade/Performance/Seating Area	1	12,100	0.28
Basketball Courts (104' x 232')		24,128	0.72
Easements /Setbacks			0.71
Net Gross Square Footage			13.71
TARE @ 25% (33% for difficult sites)**			3.42
Total Minimum Acres Required			**17.13**

* Assumes single story construction

** TARE = roads, landscaping, unusable area

***Double Portable + exterior area

Policy 1.2 Site Accessibility

Middle schools are to be safely accessible for pedestrians and vehicles.

Sub-Policy 1.2.1 Off-Site Student Pedestrian Access

There is to be clear and safe pedestrian access to a school in accordance with State and APS policy.

All major streets exceeding 55 vehicles / minute or 70 vehicles / minute within 1-1/2 mile distance from middle schools are to have:

- Appropriate traffic signals, and
- Provision for student bus transportation.

APS and contract A/E will work closely with the City Police Department, County Sheriff's Department, and City and County Transportation Planners, local Fire Marshal, APS Transportation, APS Risk Management / Bus Loading and Unloading Zone (BLUZ) team to identify and eliminate any hazardous walking conditions.

Standard 1.2.1.a Access Streets

Access streets are to have sufficient signals and signs to permit safe pedestrian entrance to and exits from the school area.

NOTE: The need for crossing zones, speed bumps, flashing lights, and school zone signage will be resolved with APS FD+C, APS Transportation, and the City of Albuquerque (or local entity).

Standard 1.2.1.b Off-Site Sidewalks

Off-site sidewalks are to be available for safety of pedestrians. Sidewalks along APS property perimeter adjoining streets shall be available for safety of pedestrians where required by zoning agency. These sidewalks shall provide barrier-free access. Connections to adjacent residential areas from the APS site should be considered if allowed by zoning, provides safe approach to the school, and does not encourage "park and walk" use of adjacent neighborhood streets.

LEED®: If public bus service is available, consider provisions to safely provide student / staff / parent access to bus stop. LEED points are available if ½ mile to light rail or ¼ mile to bus transit routes. *Sub-Policy 1.2.2 On-Site Pedestrian Access*

Sub-Policy 1.2.2 On-Site Pedestrian Access

There will be paved sidewalks connecting all school activity areas (to provide accessibility and avoid undue maintenance in interior areas from mud or sand).

Standard 1.2.2.a On-Site Bicycle Use

Provide (lockable) pad for bicycle storage by provisions of Zoning Code.

LEED®: Bike amenities qualify for points.

Standard 1.2.2.b On-Site Sidewalks

The school site will provide adequate and accessible on-site sidewalks between school areas. The pedestrian entry to the site needs clear definition. There will be paved sidewalks between school portables.

Standard 1.2.2.c Disabled Accessibility

Access to facilities for the disabled such as ramps, handrails, and curb cuts will be available at building entrances, parking areas, playgrounds, and pedestrian walks in accordance with the New Mexico Building Code, American National Standards Institute (ANSI 117.1), specifications for designing buildings and facilities accessible to and usable by physically disabled people and stipulations from the Governor's Commission on Disability.

NOTE: Provide easy access to the main office and to key public-use spaces (gyms, appropriate restrooms, performance area, likely voting location, media center, etc.). Access needs to have appropriate parking area; a drop-off space; have no barriers; be well lit; and not compromise general building security.

LEED®: Having joint use space with easy access can qualify for points.

Standard 1.2.2.d. Main Entry

The main entrance to buildings or building complexes will be clearly defined through the use of building design, landscaping, directional signage, or other method and communicate a positive image of the school. Signage will clearly identify car, bus, delivery, parking for persons with disabilities, and drop-off areas; different parking areas; location of accessible routes; and route to the office.

NOTE: Provide one flagpole that is a minimum of 20' tall with sheathed metallic flag-snaps. Do not use Flagpoles with shafts constructed of more than one piece, fiberglass or steel or poles that are tilted.

NOTE: The school is to have an integral sign mounted on the building with the name of the school and the street number. The school may also have a free standing monument sign with the name of the school and street number located near the street. The monument sign is not to be confused with a marquee sign (refer to Standard 2.3.9 Exterior Signage).

Sub-Policy 1.2.3 Vehicular Access

There is to be clear, separate, distinct and safe on-site circulation paths for pedestrians, school buses and staff, visitor, and service vehicles. Multiple access points for vehicles are preferred.

M&O Notes: Posts for signs to be #3 U-channel. Sign hardware to be vandal guard. Fence mounted signs to have 0.35" aluminum plates. All traffic signs for directions, safety, traffic control, and ADA will be installed by general contractor.

Standard 1.2.3.a Bus Loading / Unloading

Where possible, provide separate bus loading/unloading zones accommodating the required number of buses for that school that do not conflict with other vehicular or pedestrian pathways and provides for the safe loading and unloading of students.

Sub-Standard 1.2.3.a.1 Bus Area

The loading area will be able to accommodate up to 80% of the school population in a safe and orderly manner and load students from the curb directly into the bus door without passing between or behind buses or cars. General buses are 36'-6" long and 8'-0" wide and require a turning radius of 50'. Up to 28 buses will be required for a 1,200-student school. Provide curb access area for 2 or 3 SPED buses with lifts (check with transportation regarding the size of the buses to be used at each particular site) as well as after-school daycare vans.

NOTE: The contract A/E is required to meet with APS Transportation and BLUZ team regarding approval of the bus loading area layout and entry / egress turning schemes.

Standard 1.2.3.b Student Drop-Off / Pick-Up

There will be a separate area for the drop-off and pick-up of students by parents that does not conflict with other vehicular or pedestrian pathways and provides for the safe loading and unloading of students.

This area has become a design problem for schools, as walking students are fewer and safety concerns grow. The area should provide right door exit from the vehicle to the curb. Use of fencing for control is generally needed to eliminate the option for pedestrians to walk in front of waiting cars.

NOTE: Many schools now have over 50 cars queuing up for student pick-up and drop-off.

Standard 1.2.3.c Vehicular Entrances / Exits

Vehicular entrances and exits are to be safe for traffic flow. If possible, buses should not be dependent on other on-site traffic movement in order to exit, since buses all exit at the same time turning both directions from the site drives.

Standard 1.2.3.d Service / Emergency Access

Appropriate access to all areas of the site by service, garbage, and emergency vehicles are to be properly identified. Design of surfaces for maintenance vehicles shall be appropriate for the weight and clearance. Truck access to the kitchen and garbage trucks will not pass through general pedestrian or play areas. Design dumpster area and garbage truck approach per City of Albuquerque details.

The contract A/Es will meet with local Fire Department to determine access points for fire trucks to site. Allow for fire hose access to all parts of the school and fire trucks to portable area. Access to the nurse's office is to be direct and easily identifiable for emergency medical personnel. APS Nursing Services has requested a reserved area for emergency medical service vehicles at every school.

Standard 1.2.3.e Street / Parking Area Condition

Streets and parking areas are to be paved with appropriate profile for vehicles using them.

LEED®: Design recommendations relating to pervious paving areas and water harvesting impact scoring.

Standard 1.2.3.f Portable Buildings

There is to be sufficient room for ingress and egress of portable buildings to the site.

NOTE: Provide 32' improved access lane with straight-in clearance of 96' for doubles and 60' for singles. Access lane gate is to be 30' wide.

Sub-Policy 1.2.4 Parking

There is to be adequate, safe parking for staff and visitors. Parking areas are to be paved and separate from other access ways. Parking areas are to have security lighting (including rough-ins for security cameras). High Pressure Sodium lighting is best to support cameras. Design lighting in compliance with New Mexico Night Sky Protection Act, City Ordinances and Neighborhood Regulation and per APS Electrical Design Standards.

Parking standards and Signage

- Provide 3 designated parking spaces with signs for the principal and 2 other personnel to be determined during design.

- Provide 3 visitor parking spaces with signs. Prefer visitor parking and part of staff parking centralized for control of access to the office.
- Provide 1 parking space for APS police with sign.
- Provide a designated parking area with signage for 1.5 spaces for each teacher and staff member for maximum possible enrollment levels of 1,000 for new elementary school. Prefer visitor parking and part of staff parking centralized for control of access to the office.
- Provide at least 5 parking spaces for kitchen staff near the kitchen area with signage.
- A/E must confirm parking requirements for other agencies (social services, city daycare, etc.) with school administration.
- Number of parking spaces for disabled will be as required per most restrictive code designated and dispersed between staff and visitor lots.
- Provide an M&O parking space with sign.
- Provide an emergency vehicle parking space with sign.
- Provide signs for parent drop-off lane indicating no parking
- Provide signs for bus lane indicating buses only, no private vehicles or parking
- Provide signage at entrances to direct visitors to the Principals office. "Visitors must report to the Principals office".

  M&O Notes: Posts for signs to be #3 U-channel. Sign hardware to be vandal guard. Fence mounted signs to have 3.5" aluminum plates. All traffic signs for directions, safety, traffic control, and ADA will be installed by general contractor. The signs that are mounted on buildings to be attached on all corners of the sign and high enough to prevent graffiti or vandalism. Identification numbers or letters of school names etc. will be high enough off ground and adhered sufficiently to inhibit vandalizing.

LEED®: The nature of parking needs for APS violates the parking principles of LEED® to reduce parking impact and reliance on one driver vehicles.

Standard 1.2.4.a Special Event Parking

A/E should consider ability to accommodate visitor parking for special events.

LEED®: If site is near commercial / retail development, APS should consider negotiations with business owners to use their parking for special APS events.

Policy 1.3 Site Development

School sites are to be developed to enhance the educational environment and the image of the school to the surrounding community.

Elements of site development include the harmonious blend of the following elements for the school site, perimeters, parking lots, and adjacent streets. The aesthetic appeal and subsequent maintenance are important concerns.

- Landscaping / plant material
- Paved and play areas

- Pedestrian areas
- Drainage control
- Portable areas

LEED®: Illuminate areas as required for safety, comfort, and expected night use to minimize glare onto neighboring land or to sky. Put lighting on timer to allow shut-off.

NOTE: Areas adjacent to an existing or planned housing development are to be buffered from the houses. Drainage or blow sand impact on neighbors is not allowed. Consider impacts of fugitive dust and storm water run-off in project planning.

Standard 1.3.1 Plant Material / Landscaping

Site landscaping is to require minimal maintenance and be water conservative. APS site maintenance personnel are to be able to maintain the site with existing equipment. Avoid raised or steep lawn areas requiring small mower use.

Plant material is to provide shade, visual screening, wind protection, and aesthetic qualities for the building and surrounding area. From 7 -15% of the school site is to be landscaped with indigenous trees and planted areas (not including a grass field). (See APS Site Design Directives on the FD+C website for a list of preferred plants.)

The following areas are to be landscaped

- Parking lots (break up the visual expanse of paving and meet ordinance).
- Perimeters of the school facing public right-of-ways (on APS property).
- Public areas (courts, plaza, between wings, permanent portable area).
- Outside learning areas.
- Playgrounds and fields – see playground section for size. (See *APS Site Design Directives on the FD+C website* for APS grass mix or turf type.)

M&O Note: Provide tree wells with mulch in grass areas and with sufficient open dirt around them in hard surface areas to deter uplifting of surface.

M&O Note: Provide for remote control of irrigation system controllers. For new systems provide the conduit, pull wire and electrical to allow for this connection to occur.

Other landscape considerations include

- Minimize use of water and consider water harvesting to assist plant survival.
- Types and placement of plantings.
- Irrigation systems.
- Irrigated landscaping not allowed immediately adjacent to buildings.

M&O Note: Avoid loose rock or gravel ground cover near windows and artificial stucco surfaces.

LEED®: Mulching of trimmings, grass, and leaves; use of captured rainwater; efficiency of irrigation system; or modem control of irrigation system comply with scoring elements.

Standard 1.3.2 Walkways / Gathering Areas

High pedestrian traffic areas are to have paved surfaces.

NOTE: For accessibility, walkway slopes are to comply with accessibility standards for children.

Standard 1.3.3 Outdoor Seating

Seating is required in high pedestrian areas. An outdoor learning area will have seating for 30 students with a shade structure. Consider an outdoor performance area with electrical and data outlets. Slope all concrete seats for best drainage.

M&O Note: Provide skateboard deterrents on all low walls, seating, and other structures that could be targeted by skate boarders. Modular play units of recycled material are acceptable except for slides. (Slides have had high UV degradation rate and vandalism in past.)

Standard 1.3.4 Irrigation Systems

There are to be fully automatic underground sprinkler systems with vandal-proof sprinkler heads that cover all play fields, lawns, and planting areas. All sprinkler systems are to be automatic and remotely controlled. (See APS Site Design Directives on the FD+C website.)

NOTE: Provide separate metering for irrigation and domestic water systems with back flow prevention. Irrigation metering shall be water only. Sprinkler controls are to be in an outside vandal-proof vault.

Standard 1.3.5 Developed Area

The school site is to be developed as completely as practical with building area, landscaping, traffic areas, hard-surface play areas, and pedestrian ways with the intent of minimizing vacant, dirt areas.

LEED®: If open area is not developed, consider returning area to native or adaptive vegetation to restore habitat.

FD+C Note: Non-landscaped areas impose legal storm water and fugitive dust control issues on APS.

Policy 1.4 Drainage

The site is to be graded to ensure effective drainage directed away from buildings, pedestrian traffic, and congregation areas.

NOTE: Due to requirements of new federal regulations for storm water pollution protection, leaving large areas in bare soil is no longer acceptable. Recommendation is to plant perimeter areas in native grasses and provide a permanent irrigation system (to support initial germination and allow for sustaining the area in drought conditions).

Drainage requirements

- Water is to not discharge over sidewalks except by sheet flow.
- Discharge on the north side of a building is to be avoided over walks or traffic areas.
- Drainage is to be removed by adequate catch basins and drainpipes.
- Roof drainage is to be directed away from the building and not flow into the landscape areas near buildings.
- Recreation and play areas are to be properly drained at about 2% slope.
- Drainage into public rights-of-way is prohibited unless approved by governing authority.

LEED®: Consider design elements for storm water management such as water harvesting, minimizing erosion and wind-blown dirt, and reducing off-site impact of on-site water generation towards levels of pre-construction runoff volume. Wetlands or vegetated side slopes of naturally designed ponds may qualify for points.

Policy 1.5 Site Recreation

The school site is to provide outdoor recreation and learning areas suitable for age of student population served.

Standard 1.5.1 Athletic Fields

Locate the gym complex close to the main field and track, auxiliary field, and the exterior basketball courts conveniently for student population and away from streets and parking areas. Provide a 10'-0" wide gated opening for M&O access.

Standard 1.5.2 Main Field and Track

Provide a main field (210 feet by 360 feet) in proximity to the main gym with an asphalt paved pathway connecting the field with the gym. The track and field areas shall be accessible by persons with disabilities. The main field should be able to accommodate soccer and football. Provide a nominal 400 meter asphalt paved and curbed 6-lane track around the field. The track shall have positive drainage. Turf and irrigation design and installation will be provided by APS consultant. Nighttime lighting is not required. Provide a 10'-0" wide gated opening for M&O access.

Standard 1.5.3 Auxiliary Field

Provide an auxiliary area in proximity to the main gym. The auxiliary field is approximately 220 feet square (1.11 acres) sized and laid out for softball. Provide backstop, access to water, and power to a central area proximate to the softball backstop. Turf and irrigation design and installation will be provided by APS contractor. Nighttime lighting is not required. Provide a 10'-0" wide gated opening for M&O access.

Standard 1.5.4 Hard Surface Recreation Courts

Provide concrete pads sized to accommodate eight basketball goals on four high school standard sized courts (about 104 feet x 232 feet with safety run-outs). Basketball goals are to be single curved metal support standards with durable all weather metal backboards and all weather extra heavy-duty metal hoops with metal nets. Locate the courts so they are easily supervised and are accessible to PE classes and general student lunch-time use. Provide a 10'-0" wide gated opening for M&O access.

Standard 1.5.5 Recreation Area Supervision

Recreation areas are to be organized to minimize the number of supervisory personnel required.

Policy 1.6 Safety / Security Hazards

The site is to be a safe and secure environment for student population served and free from hazards (especially excessive slopes).

Standard 1.6.1 Electric Service

Electric service is to be underground. Overhead lines are allowed for temporary portable classroom areas to facilitate connection and allow for special systems wiring that will share masts. For such overhead lines comply with special wiring requirements of M&O and codes.

Standard 1.6.2 Fencing

The school site will be fully fenced with a 6'-0" minimum height fence, unless the front facade of the building acts as an access barrier with the site fence butting into the building at appropriate points. Safety security fences are to be provided to protect students from hazard of traffic, steep terraces, and drainage ponds; to protect adjacent properties from trespass by students; and to discourage passersby from walking onto the campus. There is to be lockable pedestrian access at convenient locations. The chain link fencing material is to be closed-loop only at top and bottom.

Standard 1.6.3 Security Lighting

Sites are to have illuminated parking areas, walks, entrances, portable areas, and exterior building areas for both safety and security purposes.

LEED®: *'Night sky' laws will influence the design of this lighting.*

Standard 1.6.4 Drain Fields

Septic tanks and drainage fields are to be located away from all student-accessed areas or sealed in monitored vaults. All such areas will be fenced.

Policy 1.7 Utilities

School site is to be designed for easy and low cost maintenance.

Standard 1.7.1 Electrical Equipment

Outdoor light fixtures, electric outlets, equipment (such as sump pumps), and other fixtures are to be accessible for repair and replacement, energy efficient, and locally serviceable. Access means sized so a person can efficiently work on the item, and safe so buried items are not in water filled vaults. Equipment will be vandal resistant and avoid glass components. See APS Electrical Design Standards on the FD+C website.

M&O Note: APS has transferred ownership and servicing of primary transformers to PNM.

Standard 1.7.2 Water

Outside water supply is to be adequate for normal usage. Meter domestic and irrigation water separately. Irrigation system shall be water only meter. If gray water system is proposed, discuss with APS M&O and FD+C.

LEED®: Consider maximizing water efficiency to reduce burden on municipal water supply.

Sub-Standard 1.7.2.1 Water for Fire Protection

Fire hydrants must be included per jurisdiction Development Process Manual (DPM) standards. For rural facility, provide protection using tanks if no city / county water service is available. Provide easements where required and coordinate these easements with APS Real Estate office.

Standard 1.7.3 Gas Lines

Site gas piping is to be traceable and accessible for repair. Locate "U" shut-off above surface in fenced enclosure for each portable area. Zone site piping so sections of the site can be turned off and tested without turning off the main gas service for the whole school.

M&O Note: Comply with APS M&O low/medium pressure design guidelines for gas piping.

Each school is to have a designated garbage collection area meeting City of Albuquerque standards, located near the kitchen, and accessible to a service access drive. Coordinate service requirements with APS M&O. The garbage collection area is to:

- Meet city standard detail for enclosure with gates.
- Provide space for dumpsters (of which one is for recyclables). Coordinate the size and amount of dumpsters which will be determined by student enrollment with APS M&O and Waste Management.
- Accommodate *Waste Management* garbage truck access clearances.

LEED®: Recycling is an important element of the operation of the facility when working in a LEED® process. Consider fenced area for recycling options for paper, plastic, glass, etc.

Standard 1.7.4 Garbage Collection

Each school is to have a designated garbage collection area meeting City of Albuquerque standards, located near the kitchen, and accessible to a service access drive. Coordinate service requirements with APS M&O. The garbage collection area is to:

- Meet city standard detail for enclosure with gates.
- Provide space for 4 six cubic yard dumpsters (of which one is for recyclables).
- Accommodate *Waste Management* garbage truck access clearances.

LEED®: Recycling is an important element of the operation of the facility when working in a LEED® process. Consider fenced area for recycling options for paper, plastic, glass, etc.

Standard 1.7.5 Mechanical Units

Ensure units are protected from vandalism, safe, and easy to access for maintenance and visually screened to public areas. Refer to APS Mechanical Design Standards on the FD+C website.

2.0 SCHOOL DESIGN & CONSTRUCTION INTEGRITY

Policy 2.1 Health / Safety

Site and facilities are to be designed and constructed to provide a safe and healthy environment for learning in accordance with appropriate codes and ordinances.

Sub-Policy 2.1.1 General Structural and Exterior Building Components

The structural components of the school are to provide a safe and sound educational environment that permits reasonable opportunity for internal flexibility and adaptability to meet new circumstances. The structure is not to transfer vibrations from walking, mechanical, or outside noise sources into occupied spaces.

Standard 2.1.1.a Foundations

There is to be positive drainage away from foundations, especially for basement areas. Adjacent utility trenches will have drains and, as needed sump pump systems.

Standard 2.1.1.b Floors (Slabs / Balconies / Porches)

Floors are to be of adequate strength to support structural loads imposed. Floor surfaces will be appropriate for any covering material, be weather resistant, and drain.

M&O Note: Proper moisture vapor barrier must be applied before a concrete slab is poured to eliminate moisture issues with the surfacing.

Standard 2.1.1.c Walls

Walls are to be plumb, insulated to minimum of R-25, weather tight, and with junctures. Where applicable the joint pattern is to facilitate graffiti treatment by allowing M&O to treat a panel or subdivision of the wall without treating the entire wall. Walls are to be impervious to moisture and seepage. Walls in high traffic, common ball impact, or vandal prone areas are to avoid systems that are easily penetrated with sticks, balls, and rocks.

Standard 2.1.1.d Exterior Openings

Design exterior glazing – windows and storefront system – in accordance with APS Glazing and Window Standards and APS Aluminum Storefront Specifications on the FD+C website.

Standard 2.1.1.e Structural System Flexibility

Structural system should permit flexibility to adjust to program requirements. (See discussion on allowing some classrooms to be subdivided as teaching styles change.)

Standard 2.1.1.f Sound Transmission

Design walls, floors, and ceilings to absorb or retard transmission of unwanted sound from outside the space, speech transmission between learning spaces, and in high dB (85 or greater) noise producing spaces due to occupancy or tasks performed. Certain areas may

require sound absorbing treatment in addition to sound wall construction, especially for gym, music, and cafeteria areas. Compliance with ANSI S12.60 – 2002 is required.
Normal speaking voice "speech privacy" in all offices is required, especially relating to wall / ceiling connections. Sound quality in gym and cafeteria must allow for readily recognized amplified voice transmissions, as well as reasonable acoustics for performance (stage area).

NOTE: All sound transmission rated walls are to be continuous to the roof or floor structure above. Sound boots are to be used at return air transfers through sound rated walls.

Standard 2.1.1.g Acoustical Requirements

Conform to ANSI S12.60 - 2002, American National Standard Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools.
Reverberation Time limits:

Spaces under 10,000 Cubic Feet - 0.6 Seconds
Spaces between 10,001 and 20,000 Cubic Feet - 0.7 Seconds
Spaces with Volumes exceeding 20,001 Cubic Feet - 1.5 Seconds.

Sound Transmission Class for Partitions and other Building Elements:

Classroom to Classroom: STC 50
Classroom to Corridor: STC 45
Classroom to Restroom: STC 53
Classroom to Mechanical: STC 60
Classroom to Cafeteria: STC 60
Classroom to Gymnasium: STC 60
Building Envelope (Exterior Walls and Roof/Ceiling Assembly): STC 50
Windows and Translucent Panel Assemblies: STC 35

Background Noise:

Background noise created by HVAC or other building utility systems is limited to 45 dBA.

NOTE: All sound transmission rated walls are to be continuous to the roof or floor structure above. Sound boots are to be used at return air transfers through sound rated walls.

Standard 2.1.1.h Roofs

Roofs are to be structurally sound, have positive drainage, be weather tight, insulated, equipment free, and incorporate control / expansion joints to control movement. Roof/ceiling assembly insulation to be a minimum of R-38 without insulation installed on lay-in or rigid ceilings. Comply with APS Roofing Standards on the FD+C website. Avoid discharge points for roofs on to north areas with walks and roads. Parapet walls to be no taller than 3'-0" above adjacent finished roof surface. Treat parapet caps with metal or concrete capping systems to avoid maintenance problems. All roof penetrations will terminate at least 8" above the finished roof surface. The roofing side of the parapet shall have a continuous cap sheet. Any penetration through the parapet must be a minimum of 12" above the finished roofing surface. Direct roof drainage to minimize erosion, foundation issues, and damage to landscape areas. Limit access to roofs from all structures. Provide interior access via roof hatch for maintenance.

LEED®: Surface color, reflectance, as well as insulation type and rating may qualify for points.

Sub-Policy 2.1.2 Interior Building Components

Safe materials used in construction will be asbestos and lead free as well as stabilized for fiber and gas vapor discharge. Paint will be low volatile, washable, easily matched, and durable.

LEED®: The quality of material is an element of the evaluation process.

Standard 2.1.2.a Walls

Interior walls and partitions

- Construct walls per Sound Transmission Class (STC) and Noise Reduction Coefficient (NRC) ratings as designated by the American Society for Testing and Materials (ASTM).
- Provide impact resistant surface in lower 4' (minimum) of corridors with concrete masonry unit, tile, or fiberglass reinforced gypsum wallboard, or 2 layers of 5/8" gypsum wallboard.
- Provide CMU toilet partitions in all student restrooms and gyms where vandalism and impact are common.
- Provide stainless steel or heavy-duty clear plastic corner guards on all high traffic areas.
- Provide smooth-surface walls in high-traffic areas.
- Paint the walls of all custodial, electrical, mechanical and data rooms

Standard 2.1.2.b Floors

Interior floors

- Surfaces are to be non-skid, attractive, easy to maintain, and free from projections.
- All floor finishes will be easily cleaned without the use of special equipment.
- Floor sub-surfaces and base will be appropriate for floor covering material.
- Polished concrete is the preferred flooring material for corridors, cafeterias, classrooms, art rooms, band and chorus rooms, family and consumer science classrooms, drama room and science classrooms.
- Boiler rooms, mechanical rooms, electrical rooms, and custodial closets with concrete floors to have a concrete sealer.
- Data closets (IDF / MDF) flooring to be resilient flooring and base.

M&O Note: Use approved FD+C carpet and carpet tiles (refer to Carpet Tile Specifications on the FD+C website). If floor patch is used, the recommended product is Ardex Floor Patch.

NOTE: Where possible use polished concrete floors in corridors, cafeterias, and wet areas in classrooms. Provide ceramic tile floors and wainscot in restrooms.

NOTE: APS requires a durable flooring surface in corridors, toilet rooms, cafeterias, gymnasiums, classrooms, and nurse's area. Smooth finish concrete surface, ceramic tile, porcelain tile, and linoleum are acceptable only with FD+C agreement. Offices, media center, and other quiet areas may be carpet or carpet tiles, gymnasiums need a

resilient floor surface. Recessed mud mats (removable slotted walk-off mats) are to be on the interior side of all exterior doors and square or rectangular in shape as required by LEED.

LEED®: Low vapor / low particle emitting or off-gassing materials, adhesives, and sealants are required.

Standard 2.1.2.c Ceilings

Depending on use of space, heights are to range from 8' to 14' for economy of heating, air conditioning, reverberation time control, illumination, servicing light fixtures, and ventilation. Texture and reflectivity to reinforce the illumination levels of the room.

Sub-Policy 2.1.3 Energy Conservation

Facility is to meet or exceed energy conservation standards from the State of New Mexico Energy Conservation Code.

LEED®: Thermal mass, passive cooling and heating, as well as renewable energy systems such as solar cells should be considered as optional energy means. Protect from vandalism and limit need for maintenance.

Sub-Policy 2.1.4 Mechanical System (Heating / Cooling / Ventilation)

Mechanical systems are to provide for a reliable year-round comfortable environment in a cost efficient manner in conformance to local health and safety codes. Background noise levels produced by Mechanical Systems limited to 45 dBA in Core Learning Areas. See APS Mechanical Systems Design Standards on FD+C website.

LEED®: HVAC thermal comfort, energy efficiency, and control are critical.

Standard 2.1.4.a Year-Round Comfort

There is to be provision for year-round comfortable temperature throughout the building (68 degrees F in winter and 78 degrees F in summer). The owner should be able to by-pass the time clock with manual timed overrides at each HVAC zone. Refer to the APS Mechanical Design Standards on the FD+C website.

Standard 2.1.4.b Ventilation

Ventilating system is to provide adequate year-round circulation of fresh air. Every teaching space is to have an operable window. If no operable window, provide a fan or zone mode to allow for removal of odors and stale air. Restrooms, lounge, kitchen, cafeteria, gym, conference room, Occupational Therapy/Physical Therapy, Intensive Support Program, and nursing areas will have exhaust fans independent of the HVAC systems for heating and cooling.

LEED®: Natural ventilation should be emphasized in the indoor air quality (IAQ) and energy saving elements of design.

Sub-Policy 2.1.5 Plumbing

Plumbing systems and fixtures are to reliably supply water and meet wastewater requirements for the population served in a cost efficient manner and in conformance with

local health and safety codes. Refer to the APS Mechanical Design Standards on the FD+C website.

Standard 2.1.5.a Restroom Fixtures

Number and size of restrooms and fixtures are to meet or exceed code requirements. The number of fixtures will conform to the minimum standards of the current building and plumbing codes. APS, the City of Albuquerque, Public School Facility Authority, and the Governor's Commission on Disability may have varying interpretations on the codes. Notify FD+C of code interpretation disagreements.
Provide one unisex "family style" restroom adjacent to each 'A occupancy' space (gym, cafeteria, etc.)

NOTE: Each separate restroom for staff and students is to have at least 1 accessible fixture of each type provided. All multi-fixture restrooms will have a plumbing chase access. Refer to the APS Mechanical Design Standards on the FD+C website for plumbing chase requirements.

NOTE: APS practice has been to seek the following.

- *Provide the maximum number of boys' urinals that is allowed by code in lieu of water closets.*
- *Portable areas are to have main domestic water and sewer lines installed and ready for connection. In areas with more than 4 doubles, expect installation of restroom portable.*
- *Low-flow urinals with manual flush. Water closet valves and faucets for lavatories shall have automatic sensors that are hard-wired under the sink or counter with protective shields. All wiring shall be accessible for repair but not accessible to students.*

LEED®: Water conservation should be considered when selecting plumbing fixtures.

Standard 2.1.5 b Distribution of Restrooms

Restrooms are to be properly distributed for staff and student populations including access from:

- Permanent building – distribution within building to be even throughout with equal access to male and female units in each area.
- Portable buildings – provide hard surface access for student and staff population.
- Exterior play areas – provide access to restrooms through the vestibule area if possible. No restrooms that open directly to the exterior.

Standard 2.1.5.c Drinking Fountains

There are to be no exterior drinking fountains. There are to be an adequate number of drinking fountains appropriately placed with access available for the disabled. The water fountains are to be located at central and convenient points on each floor or wing of the school, in vestibules near playfields and in or near portables and parks. Distribution of handicapped units is to be the same, except for areas not readily accessible in existing schools.

NOTE: Do not refrigerate water for drinking fountains to minimize maintenance and energy.

Standard 2.1.5.d Plumbing Fixtures

Provide privacy stalls for restrooms that accommodate multiple persons in the male and female restrooms to provide privacy at the water closets and urinals. Comply with accessibility codes. Design student restrooms that have multiple fixtures without door or barrier to corridors while maintaining privacy. Provide exterior lockable hose bibb's near major entrances.

Standard 2.1.5.e Water Supply

Water supply is to have sufficient pressure and treated to meet health and safety needs. The system will have shut-off valves in all building zones for ease of maintenance. The domestic hot water system will provide adequate re-circulating hot water to meet health department requirements in restrooms and kitchen areas.

LEED®: Reduction of potable water demand and the efficiency of the domestic hot water system are part of design evaluation.

Standard 2.1.5.f Waste Water System

Wastewater (sewer) systems are to meet or exceed code requirements. The system will be able to handle build-out of proposed permanent additions and portable areas. Provide all interior floor drains with "Trap Guard" and no trap primers. Refer to the APS Mechanical Design Standards on the FD+C website.

LEED®: Use of innovative wastewater systems advantageous.

Standard 2.1.5.g Plumbing System Reliability

Plumbing systems are to be robust, reliable, and low maintenance. Provide diagram of the valve layout for all piping systems in building and on site. Design system for heavy use 9 months of the year.

Standard 2.1.5.h Plumbing System Maintenance

Isolation valves are to be accessible for normal maintenance.

Standard 2.1.5.i Fire Protection System

New schools will have an approved automatic sprinkler system throughout and fire hydrants around the site where required. The system will have its own zone designation for notification of APS Security when main valve opens. Provide adequate coverage and pressure to meet insurance, fire inspection, and safety standards. Vandal-proof heads inside and freeze-proof heads outside are required.

School renovations and additions will also require an approved automatic sprinkler system throughout the renovated and added spaces but a sprinkler system will not be added to the existing spaces that are not being modified. Provide adequate coverage and pressure to meet insurance, fire inspection, and safety standards. Vandal-proof heads inside and freeze-proof heads outside are required. For existing construction consult FD+C.

Sub-Policy 2.1.6 Electrical / Fire Alarm / Security Systems / Special Systems / Telecommunications

There are to be adequate system services to permit effective and safe program instruction in accordance with proper codes.

NOTE: Telecommunications refers to phone, public address, voice augmentation in the classroom, and Internet access services. Voice Over Internet Protocol (VOIP) services may be a requirement as well as link access to APS Wide Area Network (WAN), HVAC energy management system, APS central security, and possible irrigation remote system. (Refer to the APS Electrical Design Standards on the FD+C website).

Standard 2.1.6.a Electrical Service

Electrical service is to be adequate for existing and projected load plus 20% spare capacity to include all expected additions and distribution to at least 20 portable classrooms.

Standard 2.1.6.b Electrical Outlets

Each learning/teaching area is to have a minimum of 2 duplex outlets per wall. Some spaces will require floor or pedestal outlet options. (See Section 3 for these exceptions.) Provide outlet for all computer jack locations. Provide 1 exterior outlet per building elevation.

Standard 2.1.6.c Lighting – Artificial Illumination

Easily maintained light sources, properly placed, should provide adequate lighting. Some special programs students require special lighting with different cycles, spectrum, noise levels, etc. (See Section 3.4.2 for ISP, OT and PT room needs and modify the fixtures.) Provide light controls, occupancy sensors and dual light levels per APS Electrical Systems Design Standards.

NOTE: Provide adequate emergency lighting in all areas of school to illuminate egress points at night and in areas without natural light. Wall and ceiling textures and colors are to be chosen to enhance illumination. Light fixtures will be readily accessible by 6 foot ladder (except in gym) for re- lamping unless approved by APS FD+C during the design process. For normally occupied interior spaces without day lighting, consider solar tubes or skylights to introduce day lighting.

Provide motion sensor lighting controls with switch override option and dual light levels as indicated in the APS Electrical Systems Design Standards.

LEED®: There are many actions that qualify for points under illumination: energy consumption, day lighting balance, occupancy sensors, multiple bank design, etc.

Sub-Standard 2.1.6.c.1 Lighting – Natural Day Lighting

Provide day lighting in all learning and work spaces with a view to the exterior. The quality of light is an important consideration to provide a healthy learning environment. Both general illumination and task lighting requirements vary according to activity. In general, as much natural light as possible is recommended and augmented by light sources replicating the natural spectrum where required.

M&O Note: For skylights refer to APS Glazing and Window Standards on the FD+C website.

LEED®: Consider using diffused skylights or light tubes where windows or clerestories are not possible in occupied learning or working spaces.

Standard 2.1.6.d Fire Alarm Systems

Emergency systems are to be properly maintained and meet or exceed code requirements including:

- Automatic and manual fire alarm systems with distinctive sound and flashing light and able to be monitored from a remote location.
- Fire alarm horns located to provide sound coverage throughout the building.
- Alarm pull-stations located at points of egress.
- Properly functioning and located smoke detectors as required.
- Panels and pull-stations will be accessible to persons with disabilities.
- Connect fire alarm system to portables.
- The fire sprinkler system will be integrated into the fire alarm system and will be monitored.
- Connect control panel to security head end equipment with conduit.
- Provide fire alarm water gong on the exterior of the building for each fire riser.

NOTE: Design special systems following consultation with FD+C, M&O, and APS special systems contractors. Special systems equipment and wiring will be provided by APS special systems contractors; conduit systems and j-boxes will be provided by general contractor's electrical sub-contractor. Refer to APS Electrical Design Standards on the FD+C website.

Standard 2.1.6.e Security Systems (Intrusion, Security Camera, and Card Access)

***Intrusion security systems** – Must be adequate and functioning, reflecting the individual needs of each school. Security systems vary depending upon the design of the school but will have the following characteristics:*

- Door or passive infrared sensors. All spaces with exterior doors or windows will have infrared/motion sensors.
- Door contacts on all exterior doors.

- Central control unit communicates system status and control mode to APS Security office.
- Devices will allow full coverage of corridors, stairwells, main entries, and key spaces such as media center, kitchen, computer labs, administration area, gym, science areas, etc. System will be zoned to allow common after-hour areas to be used while the rest of the school is alarmed. Coordinate design with APS Security / APS Police.
- Conduit and j-boxes to be provided by general contractor. Wiring and devices to be provided by APS contractor.

Security camera systems *– Suggested by APS Police for building and site. Camera systems will vary in number of cameras due to building size but standard requirements follow.*

- Provide rough-in, AC power, and conduit for cable to centralized location for cameras distributed around the facility and site.
- In buildings, cover entries into halls, computer labs, gyms, administration suites, etc.
- For the site provide conduit underground to light pole pedestals to give panorama coverage of the lot and front entry to building. Provide rough-ins for camera locations on perimeter of building.

Card access entry system *– Suggested by APS Police at main building entries only. This system allows tracking the person (identifies when and where the entry was made); makes changing access codes easy; and enables a quick lock-down of a facility. Discuss with APS Police in early design.*

NOTE: For Standard 2.1.6.e: Design special systems following consultation with FD+C, M&O, and APS special systems contractors. Special systems equipment and wiring will be provided by APS special systems contractors; conduit systems and j-boxes will be provided by general contractor's electrical sub-contractor. Refer to APS Electrical Systems Design Standards on the FD+C website.

Standard 2.1.6.f Special Systems (Intercom / Bell, Clocks)

Schools will have functioning and adequate intercom/bell/clock:

- **Intercom and Bell Systems**
  - Adequate and functioning with provision for "all call" voice calling to individual loud speakers and two-way voice communications with loudspeakers located in all offices, learning, and support areas, including portables (to have call switches as well).
  - All call answering to be provided from the console to all speakers by means of a single operating control.
  - Provide bell / chime system to cover all occupied spaces and all outdoor activity areas especially paved "safe zone" areas for fire drills.
  - Rough-in conduit to be provided by general contractor. The wiring and equipment will be provided by an APS contractor.

- **Clock System**
  Clocks to be located to avoid easy tampering. Prefer clocks incorporated into speaker module with traditional face to be provided by APS special systems contractor. Clocks to be located in:

- All offices and main circulation areas.
- All teaching areas.
- Cafeteria and kitchen.
- Parent and conference rooms, teachers' lounge, and workroom.

- **Mobile Interactive Whiteboard**

  Each classroom is to have the capability to have a mobile interactive whiteboard. The interactive whiteboard will be provided by APS/IT and the rough-in for power and data is to be provided by the general contractor. See Appendix C.4 for whiteboard specifications.

NOTE: Design special systems following consultation with FD+C, M&O, and APS special systems contractors. Special systems equipment and wiring will be provided by APS special systems contractor; conduit systems and j-boxes will be provided by general contractor's electrical sub-contractor. Refer to APS Electrical Design Standards on the FD+C website.

NOTE: Voice, Video, and Data Cabling. All cabling will be Category V plenum rated at a minimum (Cat VI cabling is preferred). The cabling technology (copper, fiber optic, etc.) will accommodate voice, video, and data traffic. Cable trays are to be used on hallway straight-aways where possible. J hooks can be used in areas that cannot be reached by cable tray/ladder racks. No under slab cable chases are to be used.

Standard 2.1.6.g Telephones

Provide an adequate and functioning telephone system with a phone in every classroom and office. In existing schools that have a phone system the new equipment is to match the existing system with provisions to change the system toe VOIP at a future time. In new schools the PBX systems are to be VOIP.

Phone requirements

- All new schools must be to VOIP standards.
- All renovation upgrades and additions to existing schools the contract architect/engineer will provide rough-in for VOIP but the VOIP system will not be activated at the time of the renovation. VOIP may be added at a later date.
- Cafeteria/kitchen will have one point of service in the cafeteria office and two points of service at the food serving line for the cash registers.
- Elevator cab will have a dedicated telephone line that calls directly to a specified number at school police (505-243-7750).

NOTE: Design special systems following consultation with FD+C, IT, and APS special systems contractors. Special systems equipment and wiring will be provided by APS special systems contractors; conduit systems and j-boxes will be provided by general

contractor's electrical sub-contractor. Refer to APS Electrical Design Standards on the FD+C website.

Standard 2.1.6.h Computers

An adequate technologically state-of-the-art computer system will be provided in all teaching, work, and cafeteria/kitchen spaces.

- **External**: Every school to have a dedicated data link to connect to the central APS computer.
- **Internal:** Every classroom and office area to have conduit with conveniently located computer ports (with adjacent outlets) that can eventually be connected to a central computer file server.

NOTE: For Main Distribution Frame (MDF) and Intermediate Distribution Frame (IDF) specifications Refer to APS Electrical Design Standards on the FD+C website.

NOTE: Design special systems following consultation with FD+C, M&O and APS special systems contractors. Special systems equipment and wiring will be provided by APS special systems contractors; conduit systems and j-boxes will be provided by the general contractor's electrical sub-contractor. Refer to APS Electrical Design Standards on the FD+C website.

Standard 2.1.6.i Voice Augmentation Systems

Recent learning mode studies have pointed to the problems of students adequately hearing teachers throughout the room. Some schools are using voice augmentation systems to amplify teacher voices. Classrooms may be designed to provide the rough-in for such a system with individual classroom control.

Policy 2.2 Accessibility / Safety

School facilities are to be accessible to all populations in normal and emergency situations.

Standard 2.2.1 Doors

All doors (except code excluded) are to be of sufficient width and threshold clearance to be accessible to persons with disabilities. Provide view lites into all public access doors including main office, classrooms, corridors, etc. View lites will be located for use by all students including those in wheelchairs. Doors into corridors, kitchen, gym, cafeteria, and mechanical rooms are to be wider without a mullion or have removable mullions to allow for one point access for large items common to that space.

M&O Note: Door hardware and accessories to follow APS M&O and FD+C standards. Refer to APS Door Hardware Standards on the FD+C website

Standard 2.2.2 Exterior Doors

Exterior doors are to open outward and be equipped with panic hardware and air lock. Main entry, parent drop-off entry doors and bus area entry doors shall have one leaf power-assisted. Such power-assisted doors will have controls in the approach way rather than behind the door swing. Provide on-off switches for these doors for off-hours. Hardware is to

be selected from APS M&O list and with proper fire rating. The recessed mud mats must be removable for cleaning and in segments that are manageable by one person.

Standard 2.2.3 Classroom Doors

Classroom doors are to be recessed, open outward, and have smoke seals for acoustical control. Hardware should be selected from APS M&O list and with proper fire rating. Attach all doorstops mechanically into robust blocking. Any lites in doors are to be no greater in size than half-lite above hardware. Smoke seals required at classroom doors for acoustical privacy.

Standard 2.2.4 Barrier-Free

Barrier-free design must be age appropriate. Structure to meet or exceed all barrier-free requirements, both externally and internally, in accordance with Accessible and Usable Buildings and Facilities (ICC/ANSI *A117.1 – 2003 as amended by 14-NMAC 7.2, the Americans with Disabilities Act Architectural Guidelines - ADAAG 2004), specifications for making buildings and facilities accessible to and usable by physically handicapped people, and the Governor's Commission on Disability.*

Standard 2.2.5 Interior Signage

Identify all occupied spaces with signage (some schools with dual language programs will have signage in two languages). Signage will comply with ADA regulations and will assist children in finding their way around the school. Signage schedule shall be coordinated with site administration. Install signage within the range of student access relative to student ages.

LEED®: Consider using signage highlighting at least 5 sustainable features in certified buildings that qualify for LEED points and add to the educational process for sustainable design.

Standard 2.2.6 Fire Extinguishers

The school will have fire extinguishers (FE) in number and location per the code. FE cabinets will be semi-recessed, glass free, and sized to hold 10 lb FEs provided by M&O. In the kitchen allow space for a 60 lb. K- rated FE and provide a hood fire suppression system. M&O provides the 10 LB. and K-rated FE's. The contract A/E provides the cabinets, brackets and location of each extinguisher and the general contractor installs them.

Standard 2.2.7 Knox Boxes and Locks

Provide Knox Boxes and Locks on gates as required by the Fire Marshal. Establish location and height of the boxes and locks with the Fire Marshal during the design process.

Policy 2.3 Cost-Effective Maintenance

Design site and grounds for cost effective operation and ease of maintenance by APS maintenance personnel. . *See APS Site Design Directives on the FD+C website for acceptable products and design.*

Standard 2.3.1 Windows, Doors, Walls

Windows, doors, and walls are to be of material and finish requiring minimum maintenance. Windows and Translucent Panels require STC rating of 35 when placed in Core Learning Areas.

FD+C Notes: Windows - All glazing areas are to be regular/rectangular, recessed to handle window treatment, and where possible in classrooms and offices with a sill height a minimum of 30" a.f.f. High windows in all teaching spaces and libraries beyond reach are to have a light control device included in the construction contract and should receive covering treatment designed by architect for general contractor to provide and install. Manually operated blinds for regular windows will be provided and installed by APS. Electrically operated shades are to be included in the general construction. Operable window hardware and screen application shall not interfere with the ability to install window treatments. View lites in office and classroom doors that require covering need to have the sill above the lockset.

M&O Notes: Windows / Glazing: Refer to APS Glazing and Window Standards on the FD+C website.

Doors - Any window in a door which will need treatment must be above opening mechanism. This includes all office and classroom doors, but not necessarily entry doors.

Doors / Hardware: Grout fill all hollow metal welded door frames. Provide screen door for service drive access to kitchen.

Walls: Use semi-gloss paint on all interior walls. Provide heavy-duty clear plastic or stainless steel corner guards in high pedestrian areas.

Standard 2.3.2 Floor Coverings

Classroom floor coverings are to be durable and require a minimum of care.

Polished concrete floors are the preferred flooring material for corridors, cafeterias, teacher lounges, classrooms, art rooms, band and chorus rooms, family and consumer science classrooms, drama room and science classrooms. Carpet squares may be considered for general classrooms.

M&O Note: Refer to APS Modular Carpet Specifications on the FD+C website.

Standard 2.3.3 Ceilings

Ceilings and walls are to require minimum care. The best panel to use for a Standard is Armstrong Fine Fissured School Zone, High NRC/High CAC) product 1734/1734, or the USG Equivalent which is Radar ClimaPlus High NRC/High CAC.

M&O Note: If required by code, use fire rated ceiling tile #1810/1811 fine fissured 'fireguard' high NRC/High CAC. When installing grid do not anchor ceiling tie wire to duct work, but tie to permanent structure with proper anchors and wire.

For all wet areas use only moisture-rated board ceilings. In student restrooms, use moisture-rated gypsum board ceilings. For kitchens use mylar or other cleanable surfaced lay-in ceiling panels approved for kitchen use.

Standard 2.3.4 Built-in Equipment

Built-in equipment is to be designed and constructed for ease of maintenance and durability.

Standard 2.3.5 Floors in Special Areas

Durable floors in restrooms, kitchens, cafeterias, and corridors are to require minimum daily maintenance and tolerate disinfecting chemicals.

Floors in nurse's area to be commercial grade sheet Marmoleum with welded seams. Kitchens to have Polyfloor in color other than white (off-white is okay). Polished concrete desirable in other areas where appropriate. Mondo flooring with welded seams in gymnasiums. Restroom floors to be ceramic tile.

M&O Note: All floor tiles shall be slip resistant.

Standard 2.3.6 Custodial Areas

Provide adequate custodial storage spaces with hot/cold water and mop sink. The rule of thumb is a minimum of one custodial room per floor and one per building.

NOTE: Provide fire sprinkler, make-up air/exhaust, shelving, mop holder with shelf and impervious backsplash on walls around mop sink. The room size must allow for custodial cart.

Standard 2.3.7 All Sink Locations (other than restrooms)

Restroom accessories are to be wall mounted and of quality finish. (See Mechanical Standards)

All sinks to be provided with:

- Soap dispenser – surface mounted with tamper-proof screws (receives pouch soap refills).
- Paper towel dispenser – surface mounted, polycarbonate, paddle operation (receives roll towels) at all sinks other that student restrooms (must be ADA compliant)
- Trash receptacle - freestanding 18 gallon capacity stainless steel

Standard 2.3.8 Exterior Signage

All signage is to be vandal resistant, easily visible from a distance, and compliant with ADA requirements. The building signage shall include the name of school and street number visible from the street.

M&O Notes: Posts for signs to be #3 U-channel. Sign hardware to be vandal guard. Fence mounted signs to have 3.5" aluminum plates. All traffic signs for directions, safety, traffic control, and ADA will be installed by general contractor. Signs on buildings to be attached on all corners of the sign and high enough to prevent graffiti or vandalism. Identification numbers or letters of school names etc. will be high enough off ground and adhered sufficiently to inhibit vandalizing.

Standard 2.3.9 Monument Signs

Provide a free-standing, durable sign that has the name and address of the school along with a non-electric, protected message board. This sign is not to be confused with a Marquee sign. The monument sign should be less than 8'-0" high and located on the site to be visible

by cars passing on the main road in front of the school without creating a visual barrier for traffic.

Marquee Signs will not be installed as part of the construction project. During the design phase of each project a location should be designated and electrical conduct installed from the building to the designated location. FD+C does not purchase or install marquee signs but in some instances will relocate existing signs to accommodate construction projects. All marquee signs and their installations need to be approved through M&O.

M&O Notes: Marquee Signs and the required infrastructure are not installed under FD+C contracts. All installation and maintenance must be provided by the school itself.

M&O Notes: All signs on buildings to be attached at all of the corners of the sign and high enough to prevent graffiti or vandalism. Street address identification numbers and letters of school name etc. will be high enough off ground and adhered sufficiently to inhibit vandalizing.

3.0 ADEQUACY AND ENVIRONMENT FOR EDUCATION

The policies and standards in this section assess the adequacy of the school structures to support educational and curriculum requirements while providing an environment conducive for learning.

Policy 3.1 Plan for Flexibility

School facilities are to provide ability to adjust to programmatic (instructional and community) and technological change.

Provide a learning environment supportive of the district's educational programs and curricula. Build into facilities opportunity to adjust to:

- Internal flexibility
- Expanding and contracting
- Accommodating future technology

Standard 3.1.1 Flexibility of Classrooms

Educational areas are to allow internal flexibility for program adaptations. Factors to consider:

- Classrooms sized to allow a variety of grade levels.
- Classrooms and support areas designed to allow for different programs.
- Some classrooms (20%) can be varied in size through use of large double doors or high sound transmission class (STC) rated folding wall systems.
- - 1/2 size classrooms that can be made into full classrooms.
- - Full classrooms that can be made into double size (for team teaching).
- - Appropriate plumbing stub-outs.
- Allow positive use of walls and ceilings for display and learning.
- Flexibility in furniture arrangement (not long narrow rooms).

NOTE: In some APS schools there are classrooms with moveable STC rated partitions in each wing of the school to allow some classrooms to expand to meet new purposes. Demountable panel partitions are not acceptable.

Standard 3.1.2 Ability to Add Permanent or Portable Classrooms

Every middle school is to have the ability to serve at least 1,200 students in permanent classrooms and expand in population and program needs by adding portable classrooms easily.

Standard 3.1.3 Expansion Capability of Core Support Facilities

Support facilities (e.g. cafeterias, restrooms, media center) are to have the capability to support anticipated expansion of the school population and have infrastructure potential for unexpected enrollment increases.

Standard 3.1.4 Communication and Information Technologies

Learning and office spaces are to have the capability to accommodate communication and information technologies.

Policy 3.2 Site / Facility Organization

School sites and facilities are to be organized in a clear and consistent manner that is conducive to learning and allows proper supervision.

Standard 3.2.1 Centralization of Common-Use Facilities

Common-use facilities are to be centralized to population served:

- *Media Center*
- *Work Room*
- *Cafeteria*
- *Student / Staff Restrooms*

Standard 3.2.2 Noisy-Quiet Separation

Noisy activities (gymnasium, music, consumer science, assembly areas) are separated from quiet learning areas.

Standard 3.2.3 Entrance / Exit Location

Entrances and exits are to be located to permit efficient student traffic flow. The main entrance will be designed to be visible from the main office.

Standard 3.2.4 Portable Classroom Location

Portable classroom buildings are to be integrated with other academic learning areas and have equal access to school support facilities.

NOTE: There are many potential portable discussion issues (e.g. access, security, condition, room for expansion, total number of portables on-site). In general:

- *Portable classroom locations are to be defined.*
- *Integrated open space will be provided.*
- *Infrastructure support will be planned.*

Standard 3.2.5 Supervision of Large Group Areas

Large group areas (cafeteria, media center, outside gathering areas) are to be designed for effective supervision.

Policy 3.3 Community / After Hour-Use

School facilities are to provide the opportunity for community and after-hour use.

The APS Board of Education endorses the philosophy and goals of community education as a district-wide program to the extent that resources are available, within current federal and state statutes, and State Public Education Department regulations. The public investment in school plants and sites, and the general community welfare, justifies the use of school buildings and grounds by local citizens for educational, cultural, civic, and recreational purposes outside of school hours or when such use will not conflict/interfere with the school program.

Standard 3.3.1 Community Education / After-Hour Use

The facility is to permit the use of some portions of the school after regular school hours without impacting security of other portions of the school. Joint-use space is to be safe, secure, and include separately keyed activity spaces (gym, cafeteria, and classrooms), accessible restrooms, and storage areas.

Standard 3.3.2 Joint-Use Facilities

Joint-use facilities (parks, swimming pools, libraries, child care, and senior citizen facilities etc.) will be integrated into the campus in a safe and secure manner and have access to an accessible restroom.

Policy 3.4 Spaces Meet Instructional Needs

All school areas will provide an environment that meets instructional and functional needs of the activities taking place.

The size and nature of the following areas are to meet standards specifications. (The size range of all areas discussed is provided in Appendix B.)

Standard 3.4.1 Standard Classrooms

Standard classroom size is roughly determined by assessment of State Pupil Teacher Ratios (PTRs), a size allocation per student, and practical experience. In practice, to leave options for moving classes between different grade levels, the following size ranges are requested:

General needs for corridors and lobby areas to support classrooms

- Provide polished concrete flooring, graffiti resistant wall surface, and way-finding.
- Provide tall display cases with safety glass for student work and awards near each grade level, the art / music classroom(s), main office and main gymnasium.
- Provide student lockers in the hallways that serve the 3 different grade levels. The locker units to be 2-tier, 16 gauge doors with louvers, 24 gauge body steel units with chrome plated handle with padlock eye, one double hook on the ceiling and 4 single hooks on walls of the locker. Provide aluminum number plate. Lockers will be 12" wide x 60" high x 15" deep. Provide the locker built-in to the base and top or sealed base and angle the top.

General needs for all middle school classroom spaces

- Provide classrooms that are a minimum of 840 sf.
- Convenient to common resources (media center, cafeteria, PE facility).
- Utilize natural light to reduce daytime lighting costs, balance spectrum of lighting available, and provide views. Windowsill height of no less than 30" a.f.f. Operable windows to provide cross ventilation.
- Acoustically balanced for hearing the human voice (must comply with ANSI standards) in the space and blocking noise from outside the space. Consider use of sound augmentation system.

- Accommodate technology needs for teacher and students to include: telephone, computers, printers, electrical and data connection for and Mobile Interactive Whiteboard.
- Accommodate APS furniture and equipment list. Arrange primary furniture to allow for good view lines of chalkboard/whiteboard area from all desks and tables.
- A minimum of 2 duplex outlets per wall.
- Easily maintained surfaces.
- Sufficient storage organized to avoid clutter.
  - Provide 8 Ln. ft. (30" deep) of computer counter (provide a portion of the counter at ADA height).
  - Provide three 36" wide, 84" high, 24" deep storage units, two with shelving only and one having a split – file drawers below and storage above with shelves.
  - Provide one 24" wide, 84" high, 24" deep storage unit with adjustable shelves.
  - Provide one wardrobe units 18" wide, 84" high, 24" deep with shelf at top, rod and hooks, and tow shelves in the bottom.
  - Key all alike within each classroom but unique to each classroom.
- Standard is 50% magnetic blackboard, 50% magnetic white boards (2 - 8'x 4') and tack boards (2 - 4'x 4') with tack strip on top of all boards. Provide flag and flay holder in each classroom and specialty classroom, art, music, library and cafeteria.
- Manual pencil sharpener on wooden block with blocking in wall at standard height for each classroom and specialty classroom, library or other area where students will be working. The sharpeners are to be provided by and installed by general contractor.
- Minimize carpet areas. (Refer to the APS Web site for specific carpet guidelines.)
- Polished concrete floors are preferred throughout but especially at wet areas.

NOTE: Consider providing additional storage space for teachers off-track in year-round schools.

Expected instructional spaces (full-size equivalences)

See list of anticipated teaching spaces in a school for 1,200, whether in permanent or portable classroom structures.

Standard 3.4.2 Special Education Spaces

Special Education requirements are the same as the regular classrooms except where noted. The allocation for each middle school will vary according to the specific enrollment needs, but the following is typical minimum impact on teaching space needs.

Standard 3.4.2.a Special Education for C and D Levels

- Eight to 24 classrooms for C level programs and D level programs whether full inclusion or not.
- One D-level space requires a time-out room of 50 sf with floors and walls of soft, easily cleanable material, door that opens out of space w/safety window, and light switch on the outside. No electrical outlets or switches in this room.
- Restroom for D-ED suite with lav and toilet. The walls to be scrub resistant. Flooring to be easily sterilized. Provide standard restroom accessories including a mirror. Lockset to restroom to be capable of locking but operable with CR key. Provide hardware that indicates room is occupied.
- Provide storage room with adjustable wall shelving on two usable walls, two 6-shelf units of HDL shelving to be heavy duty 18" deep units, about 60 Ln. ft.
- Provide a Conference Room (150 sf) with one 30" wide, 34" high, 24" deep sink base unit with 18"/12"/8" deep stainless steel sink with gooseneck / lever handle faucet and one 18" wide, 24" high, 24" deep four drawer unit. Provide one 48" wide, 24" high, 13" deep upper cabinet with lockable doors.

Standard 3.4.2.b Special Education for CRL

- Community Reference Learning (CRL) Suite to include bathroom with ADA shower, kitchenette and storage. Many schools may have a CRL suite to serve severely handicapped students. An CRL suite classroom for 8 students and 2 staff represents a full-size 840 sf classroom with 200 sf storage; a large ADA restroom with shower; a washer / dryer, storage for diapers and supplies of 100 sf; an office of 120 sf; and a separate HVAC, lighting, special systems designed for severely disabled students. It is possible to share the support spaces between two CRL classrooms. Some special programs students require specialized lighting with different cycles, spectrum, ballast noise level, etc. Provide for a 400# point load eye-hook in the ceiling of the classroom which the general contractor will install (this requires a structural connection and cross-bracing to the structure above and 7'-0" clear in all directions from the central point connection).

Standard 3.4.2.c Special Education Speech and Language

- Speech and language pathologists office with 240 sf (sound isolated). Provide one 30"W, 84"H, 24"D lockable tall storage with one 18"W, 84"H, 24"D wardrobe unit.

Standard 3.4.2.d Special Education Resource Rooms

- Resource rooms are similar to the typical classroom but half the size (without built-in counter for computers).

Standard 3.4.3 Science Laboratories

- Provide 6 science laboratories (1,250 sf) for 32 students each with 3 shared workroom / storage / prep room (420 sf). Provide a pair of laboratories and one workroom / storage / prep room for each grade level.

- For each science lab, provide six student sink groups. 5 groups (34" H, 24" D) each with 48" lockable base unit (with shelves), 18" three-drawer unit and 18" sink unit with 12" W, 12" L, 8" D phenolic resin sink with tall gooseneck lever handle faucet. The sixth group includes a 48" lockable base unit with shelves and a 36" ADA sink unit. Of the six labs, four will have the scheme exactly. For the other two labs (in the 6th grade wing) the 48" base cabinet will have 20 plastic trays inserted into the lockable cabinet rather than shelves. All groups will have upper wall cabinet units that measure 36" W, 24" H, 18" D with lockable sliding glass doors. Provide additional base cabinets as required for design. All tops are to be phenolic resin.
- Workroom / Storage / Prep Room – each space is required to have a 36" x 36" glass drying rack over 36" W, 34" H, 24" D base cabinet unit for 12" W, 12" L, 8" D phenolic resin sink with gooseneck lever handle faucet, w three drawer 18" W base unit, a 32" W base unit with shelves with a cook top inset, a 24" built-in dishwasher, a full size refrigerator and a 66" desk area with 2 pedestals of three drawers each and knee space of 30". Provide upper open wall cabinets over the desk of two 30" H, 24" H, 13" D and one over the cooktop for the hood. Provide open solid metal shelving for science equipment storage.
- Utilities to be included are gas, water, and electricity.
- Provide emergency gas shut off, eye wash, and fire blanket.

Standard 3.4.4 Performing and Fine Arts

An outdoor performance venue is a great option next to the indoor performance space. The configuration of a performance spaces follows.

Standard 3.4.4.a Chorus, Band and Orchestra

- These spaces will need acoustical tuning with non-parallel walls, sound panels from ceiling (or acoustical ceiling), wall panels and possible floor treatment.
- Ceiling heights in main rooms should be non-parallel to floor, unless using ceiling sound panels, and may vary from noted ceiling heights (that are averages for space).
- These are high noise areas spaces, so acoustically separate these rooms from the rest of the school and from one another.
- Provide chair rail around band and chorus walls for wall damage prevention.
- Chorus and band room will each have an office with visual access to the classroom.
- Each room will have a storage room for choral risers, file cabinets, lockable instrument storage cabinets and a sink in the band storage room only.
- Provide one large and one small practice room with acoustical treatment of walls and doors.

Standard 3.4.4 b Drama / Performance

- These spaces are to be designed for double use as a music space as well as drama.
- The intent of the program space is to allow use of the stage as a part of the drama academic space and to open a folding powered sound wall to the stage (part of the cafeteria) while closing the drama classroom off from the stage.
- Provide an office with a window into the classroom space and lockable storage room.
- The drama classroom will have casework similar to other classrooms.

Standard 3.4.4 c Performance Stage

- Performance Stage will be equipped with front/side/back curtains and a door to the drama classroom space for use as a green room (when the powered divider wall is closed). Provide ramp access onto stage from cafeteria side of sound wall.

Standard 3.4.4 d Art

- Art room to be provided with sink/counter area (clay traps in sinks), table area for up to eight 60" x 60" shop tables, clay area with two electric potter's wheels, damp proof cabinet, and an open area to place model or still life.
- Allow for use of ceiling grid or exposed ceiling to hang work.
- North light is important.
- Anticipate shift to computer art in the future so provide adequate electrical and data service similar to a normal classroom.
- Provide a deep, wide sink with clay trap and a separate hand sink for ADA compliance as required.
- Provide a separate kiln room with proper power and outlet for the specific kiln and exhaust hood. The kiln room will be provided with a thermostatically controlled room exhaust fan separate from the kiln exhaust hood.
- An art patio will be desirable and should be considered during the design phase. (See kiln specification in Appendix C.5)

Standard 3.4.5 Family and Consumer Science

Proximity to an exterior drop off area is recommended and if that is not possible then by an elevator. Each classroom will accommodate 32 students.

- **Sewing** will have up to 32 sewing machines, measuring 24"D x 36" W on 16 tables. Power to be supplied by power poles instead of floor outlets.
- Sewing area to have a 30"W by 60"H mirror in space for fitting clothes.
- Provide mobile demo unit to match casework (60"L, 36"H, 42"D with 4 drawer unit and two 24" storage units sections with 2 shelves each).
- Provide two 48"W, 84"H, 24"D locking tall cabinets with shelves and one wardrobe unit 18"W by 84"H by 24"D.

- Laundry room with washer and dryer. Provide 60"W, 24"H, 13"D lockable upper cabinets over the washer and dryer. Provide standing laundry sink near the washer and dryer.
- Storage room to have built-in cabinets that accommodate five 32 storage tray cabinets, with each tray about 20"H, 20"D in a nominal 24"W, 5"H, 24"D slot in a nominal 48"W, 84"H, 24"D casework unit.
- **Cooking** will have six student kitchenettes in "L" shaped base cabinets each with a double stainless steel sink (each 14x16x6) with single action lever faucet (no gooseneck), a slide-in stove with oven that has controls on the front, and a space for a microwave on the counter.
- Upper cabinets to contain evenly sized wall units including the stove hood location. Side exhaust ranges are not allowed.
- Each kitchenette is about 15 linear feet of 34"H, 24"D base cabinets mixing door and drawer units as for residence, with 8' of upper cabinets at minimum 13" deep. Each kitchenette to have at least 6 drawers in multiple units, multiple standard storage units, a sink base unit , a corner storage unit with rotating shelves, a 12" vertical try storage unit, and a slot for the slide-in stove/oven.
- The instructors demo kitchen island will be 36"H, 30"D, with 30" cooktop unit with storage below, 24" four drawer unit, 36" sink unit, and one drawer and storage unit. Provide cabinets or ceiling mounted mirror that is long enough to show stove and counter prep area. Behind demo kitchen island provide base cabinets with 36"H, 24"D units: one 36"W sink unit with double stainless steel sink unit with sprayer and disposal, one 24"W dishwasher unit, one 1-drawer and slide out trash 24"W unit, one 1-drawer and storage 24" unit, one 12' vertical try storage unit, and one 30"W, 84"H, 24"D tall unit for double oven unit with 2 drawers below.
- Provide accent lighting over demo kitchen.
- Pantry to have 1 each upright freezer and refrigerator (minimum 21 cubic feet each). Install five wire metal shelving units that are each 74"H, 24"D, 48"W.

Standard 3.4.6 Computer Lab

Every school is to have a lab with 37 equal computer workstations (32 student and 5 support devices).

- Each station will be 36"W by 30"D using specialized counters mounted at 26" +/- for middle school students. One workstation will be set at ADA height.
- All screens shall be visible from instructor workstation.
- All wiring to run in wire / cable management system along or below counters. Feed with power poles at inner rows.
- The preferred plan has two concentric partial circles (U-shaped) with the teacher's vantage point in the opening. Lower any inner row wall or divider so teacher can view the screens of the next row of computers. No tiered floors.
- Storage room (to be shared with Technology Education Lab) has four 30"W, 34"H, 24"D, lockable base cabinets with shelves, one 36"W, 34"H, 24"D six-drawer unit and a

36" ADA sink unit with 14" by 16" by 6" stainless steel sink with gooseneck lever handle faucet. Provide about 16' of upper cabinets made up of 36"W, 24"H, 13"D lockable cabinets, except for a shorter one over the sink.

- Provide separate cooling and exhaust.

Standard 3.4.7 Technology Education Lab

This lab provides space for a cross curricular teaching environment, using technology to solve problems, promote hands-on fabrication opportunities and support team building skills.

- The design of the lab should allow its workstation / hands-on fabrication functions to have multiple arrangements. "U"-shaped configuration is not appropriate. A 5-sided workstation pod fed by a power pole allowing for 7 pods in the room using computer workstation furniture clustered creating pods is an acceptable solution.
- The stations in this lab can cover applied physics, general science, flight technology robotics, power, mechanics, etc.
- Provide 60" by 30" tables around perimeter of room with wiremold above table height.

Standard 3.4.8 Library / Media Center

The library / media center requirements follow:

- Seat about 85 students and staff at tables and computers.
- Limited access and visual control throughout from 16' circulation area.
- Accessible electrical outlets on every wall and columns. Coordinate with casework, furniture, and equipment FD+C staff.
- Provide day lighting (with a minimum window sill height of 48" to clear shelving). Provide minimum sill height of 30" for LEED Certification points.
- Space able to be darkened enough for AV use.
- Lights in individually controlled banks to allow darkening.
- Appropriate wiring for audio visual and computer equipment is required.
- Space to allow for different arrangements and programs to occur at one time.
  - Work with APS FD+C for age appropriate furniture, shelving, desks, and layout.
  - Work study area for 2 classes, for large group reading activities, and for reference.
  - 20 stations for computer research and group work with data.
- Electrical for security gate installation at main entry.
- Provide adjacent Librarian office. Provide sink with soap and paper towel dispensers. Provide built-in upper and lower lockable cabinets of 40 Ln.ft.)
- Provide a built-in circulation desk to be provided by the general contractor.
- The secondary exit for emergencies should be alarmed with direct line of sight from circulation desk.
- Direct access to a media center workroom is desirable.

Standard 3.4.9 Main Gym / Physical Education

The main gym / physical education area requirements follow.

- Main gym area average of 12,525 sf with minimum 24' ceiling is required. No ductwork or lighting to be installed below the 24'.
- A safety space between the court and wall is required.
- Stripe line floor for basketball and volleyball.
- Provide seamed indoor resilient multi-purpose Mondo flooring (or equal) with cove base.
- Gym should have 2 main electronic retractable basketball goals with clear backboard and flooring court markers. Plus 4 additional electronic retractable basketball goals with backboard. Provide wall pads on the gym sidewalls.
- Provide volleyball sleeves, standards, padding, net, and sleeve screw caps for safety. Provide 5 sleeves for full and half court games.
- Wall eye bolts for net activities, and a climbing rope attachment.
- Discuss climbing wall option.
- Main gym to be located near the exterior playgrounds and recreation fields and away from classrooms.
- Provide direct access to outdoor play areas.
- Provide windows that are impact resistant or protected.
- Two offices with restrooms (with showers) for physical education and sufficient storage.
- If this space is to have a performance platform, provide a minimum platform with curtain, ramp access, and storage.
- If there are before and after-school programs, provide lockable office / storage space.
- Provide powered telescoping bleachers with one-piece molded bench type plastic seating for 1,200 people. Provide 8'-0" clear space between the top row of the bleachers and bottom of the roof structure.
- Snack bar with rolling door that seals tight to stainless steel counter. Provide cabinets, shelving and 3-compartment sink.
- Provide storage space with lockable double doors for athletic equipment and folding chairs. Ceiling height to accommodate volley ball poles.
- Provide divider curtain across the middle of the gym that is electronically operated.
- Provide PA and intercom systems.

FD+C Note: Refer to the APS Electrical Design Standards and APS Mechanical Design Standards on the FD+C website

Standard 3.4.9.a. Auxiliary Gym

- Auxiliary gym with minimum 24' ceiling is required.
- The type of flooring is to be the same as the Main Gym.
- Flooring is to be striped for basketball and volleyball.
- Provide volleyball pole anchor sleeves, standards, padding, net and sleeve screw caps for safety.
- Storage room for athletic equipment and chair storage to have ceiling height to accommodate the volleyball poles.

Standard 3.4.9.b. Multi-purpose Room

- Multi-purpose room is used for PE, dance, health, and / or weight classes with a 12' high ceiling.
- Flooring is to be specialty flooring similar to main gym for these activities.
- Provide intercom and sound system for music.
- Storage room for equipment.

Standard 3.4.9.c. Locker Rooms

- Provide separate locker rooms for boys and girls each for 70 students.
- The flooring to be fungus, mildew, bacteria resistant and easy to sterilize.
- Provide 2 offices (to be shared by 2 people each) with adjacent restrooms. Provide each office with a fixed window into the locker area. Provide (2) single tier full height 15" wide, 18" deep lockers. Provide the restroom with a water closet, lavatory with mirror and accessories. Restroom to have ceramic floor and base.
- Lockers: Provide alternating 6- and 2- combination locker system where 6 over/under lockers in 72" high by 12" wide by 18" deep lockers paired with a 2- tier locker 72" high by 15" wide by 18" deep. Design for maximum 210 students with generally less than 70 students (each sex) per period. Provide knockdown lockers with chrome plated handle with padlock eye, one double hook on ceiling and 4 single hooks on walls of lockers. Provide aluminum number plates. Provide 35 6-tier lockers and 35 2-tier lockers. Provide benches with integral bases and anchored securely to the floor.
- Restrooms: Provide restrooms for students with access from the gym via the locker room. Restroom area to have ceramic tile floors and 5' high (minimum) ceramic tile wainscot. Provide mirrors, paper towel dispensers, soap dispensers (pouch type) toilet partitions, toilet paper dispensers, handrails, and napkin disposal units (in girl's side only) in each locker room.
- All exterior windows in locker rooms shall have obscure glass and be at least 6'-0" a.f.f.

Standard 3.4.9.d. OT / PT Space

- Provide room for OT / PT, office, restroom and storage.
- In the office provide 8 Ln. ft. of computer counter set at ADA height, three 48" high, 24" deep lockable tall HDL cabinets and 4 eye hooks connected to the structure to hold 250 pounds each.
- Provide an office with a fixed window into the OT/PT space. Provide a compact refrigerator as part of the 48" wide x 36" high x 24" deep unit with 4 drawers. A microwave will sit on the counter. Provide matching upper cabinets.
- Provide a restroom for students with access from the OT/PT space. Restroom to have ceramic tile floor and 5' high (minimum) ceramic tile wainscot. Provide sufficient space to allow for a Hoyer lift (39" wide x 41" high). Provide room for movable 72" long x 30" wide x 18-36" adjustable height changing table (NIC) in the restroom. Provide mirror, paper towel dispenser, soap dispenser (pouch type), toilet paper dispensers, and handrails.
- Provide at a minimum open storage shelving measuring 24" wide x 84" high x 18" deep.
- Provide a storage room with 24 Ln. ft. of HDL open storage (48" wide x 84" high x 30" deep) for large manipulative equipment. Provide free-standing laundry sink with facet, soap and towel dispensers in this space to ease cleaning of mats and manipulative equipment.

Standard 3.4.10 Cafeteria

Cafeterias serve as a food serving area and may serve as a performance area for school activities.

- Access into space should be in no less than a double door arrangement (two 36" minimum wide doors) at all exit points even if exiting calculation allows less.
- The cafeteria should be accessible from the exterior for after school programs without allowing access to the remainder of the school.
- Sized to seat 12 sf/student with no more than 3 lunch periods.
- Typical seating is a combination of 60" round tables and 12' bi-fold models (NIC).Locate computer jacks for operation of ceiling mounted projector for large group meetings. Locate jacks with outlets along one wall for multiple table use during registration. Provide power and LAN access off the front of the raise stage to connect to projection unit for large powered AV screen.
- Provide adequate point-of-sale connections for computerized checkout units at appropriate locations (2 minimum).
- Provide powered 108" x 108" AV screen mounted in the structure of the ceiling area. Key operate switch or locate switch in storage or custodial room.
- If stage is located in cafeteria provide rough in for a high fidelity sound system with equipment located in storage, with microphone access by the stage and by one other area. Install conduit so 4 speakers will cover space from stage to back of room.

- If stage is located in cafeteria provide lighting for stage area. Provide stage lighting system with minimum 16 PAR 38 fixtures, 8/16 channel controller, dimmer packs, cabling, clamps, and needed gel sheets. Mount lighting for maximum coverage of stage area.
- If stage is located in the cafeteria it should have a performance platform with manually operated curtain on the front, side and back, ramp access, and storage.
- Provide acoustic reverb rating to allow use of space for small plays and music ensembles.
- Provide windows with a view to the outside and provide with electrically operated MECO shades (or approved equal) for shading and lockdown.
- Discuss with Food & Nutrition Service the option of self-service and/or cafeteria staff-serve.
- Floors to be polished concrete.
- For after school programs provide storage, sink, snack cooler and required outlets in a separate lockable room.
- Provide designated area for recycle bins for paper, plastic and aluminum.

Standard 3.4.10.a Snack Bar

- Locate snack bar contiguous to the cafeteria.
- Provide four service openings, 2 into cafeteria and 2 to the outside. Each opening to have a lockable stainless steel fire-rated (as needed) roll door with stainless steel sill. At exterior openings provide inset vertical hung aluminum storm window units (or equal) to close off opening when not operating to prevent draft and insects. Openings to be 18" wide x 30" high.
- At the two exterior openings, provide effective cover from rain and sun for students.
- Provide snack bar with only warming capabilities with 22 Ln. ft. of HDL open base shelf cabinets with counter top to connect with the window serving areas. Provide wiremold along backsplash of counter for warming equipment (5 devices such as microwaves). Provide wire metal shelving along wall opposite from windows.
- Provide 3 compartment sink – each 10" wide x 14" long by 12" deep – with same accessories and faucet as in kitchen unit. Provide with 20" drain boards each side. Provide 12" high stainless steel wall protection behind sink area.
- Provide a hand sink with soap and paper towel dispensers.
- Provide 2 point-of-sale computer jacks with outlets (one each pair of windows) for interface with food service computer sales system from kitchen office.

Standard 3.4.10.b Storage / Custodial

- Provide area with custodial sink, backsplashes, faucets, broom and mop holder rack.
- Provide ample storage for additional special events folding tables and chair carts.
- Provide doors to allow for 72" clear opening.

Standard 3.4.10.c Dining Patio Outside

- Provide hard surface, well drained and half shaded patio area (shade between 10:30 am and 1:30 pm) adjacent to the snack bar and easily available for students from the cafeteria. Provide anchored, exterior rated, vandal resistant tables and benches for up to 100 students.
- Provide hose bibb in area for cleaning. Provide outlet for cleaning equipment with 30 amp GFI circuit.
- Provide general site lighting for dining area (and adjacent socialization areas) to allow evening use for special programs.

Standard 3.4.11 Kitchen

- Kitchen to include the following areas. (See Appendix C.2 for *Guide to Space Planning of a School Food Service Facility* based on number of meals served).
  - Food preparation area with vegetable sink.
  - Serving area with computer access for recording student names.
  - Dish/pot washing area (requires a 3 compartment sink).
  - Hand washing sink for cook/prep/serve area with soap dispenser - surface mounted with screws (receives pouch soap refills), and paper towel dispenser - surface mounted, stainless steel, lever operation (receives roll towels).
  - Dish/pot washing area (requires a 3 compartment sink).
  - Cold and hot storage equipment generally including a freezer / refrigerator walk-ins, and 2 to 4 transporters for hot food.
  - Dry storage.
  - Restroom for the staff with door and door closer.
  - Access to lockers and electric washer / dryer units.
  - Office with telephone and data. Provide a window to view into the kitchen.
  - Janitor closet in or adjacent to kitchen.
- 18" minimum backsplash around stoves, sinks, and dirty tray drop-off.
- Kitchen to be free of any hazards to students (e.g. hot serving line surfaces).
- Sufficient access for delivery vehicles into a receiving area through a 3' - 8" door (minimum) x 7' - 0 high screen door and fly fan entry. Cover screen on door with expanded metal covers on both sides to protect screening.
- Provide doorbell at rear entry.
- Polyfloor preferred in kitchen area (color other than white).
- Sufficient access for trash pick-up.
- Shield exterior trash area near kitchen.

- Surfaces able to be disinfected. Consider use of reinforced fiberglass panels (RFP) on all walls where serving functions occur. Provide stainless steel behind cooking and washing areas (floor to ceiling).
- Provide solar preheating of hot water for kitchen use.

Standard 3.4.12 Other School Support

These are miscellaneous spaces that have no specific relationship to specific spaces.

- **Student Lockers**: Lockers are enameled 2-tiered, 16 gauge doors with louvers, 24 gauge body steel units similar to Penco Vanguard knockdown lockers with chrome plated handle with padlock eye, one double hook on ceiling and 4 single hooks on walls. Provide aluminum number plate. Lockers are suggested to line corridors serving classrooms for each grade level, split as evenly as possible, 400 in each grade area. Lockers will be 12"W, 60"H, 15"D. Provide coved sealed base or built-in (furred out above ceiling or angled top).
- **School Store**: The store will have a 72" by 42" tall stainless steel roll-up door, rated for location. It will be key lockable from inside. Room will have five 36"W, 34"H, 24"D base cabinets (one 6-drawer unit and 4 lockable shelf units). Countertop with integral backsplash. Wall opening at roll door to receive stainless steel cap on the sill or plastic laminate counter extension. Provide three 48"W, 78"H, 18"D wire steel shelving.
- **MDF and IDF** to conform to all requirements in the APS Electrical Design Standards and Telecommunications Guidelines. Seal all wall to roof and floor to wall joints to prevent dust infiltration. Locate MDF near utility entry to school. The main services and distribution of all cable / wire for all special systems goes through these rooms. Rooms to be acclimatized with good air exchange, free of dist, and operate 24 hours a day so not time clock interference.
- **IT** office can be located anywhere near the MDF. It is a standard office environment with its own thermostat. Provide a 60"L, 36"H, 36"D workbench.
- **Building Storage**: These rooms are assigned at each grade level area for general storage purposes. Provide twelve plastic laminate cabinets 36"W, 84"H, 24"D lockable shelving units.
- **Lobby** is to allow for the entry experience into the school. Provide a display case somewhere in this area or nearby of 16"W, 60"H, 24"D with safety glass, lockable, interior glass shelving and illumination. Provide for a flat screen TV mounting in the lobby for announcements and daily activity highlights.

Standard 3.4.13 Utility / Storage Custodial Utility Areas

There are to be sufficient custodial areas with hot and cold water to efficiently clean all permanent and portable facilities. They are to be conveniently distributed in a manner that is appropriate to serve entire school.

- 4-6 interior custodial areas per middle school. If different permanent buildings, at least 1 custodial closet in each building.
- Each custodial closet to be 60 sf with 1 at 200 sf in size for supplies and a desk.

- All custodial closets shall have a janitor's floor mop sink, mop holder and sufficient shelves for storage. Provide an outlet. The faucet at the mop sink shall be heavy duty with ¾" male garden hose threads on spout end, pail hook on top of cast brass spout and top reinforcing strut/bar and mounting bracket.
- Cover walls around sink with tile or stainless steel surround.
- All spaces to have active mechanical ventilation.
- Provide access to the roof in some of the custodial storage areas or nearby storage rooms.
- Custodial Rooms will have painted walls (and ceilings if they are not lay-in). The floors will have a concrete sealer.

LEED®: Selection of cleaning supplies is part of LEED® evaluation.

Facility Storage Interior (other than in classrooms)

Provide as much storage in the school as possible (about 5% of the net area) including:

- Assigned storage associated with specific rooms (gym, cafeteria, administration, fine arts / music).
- Unassigned storage (200 sf that can be used for a variety of purposes).
- Teaching materials storage at 800 sf (bookroom).

Facility Storage Exterior

- Exterior storage of 200 sf and 10' tall directly accessible to the outside to store inventory salvage and excess equipment and furniture.
- Provide storage with exterior door.

Standard 3.4.14 Administrative Offices / Support Areas

Sub-Standard 3.4.14.a Administrative Offices

The administration area will be central to the school and visitor access. It is the school's access control point so visibility and way finding is important to and from these offices.

- Main office should be easily located by visitors to the school.
- Reception areas: Provide one area with 2 workstations for key staff that control phones, PA and support administration staff. Provide an 'L'-shaped layout with upper and lower cabinets for both, each using about an 8' by 8' work area. Provide another reception area for public sign-in, phone console, and information. This area shall have 3 work stations of custom design to set the design theme of the school. The custom casework shall be about 20 Ln. ft. of base units with 3 knee spaces separated by drawer units. The counter height should be 42" high except for a section of the desk that is ADA compliant. This area is to have visual control of the school's main entry point and capable of being secured with a grille after hours.
- Provide a waiting area in the lobby for seating for 12 to 16 people and allowing room for tables for registration.

- Principal's office will have a 72' desk, credenza, and round table with 4 chairs. Principal's office should have 2 exits out of space.
- Assistant principals will have 'L' shaped desks and a round table with 4 chairs.
- Conference room should be located for easy access by multiple groups within the school. Room shall seat 12-14 people. The room shall have lower and upper lockable cabinets and a sink.
- Secretary/Bookkeeper shall have a room similar to the assistant principals but with rectangular work table rather than a round table.
- Workroom/copier is support for administrative staff. Space includes copiers, Gestettner machine, form storage, and clerk workstation. Provide six 36" W, 36" H, 24" D base storage cabinets with shelves, and six 36" W, 24" H, 15" D open shelf upper cabinets. The 2' x 2' head-end console for the PA system can be located in this room. Provide four wardrobe cabinets for staff in the open office area (18" W, 84" H, 24" D).
- File/storage/coffee area is off the main office portion of administration. In the file/storage room provide two 48" W, 84" H, 24" D lockable tall cabinets. (Eight file cabinets and one table will be provided by others.) The coffee bar area is intended more as a non-secure entry area to the high security file room. The coffee bar has one 24" ADA sink base unit with 12" by 12" by 8" stainless steel sink with gooseneck faucet, on 24" 4-drawer base unit, two 30" lockable storage base units with shelves and one small (15 cubic foot) refrigerator. Provide plug mold along counter for coffee maker and microwave.
- A 300 sf parent room can be in the vicinity with data and power.
- Provide recessed display space with locking safety glass doors to display student 2-D and 3-D art work and which is visible to the public.
- Provide restrooms in proximity to the administration area or adjacent to this area for public/staff adults.

FD+C Note: All windows to have a minimum sill height of 30"a.f.f. Minimize curved walls and odd angled walls in this area to best accommodate high density of furniture.

Sub-Standard 3.4.14.b Counseling Area

The counseling area will be self contained but needs to have easy access for all students and parents that come to this space during the school year. Access to the counseling area will be controlled by the secretary and should be located out of the general circulation for privacy.

- Provide secretary open office desk and waiting area for 6 people.
- Provide offices/rooms for three counselors, one social worker, one psychologist office, one head special education teacher, one evaluation/testing, and one instructional coach which shall be a small meeting space for teacher instructional sessions and storage of instructional materials in four 36" W, 84" H, 24" D tall HDL lockable storage units and one typical wardrobe unit.
- Provide a conference room for 14 people. Provide one 48" W, 34" H, 24" D ADA sink and drawer unit for sing 14", 16" 6" D stainless steel sink with gooseneck lever handle faucet; one 36 W, 34" H, 24" D base storage unit and compact refrigerator under a 24"

+/- base unit with side panel. Provide matching lockable upper cabinets 24" H and 13" D. Assemble so that there is a counter on each side of sink. Provide paper towel dispenser and pouch type soap dispenser at sink. Provide outlets at back of counter.

- Provide file room for 14 file fire cabinets (larger units). Room should be fireproof to protect contents. Provide two 48" W, 84" H, 24" D lockable storage cabinets for supplies, forms, and brochures. This room is a secure area with limited access.
- Testing room is an office environment.

Sub-Standard 3.4.14.c Health Center

The health center should be located near the main office and lobby for easy accessed by students and parents to facilitate signing-in and-out procedure and to allow for quick backup by staff in an emergency. Design so that the Health Center may expand in the future.

- Provide a waiting area for seating for 6 people. This space should be visible from the Nurse's and Health Assistant's office. The people waiting should not be able to see into the treatment/recovery room.
- The nurse's office shall have an 'L'-shaped furniture layout of about 11 Ln. ft. The double locked medicine check (NIC See Appendix C.2 for space requirements) is located in this space. Key access to this room is limited due to files and medicines. Provide space in layout for compact sized refrigerator to store controlled/prescription medicines. Provide window into treatment/recovery area and waiting area to supervise students. Design doors, wall, ceiling, windows for speech privacy when door is closed.
- Provide an office for the Health Assistant who will work at a desk. The assistant shall have visual access to the waiting area and treatment/recovery area.
- Sufficient space to conduct eye exam (20 feet deep) with dedicated light or use mirrors to minimize length required for traditional method.
- Provide two Treatment /Recovery areas: Provide small sized refrigerator that is white, Energy Star, 15 cubic foot frost free with ice maker incorporated into 10 Ln. Ft. of lockable plastic laminate casework 34" h and 24" D with 30" wide ADA sink unit with 14" x 16" x 8" deep stainless steel sink with gooseneck faucet with lever handles, one 30" base cabinet with 4 small drawers side by side and 2 large drawers below and one 30" W by 34: H by 24" D storage units. Provide four 13" D lockable upper storage cabinet units over base units and refrigerator. Locate refrigerator far enough away from sink so that a GFI outlet is not required. Provide pouch-type soap dispense, paper towel dispenser and mirror at sink.
- Provide area for a 24" wide by 60" high safety mirror.
- Recovery (Isolation) area: Provide space for 4 recovery couches (74" L x 24" W x 18" H) separated into pairs by sex and further separated by ceiling mounted curtains / low walls to prevent cross contamination. Patients should be able to view a supervisory person from the recovery couch if curtains are open. Area of couches should be able to be darkened to reduce stress. Privacy curtains to be installed around each couch. Duplex outlets are required at each cot for equipment.

- ADA compliant bathroom with ceramic tile floor and standard restroom accessories. For schools with ISP students, allow space for Hoyer lift in bathroom. Inclusion of shower if special education program requires it. No changing table.
- Choose paint, tile, and other coverings to be easily cleaned and disinfected. Flooring to be commercial grade sheet marmoleum with welded seams.
- Dedicated climate control. Operable window if possible; if not, provide exhaust fan in rooms.
- Provide storage closet for wheelchair, crutches, and other bulk item storage. Provide space for locking fire proof file cabinet - one for every 800 students. Provide single unit that washes and dries laundry (not stacking unit).

Sub-Standard 3.4.14.d Workroom

The workroom is to be centrally located to the teaching staff with easy access from the corridor.

- Minimum 675 sf.
- Flooring to be concrete, either polished, color integral or stained.
- Centrally located with proximity access to the Media Center preferred.
- Sufficient permanent lockable storage.
  - Base cabinets with sufficient countertop for workspace and equipment.
  - Upper cabinets.
- Deep double sink area with
  - Soap dispenser - surface mounted with screws (receives pouch soap refills)
  - Paper towel dispenser - surface mounted, stainless steel, lever operation (receives roll towels)
- Consider use of a utility sink set into the counter.
- Sufficient storage area, minimum 60 sf.
- Accommodate a variety of shelving systems for storage of paper, books, supplies, and audio-visual material.
- Ability to accommodate a desk for an educational assistant.
- Provide lay-out table.
- Dedicated circuits and outlets for equipment.

Sub-Standard 3.4.14.e Teachers' Lounge

- Located near the administrative offices or workroom and adjacent to staff restrooms. Where applicable, provide patio area with wall privacy.
- 850 sf minimum with seating for at least 30 at a table or tables.
- Small kitchenette area with a refrigerator, microwave oven (no range), and double sink. Provide 5 duplex outlets with dedicated circuits above counter. At the sink provide soap

dispenser – surface mounted with screws (receives pouch soap refills, and paper towel dispenser - surface mounted, stainless steel, lever operation (receives roll towels).

- Space and power for two vending machines.
- Staff mail boxes (1 per staff) either here or in a staff only area of the administration area.
- Windows and, ideally, access to an outside patio area. Keep window sills at minimum 30" a.f.f.
- Walls to accommodate tack boards and various displays.
- Flooring to be concrete, either polished, color integral or stained.

Sub-Standard 3.4.14.f Restrooms and Restroom Accessories

- Conveniently located so accessible to both staff and students:
  - Student restrooms central to all activities (access to all wings).
  - Convenient to portables.
  - Floor mounted toilets throughout.
  - Convenient to exterior play areas with no exterior access.
  - At least one of each fixture in each restroom will be ADA accessible.
  - Provide restroom accessories in all school restrooms.
- **Student Restrooms**
  - Boys' and girls' restrooms to be located adjacent to each other.
  - Lavatories and mirrors should be located in alcove of hallway near restrooms (do not locate inside restrooms). Provide appropriate sightline barriers into the water closet and urinal areas.
  - Automatic sensors to be hardwired on lavatory faucets, urinals, and water closets and protected behind walls and lavatory screens.
  - "Airport style" entrances (no doors or gates) at all student multi-fixture restrooms.
  - Wall-hung sinks only; no counters.
- **Staff Restrooms**
  - Staff restrooms to be distributed near staff activities.
  - Provide plumbing fixture counts according to current code.
  - Automatic sensors on lavatory faucets to be hard wired.
  - Water closets with manual dual flush.
- **Restroom Accessories** are to be wall mounted and with a quality finish.

  All sinks to be provided with:
  - Soap dispenser - surface mounted with tamper-proof screws (receives pouch soap refills)

- Paper towel dispenser in adult restrooms only - surface mounted, polycarbonate, paddle operation (receives roll towels) at all sinks except student restrooms (must be ADA compliant)
- Dyson electric hand dryers or equal in student restrooms only - surface mounted in all student restrooms with electrical connection behind the dryer. Through bolt the hand dryers securely to wall surface.

All toilet stalls to be provided with:

- Toilet paper dispenser – vandal resistant (receives large jumbo or standard roll based on school preference)
- Feminine trash receptacle in girls/women's restroom and accessible to each stall.

All restrooms to be provided with:

- Trash receptacle - freestanding 18 gallon capacity stainless steel
- In existing schools verify existing accessories with school staff. Paper product dispensers are to accommodate products in use by the school.

M&O Note: Consider putting mirrors outside student restroom area.

Standard 3.4.15 Outside Gathering Areas

Provide exterior space central to school that permits social gathering of students during leisure time and for group presentations (e.g. commons area, amphitheater).

- Provide seating options in high activity areas (at crossroads, lobbies, courtyards, etc.) and social/outdoor class areas.
- Provide an outdoor dining area with at least 12 fixed tables to accommodate 100 students. The area should be 50% shaded from 11 am to 2 pm.
- Provide an outdoor paved plaza area to accommodate 300 students with a 400 sf raised area with a GFI outlet access to accommodate speakers and small performances.
- Provide an outdoor learning area for seating 40 students with shading.
- The outdoor dining area, outdoor paved plaza area and outdoor learning area can be combined into one area.

Classroom Square Foot Recommendations					
Existing Schools				New Schools	Comments
Type of Classroom	Low	Medium	High	Recommended Minimum*1	Possible Uses
Full Size Classroom	775	840	900	840	General Classrooms/ C & D Standard Classrooms
Science Laboratories	1630	1670	1750	1670	Classroom/Storage/Prep
Special Education (D-ED)	1000	1200	1350	1200	Classroom/office/timeout/ conference/storage
Community Reference Learning (CRL) Suite		2880		2880	Bathroom w/ ADA shower/kitchenette/ storage/4 resource rooms/speech & language pathology (SLP)
Chorus	1600	1750	1900	1750	Classroom/office/storage
Band/Orchestra	2500	2800	3070	2800	Classroom/office/storage/practice rooms
Drama/Performance	2200	2300	2750	2300	Classroom/office/storage/performance
Art	1500	1750	2000	1750	Classroom/office/storage/kiln
Family/Consumer Science	2350	2675	2750	2675	Sewing/cooking/storage
Information Technology	1100	1250	1350	1250	Computer laboratory/storage
Industrial Arts	1150	1250	1330	1250	Tech 2000 classroom/storage/no shop
Library	5400	5600	5850	5600	Circulation desk/stacks/reading/computer area/class area/office/workroom/storage
Main Gym	8800	12500		12500	Playing court/seating/snack bar/storage
Auxilliary Gym	4375	5200	5625	5200	Playing court/storage/ multipurpose area/storage
Lockers	2700	3250	3400	3250	Girls/Boys lockers/2 offices with restroom
OT/PT APE	1250	1300	1350	1300	OT/PT room/ office/restroom/storage
Cafeteria	3270	4600	5200*2	4600	Seating/snack bar/storage
Kitchen	1900	2325	2500	2325	Cooking/preparation/serving/freezer/ refrigerator/dry storage/restroom/etc.
School Support		3000		3000	Lockers/school store/MDF/ IDF/IT office/custodian/ storage/lobby
Administration	1500	1850	2270	1850	Principal/asst. principal/conference/ secretary/workroom/files/storage/ reception/waiting
Counseling	1480	1835	1900	1540	Offices/files storage/ evaluation/ testing/conference
Health Center	750	840	900	840	Waiting/office/asst. area/treatment/ restroom/storage
Other		4500		4500	TIPS/ISS/workroom/storage/bookroom/ teacher lounge/teacher work area/mail/ security/parent room/staff restrooms

Note*1 = SF does not include TARE efficiency of 66%

Note*2 = includes a stage platform which may be included in the drama sf

Appendix A: Abbreviations and Definitions

The following list identifies abbreviations or unique terms used in this document.

- ADA - American with Disabilities Act
- a.f.f. - Above finished floor
- ANSI - American National Standards Institute
- APS - Albuquerque Public Schools
- ASHRAE - American Society of Heating, Refrigerating, and Air- conditioning Engineers. Key for ASHRAE Standard 62 for ventilation
- ASTM - American Society for Testing and Materials
- BC - Building code
- BIP - Severely behavior disordered student
- C Level SPED - Designation of special education level allowing 15:1 PTR
- CMU - Concrete masonry unit
- Db - decibels
- DPM - Development Process Manual
- CR - Classroom
- Certified Wood - Wood based materials used in building construction that are supplied from sources that comply with sustainable, forestry practices, protecting trees, wildlife habitat, streams, and soil as determined by the Forest Stewardship Council.
- D - Designation of special education level allowing 8:1 PTR
- DD - Designation of special education level allowing 4:1 PTR
- Energy Management System - A control system capable of monitoring environmental and system loads and adjusting HVAC operations accordingly in order to conserve energy while maintaining comfort
- FD+C - APS Department of Facilities Design and Construction
- EB - Refers to existing buildings
- FF&E - Fixtures, furniture, and equipment
- FE - Fire Extinguisher
- FRP - Fiberglass reinforced panels
- GFI - Outlet access
- gsf - Gross square feet; all area in a building measured from the outside of the wall plane
- HW - Hot water
- HM - Hollow metal
- HVAC - Heating, ventilation, and air-conditioning
- IAQ - Indoor air quality
- IBC - International Building Code (new construction)
- IDF - Intermediate distribution frame for technology system
- IEBC - International Existing Building Code (remodeling)
- IEEE - Institute of Electrical and Electronics Engineers
- IEP - Individual education plan
- IMC - International Mechanical Code
- IPC - International Plumbing Code
- IPEMA - International Play Equipment Manufacturers Association
- ISP - Intensive support program
- LEED® - Leadership in Energy and Environmental Design
- Ln.ft. - Linear feet
- M&O - Maintenance and Operations at APS

- MDF - Main distribution frame for technology system
- nasf - Net assignable square feet; the area assigned to a function not including walls, corridors, restrooms, custodial space, mechanical, and electrical rooms
- NC - Noise criteria
- NFPA - National Fire Protection Agency
- NRC - Noise reduction coefficient
- Off gas - A process of evaporation or chemical decomposition through which vapors are released from materials
- OT - Occupational Therapy
- PT - Physical Therapy
- PSCOC - New Mexico Public School Capital Outlay Council
- PSFA - Public School Facility Authority
- PTR - Pupil Teacher Ratio
- Rainwater Harvesting - The practice of collecting, storing, and using precipitation from a catchments area as a roof
- ROW - Right of way
- RR - Restroom
- sf - Square feet often referred to as nasf or net assignable square feet
- SLP - Speech and language pathologist
- STC - Sound Transmission Class
- Sustainable - A resource or system that meets present needs without compromising those of future generations
- Tare/TARE - The area remaining in a building that is not assigned including walls, restrooms, halls, mechanical / electrical rooms, custodial spaces, etc.
- TDD - Telecommunication device for the deaf
- VCT - Vinyl composition tile
- VOIP - Voice Over Internet Protocol
- WAN - Wireless Access Network
- YDI - Youth Development Inc.

Appendix B: Needs Analysis for Standards-based Middle School

The following charts apply to proposed policies and standards to a standards-based middle school designed for 1200 students (with expansion for short periods to 1500.)

Building Area Requirements	NASF	GSF	% Total GSF	
Instructional Areas	**68,840**	**130,520**		**59.7%**
Special Instructional Areas	**27,870**	**41,910**		**24.2%**
Library	5,600	8,420	4.9%	
Physical Education	22,270	33,490	19.3%	
Support	**9,955**	**14,965**		**8.6%**
Kitchen/Cafeteria	9,955	14,965	8.6%	
Administration	**8,685**	**13,065**		**7.5%**
Total	**115,350**	**173,460**		**100.00%**
Tare	**58,110**			
Students	**1,200**			
GSF Student	**144.6**	@	**1,200**	students

Site Requirements	#	Square Feet	Acres
Permanent Buildings*		173,460	3.98
Integrated Portable Buildings***	6	3,584	0.49
Overflow Portable Staging Area***	4	3,584	0.33
Visitor / Staff / Parking	145	400	1.33
Bus Area	21	1,168	0.56
Grassed Main Field (1- 210' x 360) w/ track			2.89
Grassed Auxiliary Field (1- 220' x 220')			1.11
APE (Shelter + Equipment)			0.00
Basketball Courts (104' x 232')			0.72
		Net	11.42
		Tare** at 35%	6.15
		Total Minimum Required	**17.57**

* Assuming one story construction
** Roadways, landscaping, walks
***Double Portable + exterior area

Room Description	# of Spaces	# of Persons	Area / Person	Space Criteria	Total Area	Total Assignable Square Feet	Subtotals (NASF)
Instructional Areas							
Core Classrooms							**35,100**
Standard Classrooms	39.0			840	840	32,760	
Additional Classrooms (block schedule - optional)				840	840	0	
Larger Classrooms	39.0			60	60	2,340	

Room Description	# of Spaces	# of Persons	Area / Person	Space Criteria	Total Area	Total Assignable Square Feet	Subtotals (NASF)
Special Ed							**9,960**
Standard Classrooms (C&D)	7.0			840	840	5,880	
D-ED Program	1.0			750	750	750	
Timeout room	1.0			50	50	50	
Office	1.0	1	150		150	150	
Restroom	1.0			50	50	50	
Storage	1.0			50	50	50	
Conference	1.0	6	25		150	150	
Community Reference Learning (CRL) Suite	1.0			660	660	660	
Bathroom with ADA shower	1.0			100	100	100	
Kitchenette	1.0			80	80	80	
Storage	1.0			100	100	100	
Resource rooms (A&B)	4.0			425	425	1,700	
Speech & Language Pathology (SLP)	1.0			240	240	240	
Occupational Therapy (OT)				240	240	0	
Science							**8,760**
Science Laboratories	6.0			1,250	1,250	7,500	
Workroom/Storage/Prep	3.0			420	420	1,260	
Music/Drama							**6,845**
Chorus Area	1.0			1,200	1,200	1,200	
Office	1.0	1	150		150	150	
Storage	1.0			400	400	400	
Band / Orchestra	1.0			1,800	1,800	1,800	
Office	1.0	1	150		150	150	
Practice Rooms	3.0			50	50	150	
Practice Rooms	2.0			100	100	200	
Storage	1.0			500	500	500	
Drama / Performance	1.0			1,000	1,000	1,000	

Office	1.0	1	120		120	120	
Storage	1.0			500	500	500	
Performance Stage	1.0			675	675	675	
Art							**1,750**
Art area	1.0			1,300	1,300	1,300	
Office	1.0	1	150		150	150	
Storage	1.0			200	200	200	
Kiln	1.0			100	100	100	
Family and Consumer Sciences							**2,675**
Sewing	1.0			1,100	1,100	1,100	
Storage / Washer - Dryer	1.0			200	200	200	
Cooking	1.0			1,200	1,200	1,200	
Storage (Pantry)	1.0			175	175	175	

Room Description	# of Spaces	# of Persons	Area / Person	Space Criteria	Total Area	*Total Assignable Square Feet*	*Subtotals (NASF)*
Information Technology							**2,500**
Computer Laboratory	2.0			1,100	1,100	2,200	
Storage	2.0			150	150	300	
Industrial Arts							**1,250**
Computer Classroom (Tech 2000)	1.0			1,100	1,100	1,100	
Storage	1.0			150	150	150	

		NASF		68,840
		Contingency at	0%	0
Total Classrooms	62.0	Efficiency at	66.5%	
Total Special Program	2.3	Tare		34,680
		Gross Square Feet		103,520

Room Description	# of Spaces	# of Persons	Area / Person	Space Criteria	Total Area	*Total Assignable Square Feet*	*Subtotals (NASF)*
Special Instructional Areas							
Library							**5,600**
Circulation desk	1			200	200	200	
Open Stack / Reading	1			2,800	2,800	2,800	
Computer area	1	20	30		600	600	
Class area	2	30	25		750	1,500	
Office/workroom	1	1	150	150	300	300	
Storage	1			200	200	200	
					0	0	

	NASF		5,600
	Contingency at	0%	0

Efficiency at	66.5 %
Tare	2,820
Gross Square Feet	8,420

Room Description	# of Spaces	# of Persons	Area / Person	Space Criteria	Total Area	*Total Assignable Square Feet*	*Subtotals (NASF)*
Physical Education							22,270
Main Gym							**12,525**
Playing court*	1			6,800	6,800	6,800	
Bleacher seating	1	1,800	2.75		4,950	4,950	
Storage	1			600	600	600	
Snack Bar (gym)	1			175	175	175	
Auxiliary Gym	1						**5,200**
Auxiliary Gym	1			3,800	3,800	3,800	
Gym Storage	1			200	200	200	
Multi-purpose area	1			1,000	1,000	1,000	
Storage	1			200	200	200	

Room Description	# of Spaces	# of Persons	Area / Person	Space Criteria	Total Area	*Total Assignable Square Feet*	*Subtotals (NASF)*
Lockers							**3,250**
PE Lockers -Boys	1			1,450	1,450	1,450	
PE Lockers -Girls	1			1,450	1,450	1,450	
Office/with RR	2	1	100	75	175	350	
OT/PT - APE							**1,295**
OT/PT Space	1			900	900	900	
Office	1	1	120		120	120	
Restroom	1			75	75	75	
Storage	1			200	200	200	
Adapted PE (Optional)				1,000	1,000	0	
Office		1	150	150	300	0	
Restroom				75	75	0	
Storage				200	200	0	

NASF	22,270
Contingency at 0%	0
Efficiency at 66.5 %	
Tare	11,220
Gross Square Feet	33,490

Total Classrooms: 3.0

*Counts as 2 instructional spaces

Room Description	# of Spaces	# of Persons	Area / Person	Space Criteria	Total Area	*Total Assignable Square Feet*	*Subtotals (NASF)*
Support							

Cafeteria							**4,600**
Cafeteria (includes queuing)	1	267	15		4,000	4,000	
Snack Bar (Cafeteria)	1			175	175	175	
Facility Storage (Custodian)	1			425	425	425	
Kitchen							**2,325**
Main cooking, preparation, serving	1			1,200	1,200	1,200	
Cleaning	1			300	300	300	
Freezer and Refrigerator	1			300	300	300	
Office	1	1	100		100	100	
W / D and lockers	1			50	50	50	
Restroom	1			50	50	50	
Dry Storage	1			250	250	250	
Delivery	1			75	75	75	
Other School Support							**3,030**
Lockers	1	1200	0.5		600	600	
School Store	1			240	240	240	
MDF	1			150	150	150	
IDF	5			50	50	250	
IT Office	1	1	150		150	150	
Head Custodian	1			80	80	80	
Custodial	4			40	40	160	
Building Storage	3			200	200	600	
Building Lobby	1	40	20		800	800	

NASF		9,955	
Contingency at	0%	0	
Efficiency at	66.5 %		
Tare		5,010	
Gross Square Feet		14,965	

Room Description	# of Spaces	# of Persons	Area / Person	Space Criteria	Total Area	*Total Assignable Square Feet*	*Subtotals (NASF)*
Administration							**1,850**
Principal	1	1	220		220	220	
Assistant Principal	2	1	180		180	360	
Conference	1	10	25		250	250	
School Secretary	1	1	160		160	160	
Workroom	1			150	150	150	
Files / Storage / Coffee	1			160	160	160	
Supply Storage				150	150	0	
Reception	1			250	250	250	
Waiting	1	20	15		300	300	
Counseling Area							**1,540**
Counselors	3	1	150		150	450	

Social Worker	1	1	150		150	150	
Psychologist	1	1	150		150	150	
Secretary	1	1	120		120	120	
Head Special Ed Teacher	1	1	150		150	150	
File Storage	1			150	150	150	
Evaluation / Testing	1			120	120	120	
Conference	1	10	25		250	250	
					0	0	
Health Center	1						**840**
Nursing Area					0	0	
Itemize					0	0	
Waiting area	1	6	20		120	120	
Nurses Office	1	1	120		120	120	
Health Assistant Area	1			100	100	100	
Treatment / Recovery	1			400	400	400	
Restroom	1			50	50	50	
Storage	1			50	50	50	
Storage (optional expansion)	0			400	400	0	
Other							**4,455**
TIPS / ISS	1			650	650	650	
Workroom	1			900	900	900	
Storage	1			200	200	200	
Book Storage	1			400	400	400	
Teacher Lounge	1			1,200	1,200	1,200	
Teacher Work area	1	6	30		180	180	
Mail Area	1			175	175	175	
Security Office	1	1	150		150	150	
Parent Room	1			600	600	600	
Distributed Staff Restrooms (per code, space in Tare)					0	0	

Total Classroom Spaces	65.0
Total Special Program Spaces	1.0

NASF		8,685
Contingency at	0%	0
Tare		4,380
Gross Square Feet		**13,065**

NASF	115,350
GSF	173,460
SF/student	144.55

Appendix C: Detail Requirements for Standards

C.1 Technology Requirements

In the total project budget allocate approximately $8,000 per classroom for computer hardware as part of the FF&E budget (excluding wiring).

Standard 2.1.6.h Computer Technical Specifications

As the technology of communications changes, the specific requirements for Category 5e cabling and wireless access points (WAPs) should be reviewed at least every three (3) years. Although the numbers and types of connections identified (2003) are appropriate minimums, the values may increase or decrease as new technologies become available.

External: Every school is to have a dedicated data link to the central APS telecommunications data center. This high-speed connection will support voice, video, and data communication at a minimum of T1 (1.544-Mbps) rates.

All classrooms: At least six (6) CAT 5e hard wired drops. Two drops on each of three walls, the fourth wall being the front of the classroom presentation area. In addition, eighteen (18) inches from the ceiling on the far corner from the doorway shall be installed one (1) CAT5e drop with a 110 VAC/power outlet adjacent for a wireless access point (WAP).

Each cafeteria food line: Two (2) drops and a 110 VAC/power duplex outlet at the cash register for the point of sale system.

Each gymnasium: Minimum of four (4) CAT 5e drops, two (2) on each of two (2) walls to be used for registration and other large events. In addition, one (1) CAT 5e drop shall be located between ten (10) and fifteen (15) feet above the floor with a 110 VAC/power duplex outlet next to it for a WAP installation.

Library: Two (2) Cat 5e drops and 110 VAC/power duplex outlets at each of the circulation check-out stations. The media center workroom shall have a minimum of four (4) Cat 5e drops and power outlets. In the presentation area there shall be one (1) CAT 5e drop located eighteen (18) inches below the ceiling or a maximum of twelve (12) feet from the floor with a corresponding 110 VAC/power duplex outlet for a WAP. If the library design calls for a laboratory area, the lab should be configured as described below (General purpose computer laboratories).

General purpose computer laboratories: Minimum of thirty (30) wired drops and 110 VAC/power duplex outlets in a "U" configuration on three walls, with the fourth wall being the front of the room presentation area. Should the school know that they will use all wireless laptops, provide six (6) wired drops and one (1) drop at eighteen (18) inches below the ceiling with adjacent 110 VAC/power duplex outlets. The six (6) wired drops would have two (2) drops on each of three (3) walls; these would be used for printers and other non-wireless devices.

Offices/Closets that could one day be offices: Each desk area (space one worker could occupy) is to have two (2) CAT 5e drops and a minimum of two (2) 110 VAC/power duplex outlets.

Auditoriums: This is an area where custom install WAPs will be installed. All WAP locations will be located 18 inches below the ceiling or a maximum of twelve (12) feet from the floor with a corresponding 110 VAC/power duplex outlet for a WAP. The number of WAPs will change depending on the size and shape of this area and the current technology available. The Technology Department can be consulted to determine the adequate number of WAPs and placement.

Portables/temporary offices or classrooms: A fiber chase will be run underground to an outside plant weatherproof junction box. From this junction box CAT5e can be run either overhead or underground to a stub out at each portable slab. Each portable will have a minimum of two (2) CAT5e runs and adequate 110 VAC/power duplex outlets to support up to thirty-two (32) computers.

Sub-Standard 2.1.6.h.1 Main Distribution Frame (MDF)
At least one Main Distribution Frame (MDF) will be provided in each school building that provides office, classroom, library, or gymnasium facilities. Fiber backbones (or other high speed data lines) from the MDF to the hallway Intermediate Distribution Frame (IDFs) are required. Both the MDF and the IDFs shall be separate from any electrical or mechanical controls and shall be housed in separate closets. Maximum distance between the MDF and any IDF will be 250 feet. New and re-modeled facilities are to include in the architectural drawings building wiring closets (MDFs) with the following specifications:

- Required minimum room size is twelve (12) feet by twelve (12) feet.
- See additional requirements in substandard 2.1.6.h.2 below
- Sub-Standard 2.1.6.h.2 Intermediate Distribution Frame (IDF)

New and remodeled facilities will include in the architectural drawings hallway wiring closets (IDFs) with the following specifications:
Required minimum room size is six (6) feet by eight (8) feet.
Requirements for both MDF and IDF follow:

- The ceiling height will be nine (9) ft minimum above existing floor.
- A cable management ladder rack around the perimeter of the room is to be between seven (7) feet and nine (9) feet above the existing floor.
- TVSS 20-amp protected circuits behind each open electronics rack, at a height to feed from the ladder rack.
- Provide a #6 ground and a ground bus for all walls.
- 3/4 inch AC fire rated plywood on all walls; the bottom shall be eighteen (18) inches above the floor.
- The door width will be thirty six (36) inches wide and will swing into the hallway to allow for maximum use of space in the MDF/IDF.
- Lighting shall be a minimum of 50-foot candles at three (3) feet above the floor.

- The MDF/IDF will have a separately controlled HVAC and at least one (1) exhaust fan for ventilation. In an energy efficient school design that shuts down HVAC controls on the weekend, the MDF/IDF will need separate controls that stay up at all times for equipment cooling. The MDF/IDF shall maintain temperature of 64 to 75 degrees Fahrenheit and the room shall maintain 30% to 55% relative humidity.
- The room will included in the fire and intrusion alarm systems.
- Basic Configuration will include two open seven (7) foot racks for data patch panels and electronics. The telecom equipment will be wall mounted and will protrude between eight (8) and ten (10) inches from the plywood surface. No telecommunications equipment will be mounted behind any network equipment rack that provides less than three (3) clearances and will provide a minimum of three (3) feet of aisle space between network equipment and its equipment.

C.1a Interactive Whiteboard

Albuquerque Public Schools is currently providing the "ActivBoard 387 PRO Mobile System" at all schools. The design team will be required to provide the necessary electrical outlets and conduit for all other required connections to appropriate locations. APS on-call contractors will provide all other services. Refer to the following information.

ActivBoard 387 PRO Mobile System

Product Specifications

INTERACTIVE WHITEBOARD SYSTEM

The ActivBoard Mobile System, featuring ActivBoard reliability and a state-of-the-art extreme short throw projector (EST), provides high performance all-in-one capabilities in a modular, movable package.

ACTIVBOARD GENERAL SPECIFICATIONS

Internal Resolution	2730 points (lines) per inch
Output Resolution	200 points (lines) per inch
Tracking Rate	200 inches per second providing a fast response to pen commands
Output Rate	120 coordinate pairs per second
User Input	Cordless Battery-free pen incorporating tip switch and side switch for full mouse functionality (ActivPen)
Digitizing Technology	Passive Electromagnetic
Power Requirement	USB powered device
Connection to Computer	USB
Screen Surface	Low Glare Melamine
Certifications	UL, CE, FCC
Dual User Functionality	2 Teacher and 2 Student ActivPens included
Integrated USB Sound	Two integrated slim line speakers and amplifier (with controls, inputs and outputs)
Upgrade Option	Wireless connection to computer
Packed Contents List	ActivBoard, 2 ActivPens (Teacher), 2 ActivPens (Student), 1 Amp PSU, Installation Guide, Access to ActivInspire Professional Edition via download from Promethean Planet

ActivBoard 387 PRO Mobile System

INTERACTIVE WHITEBOARD SYSTEM

Product Specifications

ACTIVBOARD SPECIFICATIONS

Model	ActivBoard 387 Pro
ActivBoard Size	87in
Resolution	14600 x 9200
Screen Formats	16:10
Overall Dimensions	2105mm x 1329mm (82.9in x 52.3in)
Active Area Dimensions	1865mm x 1175mm (73in x 46in)
Active Area Diagonal	2196mm (86.5in)
Actual Image Diagonal	2193mm (86.4in)
Board Weight	32kg (71lb)
Packed Weight	48kg (106lb)
Packed Dimensions	1500mm x 2270 x 110mm (59.1in x 89.4in x 4.3in)

INTEGRATED USB SOUND SPECIFICATIONS

Amplifier Power Output	20W per channel RMS (<1% distortion)
Controls	Volume, Base, Treble, on/off
Amplifier Frequency Response	40Hz to 18kHz +/-3dB (at 1W)
USB Sound	USB Sound supported for Minimum System Requirements stated
Connectivity – Inputs (4)	Stereo PC, Stereo CD/DVD, Mono Auxiliary, Microphone to PC via PC
Connectivity – Outputs (2)	2 Stereo
Power Requirement	18V 3.3 Amp

MINIMUM COMPUTER REQUIREMENTS

Operating Systems	Windows XP SP2 and above (XP/Vista/7); Mac OSX 10.4.11 – 10.6.1 (Tiger/Leopard/Snow Leopard); Linux Ubuntu 9.04, 9.10, Debian
PC	Pentium 4 – 1 GHz processor (800MHz for Vista), 512 MB of RAM, 1024x768 resolution, 1.5 GB of Free Disk space
Mac	Macintosh Intel Processors (Universal Binary), 512 MB of RAM, 1024x768 resolution, 3.0 GB of Free Disk Space

ActivBoard 387 PRO Mobile System

INTERACTIVE WHITEBOARD SYSTEM

Product Specifications

INSTALLATION

ActivBoard Mobile System	Requires installation by a certified Promethean installer. Components supplied and minimum specifications stated have been tested and are required for optimal performance. Use of components not supplied by Promethean or not meeting minimum specifications may impact performance and affect warranty. Contact your Promethean partner or visit www.prometheankb.com for more information. After installation, Promethean recommends that the ActivBoard Mobile System is moved by 2 people.

MOBILE STAND SPECIFICATIONS

Board Size	Accommodates ActivBoard 387 Pro
Height Settings	Height-adjustable mount, with 600mm (23.6in) of adjustment from 350mm (13.8in) to 950mm (37.4in) ± 50mm (1.9"). Top and bottom limit stops are fitted if the full range of movement is not required/appropriate. Height adjustment is powered by an electrical motor and is operated using a switch on the side of the stand.
Actuator Specification	Input Voltage: 24VDC Max Load: 750N Static Load: more than 750N Speed: 30mm/s (no load), 20mm/s (750N) Stroke Length: 600 ± 2mm Retracted Length: 795 ± 2mm End Mounting Dimension: H Type, ø10.1 hole, 6.3mm Slot Limit Switch: Built-in Duty Cycle: S2-10min Temperature: -26°- 65°C IP Degree: IP54 AC-DC Adaptor: Input Voltage: 100 ~ 240VAC Output Voltage: 29VDC Current: 2Amp (4Amp protected) Cable and Plug: 1.5m, IEC Plug
Projector Boom	Aluminum boom arm, extends 740mm (29.1in) from the back of the System. Projector Boom adjusts with the height of the ActivBoard reducing the need for specific re-calibration following height adjustment.
Mobile Base Dimensions	1400mm x 740mm (55.1in x 29.1in)
Room Height Requirements	Minimum 2562mm (100.87in) for full range operation
Door Size Requirements	Minimum door height clearance of 1962mm (77.24in) and door width clearance of 775mm (30.5in). Consideration should also be given to the size of corridors and layout of the school.
Minimum Turning Circle Requirement	See technical drawings
Power	Integrated 'power management' system for ActivBoard, Mobile Stand and Projector. There will be one lead from the Mobile System to plug in to a wall socket.
Weight	Frame only (approx.): 100kg (220.5lb); excludes board, projector, cabling and accessories Complete System Weight (approx.): 140kg (308.5lb) (when ActivBoard 387 Pro is fitted)

CONTINUED ON NEXT PAGE

MOBILE STAND SPECIFICATIONS (CONTINUED)

Connectivity Panel	Connectivity panel with inputs for 2 x fully wired VGA (to support VESA DDC) plus 3.5mm stereo jack audio inputs, USB-B input (for ActivBoard), S-video , composite video plus auxillary audio jack inputs, Cat 5e ethernet input. Connectivity panel is mounted to the left hand-side of the Support Frame (when facing the system).
Cables	Cable assembly includes: 2 x 3.6m (11.8ft) VGA panel mount (fully wired to support VESA DDC), 3.6m (11.8ft)S-video panel mount, 3.6m (11.8ft) composite video panel mount, 3.6m (11.8ft) Ethernet panel mount 2.5m (8.2ft) USB patch cable (to connect computer to face plate). 2.3m (7.5ft) right angle stereo jack to panel mount jack socket, 2.3m (7.5ft) right angle stereo jack to panel mount phono pair, for PC audio input (to connect computer to face plate). 2m (6ft) VGA cable provided in the projector box (to connect the computer to the face plate).
Pack Weights & Dimensions	**Box 1 of 4:** 13kg (28.7lb) Dimensions: 217mm x 1427mm x 467mm (8.54in x 56.18in x 18.39in) Contents: Projector Boom **Box 2 of 4:** 28kg (61.7lb) Dimensions: 182mm x 1652mm x 442mm (7.2in x 65in x 17.4in) Contents: Spine **Box 3 of 4:** 22kg (48.5lb) Dimensions: 128mm x 1782mm x 822mm (5.04in x 70.16in x 32.36in) Contents: Frame **Box 4 of 4:** 42kg (92.6lb) Dimensions: 202mm x 1442mm x 782mm (7.95in x 56.77in x 30.79in) Contents: Mobile Base

PROJECTOR SPECIFICATIONS

Model	**EST-P1** (DLP)
Native Resolution	WXGA (1280 x 800)
Compressed Resolution	up to 1080i
Typical Colors	16.77 million colors
Brightness (ANSI lumens)	2200 ANSI (normal), 2500 ANSI (high)
Contrast Ratio	2000:1
Noise Level	28dB (normal) 32dB (high brightness mode)
Dimensions (w x d x h)	354mm x 319mm x 157mm (13.9in x 12.6in x 6.1in) not including lens 354mm x 411mm x 219mm (13.9in x 16.1in x 8.6in) including lens
Weight	9kg (19.8lb)
Aspect Ratio	16:10 (native), 4:3, 16:9
Power Consumption	290W (<1W standby)
Device Type	DLP Technology
Focus	Manual Focus

CONTINUED ON NEXT PAGE

PROJECTOR SPECIFICATIONS (CONTINUED)

Zoom	N/A
Focal Length	F=2.4
Projection Distance	0.39m ~ 0.56m (15in ~ 22in)
Projection Screen Size	1.98m ~2.79m (78in ~ 110in)
Lamp Type	220W lamp
Lamp Life	6000hrs (normal) 4000hrs (high)
Keystone Correction	Vertical: max ±15°
Operating Temperature	5°C ~ 35°C (41°F ~ 95°F)
Power Supply Voltage	100 - 240V AC, 50/60Hz
Horizontal Scan Rate	15Hz ~ 90kHz
Vertical Scan Rate	43Hz ~ 85Hz
Computer Compatibility	IBM PC and Compatibles, Apple Macintosh, iMac, and VESA Standards WSXGA+ (1,680 x 1,050), WXGA+ (1,440 x 900), WXGA (1,280 x 800, 1,280 x 768), UXGA (1,600 x 1,200), SXGA+ (1,400 x 1,050), SXGA (1,280 x 1,024). XGA (1,024 x 768), SVGA (800 x 600), VGA (640 x 480)
Video Compatibility	NTSC (3.58/4.43), PAL (B/D/G/H/I/M/N), SECAM (B/D/G/K/K1/L), HDTV (720p, 1080i, 1035i), EDTV (480p, 575i), SDTV (480i, 576i)
Inputs	D-sub 15-pin (RGB) x2 HDMI V1.3 x1 RCA x 1, S-Video x 1 LAN (RJ45) x1 RS-232C (D-sub 9-pin) x1 USB x1
Color	Silver
Security	Padlock and security cable hole, Kensington lock hole, pin code security
On-screen Menu	Arabic, Chinese (Simplified), Chinese (Traditional), Czech, Dutch, English, Finnish, French, German, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Thai, Turkish
Advanced Features	3D Ready Crestron RoomView Quick Start Instant Off Source Search Freeze Quick Access Lamp Closed Caption
Packed Contents List	Power cord, computer cable (Dsub15-Dsub15), wireless remote, owner's manual (CD-ROM & Quick Start Guide)

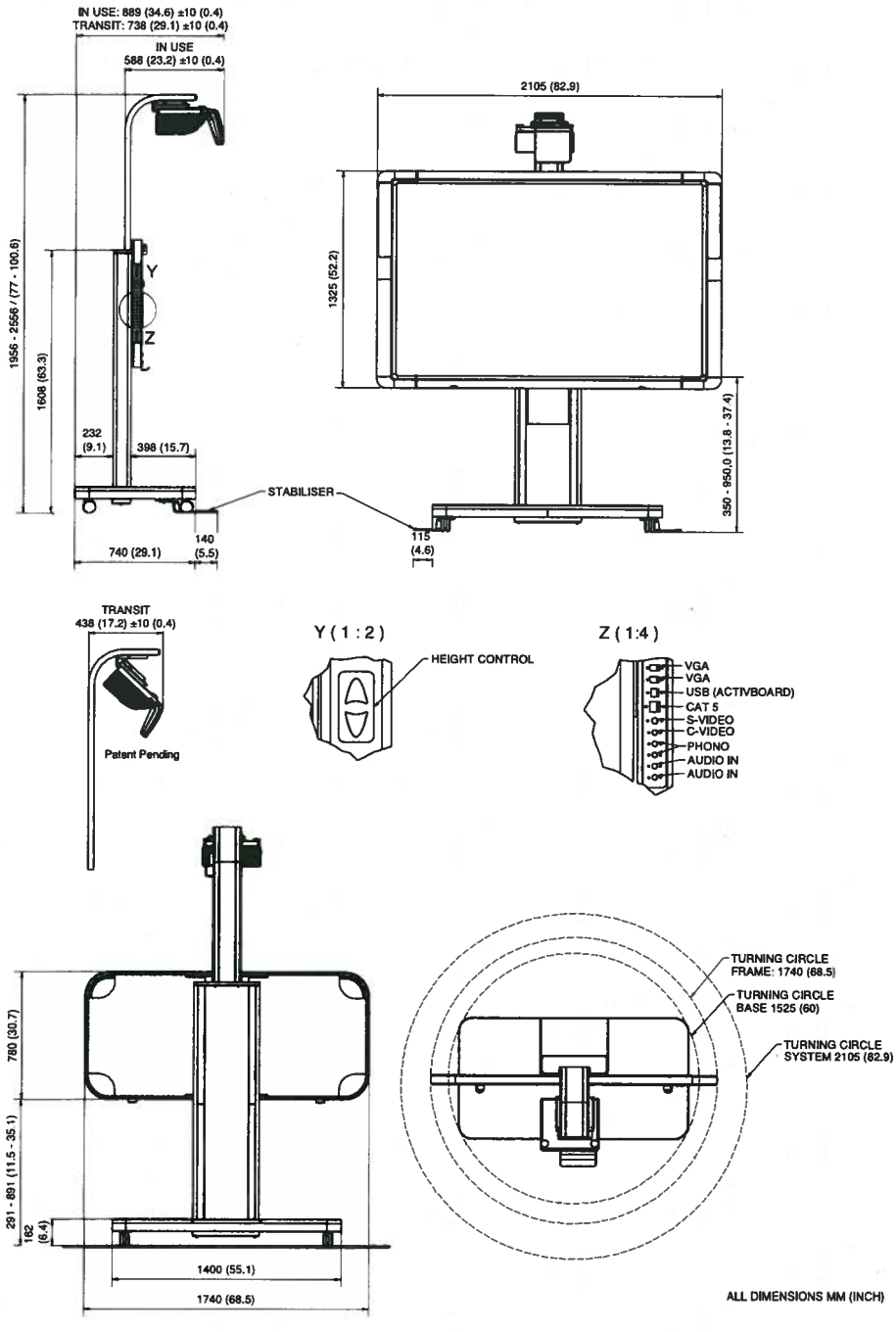
UPGRADE AND ACCESSORY OPTIONS

Wireless Upgrade Pack 300 Pro	Allows the ActivBoard 300 Pro to connect to the computer wirelessly; includes an ActivHub (2.4 GHz) and Quick Start Guide
ActivWand 50	Wireless, battery free and extended reach input device for the ActivBoard – 540mm (21.2in) in length; "left click", cursor and hover, just like a mouse
Mobile Stand Drawer	Optional drawer in the base of the System (includes lock and key), and can be used to store sets of ActivExpressions, or ActiVotes, ActivSlate or the EST-P1 remote control. (Available July 2010)
Mobile Stand Dry Erase Whiteboard	Optional dry erase whiteboard, can use 1 or 2 dry erase whiteboards per system (Available July 2010)
Mobile Stand Laptop Shelf	Storage for 1 laptop, with a maximum size of 17in, includes a lock and key (Available July 2010)

WARRANTY AND SUPPORT†

ActivBoard, Mobile Stand	Three-Year Warranty with Three-Year Email and Telephone Support. Additional Two-Year Warranty and Two-Year Email Support when installed by certified installer. Warranty is return to base for repair coverage.
EST-P1	Three-Year Warranty and Three-Year/3000hr Lamp Warranty with Three-Year Email and Telephone Support. Warranty is return for repair coverage.
ActivPen	One-Year Warranty and 90-Day Telephone Support
Support	Online support for all Promethean Products available from: www.prometheankb.com

TECHNICAL DRAWING SPECIFICATIONS



C.2 Health Room Facility Recommendations

The health room must be designed so that it will be appropriate for the particular school population and meet ADA requirements. It should be ***accessible*** to students, parents and staff. The nurse's office ***must ensure privacy*** for conferences with students, parents, and school personnel and should be as soundproof as possible to facilitate audiometric testing. Each health room will have a locked storage space where supplies and equipment can be kept and a restroom meeting ADA requirements equipped with hot and cold running water and toilet facilities.

Facilities

- Counter space with a sink with hot and cold running water, separate from the bathroom for medications and first aid.
- Adequate Storage.
- Double-Locked (narcotic grade) cabinet for medications **only.**
- Adequate ventilation system.
- Bathroom meeting ADA standards with ventilation (including sink) and adequate room to maneuver a Lift (e.g. Hoyer or Partner lift).
- Adequate area (minimum 12 feet) for vision screening.
- Minimum of two (2) separate rooms - one for school nurse's office and one for the health room (to accommodate cots for students and desk for health assistant),
- Minimum of two (2) computer drops and two(2) phone lines (one in each room)
- The health room or cot room must be able to be visualized from the nurse's office (window or door) but still ensure privacy for students.
- Waterline for icemaker

Equipment

Supplied by School
Wheelchair
Bulletin Board
Refrigerator/Ice maker
Computers
Printer
Paper Towel Dispenser
Scale (balance beam type)
Stadiometer (wall mounted)
Soap Dispensers
Paper Cup Dispenser

Cots
Phones (minimum 2)
Clocks
Lockable desks
Desk chairs
Student waiting area chairs
Fireproof locking cabinet(s)/ (1:500 students)
Trash cans
Trash can with lid

Supplied by Nursing Services
Audiometer
Vision Screening Equipment
Otoscope
Stethoscope
Blood pressure cuffs (infant, child, adult, extra large)
Sharps container*
IHP Reference book

Suggested First-Aid and Miscellaneous Supplies for the Health Room

First Aid
Bandaids (various sizes, non-latex)
Eye Glass Repair Kit
Plastic Bags
Eye Wash
Thermometer
Tweezers
Cotton Applicators
Vaseline
Portable Emergency Kit
Ice bag or cold packs
Sterile Gauze Squares

Mild Liquid Soap
Splints
Disposable non-latex Gloves
Bandage tape

Miscellaneous
Kleenex
Paper Cups
Safety Pins
Scissors

Sanitary Napkins
Large Wash Basin
Washable Blankets
Disposable Linens
Flashlight
Cotton Balls
Cleaning solution
Table Salt
Paper Towels
Alcohol (*not for use on wounds*)

C.3 Food Service Guidelines

To determine likely levels of meals to be served, canvas the surrounding area schools.

Guide to Space Planning of a School Foodservice Facility

Are	Meals			
	Up to 350	315-500	501-700	701-1000
Receiving area				
Loading	60	80	100	100
Receiving area inside building	48	48	60	80
Storage				
Dry storage (1/3-1/2 sq ft per meal)	175	250	325	450
Nonfood	30	50	70	90
Office space	40-48	48	60	80
Lockers and toilet for employees	45	60	75	85
Kitchen				
Preparation including refrigeration (1.1-1.5 sq ft per meal)	500	650	800	980
Serving	200	300	400	600
Dishwashing	150	150	180	210
Maintenance area				
Mop area	25	25	30	30
Garbage area	30	48	60	75
Total kitchen and serving areas	1303	1709	2160	2780
Dining area (based on two				
Elementary (10 sq ft/meal	1750	1750-2500	2500-3500	3500-5000
Secondary (12 sq ft/meal)	2100	2100-3000	3000-4200	4200-6000
Total dining, kitchen, and serving				
Elementary	3053	3459-4209	4635-5635	6280-7780
Secondar	4303	3809-4709	5135-6335	6980-8780

From: *School Food Service Management for the 21st Century* Dorothy Pannell-Martin 5th ed. 1999

C.4 CHILDREN'S ACCESSIBLE ELEMENTS TABLE

Element	Details	Ages 3 and 4 Pre-K	Ages 5 through 8 K through 2nd grade	Ages 9 through 12 3rd through 6th grade
Ramps See NMBC 2006 section E112.3 *See ANSI 405*	Slope	1 :16	1 :16	1 :16
	Width for single wheelchair	44" min (118 mm)	44" min (118 mm)	44" min (118 mm)
	Width for two wheelchairs	88'' min. (2236 mm)	88'' min. (2236 mm)	88'' min. (2236 mm)
Drinking fountains and water coolers *See ANSI 602*	Spout height to outlet *See ANSI 602.2 Exception 2*	30" max. (760 mm)	30" max. (760 mm)	30" max. (760 mm)
Element	**Details**	**Ages 3 and 4 Pre-K**	**Ages 5 through 8 K through 2nd grade**	**Ages 9 through 12 3rd through 6th grade**
Water closets for Toilet Rooms, Wheelchair Stalls, and Ambulatory Stalls *See ANSI 604.10 and 604.1*	Centerline *See ANSI 604.10.2*	12" max. (305 mm)	12"-15" (305-380 mm)	15"-18" (380-455 mm)
	Clearance *See ANSI 604.10.3 and 604.3*	60" (1525 mm) wide by 56" (1420 mm) min. deep	60" (1525 mm) wide by 56" (1420 mm) min. deep	60" (1525 mm) wide by 56" (1420 mm) min. deep
	Toilet seat height *See ANSI 604.10.4*	11"-12" (280-305 mm)	12"-15" (305-380 mm)	15"-17" (380-430 mm)
	Horizontal grab bar height to centerline *See ANSI 604.10.5, 604.5 and 609.4*	18"-20" (455-510 mm)	20"-25" (510-635 mm)	25"-27" (635-685 mm)
	Rear grab bar may be split or shifted *ANSI 604.5.2 Exception 3*	18"-20" (455-510 mm)	20"-25" (510-635 mm)	25"-27" (635-685 mm)
	Vertical grab bar 18" (455mm) long See NMBC 2006 section E112.7 *See ANSI 604.10.5 and 604.5.1*	Bottom is 21" (533 mm) min. - 30" (760 mm) max. above the floor	Bottom is 21" (533 mm) min. - 30" (760 mm) max. above the floor	Bottom is 21" (533 mm) min. - 30" (760 mm) max. above the floor
		Centerline is 34 inches (865 mm) max. - 36"	Centerline is 34 inches (865 mm) max. - 36" (915 mm) max. from the	Centerline is 34 inches (865 mm) max. - 36" (915 mm) max. from

		(915 mm) max. from the rear wall	rear wall	the rear wall
	Flush control *See ANSI 604.10.6*	36" max. (915 mm)	36" max. (915 mm)	36" max. (915 mm)
Wheelchair water closet compartments *See ANSI 604.10.8*	Size *See ANSI 604.8.2*	60" (1525 mm) min. wide by 59" (1500 mm) deep min.	60" (1525 mm) min. wide by 59" (1500 mm) deep min.	60" (1525 mm) min. wide by 59" (1500 mm) deep min.
	Toe clearance beneath front partition and one side partition [2] *See ANSI 604.8.*	12" (305 mm) min.	12" (305 mm) min.	12" (305 mm) min.
Ambulatory water closet compartments See NMBC 2006 section E112.5 *See ANSI 604.10.8*	Size *See ANSI 604.9.2*	36" (915 mm) wide by 60" (1525 mm) long	36" (915 mm) wide by 60" (1525 mm) long	36" (915 mm) wide by 60" (1525 mm) long
	Horizontal parallel grab bars on both sidewalls 42" (1065 mm) long	18"-20" (455-510 mm)	20"-25" (510-635 mm)	25"-27" (635-685 mm)
Urinals See NMBC 2006 section E112.6 *See ANSI 605*	Top of rim	14" max. (355 mm)	14" max. (355 mm)	14" max. (355 mm)
Element	**Details**	**Ages 3 and 4 Pre-K**	**Ages 5 through 8 K through 2nd grade**	**Ages 9 through 12 3rd through 6th grade**
Lavatories and sinks *See ANSI 606.2*	Sink rim *See ANSI 606.2 Exception 2 and 3*	22" max. (559 mm)	31" max. (797 mm)	31" max. (797 mm)
	Knee clearance *See ANSI 606.2 Exception 2 and 3*	none required with parallel approach	24" min. (610 mm)	24" min. (610 mm)
Mirrors See NMBC 2006 section E112.4	Full length mirror 60" (1525 mm) min. tall	Bottom of reflecting surface 12" (455 mm) max. above floor	Bottom of reflecting surface 12" (455 mm) max. above floor	Bottom of reflecting surface 12" (455 mm) max. above floor
	Mirrors over sinks	Bottom of reflecting surface 28" (710 mm) max. above floor	Bottom of reflecting surface 37" (940 mm) max. above floor	Bottom of reflecting surface 37" (940 mm) max. above floor

Dining surfaces and work surfaces *See ANSI 902.4*	Tops of tables and counters	26" (660 mm) min. 30" (760 mm) max.	26" (660 mm) min. 30" (760 mm) max.	26" (660 mm) min. 30" (760 mm) max.
Benches See NMBC 2006 section E112.8 *See ANSI 903*	Top of seat	11" (280 mm) min. 12" (305 mm) max.	11" (280 mm) min. 17" (430 mm) max.	11" (280 mm) min. 17" (430 mm) max.
Tray slides See NMBC 2006 section E112.9	Top of tray slide	28" (710 mm) min. 30" (762 mm) max.	28" (710 mm) min. 30" (762 mm) max.	28" (710 mm) min. 30" (762 mm) max.
Storage See NMBC 2006 section E112.10 *See ANSI 905*	Frontal approach height	20"-36" (510-915 mm)	20"-40" (510-1015 mm)	20"-44" (510-1120 mm)
	Side approach height	20"-36" (510-915 mm)	40" max. (1015 mm)	44" max. (1120 mm)

[2] In a compartment greater than 65" (1650 mm) in depth, toe clearance at the front partition is not required.

C.5 Middle School Ceramic Kiln

Skutt KM1027-3, Electric Kiln with the following options: "Envirovent 2", Furniture Kit and Easy View. Refer to the following information.

Appendix C.5 Middle School Ceramic Kiln Specifications

SKUTT

Create Your e-mail Profile
Enter e-mail here
GO

Search
Our Site
GO

- Home
- Products
- Applications
- Resources
- Architects Specs
- Shopping
- Our Company
- Contact Us

Skutt KM1027 Electric Kiln

Our even-firing powerhouse.

The KM-1027 is known as a real powerhouse because of its large 7 cubic foot capacity and ability to fire to Cone 10. It is a great kiln for those who fire porcelain and stoneware. It has proven to be the most popular model in our KilnMaster line, and has earned a reputation as a kiln which fires evenly at high temperatures over and over again. Again, the addition of the Skutt EnviroVent will help get the most from this kin's automatic firing capabilities. Also available in three phase models.

Electrical Requirements
240 Volts 48 Amps 11520 Watts
208 Volts 48 Amps 9980 Watts
Copper Wire Size: 6
Breaker Size: 60
NEMA Receptacle Configuration: 6-50

Available both Single Phase and 3 phase

BUY NOW!

How Big is That Kiln?
7.0 Cu. Ft.

Note that a larger diameter kiln holds more bowls per cubic foot due to the larger stacking surface on each shelf.

NEW Now all 10 and 12-sided KilnMaster Kilns come standard with a Skutt Lid Lifter **Details ::**

WHAT'S INCLUDED

What's included with your new kiln

CONTENTS LIST

Skutt Kilns should arrive fully assembled.

Packed with the kiln you will find the following items:
- Kiln Stand
- Instructional Video
- Operating Manual
- Stand Feet
- Extra Thermocouple (unless Type S)
- Warranty Card
- Peep Plugs - attached to the kiln stand, enough to fill each peephole on your particular model.

www.skutt.com Terms of Use Privacy Statement Contact skutt

[+] Site Feedback

TOP ACCESSORIES

KM1027 Top Accessories

KM1027

ACCESSORIES

ENVIROVENT

THE ENVIROVENT 2 IS A DOWNDRAFT VENTILATION SYSTEM DESIGNED TO EXTRACT FUMES FROM YOUR ELECTRIC KILN AND VENT THEM OUTDOORS BEFORE THEY HAVE A CHANCE TO ENTER THE ROOM.

FURNITURE KIT

TRIANGULAR POSTS AND SHELVES A FURNITURE KIT IS USED TO CREATE SHELF LAYERS INSIDE YOUR KILN. ALTHOUGH THE CONTENTS OF SHELF KITS VARY DEPENDING ON THE KILN MODEL ALL SHELF KITS WILL CONTAIN A SELECTION OF SHELVES AND 1 OR MORE POST ASSORTMENT KITS.

EASY VIEW

THE EASY VIEW IS A NEW OPTIONAL FEATURE THAT MAKES IT EASIER TO SEE AND PROGRAM YOUR CONTROLLER BY ANGLING THE TOUCHPAD UP.

ENVIROLINK

Appendix D: Crosswalk between PSCOC and APS Standards

Crosswalk: State Standards / Evaluation Guidelines

		Support Calcs	State Notes	H/L	H=Higher than standard; L= Below standard Evaluation Guideline Notes Yes means guidelines deals with standard	APS Standards
III.	General Requirements (6.27.30.8)					
	These standards are intended to supplement, but not to supersede or omit, compliance with applicable Building, Fire, Life Safety, Health or Accessibility Code or any other code, regulation, law or standard that has been adopted by a governmental agency having jurisdiction at the site of the school. Existing school buildings are not required to comply with current requirements for new buildings unless this compliance is specifically mandated by law or by the code, regulation or standard of the jurisdiction where the building is located. Design of a facility shall include: ease of maintenance, centralized common use areas; natural light; ease of supervision and security; and site specific covered (protected) circulation if needed.				Add ..."ease of supervision and security; and site-specific covered (protected) circulation if needed."	2.00
	A. Building Condition					
	A school facility must be safe and capable of being maintained.				Yes	
	1. Structural					
	A school facility must be structurally sound. A school facility shall be considered structurally sound and safe if the building presents no imminent danger or major visible signs of decay or distress.				Add wording relating to "...presents no imminent danger or major visible signs of decay or distress."	2.1.1
	2. Exterior Envelope					2.1.1
	An exterior envelope is safe and capable of being maintained if:				Yes	
	a. walls and roof are weather tight under normal conditions with routine upkeep; and				Yes	
	b. doors and windows are weather tight under normal conditions with routine upkeep and the building structural systems support the loads imposed on them.				Yes. Implied structural load note. Issue is how to know "adequate."	
	3. Interior Surfaces					2.1.2
	An interior surface is safe and capable of being maintained if it is:				Yes	
	a. structurally sound;				Yes	
	b. capable of supporting a finish; and				Yes	
	c. capable of continuing in its intended use, with normal maintenance and repair.				Add	
	4. Interior Finishes					2.1.2
	An interior finish is safe and capable of being maintained if it is:				Yes	
	a. free of exposed lead paint;				Add	
	b. free of friable asbestos; and				Add	
	c. capable of continuing in its intended use with normal maintenance and repair.				Add	

Appendix D: Crosswalk between PSCOC and APS Standards

Crosswalk: State Standards / Evaluation Guidelines

									H/L	H=Higher than standard; L= Below standard	
								Support Calcs	State Notes		Evaluation Guideline Notes	
											Yes means guidelines deals with standard	APS Standards
	B. Building Systems											
		Building Systems in a school facility must be in working order and capable of being properly maintained. Building systems include roof, plumbing, telephone, electrical and heading and cooling systems as well as fire alarm, 2-way internal communication, appropriate technological infrastructure and security systems.									Yes	
		1. General										
			A building system shall be considered to be in working order and capable of being maintained if all of the following apply.									2.1.4 2.1.6
				a. The system is capable of being operated as intended and maintained;							Yes	
				b. Newly manufactured or refurbished replacement parts are available;							Add	
				c. The system is capable of supporting the adequacy standards established in this rule;							Add	
				d. Components of the system present no imminent danger of personal injury.							Add	
		2. Plumbing Fixtures										2.1.5
			Building Code: Fixtures shall include, but are not limited to: water closets, urinals, lavatories and drinking fountains. In all new construction, restrooms shall be available so student will not have to exit the building. In existing facilities, restrooms shall be available for classrooms for grades 5 and blow, and special needs classrooms, without having to exit the building, wherever possible with reasonable cost constraints.								Implied but inside stipulation for only new construction. Add for existing K-5 and special needs classrooms...wherever possible with reasonable cost constraints.	
		3. Fire alarm										
			A school facility shall have a fire alarm system as required by applicable state fire codes.								Yes	
		4. 2-way Communication System										
			A school facility shall have a 2-way internal communication system between a central location and each classroom, library, physical education space and the cafeteria.								Yes as PA or specialized telephone system.	
IV.	Classification of Public Schools (6.27.30.9)											
	Public Schools shall be classified as defined in Section 22-1-3 NMSA 1978. The typical size of each classification is:											
	A. Elementary School											
		Generally 200 student and generally ranges from 25 - 1,000							25-1,000		300 to 750 APS allows 1,000+ but works to reduce	1.2
	B. Middle School/Junior High School											
		Generally 400 student and generally ranges from 50 - 1,000							50 to 1,000		600 to 1,000	
	C. High School											
		Generally 1,200 students and generally ranges from 50 - 2,000							50 to 2,000		1,500 to 2.200	

Appendix D: Crosswalk between PSCOC and APS Standards

Crosswalk: State Standards / Evaluation Guidelines

					H/L	H=Higher than standard; L= Below standard	
				Support Calcs	State Notes		Evaluation Guideline Notes	
							Yes means guidelines deals with standard	APS Standards
V.	School Site (6.27.30.10)							
	A school site shall be of sufficient size to accommodate safe access, parking, drainage and security and be of an area large enough to accommodate a school facility that complies with the net classroom square footage requirements established for the number of students at that facility. Additionally, the site shall be provided with an adequate source of water and appropriate means of effluent disposal.						Yes	1.3, 1.6
	A. Safe Access							
		A school site shall include a student drop-off area or pedestrian pathway that allow students to enter the school facility without crossing vehicular traffic or allow students to use a designated crosswalk if buses are used to transport students. A student drop-off area must be configured to accommodate bus width and turning requirements. For K-5 students, if buses are used to transport students, the site shall include a separate bus drop-off area, as well as a separate parent drop-off area.					Yes	1.4, 3.2.3
	B. Parking							
		A school site shall include a maintainable surfaced area that is stable, firm and slip resistant and is large enough to accommodate 1.5 parking spaces per staff FTE and one student space per four high school students. If this standard is not met, alternative parking may be approved after the sufficiency of parking at the site is reviewed by the council using the following criteria.			1.5 per staff (FTE) with 1/4		ES - 1 per staff plus 10 MS - 1 per staff pus 10 HS - 1 per staff plus 1/4 of students, plus 30	1.4.4
			1. availability of street parking around the school				Add	
			2. availability of any nearby parking lots				Add	
			3. availability of public transit				Add	
			4. number of staff who drive to work on a daily basis, and				Add	
			5. average number of visitors on a daily basis				Add	
	C. Drainage							
		A school site shall be configured such that runoff does not undermine the structural integrity of the school buildings located on the site or create flooding, ponding or erosion resulting in a threat to health, safety or welfare.					Yes	
	D. Security							
		A school site shall include a fenced or walled play/physical education area for students in programs for preschool children with disabilities and kindergarten and students in grades 1 through 6. This standard is met if the entire school is fenced or walled. If this standard is not met, alternative security may be approved after the sufficiency of security at the site is reviewed by the council using the following criteria.					Fencing inferred but only mentioned for kindergarten and tot lot play areas.	1.8
			1. amount of vehicular traffic near the school site,				Add	
			2. existence of hazardous or natural barriers on or near the school site,				Add	
			3. amount of animal nuisance or unique conditions near the school site,				Add. We consider bad zoning, neighbors also.	

Crosswalk: State Standards / Evaluation Guidelines

				Support Calcs	State Notes	H/L	H=Higher than standard; L= Below standard	
							Evaluation Guideline Notes	
							Yes means guidelines deals with standard	APS Standards
			4. visibility of the ply/physical education are, and				yes	
			5. site lighting, as required to meet safe and normal access conditions.				yes	
VI.	Site Recreation and Outdoor Physical Education (6.27.30.11)							
			A school facility shall have area, space and fixtures, in accordance with the standard equipment necessary to meet the educational requirements of the state board of education for physical education activity.				Yes	
			A. Elementary School					
			A play area and playground adjacent to the school shall be provided for physical education activities. Equipment shall be based on the design capacity of the school.			H	Yes	1.7
			B. Middle School/Junior High School					
			A paved multipurpose ply surface and a playing field for physical education activities shall be provided. Playing fields and equipment shall be based on the design capacity of the school.			H	Yes	
			C. High Schools					
			A paved multipurpose play surface and a playing field for physical education activities shall be provided. Playing fields and equipment shall be based on the design capacity of the school.			H	Yes	
			D. Combination Schools					
			A combination school shall provide the elements of the grades served by subsections A, B and C above without duplication but shall meet the higher standards.			H	Yes	
VII.	Academic Classroom Space (6.27.30.12)							
	Classroom space is measured from interior wall to interior wall.						Yes	
	A. Classroom Space							
			Classroom space - Classroom space shall be sufficient for appropriate educational programs for the class level needs.				Yes	3.4, 3.4.1
	B. Classroom Fixtures and Equipment							
			1. Each general and specialty classroom shall contain a work surface and seat for each student in the classroom. The work surface and seat shall be appropriate for the normal activity of the class conducted in the room.				Yes	3.4.1
			2. Each general and specialty classroom shall have a erasable surface and a surface suitable for project purposes, appropriate for group classroom instruction, and a display surface. A single surface may meet one or more of these purposes.				Yes	3.4.1
			3. Each general and specialty classroom shall have storage for classroom materials or access to conveniently located storage.				Yes	3.4.1
			4. Each general and specialty classroom shall have a work surface and seat for the teacher and for the aide assigned to the classroom and it shall have secure storage for student records that is located in the classroom or is convenient to access from the classroom.				Add the detail "...shall have secure storage for student records that is located in the classroom or is convenient to access from the classroom."	3.4.1

Crosswalk: State Standards / Evaluation Guidelines

					H/L	H=Higher than standard; L= Below standard	
			Support Calcs	State Notes		Evaluation Guideline Notes	
						Yes means guidelines deals with standard	APS Standards
	c. Classroom Lighting						
		1. Each general, science and arts classroom shall have a lighting system capable of maintaining at least 50 foot-candles of light.				Recommended - 50 but practical is 30 fc.	2.1.8c
		2. The light level shall be measured at a work surface located in the approximate center of the classroom between clean light fixtures.				At desk height where desks set.	
	D. Classroom Temperature						
		1. Each general, science and arts classroom shall have a heating, ventilation and air conditioning (HVAC) system capable of maintaining a temperature between 68 and 82 degrees Fahrenheit with full occupancy.				Add. Set by APS In new construction work.	2.1.4a
		2. The temperature shall be measured at a work surface in the approximate center of the classroom.				Add.	
	E. Classroom Acoustics						
		1. Each general, science and arts classroom shall be maintainable at a sustained background sound level of less than 55 decibels.				Add. Set by APS on mew construction work.	
		2. The sound level shall be measured at a work surface in the approximate center of the classroom.				Add.	
	F. Classroom Air Quality						
		1. Each general, science and arts classroom shall have an HVAC system that continually moves air and is capable of maintaining a CO2 level of not more than 1.200 parts per million.				Add.	
		2. The air quality shall be measured at a work surface in the approximate center of the classroom.				Add.	
VIII.	General Use Classrooms (Language Arts, Mathematics and Social Studies) (6.27.30.13)						
	Cumulative classroom het square foot (SF) requirements, excluding locker space and general storage space are						
		A. Kindergarten	50 net sf/student	1,020	H	900 - 1,200 sf	3.4.1
		B. Grades 1 - 5	32 net sf/student	704	H	700 - 900 sf	3.4.1
		C. Grades 6 - 8	28 net sf/student	672	H	700 - 900 sf	
		D. Grades 9 -12	25 net sf/student	700	H	700 - 900 sf	
IX.	Specialty Classrooms (Science, Arts, Career Education and Physical Education) (6.27.30.14)						
	A. Science						
		1. For grades K through 5 no additional space is require beyond the classroom requirement.			H	ARC considers sign-up lab/art/music space.	

Crosswalk: State Standards / Evaluation Guidelines

					H/L	H=Higher than standard; L= Below standard	
			Support Calcs	State Notes		Evaluation Guideline Notes	
						Yes means guidelines deals with standard	APS Standards
		2. For grades 6 through 12, 4 net sf/student of practical and instructional science space is required. The space shall not be smaller than the average classroom at the facility. This space is included in the academic classroom requirement and may be used for other instruction. The space shall have science fixtures and equipment, in accordance with the standard equipment necessary to meet the educational requirements of the state board of education. If an alternate science delivery method is used by a school district, the district shall verify the appropriate alternate fixture and equipment to the council.		700	H	1,300 - 1,500 no less than 2 labs.	
	B. Technology						
		Each classroom at a school facility shall have Internet access. Each school facility shall have at least one network multimedia computer, available for student use for every 15 students or an appropriate alternate delivery method. Computer equipment is subject to assessment under the Building systems category.		ES & MS - 3 to 67 HS 5 to	H	Guidelines say Internet access for 1 teacher WS and a pod of 3 computers plus printer and monitor for instruction. So 1 WS/10-11 students.	3.1.4, 3.4.4
	C. Art Education Programs						
		A school facility shall have space to deliver art education programs, including visual, music and performing arts programs, or have access to an alternate delivery method. The space shall not be smaller than the average classroom at the facility. This space may be included in the academic classroom requirement and may be used for other instruction.				Yes	3.4.3
		1. Elementary School					
		A music/drama or art classroom may be the same room as the classroom or may also be used as a general use classroom, plus storage of 60 net sf.		700	H	700 - 900	3.4.3
		2. Middle School/Junior High School					
		A band/orchestra/drama classroom shall have a minimum of 2.5 net sf/student up to a maximum of 1,500 net sf for band/orchestra/drama, including group practice, music storage and storage rooms, two individual practice rooms and an office. A chorus room shall have a minimum of 2.5 net sf/student up to a maximum of 800 sf, including group practice rooms, an office and library. An art room shall have a minimum of 2.5 net sf/student up to a maximum of 800 sf, including storage and an office.		1,500 music 800 chorus 800 art	H	Music - 1,600 to 1,800; Chorus - 1,200 to 1,400; Art - 1,600 to 1,800	
		3. High School					
		A band/orchestra/drama classroom shall have a minimum of 2.5 net sf/student up to a maximum of 2,000 net sf, including group practice, music storage and storage rooms, two individual practice rooms and an office. A chorus room shall have a minimum of 2.5 net sf/student up to a maximum of 1,200 sf with a practice area and an office. An art room shall have a minimum of 2.5 net sf/student up to a maximum of 1,200 net sf, including storage and an office.		2,000 music 1,200 chorus 1,200 art	H	Music - 4,500; Chorus - 2,200; Art (3 labs) - 1,800+1,200+1,200	
		4. Combination School					
		A combination school shall provide the elements of the grades served by subsections 1, 2, and 3 above without duplication, but meeting the height standards.				Add	

Appendix D: Crosswalk between PSCOC and APS Standards

Crosswalk: State Standards / Evaluation Guidelines

				H/L	H=Higher than standard; L= Below standard	
		Support Calcs	State Notes		Evaluation Guideline Notes	
					Yes means guidelines deals with standard	APS Standards
D. Career Education						
	1. Elementary School					
	No requirements				Yes	
	2. Middle School/Junior High School					
	Cooking, sewing, wood shop classrooms, etc., shall have a minimum of 15 net sf/student aggregate, with a minimum or 3,000 net sf.		3,000	H	HE - 1,600 to 1,800; Shop - 1,600 to 2,400 so the impact is about 4,200 net sf.	
	3. High School					
	Cooking, sewing, vocational education, health, child development, computer tech, metal tech, auto tech, transportation tech, coop training, etc., space shall have a minimum of 15 net sf/student aggregate, with a minimum of 5,000 net sf. If a school has a child development program, the space shall have a minimum of 1,100 - 1,500 net sf/student, including a lab, an observation area, a kitchen, an office, restrooms for children and adults and an outside play area of 75 net sf/child (1,000 net sf minimum).		Tech. - 5,000 Child dev - 1,100 - 1,500 w/ out-side		Voc Ed - 1,400 + 1,200 + 1,400 + 1,200 + 1,200; HE - 1,400 + 1,800 + 1,200 + 1,500; Health - 900; Child dev. - 1,100 + 1,500 plus 75 sf/child outside; Shop - 1,600 + 4,500 + 3,300; Coop - 1,000.	
	4. Combination School					
	A combination school shall provide the elements of the grades served by subsections 1, 2, and 3 above without duplication, but meeting the higher standards.				Add	
E. Computer and Keyboarding Labs						
	A school facility shall have space to deliver computer and keyboarding lab programs or have access to an alternate delivery method.				Yes	
	1. Elementary School					
	Lab classrooms shall have a minimum of 15 net sf/student aggregate, with a minimum of 1,000 net sf.		1,000		900 +	3.4.4
	2. Middle School/Junior High School					
	Lab classrooms shall have a minimum of 15 net sf/student aggregate, with a minimum of 1,500 net sf.		1,500		900 + add calc. for # needed. Assume 2 in MS.	
	3. High School					
	Lab classrooms shall have a minimum of 15 net sf/student aggregate, with a minimum of 2,000 net sf.		2,000		1,000 + 1,000 + 720	
	4. Combination School					
	A combination school shall provide the elements of the grades served by subsections 1, 2, and 3 above without duplication but meeting the higher standards.				Add	

Crosswalk: State Standards / Evaluation Guidelines

					H/L	H=Higher than standard; L= Below standard	
				Support Calcs	State Notes		Evaluation Guideline Notes	
							Yes means guidelines deals with standard	APS Standards
	F. Alternate Delivery Method							
		If an alternate delivery method is used by a school district to deliver instruction in science, technology, art, career education or computer and keyboarding technology. G. R. A. D. S. programs and special needs classroom(s), the alternate method must be approved following review by the council.					Ask if this is the case.	
X.	Physical Education (6.27.30.1S)							
	A. General Requirements							
		A school facility shall have an area, space and fixtures for physical education activity. This space may have more than one function and may fulfill more than one standard requirement.					Yes	
		1. Elementary School						
		For an elementary school facility, an indoor physical education teaching facility that shall be the greater of 2,400 net sf or the square footage equal to 7 net sf multiplied by one-half of the design capacity.		2,400 - 2,975			2,400 - 3,265	3.4.6
		2. Middle School/Junior High School						
		For a middle school/junior high school facility, an indoor physical education teaching facility that shall have a minimum of 5,200 net sf plus bleacher for 1.5 design capacity.			7,075		5,200 - 7,900	
		3. High School						
		A physical education complex shall have a minimum of 6,500 net sf plus bleachers for 1.5 design capacity.			10,250	H	13,200	
		4. Combination School						
		Shall provide the elements of the grades served by subsections 1, 2, and 3 above without duplication, but meeting the higher standards with bleacher capacity for 2.0 capacity. If the school includes and elementary, then it contain the requirements for an elementary school.					Add	
	B. Additional Physical Education Requirements							
		In addition to space requirements in subsection A						
		1. Elementary School						
		One office shall be provided, with physical education equipment storage with a minimum of 150 net sf. This space may have more than one function and may fulfill more than one standard requirement.					Yes	3.4.6
		2. Middle School/Junior High School						
		Two dressing rooms shall be provided, with lockers, showers, and restroom fixtures. Two offices shall be provided, each with a minimum of 150 net sf. Each shall be provided with a telephone. Physical education equipment storage space shall be provided. Additionally, a fixed or temporary platform shall be provided, which may have more than one function and may fulfill more than one standard.				H	Yes plus adds auxiliary gym and recommends weight room.	

Crosswalk: State Standards / Evaluation Guidelines

					H/L	H=Higher than standard; L= Below standard	
				Support Calcs	State Notes		Evaluation Guideline Notes	
							Yes means guidelines deals with standard	APS Standards
		3. High School						
		Two dressing rooms shall be provided, with lockers, showers, and restroom fixtures. Two offices shall be provided, each with a minimum of 150 net sf. Each shall be provided with a telephone. Physical education equipment storage space shall be provided. Additionally, a fixed or temporary platform shall be provided, which may have more than one function and may fulfill more than one standard.				H	Yes and adds auxiliary gym, mezzanines, weight room, wrestling room. Platform is not mentioned unless used for assemblies. PAC often has this stage.	
		4. Combination School						
		A combination school shall provide the elements of the grades served by subsections 1, 2, and 3 above without duplication, but meeting the higher standards.					Add	
XI.	Libraries and Media Centers/Research Area - General Requirements (6.27.30.16)							
	A school facility shall have space for students to access research materials, books and technology. This shall include space for reading, listening and viewing materials.						Yes	
	A. Elementary School							
		For an elementary school facility, this space shall be the greater of 1,000 sf or the square footage equal to 30 net sf/student for 10 percent of the design capacity.		1,000 - 3,000			2,400 with same 30 sf/student	
	B. Middle School/Junior High School or High School							
		For a middle school/junior high school or high school facility, this space shall be the greater of 2,000 sf or the square footage equip to 30 net sf/student for 10 percent of the design capacity.					MS - 4,500 - 5,200; HS - 8,400 same 30 sf/student	3.4.5
	C. Combination School							
		A combination school shall provide the elements of the grades set out in subsections A and B above without duplication, but meeting the higher standards.					Add	
XII.	Food Service Standards (6.27.30.17)							
	A. Cafeterias - General Requirements							
		1. Serving and Dining						
		A school facility shall have a covered area or space, or combination, to permit students to eat within the school site, outside of general classrooms. This space may have more than one function and may fulfill more than one adequacy standards requirement (for example, auditorium and/or indoor physical education).					Yes. We do not specifically say covered assuming it must be inside.	3.4.7
			Serving 5 - 8 net sf/capacity of dining room				Guidelines in kitchen	
			Dining 10 - 15 net sf/seated student				Yes	
			a. Elementary School - should seat up to 200 students per sitting		3,160 max.		200 at 3,000 sf	3.4.7
			b. Middle School/Junior High School - should seat up to 250 student per sitting		3,950		250 at 4,000 sf	
			c. High School - should seat up to 250 students per sitting		3,950		625 at 9,400 sf	

Appendix D: Crosswalk between PSCOC and APS Standards

Crosswalk: State Standards / Evaluation Guidelines

					Support Calcs	State Notes	H/L	H=Higher than standard; L= Below standard / Evaluation Guideline Notes / Yes means guidelines deals with standard	APS Standards
			d. Combination School - shall provide the elements of the grades served by subsections a, b, and c above without duplication, but meeting the higher standards.					Add	
		2. Fixtures and Equipments							
		A school facility shall have space, fixtures and equipment accessible to the serving area, in accordance with the standard equipment required for the preparation, receipt, storage or service of food to students.						Yes	3.4.7
		Food service facilities and equipment shall be appropriate for the food service program of the school facility. Food service facilities and equipment shall comply with *The Food Service and Food Processing Regulations* of the New Mexico Department of Environment.						Add words "...Food service facilities and equipment shall comply with *The Food Service and Food Processing Regulations of the New Mexico,* Department of the Environment." Ask for last inspection report.	
	B. Kitchen								
		Kitchen and equipment shall comply with either the Food Preparation Kitchen or the Serving Kitchen standards defined as follows:						Yes	3.4.8
		1. Food Preparation Kitchen							
			2 net sf/meal served					Add	
		a. Elementary School - 1,000 net sf minimum				1,000		1,000	3.4.8
		b. Middle School/Junior High School - 1,600 net sf minimum				1,600		1,600	
		c. High School - 1,700 sf minimum				1,700		1,700	
		d. Combination School - shall provide the elements of the grades served by subsections a, b, and c above without duplication, but meeting the higher standards.						Add	
		2. Serving Kitchen						Add	
		Where food is not prepared, there shall be a minimum of 200 net sf with hand wash sink and phone.						Add	3.4.8
XIII.	Other Facility Areas (6.27.30.18)								
	A. Parent Workspace								
		<u>If parents are invited</u> to assist with school activities, a school facility shall include a workspace for use by parents. If this space is provided, it shall consist of 1 net sf/student with a minimum requirement of 150 net sf and a maximum of 800 net sf. The space may consist of more than one room and may have more than one function.				150 - 800		Add. In current APS practice, not written in guidelines, but looked for during evaluations.	3.4.1
	B. Administrative Space								
		A school facility shall have space to be used for the administration of the school. The space shall consist of a minimum of 150 net sf, plus 1.S net sf/student, up to a maximum requirement of 2,500 net sf. (It may exceed 2,500 net sf, but 2,500 net sf is the maximum that is required.)				# of students or 2,500	H	ES - 1,430; MS - 1,405; HS - 7,0S0	3.4.10a

Appendix D: Crosswalk between PSCOC and APS Standards

Crosswalk: State Standards / Evaluation Guidelines

					H/L	H=Higher than standard; L= Below standard	
			Support Calcs	State Notes		Evaluation Guideline Notes	
						Yes means guidelines deals with standard	APS Standards
	C. Student Health, Counseling and Ancillary Space						
		A school facility shall have space to isolate a sick student from the other students and may include space for the delivery of other health, counseling, testing and ancillary programs. This space shall be a designated space that is accessible to a restroom, and shall consist of 1 net sf/student with a minimum requirement of 150 net sf and a maximum of 800 net sf. The space may consist of more than one room and may have more than one function. This space shall include a telephone.	150 - 800		H	ES - 250 to 350; MS - 500 + 600; HS - 1,086+ 2,000	3.4.10b
	D. Faculty Workspace or Teacher Lounge						
		A school facility shall have workspace available to the faculty. This space is in addition to any workspace available to a teacher, in or near a classroom. The space shall consist of 1 net sf/student, with a minimum requirement of 150 net sf and a maximum requirement of 800 net sf. the space may consist of more than one room and may have more than one function. This space shall include a break area with a sink.	1 @ 800 all levels		H	2 @ 800 All levels	3.4.10c /d
XIV.	General Storage (Excludes Lockers, Janitorial, Kitchen or Specialty Classrooms) (6.27.30.19)						
	For storage, 3 net sf per K-5 grade student may be distributed in or throughout any type of room or space, including classrooms, but may not count toward required minimum room square footages. General storage must include some secured storage.					Casework in 1 - 5, closet in Kindergarten and lockers off of the hall in MS and HS.	3.4.9
XV.	Maintenance or Janitorial Space (6.27.30.20)						
	Each school shall designate 5 net sf aggregate per student for maintenance or janitorial space. Janitorial space shall include a janitorial sink.		400 - 1,000			480 - 1,000 in 4 to 5 spaces	3.4.9
XVI.	Teacherages (6.27.30.21)						
	Teacherages shall meet standards required by the United States Department of Housing and Urban Development.					Ask, if any	
XVII.	Standards Variance (6.27.30.22)						
	The council may grant a variance from any of the adequacy standards. The council shall grant a variance if it determines that the intent of the standard can be met by the school district in an alternate manner. If the council grants the variance the school district shall be deemed to have met the guideline.					Ask, if any	

Appendix E: APS Technical Specifications and Furnishings

The latest and most current technical specifications are available on the FD+C Web site and include the following:

Refer to latest version of design standards on the FD+C webpage at www.apsfacilities.org/facilities.

E.1 Mechanical Guidelines

E.2 Electrical Guidelines

E.3 Special Systems guidelines – PA / Fire / Security Systems

1. Network Distribution Standards, December 2005
2. Special Systems Riser Rack for Portables

E.4 FD+C and M&O Standard Specifications

The district will provide technical specifications for the following systems / materials:

1. Casework
2. White and chalk boards
3. Carpet
4. Roof
5. Door and hardware
6. Toilet accessory list
7. Windows and glazing
8. Roofing

E.5 FD&C Furniture and Equipment Needs

The district will provide a furnishings list for the designer to accommodate in the occupied spaces. Coordinate color, layout, need for wiring locations, and clearances with FD+C staff.

E.6 SITE GUIDELINES

1. Site Standards
2. Landscape Standards / Specifications