



Albuquerque
Public Schools

School Design Standards



APS Facilities Design and Construction

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Section 01

Introduction And Overview

Introduction and Overview

This one-volume design standards replaces the individual separate school and site standards previously published by the Albuquerque Public Schools [APS]. This volume's functions are manifold:

- » It will serve as guideline for new construction as well as existing facility renovations for all sites and buildings.
- » It outlines broad and specific criteria to support the educational and other needs of the district.
- » It addresses adequacy, health and safety, and maintainability.
- » It is informed by current, adopted APS facility and curriculum practices, national standards, and the aggregate input from a committee composed of APS administrative personnel, content area experts, principals, and community representatives.
- » It is organized to outline minimum, general expectations and approaches for ALL buildings and sites serving all grade levels and those staff serving them.
- » It presents very specific requirements for ALL buildings and sites for each school level or educational/organizational paradigm: Elementary, Middle, K-8, High School.
- » It shall be used in accordance with and complementary to all published building system and component standards published in the Department's website. Clickable links below:

Aluminum Storefront Specification	Mechanical VRF Pre-Selection Process
Interface Carpet Tile Specifications	Playground Standards
Mannington Carpet Tile Specifications	Polished Concrete Finishing
Custom Plastic Laminate Casework Standards	Portable Building Electrical and Special Systems Service Blueprint – E-201
Door Hardware Standards	Portable Building Electrical and Special Systems Service Blueprint – E-202
Electrical Design Standards	Solar PV Guidelines
Glazing and Window Standards	Roofing Design Guidelines & Specifications
LEEDv4 Guideline	Roof Drain No Hub Coupling
Mechanical Design Standards	Mechanical Design Standards Appendix A

Key to parenthetical and related supplementary notations:

*** 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.

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The requirements outlined in this Introduction are for specific site and facility parameters not covered in the more “performance based” standards that follow. Requirements for all projects:

1. The contract Architect / Engineer (A/E) shall coordinate all work with the APS Facilities Design and Construction (FD+C) project team and participate in a School Building Committee process.
2. A utilization will be provided to the A/E by APS FD+C and Capital Master Plan (CMP) prior to the design of each Project. The CMP utilization will define the specific spaces required for each project. The APS Standards will define the square footage and character requirements for each of the specified spaces.
3. The school facility shall accommodate the education of all students. The A/E will coordinate with FD+C and APS Capital Master Plan (CMP) to determine special education facility requirements. Facilities shall support universal design and accessibility.

4. Grade level accommodations:

Elementary School	Kindergarten, 1st, 2nd, 3rd, 4th, and 5th grades (Some schools have pre-K)
Middle School	6th, 7th and 8th grades
K-8 School	Kindergarten, 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, and 8th grades
High School	9th, 10th, 11th, and 12th grades

5. New facilities shall be designed and constructed in alignment with phasing identified in the school's site master plan. Phases shall be designed and constructed to limit disruption to previous phase(s) of work.
6. The contracted 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.
7. The contracted A/E will meet to clarify 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.
8. 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.
9. These standards do not specifically address furnishings. The contract Architect will coordinate the configuration of spaces requiring furnishings with the FD+C Interiors Department.
10. The A/E and FD+C Interiors Department will coordinate and agree on colors, surfaces, and level of material quality based on these standards and allotted budget. Once settled, FD+C will then share the information with the school.
11. All new stand-alone buildings shall follow the sustainability process developed by the U.S. Green Building Council's 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.
12. The A/E shall consider and employ the principles of Universal Design.
13. APS reserves the right to exceed the PSFA Adequacy Standards for site and facility areas noted in this document.

Section 02

General Site and Facility Design Concepts

General Site & Facility Design Concepts

- » School Sites and Facilities Overview
- » Site Development
- » Safety/Security
- » Site and General Utility Requirements
- » Landscaping
- » Site Recreation

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SCHOOL SITES AND FACILITIES OVERVIEW

1. The school location should be 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.
2. Site the school on adequate area of land in a primarily residential area; ideal land sizes of recent schools:

Elementary School	10 acres
Middle School	20 -25 acres
K-8 School	25 acres
High School	45-50 acres

3. In addition to the permanent building, the site should be able to accommodate a stated quantity of future portables to be confirmed during programming.
4. An enclosed circulation school. Areas of recently constructed schools (permanent GSF; excludes portables):

Elementary School	79,000 gsf
Middle School	170,000 gsf
K-8 School	217,000 gsf
High School	349,000 gsf

5. APS FD+C assigns 25% tare to facilities. Tare space includes circulation (hallways, lobbies, vestibules, etc.), wall thickness, custodial space, general storage, and restrooms (except where fulfilling specific program requirements, i.e. nurse’s restroom). Tare space excludes mechanical rooms, IT rooms, electrical rooms, specific programmed storage, and specific programmed restrooms.
6. Special Education demographics may impact the size/design of school. See Special Education Program Overview and Appendix B for Special Education space standards.
7. Accommodate the enumerated number of student population dictated by CMP’s Utilization Study/ Projections. The table below depicts recently built ground-up schools:

Elementary School	650 student-base population with ability to increase / accommodate 1,000 students using portable classrooms (permanent area for 8 portable classrooms; interim area for up to 12)
Middle School	1,200 student-base population with ability to increase to 1,500 students using portable classrooms (permanent area for 8 to 12 portable classrooms)
K-8 School	1,200 student-base population with ability to increase to 1,500 students using portable classrooms (permanent area for 8 to 12 portable classrooms)
High School	2,100 student-base population with ability to increase to 2,650 students using permanent or portable classrooms (permanent area for 8 to 12 portable classrooms)



8. Meet specific program area/SF requirements defined in these Standards.
9. Meet specific educational, instructional, and functional needs of specified activities.
10. Provide a pleasant environment for students, teachers, and staff and be a positive addition to the community.
11. Provide a safe environment that promotes learning opportunities in accordance with relevant codes and ordinances.
12. Allow for team teaching options in part of each group of classrooms. (Use of extra wide double doors has worked well in many schools.)
13. Restrooms distributed to be convenient to students and staff.
14. Courtyard(s)/outdoor learning spaces that can be used for educational purposes.
15. Be designed for cost effective operation and maintenance.
16. Be adaptable as center for community use and education, fine arts education, and/or before and after-school programs.
17. 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 technologies into learning environments.
18. Organized in clear and consistent manner featuring:
 - » Single point-of-entry.
 - » Ease of supervision and security (controlled building access, functional organization and separation for after-hours use).
 - » Locate common-use facilities (media center, cafeteria/kitchen, gym, PAC, restrooms) for after-hours use while securing the remainder of the school.
 - » Locate workrooms in convenient proximity to the administration office and staff areas.
 - » Natural light to learning areas.
 - » Separation of noisy from quiet activities.
 - » Universal design.
19. Some APS schools have a School Based Health Center (SBHCs) or a Community Based Health Clinic (CBHC) on campus. See CMP Utilization for program needs.
 - » These programs are run by third party providers. APS provides the required spaces, power, data, and regular janitorial services.
 - » The SBHC provider provides a variety of services (not all services are at each site) such as primary care, preventive care, behavioral health and dental (very limited). All the APS SBHCs serve only students at the school they are housed.
 - » A CBHC serves the students at the school and also has hours when the community has access to the clinic
20. Refer also to each individual school level standards (Elementary School, Middle School, K-8, and High School).



SITE DEVELOPMENT

Elements of site development include the harmonious blend of the following elements for the school site, perimeters, parking lots, and adjacent streets. Aesthetic appeal and ease of maintenance are paramount concerns.

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

- » **Off-Site Student Pedestrian Access, Sidewalks, and Access Streets**
 - » While FD+C and the contract A/E will meet with the BLUZ team to identify and minimize hazards where feasible, off-site sidewalks, access streets, and circulation are not within the jurisdiction of APS. “Park and walk” use of adjacent neighborhood streets is discouraged. The following are desirable, but not within APS’s control:
 - » Signals and signs to permit safe pedestrian entrance to and exits from the school area.
 - » Barrier-free sidewalks connecting schools to adjacent residential areas.

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.
- » **On-Site Pedestrian Access/Sidewalks**
 - » The pedestrian entry to the site shall be clearly defined. Paved sidewalks shall connect all school activity areas, including portables, (to provide accessibility and avoid undue maintenance in interior areas from mud or sand).
- » **On-Site Bicycle Use**
 - » Provide fencing (lockable) around a concrete pad for bicycle storage.
 - » Provide bicycle racks.

LEED®: Bike amenities qualify for points.
- » **Accessibility**
 - » Provide ADA compliant access to facilities (universal access preferred). Use ramps, handrails, and curb at building entrances, parking areas, playgrounds, and pedestrian walks in accordance with the New Mexico Building Code, American National Standards Institute, specifications for designing buildings and facilities accessible to and usable by people with physical disabilities.

***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.

» Main Entry

- » Access points (See Safety/Security section for additional single-point of entry requirements):
 - » For security, limit the number of school access points. The main entrance to buildings or building complexes shall be clearly defined by employing, primarily, architectural elements, and, secondarily, reinforced by landscaping, directional signage, and other means. Signage shall clearly identify car, bus, delivery, handicapped parking, and drop-off areas; different parking areas; location of accessible routes; and route to the office.

***Some recent school construction projects have included signage to be translated into Spanish. Verify with building committee.

- » School Sign:
 - » The school shall 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 signage section in these Guidelines).
- » Flagpole:
 - » Provide one flagpole that is a minimum of 20' tall with sheathed metallic flag-snaps. The pole shall be one piece, non-tilted, aluminum.

» Vehicular Circulation

- » There shall 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 shall 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.

- » Bus Loading / Unloading:
 - » During programming, confirm the number of buses at a school with APS Transportation.
 - » Strive to 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.
 - » The loading area shall 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. Confirm the projected number of students and buses based on the school's projected student population. Provide curb access area for the projected number of 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.
- » Design bus lanes per bus configurations and turning radius requirements.
 - » See Appendix K for bus configurations and turning radius requirements.
- » Provide separate bus lanes from parent drop off and pick up lane.
- » Provide a separate drop off for wheel chair buses (Typically is a mid-size bus).
- » Bus boarding zones:
 - » Provide a fence at boarding zones.
 - » Load buses directly from the adjacent sidewalk (no walking around or between buses).
 - » Include way-finding design elements for younger students to find their bus. Consider color coding.
- » Consider new technology (swipe on and off buses) at bus loading area.

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

***The contract A/E shall confirm with APS CMP and Transportation the intensity of bus lane use.

» Student Drop-Off / Pick-Up

- » There shall be a separate area for the drop-off and pick-up of students by individual vehicles that shall not conflict with other vehicular or pedestrian pathways and provides for the safe loading and unloading of students. This has been a consistent safety concern for schools as the number of walking students have tended to diminish. The area should allow for a right door exit from the vehicle to the curb. Employ fencing to control pedestrians from walking in front of waiting cars. No parent cars in bus lanes.
- » Provide separate kindergarten drop-off and parking area when site allows.

*** To the extent possible, provide the length of the drop-off roadway to accommodate stated amount of vehicles cued for pick up and drop off; to be discussed with BLUZ Committee.

» Vehicular Entrances / Exits

- » If feasible, 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.

» Service / Emergency Access

- » Appropriate access to all areas of the site by service, garbage, and emergency vehicles shall 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, and/ or other jurisdictions if applicable.

***The contract A/E's 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 shall 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.

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» Street / Parking Area Condition

- » Streets and parking areas shall have the appropriate pavement profile(s) for vehicles using them. Consult the project geotechnical study, and account for all types of traffic that will transverse the pavement.
- » Discuss with BLUZ committee as to jurisdictional responsibilities of these subject adjacent areas.

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

» Parking Standards and Signage

- » Coordinate facility parking requirements with the NM Building Code.
- » There shall be adequate, safe parking for staff and visitors. Parking areas shall be paved and separate from other access ways. Parking areas shall be equipped with LED security lighting (including rough-ins for security cameras as afforded and needed). Design lighting in compliance with New Mexico Night Sky Protection Act, City Ordinances and Neighborhood Regulation and per APS Electrical Design Standards.
- » Provide 3 designated parking spaces with signs for the principal and 2 other personnel to be determined during design.
- » Provide 20 - 30 visitor parking spaces with signage. Prefer visitor parking and part of staff parking centralized for control of access to the office.
- » Provide 1 designated parking space with sign for APS police.
- » Provide a designated parking area with signage for 1.5 spaces for each teacher and staff member. Prefer visitor parking and possibly part of staff parking centralized for control of access to the office.
- » Install signage in kitchen parking lot. School needs signage for delivery zone and to prevent others from parking in their area.
 - » Schools require a minimum of 3 parking spaces next to kitchen door for early morning arrival, and require 3 - 8 parking spaces designated with signage for kitchen staff near the kitchen area. Check with Food and Nutrition Services for required kitchen parking spaces during design.
- » A/E shall confirm parking requirements for other agencies (social services, city daycare, etc.) with school administration.
- » Number of handicapped parking spaces, shall 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 direction of travel and no parking.
- » Provide signs for bus lane indicating buses only, no private vehicles or parking.
- » Provide signage at entrances to direct visitors to the school office. "Visitors must report to the School Office".
- » Provide signage for green vehicles and/or signage required for LEED points [e.g. tobacco use prohibition, facilities community use availability, etc.]

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- » Provide student parking area at high schools.
- » Consider joint use of parking area for band use. Joint use requires area free of light poles and special striping for band practice.

» **Portable Classroom Building Locations**

- » If expressly stated as a consideration during programming, there shall be sufficient room for ingress and egress of portable buildings to the site.
 - *** Provide 32' improved access lane with straight-in clearance of 96' for doubles and 60' for singles. Access lane gate shall be 30' wide.
- » Define portable classroom areas during planning and design phases.
- » Identify the total number of portables that the site can feasibly support.
- » Plan for infrastructure to support portable classrooms.
- » Integrate portable classroom buildings with other academic learning areas and provide equal access to school support and common-use spaces, as well as open space.
- » Discuss other potential portable issues, including access, security, condition, etc.
- » Portable areas shall have main domestic water and sewer lines installed and ready for connection. In areas with more than 4 doubles, expect installation of a restroom portable.

SAFETY / SECURITY

» **Single Point of Entry**

- » All school facility(ies) shall be accessed from a single point of entry. Parking, drop-off/pick-up, pedestrian routes, and other site access locations shall guide/funnel anyone entering the campus to the single point of entry.
- » The single point of entry shall be designed as a secure vestibule. The secure vestibule will require all visitors to sign in at the school's reception area before accessing other areas of the school.
- » The single point of entry applies to all school sites, including both single and multi-building campuses.

» **Site Fencing**

- » The site shall be securable with perimeter and/or interior fencing.
 - » Security fencing shall be a minimum of 6'-0" high. Chain-link is acceptable for "back-of-house" areas, while welded wire fence is desirable at more visible areas.
 - » Interior fencing is also referred to as "inter-building" fencing. This strategy may be employed where school buildings serve as barriers/walls and fencing is constructed between buildings to provide a fenced environment to allow exterior circulation for school occupants between and among separate buildings.
- » The site fencing layout must be coordinated with building egress requirements as well as the District's fire evacuation plan and active shooter protocol. Provide egress gates within the security fence as required by code, for fire evacuation, and for access to site features (recreation, playgrounds, parking, etc.).

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- » Egress gates shall be exit-only, except where approved for re-entry with card access by the APS staff architect and security team representatives.
 - » Install perimeter fencing on the property line. Coordinate requirements with the APS staff architect and APS Real Estate Department.
 - » The site fencing layout must be coordinated with joint-use areas. The school shall be able to secure and use joint-use space during school hours. Coordinate requirements for community use of joint use areas with the APS staff architect and APS Real Estate Department.
 - » Provide signage at perimeter and joint use fences. Coordinate signage requirements with the APS staff architect and the APS Real Estate Department.
 - » Vehicle gates may be required within site security fencing for maintenance access and fire lanes. Coordinate locations with the APS staff architect and M&O.
 - » In addition to site security, fencing may be used to protect students/staff from traffic hazards, steep slopes, drainage ponds.
 - » Refer to Appendix O in this document for detailed fencing requirements.
- » **Site Security Lighting**
- » Sites shall have illuminated parking areas, walks, entrances, portable areas, and exterior building areas for both safety and security purposes.
 - » Exterior lighting shall meet Illumination Engineering Society (IES) recommendations.
 - LEED®: 'Night sky' laws will influence the design of this lighting.
 - 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.
- » **Cameras (CCTV)**
- » Coordinate camera configuration during design reviews, including 50% and 95%.
 - » Coordinate the locations and configurations of exterior and interior cameras with the APS staff architect and APS security team.
 - » Provide a perimeter view of the building.
 - » Confirm current camera technology with APS staff architect / security team.
 - » Locate cameras efficiently; avoid doubling up.
 - » Cover all common and open areas, including gyms.
 - » Camera monitoring is typically located in the administrative office area, or in a security suite if the school has one. Provide sufficient power and data in monitoring rooms. Provide 4 data jacks on each wall. Verify monitor quantities, design, and workstation layout/requirements with APS police in addition to the security team.
 - » Clearly identify the general contractor's versus APS special systems contractor's scopes of work in the contract documents.

SITE AND GENERAL UTILITY REQUIREMENTS

- » **General site utility requirements**
 - » Design for easy and low cost maintenance.
 - » All underground utilities must be traceable for GPS coordinate documentation.

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- » On a case by case basis, consider GPS survey of the site utilities prior to backfill.
 - » To the extent made possible, consider the conceptual designs for utility services [sewer, water, gas] as loops.
 - » For additions and renovations, consider the consolidations of meters for all services [electrical, gas, water].
 - » Remove all abandoned utility lines and infrastructure, including underground.
 - » Coordinate site utility easement requirements with FD+C and the APS Real Estate department.
- » **Electric Service**
- » Electric service shall 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.
 - » See APS Electrical Design Standards.
 - ***Arrange, locate, size utilities to accommodate future expansion[s]
- » **Electrical Equipment**
- » Outdoor light fixtures, electric outlets, equipment (such as sump pumps), and other fixtures shall 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. *Refer to the current published APS Electrical Design Standards on the FD+C website.*
 - M&O Note: APS has transferred ownership and servicing of primary transformers to PNM.
- » **Supply Water**
- » Outside water supply shall be adequate for normal usage. Meter domestic and irrigation water separately. Consolidate water meters; the APS preference is for one domestic and one irrigation meter per campus. The irrigation system shall be 'water only' meter. If gray water or non-potable system is proposed, discuss with APS M&O and FD+C. Ensure the existence of a water and sewer availability statement. *Refer to the current published APS Mechanical Systems Design Standards.*
 - LEED®: Consider maximizing water efficiency to reduce burden on municipal water supply.
- » **Water for Fire Protection**
- » Fire hydrants must be included per jurisdiction Development Process Manual (DPM) standards. Provide easements where required and coordinate these easements with APS Real Estate office. *Refer to the current published APS Mechanical Systems Design Standards.*
- » **Drain Fields**
- » Septic tanks and drainage fields shall be located away from all student-accessed areas or sealed in monitored vaults. All such areas will be fenced.

» Gas Lines

- » Site gas piping shall 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. *Refer to the current published APS Mechanical Systems Design Standards.*

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

» Mechanical Units

- » Ensure units are protected from vandalism, safe, and easy to access for maintenance and visually screened to public areas. Refer to the current published APS Mechanical Systems Design Standards.
- » Mechanical vendors will be pre-selected and procured after the 50% CD review.
- » Consider the location, proximity, and acoustically- separating noisy building mechanical equipment with respect to adjacent neighbors.

» Fire Systems

- » Locate the Fire alarm system panel in the administrative office, separate from MDF/IDF room.

» Knox Boxes and Locks

- » Provide knox boxes and locks as required by the Fire Marshal.
- » Coordinate knox boxes during the design process and determine the final location in the field with the Fire Marshal prior to installation.
- » Do not alarm the knox box.

» Fire Extinguishers

- » Call out fire extinguishers, including type, quantity, and location in the contract documents.
 - » APS M&O provides 10 pound and 60 pound K-rated fire extinguishers as identified by the A/E in the contract documents.
 - » The general contractor provides fire extinguishers if they are different from those identified above.
 - » The general contractor installs all fire extinguishers, including those provided by APS M&O.
- » Locate fire extinguishers in cabinets. Cabinets shall be provided and installed by the general contractor.
 - » Cabinets shall be semi-recessed, glass free, and sized to hold 10 pound fire extinguishers.
 - » Provide space for a 60 pound K-rated fire extinguisher in the kitchen.

» Pest Control

- » Design shall consider and prevent hazards at any fresh air intake. Add air intake/bird deterrent at roofs, edges, windows, HVAC units, etc.

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» Garbage Collection

- » Each school shall have a designated garbage collection area meeting City of Albuquerque (COA) standards, and/or other authority having jurisdiction (AHJ) as applicable.
- » The garbage collection area shall be located near the kitchen, and accessible to a service access drive. Coordinate service requirements with APS M&O Grounds Department. The garbage collection area shall:
 - » Meet COA/AHJ standard detail for enclosure with gates.
 - » Provide space for 4 six cubic yard dumpsters (of which one is for recyclables) or 1-2 trash compactors with one dumpster for recyclables. Coordinate the size and amount of dumpsters with APS M&O and Waste Management.
 - » Accommodate Waste Management garbage truck access clearances.
 - » Locate dumpsters close to kitchen door, but not too close (rodents).

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.

LANDSCAPING

- » APS requires review by representatives of both FD+C and M&O Grounds and Maintenance.
- » Site landscaping shall require minimal maintenance and water conservation. APS site maintenance personnel should be able to maintain all site landscaping with existing district equipment. Raised or steep lawn areas requiring small mower use are not allowed.
- » Plant material shall provide shade, wind protection, erosion control, and aesthetic qualities for the building and surrounding area. Ideally, strive to landscape 7-15% of the school site with indigenous trees and planted areas (not including a grass field).
- » Other considerations:
 - » Minimize use of water and consider water harvesting to assist plant survival.
 - » Types and placement of plantings. Avoid plantings directly adjacent to buildings and foundations. Plantings should not obscure site security needs for visibility.
 - » Irrigation systems. (Note that irrigated landscaping immediately adjacent to buildings is not allowed.)

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 modern control of irrigation system comply with scoring elements.

» Priority Areas for Landscape

- » Parking lots (break up the visual expanse of paving).
- » Perimeters of the school facing public right-of-ways (on APS property).
- » Exterior common areas (courts, plaza, between wings, permanent portable area).
- » Outside learning areas.
- » Playgrounds and fields.

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.

» **Landscape and Site Design Directives**

- » Emphasize use of tree plantings, both ornamental and shade, and large-scale shrubs.
- » Avoid ornamental shrub plantings.
 - » Use sparingly and only to emphasize the primary building entrance.
 - » APS Grounds Department cannot maintain shrub beds and shrub plantings, and cannot perform weeding, deadheading, or apply chemical herbicide or pesticide applications that extensive ornamental shrub beds require.
- » The following trees and shrubs shall not be planted on APS property:
 - » Green and white ashes
 - » Elms (except hybrid elms)
 - » Kentucky coffee tree and aspen trees
 - » Spruces
 - » Golden rain tree
 - » Black locust
 - » Sugar and silver maple
 - » Poplars, cottonwoods
 - » Box elder (except sensation maple)
 - » Willows (except desert willow)
 - » Russian olives
 - » Pyracantha
 - » Ponderosa pine
 - » Piñon pine
 - » Sycamores
 - » Oleander
 - » Junipers
 - » Cotoneasters
 - » Euonymous
- » Ornamental Native Grass and Native Grass Re-Veg Seeding
 - » Landscape designs shall use native grass re-veg seeding in perimeter areas of a site that are not accessible to students.
 - » Use native grass seeding as an ornamental landscape treatment only in irrigated areas.
- » Specify establishment period and fencing requirements. Planting requirements:
 - » Shade trees shall be a minimum 2.5" caliper or larger.
 - » Ornamental trees (flowering pear, flowering plum, etc.) shall be a minimum 2" caliper or larger.
 - » All shrubs shall be a minimum 5 gallon or larger.
 - » All shrubs shall be xeric plantings.
 - » Tree wells located in paved areas shall have a minimum interior area of 10' x 10'.
 - » All trees planted in turf areas shall receive a minimum of 2" depth and 6' diameter bark mulch ring at the base of the tree. The bark shall be kept back away from the trunk of the tree to prevent rotting.
- » Design all landscape areas so that there is no site run-off of irrigation water.

» **Mulch**

- » All landscape areas shall receive aggregate mulches as ground cover in the form of gravel mulches and/or crusher fines.
 - » Minimum depth of all gravel mulches shall be 2" depth and the minimum depth of all crusher fine mulches shall be 3' depth.
 - » All mulch areas shall receive filter fabric unless the mulch is crusher fines that are installed in high traffic areas. APS Grounds will determine whether filter fabric is required or not.
 - » Aggregate mulch sizes shall be limited to the smallest size aggregate that is practical for each specific application.
 - » Aggregate mulches larger than 1" size will not be allowed on APS properties except for use on steep slope areas (3:1 and greater) and drainage areas. Crusher fines shall not be used in areas steeper than 10:1 and in areas that are used for conveying drainage or temporarily holding storm water run-off.
 - » Organic mulches are not allowed on district properties except for the use of bark mulch rings at tree plantings.
 - » All aggregate mulches used in drainage areas near buildings shall be embedded in concrete to prevent the stones from being dislodged.
 - » The design of sloped areas adjacent to or near buildings shall include the use of retaining walls, etc. to step grades and avoid the use of mulches on steep slopes.

» **Playfields and Athletic Fields**

- » Grass sod shall be limited to use on playfields and athletic fields only; and provided that the playfield and athletic field areas are one acre or larger (contiguous, not aggregate).
- » Grass seeding shall not be used on playfields and athletic fields.
- » Any field one acre or less shall be required to have artificial turf installed.
- » Plan Requirements:
 - » Note the grass species on the construction drawings and do not include in the written specifications.
 - » Grass species is limited to Bluegrass species mix unless otherwise prior approved by the APS Grounds Department (for example: Bluegrass-Bermuda grass mix). Grass species mixes such as 'Park Blend' shall not be used on APS District properties.
 - » All playfields and athletic fields shall be fenced with temporary construction fencing during the grass establishment period. The new field will not be available for use by the school during the establishment period. The cost of temporary construction fencing shall be paid for by APS through their on-call fencing contract and costs of this fencing shall be included in the Landscape Architect's Opinion of Probable Construction Cost estimate for the project.
 - » The establishment period will be twelve months (one year) from the date of final acceptance.
 - » All grass sod areas shall have a concrete mow curb consisting of a minimum 6" wide x 6" deep concrete mow curb around the entire edge of grass.
 - » Separate all grass areas from all street curbs by a porous landscape buffer of 1/4" minimum crusher fines. The buffer shall be a minimum of 18' wide and 6' deep.

- » The top surface of the buffer shall be two inches below the top of the mow curb and two inches below the top of the street curb.
- » Irrigation and Water Audit
 - » All sodded grass areas shall have full head to head coverage irrigation systems.
 - » Design all landscape areas so that there is no off-site run-off of irrigation water.
 - » All grass playfields and athletic fields of one acre or greater shall have an irrigation system water audit performed prior to the installation of the sodded grass. Submit a copy of the water audit to APS Grounds Department for review prior to installation of the sodded grass. Any installed irrigation system that does not meet the minimum audit requirements shall be modified and a re-audit performed and approved prior to the installation of sodded grass.
- » Artificial Turf Design Directives
 - » Any field one acre or less shall be required to have artificial turf installed.
 - » Use cooling granular fill / low temperature reduction fill for all artificial turf construction.
 - » For elementary schools and fields less than 50,000 SF, use Slit Film artificial turf.
 - » For fields greater than 50,000 SF, both slit film and mono-filament artificial turf are acceptable. This includes:
 - » Baseball/softball fields
 - » Multipurpose fields
 - » Soccer/football fields
 - » Multipurpose fields
 - » Landscape only artificial turf surfacing: Use primarily in areas such as courtyards, plazas, landscape areas that do not require G-max testing.
 - » Irrigation is required where trees and shrubs are planted in or adjacent to the artificial turf.
 - » Drainage requirements apply for artificial turf areas the same as grass.
 - » The contractor shall verify special conditions required for the installation of the system and shall notify the owner and/or architect of any discrepancies.
- » Irrigation System Design Directive
 - » There shall be fully automatic underground sprinkler systems with vandal-proof sprinkler heads that cover all play fields, lawns, and planting areas. All sprinkler systems shall be automatic and can be controlled remotely.
 - » *Process Requirements:*
 - » Prior to starting irrigation designs for any new or existing APS district property, contact the APS Irrigation Supervisor with APS Grounds Department to discuss the design scope, intent, equipment required, etc.
 - » APS Irrigation Supervisor must approve all irrigation designs prior to bidding or construction.
 - » The APS Irrigation Supervisor must be represented at all pre-construction conferences and must be present for all required irrigation testing and for the final project walk-through meetings.
 - » Provide an irrigation audit for all high water use grass areas.

- » High water use grass areas less than one acre are not allowed on APS District properties.
- » *Plan Requirements:*
 - » All irrigation plans shall meet the requirements of local ordinances.
 - » Whenever an irrigation plan involves modification to an existing irrigation system, the existing system shall be modified as necessary to bring the existing system into compliance with Plumbing Code requirements for back-flow prevention.
 - » All irrigation systems shall have a separate water meter, to the extent practical.
 - » In all cases, irrigation systems with high water grass areas or large planted areas shall have separate water meters.
 - » The following statement shall appear on the face of each irrigation plan:
 - » “At the time of final acceptance, the Contractor shall demonstrate to the Landscape Architect and the Owner, that the operating pressure at each head has been adjusted to match the specified design operating pressure for each valve.”
 - » The APS Irrigation Supervisor shall approve the selection of all irrigation product brands and models.
 - » All irrigation plans shall state the following information:
 - » Existing static pressure at meter or point of connection.
 - » A system performance chart that provides the following information for each control valve:
 - » Control valve number. Irrigation control valves shall be labeled numerically.
 - » Valve brand and model number.
 - » Irrigation head brand and model number.
 - » Irrigation head nozzle size.
 - » Irrigation head spacing.
 - » Irrigation head gallons per minute.
 - » Total gallons per minute for each valve and for the total project.
 - » Design operating pressure at the head.
 - » Precipitation rate at design operating pressure.
 - » Length of time required to operate valves in order to apply 0.33 inches of water.
 - » Whenever possible, systems shall use pressure regulating valves.
 - » The APS Irrigation Supervisor shall approve the selection of the specific type of controller and size of controller.
 - » Place controllers in a fenced enclosure along with the back-flow device. Fenced enclosure shall be 6 feet tall with a 3 foot wide gate, and provide 3 feet minimum clearance around the controller and back-flow preventer.
 - » Irrigation controllers shall not be placed inside of buildings or inside of walled enclosures unless approved by APS Grounds Department.
 - » Design irrigation systems with capacity to place 2 inches of water per week on high water use grasses.
 - » The water shall be applied in a six day period during a watering window from 10 PM to 7 AM.
 - » Provide reduced pressure back-flow prevention devices in an insulated, heated hot box at all irrigation points of connection.

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- » Extend electrical service to the hot box location.
- » If electrical is not available the APS Irrigation Supervisor shall decide on an alternative solution.
- » To the extent practical, install hot boxes and irrigation controllers in the same location and inside a standard APS fenced enclosure.
- » The use of PVB's and AVB's will not be allowed on APS District properties.
- » Bubbler heads shall be low flow pressure compensating bubblers.
 - » Drip irrigation systems will not be used on APS District properties unless prior approval is provided by APS Grounds Department.
 - » Irrigation systems on slopes shall be designed so that heads at the bottom of the slope are on separate valves from heads on the side and top of the slope.
- » Irrigation systems shall be designed so that there is no off-site run-off of irrigation water.

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

» Walkways / Gathering Areas

- » High pedestrian traffic areas shall be paved.

*** For accessibility, walkway slopes shall comply with accessibility standards for children.

» Outdoor Seating

- » Seating is required in high pedestrian areas.
- » An outdoor learning area will have seating for students with a shade structure.
- » Consider an outdoor performance area. 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.)

» Developed Area

- » The school shall 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 and nuisance ponding.

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

** Non-landscaped areas impose legal storm water and fugitive dust control issues on APS.

» School Gardens

- » School gardens are driven by curriculum and utilization data. Budget-permitting, an area may be set aside for a school garden. In design, work with the FD+C Cluster Team.
- » School gardens are located at all school levels, although most are at elementary schools
- » The school garden must have principal support and developed curriculum, it is not to be confused with a community garden.
- » Size for manageability. In locating, work with FD+C, consider sunlight, irrigation, and future campus development.
- » Coordinate with M&O or FD+C regarding irrigation.

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- » Quick coupler valve with main line installation is the preferred option. Second option is a quick coupler tied to irrigation system and coordinated timing with M&O. Third option is a building hose bib.
- » All irrigation and equipment must be installed through an APS-approved contract for M&O to repair or maintain.
- » FD+ C will provide the APS School Garden Coordinator with the recessed garden bed, an accessible raised planter, and a quick coupler valve.
 - » Raised planters are recommended for accessibility and may be constructed of concrete, CMU, or non-toxic wood.
 - » Planters should be no wider than 3 feet.
- » Site water flow should be towards the garden area to conserve water.
 - » Consider water quality of rainwater; water catchment systems are not recommended.
- » If a greenhouse is programmed, provide:
 - » Provide an adjacent outdoor work area, such as a patio or garden space.
 - » Provide a utility sink with drain boards and threaded faucet.
 - » If skylights or high windows are provided, include motorized blinds to control daylighting.
 - » The greenhouse shall be ADA compliant.
 - » A greenhouse should include: a door lock, shelving, ventilation, 2 foot deep shelves.
 - » Add irrigation inside (hydrant) and outside of greenhouse, with a timer (battery operated) to control water.

» Drainage Design Directives

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

***Due to requirements of new federal regulations for storm water pollution protection, leaving large areas in bare soil is no longer acceptable. Recommendation shall 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 shall not discharge over sidewalks.
- » Discharge on the north side of a building shall be avoided over walks or traffic areas.
- » Drainage shall be removed by adequate catch basins and drainpipes.
- » Roof drainage shall be directed away from the building and not flow into the landscape areas adjacent to buildings, except when intentionally design for water harvesting.
- » Recreation and play areas shall be properly drained at about 2% slope.
- » Drainage into public rights-of-way is prohibited unless approved by governing authority.
- » Design shall comply with NPDES Phase II MS4 Rules and Regulations.
 - » APS recognizes its responsibility to comply with EPA Rules and Regulations related to storm water quality.

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- » All drainage plans will adhere to the Watershed Based Permit governing APS facilities in Bernalillo County and the City of Albuquerque DPM.
- » A pre-design meeting with the permitting local agency is highly recommended to ensure APS is compliant on all Grading and Drainage permits.
- » **Roof Drains**
 - » Provide a paved swale extending from the point where the roof drain exists to a point where it exits the landscaped area.
 - » Pave these swales with either concrete, or rip-rap that is embedded in cement.
 - » No loose cobble swales shall be allowed on APS District properties.
- » **Landscaped Area**
 - » Water harvesting in landscape areas is encouraged.
 - » The depressions for harvesting water must be shallow enough to drain quickly upon a storm event and shall not hold water for more than 96 hours.
 - » Depressions greater than 18 inches in depth or not draining within 96 hours must be fenced.
 - » Provide a paved drainage swale extending through a landscape/planting area to a point where it exits the landscaped area.
 - » Pave drainage swales with either concrete, or rip-rap that is embedded in cement.
 - » Provide drainage drop inlets with an apron of cemented rip-rap placed around the entire drop inlet.
 - » The rip-rap apron shall be at least 18" wide.
 - » This rip-rap apron is in addition to the standard concrete apron and will not be substituted for the standard concrete apron.
 - » Sidewalk culverts are not allowed.

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.

SITE RECREATION

- » The school site shall provide outdoor recreation and learning areas suitable for age of student population served.
- » Playgrounds shall only be built at elementary and prekindergarten school facilities. Refer to the APS Playground Standards.
- » **Physical Education and Athletic Facilities**
 - » All physical education and athletic facilities, including exterior playing fields, must be equal (quality and quantity) for male and female per Title IX requirements and must meet all requirements of the Americans with Disabilities Act.
 - » High School playing fields and courts that are intended for competition use must meet the requirements of the National Federation of High School Associations (NFHS), including overall dimensions, line markings, and safety zones.
 - » All fields less than 1 contiguous acre shall be artificial turf.

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» Standard Fields

- » **Elementary School:**
 - » 23,690 SF, Artificial Turf. Approximately 160 LF x 148 LF or similar.
- » **Middle School:**
 - » Artificial Turf = 54,100 SF, Oval shaped with longest dimensions approximately 190 LF x 327 LF.
 - » Natural Grass = 73,800 SF. Oval Shaped with longest dimensions approximately 180 LF x 410 LF.
 - » Track surfaces surrounding fields at middle schools are graded earth, which are maintained by M&O. The tracks are approximately 20 FT wide.
- » **High School:**
 - » Multipurpose Artificial Turf = 330 LF x 195 LF playing field area plus perimeter safety zone. Provide striping for both soccer games and football practice.
 - » Football Practice Artificial Turf = Playing field per NFHS requirements (360 LF x 160 LF plus restraining line and perimeter safety zone). Include 400 meter perimeter track with (8) 48 inch wide lanes per NFHS. Coordinate surface material of "D" end areas based on location of track and field events (i.e. javelin, shot put, long jump, etc).
 - » Natural Grass = 77,000 SF, or as dictated by field use, with playfield and track dimensions as noted in bullets 1 and 2 above and per NFHS requirements.
 - » Provide pedestrian access to field for students, athletes, and spectators.
 - » Provide perimeter field fencing with vehicular access gates for maintenance.
 - » Provide scoreboard, including electrical and data needs for scoring table.

» Tennis Courts

- » Provide 4 tennis courts per high school.
 - » Recommended orientation of courts north-northwest by south-southwest at approximately 22 degrees (true north).
 - » If feasible, locate courts for potential expansion from 4 to 6 courts.
 - » Court standards:
 - » Provide post tensioned concrete slab designed for the soil conditions.
 - » Provide textured acrylic surfacing for concrete tennis courts and epoxy sealant with acrylic resurfacer.
 - » Surface drainage: pitch 1 inch per 10 feet. Each court should be in one plane and pitch side to side; never up or down to middle court.
 - » Provide court dimensions (for doubles play), line marking, net posts, nets, perimeter safety zones, and other standards per the NFHS.
 - » Provide 10 foot high perimeter fencing for ball containment and to secure courts. Include pedestrian gates.

» Soccer Field

- » Play field dimensions shall comply with the requirements of the NFHS. Specifically: 195 feet by 330 feet (actual field dimensions; additional border width required for safety zone).

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» **Baseball and Softball Fields:**

- » Field dimensions shall comply with requirements of the NFHS.
- » Fields shall be sloped to drain from the center towards both sides.
 - » Field facilities shall include (for both baseball and softball):
 - » Backstop, field fencing with cap, foul ball poles
 - » Dugout with tall fence protection (8 feet)
 - » Bleachers - 5 row
 - » Pitcher warm-up area
 - » Batting cage
 - » Storage (400 square feet each, not combined)

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Section 03

School Design and Construction Integrity

GENERAL

- » **Sites, facilities, and building systems shall be designed and constructed to:**
 - » Provide safe and healthy environments for learning.
 - » Provide cost effective operation.
 - » Require minimal maintenance.
 - » Be durable.
 - » Use safe materials that are free of asbestos and lead as well as stabilized for fiber and gas vapor discharge. Use paints that are low volatile, washable, easily matched, and durable.
 - » Reflect APS commitment to excellent stewardship of taxpayer dollars.

ACCESSIBILITY

- » School facilities shall be designed for universal access.
- » All accessible elements must be age appropriate.

BUILDING COMPONENTS» **Structural System**

- » Provide reasonable flexibility and be adaptable to meet changing educational program needs.

» **Foundations**

- » Provide positive drainage away from foundations.
- » Where utility trenches are adjacent to building foundations, provide drains and sump pumps as needed.
- » Consult the project geotechnical study/report.

» **Floors (Slabs / Balconies / Porches)**

- » Provide adequate strength to support structural loads imposed.
- » Provide a vapor barrier under concrete slabs.
- » Floor surfaces shall drain, be appropriate for any covering material, and be weather resistant.
- » Provide recommendations to prevent excessive cracking, levelness and other concrete issues.

» **Walls**

- » Walls shall be weather-tight, with junctures sealed.
- » Joint patterns shall facilitate graffiti treatment by allowing M&O to treat a panel or subdivision of the wall without treating the entire wall.
- » Avoid wall systems that are easily damaged or penetrated, especially in areas that have high traffic, ball impact, or are prone to vandalism.
- » Avoid exterior metal panels that are below 8'-0" above adjacent grade.
- » Artwork or murals on walls or attached to the building must be able to be removed.

» **Exterior Openings, Windows, and Translucent Panels**

- » Design exterior glazing (including windows and storefront systems) in accordance with APS Glazing and Window Standards, Door Hardware Standards, and APS Aluminum Storefront Specification on the FD+C website.
 - » Glazed and translucent panels shall:
 - » Meet size limitations defined in APS Glazing and Window Standards.
 - » Meet Energy Conservation Code and other applicable code requirements.
 - » Be clear. No tinting or films allowed unless authorized by APS staff architect.
 - » Have regular/rectangular geometry. Minimize shape cut glass. I.e. glass not square or rectilinear in shape.
 - » Be recessed to receive window treatment.
 - » Have a sill height of 30" above grade minimum at all exterior locations.
 - » Interior sills may be at floor level, provided that the glazing location does not impede maintenance/cleaning equipment, and does not require privacy screening (i.e. glazing will not be adjacent to chairs, conference tables, desks, etc).
 - » Be accessible for ease of removal at all locations. Ground level glazing shall be removable from the exterior. Upper floor level glazing shall be removable from interior floors. Multi-story glazing in open areas shall be removable from the exterior side.
 - » Consider and prevent hazards at operable window locations.
 - » Provide bird and pest deterrent to protect air quality.
 - » Do not project into walking pathways.
 - » All windows, including interior windows at classrooms, below 6' AFF are required to be covered (blinds or shades) for security.
 - » Window coverings, including both manual and electrically operated, shall be provided and installed by the general contractor.
 - » Approved manufacturers: Roller shades: Draper and MechoShade (have been the only ones to pass the specification qualifications), 3% openness with a color of oyster-grey (fire resistant fabric).
 - » Black out shades only in special circumstances, where approved by the APS staff architect
 - » Electronically operated shades are required for all high windows in teaching spaces, including libraries.
 - » Operable window hardware and screen application shall not interfere with the ability to install window treatments/coverings.
 - » Design kitchen windows to provide natural light while minimizing potential for break-ins. Solar tubes are a possible solution.
- » **Roofs**
- » Design roofs in accordance with APS Roofing Standards documents on the FD+C website. Click links below:
 - » Roofing Design Guidelines & Specifications (PDF)
 - » Roof Drain No Hub Coupling (PDF)

» Interior Walls and Partitions

- » Provide smooth surface walls (i.e. Gypsum board finish level 4 in public spaces and level 3 in back of house). Back of house areas include storage rooms, janitor closets, mechanical, electrical, and IT rooms.
- » Provide level 2 finish where walls extend above ceilings.
- » Do not specify level 5 finish.
- » Use semi-gloss paint on all interior walls, including support spaces (i.e. custodial, electrical, mechanical, and IT rooms).
- » If providing writable wall surfaces, (Dry-Erase paint or similar), then install the writable surface full-height or up to 7'-0" AFF, minimum.
- » Provide 2" stainless steel or heavy-duty clear plastic corner guards at all high pedestrian traffic areas.
- » Provide impact resistant surface in lower 48" (minimum) of hallways. Acceptable materials include concrete masonry units, tiles, fiberglass reinforced gypsum wallboard, or 2 layers of 5/8" gypsum wallboard.
- » Provide metal toilet partitions in most restrooms, except where high impact and vandalism is anticipated. In such restrooms, provide CMU toilet partitions.
- » Avoid high, flat surfaces or ledges which are difficult to access and maintain. Consider an angled ledge.
- » Comply with fire code requirements for allowable area of tack boards at walls.
- » Wall-mounted (and items attached to walls), including restroom partitions, grab bars, pencil sharpeners, counter top supports, door bumpers, and shelf supports need to have solid backing. No strap backing at these locations.

» Doors

- » Doors shall be of sufficient width and threshold clearance to be accessible to persons with disabilities. Apply universal design.
- » Provide wider door widths, or removable mullions, at doors into hallways, kitchen, cafeteria, gymnasiums, mechanical rooms, and other spaces that may need to accommodate movement of large equipment.
- » Where doors include windows/lites that require window covering, the opening must be above the door hardware/opening mechanism. An alternative could be to provide a solid door with adjacent sidelite. This is typical at classroom doors and private offices. Entry doors do not usually require window covering.
- » Classroom doors shall be recessed and open outward. Classroom doors shall be solid core wood, with adjacent sidelite.
- » Provide view lites in public access doors including main office and hallways.
 - » Locate view lites for use by students, including those in wheelchairs.
 - » Limit size of view lites to half-lite above hardware.
- » Attach all doorstops and bumpers mechanically into robust blocking.
- » Review flush bolt locations with M&O.
- » Door hair pins need to be set at 120 degrees and in line with door when opened.
- » Roll up doors should not be encased in hard ceiling.
- » Card reader and key access control to be located at elevators.
- » Additional requirements for exterior doors:

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- » All main exterior entry and exit doors shall be located in an air lock (vestibule), open outward, and have panic hardware.
- » Provide power assisted entry doors at the main entry/exit and at the parent and bus drop-off locations.
- » Coordinate card reader locations with the APS staff architect and APS security team.

» Refer to:

- » Door Hardware Standards
- » Aluminum Storefront Specifications
- » Glazing and Window Standards
- » Electrical Design Standards

» Interior Floors

- » Surfaces shall be non-skid, attractive, durable, free from projections, and easy to clean without the use of special equipment.
- » Floors in restrooms, kitchens, cafeterias and hallways shall tolerate disinfecting chemicals.
- » All floor tiles shall be slip resistant.
- » All carpet shall be carpet tiles and shall comply with the following specifications on the FD+C website:
 - » Interface Carpet Tile Specifications
 - » Mannington Carpet Tile Specifications
- » Where patching is required, use self-leveling floor patch.
- » Hard surface areas to be exposed concrete wherever feasible.
- » Provide the following floor finishes in designated spaces (consult the APS staff architect for exceptions):

Classrooms (grades K – 5)	1/3 polished concrete, 2/3 carpet tile	
Classrooms (grades 6 -12)	Polished concrete	
Hallways and circulation areas	Polished concrete	
Entry vestibule	Mud mat (carpet tile style)	Do not use metal slatted mud mats
Administration, reception, and offices	Carpet tile	Carpet tile may be used in other quiet areas. Verify additional areas with the APS staff architect
Student health and nurse's office	Sheet linoleum or polished concrete	Commercial grade with welded seams
Elementary gymnasiums / multi-purpose rooms	Rubberized flooring	With coordinated cove base
Middle and high school gymnasiums and cheer rooms	Athletic wood flooring	Main and auxiliary gymnasiums
Cafeteria	Polished concrete	
Classrooms (grades K – 5)	1/3 polished concrete, 2/3 carpet tile	
Classrooms (grades 6 -12)	Polished concrete	
Hallways and circulation areas	Polished concrete	
Administration, reception, and offices	Carpet tile	Carpet tile may be used in other quiet areas. Verify additional areas with the APS staff architect
Student health and nurse's office	Sheet linoleum or polished concrete	Commercial grade with welded seams
Elementary gymnasiums / multi-purpose rooms	Rubberized flooring	Commercial grade with welded seams

Middle and high school gymnasiums and cheer rooms	Athletic wood flooring	Main and auxiliary gymnasiums
Kitchen	Polished and sealed concrete, or homogeneous sheet vinyl with welded seams (for example: Polyflor)	Kitchen floors must be sealed, have texture to improve slip resistance, and be easily cleaned including the serving line area. Install kitchen cove base continuous from bottom up. No white color flooring.
Library / media centers	Carpet tile	
OT/PT classrooms	Resilient flooring	Resilient flooring may also be preferred in some special education spaces; coordinate with the APS staff architect.
Science classrooms	Polished concrete	
Music classrooms, band, orchestra, and chorus	Carpet tile	
Art classrooms	Polished concrete	
Drama classrooms	Polished concrete	
Family and consumer science classrooms	Polished concrete	
Teachers' lounge	Polished concrete	
Teachers' workroom/bullpen	Carpet tile or polished concrete	
Restrooms	Ceramic tiles	Provide ceramic tile wainscot
Mechanical, electrical, IT/data, and custodial rooms	Sealed concrete	Includes IDF and MDF

» Ceilings

- » Ceilings shall not be lower than 8'-0". Some functions may require higher ceilings. Discuss ceiling heights with the APS staff architect.
- » Texture and reflectivity shall support illumination appropriate for the intended space use. For gypsum ceilings, provide level 4 finish in public spaces.
- » For all wet areas use only moisture-rated board ceilings. In student restrooms, use moisture-rated gypsum board ceilings.
- » For kitchens, ceiling has to be washable (not just wipeable). Use mylar or other cleanable surface lay-in ceiling panels approved for kitchen use.
- » Preferred acoustical ceiling tiles include Armstrong Fine Fissured School Zone, High NRC/High CAC product 1734 or the USG Equivalent which is Radar ClimaPlus High NRC/High CAC, or equivalent Rockfon product.
- » If required by code, use fire-rated ceiling tile #1810/1811 fine fissured 'fireguard' high NRC/High CAC.

» Casework

- » Counter-tops and work counters to be solid surface if possible. Post form is acceptable.

» Acoustical Requirements and Sound Transmission

- » Comply with current LEED Indoor Environmental Quality (EQ) prerequisite and credit for acoustical performance.
- » Design walls, floors, and ceilings to absorb or retard transmission of unwanted sound from outside the space, speech transmission between learning spaces and offices, and high noise producing spaces due to occupancy or tasks performed.
- » Locate and treat electrical boxes, receptacles, and other recessed wall devices to avoid sound transmission through the wall.
- » Noisy spaces may require sound absorbing treatment in addition to sound wall

- » ...construction, especially for gym/multipurpose, music, and cafeteria areas. Refer to/comply with LEED minimum requirements even if not a LEED project.
- » Gyms, multipurpose rooms, and cafeterias must support sound systems associated with audio/visual (AV) equipment and infrastructure, as well as provide reasonable acoustics for performance/stage areas.
- » Provide acoustical separation between the kitchen and cafeteria. Avoid use of grate style doors due to sound transmission.
- » Minimize exterior sound transmission to neighbors.

SIGNAGE

» Interior Signage

- » Identify all occupied spaces with room signage.
- » Verify with the APS staff architect if the project will have signage in multiple languages (most applicable at dual language schools/programs).
- » Comply with ADA sign regulations.
- » Coordinate signage schedule with site (school) administration.
- » Coordinate room numbers with the APS staff architect, who will consult with APS CMP. (Note: If feasible, this coordination occurs during the design phase and the room numbers are incorporated into the construction documents. Otherwise, include final room numbers in the Record Drawings.)
- » Provide occupancy load signage in assembly areas (for example: gyms, multi-purpose rooms, libraries, media centers, cafeterias, PACs, etc.).

» Exterior Signage

- » Signage shall be vandal resistant, easily visible from a distance, and compliant with ADA requirements.
- » Each school site shall include the name of school and street number visible from the street. Mount building mounted signs high enough to deter graffiti and vandalism.
- » Coordinate signage requirements with the Fire Marshal and their written requirements.
- » Signage for traffic directions, safety, traffic control, ADA, and parking shall be provided and installed by general contractor.
- » Signage that prohibits smoking and skateboarding shall be provided and installed by the general contractor.

» Monument Signs

- » Provide a monument sign at new schools.
 - » The monument sign is a free-standing, durable sign that has the name and address of the school along with a non-electric, non-illuminated, protected message board. The monument sign should be less than 8'-0" high and located on the site to be visible from cars passing on the main road in front of the school without creating a visual barrier for traffic.

» Marquee Signs

- » Marquee signs and the required infrastructure are not installed under FD+C contracts. Installation and maintenance must be provided by the school.

COMMON EDUCATIONAL AREAS AND SUPPORT SPACES

» Plan for Flexibility

Facilities shall support the district's current educational programs and curricula. Build into facilities ability to adjust to future changes in:

- » Educational, instructional, and functional/programmatic needs, including community use
- » Student enrollment (expansion and contraction)
- » Technology

» Communication and Information Technology (IT)

The general contractor provides data and special systems rough-ins. APS provides data and special systems cabling, terminations, and equipment, unless noted otherwise.

- » Provide one MDF per school. The MDF room must be located on the ground floor and be sized at 12' x 14'. The MDF room needs separate HVAC. Locate MDF and electrical rooms in a central location. Coordinate distances required for cabling and voltage drops with APS FD+C and APS Technology. See electrical standards.
- » Locate IDF rooms such that areas served are within 150 to 200 feet max. The IDF room must be stacked above the MDF room, and stacked above other IDF rooms where applies. IDF rooms to be sized 10' x 12' and may require separate HVAC, verify with APS Technology. No sinks in IT rooms.
- » Learning and office spaces shall accommodate communication and information technology.
 - » Provide one 2-port face plate on each wall in classrooms. (8 data drops total in 4 locations.)
 - » Pair corresponding number of electrical outlets with data drops.
 - » Power poles and columns are not allowed.
- » Coordinate data and special systems locations with APS Technology and on-call contractors (Coordination occurs through the APS staff architect/construction manager). Provide infrastructure for a mobile interactive flat screen in each classroom, instructional space, and conference room. Instructional spaces include music, art, gym/multi-purpose, Family and Consumer Science (FACS), etc.
- » Printers
 - » No printers in classrooms.
 - » Provide power and data for printer in Individual Educational Plan (IEP) conference rooms.
- » Computer labs (Utilization data from CMP determines the number of labs.)
 - » District uses 1:1 student devices and traditional labs are evolving into flexible technology labs and STEAM labs.
 - » Coordinate wireless access point (WAP) location with APS technology.
- » Include communication and technology infrastructure and equipment in construction documents. Clearly identify in the construction documents who is responsible for providing infrastructure versus cabling versus equipment (i.e. GC vs owner's on-call special systems contractor).
- » Telephones are VOIP (voice over IP) and require a data outlet.
- » Large projection screens for assembly:
 - » In one location only per school, provide a drop down large screen and projector,

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- » ... sound system and podium.
 - » Typically, the large projection screen and related devices are located in the Cafeteria, Commons, Gym, or Multi-purpose building. (One location per school only; not all.)
 - » Provide power and data to support technology.
 - » At each school, provide a tech office
 - » Provide tech storage with work room adjacent to the tech office.
 - » Ideal access is from a hallway; not through a classroom.
 - » Consider location for storing and issuing technology devices. (I.e. in library, book room, tech storage room, etc.). A high school may need up to 150 extra devices available.
 - » Schools need more charging locations for technology devices throughout the school than they have needed in the past due to 1:1 student devices.
- ### » Zoning and Supervision of Common-Use Areas
- » Strategically locate common use areas near the front entrance to the school. Provide the ability to secure common use areas separately from the remainder of the facility. Access to common use areas shall be controlled from the front entrance. Large gathering areas shall be designed for effective supervision. Common use areas include:
 - » Media center
 - » Cafeteria / Kitchen
 - » Gymnasium
 - » Performing Arts Center (PAC)
 - » Restrooms
- ### » Facility Entrances and Exits
- » All visitors must pass through a reception area that is secured from the rest of the school.
 - » The main facility entrance shall be visible from the main office.
 - » Entrances and exits shall permit efficient student circulation.
- ### » Corridors and Lobbies
- » Provide display cases with safety glass for student work and awards near the main office/entrance, art and music classrooms, and main gymnasium. At high schools, also provide display cases with safety glass near/for each academy.
 - » If display cases have integral lighting, verify that bulbs can be easily changed.
- ### » Student Lockers
- » Can be provided at the request of the school.
 - » Distribute lockers evenly for student access. In high schools, distribute lockers among the Academies and Small Learning Communities.
 - » Locate lockers in corridors or dedicated alcoves. Successful approaches include:
 - » Two-tier lockers in corridors if against the wall.
 - » Two-tier lockers along walls with lower one-tier lockers in the middle to allow supervision.
 - » Basis of Design: Lockers shall be constructed of one-piece (Unibody) side frame and locker front. All welded body with no rivets, screws or bolts. Powder coated 2-tiered, 16 gauge doors with louvers, 16 gauge body steel units with high security latch with no moving parts to receive pad lock, one double hook on ceiling and 3 single hooks on walls.

- » Aluminum number plate. Two-tier lockers will be 15”W, 60”H, 15”D. Built-in with furr-out above lockers to ceiling or angled top and built-in solid base or coved sealed base on metal legs.
- » **Kitchen**
 - » Some schools are served from the APS central kitchen, yet most schools have on-site food preparation. The contract A/E will meet with Food and Nutrition Services for current operating needs prior to design.
 - » (See Appendix D for Guide to Space Planning of a School Food Service Facility based on the number of meals served).
 - » The serving line shall be free of any hazards to students (e.g. hot surfaces).
 - » The kitchen shall include the following areas.
 - » Food preparation area with vegetable sink.
 - » Dish/pot washing area (requires a 3 compartment sink) and grease trap located on the exterior.
 - » At the HS level, include (1) 4-compartment sink with a garbage disposal.
 - » Sink basin dimensions shall be sufficient for full sheet baking pans.
 - » Cook/prep/serve area with hand sink, soap dispenser - surface mounted with screws (receives APS supplied pouch soap refills – verify specified model with FD+C), and paper towel dispenser - surface mounted, stainless steel, lever operation (receives roll towels).
 - » Cold and hot storage equipment.
 - » Include a walk-in freezer/refrigerator with wire rack shelving. Conceal drain lines, or locate out of traffic areas. In new construction, recess the walk-in units for flush door access. Ramp access as necessary is acceptable in existing facilities only.
 - » Include 2 to 4 transporters for hot food.
 - » Provide reach-through units for hot food with universal shelving.
 - » Provide pass-through units for cold food with rolling wire rack shelving units.
 - » Dry storage.
 - » Provide door widths to allow for roll- through carts.
 - » Must be able to maintain temperature range between 50 – 70 degrees.
 - » Restroom for the staff with separate area for staff lockers and electric washer / dryer units.
 - » Kitchen bathroom must have a door and door closer.
 - » Locate staff lockers outside kitchen restroom, not inside the restroom.
 - » Office with telephone, fax, and data. Provide a window to view into the kitchen.
 - » Custodial area in the kitchen with mop sink. Provide rack for the contracted chemical system.
 - » Serving line.
 - » Floors, walls, ceilings, doors
 - » Surfaces must be able to be disinfected.
 - » Provide stainless steel behind cooking and washing areas (floor to ceiling or to height of equipment). Use fiberglass reinforced panels (FRP) on remainder of walls up to 8 feet throughout the kitchen.
 - » 18” minimum back-splash around stoves, sinks, and dirty tray drop-off.
 - » Ceilings shall be easily cleanable surfaces, washable painted drywall or washable

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- » Lay-in tiles are acceptable
- » Provide accent wall(s). Avoid an institutional look.
- » Tray drop off area needs a washable surface wall on customer side.
- » **Plumbing:**
 - » Provide cold water supply to all refrigerator locations.
 - » Provide dedicated water break for backflow prevention.
 - » Provide back flow prevention on mop sinks.
 - » Hand wash sinks required and the number of sinks depends on the size of the kitchen. Typically provide:
 - » One near the serving line.
 - » One in the food prep area. Cook/ prep/ serving area may need multiple hand sinks.
 - » One in restroom inside and one outside the restroom (might be same as the food prep sink).
 - » One in snack bar area.
 - » Tilt skillet needs water and a drain. Make sure drain is located under where skillet tips the fluid.
 - » Regarding hot water, the kitchen must meet a minimum time required for getting hot water.
 - » Provide solar preheating of hot water for kitchen use.
 - » In elementary schools, provide a location to dump milk to be discarded, near the dish drop off area.
 - » Locate grease traps outside, for ease of maintenance, and away from the door due to smells.
- » **FF&E:**
 - » Equipment lists are in Appendix E: Kitchen size will impact requirements.
 - » Provide roll paper towels dispensers with paddle operation.
 - » Food services will provide their own soap dispensers.
 - » Snack bars: if run by Distributive Education Clubs of America (DECA) provide a soap dispenser.
 - » Provide 44-gallon trash cans. Kitchen requires multiple trash cans.
 - » Restroom needs small trash can with no touch lid.
 - » Provide racks and hanging clips for mops and cleaning tools. Avoid conflict with mop sink faucet/handles.
 - » Provide space in custodial area for a rack for the contracted chemical system (current contractor system is an “eco-lab system.” Dish soap/ hand soap / chemical rack there.)
 - » Provide serving line. Height of serving depends on school level.
 - » Provide office furniture: a desk, chair and 4 drawer filing cabinet.
 - » All storage shelving needs to be microbial. GC will provide fixed, non-rolling shelves in dry storage, refrigerator and freezer.
 - » Provide small staff lockers. Staff will bring their own locks.
 - » Provide (1) box locker per kitchen staff.
 - » Each locker shall be 12” x 12” x 12”.

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- » Locate the staff lockers outside of the kitchen restroom.
- » Provide an area with lockers and stackable electric washer/dryer units.
- » Milk cooler needs to be a forced air cooler.
 - » Buffer sounds from milk coolers. Locate in an alcove. Consider heat from equipment.
- » After school programs need access to milk cooler(s) and reach-in refrigerator(s). The after-school coolers and refrigerators need to be located such that they can be secured and do not require access through the kitchen.
- » Consider staff access to roll up gates at dish area for operations. Avoid gates that are out of reach and difficult to secure.
- » Provide a kitchen receiving area:
 - » Provide sufficient access for delivery vehicles into a receiving area through a 3' - 8" door (minimum clear area) 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 and peephole at rear entry.
 - » Provide door hardware to hold the door open for delivery.
- » Provide a dumpster area for trash pick-up: Coordinate with M&O Grounds.
 - » Provide sufficient access for pick-up by garbage trucks.
 - » Shield exterior trash area from major sightlines. Locate dumpsters close to kitchen door, but not too close (rodents).
- » Kitchen technology requirements:
 - » The kitchen frequently requires a Holocom box. Verify this requirement with APS IT based on proximity of technology infrastructure.
 - » Data is required for the kitchen office. Provide three data drops with power located at three walls of the office.
 - » Provide technology to track the freezer temperatures.
 - » Provide data and power at the front and end of the line (two data drops) for cashiers at serving lines and at the snack bar.
 - » Provide power and data for future menu board at the serving line.
- » **Custodial Areas**
 - » Provide a minimum of one custodial closet per floor, per building.
 - » Provide a dedicated custodial area for the kitchen.
 - » In the kitchen, the custodial area does not require a door. It does need to be out of view from the serving line.
 - » Coordinate chemical dispenser requirements with APS staff architect and M&O.
 - » Custodial areas/closets shall include:
 - » Floor mounted mop sink with hot and cold water, chemical dispenser, and back-splash.
 - » Mop holder with shelf.
 - » Shelving for custodial supplies storage.
 - » Space for a custodial cart.
 - » Custodial offices require power and data.

RESTROOMS AND DRINKING FOUNTAINS

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» General

- » Provide one unisex "family style" restroom adjacent to each 'A occupancy' space (gym, cafeteria, or as required by the building code); and provide one unisex restroom that is visible by line-of-sight from the Administration area.
- » Provide a urinal in each unisex restroom.
- » Provide the maximum number of boys' urinals that is allowed by code in lieu of water closets. Provide full height walls or stalls for urinals rather than screens.
- » Provide plumbing chase access for all multi-fixture restrooms.
- » Restrooms shall be accessed from interior space; no direct access from the exterior.
- » Provide restrooms for students, staff, and visitors convenient to the areas served.
- » Install changing tables only when new construction of a restroom. Provide changing tables in the restrooms that are adjacent to public spaces, cafeteria, library, gymnasiums. Provide signage to identify restrooms with baby changing stations.

» Drinking Fountains

- » Locate drinking fountains at central and convenient locations on each floor or wing of the school, in vestibules near playfields, and in or near portables and parks. Distribution of accessible drinking fountains shall be the same, except for areas not readily accessible in existing schools.
- » Provide drinking fountains in the cafeteria/dining area (USDA requirement).
- » Provide 1 bottle filler per floor. Locate bottle fillers in public areas. Filters and indicator lights are required on bottle fillers. Filters must be located within the fixture housing. Filters for bottle fillers located within a wall cavity are not acceptable, regardless of whether access panels are provided.
- » Do not provide exterior drinking fountains.
- » Do not refrigerate water for drinking fountains.

» Sink and Restroom Accessories

- » All restroom accessories shall be GC provided and installed.
- » Coordinate the type of toilet and sink accessories to be provided by the GC with the APS Warehouse and the school.
- » All sinks shall be provided with:
 - » Soap dispenser - surface mounted with tamper-proof screws (receives APS supplied pouch soap refills – verify specified model with FD+C).
 - » Electric hand dryers shall be provided in student restrooms, and may be provided in adult restrooms. Electric hand dryers shall be surface mounted with electrical connection behind the dryer, and through bolted securely to wall surface. Verify manufacturer and model with FD+C.
 - » Paper towel dispensers shall not be provided in student restrooms.
 - » Paper towel dispensers shall be provided at all sinks that are not served by electric hand dryers, including in adult restrooms. Paper towel dispensers shall be surface mounted, polycarbonate, paddle operation (receives roll towels). Must be ADA compliant.

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- » All toilet stalls shall be provided with:
 - » Toilet paper dispenser – vandal resistant (Confirm that specification with existing school supplies for large jumbo or standard roll based on school preference).
 - » At elementary schools, confirm that ADA compliance for reach and grab bar requirements when specifying toilet paper dispenser.
 - » Feminine trash receptacle located in each stall of elementary, middle, and high school girls'/women's staff restroom.
 - » All restrooms to be provided with:
 - » Trash receptacle - freestanding 18-gallon capacity stainless steel (provided and placed by the General Contractor). No surface mounted or built-in trash receptacles allowed.
 - » **Student Restrooms**
 - » Locate boys' and girls' restrooms adjacent to each other.
 - » Provide lavatories and mirrors directly accessible from the hallway, and separate from the water closets. Lavatories shall be physically separated from the toilet facilities to allow efficient supervision/sightlines.
 - » Provide "airport style" entrances (no doors or gates) at all student multi-fixture restrooms. The design must provide visual blocking of stalls and urinals while maintaining open access.
 - » Airport design shall include separate entrances for boys and girls.
 - » **Kindergarten Restrooms**
 - » Kindergarten restrooms shall be located inside kindergarten classrooms.
 - » Kindergarten fixtures shall accommodate Kindergarten students (not pre-kindergarten).
 - » Refer to Children's Accessible Elements Table in the at the end of elementary School section for mounting heights and reach ranges.
 - » **Staff Restrooms**
 - » In addition to men's and women's staff restrooms, provide unisex staff restrooms to meet code/fixture count requirements and to provide flexibility.

SPECIAL EDUCATION PROGRAM OVERVIEW

- » The following discusses Special Education Programs throughout the District and corresponding facility needs.
- » The special education department categories all special education programs into three categories:
 - » Cross-categorical (serves students in levels A through D)
 - » Gifted
 - » District programs (all students are D level), including preschool programs.
- » **Cross-Categorical and Gifted Program Facility Needs**
 - » All Cross-categorical and Gifted classrooms follow regular classroom design standards.

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- » Appendix B contains detailed design standards for the Cross Categorical, Gifted, and District programs. Consult with Capital Master Plan at the time of Design Program of Space to determine the types and quantity of spaces needed. Not all SPED programs are delivered at every school.
- » **District Level Special Education Programs**
 - » District Level Special Education Program Categories are designed for a maximum of eight (8) students and special design amenities such as restrooms, changing tables, lighting, and early childhood facilities may be required depending on the program type. The following is a list of Special Education District Programs.
 - » Preschool (Community Based, Intensive Global Support, and Social & Communication Support Services)
 - » Social Emotional Support Services Level 1 (SES 1) formerly Emotionally Disturbed (ED)
 - » Social Emotional Support Services Level 2 (SES 2) formerly PACES
 - » Intensive Global Support Services Level 1 (IGS 1) formerly Functional Skills (FS)
 - » Intensive Global Support Services Level 2 (IGS 2) formerly Intensive Support Program (ISP)
 - » Primary Global Support Services Level 2 (IGS 2) formerly D k/1
 - » Social and Communication Support Services Level 1 (SCS1) formerly AU-Social Communication
 - » Social and Communication Support Services Level 2 (SCS2) formerly AU-Independent
 - » Social and Communication Support Services Level 3 (SCS3) formerly AU-Emerging
- » Appendix B contains detailed design standards for all District Level programs. Consult with Capital Master Plan at the time of Design Program of Space to determine the types and quantity of spaces needed. Not all SPED programs are delivered at every school.
- » Provision of District Special Education Programs varies at schools throughout the District and is provided in a manner giving all students equal access. To address the corresponding facility needs that reflect the scale and presence of District Level programs, schools are categorized as Hubs and Non-Hubs. *The following is a definition of Hubs and Non-Hubs.*
 - » **District Program Hubs:** These Schools have four (4) or more District Type Special Education Programs. The Ancillary Support Suite is designed to support the larger presence of ancillary staff to serve special education students. Site master planning will reflect the presence of Special Education District Program buses. All comprehensive high schools function as Special Education Hubs.
 - » **Non-Hubs:** These schools have less than four (4) District Special Education programs. Ancillary support spaces are provided and are commensurate to the quantity and frequency of ancillary support staff on campus providing service to special education students.



» **SPED Ancillary Support Suite**

» The Ancillary Support Suite aims to address the quantity of Special Education ancillary staff supporting students at schools throughout the District. Many ancillary staff are on a school campus on a part time basis. The design standards reflect the functional use calling for flexibility of space usage and sharing spaces. The Suite accommodates a space for a staff workstation area and private student meeting area that is used flexibly by various ancillary staff throughout the day. The Suite should be located adjacent to District SPED spaces, as well as adjacent to the Transition Specialist Office at High School. The SPED Ancillary Support Suite will accommodate the following staff:

- » Social Workers (SW)
- » Speech Language Pathologist (SLP)
- » Occupational Therapist (OT)
- » Physical Therapist (PT)
- » Adapted Physical Education (APE)

» **Standard Ancillary Support Suite Components (ES and MS) – 840 SF Total**

- » **(OT/PT) Instructional/Therapy Space (500 SF).** This space includes an area for a table to provide 1:1 student instruction. This room includes a therapy swing that is located at the center of the open space relative to the edge of the student instructional area. Install two hooks at 5 ½ ft. apart (see example of La Cueva High School). A whiteboard is required for instruction. Furniture needs include non-built-in cubbies with counter and a wardrobe for storage. No active panels are needed. Resilient flooring in the OT/PT and IGS classrooms is preferred over carpet. Through scheduling, this space is designed to be used fluidly by all ancillary staff, giving priority to OT/PT therapy instruction and service needs.
- » **OT/PT Storage (90 SF):** A storage area is provided with direct access to the OT/PT instructional therapy space. Double doors are provided, similar to doors found in a gym, providing access for wide equipment. The storage room also features vertical storage shelves. See diagram for optimal spatial layout.
- » **Office Workstation Hub (120 SF):** An office area to accommodate two workstations and cabinet to store personal belongings. More than two people, reflecting that ancillary staff positions are often part-time, may use the two workstations. Various ancillary staff assigned to the school will use the two workstations fluidly. VOIP is provided as per office standards. The office workstation has access to a one-on-one private Student Meeting Area as noted below.
- » **Private Student Meeting Area (130 SF):** a private area with access to the office workstations will allow ancillary staff to meet privately with students for delivery of instruction or service. This area will accommodate a small table and chairs for 2 to 4 people.



Standard Ancillary Support Suite, Elementary and Middle School	
Student Population	# 650
Instructional/Therapy Space with Swing (OT/PT and APE)	500
Therapy space Storage (OT/PT and APE)	90
Office Workstation Hub (60 sf each, 2 workstations) ¹	120
Private Student Meeting Area ²	130
Total	840

1. (Social Workers, Speech Language Pathologist, Occupational Therapists, Physical Therapists, Adapted PE teacher). For every 2.0 FTE, 1 workstation area (2:1 ratio) is to be utilized fluidly by various ancillary staff assigned to a school. The number of workstation areas is contingent on FTE allocation and shall be determined at the time of design program of space.

2. One Private Student Meeting Area for every 2.0 FTE. To be used fluidly by ancillary staff. The number of Private Student Meeting Areas is contingent on FTE allocation and shall be determined at the time of design program of space.

- » The above SPED Ancillary Suite is standard for all Elementary and Middle schools with the following exceptions:
 - » District SPED Hubs at both ES and MS require a larger Instructional Therapy Space reflecting the larger number of students served (1,180 SF):

Hub Ancillary Support Suite, Elementary and Middle School	
Space	Size (sq. ft.)
Instructional/Therapy Space with Swing (OT/PT and APE)	840
Therapy space Storage (OT/PT and APE)	90
Office Workstation Hub (60 sf each, 2 workstations) ¹	120
Private Student Meeting Area ²	130
Total	1,180

1. (Social Workers, Speech Language Pathologist, Occupational Therapists, Physical Therapists, Adapted PE teacher). For every 2.0 FTE, 1 workstation area (2:1 ratio) is to be utilized fluidly by various ancillary staff assigned to a school. The number of workstation areas is contingent on FTE allocation and shall be determined at the time of design program of space.

2. One Private Student Meeting Area for every 2.0 FTE. To be used fluidly by ancillary staff. The number of Private Student Meeting Areas is contingent on FTE allocation and shall be determined at the time of design program of space.

- » High schools will require a larger Office Workstation Hub for up to 4 workstations. In addition, high schools will require two private student-meeting rooms. A typical high school will require the following spaces (1,430 SF):

High School Ancillary Suite Support Spaces	
Space	Size (sq. ft.)
Instructional/Therapy Space with Swing (OT/PT)	840
Therapy space Storage (OT/PT)	90
Office Workstation Hub (60 sf each, 4 stations)1	240
Private Student Meeting Area A 2	130
Total	1,430

1. To be used fluidly by Social Workers, Speech Language Pathologist, Occupational Therapists, Physical Therapists, Adapted PE teacher. For every 2.0 FTE, 1 workstation area (2:1 ratio) is to be utilized fluidly by various ancillary staff assigned to a school. The number of workstation areas is contingent on FTE allocation and shall be determined at the time of design program of space.

2. One Private Student Meeting Area for every 2.0 FTE. To be used fluidly by ancillary staff. The number of Private Student Meeting Areas is contingent on FTE allocation and shall be determined at the time of design program of space.

COMMUNITY EDUCATION / AFTER HOUR USE

- » The school facility shall accommodate the use of some portions of the school after regular school hours without impacting security of other portions of the school.
- » Joint-use space shall be safe, secure, and include separately keyed activity spaces (gym, cafeteria, and classrooms), accessible restrooms, and storage areas.
- » Community use of school facilities shall not conflict/interfere with school programs.

Section 04

Programmed Spaces: Elementary Schools

>>> » A utilization will be provided to the A/E by APS FD+C and Capital Master Plan (CMP) prior to the design of each Project. The CMP utilization will define the specific spaces required for each project. The APS Standards will define the square footage and character requirements for each of the specified spaces.

ELEMENTARY PROGRAM SPACES [***based on 650 students]								
Room Description	# of Spaces	# of Persons	Area per Person	Space Criteria	Total Area	Total Assignable	Subtotal	Notes
ADMINISTRATION								
Secure Entry Vestibule	1			200	200	200		
Principal	1	6	15	90	240	240		
Assistant Principal	1	4	15	60	160	160		
Conference	1	16	15	240	240	240		
Waiting/Registration	1	10	25	250	250	250		
Receptionist/ Clerk	1				150	150		
Secretary	1				100	100		
File Room Storage	1				200	200		
Mail Area	1				40	40		Could be in Lounge
Work Area	1				60	60		
Teacher's Lounge	1	30	25	750	850	850		
Workroom	1	3	25	75	675	675		Seating for 30 Min.
Workroom Storage	1				80	80		
Family Room / PTA	1				400	400		
Staff Restrooms (in TARE)					0			
							3645	
HEALTH CENTER								
Waiting Area								
Nurse	1	6	15	90	250	250		Locate near Main office for observation.
Office	1	2	15	30	130	130		
Recovery Isolation	1	3	60	180	180	180		
Storage	1			45	45	45		With 2 recovery spaces boys / girls (2 recovery couch each).
Restroom	1			80	80	80		With Changing Table & Shower.
							685	
COUNSELING AREA								
Waiting Area								
Counselor Office	1	6	15	90	300	300		Secluded quiet area
Social Worker	1	4	15	60	150	150		Secluded quiet area

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ELEMENTARY PROGRAM SPACES [***based on 650 students]								
Room Description	# of Spaces	# of Persons	Area per Person	Space Criteria	Total Area	Total Assignable	Subtotal	Notes
Psychologist	1							Share with Social Worker
Speech & Language Pathology	2			240	240	480		
Evaluation/ Testing	1			100	100	100		
Instructional Coach	1			150	150	150		
							1180	
INSTRUCTIONAL PROGRAM								
Pre-K with Storage & RR								
Kindergarten with Storage & RR & Kitchen	6	18		900	1,200	7,200		
Kinder Teaching Kitchen	1				600	600		
1 st - 3rd Grade Classrooms	14			840	840	11,760		
4 th - 5th Grade Classrooms	10			840	840	8,400		
STEAM/STEM/Maker Space	1			1,250	1,250	1,250		Includes Teacher Office
Art	1			900	900	900		
Art Storage with Kiln	1			300	300	300		
Music	1			900	900	900		
Music Storage Room	1			50	50	50		
Student Restrooms	Per Code							Included in TARE
							31,360	
INSTRUCTIONAL SUPPORT								
Main Custodial Office/Storage								
Custodial Closets	1			80	80	80		
Testing Material Storage	1			600	600	600		
Exterior Storage	1							Salvage - covered with double doors
Exterior Recycle Area	1							Covered and Secure
MDF	1			168	168	168		12' x 14'
IDF	2			120	120	240		10' x 12'
IT Office/Storage	1			120	120	120		
General Storage	1			200	200	200		
							1,408	
FOOD SERVICES								
Cafeteria								
Seating	1	200	15	3000	3000	3000		Includes Serving Line.

ELEMENTARY PROGRAM SPACES [***based on 650 students]								
Room Description	# of Spaces	# of Persons	Area per Person	Space Criteria	Total Area	Total Assignable	Subtotal	Notes
Milk Cooler and Milk Dump	1							Included in seating area for After Hours Programs
Platform	1			400	400	400		
Platform Storage	1			200	200	200		
Kitchen	1			1700	1700	1700		Includes all spaces
Walk-in Refrigerator & Freezer	1							
Dry Storage	1							
Staff Restroom	1							
Office	1							
Locker Area	1							
Kitchen Janitor Closet	1							
							5,700	
MEDIA CENTER								
Entry/Circulation								
Librarian Office	1			100	100	100		Locate adjacent to Workroom
Work Room	1			150	150	150		Locate adjacent to circulation desk.
Computer Research	1	16		480	480	480		
Stacks Area	1	50		2090	2090	2090		
Storage	1			200	200	200		
Story Time Reading Area	1	30		450	450	450		
Hub Room	1			100	100	100		
							3,570	
INDOOR PHYSICAL EDUCATION FACILITIES								
Mini Gym / Physical Education (Consider design that abuts Gym and Cafeteria with folding wall opening the spaces to each other for assemblies)								
Gym	1			2900	2900	2900		24' Ceiling Required. Total sq. ft., Includes spaces listed below.
Equipment Storage	1			240	240	240		
After School Office / Storage	1			150	150	150		
Office	1			180	180	180		PE and APE Staff
Restrooms	2							Included in TARE

	TARE = the % value divided into the Net Assignable (NASF/0.75 - NASF)		Assume 75% Efficiency	
	NASF	TARE	GSF	Notes
Administration	3,645	1,215	4,860	
Health Center	685	228	913	
Counseling Area	1,180	393	1,573	
Instructional Program	31,360	10,453	41,813	
Instructional Support	1,408	469	1,877	
Food Services	5,700	1,900	7,600	
Media Center	3,570	1,191	4,761	
Indoor Physical Education	3,470	1,157	4,627	
	51,018	17,006	68,024	

SITE REQUIREMENTS

Student Population	#	SF	GSF	Notes
Student Population	650			
Number of Staff	90			
Permanent Buildings	1	68,024	68,024	Assumes Single Story Construction
Integrated Portable Buildings	8	1,806	14,448	Or future expansion 10 Classrooms
Visitor / Staff Parking	135	400	54,000	
Special Event Parking	0	400	0	
Buses	14	1,344	18,816	
Cars at Student Drop-Off / Pick-up	33	400	13,200	
Main Artificial (G-Max) Turf Field (with Track)	1	24,000	24,000	
Playground Pre-K and K	115	115	13,225	
Playground 1st - 3rd	305	100	30,500	
Playground 4th - 5th	230	100	23,000	
Shade / Performance / Seating Area	1	12,110	12,110	
Basketball Courts (40' x 60')	1	2,400	2,400	
Easements / Setbacks	1	30,000	30,000	
			NET GSF	303,723
			TARE @ 25% (33% for Difficult Site)	149,594
			MINIMUM SF REQUIRED	453,318
				10.4 ACRES

CORRIDORS AND LOBBY AREAS

- » Provide effective way-finding.
- » Provide tack strip in corridors. Locate tack strip outside each classroom.
- » At the art / music classroom and the main office area provide tall display cases with safety glass for student work.

GENERAL NEEDS FOR ALL ELEMENTARY SCHOOL CLASSROOM SPACES

- » 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.
 - » Acoustically balanced for hearing voice in the space and blocking noise from outside the space.
 - » Accommodate technology needs for teacher and students to include: telephone, computers, and electrical and data connections for an interactive teaching board (Refer to Appendix F).
 - » Accommodate APS furniture and equipment list. Arrange primary furniture to allow for good view lines for teaching boards from all desks and tables.
 - » Large, deep stainless steel sink with hot and cold running water.
 - » Sufficient built-in storage (174 cubic feet) organized to avoid clutter:
 - » Wardrobe/storage (95 cf, 6'-6" x 7'-4" x 2'-0") to allow for globes and other large items.
 - » Sink storage cabinets (25 cf base, 2'-6" x 5' x 2'; 8.3 cf upper, 2'-6" x 2'-6" x 1'-4"; 20 cf corner cabinet).
 - » Paper storage (27.6 cf flat storage, 3' x 4' x 2'-4").
 - » Shelves (9 cf, 3' x 3' x 1').
 - » Use of secure closet for some of this storage is allowed.
 - » Provide additional storage space for teachers off-track.
 - » Standard white boards (2 - 8'x 4') and tack boards (4 - 4'x 4') with tack strip on top, and flag pole holders (2). Consider tack strip around the rest of classroom.
 - » Manual pencil sharpener on wooden block with blocking in wall at child height for each classroom, library, art/music room and other areas where students will be working. The sharpeners are to be provided by and installed by general contractor.
 - » Area for coats that does not clutter the classroom and avoids safety issues of hooks in high traffic areas. General contractor is to provide blocking, shelf, and hooks. Provide cubbies for each child for kindergarten.
 - » Minimize carpet areas as much as possible. (Refer to APS Carpet Tile Mannington Specification and Interface Specification)
 - » Polished concrete floors are preferred throughout but especially at wet areas. Storage areas may be sealed concrete.
- » **Additional special needs for kindergarten**
- » Classroom square footages should include a restroom and storage. It should have 2 sinks (1 adult height and 1 child height), a refrigerator (no ice maker) and location for a microwave.
 - » Teaching Kitchen (kitchenette) to be shared by all kindergarten classes (large enough for a class to observe the food preparation). It shall include a dishwasher, range with oven...

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- ...and induction cooktop including signage "Use only cast iron or magnetic stainless steel cooking vessels, refrigerator (no ice maker), space for a microwave, teacher sink, commercial fume/fire hood and a grease trap. Provide point-of-use hot water heater for dishwasher to meet Environmental Health regulations. The counter should be adult height to enable the appliances but a section of the counter should be at child height and include a child sink so that children can sit around and "work". (Refer to Appendix E). All appliances to be Energy Star labeled and provided by general contractor.
- » Comply with Children's ADA Standards for this age group. Refer to Children's Accessible Elements Table located at the end of this elementary School section.
 - » Easy access to the playground. No direct access from the classroom.
 - » A multi-use kindergarten play area designed for children ages 2 to 5 (with hose bib water available and variety of play materials).
 - » Convenient restrooms designated and designed for kindergarten student use must also be ADA accessible. Restroom doors shall provide rough-in for 4 hinge locations to allow future installation of a 2-panel Dutch style door.
 - » Provide backing in wall for possible future changing table
 - » Locate near a convenient parent pick-up and drop-off space with parking.
 - » Carpet in dry areas and polished concrete surface in wet areas. (Refer to the APS standards for specific carpet guidelines)
 - » Built-in furnishings, cabinets, and accessories shall comply with height and reach standards. Refer to Children's Accessible Elements Table located at the end of this elementary School section.
 - » Energy Star (white) 18 cubic foot frost free refrigerator (no ice maker) for each classroom and one for the shared kitchen.

NOTE: Consider group restrooms and kitchens in a secure area.

» **Special Education Spaces**

- » Refer to Appendix B for Special Education Design Standards. Special education requirements are the same as the regular classrooms except where noted. The allocation for each elementary school will vary according to the specific enrollment needs. Consult APS Capital Master Plan (CMP) to determine the school's specific space allocation requirements prior to commencing with the Programming and Design of the Project.

» **Fine Arts**

- » Accommodate at least 8 – 36" x 72" tables for art, space for movement instruction, and space for risers, platforms, sets and scenery, and other music performance equipment. Provide an area for art and coats.
- » A large kiln is to be located in a dedicated room or space adjacent to the art/music room. It must be properly vented and should include adjacent space for open shelving and storage. (Refer to Appendix G In addition to the kiln vent, the room is required to have a room exhaust fan operated by a thermostat to protect against overheating of the room to avoid setting off fire suppression alarms, etc. due to the kiln. General Contractor provides kiln and all kiln components. A/E to confirm type and quality of kilns with FD+C and APS Fine Arts Department. (Refer to Appendix G).

- » Provide an outdoor teaching area adjacent to the art room, such as an outdoor amphitheater.
- » Provide a separate, adjacent storage room with locking doors; easily accessible from within the art classroom; and include an open shelving system for storage.
 - » Shelves should be no more than 2' deep.
- » Provide two sinks, one for instructor and one for students. Provide a deep, clean-up sink and a lower, ADA accessible sink. Put clay trap on all sinks. (This source of water is essential for art classes.)
 - » Provide at least 8 linear feet of counter space around sink with at least 1 GFCI electrical outlet close to the sink.
- » Provide spaces to display, including ample wall space to accommodate 2 large bulletin boards for display of instructional visuals and finished art work.
- » Provide 1 large 4' x 8' magnetized chalkboard positioned in the room so as to be part of the instructional focus. A chalkboard is preferred over a "white board" for art instruction.
- » Consider north facing high windows for additional natural light.
- » Technology includes instructional use of Interactive Boards, Tablets, and Computers.
 - » Provide at least two power and data locations at every wall.
- » Storage located within the instructional space should include cabinets and horizontal drawers large enough to accommodate the largest papers used in art class (tagboard: 24" x 36").
- » Although not a big consideration for the art room itself, provide space throughout the school for the display of student art.

» Music

- » Provide enough floor space to leave instruments set up.
- » Design the music classroom using at least one non-parallel wall for sound diffusion. Other acoustical treatment will need to be considered based on the proximity of the music room to other instructional spaces in order to avoid sound "bleeding."
- » Provide an outdoor teaching area adjacent to the music room, such as an outdoor amphitheater.
- » Provide a separate, adjacent room with locking doors; easily accessible from within the music classroom; and include an open shelving system for storage.
 - » Open adjustable shelving is optimal for storage of various musical instruments including drums in the storage room.
 - » Shelves should be no more than 2' deep.
- » Provide two sinks, one for instructor and one for students. Provide a deep, clean-up sink and a lower, ADA accessible sink. (This source of water is essential for cleaning music equipment and instruments.)
 - » Provide at least 8 linear feet of counter space around sink with at least 1 electrical outlet close to the sink.
- » Provide spaces to display, including ample wall space to accommodate 2 large bulletin boards for display of instructional visuals.
- » Consider north facing high windows for additional natural light.
- » Technology includes instructional use of Interactive Boards, Tablets, and Computers.
 - » Provide at least two power and data locations at every wall.
 - » Provide a sound system and built-in speaker system for music reproduction.

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» Computer Learning Center

Every lab shall have:

- » 32 computer stations.
- » Centrally located near the media center.
- » Layout shall be reviewed by APS FD+C and IT Department.
- » 1 printer.
- » Option to bring in laptop cart with higher capacity electrical requirements.
- » Provide adequate cooling and exhaust for computer rooms.

» STEAM / STEM Lab / Maker Space

Every lab shall have:

- » Teacher Office.
- » Centrally located near the media center.
- » Flexible space for multiple movable furniture and work tables for various research layouts.
- » 2 sinks: 1 student and 1 teacher.
- » Adjacent to outdoor secured patio.
- » Data drops / outlets to include options for
 - » Printer;
 - » Retractable power outlets from ceiling;
 - » Laptop cart with higher capacity electrical requirements.

» Library / Media Center

The library / media center requirements follow.

- » Circulation desk should be about 16 feet in length, provide limited access and visual control throughout and include with phone, data and power outlets.
 - » Provide a combination of built-in circulation desk with power and data along with mobile furniture pieces.
 - » Powered portion of the circulation desk will be built-in casework (to be in GC contract) and the remaining of the circulation desk will be mobile furniture pieces (in the F&E package).
 - » Sight lines from circulation desk is top priority.
 - » Book return location shall be movable.
 - » Built-in section preferred adjacent to library office; if sight lines do not allow desk near office then a central location is preferred.
 - » Built-in to include countertop and under counter storage.
 - » Lockable pedestal storage with two box drawer and one file drawer – at least two per built-in desk or one unit per librarian.
 - » Provide either a second lockable pedestal storage or a mixture of all three listed below:
 - » Two file drawers.
 - » Doors with adjustable shelves.
 - » Two boxes and one file drawers.
 - » Lockable pencil drawer or center drawer – one per knee space and/or librarian.

- » Accessible electrical outlets and data on every wall and columns. Coordinate with casework, furniture, and equipment FD+C staff.
- » Provide day lighting (with a minimum window sill height of 65”-70” to clear shelving).
- » Space able to be darkened enough for AV use.
- » Lights in individually controlled banks to allow darkening.
- » Space to allow for different arrangements and programs to occur at one time and include:
 - » Shelving: 3 linear feet of shelving for every 25 volumes (or 50 picture books). A/E to work with APS FD+C for age appropriate furniture, shelving, desks, and layout.
 - » Prefer movable floor shelving for flexible arrangements.
 - » 60” tall shelving around the walls is preferable.
 - » Work study area for 2 classes, for large group reading activities, and for reference.
 - » 12 stations for computer research and group work (30 sf each) with data.
 - » Provide fully accessible area for storytelling, videos, and special presentations.
 - » Design the space to have full visual access of the presentation area.
 - » Design the space to be fully visible from the general library area. No pit areas.
- » Security gate at main entry is not necessary.
- » Display areas are important. Provide a tack board, magnetic whiteboard and/or wall display areas, tack strip area above the shelves and around the room, including story area for multiple display options.
 - » Provide a Librarian office adjacent to library/media center with phone and data.
 - » Combine library workroom and office.
 - » Provide direct access to a media center workroom.
 - » Provide a sink in the work room.

» Mini Gym / Physical Education (Interior Area)

The mini gym / physical education area requirements follow.

- » Minimum 24’ clearance at ceiling is required (including light fixtures).
- » A 5’ safety space between the court and wall is required.
- » Gym should have 2 adjustable and retractable basketball goals with backboard and wall pads.
- » 4 additional adjustable and retractable basketball goals with backboard and wall pads on the gym sidewalls with free throw lines are required.
- » Provide wall eye bolts for net activities, and a climbing rope attachment.
- » Discuss climbing wall option. Provide location to be installed by APS Special Projects.
- » Floor sleeve inserts with matching standards and nets for volleyball are required and provided by general contractor.
- » Mini gym to be located near the exterior playgrounds and recreation fields and away from classrooms.
- » Provide minimum 4’ wide access door to outdoor play areas.
- » Provide windows that are impact resistant or protected.
- » Provide an office for physical education staff.
- » If this space is to have a performance platform, provide a platform with curtain option, ramp access, and storage (see chart for square footages).
- » Provide a separate office / storage space for after-school programs.
- » Technology is mobile and moved in and out of the gym space. Provide data and outlets in gyms.

- » Provide spaces for students to put valuables.
- » Athletic flooring: commercial grade sheet with welded seams (10mm thickness).
- » Provide an exterior ball wall as part of the building design.

» Physical Education (Exterior Area)

Playgrounds and fields – see playground section for size. (See APS Site Design Directives section.)

SUPPORT SPACES

All school areas will provide an environment that meets the functional needs of support services.

» Cafeteria

- » Cafeterias serve as a food serving area as well as a multi-purpose area for school activities.
 - » Centrally located.
 - » Sized to seat 15 sf/student with no more than 3 lunch periods.
 - » Provide ample storage for additional special events folding tables and chairs.
 - » If space is to have a performance platform, provide a minimum 400 sf (in addition to 3000 sf dining area) platform with curtain option, ramp access, and storage (200 sf).
 - » Provide data connections for an interactive teaching board (Refer to Appendix F).
 - » Acoustically treat the cafeteria ceiling to absorb sound.
 - » Provide windows to the outside with blinds.
 - » Provide shelter-in-place area away from windows.
 - » Discuss with Food & Nutrition Service the option of self-service and/or cafeteria staff-serve.
 - » Discuss with Food & Nutrition Service serving counter heights, depths, and points of access.
 - » Flooring to be polished concrete.
 - » Provide a milk dump located in the dining area with access to after school programs.
 - » Provide a sink located in the dining area with access to after school programs.
 - » Provide additional outlets for small milk coolers located in the dining area.
 - » Provide outside dining.

» Kitchen

See Kitchen requirements in Design & Construction Integrity Section.

» 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.

- » 1 custodial office shall provide for supplies and a desk.
 - » Provide an outlet and data drop for custodian’s desk.

- » Additional custodial closets shall be located in each building and on each floor.
 - » All shall have a janitor's floor mop sink with mop holders and sufficient shelves for storage.
 - » Cover walls around sink with stainless steel or FRP surround.
 - » All spaces to have active mechanical ventilation.
 - » Custodial Rooms will have painted walls (and ceilings or exposed structure if they are not lay-in). The floors will have a concrete sealer.
 - » Facility Storage Interior (other than in classrooms)
 - » Unassigned storage (that can be used for a variety of purposes).
 - » Paint all walls and hard ceilings (hard ceilings are not required). The floors are to have sealed concrete.
 - » Facility Storage Exterior
 - » Exterior storage shall be 10' tall and directly accessible to the outside to store inventory salvage and excess equipment and furniture.
 - » Provide storage with exterior double door.
 - » Provide safe storage for gas appliances.
- » **Administrative Offices / Support Areas**
- » Secure Entry Vestibule
 - » A secure entry vestibule shall be designed as the initial point of access into the building.
 - » 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 easy way finding is important to and from these offices. Minimize curved walls and odd angled walls in this area to best accommodate high density of furniture.
 - » Main office shall be designed in a way that receptionist can buzz-in (controlled access with cameras) from a secure vestibule.
 - » The main office reception desk should be designed and installed as casework and located where visitors enter the main lobby.
 - » Reception area shall provide space for tables for registration with computer data drop. This area is to have visual control of the school's secure vestibule.
 - » Main fire alarm annunciator, PA and intercom system control shall be located in administrative office area.
 - » Secretary shall have a clear view of cots in the nurse's cot room.
 - » Secretary shall have a clear view of special-system panels (fire/intercom).
 - » AED equipment is typically located near the administrative area, and requires charging and battery. AED should be in an area that will be unlocked and accessible after business hours. AED is owner provided, GC installed.
 - » Space for file cabinets to include (sufficient for student population) fire proof and lockable cabinets. A/E to coordinate with APS FD+C.
 - » Provide recessed display space with locking glass doors to display student 2-D and 3-D art work. Lighting shall be on a manually controlled system from outside of the display space.
 - » Mail boxes (1 per staff + 10% for growth) to be located in "staff area", admin area, or in the teachers' lounge. Mailboxes should comfortably allow for 8-1/2" x 11" paper size. Additional boxes shall provide for the receipt of packages.

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» **Counseling**

- » Review needs for a particular school program with APS Counseling for information on counseling allocations.
 - » Counseling office requires privacy, therefore no FTE sharing of offices. Even a half time FTE must have a private office.
 - » For Privacy, offices will: Limit glass. Provide blinds for privacy. Require sound isolation. Be located away from the public waiting area. Have close access to a printer for printing of confidential documents.
 - » Offices require a locked file cabinet.
 - » Provide a secure storage room for archive file storage.
 - » Locate office in the vicinity but separate from the administration.
 - » Proximity to the cumulative file room is preferred.
 - » Parents need to check in at the front area to see a counselor. Parents wait at the school office /reception and should not be able to see students going to counseling.
 - » Students can have direct access to counseling offices. Students should not have to talk to anyone to see counselor. Waiting area by counseling offices is for students.
- » **Redirector Room**
- » Redirector room to be located at the counseling suite near the main hall to encourage student access throughout the day. Adjacencies to counselor(s) and social worker(s) for added support is preferable.
 - » Redirector requires a desk with small file storage, bookshelf, white board, and power and data for a laptop.
 - » Work space is to be shared with a welcoming and comfortable student activity area, furnished with soft seating, small table and chairs. Flexibility for creating zones for individual and group restorative activities is required.
 - » Room requires carpet and soft colors.
 - » Daylighting, color LED, and dimmable lighting is preferable where possible.
- » **Nurse's Area**
- » The nurse's area should be adjacent to and entered by way of the school's central office control area.
 - » Refer to Appendix C Health Room requirements for list of equipment requirements.
 - » Provide a minimum of 6 chairs in reception area and wall rack for educational materials.
 - » Vision screening.
 - » Provide a 20 feet deep space to conduct eye exams.
 - » Provide private office for school nurse to include at least 2 duplex outlets, phone with dedicated line, computer with Internet access, paper shredder, and window to cot area. Design walls / window for hearing testing (as sound proof as possible). Consult APS Nursing Department for specific design parameters.
 - » Treatment /cot room includes:
 - » Space for 1 cot / 250 students with tables between for equipment. General contractor to provide and install curtains mounted in ceiling for privacy.
 - » Duplex outlets and data drops at each cot for equipment that may be required.
 - » Deep sink unit with hot and cold water.
 - » One 7 foot tall storage cabinet for large equipment.

- » Second desk with at least 2 outlets for a phone and computer with Internet access.
- » Refrigerator with ice maker.
- » Space for double locking medication cabinet. (See Appendix C Health Room requirements for list of equipment requirements.)
- » Provide wide door with 36" minimum clear door opening to allow for an emergency gurney.
- » Restroom to include a shower and space for a padded changing table (changing table provided and installed by APS – Consult APS FD&C for current sizes). Allow space for a Hoyer lift in bathroom.
- » Provide exhaust fan in rooms.
- » Provide space for 1 locking fire proof file cabinet for every 800 students.
- » Provide storage closet for wheelchair, crutches, and other bulk item storage.
- » Provide stackable unit washer/dryer.
- » Provide an AED in a publically accessible area for emergency use.
- » **Bookroom**
 - » The Bookroom is to be located either in the Administration Area or adjacent to the Library/Media Center with easy access from the corridor and delivery area.
 - » Shelving to be provided and installed by general contractor.
- » **Workroom**
 - » The workroom is to be centrally located to the teaching staff with easy access from the corridor.
 - » Provide sufficient permanent lockable storage including,
 - » Base cabinets with sufficient countertop for workspace and equipment.
 - » Upper cabinets.
 - » Storage area for large paper rolls.
 - » Deep double sink area.
 - » Consider use of a utility sink set into the counter.
 - » Accommodate a variety of shelving systems for storage of paper, books, supplies, and audio-visual material.
 - » Provide space for lay-out table.
 - » Coordinate requirements for dedicated circuits and outlets for equipment. Confirm all existing and anticipated equipment (including laminators, Gastetner style copier/printer/scanner/fax machines, etc.) with the school staff and FD+C.
- » **Teachers' Lounge**
 - » Locate teachers' lounge near the administrative offices or workroom and adjacent to staff restrooms. When possible, provide patio area with wall privacy.
 - » Outdoor furniture shall be attached to pavement and provided/installed by the general contractor.
 - » Provide a small kitchenette area with a refrigerator, two microwave ovens (no range), and double sink. Provide 5 duplex outlets with dedicated circuits above counter.
 - » Provide space and power for two vending machines.
 - » Provide one 4' x 4' tack board.
 - » Refer to 'Administration Area' description for mailboxes which may be located in the Teacher's lounge.

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SITE RECREATION

- » The school site is to provide outdoor recreation and learning areas suitable for age of student population served. Design of play areas and equipment selection will follow APS Playground Guidelines and the U.S. Consumer Product Safety and the most recent ASTM Standard. See Site Design Directives section and APS Playground Standards
- » Playground design must be age specific.
- » **Playground Location**
 - » Playground is to be conveniently located for student population and with safety in mind.
 - » Provide shade trees in addition to permanent shade structures, if possible, and include benches and tables in the shade area that are secured to the pavement or ground.
- » **Kindergarten Playground**
 - » Provide a separate, fenced kindergarten and/or pre-kindergarten playgrounds in close proximity to the building with appropriate equipment scaled to kindergartner use.
 - » Provide tricycle circular path and exterior storage for play equipment.
- » **Playground Safety**
 - » Provide accessible routes to play areas.
 - » Provide skateboard deterrents on all low walls, curbs, seating etc. that are targeted by skateboarders.
 - » Avoid barrel nut fasteners which cause maintenance problems (blue loctite).
 - » Typical playground equipment is a minimum 20' x 20' play structure.
- » **Hard Surface Play Areas**
 - » Locate hard surface play areas near the buildings with southern sun exposure where possible. If distant from the buildings and accessed through unpaved areas, extend a wide walk between the two (crusher fines may be acceptable) to minimize mud and sand being tracked into the buildings. Areas are to include:
 - » 1 concrete pad with basketball goals (lowered height) if space allows.
 - » Asphalt play area with painted game lines.
 - » Surfaced, running / walking track (minimum 5' wide).
- » **Grass Playing Field**
 - » There is to be one game field. For fields under 1 acre, provide artificial play turf (G max certified). See Site Design Directives section for size.
 - » A separate Joint-Use natural grass field may be provided/required under agreement with either the City or the County (confer with APS Real Estate Department). The grass field shall be sized per the Joint-Use agreement requirements.
- » **Playground Supervision**
 - » Playgrounds are to be sited with good sight lines for good supervision.

CHILDREN'S ACCESSIBLE ELEMENTS TABLE

CHILDREN'S ACCESSIBLE ELEMENTS TABLE		
APS is designing Elementary School spaces for Kindergarten through 5th Grade (Pre-K programs will utilize facilities designed for Kindergarten)		
Element	Details	K-5 th Grade (includes Pre-K)**
Ramps See NMBC 2006 section E112.3 See ANSI 405	Slope	1:16
	Width for single wheelchair	44" min (118 mm)
	Width for two wheelchairs	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)
Water closets for Toilet Rooms, Wheelchair Stalls, and Ambulatory Stalls See ANSI 604.10 and 604.1	Centerline See ANSI 604.10.2	15" (380 mm)
	Clearance See ANSI 604.10.3 and 604.3	60" (1525 mm) wide by 56" (1420 mm) min. deep
	Toilet seat height See ANSI 604.10.4	15" (380 mm)
	Horizontal grab bar height to centerline See ANSI 604.10.5, 604.5 and 609.4	25" (635 mm)
	Rear grab bar may be split or shifted to avoid conflicts with flush valves – APS prefers a split bar ANSI 604.5.2 Exception 3	25" (635 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 Centerline is 34 inches (865 mm) max. - 36" (915 mm) max. from the rear wall
	Flush control See ANSI 604.10.6	36" max. (915 mm)

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CHILDREN'S ACCESSIBLE ELEMENTS TABLE		
APS is designing Elementary School spaces for Kindergarten through 5th Grade (Pre-K programs will utilize facilities designed for Kindergarten)		
Element	Details	K-5 th Grade (includes Pre-K)**
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.
	Toe clearance beneath front partition and one side partition ² See ANSI 604.8.	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
	Horizontal parallel grab bars on both sidewalls 42" (1065 mm) long	25" (635 mm)
Urinals See NMBC 2006 section E112.6 See ANSI 605	Top of rim	14" max. (355 mm)
Lavatories and sinks See ANSI 606.2	Sink rim See ANSI 606.2 Exception 2 and 3	31" max. (797 mm)
	Knee clearance See ANSI 606.2 Exception 2 and 3	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
	Mirrors over sinks	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.
Benches See NMBC 2006 section E112.8 See ANSI 903	Top of seat	11" (280 mm) min. 12" (305 mm) max.
Tray slides See NMBC 2006 section E112.9	Top of tray slide	28" (710 mm) min. 30" (762 mm) max.
Storage See NMBC 2006 section E112.10 See ANSI 905	Frontal approach height	20"-40" (510-1015 mm)
	Side approach height	40" max. (1015 mm)



Section 04

Programmed Spaces: Middle Schools

- » Needs Analysis For Standards-Based Middle School
- » General Needs for Corridors and Lobby Areas in Proximity to Classrooms
- » General Needs for All Middle School Classrooms

NEEDS ANALYSIS FOR STANDARDS-BASED MIDDLE SCHOOLS

A utilization will be provided to the A/E by APS FD+C and Capital Master Plan (CMP) prior to the design of each Project. The CMP utilization will define the specific spaces required for each project. The APS Standards will define the square footage and character requirements for each of the specified spaces.

Space Description	APS MS Standard		
	# Spaces	NSF per Space	Subtotal NSF
Instructional Areas			
Core Classrooms			
Standard Classrooms	39	840	32,760
			32,760
Special Ed			
<i>See Special Ed programs listed in the Appendix and add square footage to the grand total</i>			
Science			
Science Laboratories	6	1,250	7,500
	3	420	1,260
			8,760
Performance (Chorus, Band, Drama)			
Chorus Area	1	1,300	1,300
Office	1	150	150
Storage	1	400	400
Band/ Orchestra	1	2,070	2,070
Office	1	150	150
Practice Rooms	3	50	150
Practice Rooms	2	100	200
Storage	1	500	500
Drama/ Performance	1	1,000	1,000
Office	1	120	120
Storage	1	500	500
Performance Stage	1	875	875
			7,415
Art			
Art Area	1	1,300	1,300
Office	1	150	150
Storage	1	200	200
Kiln	1	100	100
			1,750
Flexible Classrooms –Elective labs			
Family and Consumer Sciences			
Sewing	1	1,100	1,100
Storage/Washer-Dryer	1	200	200
Cooking	1	1,200	1,200
Storage (Pantry)	1	175	175
			2,675
Information Technology			
Computer Laboratory	2	1,100	2,200
Storage	2	150	300
			2,500
Industrial Arts			
Technology Education Lab	1	1,100	1,100
Storage	1	150	150
			1,250
		NASF	57,110
		[75% Efficiency] Tare	19,018
		Gross Square Feet	76,128

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Space Description	APS MS Standard		
	# Spaces	NSF per Space	Subtotal NSF
Library			
Circulation Desk	1	200	200
Open Stack/ Reading	1	2,800	2,800
Computer Area	1	600	600
Class Area	2	750	1,500
Office/ Workroom	1	300	300
Storage	1	200	200
		NASF	5,600
		[75% Efficiency] Tare	1,865
		Gross Square Feet	7,465
Physical Education:			
Main Gym			
Playing Court	1	8600	8600
Bleacher Seating	1	incl above	incl above
Storage	1	600	600
Snack Bar (Gym)	1	170	170
			9370
Auxiliary Gym			
Auxiliary Gym	1	5800	5800
Gym Storage	1	330	330
Multi-Purpose Room	1	1700	1700
Storage	1	350	350
			8180
Lockers			
PE Lockers- Boys	1	1450	1450
PE Lockers- Girls	1	1450	1450
Office with RR and Storage	2	175	350
			3250
OT/PT- APE			
OT/PT Space	1	900	900
Office	1	120	120
Restroom	1	100	100
Storage	1	200	200
			1320
		NASF	22,120
		[75% Efficiency] Tare	7,366
		Gross Square Feet	29,486

Space Description	APS MS Standard		
	# Spaces	NSF per Space	Subtotal NSF
Support:			
<i>Cafeteria</i>			
<i>Cafeteria (includes queuing)</i>	1	3,800	3,800
<i>Snack Bar (Cafeteria)</i>	1	175	175
<i>Facility Storage (with Custodian)</i>	1	425	425
			4,400
<i>Kitchen</i>			
<i>Main Cooking, Preparation, Serving</i>	1	1,200	1,200
<i>Cleaning</i>	1	250	250
<i>Freezer and Refrigerator</i>	1	450	450
<i>Office</i>	1	100	100
<i>W/D and lockers</i>	10	80	80
<i>Restroom</i>	1	50	50
<i>Dry Storage</i>	1	325	325
<i>Delivery</i>	1	75	75
			2,530
<i>Other School Support</i>			
<i>Lockers</i>	1	600	600
<i>School Store</i>	1	240	240
<i>MDF [12' x 14']</i>	1	168	168
<i>IDF [10' x 12']</i>	5	120	600
<i>IT Office</i>	1	150	150
<i>Head Custodian</i>	1	80	80
<i>Custodial and Site Equipment</i>	5	40	200
<i>Building Storage</i>	3	200	600
<i>Building Lobby</i>	1	800	800
			3,438
		NASF	10,368
		[75% Efficiency] Tare	3,453
		Gross Square Feet	13,821

Space Description	APS MS Standard		
	# Spaces	NSF per Space	Subtotal NSF
<i>Administration</i>			
<i>Administration/ Counseling</i>			
<i>Administration</i>			
<i>Principal</i>	1	220	220
<i>Assistant Principal</i>	2	180	360
<i>Conference</i>	1	250	250
<i>School Secretary</i>	1	160	160
<i>Workroom</i>	1	150	150
<i>Files/ Storage/ Coffee</i>	1	160	160
<i>Reception</i>	1	250	250
<i>Waiting</i>	1	300	300
			1850
<i>Counseling Area</i>			
<i>Counselors</i>	3	150	450
<i>Social Worker</i>	1	150	150
<i>Psychologist</i>	1	150	150
<i>Secretary with waiting area</i>	1	175	175
<i>Head Special Ed Teacher</i>	1	150	150
<i>File Storage</i>	1	150	150
<i>Evaluation/Testing</i>	1	120	120
<i>Conference</i>	1	250	250
<i>Instructional Coach</i>	1	240	240
			1835
<i>Nurse Suite</i>	1		
<i>Waiting Area</i>	1	120	120
<i>Nurse's Office</i>	1	120	120
<i>Health Assistant Area</i>	1	100	100
<i>Treatment/ Recovery</i>	1	400	400
<i>Restroom</i>	1	50	50
<i>Storage</i>	1	50	50
			840
<i>Other</i>			
<i>TIPS/In-School Suspension</i>	1	650	650
<i>Workroom</i>	1	900	900
<i>Storage</i>	1	200	200
<i>Book Storage</i>	1	400	400
<i>Teacher Lounge</i>	1	1,200	1,200
<i>Teacher Work Area</i>	1	180	180
<i>Mail Area</i>	1	175	175
<i>Security Office</i>	1	150	150
<i>Parent Room</i>	1	600	600
<i>Staff Restrooms (space in tare)</i>			
			4455
		NASF	8,980
		[75% Efficiency] Tare	2,990
		Gross Square Feet	11,970
		NASF - Grand Total	104,178
		[75% Efficiency] Tare	34,691
		Gross Square Feet - Grand Total [n.i.c. SpEd and TARE]	138,869

STANDARD-BASED MIDDLE SCHOOL (1200 Students)			
Building Area Requirements	NASF	GSF	% TOTAL GSF
Instructional Areas	57,110	76,128	55%
Special Instructional Areas			
Library	5,600	7,465	5%
Physical Education	22,120	29,486	21%
Support			
Kitchen / Cafeteria	10,368	13,821	10%
Administration	8,980	11,970	9%
TOTAL	104,178	138,869	
TARE	34,691	75%	
NUMBER OF STUDENTS	1,200		
GSF per STUDENT	116		

Site Requirements	#	Square Feet	Acres
Permanent Buildings*		138,869	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 [1-220' x 360'] w/ track			2.89
Grassed Aux Field [1-220' x 220']			1.11
APE [Shelter & Equipment]			0.00
Basketball Court [104' x 232']			0.72
* Assuming One-Story Construction			
** Roadways, Landscaping, walks			
*** Double Portable & Exterior Areas			
		Net	11
		[75% Efficiency] Tare **	4
		Total Minimum Acreage Required	15

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GENERAL NEEDS FOR CORRIDORS AND LOBBY AREAS IN PROXIMITY TO CLASSROOMS:

- » 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.
- » At the discretion of the school, provide student lockers in the hallways. If located in a room and for easy monitoring, lockers shall be one-tier. If against the walls, the locker units can be 2-tiers.

GENERAL NEEDS FOR ALL MIDDLE SCHOOL CLASSROOMS:

- » Refer to Chapter 2 [School Design + Construction Integrity].

» Special Education Spaces:

- » Refer to Appendix B

» 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 stations with sinks. Five (5) of which measuring 34" H x 24" D, shall feature 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 goose-neck lever handle faucet. The sixth station shall include a 48" lockable base unit with shelves and a 36" ADA sink unit.
- » Of the six laboratories, four will have the scheme exactly as described above. For the other two labs (in the 6th grade wing) the 48" base cabinet shall feature 20 plastic trays inserted into the lockable cabinet rather than shelves. All groups shall 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 shall be phenolic resin.
- » Workroom / Storage / Prep Room – each space shall feature a 36" x 36" glass drying rack over 36" W, 34" H, 24" D base cabinet unit with a cutout for 12" W, 12" L, 8" D phenolic resin sink with goose-neck lever handle faucet, a 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" wide. Provide upper open wall cabinets over the desk of two 30" H, 24" H, 13" D and one over the cook-top for the hood. Provide open solid metal shelving for science equipment storage.
- » Utilities to be included are natural gas, water, and electricity.
 - » Provide retractable power outlets from ceiling over lab tables.
 - » Provide emergency gas shut off, eye wash/ shower, and fire blanket.
 - » Consider if natural gas is required for all science classrooms.
 - » Consider if a fume hood is required at some science classrooms.

» **Performing and Fine Arts:**

- » Solicit programming information from APS Fine Arts Department for actual enrollment in art and music classrooms, program information, and office needs.
 - » Accommodate technological tools in instruction: recorded music, projection of lyrics, and displaying video clips of performances.
 - » Provide Bluetooth compatibility for music classrooms.
 - » Provide speakers and AV system for classrooms.
 - » LED screen with air play Promethean for each classroom.
 - » Provide appropriate number of power outlets at walls and counters.

The A/E shall consider an outdoor performance venue in close proximity to the indoor performance space. The configuration of the performance spaces are as follows:

» **Chorus, Band and Orchestra:**

- » Spaces shall be acoustically tuned with non-parallel walls, sound panels from ceiling (or acoustical ceiling), wall panels and 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).
- » Because these rooms are high-noise spaces, acoustically-separate them from the rest of the school and from one another.
- » Protect walls w/ chair rail and corner guards around band and chorus walls.
- » Chorus and band room shall feature an office for each teacher, with visual access to the classroom.
- » Riser will be purchased as furniture and not built-in. Each room shall have a storage room for choral risers, file cabinets, lockable instrument storage cabinets and a sink in the band storage room only. Cabinets shall be anchored to floor to meet seismic requirements.
- » Provide one large and one small practice room with acoustical treatment of walls and doors. Design practice rooms to open into the ensemble rooms. Put windows in the practice room doors.

» **Drama / Performance:**

- » Program space shall 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.
- » Provide casework for storage of props, fabrics and other stagecraft materials for the drama classroom.

» **Performance Stage**

- » Performance Stage shall be equipped with front/side/back curtains with stage wings and be located in close proximity or adjacent to the drama classroom.
- » Provide ramp access onto stage. Performance area shall be provided in the cafeteria. Stage area is additionally described more fully in the **Cafeteria Section**.

» **Art**

- » Provide sink/counter area, 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.
- » Orient openings to the north if possible.
- » Provide a deep, wide sink with clay trap and a separate hand sink for ADA compliance as required.
- » Provide (1) magnetic white, (1) chalk boards and tack board and/or tack strips. Provide places to display student work. Consider dry erase walls to encourage advertising of student performance.
- » Provide and coordinate a separate kiln room with proper power and outlet for the specific kiln and exhaust hood for the specific kiln. The kiln room will be provided with a thermostatically controlled room exhaust fan separate from the kiln exhaust hood. The District preferred kiln and associated equipment, see Appendix G, and shall be provided and installed by the general contractor
- » Provide retractable power outlets from ceiling over shop tables.
- » Provide a contiguous or adjacent art patio if possible.

» **Flexible Labs – Elective Labs**

Each classroom will accommodate 32 students.

» **JROTC / Leadership**

Consult with CMP for JROTC spaces / utilization and funding.

» **Family and Consumer Science – Sewing.**

- » If such program/need exists in a mid-school and verified by CMP, the space shall accommodate the following functions:
 - » Sewing will have up to 32 sewing machines, measuring 24"D x 36" W on 16 tables. Power to be supplied by ceiling-mounted retractable outlets 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.

» **Family and Consumer Science - Cooking**

- » If such program/need exists in a mid-school and verified by CMP, the space shall accommodate the following functions:

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- » 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 (side exhaust ranges are not allowed), and a space for a microwave on the counter. Provide a residential style fume hood with a suppression system at each range.
 - » Upper cabinets to contain evenly sized wall units including the stove hood location.
 - » 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 demonstration kitchen.
 - » Pantry to have 1 each upright freezer and one refrigerator (minimum 21 cubic feet each, Energy Star). Install five wire metal shelving units that are each 74”H, 24”D, and 48” W.
- » **Computer Labs**
- » If space utilization from CMP validates the need, a computer lab shall be designed with the following:
 - » 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. There shall be no power poles or floor outlets.
 - » 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.
- » **Technology Education Lab**
- » This lab provides space for improving computer technology skills.
 - » The design of the lab should allow its workstations to be viewed by the teacher.
 - » Provide lockable upper cabinets for storage of equipment.

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- » **STEAM / STEM Lab / Maker Space**
- » If utilization analysis indicate need, provide a STEM/ STEAM/ MAKER space.
 - » Data drops/ outlets.
 - » Movable furniture and work tables.
 - » Retractable power outlets from ceiling.
 - » Locate as close as possible to library
- » **Library / Media Center**
- » The library / media center requirements follow:
 - » Accommodate multiple classes in library.
 - » Seat about 85 students and staff at tables and computers.
 - » Acoustics at teaching area should be designed for teaching.
 - » Space to allow for different arrangements and programs to occur at one time.
 - » Provide age-appropriate furniture, shelving, desks, and layout.
 - » Work study area for 2 classes, for large group reading activities and for reference.
 - » 32 stations for computer research and group work with data.
 - » Expect more talking in libraries as move to project based learning.
 - » Use sound baffles at an open ceiling to absorb sound so kids can talk.
 - » Provide accessible electrical outlets on every wall and columns. Coordinate with casework, furniture, and equipment FD+C staff.
 - » Circulation desk should be about 16 feet in length, provide limited access and visual control throughout.
 - » Provide circulation desk with phone, data and power outlets.
 - » Allow the book drop location to be flexible/ or as furniture.
 - » Shelving
 - » The library requires less shelf space than needed in the past. Reading materials are a blended model - technology and paper books.
 - » Floor shelving needs to be movable / mobile. Flexible to accommodate shelving arrangement in 20 years.
 - » 60” tall shelving around the walls is preferable.
 - » Lighting
 - » Provide day lighting (with a minimum window sill height of 65 or 70” 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.
 - » Technology
 - » Provide adequate power outlets and data drops.
 - » Provide flexible access to power. No power columns/poles.
 - » Provide desks with cable management.
 - » Install appropriate wiring for audio visual and computer equipment is required.
 - » Provide storage and charging for phones.
 - » Convert the hub room space for tech storage needs and provide good power for charging up to 30 units.



- » Provide charging walls for devices. Need flexibility to change device cords. Look for furniture for charging.
- » Provide a device charging system so that no grown-up employees are responsible for the phones.
- » The secondary exit for emergencies should be alarmed with direct line of sight from circulation desk.
- » Metal-detector security gates shall not be used.
- » Family centers/ parent room shall feature computer stations which parents may come in and utilize.
- » Office / Workroom
 - » Provide adjacent Librarian office. Provide sink with soap (receives APS supplied pouch soap refills – verify specified model with FD+C) and paper towel dispensers. Provide built-in upper and lower lockable cabinets of 40 linear feet.
 - » Direct access to a media center workroom is required.
 - » Combine library workroom and office.
- » **Physical Education / Main Gym, Offices, PE Classroom**
 - » All physical education facilities must have equal facilities for male and female per the Title IX requirement. The MS facilities support PE and athletics programs.
 - » Provide coach offices. A MS program typically has 3 to 4 coaches. Provide 2 shared offices.
 - » Provide a PE Classroom.
 - » The main gym / physical education area requirements follow.
 - » No ductwork or lighting to be installed below the 25' height.
 - » A safety space (minimum 10 Feet) between the court and wall is required with wall pads at each end.
 - » Stripe line floor for 6 basketball courts (1 court the long direction and 2 courts across the narrow direction) and volleyball.
 - » Provide seamed indoor resilient multi-purpose rubber flooring with manufactured cove base.
 - » Gym should have 2 main motorized 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 in the auxiliary gymnasium.
 - » Main gym to be located near the exterior playgrounds and recreation fields and away from classrooms.
 - » Consider an area for wall ball.
 - » Provide direct access to outdoor play areas.
 - » Provide windows that are impact resistant or protected.
 - » If there are before and after-school programs, provide lockable office / storage space.



- » Provide motorized telescoping bleachers to seat ½ of the student population with one-piece molded bench type plastic seating on one side of gymnasium. Provide 8'-0" clear space between the top row of the bleachers and bottom of the roof structure.
- » Provide full-time designated wheelchair spaces at bleachers. No "Flex Rows."
- » Mirrors or glass panels in exercise or weight rooms to be no greater than 48" wide x 60" tall sections. Multiple sections can be stacked on top of each other to generate floor to ceiling condition.
- » If far from cafeteria, provide a 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 volleyball poles. Secure all shelving units to floor to meet seismic conditions.
- » Provide a motorized divider curtain across the middle of the gym.
- » Technology is mobile and moved in and out of the gym space. Provide data and outlets in both gyms.
- » Provide PA and intercom systems in both gyms.

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

» Locker Rooms

- » Provide separate locker rooms for boys and girls each for 70 students with equal facilities for each sex per Title IX requirements.
- » Provide 2 offices (to be shared by 2 people each) with adjacent restrooms in close proximity to locker rooms. 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 tile 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. Doors shall have a piano hinge.
- » Design for maximum 210 students with generally less than 70 students (each sex) per period. Provide fully welded lockers with padlock eye (no moving parts), one double hook on ceiling and 3 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.
- » All exterior windows in locker rooms shall be at least 8'-0" a.f.f.

» Auxiliary Gym

- » Auxiliary gym sized to have a standard basketball court with a safety space around the court (3,800 sf) with a minimum 25' ceiling height is required.
- » Floor shall be the same as the Main Gym.
- » Flooring shall be striped for basketball and volleyball with wall pads on the end walls.

- » A safety space (minimum 10 Feet) between the court and wall is required with wall pads at each end.
- » 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.

» **Circuit Training**

- » The circuit equipment should be enclosed in a 1,500 square feet space with a raised ceiling to accommodate the circuit training equipment that is specified.
- » The type of flooring shall be the same as the Main Gym.
- » Flooring shall be striped to indicate the clearances required during the use of each piece of the circuit.
- » Consider a training course at the exterior.
- » OT / PT Space: See Appendix B for Special Education requirements.

» **Cafeteria**

- » In addition to the cafeteria's function as the dining area, it may serve as the school's performance venue and for assemblies.
 - » 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 15 nsf/student with no more than 3 lunch periods.
 - » Provide adequate point-of-sale connections for computerized checkout units at food purchasing 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.
 - » 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, hand sink, snack cooler and required outlets in a separate lockable room.
 - » Provide designated area for recycle bins for paper, plastic and aluminum.

» **Stage (if located in the 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.
- » 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.
- » Provided manually operated curtains on front, side and back, ramp access, and storage.
- » Provide acoustic reverb rating to allow use of space for small plays and music ensembles.

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» **Snack Bar**

- » Snack bar shall be contiguous with the cafeteria or gym as in recent builds.
- » Provide service openings into the cafeteria and to the outside. Each opening shall 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 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 wire mold along back-splash 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 (receives APS supplied pouch soap refills – verify specified model with FD+C) 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.

» **Storage / Custodial**

- » Provide separate custodial areas: one in kitchen and cafeteria. Each 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.

» **Outside Dining Patio**

- » 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.

» **Kitchen**

See requirements in Chapter 2- Design & Construction Integrity Section.

» **Other School Support**

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

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- » **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 back-splash. 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 dust, 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.
- » **Utility / Storage Custodial Utility Areas**
 - » Refer to Chapter 2 [School Design + Construction Integrity]
- » **Facility Storage Interior (other than in classrooms)**
 - » Refer to Chapter 2 [School Design + Construction Integrity]
- » **Facility Storage Exterior**
 - » Refer to Chapter 2 [School Design + Construction Integrity]

ADMINISTRATIVE OFFICES / SUPPORT AREAS

- » **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 built-in 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 built-in reception area for public sign-in, phone console, and information. This area shall have 3 built-in 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 transaction counter height should be 42" high except for a section of the desk that is ADA compliant and the work surface behind the transaction counter should be 30" a.f.f. This area shall 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 14 to 16 people and allowing room for tables for registration.
 - » Principal's office will have APS-provided furniture which may include a desk, credenza, and table and chairs. Principal's office should have 2 exits out of space.
 - » Assistant principals' office will have APS-provided furniture which may include desk and a small round table and chairs.
 - » Conference room should be located for easy access by multiple groups within the school.

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- » 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 worktable 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 vertical 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 (18 cubic foot) refrigerator with ice maker (to be provide by the general contractor). 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.
- » Provide AED defibrillator cabinet that can be readily accessed during emergency outside in hallway.

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

- » **Counseling Area**
 - » Review needs for a particular school program with APS Counseling for information on traditional counseling allocations.
 - » The counseling area will be self-contained but shall be easily accessible for all students and parents. 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.
 - » Parents need to check in at the front area to see a counselor. Parents need to wait at school office /reception. Locate the counseling suite away from the public waiting area so that the public or parents don't see kids going to counseling.
 - » Students can have direct access to counseling offices. Students should not have to talk to anyone to see counselor. Waiting area by offices is for students.
 - » 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.
 - » Office standard is 300 SF. Don't need a space as big as a classroom -1/3 size of classroom. Portables are not preferred.

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- » For privacy, avoid glass. Counseling offices require sound isolation.
 - » Printers need confidential and need to be close to the offices and computers password protected.
 - » Provide a conference room for 14 people. Provide one 48" W, 34" H, 24" D ADA sink and drawer unit for sink 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 (receives APS supplied pouch soap refills – verify specified model with FD+C). Provide outlets at back of counter.
 - » Provide file room for 14 vertical file fire-rated 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.
- » **Health Center (Nurses Office)**
- » The health center shall be located near the main office and lobby for easy access by students and parents. This will also facilitate the mandatory signing-in and-out procedures and allows 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 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.
 - » Provide two Treatment /Recovery areas: Provide refrigerator (provided by general contractor) that is white, Energy Star, 18 cubic foot frost free with ice maker. Provide 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 (receives APS supplied pouch soap refills – verify specified model with FD+C), paper towel dispenser and mirror at sink.
 - » Provide area for a 24" wide by 60" high safety mirror.

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- » 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 Special Education DD level 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 (See general notes).
 - » Dedicated climate control. Operable window if possible; also provide exhaust fan in rooms.
 - » Provide storage closet for wheelchair, crutches, and other bulk item storage.
 - » Provide space for locking fire proof vertical file cabinet - one for every 800 students.
 - » Provide combo washer-dryer laundry unit (stacking unit).
- » **Workroom**
- The workroom shall be centrally located to the teaching staff with easy access from the corridor.
- » Flooring to be polished concrete.
 - » 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 APS supplied pouch soap refills – verify specified model with FD+C)
 - » 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.
- » **Teachers' Lounge**
- » Located near the administrative offices or workroom and adjacent to staff restrooms. Where applicable, provide patio area with wall privacy.
 - » Provide seating for at least 30 at a table or tables. Small kitchenette area with an 18 c.f. frost free refrigerator with ice maker, 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 APS supplied pouch soap refills – verify specified model with FD+C), and paper towel dispenser - surface mounted, polycarbonate, 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.

» **Site Recreation**

- » The school site shall provide outdoor recreation and learning areas suitable for age of student population served. Refer to individual sections for specific school level requirements.

» **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 paved plaza area to accommodate 300 students with a 440 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.
- » Provide an outdoor dining patio (standard included in cafeteria section).

» **Athletic Fields**

Locate the gym complex close to the main field and track, auxiliary field, and locate the exterior basketball courts in a convenient location for student use and away from streets and parking areas. Provide a 10’-0” wide gated opening for M&O access.

» **Main Field and Track**

Provide a main field (210 feet by 360 feet) with asphalt track close to the main gym with an asphalt-paved pathway connecting the field to 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.

» **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 shall 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.

» **Recreation Area Supervision**

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

Section 05

Programmed Spaces: K-8

» A utilization will be provided to the A/E by APS FD+C and Capital Master Plan (CMP) prior to the design of each Project. The CMP utilization will define the specific spaces required for each project. The APS Standards will define the square footage and character requirements for each of the specified spaces.

K to 8 PROGRAM SPACES [***basis is NW K-8 school]								
Room Description	# of Spaces	# of Persons	Area per Person	Space Criteria	Total Area	Total Assignable	Subtotal	Notes
ADMINISTRATION								
Principal	1	1		150	148	148		
Assistant Principal	2	2		120	150	300		
Conference	1	14		240	235	235		For 14 people.
							683	
Waiting Area	1	16		250	331	331		For 16 people.
Receptionist/ Clerk	1	2		150	236	236		
Secretary	2	1		100	122	122		
File Room Storage	1			100	75	75		
Kitchenette	1			67	67	67		
Mail Area	1			40	40	40		With space for copier.
Display Case	1				20	20		Locking glass.
Teacher's Lounge	2	30	25	850	850	1,700		Seating for 30 Min.
Bookroom	1	30	25	440	462	463		
Family Room / PTA	1	30	25	600	612	612		
Staff Restrooms (in TARE)		30	25					
Security Resource Officer	1							
							3666	
HEALTH CENTER								
Waiting Area	1	6	15	200	178	178		Locate near Main Office with expansion potential.
Nurse	1	6	15	160	160	159		
Health Assistant	1	6	15	100	40	40		
Treatment Room	1	6	15	120	126	126		
Recovery Isolation	1	6	15	200	322	322		With 2 recovery spaces boys / girls (2 recovery couch each).
Storage	1	6	15	50	61	61		
Restroom	1	6	15	80	85	85		With Changing Table & Shower.

K to 8 PROGRAM SPACES [***basis is NW K-8 school]								
Room Description	# of Spaces	# of Persons	Area per Person	Space Criteria	Total Area	Total Assignable	Subtotal	Notes
COUNSELING AREA								
Waiting Area	1	6	15	200	230	230		For 6 people.
Counselor Office	3			150	146	438		
Social Worker	1			150	167	167		
Psychologist	1			150	150	150		
Head Special Ed Teacher	1			150	150	150		
Speech & Language Pathology	1			240	224	224		
Evaluation/ Testing	1			150	146	146		
Instructional Coach	1			150	153	153		Small meeting space.
Conference Room	1	14	15	250	246	246		For 14 people.
File Storage	1	14		100	100	100		Fireproof, Limited-access.
EVEN START FAMILY LITERACY PROGRAM								
Adult Education	1			600	550	550		With Changing Table.
Pre School / Child Care	1			600	550	550		
INSTRUCTIONAL PROGRAM								
Pre-K with Storage & RR	2	18		900	1,100	2,200		6th grade to be an Academy.
Kindergarten with Storage & RR	7	60		1,200	1,200	8,400		6th grade to be an Academy.
Kinder Kitchen	1			641	641	641		6th grade to be an Academy.
Kindergarten Break out	1			520	520	520		6th grade to be an Academy.
1st Grade Classrooms	5	120		840	840	4,200		6th grade to be an Academy.
2nd Grade Classrooms	5	96		840	840	4,200		6th grade to be an Academy.
3rd Grade Classrooms	4	96		840	840	3,360		6th grade to be an Academy.
4th Grade Classrooms	4	96		840	840	3,360		6th grade to be an Academy.
5th Grade Classrooms	4	96		840	840	3,360		6th grade to be an Academy.
6th - 8th Grade								6th grade to be an Academy.
Core Classrooms	8	144		840	840	6,720		
Math	5	96		840	840	4,200		
English	6	96		840	840	5,040		

K to 8 PROGRAM SPACES [***basis is NW K-8 school]								
Room Description	# of Spaces	# of Persons	Area per Person	Space Criteria	Total Area	Total Assignable	Subtotal	Notes
Break-Out Large Open Classroom	4			901	900	3,600		Project based learning space open to classroom wing lobby
Break-Out Small Open Classroom	6			500	500	3,000		Project based learning space open to classroom wing lobby
Break-Out Intrapersonal	4			340	340	1,360		Independent study
Multi-Purpose Enclosed Classroom	4			900	900	3,600		Multipurpose Classroom
Fed. Categorical/ Spec. Programs	2			900	900	1,800		
Community Reference Learning								
CRL Classroom	1	8		840	887	887		For 8 Students and 2 Staff, with Kitchenette With ADA shower
Restroom	1			100	96	96		
Storage Room	1			200	211	211		
Laundry Room	1			100	111	111		
Office	1			120	255	255		
Research Room	4			120	104	416		
Science								
Science Laboratories	4	32		1470	1470	5880		Includes Storage and Prep Area
Physical Biology Lab	1	32		1200	1281	1281		Includes Storage and Prep Area, and Exterior Science Deck
Technology Lab (computer Science)	1	32		1000	1083	1083		Includes Storage and Prep Area
Break-Out Large open classroom	2			800	800	1600		
Fine Arts								
Chorus Room	1			1543	1,543	1,543		Total size of suite not to exceed 1750 sq. ft.
Chorus Office	1			120	138	138		
Chorus Storage Room	1			120	134	134		
Band/ Orchestra	1			1,661	1,661	1,661		Total size of suite not to exceed 2800 sq. ft.
Band/Orchestra Office	3			120	120	360		
Practice Room - Small	1			100	103	103		
Practice Room - Large	1			150	155	155		
Band Orchestra Storage Room	1			120	265	265		
Restrooms	4	70		237	237	948		

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K to 8 PROGRAM SPACES [***basis is NW K-8 school]								
Room Description	# of Spaces	# of Persons	Area per Person	Space Criteria	Total Area	Total Assignable	Subtotal	Notes
Drama/ Performance	1			1,762	1,762	1,762		Total size of suite not to exceed 2300 sq. ft.
Drama/Performance Office	1			120	121	121		
Performance Stage	1			800	800	800		With Vestibule
Drama Office	1			120	121	121		
Drama Storage	2			120	136	136		
Art Room (1st-5th)	1	32		1,000	1,038	1,038		With Kiln Room, North Light
Art Room (6th-8th)	1	32		1,750	1,934	1,934		With Office, Storage and Kiln Room, North Light
Art Multi Use	1			1,300	1,300	2,600		
Information Technology								
Flex Lab (1st-8th)	3	30		1,200	1,070	3,210		1 for k-5th 2 for 6th-8th / PARCC Testing
Wired	8	15		280	280	2,240		Dispersed Computer research areas.
CPU Charge Cart Storage Room	2			50	56	112		one or two based on lab location
Student Restrooms (in TARE)								
INSTRUCTIONAL SUPPORT								
Main Custodial Office/ Storage	1			200	198	198		
Custodial Closets	8			50	60	400		
Interior Storage (Dispersed)	5			100	100	500		
Exterior Storage	0			20	200	0		
School Store	1			250	282	282		
k-5 Cubbies	1			3,250	3,250	3,250		
MDF & IDF	10			150	170	1700		
IT Office	1			120	134	134		
General Storage	1			200	134	134		Roof Access.
FOOD SERVICES								
Cafeteria				4,600	5,669	5,669		Performance Stage listed under Fine Arts.
Serving Line					0	0		2 Serving Lines minimum based on age group.
Kitchen				2,325	1,365	1,365		Total sq. ft., includes spaces listed below.
Walk-in Refrigerator & Freezer				450	450	900		

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K to 8 PROGRAM SPACES [***basis is NW K-8 school]								
Room Description	# of Spaces	# of Persons	Area per Person	Space Criteria	Total Area	Total Assignable	Subtotal	Notes
Dry Storage					225	225		
Staff Restroom				75	75	75		
Office				120	143	143		
Locker Area					39	39		
Kitchen Janitor Closet					23	23		
Kitchen Laundry					51	51		
Chair Storage					279	279		
Milk Cooler (After hours program)					27	27		
Vending Machine Alcove					24	24		
MEDIA CENTER								
Entry/Circulation	1			200	285	285		
Librarian	1	1		150	177	177		Locate adjacent to circulation desk.
Work Room	1	1		150	212	212		
Computer Research	1	1		480	484	484		
Stacks and Reading Area	1	1		1700	1,758	1758		
Equipment Storage	1	1		200	232	232		
Group Study	2	1		200	202	404		
Story Time Reading Area (K thru 2nd)	1			700	697	697		Locate adjacent to Kindergarten Classrooms
K-2 Books (K thru 2nd Library)	1			1000	1,001	1001		Locate adjacent to Kindergarten Classrooms
INDOOR PHYSICAL EDUCATION FACILITIES								
Main Gym / Physical Education	1			7,346	7,346	7,346		24' Ceiling Required. Total sq. ft., Includes spaces listed below.
Bleachers	1	1200		2700	0	0		
Snack Bar	1			171	171	171		
Equipment Storage	1			240	240	240		
General Storage	1			161	161	161		
Auxiliary Gym	1			4,829	4,829	4,829		24' Ceiling Required. Total Sq. ft., Includes spaces listed below.
Equipment Storage	1			198	198	198		
Multi-Purpose Room	1			1,800	2,081	2,081		PE, Dance, Health, Weight Classes. 12' Ceiling.
Equipment Storage	1			200	109	109		

K to 8 PROGRAM SPACES [***basis is NW K-8 school]								
Room Description	# of Spaces	# of Persons	Area per Person	Space Criteria	Total Area	Total Assignable	Subtotal	Notes
INDOOR PHYSICAL EDUCATION FACILITIES								
General Storage	1			161	161	161		
Auxiliary Gym	1			4,829	4,829	4,829		24' Ceiling Required. Total Sq. ft., Includes spaces listed below.
Equipment Storage	1			198	198	198		
Multi-Purpose Room	1			1,800	2,081	2,081		PE, Dance, Health, Weight Classes. 12' Ceiling.
Equipment Storage	1			200	109	109		
Locker Rooms	2	70		1,625	1,488	2,976		Total sq. ft., includes spaces listed below.
Offices	2	70		120	168	336		
Restrooms	4	70		237	237	948		

TARE = the % value divided into the Net Assignable (NASF/0.70 - NASF) Assume 70% Efficiency

	NASF	TARE	GSF	Notes
Administration	4,470	1,967	6,437	
Health Center	971	427	1,398	
Counseling Area	2,004	882	2,886	
Even Start Family Literacy Program	1,100	484	1,584	
Instructional Program	102,182	44,845	147,027	
Instructional Support	6,598	2,903	9,501	
Food Services	8,820	3,881	12,701	
Commons Media Center	5,250	2,310	7,560	
Indoor Physical Education	19,395	8,534	27,929	
	150,790	66,233	217,023	

PROPOSED Pre-K thru 8 SITE REQUIREMENTS (for 1,200 students)

Student Population	#	SF	GSF	Notes
Student Population	1343			
Number of Staff	100			
Permanent Buildings	1	217,023	217,022	Assumes Single Story Construction
Integrated Portable Buildings	8	7,680	61,440	Or future expansion 10 Classrooms
Visitor / Staff Parking	240	400	96,000	
Special Event Parking	96	400	38,400	
Buses	22	1,344	29,568	
Cars at Student Drop-Off / Pick-up	200	400	80,000	
Main Grass Field (210' x 360' with Track)	1	104,000	104,000	
Playground Pre-K and K	154	115	17,710	
Playground 1st - 3rd	279	100	27,900	
Playground 4th - 5th	159	100	15,900	
Shade / Performance / Seating Area	1	12,110	12,110	
Basketball Courts (104' x 232')	1	2,300	2,300	
Easements / Setbacks	1	30,000	30,000	
NET GSF			732,350	
TARE @ 45% (Sloping Site)			329,558	
MINIMUM SF REQUIRED			1,061,908	24 ACRES

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MIDDLE SCHOOL SITE REQUIREMENTS (for 1,200 students)				
Student Population	# 1,200	SF	GSF	Notes
Number of Staff Permanent Buildings	? 1	171,370	171,370	Assumes Single Story Construction
Integrated Portable Buildings	8	7,680	61,440	Or future expansion?
Overflow Portable Staging Area	4	3,840	15,360	
Visitor / Staff Parking	160	400	64,000	
Special Event Parking	155	400	62,000	
Buses	8	1,344	10,752	
Main Grass Field (210' x 360' with Track)	1	75,600	75,600	
Auxiliary Grass Field (220' x 220')	1	48,400	48,400	
Shade / Performance / Seating Area	1	12,110	12,110	
Basketball Courts (104' x 232')	1	24,128	24,128	
Easements / Setbacks	1	30,000	30,000	
NET GSF			575,160	
TARE @ 25% (33% for Difficult Site) 143,790				
MINIMUM SF REQUIRED 718,950 17 ACRES				

Section 06

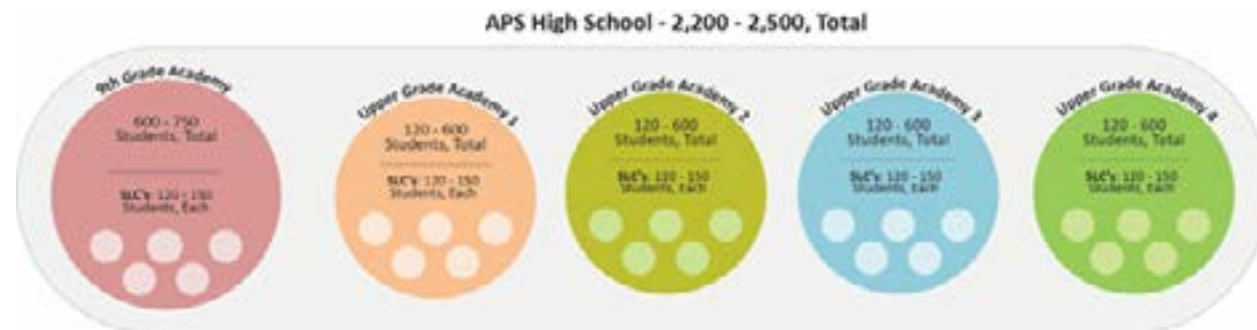
Programmed Spaces: High Schools

A utilization will be provided to the A/E by APS FD+C and Capital Master Plan (CMP) prior to the design of each Project. The CMP utilization will define the specific spaces required for each project. The APS Standards will define the square footage and character requirements for each of the specified spaces.

ORGANIZATIONAL STRUCTURE INTO ACADEMIES AND SMALL LEARNING COMMUNITIES (SLC’S)

- » High Schools are comprised of several Academies.
- » Academies are comprised of several of Small Learning Communities (SLC’s).
- » Most teachers will not have assigned classrooms, but will teach in a collegiate model, with the Home Base serving as an office and professional collaboration area.

APS HIGH SCHOOL – 2,200 TO 2,500 TOTAL STUDENTS



ACADEMIES

- » APS Standard high schools will include:
 - » One 9th grade academy
 - » Up to four upper grade academies
 - » Space for a future expansion academy to accommodate growth
- » The upper grade academies will generally be organized by career or academic focus, with each academy offering multiple related career paths. Each upper grade academy shall be sized for between 120 and 600 students.

NINTH GRADE ACADEMY

- » The ninth grade academy will serve approximately 600 to 750 students, and will:
 - » Be physically separated from other academies to the extent practical.
 - » Have its own administration and dining areas.
 - » Facilitate student circulation from their academy to the media center, gymnasium, administration, dining, and transportation without navigating through large groups of upper grade students.

UPPER GRADE CAREER ACADEMIES

- » Upper grade career academies integrate academic and vocational instruction for grades 10, 11, and 12. These academies will:
 - » Provide work-based learning opportunities for students and prepare students for post-secondary education and employment, with the personalized learning environment of a small community.
 - » Have separate administration areas that are adequately staffed.
 - » Be flexible over time to meet the career ambitions of the students and the cultural requirements of the community.
 - » Have dedicated elective labs and technology shops. Labs may be used for computer or other hands-on learning, such as robotics. Technology shops will provide an industrial setting to accommodate the use of heavy machinery or loud activities.

CAREER ACADEMY PRECEDENTS:

- » The following upper grade career academies / Programs of Study are offered at many APS high schools:
 - » Audio and Video Technology and Film
 - » Construction Technologies
 - » Design/Pre-Construction: Architecture
 - » Design/Pre-Construction: Engineering
 - » Education and Training
 - » Facility and Mobile Equipment Maintenance (Automotive Technologies)
 - » General Business
 - » Health Informatics
 - » Production (Welding)
 - » Restaurant and Food/Beverage Services
- » Instructional spaces should reflect the career environments of the program of study.

SMALL LEARNING COMMUNITIES (SLC’S)

- » Academies will be organized into smaller groups of students, called Small Learning Communities (SLC’s). Each SLC will be a separate learning unit, comprised of about 120 to 150 students. Students and teachers within each SLC will be scheduled together and have a dedicated area in the school for conducting most of their classes. Students also attend some classes outside of their SLC’s. The 9th grade academy may have up to 5 SLC’s.
- » Areas included within all SLC’s:
 - » Core classrooms for English, math, science and humanities.
 - » Elective classrooms and technology shops to support evolving curriculum.
 - » SPED program space.
 - » Staff areas: home base (preparation area), workroom, and conference room. Several SLC’s may share a staff work room and conference room.
 - » Restrooms and student lockers.
 - » Informal space for student teams, projects and resources.

SPACE NEEDS SUMMARY TABLE

Refer to Appendix A.

» **Central Areas:****SECURE ENTRY VESTIBULE**

- » Provide single-point entry into the school that can be supervised from the central administration area and by APS Police. See secure entry vestibule and site fencing requirements.
- » The high school campus may include several buildings, parking lots and joint use facilities. Develop a security strategy which addresses student and staff safety and allows the administration to control public access to the campus during the instructional day.

CENTRAL ADMINISTRATION

- » All school visitors must enter through the school's central administration.
- » Visibility and way finding is important to and from this area.
- » In addition to the central administration area, each Academy shall also house administrative functions. The space descriptions below are for the central administration area.
- » The lobby shall provide the entry experience into the school. Include:
 - » 1 display case somewhere in or near the lobby. The display case shall be approximately 16' wide x 5' high x 2' deep. The display case shall have safety glass doors and shelving, illumination, and shall be lockable.
 - » Provisions (backing, power, and data) for mounting a flat screen in the lobby for announcements.
 - » Provide a waiting area in or adjacent to the lobby with space for seating 12 to 16 people as well as space for tables for registration.
- » Reception area:
 - » Provide a built-in reception counter with 3 workstations for visitor/public sign-in and information. The reception counter shall have visual control of the school's main security vestibule entrance and be capable of being secured with a grille or doors afterhours.
 - » The reception counter shall be about 20 LF, with base casework and pedestal units to separate the 3 workstations. Counter height for visitors shall be 42", except where variation is required for ADA.
 - » Include the fire annunciation panel, accessible to the fire department, in the reception area.
 - » In addition to the workstations at the reception counter, provide space for 2 open office workstations for reception staff to operate the phones, intercom, and support the school administration. Each workstation shall be about 8' x 8'. Provide space for (4) wardrobe cabinets for staff in the open office area (wardrobes are approximately 18"W, 84"H, 24"D).
- » Attendance office, Bookkeeper's office, and Registrar's office/Data Processing:
 - » Locate these offices adjacent to the reception area. The reception counter shall serve as the contact point for these offices.

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- » Principal's office:
 - » Requires 2 exits out of the office, and a dedicated restroom. Include space for a desk, credenza, and table with 4 chairs.
- » Principal's Secretary:
 - » Provide a work area adjacent to the principal's office for the principal's secretary. The secretary's work area may be an open office work area.
- » The vault is secure storage for the school. Locate the vault close to the principal and bookkeeper. The vault requires secure construction of reinforced masonry walls, or drywall with steel mesh. Extend vault walls full height to bottom of structure above and provide a hollow metal steel vault door with security quality lockset.
- » The administration workroom includes copiers, Gestettner machine(s), form storage, and (1) clerk workstation. Provide (6) 36" wide, 34" high, 24" deep base storage cabinets with shelves, and (6) 36" wide, 24" high, 15" deep open shelf upper cabinets. The head-end console for the PA system can be located in this room (console is approximately 24" x 24").
- » The coffee bar shall include (1) 24" deep ADA sink base unit with (1) 12" x 12" x 8" deep stainless steel sink with gooseneck lever faucet, (1) 24" 4-drawer base unit, (2) 30" lockable storage base units with shelves and (1) white, 18 cubic FT Energy Star refrigerator with ice maker. Provide above counter power for the coffee maker and a microwave. Provide space for a 30" x 60" table near the coffee bar.
- » The administrative conference room may be used by various school groups, and shall have space for a table with seating for 12-14 people. Provide casework. Base casework shall be approximately 2' deep x 7' long. Integrate 1 ADA sink and 1 under-counter refrigerator into the casework. Provide matching lockable upper cabinets (1' deep x 2' high). Sink basin shall be stainless steel, approximately 14" x 16" x 6" deep, with gooseneck lever handle faucet.
- » Mail room: Option A) Provide a central Mail Room in the central administration area with letter slots (minimum 10" wide x 13" deep x 6" high) for each staff member above a continuous countertop, with open base cabinets or cubbies below for larger items. Option B) Provide separate mail rooms in each academy.
- » The Test Preparation Room is for receiving, organizing and delivering test materials to teachers. This room must be secure and lockable. Provide (2) power and data outlet locations, (1) 12' whiteboard, and (1) 4' tackboard.
- » Locate the file/storage area adjacent to, and monitored from, the main office portion of administration. Include (2) 48" wide x 84" high x 24" deep lockable cabinets. Allocate space for 8 file cabinets and 1 table (provided by others).
- » Locate the Parent Room/Family Center in or near the central administration area, or other area that can be monitored and is appropriate for community access. Provide data and power.
- » The Career Exploration Center is for informal counseling, prospective employer meetings, college recruitment, and information distribution to students about potential career and higher education choices. The Career Exploration Center may include a staffed workstation. The area may be subdivided into meeting and office space. Provide space for shelving for printed material/resources.

- » Provide student access to computers (i.e. for applications, FAFSA work, etc.).
- » Provide an In-School Suspension Room (ISS), outfitted as for a core classroom. Locate the In-School Suspension Room adjacent to the security suite (see description below) or combine with the APS Security Office. In-School Suspension is supervised by APS Police (provide a window between the two). If construction is phased, then provide temporary accommodations for the in-house suspension room in the first phase.
- » Provide a security suite. Locate the suite in or adjacent to the central administration office. Include an office for APS Police and another office for security personnel. Include a Delinquent Hold Room for suspects awaiting intake by APD (access separate from main circulation, with exterior access for APD desirable), an office for the CCTV security system monitors with an observation station, and a CCTV equipment room with 24/7 HVAC split system (as for MDF and IDF). Provide a window to view the In-House Suspension Room. Provide a mirrored window in the CCTV monitoring office into the Police/CSA office for monitoring purposes.

SPECIAL EDUCATION CENTER

Refer to the Appendix B for special education requirements.

MEDIA CENTER

- » The Media Center (also known as the Library or the Learning Resource Center) shall be centrally located within the main building and on a major circulation route, and able to accommodate 10% – 15% of the student body in the main space.
 - » If there is a mezzanine, no student areas will be located on the second floor.
- » **Entry / Circulation Desk**
 - » The main entrance to the Media Center may be either from the interior or exterior.
 - » Include display cases and tack boards at the entry area. Display cases may be used for showing items available from the student store.
 - » Provide a circulation desk with visual supervision of the main entrance, as well as the main library area.
 - » Locate circulation desk near to library office.
 - » The circulation desk shall include about 40 LF of countertop/base cabinets with 2 or 3 built-in workstations.
 - » Powered portion of the circulation desk will be built-in casework (to be in GC contract) and the remaining of the circulation desk can be mobile furniture pieces (in the F&E package). Provide power and data outlets at a built-in section of the circulation desk.
 - » Provide space for at least 6 carts and book drop-off unit at the circulation desk. Allow the book drop location to be flexible. Consider an exterior wall book drop-off.
 - » Provide a storage area with cubbies for student backpacks, near the circulation desk.
 - » Provide a secondary exit from the Media Center visible from the circulation desk. Equip the secondary exit with a local alarm.

- » Provide a storage room adjacent to the circulation desk. The storage room shall contain 12” and 18” deep metal shelving units. This storage room is smaller than, and separate from, the general library storage room.
- » Provide a general storage room near the entrance and circulation desk. In addition to library materials, this storage room will accommodate audio/visual (A/V) equipment, including shelved items and carts; provide power and data for checking equipment. Shelving shall be 24” and 48” deep.
- » Provide convenient access to student and staff restrooms from the media center.

» **Collections / Reference Area (Stacks) / Main Library Space**

- » Design the space to allow for different furniture arrangements and programs to occur simultaneously.
- » Accommodate reference materials including books, maps, atlases, globes and other items. In general, the reference collection is migrating towards electronic formats.
- » Provide 4’ high book stacks in the collections area, with 6’ high stacks at perimeter walls. (Intent is to allow for visual supervision.)
- » Pony walls with power and data may be desirable to accommodate furniture arrangements; avoid floor receptacles.
- » Provide a tack board, magnetic whiteboard and/or wall display areas.
- » Provide a classroom area within the main library area. Include space for tables and chairs to accommodate 36 students (minimum) and an instructor’s station (on which a document camera may be located). Provide a 12’ whiteboard flanked by 4’ tack boards, and interactive flat screen display.
- » Provide a computer area within the main library area to accommodate 16 computer stations (minimum).
 - » Provide computers for students for book look-up / catalog access with no login. Provide 1 or 2 additional, dedicated search computers.
- » Provide a social area with casual seating and tables, and 5 LF of countertop and base cabinet. This area needs to be able to be supervised from the main library area, or from the circulation desk.
- » Total seating within the main library area shall be about 140. Seating may be spread out among tables and chairs, computer areas, and informal seating areas.
- » Provide power and data on all walls.
 - » Libraries need as much power and internet access as possible.
 - » Provide flexible access to power. Power columns and poles are not allowed.
 - » Provide desks with cable management.
 - » Storage and charging phones.
 - » Provide tech storage needs with power for charging up to 30 units.
 - » Provide charging walls for personal devices and flexibility to change device cords. Look for furniture to facilitate charging. Provide a device charging system so that no grown up employees are responsible for the phones.
- » Provide daylight. Window sill height at most windows shall be 48” above floor to allow for shelving below windows. Meet lockdown requirements (refer to window treatments requirements).

- » Provide a sound system, projector, and projection screen. Coordinate requirements with APS IT through the FD+C staff architect.
- » Provide the ability to darken space for audio/visual use.
- » Provide individually controlled lighting banks to allow darkening of teaching areas.
- » Accommodate parent use of library.
 - » Libraries provide access to technology for parents. Consider a public kiosk with computers that doesn't require login.
 - » Provide public Wi-Fi in the libraries.
- » Family centers. Parents can come in and work on computers. All new schools will get parent rooms. A computer area can be located there.

» Librarian's Office/Work Room

- » Locate the librarian's office adjacent to the circulation desk.
- » The librarian's office shall include a work counter with base and upper cabinets along one wall.
- » Provide space for 1 workstation, 2 side chairs, and a 4' wide bookcase. The workstation shall accommodate a computer.
- » Provide a work room either as part of the librarian's office, or adjacent to it, and in close proximity to the circulation desk.
 - » Provide 20 LF of countertop with base cabinets, and 10 LF upper cabinets.
 - » The countertop serves as a prep area for copiers and printing machines.
 - » Provide power and data for equipment.
 - » Provide a single basin utility sink and separate ADA hand wash sink.

» Conference/Seminar Room/Group Collaborative learning area

- » Access to the conference/seminar room can be adjacent to or accessed from the collections area.
- » Provide a dividable conference/seminar room with a total capacity of 12 to 16 occupants. Accommodate various uses including meetings, presentations, and group study.
- » On each side of the dividable conference/seminar room, provide:
 - » 8' whiteboard
 - » 4' tackboard
 - » Rough-in for interactive flat screen

GRAPHICS/AV PRODUCTION CLASSROOM AND LAB

- » The Graphics and Audio/Visual Production Area may be used by staff and students. It consists of the following 3 spaces:
- » Production Classroom. Include:
 - » Countertop with base and upper cabinets
 - » Countertop with space for 4 to 8 computer graphics workstations
 - » Island countertop with base cabinets each side, 8 – 10 LF
 - » (1) 12' whiteboard with smart board projector
 - » (1) 4' tackboard

- » Production Lab (recording space). Include a blue screen/green screen on one wall for video backdrop for school announcements and other video activities.
- » Production Storage Room that accommodates 18" deep shelving.

COMPUTER LABS

- » CMP statement of program needs will determine number of computer labs required.
- » Each lab shall accommodate 40 student stations and 1 instructor's station.
- » These computer labs may also be used for computer-based testing.
- » Provide access to the computer labs from the Media Center, with visual supervision from the circulation desk.
- » Provide one wall of countertop, base cabinets and upper cabinets for peripherals and supplies in each computer lab.
- » Provide power and data as necessary to support equipment.
- » Provide 12' whiteboard, rough-in for interactive flat screen, 4' tackboards flanking the whiteboard, and (2) 8' tackboards all other walls of each computer classroom.

PROFESSIONAL ROOM

- » The professional area is a research room for faculty and staff that also allows for teacher/librarian collaboration. In the professional room, provide:
 - » Space for a conference table for 8 people.
 - » 2 countertop workstations (with power and data outlets to accommodate computers).
 - » An area for casual seating (with access power and data outlets).
 - » Space for book shelves.

BOOK ROOM

- This is a central book and teaching materials storage room that serves the entire school. It can be located either with the Media Center or with the central administration. Include:
- » A powered, movable storage shelf system for compact storage of text books.
 - » Lighting layout to accommodate the movable storage system.
 - » An overhead counter door with counter for textbook distribution. Provide sufficient space for student queues at this door (usually queues from the hallway).
 - » Provide built-in countertop worksurface, including 1 workstation.

PERFORMING ARTS CENTER (PAC)

- The PAC consists of an auditorium, a black box theater, and drama/theater arts instructional and support areas. The auditorium shall be located adjacent to the black box theater for shared support space. Music and other fine arts areas should be located adjacent to the PAC for program synergies.

AUDITORIUM

- The PAC auditorium includes a stage with fly loft and backstage area, orchestra pit, and seating for 450 people.

- » Provide a pre-function lobby area with ticket booth and public restrooms.
- » Configure the auditorium, including pre-function area, for after-hours public access while securing other parts of the school.
- » Acoustically tune the auditorium, and control reverberation time in accordance with current ANSI standards.
- » Provide upholstered auditorium seating on a sloped floor. Coordinate the rake of the floor with sight lines to the stage.
- » Provide ADA access from the seating area to the stage, the orchestra pit, and to the control room areas. Ramp access is preferred.
- » Provide a gallery space separate from and behind the last row of seats to transition from the pre-function lobby to the auditorium seating area.
- » Stage requirements:
 - » Provide proscenium arch with apron.
 - » Provide fly loft with sufficient height necessary for vertical movement of flats and curtains.
 - » Provide a wood stage floor system consisting of hardboard surface, double layer plywood underlayment, wood sleepers, and vibration pads.
 - » Provide a backstage area within the stage enclosure, but behind the curtains, to provide space for staging sets during productions.
 - » Provide dead-hung and motorized pipe rigging.
 - » Provide a motorized projection screen sized for the auditorium (approximately 18' x 24').
 - » Provide typical draperies: Grand Valence, Grand Drape, 4 Borders, Midstage Traveler, Scrim, Upstage Traveler, and Cyclorama.
- » Other theater systems requirements:
 - » Provide house and theater lighting controlled by dimmer racks. Locate the dimmer racks in a separate room with adequate cooling and sound isolation. Provide a secondary dimmer control station within the auditorium seating area.
 - » Configure auditorium lighting systems for flexibility and pre-set scenes.
 - » Provide acoustic response for spoken word and musical performances without reconfiguration.
 - » Provide a catwalk over the auditorium, with clear view of stage but concealed from the audience, for lights and sound equipment.
 - » Provide dual pipe battens for stage electrics, and single pipe battens for other line sets.
 - » Provide motorized battens for raising and lowering lights and curtain/equipment supports, to eliminate the need for a grid iron. Locate the control center for motorized battens above or near the stage operator's control station (with lock).
 - » Provide space for tormentor lights on each side of the hall.
 - » Provide a control room at the rear of the auditorium, with clear sight lines to the stage and orchestra pit.
 - » Provide space adjacent to, and on each side of, the control room for follow-spot lighting.

- » Provide a sound control station near the center of the auditorium seating area, with sound and lighting control systems linked electronically to the control room. Provide a voice system between the station and the control room.
- » Provide cross-over access outside of the stage enclosure to allow performers to move from one side of the stage to the other without disruption to a performance.
- » Orchestra pit requirements:
 - » Pit cover: Removable pit filler system to be comprised of acoustically-dampened honeycomb core decks, aluminum beams and columns that are pinned together for easy installation and removal. Decks are to be independent of each other allowing for individual decks to be removed for easy access to or from the pit area when the pit filler is installed. Deck finish to match adjacent stage.
 - » Size the pit to accommodate a small performing group.
 - » Position the pit to balance sound from the pit and from the stage. At least one position in the pit (which may be raised) must have visibility of the stage and the entire pit.
- » Piano storage requirements:
 - » Provide a storage room for a grand piano at either stage or pit level. If at pit level, provide a lift or an oversize elevator to move the piano from one level to the other.
 - » Provide HVAC to control temperature and humidity in the piano storage room.
- » **Drama Classroom**
 - » Provide a drama classroom with features as per a general classroom.
 - » Locate the drama classroom adjacent to the dressing, make-up, and wardrobe rooms. (During productions and performances, the drama classroom functions as the Green Room.)
 - » Configure the drama classroom for student access, while other areas of the PAC, including auditorium and black box theater, are secured.
 - » Provide a drama office with visual supervision of the classroom area.
 - » Provide a storage room.
- » **Black Box**
 - » If feasible, locate the black box theater adjacent to the auditorium.
 - » Adjacency between the black box and the auditorium provides the ability to share support space including: staging/set-up areas, storage rooms, the pre-function lobby, and public restrooms.
 - » The black box theater shall be a rectangular space.
 - » Provide space for portable risers to accommodate 70 - 100 seats.
 - » Provide a wood stage floor. The floor may have a concrete border around the perimeter.
 - » Tune acoustics for spoken word and small music performances.

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- » Provide a wire tension grid above for stagecraft.
 - » Provide access to the tension grid from outside of the space.
 - » The grid shall accommodate a maximum live load of 15,000 pounds, and a live load on any one pipe hanger of 700 pounds.
- » Provide support and power for theater lighting around the perimeter of the room, and on the tension grid.
- » Provide a theater sound system.
- » Provide an equipment storage room for the portable risers, chairs, cart for transporting the risers, and other equipment.
- » Provide a staging/set-up room.
 - » May be part of the PAC work area/scene shop.
 - » Locate adjacent to the black box theater, for backstage operations and support.
 - » Locate adjacent to the receiving area.

» Back of House

- » The back of house spaces support both the auditorium and the black box theater, as well as drama curriculum.
- » Provide a work area (scene shop/set-building) with convenient access to the auditorium stage and the black box theater. Include the following:
 - » Areas for staging of flats and for storage of set construction supplies.
 - » Power for tools and equipment for set fabrication and construction.
 - » Data drops.
 - » Whiteboard and tackboard.
 - » Large stainless steel work sink.
 - » Custodial closet with sink.
- » Provide a general storage room for make-up and supplies.
- » Provide separate make-up rooms for girls and boys.
 - » Include 24 LF of make-up counters in each room, with mirrors, make-up lighting, and power for grooming devices.
- » Provide separate girls and boys dressing rooms.
 - » Include a full length mirror in each dressing room, and 12 coat hooks in each student dressing room.
- » Provide girls and boys restrooms.
- » Provide a wardrobe workroom with separate entry and exit doors for efficient circulation before and after performances. Include:
 - » 18 LF total of base cabinets with open shelves, arranged in a tee shape; 14 LF against the wall and a 2' x 4' stem, open below, that projects into the room (this counter is for garment assembly and repair).
 - » Washer and dryer, with adjacent 30" wide base cabinet and countertop.
 - » Wall-mounted garment rack system.
 - » Wardrobe storage room with double door access from the wardrobe workroom.
- » Provide a receiving area to accommodate theater supplies, lumber, sheet materials, and lighting and sound equipment. Include an overhead coiling door to an outdoor receiving area or loading dock.

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PHYSICAL EDUCATION AND ATHLETICS SPORTS

All physical education and athletic facilities, including exterior playing fields, must be equal (quality and quantity) for male and female per Title IX requirements and for parity between high schools. Some areas, such as the Training Room and Weight Room, will be shared by the sexes.

In addition to curricular physical education classes, the gymnasium and related spaces accommodate high school competitive athletic sports teams. Among the team sports that are usually offered are football, soccer, volleyball, cross country/track, basketball, wrestling, swimming (usually off-site or at a joint-use facility), baseball, softball, and, usually off-site, golf and tennis. Other sports or activities may include rugby, field hockey, lacrosse, dance, cheer, ballet and folklorico.

» Main Lobby with Ticket Sales and Snack Bar

- » Provide a main lobby for 400 occupants (due to no re-entry policy at APS events). Using an occupant load factor of 7.5 SF, the main lobby shall be approximately 3,000 SF.
- » In the main lobby, provide trophy display cases (6' high x 16' long) protected by railing(s).
- » Plan for message boards and illuminated signage.
- » Provide a ticket booth with countertop, under-counter drawer, power, and point of sale data drop near the main lobby entry.
- » Provide public restrooms, including a unisex family restroom, with convenient access from the main lobby.
- » Provide a snack bar with:
 - » (2) 6' wide serving windows. Each window shall have a lockable, rolling door (fire-rated, automatic closing) that seals tight to a stainless steel countertop.
 - » At each serving window, provide countertop, cabinets with 2 drawers, and open shelving.
 - » Within the snack bar, provide a hand sink, full refrigerator, and ice maker. Provide space and utilities for (2) reach-in beverage coolers, and (1) reach-in freezer. Provide countertop area with utilities for a (3) beverage and drink machines. If run by DECA, see DECA section.
 - » On the back wall of the snack bar, provide a glass display and (2) full length shelves for display.
 - » Provide adequate power for heating and vending equipment, (6) countertop heating and warming devices (minimum), and the ice machine. Check electrical standards for circuit requirements. Provide water supply floor drain for the ice maker condensate line.
 - » Provide data drops for point of sales devices.
 - » Provide a service room, accessed from the concessions area, with a 3-compartment sink equipped with commercial spray hose in 8 LF of counter with upper double shelves and 3' x 3' drying rack. Provide a mop sink in the service room also.
 - » Provide a storage room for dry goods, accessed from the snack bar. Include (2) 4' wide by 18" deep wire rack shelving units.

» Main Gym

- » Provide public access to the main gym from the main lobby
- » Locate the main gym to provide direct access to the athletic fields, and away from classrooms.
- » Provide a minimum 10 foot safety zone between the courts and walls. Provide safety wall padding at each end of the main court and at obstructions. Wall pads shall meet the minimum ASTM standards specification for impact performance requirements.
- » Minimum ceiling height in the main gym shall be 30 feet. No ductwork or lighting below 30 feet.
- » Provide a maple hardwood floor system. Provide wood gym floor protective cover with storage cart(s), to be stored in the gym storage room.
- » Stripe the floor for a main basketball court (50' x 94'), 2 additional courts, and a volleyball court co-located with the main basketball court.
 - » The preferred arrangement is for the 2 additional basketball courts to be cross-courts in relation to the main basketball court.
- » Provide 6 electrically retractable basketball goals with clear backboards and break away rings. Meet NCAA and NFHS Standards.
- » Provide volleyball sleeves with caps, standards, and nets. Arrange volleyball courts for 1 main court and 2 cross courts; each volleyball court shall have separate net supports.
- » Provide ADA accessible seating areas in main gym and mezzanines.
- » Provide powered telescoping bleachers, on main floor (wall-attached) and on mezzanines (reverse-fold), with one-piece molded bench type plastic seating. Flex bleacher rows are not allowed. Provide a total capacity of 3,300 spectators (1.5 x school enrollment capacity) when fully extended. Provide minimum 8 foot clear height from top of bleachers/railings and bottom of the roof structure, lighting, or ducts. Verify ADA seating locations with FD+C.
 - » Provide hinged front skirt for cleaning. Limit switches.
- » Provide 2 scoreboards for visibility from bleacher seating, asymmetrical from the centerline of the court.
- » Provide an electrically-operated divider curtain across the width of the gym to separate the 2 cross-courts for PE classes. Roof structure shall accommodate the weight of the curtain.
- » Provide public address and intercom system per APS IT requirements; provide a dedicated room for A/V head-end equipment, with view of main gym. Lighting controls shall be nearby.
- » Provide a projector, screen(s) and provisions for hard-wired and wireless microphones.
- » In addition to the A/V requirements noted above, provide power, data, and microphone connections at the score table location.
- » Provide a lockable main gym storage with double door clear access (removable or no mullion), for athletic equipment, scorer's table, other tables, a lecturn, and at least 200 folding chairs on carts. Ceiling height shall accommodate volleyball poles.
- » Provide an additional main gym storage area (separate or subdivided) for wood floor cover carts and for competition wrestling mats. Provide door threshold configurations

that allow space for maneuvering of carts loaded with wrestling mats and gym floor covers.

- » The GC shall provide and install all gymnasium related shelving. All shelving must be anchored to the floor.

» Main Gym Mezzanines and Bleachers/Adaptive PE (APE)/Multi-Purpose

- » Mezzanine must be ADA accessible. Provide public access (stairs and elevator) from the main lobby to the mezzanines. Consider an arrangement that allows for mezzanines and access stairs to be locked when not in use.
- » Provide a mezzanine for additional bleacher seating on each side of the main gym, above the main bleachers, as part of the total seating capacity to be accommodated (i.e. 3,300 (1.5 x school enrollment capacity)).
 - » Consider impact of railing design on spectator vision to game floor
- » The mezzanine spaces are additional teaching spaces for PE. To secure the railing side of the space:
 - » Retract the power-operated mezzanine bleachers towards the rail side of the mezzanine, forming a wall. If bleachers do not fold toward the rail of the mezzanine, provide an electrically-operated divider curtain across the length of the mezzanine to separate the mezzanine from the main gym below. Roof structure shall accommodate the weight of curtain.
- » Provide an office and storage room adjacent to the mezzanine for Adaptive PE. Also provide convenient access to restrooms from the Adaptive PE mezzanine.
- » Install athletic flooring surface at mezzanines when used for PE and athletics space.
- » Provide lockable multi-purpose mezzanine storage areas with double door clear access (removable or no mullion), for items used on the mezzanines, such as ping pong tables.

» Auxiliary Gym

- » Locate the auxiliary gym for public access from the main lobby.
- » Provide a minimum 10 foot safety zone between the courts and walls. Provide safety wall padding at end of courts and at obstructions. Wall pads shall meet the minimum ASTM standards specification for impact performance requirements.
- » Minimum ceiling height in the auxiliary gym shall be 30 feet. No ductwork or lighting below 30 feet.
- » Provide wood flooring as for main gym. Stripe the floor for basketball and volleyball courts and 2 basketball and volleyball cross courts. Courts shall be full competition size.
- » Provide a small scoreboard.
- » Provide six basketball goals with clear backboards and break-away rings. Meet NMAA and NFHS Standards.
- » Provide volleyball sleeves with caps, standards, and nets, arranged for one large court and two cross courts; each volleyball court to have separate net supports.
- » Provide an electrically-operated divider curtain across the width of the gym to separate the two cross-courts for PE classes. Roof structure shall accommodate the weight of curtain.
- » Provide 3 rows of power-operated folding bleachers along one wall only, for about 300 occupants (requires about 800 SF). Flex bleacher rows are not allowed, provide hinged front skirt for cleaning, and limit switches.

- » Provide an auxiliary gym A/V room. This room can be combined with the A/V room serving the main gym.
- » Provide a lockable auxiliary gym storage room for athletic equipment and folding chair storage, with ceiling height sufficient for volleyball poles.

» **Weight Room**

- » Provide access to the weight room via double doors (removable or no mullion) for moving equipment in and out.
- » The weight room shall be a rectangular space with a 12 foot ceiling.
- » The weight room shall be designed as one open room to accommodate free weights and training machines (some of which require power).
- » Provide an area separate from, but connected to, the weight room for circuit training equipment.
- » Provide an adjacent office with observation window to the weight room, including circuit training area.
- » Provide a storage room.
- » Provide rubber flooring system designed for free weight impacts.
- » Provide a mirrored (safety-glazed) wall.
- » Provide access to service sink to clean floors.
- » Provide safety light fixtures.

» **Wrestling Room**

- » Locate the wrestling room near the main gym, training, laundry room (for access to washers and dryers) and weight rooms.
- » Provide access to the wrestling room via double doors (removable or no mullion) for moving equipment in and out. Arrange doors to avoid swinging into/onto mats due to thickness.
- » The wrestling room shall be proportioned to accommodate wrestling mats (traditionally (2) 42' x 42' mats, may also be 40' x 40' mats, 12' roll mats, or 6' roll mats x 42' long). Verify with FFE if APS will provide new the mats and carts.
- » Provide additional space (6' x 42') within the wrestling room for stationary bikes and similar equipment.
- » Provide minimum 16' high ceiling.
 - » Provide anchors for climbing ropes.
 - » Provide chin-up bars and peg climbing board.
- » Provide 6' high wall padding all around. Coordinate padding with thermostats (for performance) and limit penetrations for other wall-mounted devices. Wall pads shall meet the minimum ASTM standards specification for impact performance requirements.
- » Provide a student shower area with 2 showers.
- » Provide a storage room for spare mats. The storage room shall include:
 - » Water-resistant flooring.
 - » A custodial sink for mopping down mats.
 - » A floor drain.
 - » A chemical storage cabinet.

- » Provide a storage space for competition wrestling mats. Competition mats are comprised of 6 rolls; each 12.5' long x 6' diameter. Competition mat storage may be provided either in the wrestling storage room or near the main gym.
- » Provide an office for the wrestling coach with observation window into the wrestling room and with space for a desk, file cabinet, and 4 chairs.
 - » Provide a restroom with shower and two 18" x 18" x 72" lockers with bench for use by the wrestling coach.

» **Multi-Purpose Rooms (PE Studio, Cheer, etc)**

- » Multi-purpose rooms can be used for PE, aerobics, gymnastics, dance, cheer, health, and weight classes.
- » Provided minimum 16 foot ceilings.
- » Provide a sound system in a lockable cabinet.
- » Provide separate cheer and dance offices, with 2 desks, 2 chairs, 2 file cabinets and one guest chair.
- » 2 dressing rooms, and a storage room to support each multi-purpose room.
- » Cheer requires a practice area to accommodate mats plus a minimum 10 foot safety zone on one end of the mats (54' x 70').
 - » Provide non-slip flooring.
 - » Provide mirrors.
 - » Provide a separate storage room for (9) 6' x 60' pads (which roll up to 6' long x 5' diameter). The pads are stored six rolls on end. Storage room shall have double door clear access. Avoid door thresholds that impede moving pads in and out of cheer space, and in and out of the main gym.
- » Dance requires a practice area of about 30' x 60' (same as competition), with a wood floor (high performance laminated type).
 - » Provide mirrors and bars in the dance area.
 - » For a remodeled space, if wood floors cannot be installed, provide a Marley floor.

» **PE Classroom**

- » Provide a general team/academic classroom to accommodate up to 100 students, with operable partition to divide space in half.
 - » Furnishing by FD+C FFE, typically 35 chairs per classroom, desk tables, teacher desk and chair and file cabinet.
 - » This space shall be used for training films, large team meetings, academic subjects such as Sports Medicine and Health, and other classes.
 - » This classroom can be combined with one of the multi-purpose rooms described above if appropriate flooring and other considerations are addressed.
- » Provide (2) 12' whiteboards, interactive flat screen at each teaching wall, and (2) 4' tackboards for each side of classroom.
 - » Provide power and data drops as for core classrooms. Provide a dedicated circuit for computer cart recharging.
- » Provide a storage room.

» **PE Locker Rooms**

- » Locate PE locker rooms to provide direct access to the main gym and convenient access to athletic fields.
- » Visiting teams may use PE locker rooms for games, and will need a white board and space for the coach to talk with the team.
- » Provide 1 locker room each for boys and girls. Each locker room shall accommodate 120 students per class period.
- » Provide polished, sealed concrete flooring.
- » Provide a minimum of 120 lockers each for boys and girls.
 - » Provide ventilated athletic type lockers, with baked enamel welded steel construction, sloped tops, and no moving parts.
 - » Provide some tall lockers (12" wide x 12" deep x 60" tall).
 - » For each tall locker, provide seven box lockers (12" wide x 12" deep x 12" tall).
 - » Configure lockers to keep overall height below eye level for easier supervision.
- » Provide 2' wide bench for lockers, either mid-aisle or as part of the concrete base for the lockers.
- » Provide (1) 8' whiteboard and (1) 4' tackboard in the locker room for announcements.
- » Provide restrooms and changing areas.
 - » Provide floor drains in the restrooms and changing areas.
- » Provide an instructor's supervision station in each locker room with power and data for a laptop. The supervision station shall have good visibility of the locker room.
- » Provide a PE storage room with (4) 4' wide x 2' deep x 7' tall storage cabinets.
- » For students entering locker rooms from the exterior, provide walk-off mats at that door.

» **Athletic Locker Rooms**

- » Locate athletic locker rooms to provide direct access to the main gym and convenient access to athletic fields.
 - » Locker room distance to track must be comparable for boys and girls.
- » Access from gym to locker rooms may not pass through the lobby. Provide one combined locker room for all boys' sports and one combined locker room for all girls' sports.
- » Provide polished, sealed concrete flooring.
- » Provide minimum 110 lockers for football; 80 lockers for boys' other sports; and 190 lockers in the girls' locker room. (I.e. Equal number of boys and girls lockers.)
 - » Football lockers shall be 18" wide x 18" deep x 60" high.
 - » Non-football lockers can be smaller.
 - » Girls and boys lockers shall be equal in quality and quantity.
 - » Configure lockers for easier supervision.
 - » Lockers shall be ventilated athletic type, with baked enamel welded steel construction, sloped tops, and no moving parts.
 - » Provide 2' wide bench for lockers, either mid-aisle or as part of the concrete base for the lockers.
- » Provide (1) 8' whiteboard and (1) 4' tackboard in the locker room for announcements.

- » Provide (2) 8' whiteboards and (2) 4' tack boards to serve (2) team meeting areas within the locker area (an E-shaped arrangement of the lockers will define 2 such areas).
- » Provide restrooms and changing areas.
 - » Provide 2 shower stalls with curtains for each locker room.
 - » Provide floor drains in the restrooms and changing areas.
- » Provide for a coach's supervision station in the locker room.
- » Provide a coach's supervision station in each locker room with power and data for a laptop. The supervision station shall have good visibility of the locker room.
 - » For students entering locker rooms from the exterior, provide walk-off mats at that door.

» **Athletic Director's Office (private)**

- » Provide a private office with windows to view traffic in and out of locker room area.
- » Locate this office close to the gym; as the Athletic Director is the Gym event manager.
- » Provide space for 1 desk, 6 chairs, 1 table, file cabinets, and a 4' wide bookcase.
- » Provide an 8' whiteboard and 4' tackboard.
- » Provide a storage room with a 4' wide tall cabinet and 6' high wire shelving unit for storage.

» **PE Instructor Offices (private)**

- » Provide (2) PE instructor's private offices near the athletic coaches' open office area.
 - » Provide space for a desk, file cabinet, book cabinet, and 6 chairs.
 - » Provide male and female restrooms for PE instructors adjacent or nearby. Include water closets, lavatories, showers, lockers, and changing areas.

» **Athletic Coaches' Office Area (Open Workstations)**

- » Provide an open office environment for athletic coaches. The open office environment shall accommodate all athletic team coaches.
 - » Opposite seasons and contract coaches to share offices for efficiency.
- » Locate the office area near athletic locker rooms and with convenient access to exterior fields and primary practice rooms.
- » Provide a huddle space adjacent to the open office area for private conferences.
- » Football may include 1 head coach and up to 9 assistant coaches. Football coaches will be accommodated in the open office area with other sports teams.
- » A typical coaches' office area is described below. This should be modified in conjunction with FD+C/CMP and the school's athletic department to accommodate the expected number coaching staff based on the school's target enrollment.
 - » Provide a 24" deep writing counter around perimeter of room, with space in center for additional tables and staging of equipment.
 - » Provide space for task chairs, guest chairs, and lockable file and storage cabinets.
 - » Provide a 6' long counter with base cabinets and upper cabinet. Include hand sink, full size refrigerator, and power for small appliances.
 - » Provide male and female restrooms adjacent or nearby. Include water closets, lavatories, showers, lockers, and changing areas.
 - » Provide a 12' whiteboard, (2) 4' tackboards, and equip for interactive whiteboard.

» Athletics Storage

- » Provide either individual storage rooms for major team sports, or a large storage area subdivided with mesh partitions.
 - » Provide 10 storage rooms/spaces with interior access. These rooms/spaces will be assigned to Volleyball, Girls Basketball, Softball, Boys' Basketball, Baseball, Soccer, Track/Field, Golf, and Tennis. (1 storage room/space will be unassigned.)
 - » Provide 1 storage room with exterior access for PE/athletic equipment. Space will be used for shelving and floor storage. Soccer goals and track/field equipment may be accommodated in this room. This room may also house Gators (or equivalent vehicles).
- » Provide a Football Equipment Storage Room.
 - » Accommodate storage for 140 helmets on storage racks, and pads.
 - » Provide a large stainless steel sink with drain board for cleaning of equipment.
 - » Provide space for portable game lockers to be stored.
 - » Provide an overhead counter door/counter for dispensing and receiving of equipment at beginning and end of season.

» Training Room and Therapy Pools

- This space accommodates therapy, taping, and meetings with trainers.
- » Locate the training room to be equally accessible to boys and girls (primarily athletics sports).
 - » Provide a 10' ceiling (minimum) in the training room.
 - » Provide an area to accommodate equipment, including a range of motion machine, elliptical machine, and stationary bike. Provide power for equipment.
 - » Provide a first aid area with a full-size, lockable refrigerator/freezer.
 - » Provide a treatment area with 4 portable training/massage tables, 4 short movable taping tables, a large capacity, reach-in ice machine (see Appendix H), a hand sink at the taping area, 6' countertop with workstation, and base and upper cabinets.
 - » Provide 8 quad receptacles (minimum) for each training/taping table and at the first aid counter.
 - » Provide whirlpool area in a moisture-resistant environment, with visual access to the training room (and privacy curtain). Include:
 - » Space for 2 large above-floor whirlpools and 1 arm whirlpool with temperature mixing check valves.
 - » Wall hose bib to fill whirlpools.
 - » Slip-resistant, ceramic tile flooring with floor drain.
 - » Space for tables, chairs and 4' wide tall clothing storage unit.
 - » Provide restroom with toilet, urinal, and lavatory, accessories and mirror.
 - » Provide a trainer's office with view window and blinds into training room, and space for 1 desk, 1 file cabinet, a table and 2 chairs.
 - » Provide a secure storage room with wire shelving (12" deep x 60 LF), and space for wheelchair, crutches, canes, drink coolers, and travel bags.
 - » Provide special hot water with temperature control at valves and hook-ups, humidity control, service sink in or nearby to sterilize floors, and a floor drain for ice maker.
 - » Provide safety lighting units with high illumination levels.

- » The training room typically has portable AED which requires charging and battery. AED should be in an area that will be unlocked and accessible after business hours. AED is owner provided, GC installed.

» Ice and Laundry Room

- » Provide a room (or rooms) for general laundry and ice pick-up room. Locate the room(s) near the athletic locker rooms and near an exterior wall or roof for dryer vents. Include:
 - » 2 large capacity washers
 - » 2 large capacity dryers
 - » 1 large ice maker, (see Appendix H).
 - » (1) 4' x 8' folding table
 - » (1) 4' wide tall cabinet for supplies
 - » Floor drain and venting
- » Provide a separation barrier between ice machine and laundry area.

» Junior Reserve Officer Training Corps (JROTC)

- JROTC offers federally-sponsored elective classes at high schools. This program may have up to 200 students participating, and may be part of a Business or similar Academy. The JROTC area is typically a separate suite of spaces at the school. The JROTC suite shall have direct exterior access, and convenient access to the gym and weight room. Provide concrete floors, durable walls, and acoustic ceilings for all spaces (except restrooms, which require hard ceilings).
- » Consult with CMP for JROTC spaces / utilization and funding. JROTC requirements could be different for each service. Each HS will have only one service sponsor.
 - » Supervision and proximity of spaces is key. There may be up to 4 teams and only two supervisors.

» JROTC Multipurpose Classroom (+/- 2,2920 NSF)

- » Provide a long, rectangular, multi-purpose classroom space for drill, firing range, and other activities. Include:
 - » Ideal size is 80 feet x 45 feet. One end structurally needs to support steel plate for firing range.
 - » Base cabinets (12 LF).
 - » Power and data.
 - » 12' ceiling (minimum).
 - » Acoustical isolation from other spaces.
 - » Sound attenuation within the space.
- » The firing range is 50' long with addition zones for queuing and safety. The range and zones shall be located in the 80' length of the multi-purpose room. Requirements as follows:
 - » 50' long firing range
 - » 8 to 10 firing lanes (3'-6" minimum width), with floor markings for firing positions
 - » 8' deep queuing area behind the firing line
 - » 10' deep safety zone behind the queuing area
 - » 10 gauge steel on 8' high plywood special construction on the face of the firing wall

- » Provide lighting to illuminate the firing wall, in addition to general area lighting.
- » Electronic targets are used now. Provide power and data needs for targets.
- » Provide space for 2 instructor workstations with power and data within the multipurpose classroom. Private offices are not required.

» **Air Rifle Storage, Training Aids, and Drill Storage (+/- 380 NSF)**

- » Locate storage within the JROTC suite.
- » Storage must be secure, and capable of maintaining low humidity levels.
- » Provide heavy duty wire mesh shelving or racks for rifles and ammunition storage.
 - » Rifle racks may be further secured from other equipment by expanded metal cage construction.
 - » The APS carpentry shop has construction some rifle racks for JROTC.
- » Provide heavy-duty metal shelving for items including magnetic compasses, GPS unit and devices, digital camera, digital camcorder, LDC projector and digital television, as well as drill rifles and parade swords, Color Guard materials, and miscellaneous supplies.
- » Provide space to store marksmanship backstops, shooting mats, and kneeling pads.

» **Property (Uniform) Storage (+/- 360 NSF)**

- » Locate storage within the JROTC suite.
- » Provide racks for uniform storage.
- » Uniform area must serve a minimum of 100 students. (Programs typically have 125-175 cadets each year. The area also depends on the service; Marine Corp has larger type of uniforms.
 - » Provide power and data (for computer based inventory). Consider access to a laundry area near the uniform storage. Laundry area can be shared with other school PE, PAC, and athletic programs. Residential quality washer and dryer is adequate.

» **Equipment and Maintenance Area (+/- 395 NSF)**

- » Provide a utility sink.
 - » Provide a refrigerator
 - » Provide casework, approximately 7 LF x 2 feet deep of base and upper cabinets with countertop.
 - » Provide space with power and data connections for activities such as uniform ironing, and servicing rifles and other equipment.
 - » Provide a mirror for uniform fitting.

» **Restrooms**

- » JROTC requires access to restrooms for students and adults.
 - » Provide in-suite restrooms if general restrooms are not available after hours for JROTC use.
 - » Restrooms require space for changing clothes and trying on uniforms.

- » If provided, in-suite restrooms require:
 - » 2 student restrooms.
 - » 1 unisex adult restroom.

» **Classroom Spaces**

- » JROTC requires access to two classrooms to support 40-45 students at one time. Provide access to shared classrooms with adjacency to JROTC suite.
 - » Classrooms could be configured as one oversize CR but dividable: one 1200 SF classroom and dividable with acoustical bi-fold, or could be two smaller classrooms about 600 - 650 SF in size.
 - » Classrooms should support STEM program activities.

STUDENT ACTIVITIES CENTER

- The Student Activities Center shall be centrally located. Include:
- » A flexible activities room with built-in casework storage, including a countertop work surface with a sink. The activities room may include a contact window with roll-up counter door. Provide power and data for equipment, including student ID equipment, and space for desk/chair and/or table, and files.
 - » An office for the Activity Director (staff member), with voice/data drops.
 - » Consider locating a vending area in the main circulation space, near the student activities center.

SCHOOL NURSE

- Locate the health center near the main office and lobby for easy access by students and parents and to allow for quick backup by staff in an emergency. Provide separate, direct exterior access to a vehicular circulation/parking area for emergency vehicles. Doors shall accommodate a gurney (36" clear, minimum).
- » Provide a waiting area to seat 6 to 10 people. This space should be visible from the nurse's office and health assistant's workstation. The people waiting should not be able to see into the treatment/recovery room.
 - » See Appendix C for the equipment list for all nurse suites.
 - » Provide a workstation for the Health Assistant. Include:
 - » Visual privacy of the Health Assistant's computer monitor.
 - » Visual access to the waiting area and treatment/recovery area.
 - » 8 LF to 10 LF of countertop, base cabinets and upper cabinets along one wall.
 - » Provide a nurse's office. Include:
 - » Limited access to this office due to files and medicines.
 - » (1) double-locked medicine cabinet (See Appendix C).
 - » Window(s) for natural light.
 - » Window into the treatment/recovery area and waiting area to supervise students.
 - » Acoustic speech privacy when the door is closed.

- » If the school has District SPED program, provide a SPED nurse's office, similar to the Nurse's office, but without a medicine cabinet.
 - » Provide a separate triage/cot area for general education students and another triage/cot area for SPED students. In each triage/cot area, include:
 - » 1 white, Energy Star, 18 cubic FT refrigerator with ice maker incorporated into 14 LF of lockable plastic laminate casework (approximately 34" high x 24" deep x 30" wide). Locate the refrigerator away from plumbing fixtures so that it does not require a GFCI outlet.
 - » 1 ADA stainless steel sink (approximately 14" x 16") with gooseneck faucet and lever handles.
 - » (1) 30" base cabinet with 4 small drawers side by side and 2 large drawers below.
 - » (1) 30" wide x 34" high x 24" deep storage cabinet.
 - » (4) 13" deep lockable upper storage cabinets over base cabinets.
 - » (1) double-locked medicine cabinet (See Appendix C).
 - » (1) 24" wide x 60" high safety mirror.
 - » 2 to 4 recovery cots (74" long x 24" wide x 18" high) separated into pairs by gender. Include privacy curtains around each cot to minimize spread of germs. Patients shall be able to view a supervisory person from the recovery cot if curtains are open. Include ability to dim the lighting in the cot area. Include duplex outlets at each cot for equipment.
- » Provide vision screening equipment.
- » Provide a storage closet for wheelchair, crutches, and other bulk item storage.
- » Provide a storage room for locking fire proof file cabinet (1 cabinet for every 500 students).
- » Provide 2 restrooms with ceramic tile floor and standard restroom accessories.
 - » For schools with District Special Education students, provide an additional restroom with space for Hoyer lift and changing table in restroom.
 - » Include a shower if required by the school's special education program.
 - » Provide a combination washer/dryer (not stacking unit) near the Special Education restroom.
- » Choose paint, tile, and other coverings to be easily cleaned and disinfected.
- » Flooring to be commercial grade sheet linoleum with welded seams.
- » All faucets in the health center shall be manual operation (no automatic sensors).
- » Provide exhaust fan in triage/cot areas and restrooms. In addition, provide operable window(s) if possible.
- » Provide phone/data port for each staff position (Nurse, Special Education Nurse, Health Assistant), and for a student-use phone. Provide a dedicated fax line and space for a printer/copier/fax machine in a private location.
- » AED equipment is typically located near the administrative area or student health center, and requires charging and battery. AED should be in an area that will be unlocked and accessible after business hours. AED is owner provided, GC installed.

STUDENT COMMONS /CENTRAL FOOD SERVICE/CAFETERIA

- » Student Commons shall serve as an indoor gathering area with access to common use facilities such as cafeteria/dining, snack bar, student activities, family/community room, administration, gymnasium, and library/media center. Ideally, the Commons area will integrate or flow into the Cafeteria / Food Service areas.
 - » Provide space for a variety of seating options.
 - » Provide power for opportunities for charging devices.
 - » Consider a raised performance area.
 - » The student commons is similar to an outdoor student gathering area.
- » Cafeterias serve as food serving areas as well as small assembly areas for school activities. The number of meals served varies among high schools; Food and Nutrition Services will provide information about meals served and staffing for each high school site.
- » Provide access to the dining areas via double doors (2 doors at 36" wide each) at all entrance/exit locations even if not required by code for egress width.
 - » Provide access to the cafeteria from the exterior for after school programs, while also providing ability to lock the kitchen and the remainder of the school. Provide one set of restrooms that are accessible from the cafeteria for use after hours.
- » Size the seating areas for 15 SF/student (minimum) with no more than 3 lunch periods.
 - » Plan the dining areas to accommodate typical APS seating; a combination of 60" round tables and 12' bi-fold models. Dining furniture will be provided and installed by the owner.
- » Design the cafeteria to encourage formation of single file serving lines.
 - » Provide separate dining areas and serving lines for the Ninth Grade Academy vs upper grades.
 - » Discuss with APS Food + Nutrition Service the option of self-service and/or cafeteria staff-serve. Typically, cafeteria staff serve the hot food items and students self-serve cold food items.
 - » Provide point-of-sale connections for computerized checkout units at appropriate locations, including: 2 (minimum) on serving lines.
 - » 1 in the cafeteria.
 - » 2 connections on parallel walls in the kitchen manager's office.
- » Provide a separate, lockable room for after school programs. Include:
 - » Access to the room directly from the cafeteria.
 - » Space for storage.
 - » A sink.
 - » Power for equipment, including a refrigerator (for milk and other cold items) and a re-therm unit for at-risk dinner program and/or homework dinner program.
- » Provide infrastructure for a flat screen (approximately 60" or 72").
- » Provide infrastructure for a ceiling mounted projector for large group meetings.
- » Provide a powered AV screen (approximately 108" x 108") mounted in the structure of the ceiling area.
 - » Provide a key operated switch, or locate the switch in a storage or custodial room.

- » Provide rough-in for a sound system.
 - » Locate sound system equipment in a storage room.
 - » Provide microphone and audio access in two locations.
 - » Install conduit so 4 speakers will cover space from stage to back of room.
- » Provide power and data outlets along a wall for multiple table use during registration.
- » Provide general and specialty lighting for activities within the Commons/Cafeteria.
- » Provide windows. Include:
 - » A view to the outside.
 - » Electrically operated shades for shading and lockdown.
- » Provide polished concrete floors.
- » Provide a designated area for recycle bins for paper, plastic, and aluminum.
- » Acoustically condition the Commons/Cafeteria:
 - » Reverberation Time Maximum: 1.5 seconds; Noise produced by HVAC and Building Utility Systems: Maximum 45 dBA; STC rating for the walls: STC 50; STC rating for windows or translucent panels: STC 35.

KITCHEN

See Kitchen requirements in Design & Construction Integrity Section.

- » The contract architect must meet with APS Food and Nutrition Services (F+NS) prior to designing the kitchen. Coordinate this meeting(s) through the APS staff architect. See Appendix D for Guide to Space Planning of a School Food Service Facility based on number of meals served.
- » Kitchen equipment shall be included in the general construction contract. Coordinate requirements for kitchen equipment, see Appendix E.

SNACK BAR

Generally there are two (2) snack bars in the high school – one near the cafeteria and one near the gym lobby. Both snack bars are mostly the same. See DECA section for their program needs.

- » Locate the food services snack bar near interior and exterior student gathering areas.
- » Provide about 4 service openings, (1 to 2 interior and 1 to 2 to the outside).
 - » Service openings shall be 18” wide x 30” high.
 - » Interior service openings shall have a lockable stainless steel fire-rated (as needed) roll door with stainless steel sill.
 - » Exterior service openings shall have inset vertical hung aluminum storm window units (or equal) to close off opening when not operating to prevent draft and insects.
- » At the exterior openings, provide effective cover from rain and sun for students.
- » Provide snack bar with warming only capabilities.
- » Do not include fryers, grills, or any equipment that requires a commercial hood.
- » Include 22 LF of HDL open base shelf cabinets with countertop to connect with the window serving areas.

- » Provide wire mold above back-splash of counter for warming equipment (up to 5 devices).
- » Provide stainless steel wire metal shelving along wall opposite from windows.
- » Provide (1) 3 compartment sink (each compartment shall be 10” x 14” x 12” deep) with faucet as accessories as per a commercial kitchen unit. Include 20” drain boards each side and 12” high stainless steel wall protection behind sink area.
- » Provide a hand washing sink.
- » Provide (1) point-of-sale data and power outlet at each pair of windows (2 locations, total) for interface with the food service computer sales system in the kitchen office.

» DECA Snack Bar

The DECA snack bar is generally the same as other snack bars in the school, with these additional program needs:

- » Provide a soda fountain machine. Fountain is not able to be shared with other snack bar vendors.
- » Provide electricity for:
 - » Hot holding equipment
 - » Ice machine
 - » Point of sale for each window. (Data and power). Avoid Wi-Fi for POS.
 - » Cameras at each monitor.
 - » Big refrigerators for drinks.
 - » Provide data for electronic menus, nutrition guidelines.
 - » Provide area for taped menus at windows.
- » Provide slat walls at back. Storage:
 - » Provide a large storage room with power for hot holding equipment and refrigerators.
 - » Provide adjacency to DECA classroom if possible.

STORAGE / CUSTODIAL

- » Provide a custodial closet in the kitchen.
- » Provide each dining area with a custodial closet.
- » Provide each dining area with a storage room for special events, folding tables and chair carts.
 - » Storage room doors shall allow for 72” clear opening.

OUTSIDE DINING PATIO

- » Provide a hard surfaced, well-drained patio area.
 - » Locate the patio adjacent to the snack bar and easily accessible by students from the cafeteria.
 - » The patio shall be half-shaded between 10:30 am and 1:30 pm.
 - » Provide a hose bib in the area for cleaning.
 - » Provide outlet for cleaning equipment with 30 amp GFCI circuit.
- » Provide tables, benches, and trash receptacles for up to 100 students.
 - » Tables, benches, and trash receptacles shall be exterior-rated, vandal resistant, vinyl coated expanded metal.

- » The general contractor shall provide and install the tables, benches, and trash receptacles.
- » Tables, benches, and trash receptacles shall be anchored.
- » Each trash receptacles shall have a 30 to 40 gallon capacity.
- » Provide general site lighting for the outside dining area (and adjacent socialization areas) to allow evening use for special programs.

ACADEMY AREAS

- » The administrative and academic spaces below are distributed between:
 - » One Ninth Grade Academy
 - » Upper Grade Academies
- » The upper grade academies will generally be organized by career or academic focus, with each academy offering multiple related career paths.
- » **Ninth Grade Academy Spaces**
 - » The Ninth Grade Academy generally includes spaces similar to upper grade academies, with the following unique requirements:
 - » Be physically separated from other academies to the extent practical.
 - » Facilitate student circulation from their academy to the media center, gymnasium, administration, dining, and transportation without navigating through large groups of upper grade students.
 - » Have its own administration and dining areas.
 - » The Ninth Grade Academy dining commons has the option to be supported by a warming kitchen, or by the school's main cooking kitchen. It will have a serving line and a dining area similar to the main cafeteria.
 - » The Ninth Grade Academy Administration area is similar to other academy administration suites but includes a social worker office.
- » **Academy Administration**
 - » A waiting area with space for seating for up to six visitors.
 - » A secretary/support area with space for 1 open office workstation to operate phones, intercom, and support the academy administration.
 - » One office for the Academy dean / assistant principal. Allow space for an L-shaped desk and round table with 4 chairs.
 - » A secure file room with limited access for academy records. The GC shall provide (1) 48" wide x 84" high x 24" deep lockable storage cabinet in each file room for supplies, forms, and brochures. Include space for a total of 3 to 4 fire-proof file cabinets (larger units), per each academy. Fire-proof file cabinets will be provided by the owner (not the GC).
- » **Counseling Area**
 - » Review needs for a particular school program with APS Counseling for information on traditional counseling allocations.
 - » Provide a self-contained counseling area. Access to the counseling area shall be controlled from the academy secretary/support station. The counseling area shall be located out of the general circulation space for privacy.
 - » Students can have direct access to counseling offices. Students should not have to talk to anyone to see a counselor. Waiting area by offices is for students.
 - » Prefer counselors located together or as part of an area where adults can serve the students right away. If there are mini-admins with the academy model, it's ok for a counselor in each area.

- » Consider a public access computer station for on line scheduling.
- » Provide offices for up to 5 counselors, distributed among the Academies. A HS will have 4 or more counselors which includes a college and career counselor and a cross-roads counselor. (In central Administration or in the central Special Education area there will be offices for 1 to 2 social workers, 1 transition specialist office, 1 head special education teacher, 1 evaluation/testing, and 1 to 2 speech and language pathologists.)
- » Office standard is 300 SF. Don't need a space as big as a classroom –1/3 size of classroom. Portables are not preferred.
 - » Counseling office requires privacy, therefore no FTE sharing of offices. Even a half time FTE must have a full office.
 - » For privacy, avoid glass. Counseling offices require sound isolation.
 - » Offices require a locked file cabinet. Also a secure storage room for a certain number of years is required.
 - » Printers need confidential and need to be close to the offices, and computers password protected.
- » **High School Wellness Room**

Per the APS Student, Family, & Community Supports Division, this space should be designed to help students relax and be mindful in order to improve focus on academic work. It is intended to be a short term (approximately 15 minutes) , first-tier, preventative support for students experiencing stress.

Wellness room is to be centrally-located on campus to encourage student access throughout the day. Proximity to common use areas such as the media center or student health is preferable.

 - » Staff work space requires a desk with small file storage, bookshelf, white board, and power and data for a laptop. Desk is to be located adjacent to door for students to sign in. The staff area requires docking/charging stations for iPads or similar devices that may be checked out by students.
 - » Work space is to be shared with a welcoming and comfortable student activity area. Flexibility for creating and re-arranging zones for individual and group restorative activities is required. Mix of soft seating, tables, white board, and data access for charging student devices is required. Examples activities may include: listening to music or guided meditations, coloring, arts and crafts, journaling, and reading.
 - » Room requires carpet and soft colors.
 - » Daylighting, color LED, and dimmable, zoned lighting is preferable where possible.
 - » Plants and/or nature images/textures are encouraged.
 - » Provide power and data/wifi as per a standard classroom.
- » **Conference Room**
 - » Provide a conference room with seating for 14 people.
 - » Provide casework, (1) ADA sink, and an under-counter refrigerator in each conference room. Base casework shall be approximately 7' long x 2' deep. Provide lockable upper cabinets (24" high x 12" deep). Sink basin shall be stainless steel, approximately 14" x 16" x 6" deep with gooseneck lever handle faucet. Provide outlets at the back of the counter.

ACADEMIC AREAS

- » **General Classrooms**

General classrooms shall be standardized to provide flexibility to move classes between different grade levels.

- » Casework, Furniture, and Equipment
 - » Provide built-in storage, including: 36”W, 84”H, 24”D tall storage with adjustable shelves, 12’L, 30”H, 12”D upper storage units with adjustable shelves, 12’L, 34”H, 24”D lower storage units with adjustable shelves and drawers.
 - » Key all storage alike within each classroom; each classroom storage key to be unique.
 - » 28 LF of magnetic marker & 4’x4’ tack boards with tack strip on top of all boards.
- » **Science Classrooms and Laboratories**
 - » Provide a minimum of one science laboratory per small learning community. A general science classroom requires water, sink, electricity, shelves, and cabinets. Consider an arrangement of two classrooms sharing a single laboratory space.
 - » Arrange student stations in the laboratory so that students do not have their backs to the teaching station (i.e. avoid perimeter workstations).
 - » This setup could include 4 islands for students to work in groups. Each island includes 2 student sinks and utility connections (power, data, gas, and water).
 - » At least one group station shall be ADA compliant.
 - » Consider arrangement for the teaching station at a long wall, so that students are not as far away from the teaching wall.
 - » Provide lots of white boards. No chalk boards.
 - » Provide retractable outlets from ceiling, like those in some art or computer rooms, to support lab work done at tables. Ceiling outlets allow more modular/flexible use of the classroom. Watch the ceiling height and site lines.
 - » Plumbing:
 - » Provide master shut off valves for gas, water, and power near the teaching wall.
 - » Provide a dual-head emergency eye-wash combined with shower in each laboratory.
 - » All sciences require three sinks (see additional requirements for Chemistry classrooms).
 - » Provide deep sinks only. Shallow sink sprays all over the place. If only two sinks are provided, both should be deep.
 - » Sinks shall have gooseneck faucets.
 - » Provide an ion exchange unit for water treatment for sinks.
 - » Provide a disposal.

Note: Chemically treated biology parts are not disposed of in the sink.
 - » Owner will provide a fire blanket in each laboratory.
 - » Provide an exhaust fan in each laboratory. Accommodate scientific equipment heat loads when sizing HVAC equipment.
 - » Provide a variety of casework for storage options (minimum 80 LF). Requirements as follows:
 - » Casework shall be wood, with epoxy resin counter-tops and sinks.
 - » Casework shall be lockable. Key locks within each laboratory alike, but unique to each different laboratory.
 - » Include base cabinets with adjustable shelves, totes, and drawers. Include 18” deep upper cabinets with sliding glass doors. Include full height cabinets (approximately 48” wide X 24” deep X 84” high with glass doors).
 - » Provide a hood for all science classrooms. If available teachers would use it.

- » Provide direct access to a prep room from the laboratory. Prep rooms may be shared among laboratories. The laboratory prep room will include the following items. Some equipment will be provided by the owner; coordinate with staff architect:
 - » An epoxy resin sink with gooseneck faucet.
 - » Dishwasher (approximately 24” wide).
 - » Refrigerator (full size with freezer).
 - » Glass drying rack (approximately 36” X 36”).
 - » Similar range of casework storage options as in the laboratory.
 - » Space for shelving to store science equipment. Chemistry shelving needs to be wood; other science shelving should be metal.
 - » Cabinets specifically designed for chemical storage.
- » Provide a chemical storage room (to be shared among science labs).
- » Chemistry Classroom additional requirements:
 - » Only chemistry labs require gas. Gas is not required in classrooms for biology and physics and environmental science and astrogeology.
 - » Chemistry rooms require six sinks.
 - » In Chemistry Labs, provide one fume hood each, 4 feet wide, with epoxy top and cup sink, water, gas, power, and light, designed to be fully accessible.
- » APS Risk Management maintains a list of chemicals used in high school science programs and provides safety training for teachers. Chemicals may include flammables, non-flammables, corrosives, acids, bases and others and may require venting; chemicals must be stored in appropriate cabinets in a locked room. GC should provide and install cabinets with direct ventilation. APS provides other cabinets.
- » Some science classrooms will support digital labs. For these labs teachers use the MAC carts and iPads.
- » Provide an outdoor garden area with irrigation.
- » Provide a greenhouse. Culinary arts will share the greenhouse.
- » **Computer Labs, Elective Labs, Flex Labs, and STEAM Spaces**
 - » As 1:1 student devices become the District policy, dedicated computer labs, including those for standards-based testing, evolving into flexible technology labs for educational programs including STEAM. Verify the number of dedicated computer labs with CMP during the programming design phase.
 - » Each lab shall have capacity to accommodate 37 equal computer workstations (32 student and 5 support devices). Each station shall be 36” wide X 30” deep X 26” high using specialized counters.
 - » Electrical Engineer must confirm computer amps per device for circuit requirements.
 - » Provide at least one ADA station per lab.
 - » Consider locating computer labs as centralized collaborative spaces within Small Learning Communities and/or Academies.
 - » All wiring shall run in a wire/cable management system along or below the counters.
 - » Avoid floor outlets.
 - » Consider a lab storage room for every 2 to 4 computer labs, based on location. Include:
 - » Power and data to plug in the COW cart.
 - » Four 30” wide X 34” high X 24” deep lockable base cabinets with shelves.
 - » One 36” wide X 34” high X 24” deep six-drawer unit

- » One ADA sink unit with 14" X 16" X 16" deep stainless steel sink with gooseneck lever handle faucet
- » 20 LF of upper cabinets made up of 36" wide X 24" high X 13" deep lockable cabinets with two adjustable shelves, except for a shorter unit over the sink.

» Elective Labs

Elective Labs, including technology and vocational labs, can be used for general science, computer, or other hands-on learning curriculum. Labs can provide an industrial setting for curriculum requiring the use of heavy machinery and/or noisy activities.

Consider a maker space a place to cut wood, work with pvc, etc. for students to build and test things.

- » Locate elective labs for convenient access to associated academy(ies)
- » Provide 200 SF of prep space in addition to classroom area for each elective lab.
- » Natural light, technology, and interior finish requirements are the same as per general classrooms.
- » Casework, Furniture, and Equipment
 - » Provide casework as for general classrooms; additional casework may be required by the program housed.
 - » Provide whiteboards, tackboards, and pencil sharpener blocks as for general classrooms.
- » Provide retractable outlets from ceiling, like those in some art or computer rooms, to support lab work done at tables. Ceiling outlets allow more modular/flexible use of the classroom. Watch the ceiling height and site lines.

PROJECT-BASED LEARNING LABS

Verify program and space needs with CMP.

» Technology Education Lab

A Technology Education Lab supports project-based learning. It is a cross-curricular environment, with technology to solve problems, promote hands-on fabrication opportunities, and support team building skills. Curricula may include applied physics, general science, flight technology, robotics, power, mechanics, electronics, and others.

- » Provide a flexible classroom that allows for multiple, collaborative workstation configurations.
 - » One approach is to cluster computer workstation furniture into pods (for example, seven pods of five-sided workstations fed by power poles). Other configurations may also be appropriate.
 - » U-shaped configuration is not appropriate because it does not support collaborative, project-based learning.
 - » Provide power and data to support the technology stations. Consider retractable outlets from ceiling, like those in some art or computer rooms, to support lab work done at tables.
- » Provide space for 60" x 30" tables around the perimeter of the room with wiremold on walls above table height.
- » Provide built-in upper cabinets.
- » Provide acoustic control, storage, whiteboards and tackboards, and pencil sharpener block as for core classrooms.

» Project Studio

The Project Studio is a shared resource area for students for project-based curriculum,

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...provided for specialized curriculum programs only. The studio can be co-located with student team areas; it can be a room or an open informal area.

- » Accommodate flexible, movable furniture layouts.
- » Provide a minimum of 10 Ln. ft. of casework including one 36"W, 84"H, 24"D storage unit with file drawers on the lower 2/3 and storage cabinets above with adjustable shelves.
- » Provide casework storage (approximately 7 LF). Include base storage cabinets with adjustable shelves and minimum one 4-drawer cabinet; countertop with back and side splashes, and upper storage cabinets with adjustable shelving.
- » Provide (1) 8' whiteboard and (1) 4' tackboard.
- » Consider retractable outlets from ceiling, like those in some art or computer rooms, to support lab work done at tables. Ceiling outlets allow more modular/flexible use of the classroom. Watch the ceiling height and site lines.

SPECIAL EDUCATION SPACES

See Appendix B for requirements in addition to those noted below.

Special education (SPED) requirements are the same as general education classrooms except where noted. Special education spaces shall be distributed among the academies. The APS Special Education Department aims to provide services to students in the least restrictive environment possible, and to integrate SPED students (inclusion) with other students to the greatest extent possible.

» General Notes for All Special Education Spaces

- » All special education offices and conference spaces require sound isolation.
- » Special education students may require specialized lighting with different cycles, spectrum, ballast noise level, etc. Discuss HVAC, lighting, and other systems designed for severely disabled students with the FD+C staff architect and APS Special Education.
- » Some space(s) may be classified as Institutional Occupancy under the building code because some students may be generally incapable of self-preservation, requiring specialized door controls.

TEACHER HOME BASE

Most High School teachers will not have assigned classrooms, but will teach in a collegiate model, with the Home Base serving as an office and professional collaboration area.

- » In the Ninth Grade Academy, provide 1 teacher home base for each smaller learning community (or shared by 2 smaller learning communities).
- » In Upper Grade Academies, provide teacher home bases as required to accommodate general education staff. Each Upper Grade Academy home base shall accommodate a similar number of teachers.
- » Typically, science and special subject teachers have workstations within classrooms, rather than in the home base.
- » The home base is a collaborative work space and shall include a large conference table.
 - » Provide space for 1 conference table, 30" x 72", with 4 chairs and 4 guest chairs.
 - » Provide countertop for shared printer and devices, with voice/data/power connections.

- » Provide built-in casework or systems furniture to accommodate each teacher served by the home base.
 - » Each workstation shall consist of 36" wide x 30" deep desk space with grommet holes for cabling. Include a box/box/file pedestal with pencil tray in the top box drawer, (1) 48" wide overhead flipper door storage unit, with task light below; (1) 48" wide tackboard below the overhead storage unit, and voice/data/power at each workstation.
 - » Provide (1) 12" wide x 24" deep x 7' high wardrobe storage unit with top shelf and wardrobe hanging rod for each teacher.
 - » Provide space for (1) 4 drawer vertical file or equivalent lateral file per teacher.
 - » Provide space for (2) 3' wide x 1' deep x 4' high bookcases per teacher.
- » Provide a break area in each home base with a refrigerator, single basin sink, and microwave.
 - » Provide space for a small lounge seating area.

TEACHER WORKROOM

- » Each teacher workroom shall include:
 - » Space for a large work table and copy equipment to be provided by APS.
 - » Permanent lockable storage with shelving to accommodate storage of paper, books, supplies, and audio-visual material.
 - » Base cabinets with countertop for workspace and equipment with upper cabinets above.
 - » Double sink.
 - » Ability to accommodate a desk for an educational assistant.
 - » Dedicated circuits and outlets for equipment (possibly including ceiling electrical drops).
 - » Polished concrete flooring.
- » In the Ninth Grade Academy, provide 1 teacher workroom for each smaller learning community (or shared by 2 smaller learning communities).
- » In the Upper Grade Academies provide 1 teacher workroom per 1 to 2 teacher home bases.

SPECIALIZED CLASSROOMS

» Fine Arts Center (2D and 3D)

- The Fine Arts Center includes studios for photography, computer graphics, video production, two-dimensional painting/drawing, and three-dimensional ceramics/sculpture/jewelry.
- » Locate fine arts studios adjacent to each other.
 - » Provide places to display the work. Consider dry erase walls to encourage advertising of student performance. Provide display cases for student work.
 - » Provide a protected outdoor area/art patio for work and display.

- » Provide kilns, see Appendix G.
- » Allow for use of ceiling grid or exposed ceiling to hang work.
- » Provide north light where feasible.
- » Provide power and data similar to a general classroom.
- » Provide infrastructure to accommodate technology in fine arts classrooms. Provide speakers and A/V system for classrooms.
- » Consider an outdoor performance venue in close proximity to the indoor performance space.
- » Consider a computer lab within, or near, the music suite computer keyboarding, composition and theory classes.

» Painting and Drawing

- » Provide a classroom area.
- » Include whiteboard, tackboard, and interactive whiteboard similar to general classrooms.
- » Casework requirements:
 - » Base cabinets (approximately 15 LF) with counter area (adjacent to or near the sink) and open upper cabinets with adjustable shelving, and an integral accessible counter space.
 - » Provide many outlets at the counters for glue guns and encaustic painting.
 - » Tall open storage with adjustable shelving or cubbies (approximately 6 LF).
 - » Combination (approximately 18 LF) of tall, open flat storage for paper and artwork, and base cabinet drawer units, with some countertop area.
 - » 5' tall divided vertical storage (approximately 8 LF) for paper and mat board supplies.
 - » Casework described above can be located in the classroom area and/or the 2D storage rooms.
- » Sink requirements:
 - » One deep, wide stainless steel sink with integral drain boards and clay trap.
 - » Separate hand sink.
 - » Protective wall covering behind sinks.
- » Provide storage room for supplies and easels.
- » Provide an office with visual access to the studio area.

» Ceramics, Sculpture, and Jewelry

- » Provide classroom area.
- » Allow space for shop tables (provided by owner).
- » Include whiteboard, tackboard, and interactive whiteboard similar to general classrooms.
- » Include a clay area with electric potter's wheels and damp proof cabinets.
- » Include an open area to place models or still life.
- » Casework requirements:
 - » Base cabinets with counter area (adjacent to sink) and open upper cabinets with adjustable shelving (approximately 10 LF).
 - » Provide many outlets at the counters.
 - » Tall open storage with adjustable shelving or cubbies (approximately 18 LF).

- » Sink requirements:
 - » One deep, wide stainless steel sink with integral drainboards and clay trap.
 - » Separate hand sink.
 - » Protective wall covering behind sinks.
 - » Provide kilns in a separate kiln room or structure with appropriate utilities including power and exhaust. (See kiln specification in Appendix G)
 - » Kilns shall be provided and installed by the general contractor.
 - » Types of kilns may include a large gas-fired kiln; two or more small electric kilns; and possibly a raku kiln.
 - » Provide a thermostatically controlled kiln room exhaust fan separate from, and in addition to, the kiln exhaust.
 - » Provide storage and drying rooms.
 - » Provide a damp clay storage area if desired by the school program.
 - » Provide an office with visual access to the studio area.
- » **Computer Graphics**
- » The computer graphics lab shall support 32 student computers (minimum) and one teacher station with appropriate power and data drops.
 - » Include whiteboard, tackboard, and interactive whiteboard similar to general classrooms.
 - » Provide enclosed base cabinets (approximately 21 LF) with counter area and upper cabinets with adjustable shelving.
 - » Provide an office with visual access to the lab area.
- » **Film Studio**
- » The video studio consists of a larger studio for video recording, filming, and production activities; and a smaller video editing/production studio. Support space includes storage, and office, and an optional sound-proof booth.
 - » Provide an office with visual access to both the video studio and video editing studio.
 - » Provide a storage room for video equipment, convenient to both the video studio and the exterior.
 - » In the video studio,
 - » Include whiteboard, tackboard, and interactive whiteboard similar to core classrooms.
 - » Provide sound isolation from other spaces as well as outdoor noise.
 - » Provide acoustic treatment to reduce reverberation time.
 - » Provide a curtain track for a “blue screen” which can be positioned along at least two walls including one interior corner.
 - » Provide exposed ceiling structure and include power outlets in the ceiling and means for attachment of lighting support systems.
 - » Access to the exterior is optional, but recommended. Students and equipment often go outside and off-site for filming activities.
 - » A sound booth is optional. If provided, it is a free-standing acoustically-isolated structure that is located in the video studio.

- » The video editing studio is similar to a computer lab.
 - » Provide 15 student editing stations (minimum) and one teacher station.
 - » Student stations shall be 36” wide, minimum.
 - » Arrange the video editing studio similar to the computer graphics lab to enable the teacher to observe all student screens from a single position. (Individual video editing booths are an alternate arrangement, although this arrangement is more difficult to supervise.)
 - » Locate the video editing studio adjacent to the video studio.
- » **Photography**
- » Provide a classroom area.
 - » Include whiteboard, tackboard, and interactive whiteboard similar to general classrooms.
 - » Casework requirements:
 - » Base cabinets (approximately 10 LF) with counter area (adjacent to or near the sink) and open upper cabinets with adjustable shelving.
 - » Tall open storage with adjustable shelving or cubbies (approximately 12 LF).
 - » Tall, open flat storage (approximately 8 LF) for paper and artwork.
 - » Sink requirements:
 - » One deep, wide stainless steel sink with integral drainboards and clay trap.
 - » Separate hand sink.
 - » Protective wall covering behind sinks.
 - » Provide a dual-head emergency eye wash unit.
 - » Provide a ventilation hood over the acid sink with 4 hour twist timer control.
 - » Provide two film loading booths, light-tight, with base cabinet, countertop and upper cabinets; “white” light for cleaning; need not be accessed through dark room.
 - » Provide a storage room suitable for shelved items and large items.
 - » Provide an office with visual access to the studio area.
 - » Provide a Dark Room with revolving darkroom door and a separate light-tight emergency exit door. Include:
 - » 36” wide enlarger workstations (15-18) with countertop, dividers, with provision for a curtain behind the student, and an above counter duplex receptacle at each station for enlarger and portable safe light.
 - » Large freestanding photo developer sink with vent hood; photo wash sink (three sides usable also with vent hood).
 - » Base cabinets and countertop (approximately 12 LF) with open large paper storage shelving, and one 4 drawer unit, and upper wall cabinets.
 - » Normal (“white”) light illumination, 5000K non-fluorescent fixtures for cleaning and general use, with a safety cover over the switch to prevent inadvertent operation of switch.
 - » General safe light illumination (one way to do this is with suspended indirect safe light fixtures such as those made by Thomas Instrument Company).
 - » Sinks connected to acid drain. Consider an automatic silver collection unit for spent fixative at the sink(s); discuss with teacher and determine volume of silver recovery to be addressed.



- » A dual-head emergency eye wash unit.
 - » Workroom accessed from the dark room only. In the workroom, provide a tray sink with drain board, chemical shelf above sink, film drying cabinet with power receptacle, photo wash sink with vent hood, 6 LF of base cabinets with countertop and upper cabinets, 2 countertop workstations with 4-drawer units adjacent, receptacles at countertop locations, and safe lights. Connect sink to acid drain. Consider an automatic silver collection unit for the spent fixative at the sink. Provide a dual-head emergency eye wash unit.
 - » Dark room and dark room workroom to have white or light colored ceiling; flat black wall color up to 7 feet high; light gray wall color above; and light gray floor color (flooring to be non-dusting).
 - » For dark room and dark room workroom position air supply, return (filtered) and vent hoods to draw chemical fumes away from sink users' faces. These spaces should be slightly negative in pressure.
- » **Music Center**
- » Provide ensemble rooms for band, chorus and orchestra. Ensemble rooms may be shared among programs, based on program need; coordinate with FD+C, who will consult CMP.
 - » Provide individual and small group practice rooms
 - » Arrange practice rooms for visual supervision; consider locating directly off of the main ensemble rooms.
 - » Provide a sound control room with power/data drops for recording band, orchestra, and choir rehearsals. Include countertop, base cabinets and upper cabinets with open workspace.
 - » Provide a sound isolated listening room with sound system connections to sound control room.
 - » Provide additional space as required to accommodate music programs such as guitar, piano, and mariachi; coordinate with FD+C, who will consult CMP.
 - » Acoustically isolate ensemble and other music program rooms from each other and from the rest of the school.
 - » Floors shall be level; No built-in risers.
 - » Ceilings shall be about 18 feet high on average. Provide additional volume in the band room, above the ceiling, to help with sound dissipation.
 - » Acoustically tune rooms and control reverberation time per ANSI S12.60. Options include: non-parallel walls and ceilings, sound panels, and floor treatment.
 - » Provide wall protection (chair rails, corner guards) in large ensemble spaces.
 - » Provide infrastructure to accommodate technology in fine arts classrooms. Provide speakers and A/V system for classrooms.
 - » Provide storage as follows:
 - » Chorus will have storage rooms for choral risers, 10 file cabinets for music, and robes for choirs with clothes rods.
 - » Orchestra will have storage rooms for 10 file cabinets for music, and built-in lockable instrument storage cabinets.



- » Verify equipment inventory/storage requirements with the school and APS fine arts department.
- » Band will have an exterior access with proximity to exterior practice marching area, which may be a shared space.

FLEXIBLE ELECTIVE CLASSROOMS AND OTHER OPTIONAL SPACES

» Tiered Lecture Hall

- » Tiered lecture hall to seat 200 students. Include the following:
 - » Fixed seating and work surface for 200 students.
 - » 16' whiteboard flanked by 4' tackboards.
 - » Projector and projection screen sized for the space.
 - » Sound system for the room operated from a lectern.

» Greenhouse

- » The greenhouse is shared by the science program and the culinary arts program.
- » The greenhouse is an instructional space used for growing plants.
- » Provide an adjacent outdoor work area, such as a patio or garden space.
- » Provide a utility sink with drain boards and threaded faucet.
- » If skylights or high windows are provided, include motorized blinds to control daylighting.

» Career Technical Education

Career Technical Education programs can be integrated into Academies. Most of the programs can be housed in the programmed elective technology flexible classroom within the SLC's. A few programs, notably the industrial arts shops, need specific spaces tailored to the curriculum of the program. Traditional vocational/industrial arts programs may be adapted to updated curriculum.

Traditional career vocational/industrial arts programs can include:

- » Culinary Arts
- » Family and Consumer Science (Home Economics)
- » Business
- » Health Occupations
- » Technology Education (Drafting and Graphic Arts, Metals, Woods, and Transportation Technology)

» Culinary Arts Lab

- » Provide one main instructional space with a commercial kitchen environment.
 - » Provide four rows of stainless steel student tables; each row to have two 9-foot student tables on each side of a two-compartment pot sink with drain board on each side, and space for a food holding cart at each end of the row. Provide two gas cooktops on each student table, space for a mixer, and power for several small appliances. Provide sliding door storage cabinets below the table tops on the teacher side, and space for stools on the student side. Students need counters in the middle of each kitchen area to work.

- » Provide storage shelf at each student metal table.
- » Provide (minimum) one ADA compliant student station.
- » Provide a teacher's demonstration area. Include a single-compartment sink with drain boards on each side and stainless-steel enclosed utility pony wall for services; stainless steel demonstration table with mirror, two gas cooktops and space for mixer; 4' mobile steel table; and mobile pot rack. Provide power for small appliances.
- » Provide giant interactive teaching board for teaching demonstrations.
- » Floors: Provide slip-resistant surface.
 - Classroom organization:
 - » Keep walls low so that teacher can see students. Supervision and clear sight lines are required.
 - » Provide a principle cooking line. Include four convection ovens and one range/oven under a commercial kitchen hood. Provide two stainless steel worktables close by each with a stainless steel utility chase to ceiling cavity.
 - » Locate a secondary cooking area behind the teacher's demonstration area. Include one gas broiler, one 24" griddle, and one cheese melter under a commercial kitchen hood. Provide a stainless steel prep table on each side of this area.
 - » Provide a griddle, (preferred over a tilt skillet or braiser).
 - » Provide reach-in refrigerators and freezer near the secondary cooking area.
 - » Provide combination walk-in cooler and walk-in freezer, each 6' x 6', with remote condensing unit and individual access door, and wire shelving.
 - » Provide a scullery area with a three-compartment sink, dish tables, dishwasher with booster heater (consider solar hot water pre-heating), garbage disposal with pre-rinse, and wire shelving rack for clean ware.
 - » The size of the deep three-compartment sinks in the professional kitchen area should be able to accommodate the cooking sheets.
 - » Include a roll-up counter door and countertop in the scullery area to serve the culinary laboratory (described below).
 - » Provide a washer and dryer area with table, under-table laundry hamper, shelf above washer and dryer. Locate the washer and dryer area to minimize the length of dryer exhaust vent piping.
 - » Provide a table by washer and dryer.
 - » Provide storage for aprons.
 - » Provide student lockers to accommodate backpacks for a full class.
 - » Locate backpacks where kids can watch their backpack.
 - » Provide a long, trough-type sink in this area for wash-up before and after class.
 - Ventilation:
 - » Provide ventilation to exterior due to smells and steam. Not a recirculation vent, not a charcoal vent.
 - » All cooking hoods must have fire suppression.
 - » Provide a big exhaust hood at commercial kitchen.
 - » Provide operable windows with screens in classrooms.

» Culinary Arts Café / Dining Area

- » Provide an instructional space with a commercial cafe environment. Classroom doubles as café and hot bar.
 - » Include a mobile serving line consisting of a three-well hot table, cold table, solid top buffet table with display case, and small starter table; and one small table with point-of-sale (POS) cash register nearby (voice/data drop required).
 - » Include whiteboard, tackboard, and interactive whiteboard similar to core classrooms.
 - » APS FF+E will furnish the classroom area with round tables and chairs.
 - » The room must meet environmental health requirements if the café is selling food.
 - » Provide exterior access.
- » Locate the culinary arts laboratory adjacent to the culinary arts classroom to accommodate:
 - » Transportation of food to the mobile serving line, and
 - » Return of dirty dishes through the roll-up counter door to the scullery area.

» Culinary Arts Program Support Space

- » Provide the following spaces to support Culinary Arts instructional areas:
 - » A secure, dry storage room with clothes rod for uniforms and wire rack shelving and 3 ingredient bins.
 - » Separate chemicals and cleaning materials away from food.
 - » Separate food storage from work area.
 - » Provide a custodial closet with floor sink and shelf storage.
 - » Provide shelving for detergents.
 - » An appliance storage room with mobile wire shelving units.
 - » Provide adjacency or proximity to the greenhouse or a place to grow herbs. See Greenhouse section.
 - » A teacher's office is not needed. If provided, include a window to the Culinary Arts Classroom (and also to the Culinary Arts Laboratory if possible).

» Family and Consumer Science (Home Economics)

- » Historically, Home Economics space included a Food and Nutrition Lab and a Sewing (Fashion) Lab; and may also include Child Development.
 - » The program has recently experienced a shortage of instructors. Verify program need with CMP.
 - » The Food and Nutrition Lab has been replaced by the Culinary Arts program. (See previous section for space requirements.)
 - » If providing residential kitchen areas, include a single-compartment sink.
 - » Provide induction stove in family area. Induction cook tops require magnetic special pans.
 - » The Sewing Lab (also known as: Fashion Lab) includes tables, chairs, sewing machines, an office, a storage area, a laundry area, and at least two fitting areas.
 - » The Child Development Lab (also known as: Working With Young Children) includes an observation area, a full kitchen (this is problematic with current fire code requirements), two restrooms for pre-K children and a restroom for

- » adults, and a fenced outdoor play area of at least 1,000 SF complying with APS Playground Standards. The Child Development Lab is accessible to the public.

» Health Occupations

- » This program may be a sports medicine, nursing, or dental, etc. program.
- » A Health Occupation Lab is similar to a general classroom but includes 4 sinks.
- » Health Occupation Support space includes an office, a smaller classroom, and a storage room.

» Business Education

- » Business Education programs:
 - » Provide instruction in office skills including keyboarding and accounting.
 - » Most business education programs can be housed in computer or technology labs.
- » Business Education lab requirements:
 - » Provide a lab space.
 - » Include a sink, and adequate power and data for business machines and computers, with master power shut-off switches.
 - » Include whiteboard, tackboard, and technology as for a general classroom.

» DECA Classroom and Office

- Most career technical student organizations can be accommodated after hours within spaces provided for other programs. DECA is an exception in that it requires dedicated spaces, including:
- » A general education classroom.
 - » An office with visual access to the classroom.
 - » A snack bar, see Snack Bars section for additional requirements.
 - » DECA classroom and office should be adjacent to the snack for supervision ; provide close proximity if adjacency is not possible.

» Technology Education (CAD and Graphic Arts, Woods Technology, Metals Technology, Transportation Technology)

- Technology Education programs may include a Drafting and Graphic Arts program, Woods Technology Shop, Metals Technology Shop, and Transportation (automotive and aviation) Technology Shop. High schools may have one or more of the Technology Education labs.
- » Drafting and Graphics Arts may be part of the Fine Arts Curriculum.
 - » The programs have recently experienced a shortage of instructors. Verify program need with CMP.
 - » Provide display cases, and at least 112 metal box lockers, in the hallway/lobby of the Technology Education area. Lockers shall be 18" x 18" x 18" minimum.
 - » Some schools may include industrial cooperative training programs. These would typically require a large classroom of about 1,000 SF, an office, and a storage/library room.
 - » See Appendix I for suggested equipment lists for Technology Education labs.

- » Provide a separate room (about 250 SF) with sound isolation for compressors for pneumatic / compressed air equipment.
- » Drafting and Graphics Arts includes a computer lab (840 - 1,200 SF), an office (120 SF), a server room (120 SF), a plotter room (225 SF), a secure storage room (245 SF), and a project storage room (200 SF).
 - » The server room shall be accessed from the office, and shall not function as the building area IDF room.
 - » Provide a 6" raised access floor over recessed slab throughout, except at built-ins (including casework).
 - » In the computer lab, provide about 90 – 100 LF of countertop with base cabinets, six 3' workspaces, and eight 3' open shelf units with one horizontal shelf and the lower compartment divided into two spaces by a vertical divider.
 - » In the plotter room, provide about 15 LF of space along a wall for countertop with one 3' workspace, one 3' base cabinet, and 9 LF of two tier vertical under-counter storage; also provide solid floor along wall for one 48 inch wide flat file.
 - » In the project storage room and secure storage room, provide 24" deep metal shelving.
 - » Provide a utility sink in the computer lab.
 - » Provide a full wall erasable marker surface with continuous tack strip for display, marker dispenser, and tack tray.
 - » Provide a projection screen with overhead projector rough-in in the computer lab.
- » Woods Technology includes a laboratory (2,400 – 3,200 SF), classroom (600 – 750 SF), an office (120 SF), tools storage (400 SF), project storage (400 SF), and a finish area (220 SF).
 - » Provide exterior access for deliveries and outside work. Include a covered exterior concrete slab of about 600 SF.
 - » Accommodate painting outside. If an interior paint area is also provided, note that a Paint Spray Booth in accordance with the fire code, and other applicable codes, is required.
 - » Coordinate utility requirements with woodworking equipment.
 - » Indicate safety zones for woodworking equipment on floor surfaces.
 - » Provide dust collection.
 - » Provide a minimum of 156 lockers in the woods laboratory. Each locker shall be at least 12" x 12" x 12".
 - » Provide an eyewash and wash fountain in the woods shop. Include soap dispenser (receives APS supplied pouch soap refills – verify specified model with FD+C), towel dispenser and mirror.
- » Metals Technology requires a laboratory (3,000 – 3,350 SF), classroom (600 – 750 SF), an office (120 SF), shop support/storage (1,200 SF), and welding room (540 SF).
 - » The laboratory will accommodate welding, foundry and forge, sheet metal, pattern making, and machine tools.
 - » Provide exterior access for deliveries and outside work. Include an overhead door and hoist beam with motorized crane hoist in the metals laboratory.
 - » Provide a covered exterior concrete slab of about 600 SF, prepped for welding.
 - » Accommodate painting outside. If an interior paint area is also provided, note that a Paint Spray Booth in accordance with the fire code, and other applicable codes, is required.



- » Coordinate utility requirements with metal working equipment.
- » Indicate safety zones for metal working equipment on floor slabs.
- » In the welding room, provide an entry curtain, individual booths also with curtains, and a 2A:20BC fire extinguisher.
- » Provide lockable cages in the shop support/storage area for supply and project storage, gas manifolds, and tools.
- » Provide a minimum of 112 lockers in the metals laboratory. Each locker shall be at least 18" x 18" x 18".
- » Provide an eyewash and wash fountain in the metal shop. Include soap dispenser (receives APS supplied pouch soap refills – verify specified model with FD+C), towel dispenser and mirror.
- » Transportation Technology requires a laboratory (2,600 - 3,300 SF) with 4 automotive stalls comprising 2,400 SF, and a bench area of 900 SF; a classroom (600 SF) (can be shared with other shops); office (120 SF), tool area (180 SF); tool crib (180 SF); supply storage (130 SF); equipment storage (135 SF).
 - » Space criteria and other requirements noted above may vary for programs that focus on avionics.
 - » The laboratory shall include 4 automotive stalls (2,400 SF) and a bench area (900 SF).
 - » Depending on program needs, welding booths may be required.
 - » Coordinate requirements for utilities, including water, gas, compressed air, and power, for shop equipment.
 - » Provide a screened exterior space for storage of automobiles.
 - » Accommodate equipment safety requirements, including handling and storage of hazardous fluids.
 - » Provide an eyewash and wash fountain in the transportation laboratory. Include soap dispenser (receives APS supplied pouch soap refills – verify specified model with FD+C), towel dispenser, and mirror.

OTHER SCHOOL SUPPORT

- » **Education Program Storage**
 - » Education program storage rooms are assigned at each grade level, or by academy. Provide 12 plastic laminate cabinets 36" wide x 84" high x 24" deep with lockable shelving units.
 - » 1 General storage area shall be accessed from the exterior, via double doors/removable mullion for yard equipment.
- » **MDF and IDF rooms**
 - » The main services and distribution of all cable wire for all special systems goes through these rooms.
 - » Conform to all requirements in APS Electrical Design Standards on the FD+C website (Main Communications Room and Intermediate Communications Room).
 - » Seal all wall-to-roof and floor-to-wall joints to prevent dust infiltration.
 - » Locate the MDF near the utility entry to school.



- » Rooms shall be acclimatized with good air exchange, free of dust, and operate 24 hours a day so no time clock interference.
- » No ceilings in MDF and IDF rooms.
- » See General Requirements for office / computer maintenance space requirements.

» Custodial Space

- Provide sufficient custodial areas with hot and cold water to support efficient cleaning of all permanent and portable facilities. Custodial areas shall be conveniently distributed in a manner that is appropriate to serve entire school. See General Requirements for detailed custodial space needs. The High School needs include:
- » At least 1 custodial closet per building and per story.
 - » Minimum of 6 interior custodial areas per high school.
 - » (1) 200 SF custodial room shall accommodate supplies and a desk. The remainder of custodial closets shall be 65 SF each.
 - » Provide access to the roof in some of the custodial storage areas or nearby storage rooms (if not provided at exit stair towers).

» Site Recreation

- » PE uses outside facilities, track, and fields, in fall and spring. In winter PE will use just inside space.
- » Share athletic facilities seasonally to maximize efficient use of facilities.
- » All High School sports and fields must meet NMAA regulation size.
- » Verify if HS fields are open to the community. Typically the campus is locked by 5:30 PM.
- » No lights required at site recreation facilities. Provide lighting only as required to prevent theft of bleachers. (Home night games are played at district athletic complexes or stadiums).

High School site recreation facilities include:

- » Multi-purpose Synthetic Turf Field: (195' x 330' = 64,350 square feet) striped for football and soccer.
 - » Football goalposts and storage
 - » Bleachers – 5 rows
- » Track and Field:
 - » Track
 - » Install poly-urethane track, not latex.
 - » Put concrete around the outside of the track. Dirt on the outside of the track will destroy the surface. Limit sprinklers adjacent to track.
 - » Configure track and field for efficient use of limited space.
 - » Install Poly-urethane at "D" end zone of Instead of synthetic turf, for MP field.
 - » Locate track and field activities at other "D" end.
 - » Locate javelin and discus activities for close adjacency.



- » Pole vault pit
- » Long jump pit
- » Discus and javelin
- » Track storage

» **Multi-Purpose Synthetic Turf Field (220' x 350')**

- » Soccer storage
- » Bleachers – 5 rows
- » Use outfields of baseball and softball for fall PE and athletics fields. Home soccer games can be played on a baseball/softball field.
 - » Mind uses on other side of outfield fence; nets may be required.

» **Baseball Field**

- » Baseball/softball concessions and dug outs are the model. Locate restrooms at concession only (not in dugouts).

» **Softball Field**

- » Baseball/softball concessions and dug outs are the model. Locate restrooms at concession only (not in dugouts).

» **Tennis Courts (6 minimum)**

- » Tennis courts: Trend is to use club/public outside courts for a fee

» **Outdoor Basketball Courts (6 hoops minimum)**

Section 07

Appendix

APPENDIX A: High School Space Table

Space Description	APS HS Standard			Notes	
	# Spaces	NSF per Space	Subtotal NSF		
HIGH SCHOOL SITE					
BLDG					
a	Footprint	1	480,000	480,000	Footprint may vary depending on layout and number of stories.
			480,000		
School Parking and Vehicular Circulation					
a	Visitor Parking	50	350	17,500	
b	Staff Parking	200	350	70,000	
c	Student Parking	900	350	315,000	
d	Service Parking	10	400	4,000	
e	Special Bus Pick-Up	3	350	1,050	
f	Bus Pick-Up	30	500	15,000	
g	Carpool Lane	75	200	15,000	
h	Site Drives (at 10% of parking)	1	43,755	43,755	
			481,305		
School Athletic Amenities					
a	Grassed Main Field	1	142,500	142,500	570' x 250'
	Track	1	Incl. above		
	Pole Vault Pit	1	Incl. above		
	Long Jump Pit	1	Incl. above		
	Bleachers football - 5 row	2	Incl. above		
	Press Box	1	200	200	
	Concession Stand	1	200	200	
	Toilets	2	300	600	
	Football Storage	1	400	400	
	Track Storage	1	300	300	
b	Grassed Auxiliary Field	1	70,000	70,000	350' x 200'
	Soccer Storage	1	396	396	
	Bleachers Soccer - 5 Row	2	Incl. above		
c	Grassed Dirt Auxiliary Field	2	70,000	140,000	350' x 200'
d	Baseball Field	1	200,000	200,000	
	Backstop	1	Incl. above		
	Dugout	2	200	400	
	Bleachers Baseball - 5 Row	1	Incl. above		
	Batting Cage	1	Incl. above		
	Baseball Storage	1	400	400	
e	Softball Field	1	70,000	70,000	
	Softball Storage	1	300	300	
f	Tennis Courts	6	7,200	43,200	60' x 120'
	Tennis Storage	1	100	100	
			668,996		
<i>Subtotal School Site SF</i>				1,630,301	
<i>Site Efficiency at 75%</i>				2,173,735	
<i>SF per Acre</i>				43,560.00	
<i>Total Acres required for School Site</i>				50	

Space Description	APS HS Standard			Notes	
	# Spaces	NSF per Space	Subtotal NSF		
Central Areas					
Main Entry and Central Administration					
a	Lobby/Reception				
	Waiting/Seating Area	1	490	490	
	Reception Counter/Work Area	1	145	145	
b	Administrative Areas				
	Registrar/Data Processing	1	230	230	
	Bookkeeper	1	120	120	
	Attendance Office	1	120	120	
	Open Office Work Area	1	450	450	
	Administration Work Room	1	220	220	
	Coffee/Break Bar	1	45	45	
	Administration Conference Room	1	335	335	
	Mail	1	420	420	
	Test Preparation Room	1	300	300	
	File Room	1	100	100	
	Vault	1	75	75	
	Administration Storage Area	1	515	515	
c	Principal Area				
	Principal Office	1	220	220	
	Secretary	1	120	120	
	Principal Restroom	1	55	55	
d	Parent Room/Family Center				
	Work Area	1	580	580	
	Staff Offices	2	105	210	
	Break Area	1	170	170	
	Storage	1	50	50	
	Restroom	1	65	65	
e	Career Exploration Center	1	320	320	May be subdivided into meeting and office spaces.
f	In-House Suspension Room	1	840	840	
g	Security Areas				
	Office	1	220	220	
	APD	1	120	120	
	Delinquent Hold Room	1	90	90	
	CCTV Monitoring Room	1	120	120	
	CCTV Equipment Room	1	90	90	
			Subtotal	6,835	
Special Education Areas - Refer to Appendix B					
Media Center					
a	Circulation Desk	1	290	290	Includes 2 to 3 workstations and countertop layout area
	Circulation Storage	1	55	55	
b	Main Area				
	Stacks / Reference Collection	1	1,780	1,780	For about 18,000 volumes
	Classroom Area/Study Tables	1	1,370	1,370	36 Seats, minimum
	Computer Stations	1	450	450	16 Stations, minimum

Space Description	APS HS Standard			Notes	
	# Spaces	NSF per Space	Subtotal NSF		
	Reading Alcoves	1	530	530	Soft seating area (about 25 seats)
	Periodicals	1	48	48	48 Linear feet
	Student Copiers	1	75	75	1 or 2 copiers
	Search Computer	1	75	75	1 Dedicated computer
c	Librarian's Office	1	170	170	
d	Workroom	1	275	275	Includes kitchenette
e	Conference/Seminar Classroom	1	840	840	Can be subdivided in 2 smaller spaces
f	General Storage	1	745	745	Includes IT/AV storage
g	Graphic Production Classroom	1	475	475	
	Graphic Production Lab	1	250	250	
	Graphic Production Storage	1	110	110	For shelved items and carts. Provide power and data.
h	Computer Lab	2	1,305	2,610	
	Computer Lab Storage	0	0	0	
i	Professional Room	1	440	440	
j	Book Room	1	1,830	1,830	Can be located in Central Administration
k	Public Toilets	2	230	460	Also provide convenient access to student toilets from the library.
			Subtotal	12,838	
<ul style="list-style-type: none"> • Provide daylight. Window sill height shall be 48" above floor to allow for shelving below. • Provide sound system, projector, and projection screen. Coordinate with APS staff architect. 					
Performing Arts Center (PAC)					
a	Entrance / Pre-Function				
	Entry Vestibule	2	175	350	
	Lobby	1	2,320	2,320	
	Ticket Window	1	150	150	Can be combined with coats
	Coat Window	1	150	150	Can be combined with tickets
	Concessions				
	Public Toilets (multi-stall)	2	300	600	
	Public Toilets (individual)	2	65	130	
b	Theater				
	Seating	1	5,160	5,160	450 Seats (including mezzanine)
	Orchestra Pit	1	550	550	Piano storage.
	Stage, including Backstage	1	2,900	2,900	Include proscenium arch with apron.
	Control and AV Rooms	1	620	620	Distribute area as required
c	Drama Classroom/Green Room	1	900	900	Provide features as per a core classroom. During performances, this classroom functions as a green room. Location adjacent to dressing, make-up, and wardrobe rooms.
d	Office	0	120	0	Not required

Space Description		APS HS Standard			Notes
		# Spaces	NSF per Space	Subtotal NSF	
e	Dressing Room	2	240	480	Consider 2 more dressing rooms for adults
f	Dressing Room Toilet	2	80	160	Consider 2 more toilet rooms for adults
g	Make-Up Room	2	200	400	
h	Wardrobe/Costume Storage	1	265	265	Washer/dryer
i	Set-Building/Work Area	1	2,485	2,485	
j	Storage	1	435	435	Can be combined with set-building
k	Receiving	1	0	0	Included in work area; Share the receiving area between the PAC and the black box.
m	Mechanical	1	1,800	1,800	
n	Electrical	1	160	160	
o	Telcom	1	185	185	
Subtotal				20,200	
<ul style="list-style-type: none"> Consider an outdoor performance venue in close proximity to the PAC. Configure such that the PAC and black box can be secured while providing student access to the drama classroom. 					
Black Box					
a	Black Box Theater	1	2,360	2,360	Shall be a rectangular space with recessed wood stage floor (may have concrete border). Provide space for portable risers to accommodate 70 to 100 seats.
b	Staging / Set-Up	0	0	0	Share PAC work area. If Black Box is located in a separate facility, then provide 200 SF.
c	Equipment Storage	1	225	225	For storage of portable risers, chairs, cart for transporting the risers, and other equipment.
d	Public Restrooms	0	0	0	Share PAC restrooms. If Black Box is located in a separate facility, then provide 2 restrooms at 200 SF each.
e	Pre-Function Area	0	0	0	Share Pre-Function/Lobby space with PAC.
Subtotal				2,585	
<ul style="list-style-type: none"> Locate adjacent to the PAC for shared use of support spaces (lobby, toilets, storage, staging, set-up, etc). Provide a theater sound system. Tune acoustics for spoken word and small music performances. Provide a wire tension grid above for stagecraft. Provide access to the grid from outside the space. Grid to accommodate max live load of 15,000 pounds, and a max live load of 700 pounds on any 1 pipe hanger. Provide support and power for theater lighting around perimeter of room, and on the tension grid. 					
Physical Education					
a	Lobby / Pre-Function	1	3,000	3,000	Assume 400 occupants at 7.5 SF per occupant.

Space Description		APS HS Standard			Notes
		# Spaces	NSF per Space	Subtotal NSF	
b	Tickets	1	100	100	
c	Snack Bar	1	340	340	
	Service	1	120	120	3 compartment sink and mop sink.
	Dry Storage	1	120	120	
d	Public Toilets (Women/Men)	2	230	460	
e	Public Toilets (Women/Men)	2	325	650	
f	Public Toilet (Family)	1	60	60	
g	Student Toilets	2	325	650	
h	Ice and Laundry Room	1	150	150	
i	Athletic Director's Office	1	150	150	
	Athletic Director Storage	1	75	75	
j	Conference Room	1	230	230	
k	Open Office Area	1	900	900	For athletic coaches. Assume 60 SF per workstation; verify number of required workstations during programming phase.
	Huddle Room	1	120	120	More than 1 huddle room may be recommended based on number of open workstations.
	Restrooms for Open Office	2	65	130	
l	Private Offices	2	120	240	For PE instructors.
	Private Office Storage	2	100	200	
	Private Office Restrooms	2	75	150	
m	Main Gym	1	12,210	12,210	
	Main Gym Storage	2	315	630	1 Storage area is for competition wrestling mats, and the other storage area is for tables, chairs, and equipment.
	Main Gym AV Room	1	75	75	
n	Auxiliary Gym	1	9,355	9,355	
	Auxiliary Gym Storage	1	230	230	For athletic equipment and folding chairs.
	Auxiliary Gym AV Room	1	40	40	Could be combined with main gym AV room.
o	Weight Room	1	3,875	3,875	
	Circuit Training	1	1,260	1,260	
	Weight Room Office	1	100	100	
	Weight Room Storage	1	95	95	
p	Wrestling Room	1	4,270	4,270	Includes area for stationary bikes and similar equipment.
	Wrestling Office	1	150	150	
	Coach's Shower Room	1	85	85	
	Student Shower Rooms	2	85	170	
	Wrestling Storage	1	230	230	For general wrestling storage (not mats).
q	Multi-purpose Mezzanine	1	2,790	2,790	

Space Description	APS HS Standard			Notes
	# Spaces	NSF per Space	Subtotal NSF	
MP Mezzanine Storage	1	300	300	<i>For ping-pong tables and other MP equipment.</i>
Mezzanine General Storage	1	245	245	
r Adaptive PE Mezzanine	1	3,310	3,310	
Adaptive PE Office	1	125	125	
Adaptive PE Storage	1	135	135	
s JROTC	1	2,600	2,600	<i>Could be located in Business + Leadership Academy. Includes air rifle firing range.</i>
Classroom	2	600	1200	<i>Can be combined for one classroom space</i>
Offices	2	120	240	
Air Rifle Storage	1	170	170	
Drill Storage	1	175	175	<i>Includes laundry area.</i>
Uniform Storage	1	250	250	
Train Aids Storage	1	200	200	
Restrooms (girls/boys)	2	60	120	
Restroom (staff)	1	60	60	
t PE Locker Rooms (girls/boys)	2	2,945	5,890	
PE Storage (Interior)	1	200	200	
PE Storage (Exterior)	1	150	150	
u Athletic Locker Rooms (girls/boys)	2	2,775	5,550	
Athletic Storage A	10	200	2,000	
Athletic Storage B	1	620	620	<i>For football equipment.</i>
v Referee Lockers	1	210	210	
Referee Restrooms (women/men)	2	125	250	
w Training Room	1	835	835	<i>Includes equipment, first aid, and treatment areas.</i>
Therapy Pool Area	1	345	345	
Training Office	1	120	120	
Restroom	1	70	70	
Storage	1	120	120	
x PE Classroom	1	1,510	1,510	
PE CR Storage	1	200	200	<i>For tables, chairs, and lectern.</i>
y MP Room #1 (PE Studio, etc.)	1	1,850	1,850	
Office	1	150	150	
Dressing Rooms	2	75	150	
Storage	1	150	150	
z MP Room #2 (Cheer, Dance, etc.)	1	3,500	3,500	
Office	1	140	140	
Dressing Rooms	2	140	280	
Storage	1	190	190	
aa Janitor Closet	2	100	200	
bb Telecom/IT	2	165	330	
cc Mechanical	1	2,535	2,535	
dd Electrical	1	525	525	
Subtotal			80,250	

Space Description	APS HS Standard			Notes
	# Spaces	NSF per Space	Subtotal NSF	
Student Activities Center				
a Activities Room	1	840	840	<i>Include built-in storage and lockers, sink, and countertop work surfaces. May include overhead roll-up countertop door.</i>
b Activity Director's Office	1	125	125	
Subtotal			965	
Health Center				
a Lobby/Waiting	1	540	540	<i>6-10 seats</i>
b Health Assistant	1	65	65	<i>Open workstation at reception counter</i>
c Cot and Triage Area	1	330	330	
d ISP Cot and Triage Area	1	225	225	
e Nurse's Office	1	120	120	
f ISP Nurse's Office	1	120	120	
g Vision Screening	1	125	125	
h File Room	1	105	105	
i Storage	1	360	360	
j Special Needs Changing Room	1	95	95	<i>Include washer, dryer, and changing table</i>
k Toilet	2	60	120	<i>With shower?</i>
Subtotal			2,205	
Central Food Service				
a Dining Commons	400	15	6,000	<i>Size for 15 sf/student minimum with 3 serving periods, maximum.</i>
b Student Restrooms	2	215	430	
c Central Kitchen	1	1,375	1,375	
Office	1	90	90	
Dishwashing	1	160	160	
Dry Storage	1	160	160	
Walk-In Refrigerator	1	80	80	
Walk-In Freezer	1	130	130	
Laundry	1	80	80	
Janitor	1	70	70	
Staff Restroom	1	65	65	
Serving Area(s)	2	150	300	
Subtotal			8,940	
Snack Bars (Including DECA)				
a Concessions	1	435	435	
Workroom	1	150	150	
Storage	1	90	90	
Classroom (DECA only)	1	840	840	
Subtotal			1,805	
Academy Spaces				
a Academy Administration				

Space Description	APS HS Standard			Notes	
	# Spaces	NSF per Space	Subtotal NSF		
Lobby/Waiting	1	350	350	6 seats	
Secretary/Reception/Work Station	1	110	110		
Dean/Assistant Principal	1	200	200		
Academy Records	1	125	125		
Counselor Office	1	300	300	Can also be located in a counseling suite	
Ancillary Office	1	120	120		
Faculty Restrooms	2	90	180		
Conference	1	280	280	14 seats	
Storage	1	185	185		
b Academic Areas					
General Classroom	4	840	3,360		
Science Classroom/Lab	2	1,300	2,600	Include 1 accessible student station	
Science Prep/Storage	1	450	450	Shared between pairs of science labs	
Project Studio	1	1,360	1,360		
Student Team Area	1	300	300	Open to hallway/circulation space	
Conference/Seminar Room	1	625	625		
Teacher Home Base	1 - 5	600	600	Include 6 to 8 workstations plus break area with fridge, microwave, single basin sink, and countertop.	
Teacher Work Room	1-3	275	275	1 workroom per 1-2 teacher home bases	
Teacher Restrooms	2	65	130		
Student Lockers	150	5	750	1 Per student at target enrollment, 5 SF each	
Student Restrooms	2	215	430		
c Academy Dining Commons	1	2,000	2,000	Size for 15 SF/student	
Warming Kitchen	2	230	460		
Serving Area(s)	2	220	440		
Student Restroom	2	215	430		
Storage	0	225	0	Locate adjacent to servery	
Janitor Closet	1	60	60		
Subtotal			15,710		
Specialized Classrooms - Arts Center					
a	2D - Drawing / Painting Classroom Studio	1	1,305	1,305	Provide whiteboard, tackboard, and interactive whiteboard. Include casework, work sink, and separate handsink. Work sink shall be stainless steel with integral drainboards and clay trap.

Space Description	APS HS Standard			Notes	
	# Spaces	NSF per Space	Subtotal NSF		
Storage	1	265	265	For storage of supplies and easels.	
Office	1	120	120	Provide visual supervision of the classroom from the office.	
b	3D - Ceramics Classroom Studio	1	1,325	1,325	
Kiln	1	150	150		
Drying Room	1	150	150		
Office	1	120	120		
Storage	1	360	360		
c	Computer Graphics / Editing Classroom Studio	1	1,235	1,235	
Storage	1	180	180	Shared with Film Studio	
Office	1	150	150		
d	Film Studio Classroom Studio	1	1,935	1,935	
Sound Recording/Control Room	1	120	120		
Whisper Room	1	70	70		
Vestibule	1	140	140	Include overhead door	
Storage	1	250	250		
e	Photography Classroom Area	1	785	785	Provide whiteboard, tackboard, and interactive whiteboard.
Darkroom / Finishing	1	720	720		
Storage	1	120	120	Suitable for shelved items and large items.	
Office	1	120	120	Provide visual supervision of the classroom from the office.	
Subtotal			8,660		
Specialized Classrooms - Music Center					
a	Band Classroom Area	1	2,345	2,345	Ceiling shall be about 18 feet high with additional volume above ceiling for sound dissipation. Provide chair rail around walls.
Instrument Storage	1	525	525	Include 10 file cabinets for music, lockable instrument storage cabinets, and a sink for cleaning instruments.	
Instrument Workroom	1	110	110	Can be combined with instrument storage	
Percussion Storage	1	230	230		
Uniform Storage	1	310	310		
Practice	4	55	220	Provide visual supervision from main space	
Ensemble	2	310	620	Provide visual supervision from main space	

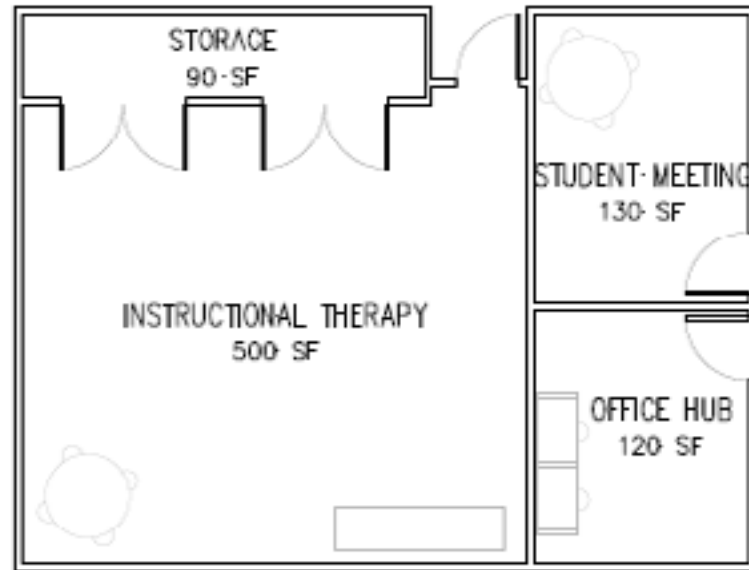
Space Description	APS HS Standard			Notes
	# Spaces	NSF per Space	Subtotal NSF	
Library	1	135	135	
Sound Control Room	1	200	200	W/ power and data for recording band, chorus, and orchestra rehearsals. Provide countertop, base, and upper cabinets.
Office	1	120	120	
b Orchestra Classroom Area	1	1,185	1,185	Ceiling shall be about 18 feet high. Provide chair rail around walls.
High Strings Storage	1	280	280	Accommodate 10 file cabinets for music, and lockable instrument storage cabinets for violins and violas.
Low Strings Storage	1	230	230	Storage for cellos and basses.
Practice	2	55	110	Provide visual supervision from main space
Ensemble	1	250	250	Provide visual supervision from main space
Library	1	260	260	
Listening Room	1	145	145	Sound isolated with sound system connection to sound control room.
Office	1	120	120	
c Chorus Classroom Area	1	1,560	1,560	Ceiling shall be about 18 feet high. Provide chair rail around walls.
Large Storage	1	390	390	Accommodate choral risers, 10 file cabinets for music, and choir robes with clothes rods.
Small Storage	1	80	80	
Ensemble	1	165	165	Provide visual supervision from main space
Ensemble / Piano Lab	1	235	235	Provide visual supervision from main space
Library	1	130	130	
Office	1	120	120	
Subtotal			10,075	
<ul style="list-style-type: none"> • Band, Chorus, and Orchestra spaces may be separate or combined based on program need; Consult APS CMP. • Additional program spaces may be provided for guitar, piano, and mariachi; Consult APS CMP. • Acoustically isolate music program spaces from each other and from the rest of the school. • Floors shall be level; no built-in risers. • Consider a computer lab near the music suite for composition and theory classes. 				
Additional Specialized Classrooms				
a Computer Lab				
Lab Area	1	1000	1,000	

Space Description	APS HS Standard			Notes
	# Spaces	NSF per Space	Subtotal NSF	
Classroom Area	1	600	600	Can be shared among other shops
Office	1	120	120	
Shop Support/Storage	1	1200	1,200	Tools and project storage
Welding Room	1	540	540	Project storage and secure storage
n Transportation Technology				
Lab Area	1	3300	3,300	Includes bench area (about 900 SF)
Classroom Area	1	600	600	Can be shared among other shops
Office	1	120	120	
Tools	2	180	360	Tools and project storage
Storage	2	130	260	Supply storage and equipment storage
o Technology Education Lab				Use educational shop for vocational use occupancy
Lab Area	1	1000	1000	
Subtotal			32,370	
Other Facility Support				
a Storage				
Educational Program Storage	1	120	120	
Exterior General Storage	1	400	400	
b Special Systems	1	230	230	
MDF	1	168	168	1 per building
IDF	1	120	120	1 per floor
IT Office	1	120	120	
IT Storage	1	60	60	
c Custodial	1	230	230	
Office/Supplies	1	200	200	1 per school
Janitor's Closet	1	65	65	1 per building and 1 per floor, minimum
Subtotal			1,617	
Counseling Suite				
a Counselors	5	150	750	Offices may be distributed among the Academies. Includes College and career counselor and cross-roads counselor.
b Social Worker	2	150	300	
c Psychologist	1	150	150	
d Transition Specialist	1	150	150	
e Speech and Language Pathologist	2	150	300	
f Secretary with waiting area	1	175	175	
g Head Special Ed Teacher	1	150	150	
h File Storage	1	150	150	
i Evaluation/Testing	1	120	120	
j Conference	1	250	250	
k Instructional Coach		240	0	
l Wellness Room	1	840	840	Can be located in proximity to other common use areas, such as the media center or health center
Subtotal			3335	

APPENDIX B: Special Education Design Standards

» Conceptual Drawings
The following are conceptual drawings of the Ancillary Support Suite at Hubs and Non-Hubs for elementary, middle, and high schools:

» Standard Ancillary Support Suite for Elementary and Middle School



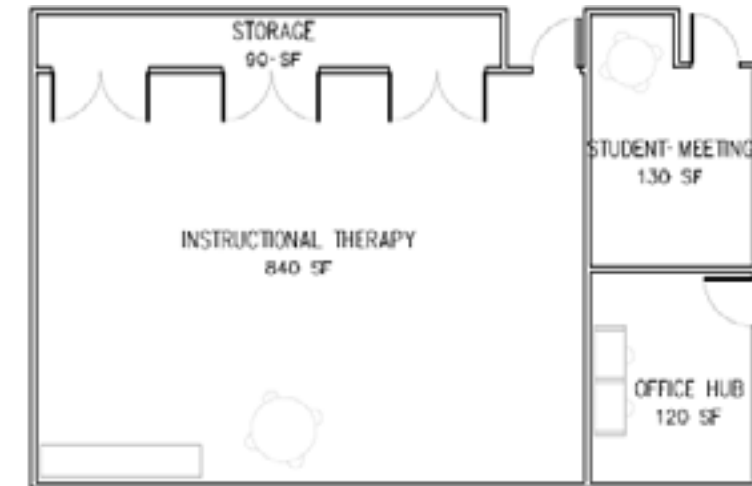
Standard Ancillary Support Suite, Elementary and Middle School	
Student Population	Size (sq. ft.)
Instructional/Therapy Space with Swing (OT/PT and APE)	500
Therapy space Storage (OT/PT and APE)	90
Office Workstation Hub (60 sf each, 2 workstations) ¹	120
Private Student Meeting Area ²	130
Total	840

1. (Social Workers, Speech Language Pathologist, Occupational Therapists, Physical Therapists, Adapted PE teacher). For every 2.0 FTE, 1 workstation area (2:1 ratio) is to be utilized fluidly by various ancillary staff assigned to a school. The number of workstation areas is contingent on FTE allocation and shall be determined at the time of design program of space.

2. One Private Student Meeting Area for every 2.0 FTE. To be used fluidly by ancillary staff. The number of Private Student Meeting Areas is contingent on FTE allocation and shall be determined at the time of design program of space.



» Hub Ancillary Support Suite for Elementary and Middle School

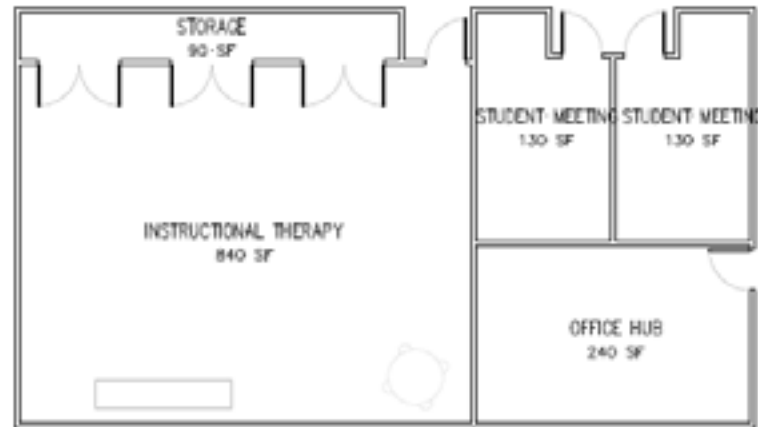


Hub Ancillary Support Suite, Elementary and Middle School	
Space	Size (sq. ft.)
Instructional/Therapy Space with Swing (OT/PT and APE)	840
Therapy space Storage (OT/PT and APE)	90
Office Workstation Hub (60 sf each, 2 workstations) ¹	120
Private Student Meeting Area ²	130
Total	1,180

1. (Social Workers, Speech Language Pathologist, Occupational Therapists, Physical Therapists, Adapted PE teacher). For every 2.0 FTE, 1 workstation area (2:1 ratio) is to be utilized fluidly by various ancillary staff assigned to a school. The number of workstation areas is contingent on FTE allocation and shall be determined at the time of design program of space.

2. One Private Student Meeting Area for every 2.0 FTE. To be used fluidly by ancillary staff. The number of Private Student Meeting Areas is contingent on FTE allocation and shall be determined at the time of design program of space.

» High School Ancillary Support Suite



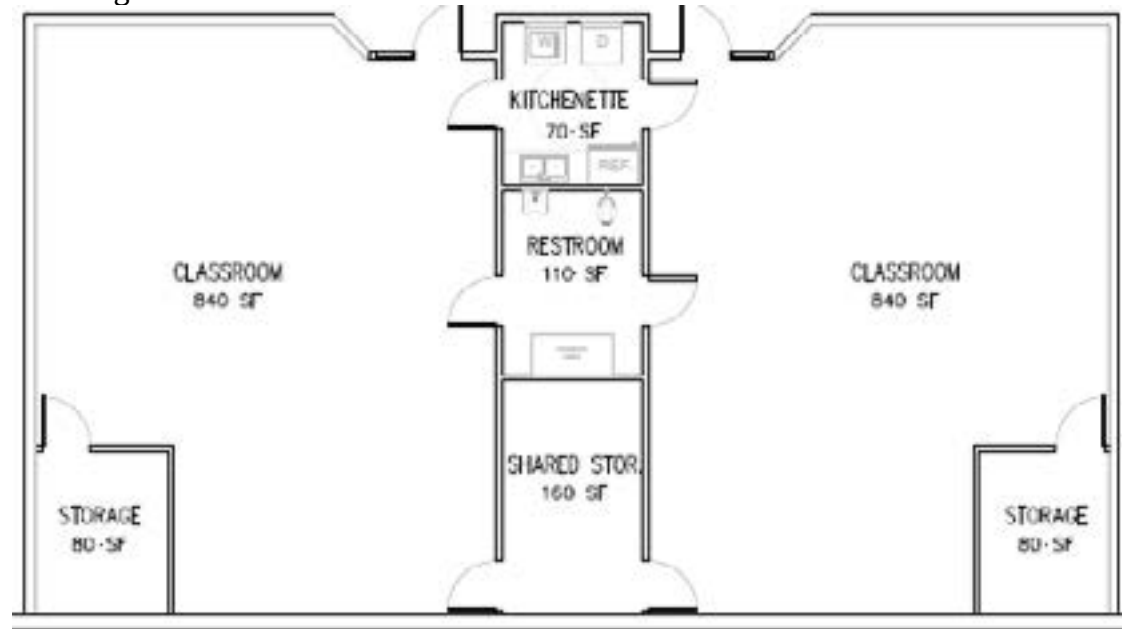
High School Ancillary Suite Support Spaces	
Space	Size (sq. ft.)
Instructional/Therapy Space with Swing (OT/PT)	840
Therapy space Storage (OT/PT)	90
Office Workstation Hub (60 sf each, 4 stations) ¹	240
Private Student Meeting Area A 2	130
Total	1,430
<p>1. To be used fluidly by Social Workers, Speech Language Pathologist, Occupational Therapists, Physical Therapists, Adapted PE teacher. For every 2.0 FTE, 1 workstation area (2:1 ratio) is to be utilized fluidly by various ancillary staff assigned to a school. The number of workstation areas is contingent on FTE allocation and shall be determined at the time of design program of space.</p> <p>2. One Private Student Meeting Area for every 2.0 FTE. To be used fluidly by ancillary staff. The number of Private Student Meeting Areas is contingent on FTE allocation and shall be determined at the time of design program of space.</p>	

»»»» **INTENSIVE GLOBAL SUPPORT (IGS) LEVELS I & II PROGRAM CLASSROOM SUITE**

The following are conceptual drawings of the Ancillary Support Suite at Hubs and Non-Hubs for elementary, middle, and high schools:

- » Intensive Global Supports I and Intensive Global Supports II Classroom Spaces
IGS Level I students are building independence. IGS Level II students are dependent and may have feeding issues among other medical conditions.
- » At all school levels, IGS classrooms are designed in sets of two with the objective of sharing the restroom and kitchenette.
 - » **(C) Classroom** – Standard classroom design including sink. 840 SF
 - » **(S) Storage** – 1 individual storage area for each classroom at 80 SF each and 1 shared storage area for both classrooms at 160 SF each. See diagram for optimal spatial layout.
 - » **(K) Shared Kitchenette** – The shared kitchenette is 70 SF and provides ADA access. It includes an area for stacked washer and dryer, an area for an efficiently sized refrigerator, a counter with sink, and a microwave above the sink. Storage cabinets are also provided above the counter area (doors/no doors).The microwave is not for student use.
 - » **(R) ADA restroom** – 110 SF with standard changing table (motorized for height).
- » Doors throughout the classroom and shared suite are placed in locations where they do not block the accommodation and placement of a Hoyer or Arjo lifting system near the shared rest room.
- » The Arjo or Hoyer lifting system is generally placed within the classroom so that the instructor can easily access this device for use within the restroom or within the classroom space. These systems are used to lift non-ambulatory students.
- » No Shower is needed within IGS facility space. Shower amenities are provided through Nurse’s Office.
- » Furniture solution: Playtex diaper genie or similar product for odorless diaper disposal

The following is a conceptual drawing of Intensive Global Support (IGS) classroom space for all grade levels.



Intensive Global Support I and II Classroom Spaces: Elementary, Middle, and High School	
Space	Size (sq. ft.)
Classrooms (2 at 840 sq. ft. each)	1680
Shared Kitchenette	70
ADA Restroom with changing table	110
Storage area (1 per classroom at 80 sq. ft. each and 1 shared for both classrooms at 160 sq. ft.)	320
Total	2180

Note: These spaces are designed as two classrooms spaces with shared kitchenette, shared restroom, and individual storage areas.

CURRENT DISTRICT SPED PROGRAM DESIGNATIONS

In spring 2017, APS SPED underwent a program restructuring; new program name designations are reflected below:

Current Term	Definition	Former Term
SES1 (Social Emotional Support Services Level 1)	Significant emotional challenges which impact adaptive behavior skills.	ED
SES2 (Social Emotional Support Services Level 2)		PACES
IGS1 (Intensive Global Support Services Level 1)	Significant global learning deficits and global adaptive behavior skills deficits.	FSP
IGS2 (Intensive Global Support Services Level 2)		ISP
SCS1 (Social and Communication Support Services Level 1)	Significant communication and social skills deficits which impact other adaptive behavior skills.	AU-Social Communication
SCS2 (Social and Communication Support Services Level 2)		AU-Independent Communication
SCS3 (Social and Communication Support Services Level 3)		AU-Emerging

ELEMENTARY SCHOOL SPECIAL EDUCATION DESIGN STANDARDS

Consult with Capital Master Plan at the time of design program of space to determine the types and numbers of SPED spaces needed. Not all SPED programs are delivered at every school.

ELEMENTARY SCHOOL SPECIAL EDUCATION DESIGN STANDARDS					
SPED Instructional Classrooms	PTR	Non-Hub Description	Non Hub Total SF	Co-located District Hub Description	Co-Located Hub Total SF
Gifted	24	840 SF General Classroom	840	same as non-hub	840
Cross Categorical	8 to 24	840 SF General Classroom	840	same as non-hub	840
District Early Childhood (Developmental Preschool Program)/ Kindergarten ¹	8	Development Preschool Program classrooms shall be constructed in 2 classroom units. Each classroom shall be 1,250 SF to include private ADA bathroom with changing table and storage. ²	1250	same as non-hub	1250
Levels 1 and 2: Social Emotional Support Services (SES 1 and SES 2)	8	815 SF Classroom and 25 SF quiet room for a total 840 SF. The Quiet Room to have the following components: floor and walls surfaces made from durable and cleanable materials that cannot be easily damaged, no outlets or light switches on interior walls. ^{3 and 5}	840	same as non-hub	840
Levels 1 and 2: Intensive Global Support Services (IGS 1 and IGS2)	8	IGS classrooms are designed in sets of two with the objective of sharing the restroom, kitchenette and storage. The classroom is a standard classroom including sink for 840 SF. Each classroom shall have 1 storage area of 80 SF each and 1 shared storage area of 160 SF (80 SF each). The shared kitchenette is 70 SF and provides ADA access. It includes an area for stacked washer and dryer (ADA compliant), an area for an efficiently sized refrigerator, a counter with sink, and a microwave above the counter area (doors/no doors).The microwave is not for student use. The ADA restroom is 110 SF and has a standard changing table (motorized to adjust height). Doors throughout the classroom and shared suite are placed in locations where they do not block the accommodation and placement of a Hoyer or Arjo lifting system near the shared restroom. ⁴	840 SF plus storage and shared Kitchenette and Restroom	same as non-hub	840 SF plus storage shared Kitchenette and Restroom
Levels 1, 2, and 3: Social and Communication Support Services (SCS 1, SCS 2, and SCS 3)	8	815 SF Classroom and 25 SF quiet space (to include specialized lighting and furniture) for a total 840 SF Quiet space is meant to refocus and relax; quiet space can be accomplished with furniture. ^{3 and 5}	840	same as non-hub	840

SPED Administration Spaces	Non-Hub Description	Total SF	Co-located District Hub Description	Total SF
Individualized Educational Plan (IEP) Meeting Room	A space for 16 people (240 SF). Include VOIP capabilities with Active Panel and data.	240	same as non-hub	240
Head SPED Teacher ⁶	Office with VOIP capabilities	120	same as non-hub	120
SPED Assistant Principal ⁶	Office with VOIP capabilities	120	same as non-hub	120

SPED Administration Spaces	Non-Hub Description	Total SF	Co-located District Hub Description	Total SF
Instructional/Therapy Space	The SPED Ancillary Support Suite will accommodate the following staff: Social Worker (SW), Speech Language Pathologist (SLP), Occupational Therapist (OT), and Physical Therapist (PT), and Adapted PE (APE). The suite includes: instructional/therapy space with swing, therapy space storage, office workstation hub (based on FTE), and private student meeting area. ⁷ This space includes an area for a table to provide 1:1 student instruction. This room includes a ceiling hook for a therapy swing that is located at the center of the open space relative to the edge of the student instructional area. A whiteboard is required for instruction. Furniture needs include non-built-in cubbies with counter and a wardrobe for storage. No active panels are needed. Through scheduling, this space is designed to be used fluidly by all ancillary staff, giving priority to OT/PT therapy instruction and service needs. To have adjacent access to the Office workstation hub to facilitate ancillary staff circulation.	500	Instructional/Therapy Space at a collocated hub is larger.	840
Therapy Space Storage	A storage area is provided with direct access to the OT/PT instructional therapy space. Double doors are provided, similar to doors found in a gym, providing access for wide equipment. The storage room also features vertical storage shelves.	90	same as non-hub	90
Office Workstation Hub ⁸	An office area to accommodate two workstations and cabinet to store personal belongings. More than two people, reflecting that ancillary staff positions are often part-time, may use the two workstations. Various ancillary staff assigned to the school will use the two workstations fluidly. VOIP capabilities are provided as per office standards. The office workstation has access to the one-on-one private Student Meeting Area.	120	same as non-hub	120
Private Student Meeting Area ⁹	A private area with adjacent access to the office workstation area will allow ancillary staff to meet privately with students for delivery of instruction or service. This area will accommodate a small table and chairs for 2 to 4 people. VOIP capabilities provided.	130	same as non-hub	130

1. Pre-School outdoor play area and Bathroom to 3-5 year old standard
2. PreK classrooms will share an appliance area: a refrigerator is needed; only one appliance area is needed in school for pair of DPP programs; sink for food prep - these spaces are for adult use; Instructional kitchenette not needed for student instruction at the PreK level.
3. See detailed SPED standards regarding surfaces and fixtures in Quiet Spaces.
4. Resilient flooring in the OT/PT and IGS classrooms is preferred over carpet.
5. IGS classrooms shall be constructed in 2 classroom units with shared Appliance and Bathroom areas for a total of 2,180 SF.
6. Close proximity to school restrooms are given preference to District Programs SES and SCS classrooms over the general 1st through 5th grades classrooms.
7. To facilitate Ancillary Staff collaboration and flexible, functional space, VOIP capabilities are to be outfitted throughout the Ancillary Support Suite.
8. For every 2.0 FTE, 1 workstation area (2:1 ratio) is to be utilized fluidly by various ancillary staff assigned to a school. The number of workstation areas is contingent on FTE allocation and shall be
9. For every 2.0 FTE, one private student meeting area is needed (2:1 ratio). The number of private student meeting areas shall be determined at the time of design program of space.

MIDDLE SCHOOL SPECIAL EDUCATION DESIGN STANDARDS

Consult with Capital Master Plan at the time of design program of space to determine the types and numbers of SPED spaces needed. Not all SPED programs are delivered at every school.

MIDDLE SCHOOL SPECIAL EDUCATION DESIGN STANDARD					
SPED Instructional Classrooms	PTR	Non-Hub Description	Non Hub Total SF	Co-located District Hub Description	Co-Located Hub Total SF
Gifted	24	840 SF General Classroom	840	same as non-hub	840
Cross Categorical	8 to 24	840 SF General Classroom	840	same as non-hub	840
Levels 1 and 2: Social Emotional Support Services (SES 1 and SES 2)	8	815 SF Classroom and 25 SF quiet room for a total 840 SF. The Quiet Room to have the following components: floor and walls surfaces made from durable and cleanable materials that cannot be easily damaged, no outlets or light switches on interior walls. ^{1 and 3}	1250	same as non-hub	1250
Levels 1 and 2: Intensive Global Support Services (IGS 1 and IGS2)	8	IGS classrooms are designed in sets of two with the objective of sharing the restroom, kitchenette and storage. The classroom is a standard classroom including sink for 840 SF. Each classroom shall have 1 storage area of 80 SF each and 1 shared storage area of 160 SF (80 SF each). The shared kitchenette is 70 SF and provides ADA access. It includes an area for stacked washer and dryer, an area for an efficiently sized refrigerator, a counter with sink, and a microwave above the sink. Storage cabinets are also provided above the counter area (doors/no doors).The microwave is not for student use. The ADA restroom is 110 SF and has a standard changing table (motorized to adjust height). Doors throughout the classroom and shared suite are placed in locations where they do not block the accommodation and placement of a Hoyer or Arjo lifting system near the shared restroom. ⁴	840 SF plus storage and shared Kitchenette and Restroom	same as non-hub	840 SF plus storage shared Kitchenette and Restroom
Levels 1, 2, and 3: Social and Communication Support Services (SCS 1, SCS 2, and SCS 3)	8	815 SF Classroom and 25 SF quiet space (to include specialized lighting and furniture) for a total 840 SF Quiet space is meant to refocus and relax; quiet space can be accomplished with furniture. ^{1 and 3}	840	same as non-hub	840

SPED Administration Spaces	Non-Hub Description	Total SF	Co-located District Hub Description	Total SF
Individualized Educational Plan (IEP) Meeting Room	A space for 16 people (240 SF). Include VOIP capabilities with Active Panel and data.	240	same as non-hub	240
Head SPED Teacher ⁴	Office with VOIP capabilities	120	same as non-hub	120
SPED Assistant Principal ⁴	Office with VOIP capabilities	120	same as non-hub	120

<<<<<

SPED Administration Spaces	Non-Hub Description	Total SF	Co-located District Hub Description	Total SF
Instructional/Therapy Space	The SPED Ancillary Support Suite will accommodate the following staff: Social Worker (SW), Speech Language Pathologist (SLP), Occupational Therapist (OT), and Physical Therapist (PT), and Adapted PE. The suite includes: instructional/therapy space with swing, therapy space storage, office workstation hub (based on FTE), and private student meeting area. ⁵ This space includes an area for a table to provide 1:1 student instruction. This room includes a ceiling hook for a therapy swing that is located at the center of the open space relative to the edge of the student instructional area. A whiteboard is required for instruction. Furniture needs include non-built-in cubbies with counter and a wardrobe for storage. No active panels are needed. Through scheduling, this space is designed to be used fluidly by all ancillary staff, giving priority to OT/PT therapy instruction and service needs. To have adjacent access to the Office workstation hub to facilitate ancillary staff circulation.	500	Instructional/Therapy Space at a collocated hub is larger.	840
Therapy Space Storage	A storage area is provided with direct access to the OT/PT instructional therapy space. Double doors are provided, similar to doors found in a gym, providing access for wide equipment. The storage room also features vertical storage shelves.	90	same as non-hub	90
Office Workstation Hub ⁶	An office area to accommodate two workstations and cabinet to store personal belongings. More than two people, reflecting that ancillary staff positions are often part-time, may use the two workstations. Various ancillary staff assigned to the school will use the two workstations fluidly. VOIP capabilities are provided as per office standards. The office workstation has access to the one-on-one private Student Meeting Area.	120	same as non-hub	120
Private Student Meeting Area ⁷	A private area with adjacent access to the office workstation area will allow ancillary staff to meet privately with students for delivery of instruction or service. This area will accommodate a small table and chairs for 2 to 4 people. VOIP capabilities provided.	130	same as non-hub	130

1. See detailed SPED standards regarding surfaces and fixtures in Quiet Spaces
2. IGS classrooms shall be constructed in 2 classroom units with shared Appliance and Bathroom areas for a total of 2,180 SF.
3. Close proximity to school restrooms are given preference to District Programs SES and SCS classrooms over the general 6th through 8th grades classrooms.
4. Head SPED teacher and SPED Assistant Principal offices are contingent on FTE allocation and educational program at the time of design program of space. Not all schools have designated SPED administrative support.
5. To facilitate Ancillary Staff collaboration and flexible, functional space, VOIP capabilities are to be outfitted throughout the Ancillary Support Suite.
6. For every 2.0 FTE, 1 workstation area (2:1 ratio) is to be utilized fluidly by various ancillary staff assigned to a school. The number of workstation areas is contingent on FTE allocation and shall be determined at the time of design program of space.
7. For every 2.0 FTE, one private student meeting area is needed (2:1 ratio). The number of private student meeting areas shall be determined at the time of design program of space.

HIGH SCHOOL SPECIAL EDUCATION DESIGN STANDARDS

Consult with Capital Master Plan at the time of design program of space to determine the types and numbers of SPED spaces needed. Not all SPED programs are delivered at every school.

HIGH SCHOOL SPECIAL EDUCATION DESIGN STANDARDS			
SPED Instructional Classrooms	PTR	Non-Hub Description	Non Hub Total SF
Gifted	24	840 SF General Classroom	840
Cross Categorical	8 to 24	840 SF General Classroom	840
Levels 1 and 2: Social Emotional Support Services (SES 1 and SES 2)	8	815 SF Classroom and 25 SF quiet room for a total 840 SF. The Quiet Room to have the following components: floor and walls surfaces made from durable and cleanable materials that cannot be easily damaged, no outlets or light switches on interior walls. ^{1 and 3}	1250
Levels 1 and 2: Intensive Global Support Services (IGS 1 and IGS2)	8	IGS classrooms are designed in sets of two with the objective of sharing the restroom, kitchenette and storage. The classroom is a standard classroom including sink for 840 SF. Each classroom shall have 1 storage area of 80 SF each and 1 shared storage area of 160 SF (80 SF each). The shared kitchenette is 70 SF and provides ADA access. It includes an area for stacked washer and dryer, an area for an efficiently sized refrigerator, a counter with sink, and a microwave above the sink. Storage cabinets are also provided above the counter area (doors/no doors).The microwave is not for student use. The ADA restroom is 110 SF and has a standard changing table (motorized to adjust height). Doors throughout the classroom and shared suite are placed in locations where they do not block the accommodation and placement of a Hoyer or Arjo lifting system near the shared restroom. ⁴	840 SF plus storage and shared Kitchenette and Restroom
Levels 1, 2, and 3: Social and Communication Support Services (SCS 1, SCS 2, and SCS 3)	8	815 SF Classroom and 25 SF quiet space (to include specialized lighting and furniture) for a total 840 SF Quiet space is meant to refocus and relax; quiet space can be accomplished with furniture. ^{1 and 3}	840

SPED Administration Spaces	Non-Hub Description	Total SF
Individualized Educational Plan (IEP) Meeting Room	A space for 16 people (240 SF). Include VOIP capabilities with Active Panel and data.	240
Head SPED Teacher ⁴	Office with VOIP capabilities	120
Transition Specialist ⁴	Office with VOIP capabilities	120
SPED Assistant Principal ⁴	Office with VOIP capabilities	120

SPED Administration Spaces	Non-Hub Description	Total SF
<i>The SPED Ancillary Support Suite will accommodate the following staff: Social Worker (SW), Speech Language Pathologist (SLP), Occupational Therapist (OT), and Physical Therapist (PT), and Adapted PE. The suite includes: instructional/therapy space with swing, therapy space storage, office workstation hub (based on FTE), and private student meeting area.⁵</i>		
Instructional/Therapy Space	This space includes an area for a table to provide 1:1 student instruction. This room includes a ceiling hook for a therapy swing that is located at the center of the open space relative to the edge of the student instructional area. A whiteboard is required for instruction. Furniture needs include non-built-in cubbies with counter and a wardrobe for storage. No active panels are needed. Through scheduling, this space is designed to be used fluidly by all ancillary staff, giving priority to OT/PT therapy instruction and service needs. To have adjacent access to the Office workstation hub to facilitate ancillary staff circulation.	840

Therapy Space Storage	A storage area is provided with direct access to the OT/PT instructional therapy space. Double doors are provided, similar to doors found in a gym, providing access for wide equipment. The storage room also features vertical storage shelves.	90
Office Workstation Hub ⁶	An office area to accommodate two workstations and cabinet to store personal belongings. More than two people, reflecting that ancillary staff positions are often part-time, may use the two workstations. Various ancillary staff assigned to the school will use the two workstations fluidly. VOIP capabilities are provided as per office standards. The office workstation has access to the one-on-one private Student Meeting Area.	240
Private Student Meeting Area ⁷	A private area with adjacent access to the office workstation area will allow ancillary staff to meet privately with students for delivery of instruction or service. This area will accommodate a small table and chairs for 2 to 4 people. VOIP capabilities provided.	2 @ 130 sq. ft. each

1. See detailed SPED standards regarding surfaces and fixtures in Quiet Spaces
2. IGS classrooms shall be constructed in 2 classroom units with shared Appliance and Bathroom areas for a total of 2,180 SF.
3. Close proximity to school restrooms are given preference to District Programs SES and SCS classrooms over the general 6th through 8th grades classrooms.
4. Head SPED teacher and SPED Assistant Principal offices are contingent on FTE allocation and educational program at the time of design program of space. Not all schools have designated SPED administrative support.
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7. For every 2.0 FTE, one private student meeting area is needed (2:1 ratio). The number of private student meeting areas shall be determined at the time of design program of space.

APPENDIX C: Student Health Equipment

Owner provided Equipment

- » Wheelchair
- » Computer(s)/Printer(s)
- » Scale
- » Stadiometer (wall-mounted)
- » Paper cup dispenser
- » Cots
- » Phones
- » Free-standing furniture
- » Fire-proof cabinet(s) (1 per 500 students)
- » Trash cans

Equipment Provided by Nursing Services

- » Audiometer
- » Vision screening equipment
- » Otoscope
- » Stethoscope
- » Blood pressure cuffs
- » Sharps container
- » Reference books
- » First aid and triage supplies

APPENDIX D: Food Service

Space	Number of Meals Served per Day					
	200	201-400	401-600	601-800	801-1,200	1,201-1,500
Receiving	45	55	70	80	90	120
Can Wash / Dry	50	60	85	115	135	155
Staff Toilets/Lockers	100	200	200	200	225	250
Janitor Closet/ Storage	50	55	70	80	90	115
Offices	50	65	90	110	145	155
Dry Storage	200	250	350	450	550	650
Fridge/Freezer	130	175	250	350	500	700
Prep/Cooking	500	550	650	750	900	1,150
Pot/Pan Washing	75	80	95	105	120	140
Serving	250	325	650	1,000	1,300	1,600
Dining	800	1,200	2,000	2,800	3,400	4,000
Dish/Tray Washing	100	125	175	225	300	375
Total NSF	2,350	3,140	4,685	6,265	7,755	9,410

From: National Food Service Management Institute

APPENDIX E: Kitchen Appliance Guidelines

High School Kitchen Equipment List (Example from AHS)		
Item No.	Quantity	Description
1	1	S/S 3-COMPARTMENT SINK
2	4	S/S HAND SINK
3	LOT	POT & PAN STORAGE SHELVING
4	8	S.S WORK TABLES
5	1	40 QT. MIXER
6	LOT	FREEZER REFRIGERATION SYSTEM
7	LOT	WALK-IN STORAGE SHELVING
8	LOT	COOLER REFRIGERATION SYSTEM
9	LOT	WALK-IN COOLER / FREEZER
10	1	FLY FAN
11	LOT	DRY STORAGE SHELVING
12	1	HOT-TOP RANGE
13	1	TILTING SKILLET
14	1	S/S FLOOR TROUGH
15	2	DOUBLE CONVECTION OVENS
16	2	ROLL-THRU REFRIGERATORS
17	2	PASS-THRU HEATED CABINETS
18	1	S/S GRAB-N-GO COUNTER
19	1	DROP-IN FROST PLATE
20	1	HEATED MERCHANDISER
21	2	MILK DIPENSERS
22	1	S/S TRAY SLIDE
23	1	S/S CASHIER'S COUNTER
24	1	P.O.S. COMPUTER (N.I.C)
25	2	FLAT-TOP COUNTERS
26	1	HOT FOOD COUNTER
27	1	SNEEZE GUARD
28	1	COLD FOOD COUNTER
29	1	SNEEZE GUARD
30	1	FLAT-TOP COUNTER
31	1	S/S SLIDE TRAY
32	23	S/S CORNER GUARDS
33	4	BUN PACK RACKS
1	1	S/S 3-COMPARTMENT SINK
2	4	S/S HAND SINK
3	LOT	POT & PAN STORAGE SHELVING

APPENDIX F: Active Panel

Active Panel (aka: Interactive teaching Boards): Promethean Active-Panel Touch large screen high definition flat screen on mobile stand. Provide power and data connections at teaching wall.



APPENDIX G: Kiln Standards

Elementary, middle, and high schools typically get the same (or similar) electric kiln. High school art programs may require more than one electric kiln, as well as a gas kiln. Kiln needs for all programs shall be evaluated during design. Both types of kilns shall be installed inside of a building (no exterior kilns).

» Approved Electric Kiln Manufacturer (or approved equal) for all Elementary, Middle, and High Schools

- » Skutt Ceramic Products
- » Address: 6441 SE Johnson Creek Blvd., Portland, OR, 97206-9552
- » Phone: 503-774-6000
- » Website: www.skutt.com
- » Email: skutt@skutt.com

» Electric Kiln Model and Required Accessories

- » SKKM1227-3-208-3: Electric Ceramics Kiln, 208V, 3 Phase
 - » All new kilns shall be 208V 3 phase power. Consult the staff architect if an existing school does not have 208V 3 phase power.
- » SKF1227-3: Interior Kiln Furniture for 1227-3 Kiln
- » SKEnvironVent2: Vent for direct exhaust to exterior of building from the bottom of the kiln
- » SKEnvironLink: Electrical switching device to automatically turn on one or more exhaust vents when the kiln is operating
- » Easy View: This accessory angles the touchpad for easy viewing.
- » Lifter Upgrade Kit: Provides safe and easier lifting.
- » Installation: Installation and testing of the kiln at the site shall be performed by an approved installer.

» Other important electric kiln information:

- » Kiln Vent: The kiln shall have a motorized vent from the bottom of the kiln that is exhausted through a vent similar to that used for a residential clothes dryer (EnvironVent2 listed above). Even though the kiln interior is extremely hot, this vent mixes this hot air with such a large proportion of ambient room air that no special vent construction is required through the wall.
- » Room Exhaust: The room shall have an exhaust fan to remove the heat generated from the kiln, but this does not need to be in a special hood or have special fire suppression equipment. The contract architect shall verify fire suppression requirements with CID and the fire department having jurisdiction. In the past, the City of Albuquerque has NOT required a hood since there is an exception in Chapter 9 of the UMC for electric kilns that are equipped with vent blowers. This exhaust, in conjunction with the building HVAC system, must be able to maintain the room...

- » ...temperature below 105 degrees F, which is the maximum temperature that the electronic controller can tolerate. The EnvironLink device (see above) will automatically turn on the EnvironVent (see above) on the bottom of the kiln when the kiln is running. The room exhaust fan shall be on a line voltage thermostat to prevent the room from ever getting hot enough to trigger the fire sprinkler system. The room fan should not be controlled by a manual switch, because forgetting to turn it on would run the risk of setting off the fire sprinklers (as has happened at two Rio Rancho schools).
- » Fire Sprinklers: Ceiling mounted fire sprinkler heads shall NOT be located directly above the kiln and shall have the highest temperature setting allowable.
- » Clearance: Kilns must be a minimum of 18” (or greater if required by code) from any wall or combustible material. The approximate diameter of the kiln is 34” for planning purposes.
- » Wall and Floor Coverings: Flooring must be non-combustible. Concrete is preferred.

» Approved Gas Kiln Manufacturer (or approved equal) for High Schools

- » Laguna Gas Kilns
 - » NM Distributer: NM Clay
 - » 3300 Girard NE, Albuquerque, NM 87107
 - » Phone: 505-881-2350

» Gas Kiln Model and Required Accessories

- » LE 200-24 Gas-fired Pottery Kiln – Front Loading
- » Include all standard features as well as the following:
 - » K-26 firebrick walls, arch, and door (recommended for Cone 10 firing)
 - » Programmable controller

APPENDIX H: Ice Machine Standards for High School Athletics

- » Indigo™ Series 606 Ice Cube Machine
- » Model: IY-0606A



Ice Machine Electric
208-230/60/1 standard. (230/50/1 also available)

Minimum circuit ampacity:
Air Cooled: 11.1
Water Cooled: 10.7
Remote: 11.7

Maximum fuse size:
Air Cooled: 15
Water Cooled: 15
Remote: 15

Specifications
BTU Per Hour:
11,800 (average)
13,700 (peak)
Refrigerant: R-404A
CFC-free

Operating Limits:
Ambient Temperature Range:
35° to 110°F (1.7° to 43.3°C)

Water Temperature Range:
35° to 90°F (1.7° to 32.2°C)

Water Pressure Ice Maker Water In:
Min. 20 psi (137.9 kPa)
Max. 80 psi (551.1 kPa)



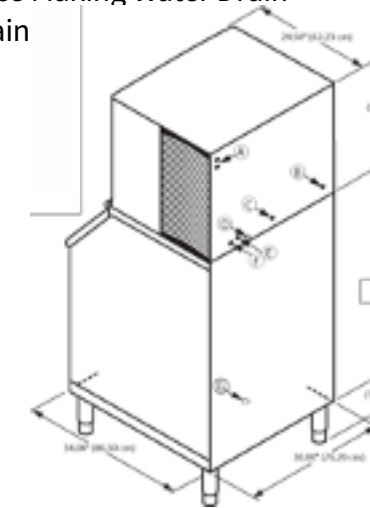
- » Designed for operators who know that ice is critical to their business, the Indigo™ Series ice machine's preventative diagnostics continually monitor itself for reliable ice reduction.
- » Improvements in clean ability and programmability make your ice machine easy to own and less expensive to operate.



» Indigo™ Series 606 Ice Cube

i-606 on B-570 Storage Bin

- » Electrical Entrance (2) Options
- » 3/8" (0.95 cm) F.P.T. Water Condenser Inlet (water-cooled units)
- » 1/2" (1.27 cm) F.P.T. Water Condenser Outlet (water-cooled units)
- » 1/2" (1.27 cm) Auxiliary Base Drain Socket
- » 3/8" (0.95 cm) F.P.T. Ice Making Water Inlet
- » 1/2" (1.27 cm) F.P.T. Ice Making Water Drain
- » 3/4" (1.91 cm) Bin Drain



» Specifications:

	Model	Ice Shape	Ice Production 24 Hours		Power Usage kWh/100 lbs. @90°Air/70°F 1 Ph	Potable Water Usage/100 lbs. of Ice	ENERGY STAR*
			70°Air/ 50°F Water	90°Air/ 70°F Water			
AIRCOOLED	ID-0606A	dice	632 lbs.	490 lbs.	5.41	20.0 Gal.	
	IY-0606A	half-dice	<635 lbs.	(555 lbs.	5.29	20.0 Gal.	
WATERCOOLED	ID-0606W	Dice	661 lbs.	575 lbs.	4.44	20.0 Gal.	NA
	IY-0606W	half-dice	700 lbs.	580 lbs.	4.45	20.0 Gal.	NA
* Water-cooled Condenser Water Usage / 100 lbs. of Ice: 140 gal. * Water-cooled models are excluded from ENERGY STAR qualification.							
REMOTE COOLED	ID-0696N	Dice	612 lbs.	535 lbs.	5.85	20.0 Gal.	
	IY-0696N	half-dice	642 lbs.	565 lbs.	5.76	20.0 Gal.	

Order ice storage bin separately. Ice storage bin and JC-0895 remote condenser must be ordered separately. Consult remote condenser specification sheet for details.

» Accessories:



LuminIce™ Growth Inhibitor

Reduces yeast and bacteria growth for a cleaner ice machine.



Bin Level Control

Allows ice bin level to be automatically set. Built-in LED light illuminates bin.



Arctic Pure® Water Filters

Reduces sediment and chlorine odors for better tasting ice.



iAuCS®

Schedules and performs routine ice machine cleaning automatically.

APPENDIX I: Technology Education Equipment

» **Wood Technology Equipment List (suggested)**

The following equipment may be part of the project and provided by the General Contractor (one each in the Wood Technology Lab unless noted otherwise):

- » Table Saws, 12-14” and 18”
- » Jointer
- » Surfacer
- » Shaper
- » Band Saws, 20” and 14” (2)
- » Belt Sander (2)
- » Spindle Sander
- » Panel Saw
- » Miter Saw Bench (approximately 26 LF)
- » Drill Press (3, ¾ - 1 ½ hp)
- » Router Table (2, 1 ½ and 3 ½ hp)
- » Wood turning lathes (6)
- » Scroll Saw (2)
- » Dowel Machine
- » 4000 lb capacity lumber shelving, 48” D x 72” L x 60” H.
- » Student Work Tables (6)
- » Tool Cabinet 5’ W x 2’ D (2)
- » Metal Storage Cabinet 4’ W x 2’ D (2)
- » Lathe Tool Grinder
- » Lathe Tool Buffer

» **METALS Technology Equipment List (suggested)**

The following equipment may be part of the project and provided by the General Contractor (one each in the Metals Technology Lab unless noted otherwise):

- » Clausing Metosa lathes (8)
- » Clausing Metosa lathe support cabinets (3)
- » Vertical Milling Machines (4)
- » Vertical Milling Machines cabinets (3)
- » Band Saw 20” (2)
- » Drill Press, 15” and 20”
- » Horizontal Band Saw
- » Iron Worker apparatus
- » Student Workbenches (4)
- » Heat Treat Oven (in Shop Support)
- » Surface Grinder (in Shop Support)

- » Tool Grinder 7” (2 in Shop Support)
- » Grinder 10”, 5 hp (in Shop Support)
- » Wire Wheel (in Shop Support)
- » Tool and bit grinder 6” (in Shop Support)
- » Belt Grinder (in Shop Support)
- » Arc Welders (2 in Shop Support)
- » RMD Notcher (in Shop Support)
- » RMD Pipe Bender (in Shop Support)
- » Welding Booths, 48” x 48” 10 with curtains (in Welding Room)
- » Welding Grate Top Tables, 48” x 24”, one in each welding booth
- » Oxygen and inert gas tanks and manifolds (in Shop Support)
- » Exterior area prepped for welding
- » Hoist beam with motorized crane

» **Transportation Technology Equipment List (suggested)**

The following equipment may be part of the project and provided by the General Contractor (one of each in the shop unless noted otherwise):

- » Two-post lifts
- » Tire mounting machine
- » Wheel balancer
- » Battery charger
- » Bench or pedestal grinder
- » Tool cabinets
- » Metal storage shelving
- » Compressed air for tools and tires
- » Power from retractable overhead reels
- » Vehicle Exhaust Recovery system
- » Student Work benches/tables
- » Containment area for 55 gallon liquid waste storage drums

APPENDIX J: Wireless Installation Requirements

» **Wireless Specifications**





- » Wireless networking – wireless access points (WAPs or AP’s) shall be planned for and installed per requirements set forth by APS IT department.
- » Wireless shall be deployed in all public areas such classrooms, conference rooms, study areas, stadiums, open areas adjacent to buildings, etc.

» **BICSI TDMM requirement/environmental considerations**

Consider these factors when developing of the wireless access points:

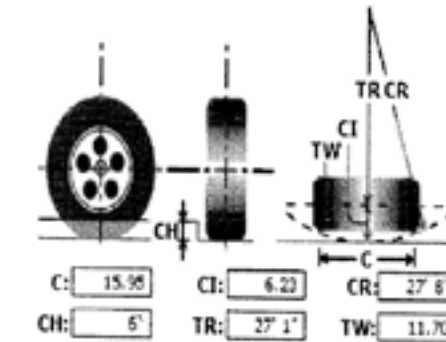
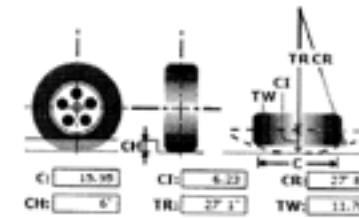
- » When deploying and/or designing wireless networks, thoroughly evaluate the environment in which wireless standards (BICSI; TDMM and BICSI wireless standards manual), propagation analysis, or modeling.
- » Materials, objects, local geography, electrical, HVAC units and other EMI/RFI factors in the atmosphere can effect wireless communications.
- » Per BICSI/EIA/TIA/IEEE/ANSI: factors affecting the behavior of waves: refraction, scattering, diffraction, and or absorption any of the following factors can affect the wireless broadcast and design considerations need to be considered when designing and or installing the wireless.
- » Design/installation requirements: ceiling installation in the center of the classroom is APS’s standard: other facilities may vary on the placement of the WAPs (gym, cafeteria, library, auditorium...)
- » WAP locations that are in areas with lay in ceilings require per code to be self-supported to the ceiling deck and the WAP will be mounted to a T-bar hanger and centered in the tile in the center of the room and supported to the red iron/I-beams and or trusses.
- » Open ceiling installation requirements: 2-4” squire boxes, ¾” rigid/IMC (cut to length so that the WAP is no longer than 10 feet: support to ceiling deck), 2-swivel mounts (part#tps fh12) wall installations can only be installed if aps it approves the installation. For specific wireless details contact APS IT department. (New 2015/2017 requirement 1 WAP per classroom; 2 cat6 drop per)

APPENDIX K: Transportation

School Bus Configurations				
Configuration	 Type A	 Type B	 Type C	 Type D
Passenger Capacity Width & Length	Typically 16-36 Width 8' Length 25'	Typically 30-36 Width 8' Length 35'	Typically 36-78 Width 8' Length 40'	Typically 54-90 Width 8' Length 45'
GVWR	Type A-I: ≤ 14,500 pounds (6,600 kg) Type A-II: 14,500 pounds (6,600 kg) and up	Type B-I: ≤ 10,000 pounds (4,500 kg) Type B-II: between 10,000–21,499 pounds (4,536–9,752 kg)	Over 21,500 pounds (9,800 kg) (typically between 23,000–29,500 pounds (10,400–13,400 kg))	Over 20,000 pounds (9,100 kg) (typically between 25,000–36,000 pounds (11,000–16,000 kg))
Description	A bus body placed on a cutaway van chassis with a left-side driver's door Single or dual rear wheels on drive axles.	A bus body mounted to either a stripped chassis or a cowled chassis The entrance door is mounted behind the front wheels The engine compartment is located partially inside the passenger compartment next to the driver and the hood is significantly shorter than that of conventional buses (similar to step vans)	A bus body mounted to a cowled medium-duty truck chassis The entrance door is mounted behind the front wheels. The engine is mounted forward of the windshield	A bus body mounted to a separate chassis. The entrance door mounted in front of the front wheels. Single rear axle or (very rarely) tandem rear axles The engine is mounted next to the driver inside the bus (front-engine/ "FE"), in the rear of the bus behind the rearmost seats (rear-engine/ "RE")

Turning Radius – 47 PAX

Proposal: 10070 Version: 1 Model: INTEGRATED CE S BUS (PB105)
 Dealer: SUMMIT TRUCK GROUP (821041 000) Application: School Transportation GVWR: 29800

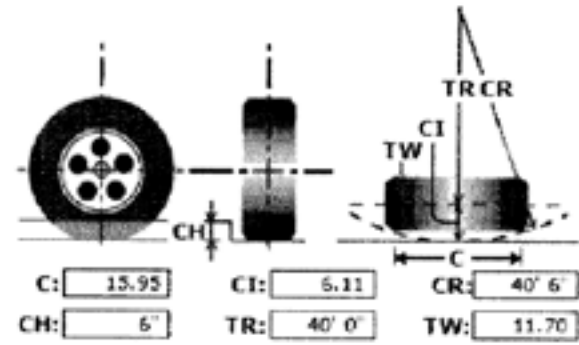
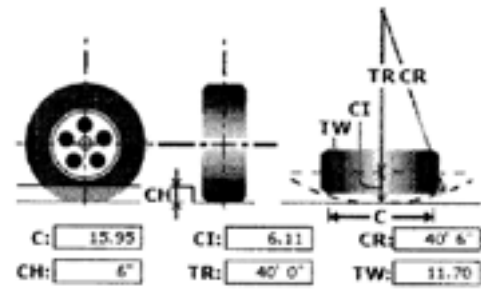


Turning Radius Statistics	
Calculation Factors	
Front Axle Code	0002ASH
Steering Gear Code	0005PSA
Front Wheel Code	0027DUG
Front Tire Code	07372135429
Wheelbase	193
General Information	
Inside Turn Angle	50.00 Degrees
Radial Overhang	19.00
Axle Information	
KingPin Inclination	6.25 Degrees
KingPin Center	69.00

* All Measurements are in inches, unless otherwise specified.

Turning Radius – Activity Bus

Proposal: 10289 Version: 1 Model: INTEGRATED RE S BUS (PB305)
Dealer: SUMMIT TRUCK GROUP (821041 000) Application: Activity Trip GVWR: 36220

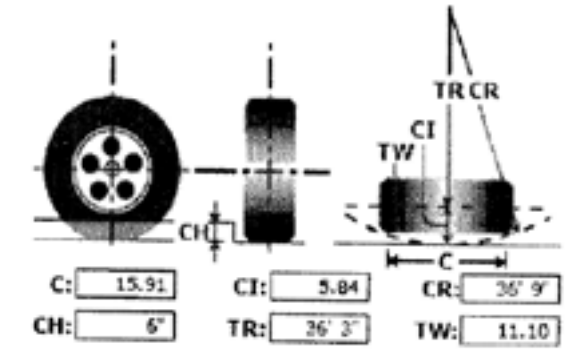
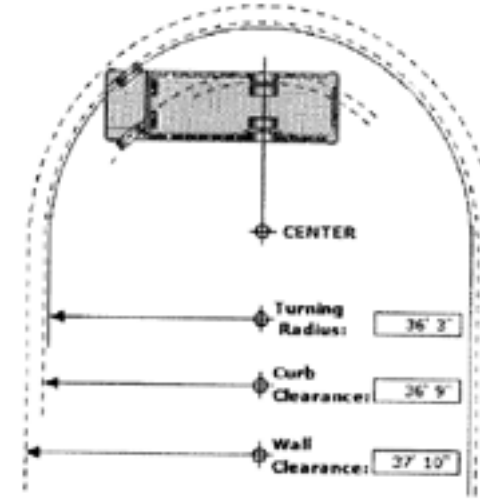


Turning Radius Statistics	
<i>Calculation Factors</i>	
Front Axle Code	0002AST
Steering Gear Code	0005PRJ
Front Wheel Code	0027DMC
Front Tire Code	07382135429
Wheelbase	276
<i>General Information</i>	
Inside Turn Angle	43.00 Degrees
Radial Overhang	52.00
<i>Axle Information</i>	
KingPin Inclination	6.25 Degrees
KingPin Center	69.00

* All Measurements are in inches, unless otherwise specified.

Turning Radius – 71 PAX

Proposal: 10477 Version: 1 Model: INTEGRATED CE S BUS (PB105)
Dealer: SUMMIT TRUCK GROUP (821041 000) Application: Activity Trip GVWR: 36220



Turning Radius Statistics	
<i>Calculation Factors</i>	
Front Axle Code	0002ASH
Steering Gear Code	0005PSA
Front Wheel Code	0027DUW
Front Tire Code	07382135415
Wheelbase	276
<i>General Information</i>	
Inside Turn Angle	50.00 Degrees
Radial Overhang	19.00
<i>Axle Information</i>	
KingPin Inclination	6.25 Degrees
KingPin Center	69.00

* All Measurements are in inches, unless otherwise specified.

APPENDIX L: Sign Standards



APPENDIX M: Library Services and Instructional Materials Recommendations for K-5 Libraries

» 6.27.30.16 N MAC

- » There must be a Library/Media Center, where students can access research materials, literature, non-text reading materials, books and technology.
- » Must include a space for reading, listening and viewing materials.
- » Area: needs to be at least 3 net sf/student of the planned school program capacity, but no less than 1,000 net sf, with additional office/workroom space and secure storage.
- » Resources: library fixtures, equipment and resources in accordance with the standard equipment necessary to meet the educational requirements of the PED.
- » Source: <http://www.nmcprstate.nm.us/nmac/parts/title06/06.027.0030.html>

» NM SCHOOL LIBRARY PROGRAM STANDARDS AND APS STATUS REPORT RUBRIC FACILITY DESIGN

- » The Library/Media Center should be centrally located and convenient to all students.
- » Minimum interior space should be the larger of 3600 square feet or enrollment multiplied by 6.
- » Basic functional areas must include space for:
 - » Sufficient shelving to house the collection (3 linear feet for every 25 standard volumes or 50 picture books)
 - » Two or more classes of 25-30 students each
 - » Large group presentations (with the ability to darken area to show presentations on screens)
 - » Reference (mostly computers or other devices to access online reference)
 - » Circulation activities
 - » Electronic resource work area(s) at 30 sq. ft. per workstation, with a minimum of 20 computers
 - » Library office(s)/workroom, with a view of the library
 - » Ample and secure storage
 - » Displays
 - » Work/study
 - » Reading
 - » Instruction (with the ability to darken area to provide instruction on screens)
 - » Group study or meeting
 - » Mobile device carts
- » The Library/Media Center should be aesthetically pleasing, welcoming, and have natural light.
- » Windows should provide sufficient UV protection for library materials.

» BUILDING INFRASTRUCTURE

- » Electrical wiring, adequate to meet lighting needs and electronic equipment needs, which meets or exceeds current National Electric Code.
- » Maximum internet and intranet connectivity (high-speed, many ports, strong wireless network, etc.)
- » Meets/exceeds state uniform building codes, is accessible and flexible.
- » Adequately heated, cooled, and ventilated.
- » Lighting and sound provisions appropriate for reading, study, and other library activities.

» FURNITURE

- » Appropriate-size chairs and tables for student population.
- » Computer workstations (sufficient for at least one class).
- » Shelving for physical collection with a minimum of 3 linear feet for every 25 standard volumes or 50 picture books.
 - » Shelving should be flexible, not impede lines-of-sight, and either be along library walls or be movable.
- » Secure storage cabinets.
- » File cabinets.
- » Circulation desk with ample space, designed to be usable by elementary students.
- » Furniture appropriate to study or meeting rooms, if included in library design.

» COMPUTER EQUIPMENT

- » At least 20 new computers or laptops.
 - » Should have current operating systems and a variety of software.
 - » Should include software that allows students and staff to virtually collaborate and create products/content in the library.
- » Mobile devices (iPads, other tablets, etc.).
- » One promethean (or similar presentation system) board.
- » Library equipment (scanners, printer, librarian tablet for checkout, etc.).
- » Additional equipment (telephone, scanners, laminators, etc.).
- » Current media production equipment and software.

Sources: Standards for New Mexico School Libraries ([http://nmla.org/clocs/NM Task Force for School Library Standards RevMar04.pdf](http://nmla.org/clocs/NM%20Task%20Force%20for%20School%20Library%20Standards%20RevMar04.pdf)) and APS Library Status Report Rubric (attached document).

APPENDIX N: LIBRARY SERVICES AND INSTRUCTIONAL MATERIALS RECOMMENDATIONS FOR HIGH SCHOOL LIBRARIES

» 6.27.30.16 NMA

- » There must be a Library/Media Center, where students can access research materials, literature, non-text reading materials, books and technology.
- » Must include a space for reading, listening and viewing materials.
- » Area: needs to be at least 3 net sf/student of the planned school program capacity, with additional office/workroom space and secure storage.
- » Resources: library fixtures, equipment and resources in accordance with the standard equipment necessary to meet the educational requirements of the PED.

» NM SCHOOL LIBRARY PROGRAM STANDARDS AND APS STATUS REPORT RUBRIC FACILITY DESIGN

- » The Library/Media Center should be centrally located and convenient to all students.
- » Minimum interior space should be the larger of 3600 square feet or enrollment multiplied by 6.
- » Basic functional areas must include space for:
 - » Sufficient shelving to house the collection (3 linear feet for every 25 standard volumes)
 - » Three or more classes of 25-30 students each
 - » Large group presentations
 - » Reference (mostly computers or other devices to access online reference)
 - » Circulation activities
 - » Electronic resource work area(s) at 30 sq. ft. per workstation, with a minimum of 6 computers
 - » Multiple electronic resource work areas are preferable
 - » Library office(s)/workroom, with a view of the library
 - » Ample and secure storage
 - » Displays
 - » Work/study spaces (preferably three)
 - » Reading areas (preferably at least two)
 - » Multiple instruction areas (with ability to darken any with boards or projectors)
 - » Content creation area(s)
 - » Group study or meeting areas
 - » Mobile device carts
- » Any doors used by students or staff under normal, non-emergency circumstances should have security gates.
- » The Library/Media Center should be aesthetically pleasing, welcoming, and have natural light.

» BUILDING INFRASTRUCTURE

- » Electrical wiring, adequate to meet lighting needs and electronic equipment needs, which meets or exceeds current National Electric Code.
- » Maximum internet and intranet connectivity (high-speed, many ports, strong wireless network, etc.)
- » Meets/exceeds state uniform building codes, is accessible and flexible.
- » Adequately heated, cooled, and ventilated.
- » Lighting and sound provisions appropriate for reading, study, and multiple classes using the library simultaneously.

» FURNITURE

- » Appropriate-size chairs and tables for student population(s); sufficient seating for at least three classes.
- » Computer workstations (sufficient for at least two and preferably three — classes).
- » Shelving for physical collection with a minimum of 3 linear feet for every 25 standard volumes or 50 picture books.
 - » Shelving should be flexible, not impede lines-of-sight, and be movable.
- » Secure storage cabinets.
- » File cabinets.
- » Circulation desk with ample space.
- » Well-designed furnishings appropriate for recreational reading areas (sufficient for at least two areas).
- » Furniture appropriate to study or meeting rooms.

» COMPUTER EQUIPMENT

- » At least 60 new computers or laptops.
 - » Should have current operating systems and a variety of software.
 - » Should include software that allows students and staff to virtually collaborate and create products/content in the library.
- » Mobile devices (iPads, other tablets, etc.).
- » At least one promethean (or similar presentation system) board(s).
- » Library equipment (scanners, librarian tablet for checkout, etc.).
- » Additional equipment (telephone, printers, scanners, laminators, etc.).
- » Current media production equipment and software.

APPENDIX O: FENCING REQUIREMENTS

» Chain Link Fencing

- » Steel Wire Fabric: Metallic-coated 9 gauge wire.
 - » Mesh Size: 2”
 - » Weight of Metallic (Zinc) Coating: ASTM A 392, Type II, Class 1, 1.2 ounce/square foot with zinc coating applied before weaving.
 - » Coat selvage ends of fabric that is metallic coated before the weaving process with manufacturer’s standard clear protective coating.
- » Selvage: Knuckled top and bottom, or as indicated in the drawings.
- » Wind Screen, Provide in locations if indicated on drawings or directed by APS personnel. Typical material to be ci-Permatex black mesh vinyl coated polyester fabric, with 85% opacity manufactured by ci Fabrics 800-622-7169 or approved substitution.
- » Framing
 - » Posts and Rails: Comply with ASTM F 1043 for framing and the following:
 - » Group IA, round steel pipe, Schedule 40.
 - » Post Size and Thickness: According to ASTM F 1043.
 - » Top Rail: 1-5/8 inches O.D., unless otherwise noted in the drawings.
 - » Line Post: 2-3/8 inches O.D., unless otherwise noted in the drawings.
 - » End, Corner and Pull Post: 2-7/8 inches O.D., 4.64 pounds per foot, unless otherwise noted in the drawings.
 - » Coating for Steel Framing: Type C, Zn-5-Al-MM alloy, consisting of not less than 1.8 ounce/square foot coating.
- » TENSION WIRE
 - » General: Provide horizontal tension wire extended along bottom of fence fabric.
 - » Metallic-Coated Steel Wire: 7 gauge, marcelled tension wire complying with ASTM A 817, ASTM A 824, and Type II, zinc coated (galvanized) by hot-dip process, with matching chain link fabric coating weight.
- » FITTINGS
 - » Post and Line Caps: Provide for each post.
 - » Rail Fittings: provide the following where indicated in the drawings or directed by APS personnel:
 - » Top Rail Sleeves: Pressed-steel or round-steel tubing not less than 6 inches long.
 - » Rail Clamps: Line and corner boulevard clamps for connecting rails in the fence line-to-line posts.
- » CHAIN LINK FENCE INSTALLATION
 - » Chain Link Fabric: Fabric for athletic fields shall be applied to the inside of posts adjacent to the field of play. Leave 1 inch between finish grade or surface and bottom selvage, unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.
 - » Fasteners: Install nuts for tension bands and carriage bolts on the side of the fence opposite the fabric side. Peen ends of bolts or score threads to prevent removal of nuts.
- » Welded Metal Fencing
- » Egress Gates at Security Fencing

APPENDIX P: NM 811 Method**NM 811 METHOD – CONTRACTOR PROCEDURES FOR APS/FDC
UTILITY LINE SPOTTING****Contractor Responsibilities:**

1. Submit complete electronic (email) request for line spotting a minimum of two working days (48 hours; all time references herein exclude weekends and State holidays) in advance of the planned sub-surface disturbance (including, but not limited to, excavation, trenching, boring, probing or drilling) to New Mexico 811, phone: 811 or website: www.NM811.org . The request must include the following:
 - Individual responsible (Requestor) and company name, email address and phone and fax contact information of the requesting excavator;
 - The associated APS project number APS facility or school name and brief description and the purpose of the type of work to be done.
 - Name and email of the APS Construction Manager.
 - The excavation site must be pre-marked in white. (Required by Statute)
 - An accurate physical description and address of the location and size of the excavation site to be line spotted at this time.
 - Driving instructions if outside Metropolitan Albuquerque.
 - Spotting instructions.
 - Any appropriate remarks regarding access to or hazards at the site.
2. Have a representative available if needed on site to assist line spotters in designation of line spotting area(s) and clarify any instructions upon request from line spotters.
3. Line spots are good for 10 working days. Requests should be limited to the amount of work that can be completed in that time frame. An excavator may only request a Relocate ticket for circumstances beyond their control i.e. inclement weather, site access issues, etc.
4. Do not proceed with any sub-surface disturbance until the 48 hour window has expired and Requestor verifies via phone or website that the ticket has been cleared or marked by all utility operators.
5. Wide Area Locates should not be used unless a specific work plan can be developed and followed by all excavators on site. It will be the General Contractors responsibility to develop and ensure that all sub-contractors, APS and the APS On-Call Subsurface Utility Consultant agree to follow the plan.
6. Design locates will be scheduled as soon as possible but may require more than 48 hours to complete.
7. APS On-Call Subsurface Utility Consultant will update the One-Call Ticket status on the NM811 website prior to expiration.
8. If there are site access issues or other unforeseen delays, APS On-Call Subsurface Utility Consultant will contact the requestor and APS personnel to apprise them of the delay.
9. APS On-Call Subsurface Utility Consultant will email a report to APS Staff Architect and CM or other APS project personnel. This report will contain the information regarding the utilities marked and results of the on-site utility investigation. Photos will be recorded of sites and will be available on request. APS On-Call Subsurface Utility Consultant will not contact requestor directly.