School District of Manatee County

Design Standards & Specification Guidelines

Issue Date: 11/01/2024
Fifth Edition

Department of Construction Services

R.G. Matzke Support Center
1 Matzke Way, Building 7
Bradenton, FL 34208

School District of Manatee County
Planning Manual for Schools & Ancillary Spaces for the Department of Construction Services (DCS)

Introduction

The mission of the School District of Manatee County (SDMC) is to educate and develop all students today for their success tomorrow. In order to achieve this mission, we must construct the highest quality facilities possible, with strict compliance with project budgets.

The purpose of this document is to introduce you to our standards for constructing and/or renovating schools and ancillary spaces for SDMC. It is our goal to establish these guidelines in an effort to streamline the process of designing and constructing our facilities, to accomplish our mission.

This is a “living document” which will be available on the District’s website. Continual review and periodic revisions will take place with resulting changes posted on the District’s website. It has been formatted for ease of use. The intent is to provide a framework for decisions and allowing for creative solutions to be considered and implemented wherever possible. Periodic revisions will be dated as such.

SDMC strives to construct “maintenance-friendly”, cost effective schools and we recognize that operational costs incurred after the project is complete also play a significant role in selecting products and equipment.

SDMC will strive to provide buildings that meet green building objectives. We believe that utilizing renewable products, energy efficient equipment and other items are vital.

Department of Construction Services

LEGEND:

Font Color		Department		Director
		Maintenance and Operations		Todd Henson
		Food Service		Regina Thoma
		Transportation		Jamie Warrington
		Instructional Technology		Scott Hanson
		Construction Services		Reginald Goff

Please use the above assigned font color to change text color of sections you will be reviewing and updating.

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SDMC Design Standards & Specification Guidelines Updates

Original Edition
The Original Edition of the SDMC Design Standards & Guidelines was issued 03.01.2022 for internal review and comment.

First Edition
The 2022 SDMC Design Standards & Guidelines was issued to Architect/Engineers 07.15.2022.

Second Edition

Third Edition

Fourth Edition

Fifth Edition
The 2024 SDMC Design Standards & Guidelines revised, Oct. 30, 2024 Items reviewed: IT - Panels, Chief Boxes & Speakers; M&O - Access Card Power Supply, Art Sink, Knox Box; Miscellaneous - Tuba Storage

Revisions

Department of Construction Services (DCS)
School District of Manatee County
Department of Construction Services
R.G. Matzke Support Center
1 Matzke Way, Building 7
Bradenton, FL 34208

SDMC Building Code Interpretations

From our Chief Building Officials

If there is ever a question on how School District of Manatee County Construction Services & Code Compliance handles and/or views a specific issue, particularly when other Districts you have worked with have done it differently do not hesitate to contact DCS. We look forward to working with you.

The District chooses to outsource the Building Official responsibilities to a Qualified Third Party which will be assigned by DCS for each project. The Architect shall communicate and coordinate as required with the assigned Building Officials through the DCS Coordinator.

Building Classification

Typically, SDMC school buildings are Risk Category III (Except EHPA Buildings IV), Type IIB Construction, Sprinklered.

Open Collaboration Separation between Assembly and Educational Spaces

Per recent open plan design concepts there has been much discussion over separation between Assembly Spaces (Media Centers, Large Collaboration Areas) and Educational Spaces (Classrooms, Group Projects, etc.). Our District has concluded that: FBC 423.8.1.1 along with information provided by the State Fire Marshal's Office is clear. **NO** fire separation (rated wall) is required where the *"support spaces"* (assembly-media, collaboration, etc.) abut student occupied spaces. Simply put, they are not separate occupancies.

Lightning Protection

Pursuant to FBC 453.17.7 Lightning: All facilities shall be protected accordingly. If you are working on a renovation project, please contact our office to verify this requirement applies.

Storage Rooms

Storage rooms and custodial closets, in sprinklered buildings, shall be enclosed with smoke partitions sealed tight to the floor and roof deck with firestop sealant, in accordance with Sections 14.3.2.1 and 8.7.1.2, NFPA 101, Florida Fire Prevention Code. No Smoke Dampers are required unless the supply and/or return duct feeds an exit access corridor.

All Storage Rooms over 100 square feet are required to be 1-Hour rated per FBC Sections 311.1.1 and table 508.4.

Janitor Closets

Janitor Closets are required to be 1-Hour rated in a Non Sprinklered Building OR if room is over 100 square feet in a Sprinklered Building. In Fully Sprinklered Buildings Janitor Closets are required to have a Smoke Partition.

Storage, Data, Kitchen, Mechanical, and Electrical Rooms Smoke & Heat Detectors

Smoke detectors shall be provided in Data, Electrical, and Mechanical rooms, even though they are not required by code. If one of the aforementioned rooms has an exterior door a heat detector shall be installed in lieu of a smoke detector. In Fully Sprinklered Buildings heat detectors are NOT required in Kitchens.

In Fully Sprinklered Buildings smoke detectors are NOT required in Storage Rooms.

Concessions Stands & Health Department Permitting

Shall be submitted for Health Department Permitting by the Architect. Fees are paid by Construction Services.

The contact at Manatee County Health Services are:

Barbara Will, MPH
Email: barbara.will@flhealth.gov mailto:

Florida Department of Health in Manatee County
410 6th Avenue East
Bradenton, FL 34208
(941) 714-7585
Fax: (941) 750-9364

Required Applications:
Manatee County Health Dept (MCHD) Food Service Information/Request for Plan Review Form
Manatee County Health Dept (MCHD) Application for Group Care Certificate Form
Food Service Establishment Plan Review Application, DH Form 8003-DCHP-02
Application for Sanitation Certificate, DH Form 4086

New EHPA Construction

Per the Interlocal Agreement for Shelter Operations Between the SDMC, FL, Manatee Sheriff's Office, and Manatee County BOC, FL dated July 07, 2019, Section 6. Shelter Retrofit and New EHPA Construction, Subsection B, the following apply:

The County and SDMC agree to review and determine the best facilities based on capacity, capability, and location. The County and SDMC agree to consider hardening entire campuses to EHPA standards, subject to funding.

- Unless necessary to meet the requirements of a funding agreement, the County and SDMC agree to negotiate total exemption for school which do not offer desired capability and capacity in exchange for expended hardening of future facilities.
- The County and SDMC agree to waive the certain EHPA criteria specifically, ICC-500 wind requirements, On-site water and sewer storage, Roof and Wall Cladding, and missile impact rated glass.
- The base wind design will be 150 mph.

The County and SDMC hereto, contingent upon the availability of funding, agree to provide materials, equipment, and supplies to improve the use or increase the capacity of school facilities to serve as emergency public shelters, to include, but not limited to:

- Shutters or other code approved window protection
- Emergency power connections
- Emergency generators
- Medical Equipment

SDMC Fire Official Requirements

SDMC Fire Official:

The Florida Fire Prevention Codes below should be used as guide (not all inclusive) for your project. Not all items will apply, but those that do should be included in the Contract Documents prior to submission for Fire Official Review. If at any time you have any questions regarding Life Safety and/or Code issues, please don't hesitate to call. We look forward to working with you.

Contact: Sally Porter
Email: hulls@manateeschools.net
Phone: 941-708-8800 ext.: 44173

Florida Fire Prevention Codes and 69A-58 FAC

NFPA 1 Chapter 1 Administration

Purpose: The purpose of this *Code* is to prescribe minimum requirements necessary to establish a reasonable level of fire and life safety and property protection from hazards created by fire, explosion, and dangerous conditions. **NFPA 1-1.2**

Plans and Specifications: The District Safety Inspector shall have the authority to require plans and specifications to ensure compliance with applicable codes and standards. **NFPA 1-1.7.11**

Certificate of Occupancy: When the building code requires a certificate of occupancy, the certificate shall not be issued until approved by the District Safety Inspector for fire code enforcement. **NFPA 1-1.7.13**

Chapter 18 Fire department Access and Water Supply

Fire Apparatus Access: Plans for fire apparatus access roads shall be submitted to the fire department for review and approval prior to construction. **NFPA 1-18.1.1.1**

Fire Hydrant Systems: Plans and specifications for fire hydrants shall be submitted to the fire department for review and approval prior to construction. **NFPA 1-18.1.1.2**

FBC: All valves controlling the water supply for automatic sprinkler systems, pumps, tanks, water levels and temperatures, critical air pressures and water-flow switches on all sprinkler systems shall be electrically supervised in accordance with **NFPA 72. FBC 903.4**

Required Access

Approved fire department access roads shall be provided for every facility, building, or portion of a building hereafter constructed or relocated. **NFPA 1-18.2.3.1.1**

When fire department access roads cannot be installed due to location on property, topography, waterways, nonnegotiable grades, or other similar conditions, the Fire Department shall be authorized to require additional fire protection features. **NFPA 1-18.2.3.1.4**

Required fire lanes shall be provided with the inner edge of the roadway no closer than 10 feet and no further than 30 feet from the building. Such lanes shall have a surface designed to accommodate fire apparatus with a minimum weight of 32 tons. **FL NFPA 1-18.2.3.1.5**

Access to Buildings

A fire department access road shall extend to within 50 feet of at least one side-hinged, swinging type egress exterior door that can be opened from the outside and that provides access to the interior of the building. This provision does not apply to any buildings or structures not requiring a side-hinged, swinging type egress. **FL NFPA 1-18.2.3.2.1**

Fire department access roads shall be provided such that any portion of the facility or any portion of an exterior wall of the first story of the building is located not more than 150 feet from fire department access roads as measured by an approved route around the exterior of the building or facility. **NFPA 1-18.2.3.2.2**

When buildings are protected throughout with an approved automatic sprinkler system that is installed in accordance with NFPA 13, NFPA 13D, or NFPA 13R the distance in 18.2.3.2.2 shall be permitted to be increased to 450 feet. **NFPA 1-18.2.3.2.2.1**

Multiple Access Roads: More than one fire department access road shall be provided when it is determined by the Fire Department that access by a single road could be impaired by vehicle congestion, condition of terrain, climate conditions, or other factors that could limit access. **NFPA 1-18.2.3.3**

Dimensions: Fire department access roads shall have an unobstructed width of not less than 20 feet and unobstructed vertical clearance of not less than 13 ft. 6 in. Minimum width may be reduced to meet special access with the approval of the Fire Department.**FL NFPA 1-18.2.3.4.1.1**

Dead Ends: Dead-end fire department access roads in excess of 150 feet in length shall be provided with approved provisions for the fire apparatus to turn around. **NFPA 1-18.2.3.4.4**

Marking of Fire Apparatus Access Roads: Fire lanes shall be marked with freestanding signs with the wording "NO PARKING FIRE LANE "or similar wording. Such signs shall be 12 in by 18 in. with a white background and red letters and shall be a maximum of seven feet in height from the roadway to bottom part of the sign. The signs shall be within sight of the traffic flow and be a maximum of 60 feet apart. **FL NFPA 1-18.2.3.5.3**

Water Supplies and Fire Hydrants

An approved water supply capable of supplying the required fire flow for fire protection shall be provided to all premises upon which facilities, buildings, or portions of buildings are hereafter constructed or moved into the jurisdiction. **NFPA 1-18.3.1*** Where no adequate or reliable water distribution system exists, approved reservoirs, pressure tanks, elevated tanks, fire department tanker shuttles, or other approved systems capable of providing the required fir flow shall be permitted. **NFPA 1- 18.3.2***

Hydrants: A 36-inch clear space shall be maintained around the entire circumference of the fire hydrants except as otherwise required or approved by the Fire Official (AHJ). **NFPA 1-18.5.3**

Fire hydrants shall be no closer than 40 feet to the building. **NFPA 24-7.2.3**

Fire hydrants shall be spaced no more than 500' apart.

Fire mains shall be 8 inches or larger in diameter and looped if entire campus is not sprinkled.

Fire hydrant connections must not be less than 18" and no more than 24" above finished grade.

Paint hydrants to indicate the flow rate.

Fire Protection Appliances: Clearances of seven and one-half feet (7'-6") in front and to the sides of the appliances. **FL NFPA 1-18.3.4.2.** *Exception: These dimensions may be reduced by approval of the Fire Department.*

Fire Department Connections

FDC: Fire department connections shall be identified by a sign that states "NO PARKING FIRE DEPARTMENT CONNECTION" and shall be designed in accordance with Florida Department of Transportation standards for information signage. **FL NFPA 1-18.3.4.3**

Fire department connections (FDC) shall be located on the street side of buildings, fully visible, a sign indicating what building(s) they protect and recognizable from the street or nearest point of fire department accessibility and shall be located and arranged so that hose lines can be attached to the inlets without interference from nearby objects, including buildings, fences, post, or other fire department connections. **NFPA 14-6.4.5**

A fire department connection (FDC) for standpipe shall be located not more than 100 feet from the nearest fire hydrant connected to an approved water supply. **NFPA 14-6.4.5.4**

The FDC size and type will be determined by the District Safety Inspector (4" or 5" Storz connector) with locking cap. Please contact our office to determine size required for your school location and the local fire department jurisdiction serving your school. Contractor shall order from https://www.knoxbox.com/.

FDC shall be not less than 18 inches above finished grade and no more than 36 inches above finished grade.

Fire Department Connection (FDC) must not be more than 250 feet from the building. Our preference is 100 feet. Please contact our office to determine type required for your school location and the local fire department jurisdiction serving your school. Contractor shall order from https://www.knoxbox.com/.

Fire lines and the fire department connection must be pressure tested at not less than 200 psi for 2 hours with a zero drop in pressure. This test must be conducted by the District Safety Inspector. Prior notification for the test shall be not less than 2 working days. Preference of time for the test to start is between 7 am – 9 am.
NFPA 24-10.10.2.2.1*

Fire Walls/Smoke Walls

Red or yellow fire caulking shall be used. (**NO WHITE CAULKING is permitted**)

Fire walls and smoke walls shall be inspected and approved by the District Safety Inspector prior to being covered.

Each New Fire Wall, Fire Barrier, Fire partition, Smoke Barrier, Smoke partition, or any other new wall required to have protected openings shall be permanently identified with signs or stenciling above any decorative ceiling and in concealed spaces with the wording, "SMOKE PARTITION – PROTECT ALL OPENINGS", or similar language. Such signs or stenciling shall be in 4-inch-high letters, ½ inch stroke, and not more than 15 feet on-center. **NFPA 101-8.3.2.4**

All penetrations through a fire or smoke wall shall be properly sealed.
All storage rooms shall be 1 hour rated and approved by the District Safety Inspector, except if fully sprinkled. **NFPA 101-14.3.2**

All laundry rooms (with commercial equipment) shall be 1 hour rated and sprinkled. **NFPA 101-14.3.2**

Corridors:

All corridors in a fully sprinkled building, educational occupancy, shall be smoke rated partitions to deck per **NFPA 14.3.6**.

Fire alarm and sprinkler systems

The fire alarm system final test shall be witnessed and approved prior to the facility being occupied. This test must be witnessed by the District Safety Inspector. Prior notification for the test shall be not less than 2 working days.
In a sprinkled building(s) smoke detectors will be installed in electrical rooms and IDF rooms. Explosion proof heat detectors shall be installed in flammability rooms or other areas as determined by the District Safety Inspectors.

Full Evacuation Voice communication will be installed in all Educational and Assembly occupancies through-out the entire facility/campus. One Command Center shall be provided unless the building is an EHPA. EHPA facilities will require a second Command Center. Location to be confirmed by the DCS Project Coordinator and/or Building Code Official.

The sprinkler system shall be pressured tested at not less than 200 psi for a period of 2 hours with zero drop in pressure. The test must be conducted by the District Safety Inspector. Prior notification for the test shall be not less than 2 working days. **NFPA 13-16.2.1.1**

Sprinklers shall be installed under fixed obstructions over 4 feet wide such as ducts, decks, open grates, flooring, and overhead doors. **NFPA 13-8.5.5.3.1**

Fire Extinguishers

Please use the following criteria when specifying "Fire Extinguishers" on our projects.

With the exception of the following areas, please specify a 5lb. ABC fire extinguisher in ALL locations.

- In computer labs---specify a "water mist" type extinguisher.
- In any area where a fire suppression system is in place (example; culinary arts lab), specify a "K" extinguisher.

Clarification: Our Kitchen Hoods Do **NOT** have suppression systems, all that is required is a 5lb ABC extinguisher.

The proper spacing of fire extinguishers shall be per NFPA 10.

Knox box

Use Recessed Knox-Box 3275 with Hinged Door. All knox boxes to incorporate the school districts keyway, not the local fire district. Locate Knox-Box on Site and Floor Plans and ensure it is coordinated to be recessed in the exterior wall. Surface mounted Knox-Box at main entry is NOT permissible. The tamper switch is not used.

Blue Box (Tactical)

Use Blue Recessed Knox-Box 3275 with Hinged Door (new construction) or Blue Surface Mounted Knox-Box 3200 (existing construction). School District has our own knox keyway to be used on all blue boxes. Locate Knox-Box on Site and Floor Plans. Locate outside the dumpster enclosure. Standard brown box with blue reflective tape is also acceptable. Contact: The Knox Company | Attn: Wendy Fecteau | 5150 Central Sarasota Pkwy | Sarasota FL 34238 | Office: 888-342-3530. The tamper switch is not used.

Temporary Separation Walls

The following is from NFPA 1.

16.4.2 Temporary Separation Walls.

16.4.2.1
Protection shall be provided to separate an occupied portion of the structure from a portion of the structure undergoing alteration, construction, or demolition operations when such operations are considered as having a higher level of hazard than the occupied portion of the building.

16.4.2.2
Walls shall have at least a 1-hour fire resistance rating.

16.4.2.3
Opening protectives shall have at least a 45-minute fire protection rating.

Backflow Preventor Tamper Switch

The backflow preventor tamper switch is required to be monitored by the school fire alarm system. If a backflow preventer serves 2 or more schools on the same campus the tamper switch must be monitored by the fire alarm system at each building.

SDMC Design Standards and Specifications Checklist

Verification and Confirmation

A/E and Construction Management Teams shall review the below list of items and provide Verification and Confirmation that items have been implemented in Contract Documents prior to GMP. This Checklist will serve both the A/E/CM Teams as well as the Owner for document review. The "Date Added" column is for use by DCS in tracking revisions to this document.

**** Division Items noted elsewhere in this document are REQUIRED to be implemented in the Contract Documents ****

This section has been formatted to follow the MasterSpec Divisions. District Standards, and minimum District Specification Requirements have been grouped together for clarity and ease of use.

This document is a living document and intended to be used as s checklist for the A/E Team and shall be reviewed with the DCS prior to 100% Construction Documents.

TABLE OF CONTENTS – DIVISION 01 – GENERAL CONDITIONS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Under Section 017700 – Closeout Procedures add in BOLD CAPS "**NOTE: IF CONTRADICTIONS OCCUR BETWEEN DIVISION 01 AND THE CONSTRUCTION MANAGEMENT AGREEMENT, THE "OWNER/CM AGREEMENT" SHALL SUPERCEDE AND GOVERN FOR THOSE PARTICULAR AREAS**"	03.01.22	
Under Section 011000 - Guaranteed Maximum Price Proposal: Construction Manager shall follow the GMP Proposal Booklet requirements and format outlined in the SDMC Design Standards and Specifications Guidelines Appendix C. A sample document with instructions to the Construction Manager are provided by the Owner.	10.24.23	

DIVISION 00 00 10 – PROJECT COLLABORATION

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
To insure Plans and Specifications are developed in accordance with the District's guidelines, accommodating ever-changing pedagogies, and incorporating new technology, the Project Team should facilitate Plan Reviews for Maintenance, IT and other District personnel as follows: • Schematic Design • Design Development • Construction Documents	03.01.22	
The process for Plan Reviews shall be as follows: • The Project Director/Project Assistant will transmit one set of documents to the Director of Maintenance, the Director of IT and the Director of Data/Communications. • The Supervisors and Managers will create a log for the appropriate District personnel to review and sign-off on the documents. • Upon completion of this review, all comments will be transmitted to the Project Director. • The Project Director will review these comments with the Project Team and incorporate and/or respond to each comment. • If possible, a meeting will be scheduled with the Project Team and the appropriate District staff to review and discuss specific issues.	03.01.22	
In addition, during construction, walk-throughs for Maintenance and other District personnel will be scheduled at approximately 50% complete and 90% complete. The CM should be the guide and a sign in sheet should be done to document who was in attendance.	03.01.22	

For existing Sites – Project Team shall consider:
• Underground utilities condition & age
  ○ Test/scope existing underground piping CWS/HWS and domestic
  ○ How will existing underground utilities be addressed
• Domestic water piping condition & age
  ○ Existing CPVC shall be replaced with copper
• Examine overall building grounding & condition
  ○ Consider testing the existing grounding system in place & upgrade
• Plans shall be 24" x 36" format unless prescribed otherwise by the Project Director and Architect/Consultants
	06.01.22
	
	05.28.24	

DIVISION 00 00 30 – VALUE ENGINEERING PROCESS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Value Engineering can be critical to getting a project within budget. Each item should be logged by the CM and reviewed by the Project Team and the appropriate District department, as applicable. While it is the District's intent for facilities to be constructed with the highest quality products and materials available, budgetary constraints may dictate evaluating alternative strategies.	03.01.22	
Generally, School District of Manatee County will consider the following items, as well as others deemed appropriate by the Project Team:	03.01.22	
Flooring: • Alternate flooring will be considered by the Project Team. Substitutions must be approved by the Maintenance & Operations Department.	03.01.22	
HVAC: • Test & Balance should be included in the CM contract. With 100% full commissioning. • Return air ducts do not have to be insulated if they are less than 50' in length. • Inspection ports should be reviewed to see if they can be reduced. • Mastic only. • Chillers 10-year warranty and 10 year PM.	03.01.22	
Plumbing: • Consider Raypac boilers. • Consider duct wrap in lieu of fiberglass insulation on interior storm drain piping (rain leaders). • Consider deep seal primers in lieu of trap primers. • Fixture packages should be opened up to alternate manufacturers.	03.01.22	
Lighting: • Use concrete, direct burial light poles in lieu of fiberglass poles. • Fixture packages should be opened up to alternate manufacturers.	03.01.22	
Generator: • If a generator is included in the project, consider eliminating the UPS and battery backups with the exception of the MDF location.	03.01.22	
Data/Communication: Install a minimum of 3: Classroom Category 6A communications outlets shall consist of a single gang faceplate with three non-keyed RJ45 modular to 110 type inserts. Two outlets to be located on opposite walls. Third outlet is incorporated into the Digital Display. • 1 wireless access point per classroom requires 2 Data. • 1 IP PA Speaker requires 1 data.	03.01.22	

DIVISION 00 00 40 – EHPA SHELTER PROCESS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
If a new or renovated school project is to be used as an Enhanced Hurricane Protection Area (EHPA) shelter, the following procedures are required: • Adhere to Florida Statute 1014.372, Education Facilities as Emergency Shelters. The facility must meet or exceed Florida Building Code Chapter 453.25, Public Shelter Design Criteria. • Determine the areas to be used as the shelter. • Determine where the EHPA Shelter Manager's office will be located.	03.01.22	
• Provide the required construction elements including: o Fire Alarm Control Panel in the EHPA Shelter Manager's Office, bladders, generators or provisions for hookup of portable generator units.	03.01.22	
• The use of a deep well system for EHPA water provisions will be considered by each project team.	03.01.22	
• It would be beneficial to determine whether or not natural or liquid propane (LP) gas would be used.	03.01.22	
• Determine the appropriate parking requirements for the EHPA Shelter.	03.01.22	
• The AE should prepare an Operating and Maintenance Manual for the EHPA Shelter Manager and related school-based staff.	03.01.22	
• The CM should provide training for the EHPA Shelter Manager and related school-based staff.	03.01.22	
• EHPA water system preferred options include: o Tank coupler – Gopher Industrial Item #APG315DAL (1-1/2" Part D Aluminum Ever-Tite) o Tank coupler dust cover – Gopher Industrial Item PTC1071115 (Part V Dust Cap Aluminum with Brass Handles 1-1/2") o NOTE: These items are intended to provide for relatively inexpensive means to have consistent requirements for filling and servicing of the EHPA water system tanks.	03.01.22	

DIVISION 00 00 50 – MISCELLANEOUS PROCEDURES

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
• Educational Specifications (Ed Specs): o When required, shall include: ▪ Vocational/technology equipment lists. ▪ Standard classroom layouts. ▪ Educational Programs. ▪ Facility capacity.	03.01.22	
Sole Source items: • While SDMC acknowledges the need for competitive subcontractor bidding for projects, we also realize the value of sole sourcing the following items (see individual PM sections for more information): o Access Control System o Membrane Roofing o Lighting Systems o Telephone System (VoIP) o Locking Hardware Public Address System o Low Voltage Cabling	03.01.22	
The School District of Manatee County has sustainability goals in the 2020 Strategic Plan. To that end, new construction and renovation projects shall be energy efficient, comply with industry standards and align with the State Requirements for Educational Facilities (SREF.) If more stringent requirements are desired, they will become part of the Planning Manual.	03.01.22	

DIVISION 00 60 00 – CLINICS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Clinics in kindergarten through grade 12 (K–12), vocational-technical centers (VTC), and full-service schools shall comply with the general criteria found in the Florida Building Code and the Florida Fire Prevention Code as adopted by the State Fire Marshal, as well as the specific criteria found herein. Clinics shall be located and equipped to provide emergency aid to students. Closets and storage cabinets used for medications and bandages shall have locks and shall be designed to be under constant supervision.	03.01.22	
School clinics shall include locked storage, toilet room and shower, and bed space.	03.01.22	
Sanitary facilities are required as follows: • Elementary school clinics, including kindergarten, shall include at a minimum one accessible toilet room, to serve male and female students, complete with a water closet, lavatory, accessible shower, changing table, and accessories. • Secondary and VTC school clinics shall include two accessible toilet rooms complete with water closet, lavatory, accessories, and shower. • Toilet rooms in clinics shall include both hot and cold water at the showers and all lavatories. The water temperature shall be controlled by a mixing valve and shall not exceed 110°F • All toilet room exhaust fans in the multi-story building areas shall discharge at the exterior wall at each floor level. They shall NOT extend through each floor plate to the roof. • A working countertop with lavatory/sink and hot water shall be provided in each clinic. • Space for student beds shall be provided in each clinic at 50 square feet (4.6 m2) per bed. Space for beds in secondary and VTC schools shall be equally divided for male and female students. Beds shall be provided based on student capacity in the following ratios: ○ Up to 500 students: Three beds ○ 501 to 1,000 students: Four beds ○ 1,001 to 2,000 students: Five beds ○ Over 2,000: Six beds • Line-of-Sight – ensure the clinic is designed so that the clinic assistant desk is placed where he/she can see students that are lying on cots as they need to be monitored (“Visual supervision of beds from reception area/office/nurses’ station”). • Clinic refrigerators shall be full size with ice maker and lockable. No under counter refrigerators are permitted. • Comply with current SREF requirements if other than listed above. • Clinic floor finish shall be VCT.	03.01.22	

DIVISION 00 65 00 – PLANT MANAGER/RECEIVING

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
All doors in Plant Manager & Receiving Areas shall be Hollow Metal type. Wood doors shall not be permitted.	03.01.22	
Plant Manager area shall have a dedicated toilet room and shower within the Receiving Area (with hot water).	03.01.22	
Emergency Eye Wash station is required ideally outside of the Receiving Area near entry door.	03.01.22	
Laundry Room with Washer and Dryer are required.	03.01.22	
All casework in the Plant Manager and Receiving Area shall be plywood construction as these areas are typically left open during the day and are not conditioned.	03.01.22	

DIVISION 00 72 00 – GENERAL CONDITIONS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Verify current AIA Contract Edition with DCS Contracts Coordinator.	03.01.22	

DIVISION 00 73 00 – SUPPLEMENTARY CONDITIONS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Verify current AIA Contract Edition with DCS Contracts Coordinator.	03.01.22	

DIVISION 01 11 00 – SUMMARY

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Verify this Section has been updated to reflect current project requirements (New vs. Occupied Campus). Review original unedited Master Spec for items that may apply to current project.	03.01.22	
Verify Owner Purchased items with Project Coordinator.	03.01.22	

DIVISION 01 22 00 – UNIT PRICES

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Verify Spec has been updated to reflect current project requirements.	03.01.22	
Verify with Project Coordinator if Unit Prices are desired.	03.01.22	

DIVISION 01 23 00 – ALTERNATES

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Verify Spec has been updated to reflect current project requirements.	03.01.22	

DIVISION 01 31 00 – PROJECT MEETINGS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Verify Pre-Installation Conference List with Project Coordinator.	03.01.22	

DIVISION 01 33 00 – SUBMITTAL PROCEDURES

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Insert Owner Submittal Checklist. Owner has a specific list of submittals that are required to have Owner Approval before proceeding. Obtain list from your Project Coordinator.	03.01.22	
At the project commencement, the CM will prepare a submittal list for the project listing all items that require a color selection.	03.01.22	
• Based on this list, the Project Architect will develop color schemes and present them to the Project Team for approval.		
• The Project Team will schedule color presentation meetings to review the recommended color schemes and products, as warranted by the project.		
• Once the color scheme is approved, the Project Architect will prepare a color board (or multiple color boards) for the project. The color board(s) must include samples of each color/product selected, as well as indicate where the item(s) will be located.		
• The Project Director will transmit the color board to the Superintendent's Cabinet for their review and acceptance.		
• Once this is done, the color board will be returned to the Project Director, who will transmit it to the CM.		
Color board(s) should be retained on site for the duration of the project.	03.01.22	
All color selections will be made at one time to insure a coordinated color scheme. Subsequent to Owner approval, absolutely no changes to color will be permitted without written consent by the Project Director. Products requiring color selections will not be released until all color selection submittals are submitted by the CM and approved by the Project Architect. Special exceptions to this must be approved by the Project Team.	03.01.22	
The intent is that the color scheme presented to the Project Team will not reflect the personal preferences of any one individual, and that the color schemes will be professionally developed.	03.01.22	

DIVISION 01 40 00 – QUALITY REQUIREMENTS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Mockups shall be required for the following (minimum): • Tooled Joints (Plazas) • Sidewalk Finish • Wall System with Window and Door with Finish • Precast Sills • Brick Cavity all Construction including Window/Flashing • CMU (exposed to public view only) • Millwork • Sealants Joints (High Visibility Areas) • Drywall Finish • Ceramic Tile (Wall, Floor, Base) • Quarry Tile (Floor, Base) • Vinyl Base • Lighting in Canopies • VCT Waxing • Paint • Stained Flooring	03.01.22	
Architect to ensure language is included in each Specification Section including size, quantity, etc. of mockups. Mockups must remain through Substantial Completion.	03.01.22	
Building Permit Process:	03.01.22	
• SDMC utilizes a third-party entity to complete plan review, permit and inspection services for all projects requiring a building permit.		
• During the design process, the AE and CM will provide documents to the BO, who will provide plan review comments.		
• After Construction Documents are complete, the AE and CM will provide signed/sealed documents and the required permit application to the BO for permit issuance.		
• During construction, the CM will schedule inspections with the BO.		
• If the facility is a Threshold Building, special requirements should be made with the BO to inspect.		
• Once the project is complete, the BO will issue the Certificate of Occupancy and assist with the completion of DOE OEF Forms.		

DIVISION 01 45 23 – TESTING LABORATORY SERVICES

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Verify with Owner if these services are contracted through the Owner direct with Materials Testing Agency or through the CM.	03.01.22	
Review original unedited Master spec for items that may apply.	03.01.22	

DIVISION 01 50 00 – CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Verify with Owner how Use Charges will be paid when on an Occupied Campus (i.e. via Owner or CM General Conditions).	03.01.22	
Verify with Owner if Educational Facilities Inspector's (EFI) Trailer is required for project.	03.01.22	
Placement and removal of all temporary utilities shall be the responsibility of the Contractor. Water and power may be provided by DCS. New building services to be arranged by the Contractor with the power company. Billing to be switched to DCS upon Final Owner Acceptance.	03.01.22	
• Construction Project Signs: ○ A project sign may be provided for all major construction projects and should include the following: full names of Board members and Superintendent at the time of the initial contract execution, the full name of the architectural firm and construction manager, Director of Construction Services and Project Director, and the MCSD logo. The size of these signs is typically 4'x8'. A submittal should be prepared by the CM and reviewed/approved by SDMC.	03.01.22	

DIVISION 01 73 00 – EXECUTION REQUIREMENTS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Verify this Spec has been updated to reflect current project requirements. New vs. Occupied Campus. Review original unedited Master spec for items that may apply.	03.01.22	

DIVISION 01 77 00 – CLOSEOUT PROCEDURES

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Verify all Related Spec Sections with Closeout requirements are listed.	03.01.22	
Request DCS current Closeout Requirements and update this section as applicable.	03.01.22	
Once the project is Substantially Complete: • As projects come to a close, the CM shall prepare a list of job purchased tools, furniture, equipment and other items. The Project Team will review these items and determine what will be turned over to the Owner at completion. These items will be transmitted and delivered to the SDMC warehouse for inventory. • Project progress photographs shall be included along with monthly aerial photographs in the PMIS books. This photographic documentation of the project shall be included in the closeout books. • The CM shall prepare two (2) closeout books which need to include: Operating & Maintenance instructions, Warranties, Subcontractor/Vendor listing, Technical Data, etc. • The CM shall transmit to the AE all As-Built information for review. The AE will compile and prepare the final As-Built documents and submit to the Owner. The CM shall provide one hard copy and one electronic copy of all As-Built documents. • No final payments will be made until these items are submitted and approved by the Project Director.	03.01.22	
• The Project Director will transmit these documents to the following: ○ Plans Room located in the Department of Construction Services ○ School Principal/Head Custodian/Plant Manager	03.01.22	
In addition to the above closeout documents, aerial photographs are required at the completion of all major construction projects, as follows: • Outside Frame Dimensions: 36-1/2" wide by 29-1/2" high • Frame: Black, 1-1/2" wide • Matt: White, 4" wide (approximate) • Visible Photograph Dimensions: 29-1/2" wide by 22" high • School Title: White letters, ½" high, All capitals, Located on bottom right, on the picture	03.01.22	
• NOTE: The existing photographs on display in the DCS Conference Room vary slightly in size and configuration. The above information is the average of these existing photographs and the most consistent size and configuration.	03.01.22	
See Appendix A for Closeout Requirements Checklist to be included in specifications and verify with Project Director.	03.01.22	

DIVISION 01 79 00 – TRAINING REQUIREMENTS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Owner Training Requirements: • Unless noted otherwise in the Construction Documents: ○ Owner training sessions will be recorded and submitted with the Closeout Documents. ○ Owner Training shall include a sign in sheet to document attendees for the training. ○ Owner Training shall include operational features, programming features and other features required to keep the item in working condition.	03.01.22	

DIVISION 02 00 00 – GEOTECHNICAL DATA

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Insert Owner supplied Geotechnical Report for project as Appendix to this section.	03.01.22	

DIVISION 02 00 00 – TERMITE CONTROL

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Termador or demonstrated equivalent must be provided. Side by Side comparison must be provided for acceptance.	03.01.22	
Termite Control must comply with most recent version of the Chapter 482 FL Statue.	03.01.22	
Termite spray shall extend 2-foot minimum from exterior face of building(s) and 1-foot high vertically from the ground.	03.01.22	
Green/blue dye shall be provided in mix for soil applications. Applications vertically shall be clear and in compatibility with exterior building finish.	03.01.22	

DIVISION 02 00 10 – ASBESTOS REPORTS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Insert Asbestos and/or Hazardous Materials Reports, if any, for existing building work. Verify with Project Director.	03.01.22	

DIVISION 03 30 00 – CONCRETE

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Fiber add mixture at sidewalks may be acceptable as an alternate to WWF subject to approval by Owner. If fiber is permitted all fibers must be burned off. Wire mesh is preferred to Fiber Mesh.	03.01.22	
Control joint spacing plan shall be approved by the Project Coordinator. Sidewalks should have an expansion or control joint at every 20' minimum.	03.01.22	
Mockup shall be required and accepted by the Architect and Owner prior to proceeding with full scope of work.	03.01.22	
Where Radon is present, provide the appropriate barrier under slabs and notify DCS.	03.01.22	
Consider the use of Barrier One Admixture to prevent moisture remediation in concrete SOG slabs. Highly recommended.	06.01.22	
Sidewalk areas shall be compacted and tested. Sidewalks should be a minimum of 4" thick with a 6" thickened edge adjacent to high traffic areas, sodded areas, and asphalt areas.	03.01.22	
Vapor barriers for all new concrete shall be a minimum of 15 mil Stego or equal.	03.01.22	
Sidewalk to Building expansion joint shall be impregnated sheathing with zip strip and gray sealant.	03.01.22	
Tooled joints shall be provided at exposed areas such as expansion joints, sidewalks, plazas, etc. Tooled joints must be 1 ½-inch deep.	03.01.22	
Light broom finish with 1 ½-inch picture frame shall be provided at sidewalk flatwork. Broom finish is preferred at all exterior sidewalks, stairs, etc.	03.01.22	
Cast-in-Place Concrete elevated walkways shall always be broom finished and have traffic coating applied.	03.01.22	
Hollow Core Plank Concrete shall always have Traffic Coating System applied.	03.01.22	

DIVISION 04 00 00 – MASONRY

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
New schools constructed for School District of Manatee County prefer double-wythe brick exterior wall systems to provide a longer building life cycle, unless an alternative is approved in advance by DCS.	03.01.22	
Masonry control joints shall be galvanized or copper and shall be located by the Architect/Engineer and clearly shown on the architectural plans.	03.01.22	
A mock-up of the masonry wall system shall be constructed and remain in place during construction and should include all elements required for a complete wall sample. See mockups and submittal requirements.	03.01.22	
All exposed masonry joints shall be tooled.	03.01.22	
Stainless or copper flashing is preferred; however, flexible flashing is acceptable if required by budget.	03.01.22	
In multi-wythe walls, cavities should be a minimum of 2”.	03.01.22	
Rake joints are not preferred.	03.01.22	
Masonry walls at mechanical room locations shall be insulated.	03.01.22	
Bullnose masonry units are not preferred.	03.01.22	
Stucco block should not be used at exposed interior wall locations.	03.01.22	

DIVISION 04 21 13 – BRICK MASONRY

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Mockup shall be required and accepted by the Architect and Owner prior to proceeding with full scope of work.	03.01.22	
Anti-graffiti sealer shall be applied at full brick height or 8 foot maximum above finished grade.	03.01.22	
Ensure weeps are located above final finished grade.	03.01.22	
Rope weeps shall be required. No vented weeps acceptable.	03.01.22	
Control joints shall be coordinated between Architectural and Structural drawings.	03.01.22	
Control joints shall be shown on the Architectural building elevations and coordinated with all MEP & FP. Devices should not fall on joint lines and should be balanced aesthetically.	03.01.22	

DIVISION 04 22 00 – CONCRETE UNIT MASONRY

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Mockup shall be required and accepted by the Architect and Owner prior to proceeding with full scope of work when exposed masonry is used.	03.01.22	
Control joints shall be coordinated between Architectural and Structural drawings.	03.01.22	
Sound absorbing block shall be used at chiller yard enclosures.	03.01.22	
Where exposed CMU occurs at interior spaces within the building (i.e. stairwells, electrical, mechanical, janitor closet, etc.) the workmanship and materials shall be equal to that in occupied spaces including painted surfaces. Ensure tooled mortar joints are provided.	03.01.22	

DIVISION 05 00 00 – METALS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Aluminum anodized finish handrails are preferred for all exterior locations and interior walls.	03.01.22	
Stainless steel handrails are preferred in the kitchen/cafeteria locations.	03.01.22	

DIVISION 05 40 00 – COLD-FORMED FRAMING

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Verify specified manufacturers are current with industry.	03.01.22	

DIVISION 05 50 00 – METAL FABRICATIONS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Verify roof hatch has been specified for the project. For all projects with a low sloped roof above 12'AFF and multi storied buildings.	03.01.22	

DIVISION 05 52 13 – PIPE AND TUBE RAILINGS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
All railings shall be Anodized Aluminum. Painted steel railings are not permitted.	03.01.22	
Verify specified manufacturers are current with industry.	03.01.22	
Railings shall be bolted in place. If railings cannot be supported core drilling shall be acceptable. Stainless steel bolts shall be used. Connections shall address galvanic action.	03.01.22	

DIVISION 06 10 00 – ROUGH CARPENTRY

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Telecom Room plywood shall be ¾-inch AC grade plywood, void free, with 2 coats of fire-retardant light colored paint all sides of board (front/back/all edges). Plywood shall be 8-feet high and mounted 8-inches A.F.F. Fire-rated plywood is NOT permitted. Verify electrical related specifications reflect this information.	03.01.22	
Wood blocking is preferred, but can be used where necessary. Wood blocking shall not be fire-rated wood or pressure treated. Locations are as noted but, not limited to the following: ***Wall mounted door stops, White Boards, Tack Boards, Wall mounted shelving, Wall mounted clocks, Wall hung upper cabinetry, Wall mounted electrical equipment, Digital Interactive Displays, Grab Bars, Science Lab Wall Accessories, etc.***	10.17.23	
If metal blocking is used it shall be 14 GA. minimum.	03.01.22	

DIVISION 06 40 00 – ARCHITECTURAL CASEWORK

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
AWI Quality Certification Program is required.	03.01.22	
Mockup shall be required and accepted by the Architect and Owner prior to proceeding with full scope of work. Mockup will be Destructive Tested by District.	03.01.22	
Include Warranty Section.	03.01.22	
Add attic stock paragraph item for shelf clips. Provide 150 shelf clips.	03.01.22	
Vanity countertops shall NOT be utilized in any toilet rooms.	03.01.22	
Backpack hooks shall be provided in Classrooms at Elementary Schools only for each student. Location TBD by PC/Principal. Request standard elevation from your project PC. Ensure adequate spacing between hooks to accommodate 18"H x 14"W x 9"D backpack. Basis of Design shall be Hertz Furniture backpack hook for innovation student – Model #INN-HOOK.	03.01.22	
Add Section for "PROTECTION". Installed countertops shall be protected immediately after installation. All casework shall be protected from dust/debris throughout the duration of construction until time of Final Cleaning.	03.01.22	
Countertops: • Laminate: Standard installation in classrooms, computer labs, conference rooms, workrooms, lounges, media centers, etc. • Epoxy Resin: Standard installation in chemical, biology, and science labs. • Solid Surfaces: Standard at Main School Reception and Media Center Desk. • All Countertop Work and Writing Surfaces shall be smooth non grained finish.	03.01.22	
Backsplash installation and caulking: All backsplashes shall be finished on all surfaces (inclusive of non-visible surfaces after installation). The backsplash shall be set in a sealant bead at the wall to backsplash condition and at the bottom of backsplash to counter condition. After the backsplash is set in a sealant bed caulk beads shall be placed at the top of backsplash to wall condition and backsplash to counter condition visible joints.	03.01.22	
AWI Premium Grade Flush Overlay Cabinets shall be provided.	03.01.22	
AWI Premium Grade High Pressure HGS laminate Countertops shall be provided.	03.01.22	
Casework Hardware: • Instrumental 5 knuckle hinges, Hospital tip on all cabinets. No European hinges. Match hardware finish. • Back-Mounted Pulls: BHMA A156.9, B02011.	03.01.22	
Cabinet locks shall be provided in all Clinic and Science Lab casework. Other casework should have locks on 20% of the casework in the room. Keys for casework should be transmitted to the Project Director at the completion of the project.	03.01.22	
Caulk all cabinets and countertops.	03.01.22	
Backing must be installed for all wall-mounted door stops.	03.01.22	
Cabinet bases shall be 4" high, ¾" CDX pressure treated.	03.01.22	

DIVISION 06 40 00 – ARCHITECTURAL CASEWORK (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Drawers made from stapled and glued plywood are preferred, not glued particle board.	03.01.22	
No cabinets shall have shelves over 36" long (Longer shelves sag and bow and consequently fall off their supports).	03.01.22	
Screw rails in cabinets should be made from ¾" plywood on the inside of the cabinet.	03.01.22	
Overhead cabinets should be a minimum of 12" deep	03.01.22	
Casework glazing shall be at least ¼" tempered glass (doors and/or shelves).	03.01.22	
In K-3 classrooms install cubbies for student storage (18" W x 18" H x 24" deep).	03.01.22	
In 4-5 classrooms install backpack hooks with adequate backing for these hooks.	03.01.22	
Musical instrument storage shall be FFE, not built-in casework. **See UltraStor Storage Cabinets by Wenger**. link: https://shop.wengercorp.com/education/ultrastorr-storage-products.html	10.30.24	
Wire Pulls: Back-mounted, solid metal with brushed chrome finish, 4 inches long by 5/16-inch diameter. Stanley No. 4484 or equal – No plastic pulls.	03.01.22	
Door Catch: At double doors provide cast aluminum, Ives #2 Elbow Catch at inactive leaf. Pull Chain catches not permitted. At Wardrobe cabinets provide fixed shelf at center of unit for catch mounting.	03.01.22	
Drawer Slides: BHMA A156.9, B05091. Equal to Accuride drawer slides. • Heavy Duty (Grade 1HD-100 and Grade 1HD-200): Side mounted; full-extension type; zinc-plated steel ball-bearing slides. • Box Drawer Slides: Grade 1HD-100; for drawers not more than 6 inches high and 24 inches wide. • File Drawer Slides: Grade 1HD-200; for drawers more than 6 inches high or 24 inches wide. • Pencil Drawer Slides: Grade 1; for drawers not more than 3 inches high and 24 inches wide. • Keyboard Slides: Grade 1HD-100; for computer keyboard shelves.	03.01.22	
Door Locks: BHMA A156.11, E07121. 5-disc tumbler locks keyed alike within each room. Dull chrome finish. Provide National Lock No. C8060 • Drawer Locks: BHMA A156.11, E07041. Locks in each room shall be keyed alike.	03.01.22	
Grommets for Cable Passage through Countertops: 2-inch OD, black, molded plastic grommets, and matching plastic caps with slot for wire passage: "OG Series"; Doug Mockett & Company, Inc. or equivalent.	03.01.22	
Wall Mounted Shelf Standards: • Standard: Knape & Vogt No. 87 heavy duty 12-gauge steel, anochrome finish. • Shelf Bracket: Knape & Vogt No. 187LL extra heavy-duty shelf brackets, 12". • No plastic shelf supports.	03.01.22	
Adjustable Shelf Supports: Injection molded polycarbonate (clear color), friction fit into cabinet and panels and vertical dividers, adjustable on 1-1/4" centers. Each shelf support with two (2) integral supports pins, 5 mm diameter, to interface pre-drilled holes and prevent accidental rotation of support. Supports automatically adaptable to ¾" or 1" thick shelving and provide non-tip feature for shelving. Supports are designed to readily permit field fixing of shelf if desired. In lieu of above, provide ¼" diameter holes at 1-1/4" o.c. vertically to receive Hafele Type "H" nickel-plated shelf clamp supports (four per shelf). Shelving 3-feet wide or wider shall be 1-inch thick.	03.01.22	
Exposed Hardware Finish: Satin chromium plated; BHMA 626 for brass or bronze base; BHMA 652 for steel base.	03.01.22	

DIVISION 06 40 00 – ARCHITECTURAL CASEWORK (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off

Countertop Heights (From Finished Floor to Top of Counter)
• Typical Counters (Non-Classroom): 34-inches
• ESE: 30-inches (step up to 36" at Dishwasher)
• Art: 30-inches
• Digital Display:
  ○ Classrooms (Elementary): 36-inches
  ○ Classrooms (Middle & High): 40-inches
	03.01.22
	
	10.17.23
	10.17.23	

• Science Demonstration Classrooms, Labs & Equipment: • Comply with FDOE Science Laboratory Safety Support Information Guidelines. Request copy from Project Coordinator. • Goggle Cabinets: Electrical outlets for goggle cabinets shall be provided above the cabinet and cords shall be bundled and rest on top of the cabinet. Goggle cabinets are required in all Science Demonstration Classrooms and Labs at Middle and High Schools. • Chemical Science Storage: Provide non-corrosive shelving with minimum ½-inch lip on shelves. • Science Demonstration Classrooms (SDC): Shall be defined as a Science Teaching space where NO chemicals/non- flammable liquids are used. SDC shall have acid resistant counters. A total of (3) sinks for student handwashing shall be provided in each SDC (minimum). An Emergency Eye Wash (EWS-2) shall be provided at one sink in each SDC. An Emergency Eye Wash/Shower shall NOT be required. A class ABC Fire Extinguisher shall be provided in each SDC adjacent to the primary exit door. Teaching Wall shall be behind the teacher demonstration station. • Middle School: A fixed teacher demonstration station is NOT REQUIRED. • High School: A fixed teacher demonstration station IS REQUIRED with a sink, power, data. Removeable Rods and Mirrors shall be provided. • Science Laboratory (SL): Shall be defined as a Science Teaching space where science investigation occur and where potentially hazardous chemicals/flammable liquids, materials, or conditions may exist. • SL shall have acid resistant casework and black epoxy resin counters with integral epoxy resin sinks. An Emergency Eye Wash/Shower (EWS-1) shall be provided in each SL with a floor drain. The standard drain outlet on the EWS assembly shall be directed piped through the wall and NOT spill on the floor. A class ABC Fire Extinguisher shall be provided in each SL adjacent to the primary exit door. A Fire Blanket shall also be provided in each SL located where a fire hazard may exist (i.e. next to Fume Hoods/Chemical Storage). Teaching Wall shall be behind the teacher demonstration station. A Master Emergency Shutoff Switch shall be installed in each SL near the teacher demonstration station. All Science Labs shall comply with FBC Exhaust Requirements. • Middle School: A fixed teacher demonstration station IS REQUIRED with a sink, power, data. A total of (4) sinks for student handwashing sinks shall be provided in each SL (minimum). • High School: A fixed teacher demonstration station IS REQUIRED with a sink, power, data. A total of (6-8) sinks for student handwashing shall be provided in each SL (number is based on curriculum of individual lab type – verify with science staff).	03.01.22 10.17.23 10.17.23	
Plywood is required at all wet counter and cabinet unit body assembly locations including backsplash (i.e., counter sinks). 9-ply.	03.01.22	

DIVISION 06 61 16 – SOLID SURFACING FABRICATIONS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Shall be provided at all windowsills.	03.01.22	
Add section for "CLEANING AND PROTECTION". Installed countertops shall be protected immediately after installation and shall be protected from dust/debris throughout the duration of construction until time of Final Cleaning.	03.01.22	
Shall be provided at Administration Reception and Media Center Desk(s).	03.01.22	
All corners shall be eased ¼" to ½" -inch radius.	03.01.22	

DIVISION 07 00 00 – ROOFING

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
The standard shall be an 45-60mil mechanically fastened Fibertite with welded. All roofing components shall be supplied by a single manufacturer for a complete roofing system. Acceptable Manufacturers shall be Fibertite. Walkway protection shall be provided to all rooftop equipment. If Lightweight concrete is utilized, it must be specified and warrantied to be free of calcium chloride.	03.01.22	
Internal Roof Drains are NOT preferred. External Roof Drainage shall be provided where possible.	03.01.22	
Warranty: Provide Manufacturers standard, No Dollar Limit (NDL) guarantee with single source coverage, "Edge to Edge" protection where the Manufacturer agrees to repair or replace components in the roofing system which cause a leak due to a failure in materials or workmanship. Duration: 20 Years from date of Substantial Completion.	03.01.22	
Roof access from the interior of the building is required at all two-story buildings and higher as well as in all single-story buildings over 12' in height.	03.01.22	
Warranty requirements for roofs shall be as follows: • Membrane roofing: 20-year full manufacturer's warranty • Metal Roofing: 20-year full manufacturer's warranty	03.01.22	
Skylights are not preferred.	03.01.22	
Design should provide access to roof from all levels.	03.01.22	
Design should include provisions for electrical outlet at roof level for future repair and/or maintenance operations.	03.01.22	
Roof accessories provided by the manufacturer are preferred.	03.01.22	
Warranty: • Provide Installer's Warranty covering all work and components of the Roofing System. • Duration: ○ 5 years from date of Substantial Completion.	03.01.22	

DIVISION 07 18 00 – TRAFFIC COATINGS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Traffic Coating System (if required) shall be Neogard System or approved equal. Primer: Neogard 7760/7761 two-component polymide epoxy (300sf/gallon) Base Coat: Neogard 70410 single component urethane (26/20 mils WFT/DFT) Aggregate: 20/30 Silica Sand Topcoat: Neogard 7430 single component, moisture cured urethane (16/12 mils WFT/DFT)	03.01.22	
Strictly adhere to the Manufacturer's Installation Instructions for complete System.	03.01.22	

DIVISION 07 21 00 – THERMAL INSULATION

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Fi-Foil insulation is permitted.	03.01.22	

DIVISION 07 26 00 – UNDER SLAB VAPOR BARRIER/RETARDER

Item to verify and/or incorporate (Reference 030000 Concrete)	Date Added	A/E/CM Sign Off
Provide ASTM E 1745, Class A, not less than 15 mils thick by Stego Industries, LLC (Stego Wrap) or demonstrated equivalent.	03.01.22	

DIVISION 07 62 00 – SHEET METAL FLASHING AND TRIM

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Offsets in downspouts are to be avoided.	03.01.22	
Add Warranty Section where items can be warranted.	03.01.22	
Mockup shall be required and accepted by the Architect and Owner prior to proceeding with full scope of work.	03.01.22	
Conductor heads, downspouts, etc. shall be 0.050-inch Aluminum. Material shall NOT be riveted.	03.01.22	
3-sided downspout protectors are required and shall be provided to 6'-0" above finished grade (provide detail, provide gauge) OR specify 0.125-inch aluminum sheet metal for durability.	03.01.22	

DIVISION 07 92 00 – JOINT SEALANTS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Sealant shall be provided at base of ALL drywall partitions (whether sound rated or not). Also add note to Partition Type Details. This prevents vinyl base from kicking under from Maintenance equipment during cleaning. Drywall cannot extend to floor to avoid wicking from cleaning water.	03.01.22	
Sealant shall be pick proof at interior and exterior building joints exposed to students. Ensure correct type of Sealant is specified.	03.01.22	
Verify specified manufacturers are current with industry.	03.01.22	
Require sealant samples be submitted for review for each application/location to ensure sealant color blends with adjacent surfaces/materials.	03.01.22	
Pick Proof Sealant shall be installed to 8-feet above finished floor at all floor levels of a building (i.e. 1st floor, 2nd floor, etc.) that are accessible to student abuse. BOD shall be Pecora Dynaflex security sealant. Pecora Dynapoxy EP-1200 cannot be used where joint movement occurs (i.e. Tilt Up Panels).	03.01.22	
Carefully review sealant types and desired finished appearance. Silicone sealants are NOT Paintable.	03.01.22	

DIVISION 08 00 00 – OPENINGS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
All schools and sites should have a single point of entry, clearly marked and accessible.	03.01.22	
Front office areas should be equipped with a panic button and card access (see Card Access Section 281311)	03.01.22	
Doors should be 7' high maximum, except kitchen doors.	03.01.22	
Exterior doors shall be hollow metal (HM)	03.01.22	
Strive to eliminate recessed exterior doors or pockets deeper than they are wide.	03.01.22	
Maple, oak, or birch finishes are acceptable and pre-finishing is preferred.	03.01.22	
Light kits should be baked enamel factory finish.	03.01.22	
Minimize classroom exits as exterior doors to control access.	03.01.22	
Closeout documents should include a detailed inventory of doors, frames, and hardware in an exportable format (i.e.: Excel) for possible use in the District's inventory system. See Closeout requirements.	03.01.22	
Aluminum doors shall have NO vertical rods. Aluminum doors shall have a continuous hinge.	03.01.22	
Door frame heads of steel doors shall have a closure channel to prevent water access.	03.01.22	
Steel door frames shall be fabricated with cold rolled galvanized steel – no less than 16-gauge, high use areas (cafeteria, gym, auditorium, exterior entrances) shall be no less than 14-gauge. Frame reinforcements shall not be less than 10-gauge.	03.01.22	
Where double doors are required for exit passage, passage of large equipment shall be equipped with a keyed – removable steel mullion.	03.01.22	
Kitchen entry doors should be double doors (2 – 3'-8" x 7'-8") with keyed mullion. Coordinate kitchen equipment dimensions prior to determining door openings.	03.01.22	
Aluminum framed curtain wall is not preferred without DCS approval. Utilize aluminum storefront instead.	03.01.22	
Regardless of whether an access control (card reader) system has been specified for the facility, all exterior main entrance doors shall be prepared for access control devices. All public entrances must include ALGO SIP device. These doors and their openings shall be prepped for future installation of appropriate electronic locking devices, request to exit devices, handwave stations and card readers. Door jambs and walls shall have suitable sized conduit installed to accommodate wiring for future devices.	03.01.22	

DIVISION 08 11 13 – STEEL DOORS AND FRAMES

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Clear path for a palette jack shall be provided for from Main Entry of school and receiving areas. Provide oversize door or double door with removable mullion. Review plans with Project Coordinator.	03.01.22	
Coat interior of all frames with bituminous coating prior to grouting. All exterior doors shall be fully grouted in place. All interior doors located in CMU walls shall be fully grouted in place.	03.01.22	
All occupied spaces shall have view panel in door (except at toilet and locker rooms). Exposed door hardware shall NOT be seen through view panel. Coordinate door lite kits accordingly.	03.01.22	
Exterior door frames shall be recessed from the face of the exterior wall to reduce water sheet flow down the face of the doors. Flush interior side of frame with interior face of concrete/masonry wall. Exterior doors shall also be provided with a rain drip guard. Ensure top edge of drip guard is caulked to prevent water damage. All exterior doors equipped with door sweep for pest proofing	03.01.22	

DIVISION 08 14 16 – FLUSH WOOD DOORS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Update Section to be project specific. Submit door type and sample for review by Project Coordinator. Maple or Plain Sliced White Birch are acceptable wood grains.	03.01.22	
All student occupied spaces shall have view panel in door (except at toilet and locker rooms). Exposed door hardware shall NOT be seen through view panel.	03.01.22	
Clear path for a palette jack shall be provided for from Main Entry of school and receiving areas. Provide oversize door or double door with removable mullion. Review plans with Project Coordinator.	03.01.22	

DIVISION 08 41 13 – ALUMINUM-FRAMED STOREFRONTS AND ENTRANCES

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Add Section noting to coordinate Storefront Hardware with Card Reader Access Hardware.	03.01.22	
Note Preinstallation Conference as Mandatory to coordinate the above with all Subcontractors involved.	03.01.22	
Light kits should be baked enamel factory finish.	10.24.23	

DIVISION 08 51 13 – ALUMINUM WINDOWS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Window limiters shall be provided on all operable windows. Windows at ground level shall not protrude in the public way more than 4-inches maximum.	03.01.22	
Acceptable manufacturers include: • EFCO Corporation • Howard Industries, Inc. • Kawneer Company, Inc. • Miami Wall Systems • Winco Manufacturing Co. • Peerless	03.01.22	
Do not provide window screens.	03.01.22	
Side-hinged exit windows should not have stop-hold opens installed.	03.01.22	
Safety glass is required for all glazing.	03.01.22	
Interior glass and glazing should be limited to the extent that classrooms can be locked down and have all occupants hidden from view. SDMC does not want “fishbowl” classrooms.	03.01.22	

DIVISION 08 71 00 – FINISH HARDWARE

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Ensure doors shown as 180 degrees have correct hardware.	03.01.22	
Add "KEY CABINET" section. Set up and index one (1) Key Cabinet that allows room for expansion for 150% number of keys for the project. Provide envelopes, labels, tags, receipt forms, away index cards, the cross-index system shall be set up by the hardware supplier. Verify location of Key Cabinet with School Staff.	03.01.22	
Color and finish of door hardware shall match brushed aluminum finish.	03.01.22	
A wardrobe hook shall be installed inside of all Office doors at 60-inches A.F.F.	03.01.22	
Specify a minimum 10-inch-high x width required) metal kick plate of the appropriate finish color to match adjacent hardware finish at all restrooms, custodial closets, storage rooms, mechanical and electrical rooms, science labs, and exit doors.	03.01.22	
All High Use double doors shall have removable mullions. No fixed mullions permitted.	03.01.22	
Provide sound gasketing and drop seals at and between rooms generating high volume of sound (i.e. Sound Production, Dance, Music, Band, Choral, Ensemble, Practice Room, etc.)	03.01.22	
Request DCS current Finish Hardware Specification for incorporation to Construction Documents.	03.01.22	
CLASSROOM door locksets shall no longer have a Classroom Function. STOREROOM Function locksets shall be provided at all CLASSROOMS.	03.01.22	
Rooms with double doors serving frequently moved large equipment do NOT provide removable mullions (i.e. Band Rooms, Drama Rooms, Storage, etc.). Provide flush bolts at inactive leaf (top and bottom).	03.01.22	
Exterior door panic device hardware shall be provided with Dog Down feature through bolted.	03.01.22	
All door closers shall be mounted on the interior side of the doors. All door closers shall be through bolted.	03.01.22	
Where Constant latching flush bolts are specified a Astragal must also be specified to reinforce the door edge.	03.01.22	
At Electrical Rooms with 800amp breakers or higher door must be out swinging and have panic bar hardware.	03.01.22	

PRODUCT	ACCEPTABLE MANUFACTURER	ACCEPTABLE SUBSTITUTE
Hinges	Hager	Stanley, McKinney
Locks & Latches	Schlage	None
Cylinders, Keys, Keying	Schlage Everest T	None
Exit Devices	Von Duprin	None
Removable Mullions	Von Duprin	None
Door Closers	LCN	None
OH Stops/Holders	Glynn Johnson	Rixson
Wall Stops/Floor Stops, Flash Bolts	Glynn Johnson	Rockwood, Hager
Kick Plates/Push-Pull	Rockwood	Hager, Ives
Threshold Weatherstrip	National Guard	Pemko, Reese
Silencers	Glynn Johnson	Rockwood, Hager
Key Cabinet	Lund	Telkee

DIVISION 08 71 00 – FINISH HARDWARE (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Provide cylinders from the same manufacturers as the locks and latches. All locks and cylinders shall have conventional Schlage cylinders matching School District of Manatee County's existing restricted Keyway, unless otherwise noted. All new bittings, shall be issued by Schlage Lock in order to maintain the integrity of the existing grand master key system. All keys, shall be cut on appropriate Everest/"T-234" Series Restricted key blanks, matching the School Board's restricted key way and specified by Schlage Lock Company. Cylinders shall be Schlage, key-removable type. Stamp blind code on cylinder.	03.01.22	
Milk Cooler: Provide drain under each Milk Cooler. Verify drain location with unit drain plug.	03.01.22	
Dry Storage Room: Provide a Classroom Lock Function on the door to this room in lieu of a Storage Room Lock. Staff need access in and out of this room continuously throughout the day.	03.01.22	
Kitchen Doors: Doors from the loading area into the back of house Kitchen shall be specified as 4'-0". Size of Fly Fan shall also be 48-inches wide. Door shall have door view finder hole mounted 4'-7" A.F.F. (Model: EZ View ST – 26D503S with built in privacy cover).	03.01.22	
Construction Keying shall comply with the following: • No lock cylinder keys will be ordered by the distributor until a keying meeting has been held by School District of Manatee County Project locksmith's Project Manager and the Distributor. Signature cards are to be signed by project locksmith's authorized personnel only, as on file with Schlage Locks.	03.01.22	
Keying System: Unless otherwise indicated, provide a factory-registered keying system complying with the following requirements:	03.01.22	
• Grand Master Key System: ○ Cylinders are operated by a change key, a master key, and a grand master key.	03.01.22	

Keys: Provide nickel-silver keys complying with the following:
• Stamping: Permanently inscribe each key with a visual key control number (blind code) and include the following notation: **["DO NOT DUPLICATE."]**
• Quantity: In addition to one extra blank key for each lock, provide the following:
  ○ Cylinder Change Keys: Four
• Master Keys: Six
  ○ Grand master Keys: Six
	03.01.22	

Provide 2 copies of bitting list to Project Director who will provide it to Maintenance.	03.01.22	
Provide one hundred (100) Everest/"T" Series Restricted key blanks to Project Director at Substantial Completion.	03.01.22	
KEY CABINET: Set up and index one (1) Key Cabinet that allows room for expansion for 150% of the number of keys for the project. Minimum size to be equal to Lund 1203. Provide and install a 5-way cross reference system which indicates the key set number, room "FISH" number, key code number hook number and key description. The keys and key cabinet shall be transmitted by the Construction Manager to the Principal (with a copy of the transmittal to the Project Director) upon Substantial Completion of the project.	03.01.22	
No hardware is to be installed until the lock manufacture has provided a preinstallation class. This is to insure proper installation of the specified products.	03.01.22	

DIVISION 08 71 00 – FINISH HARDWARE (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Six-Month Adjustment: Approximately six months after date of Substantial Completion, Installer shall perform the following: • Examine and readjust each item of door hardware as necessary to ensure function of doors, door hardware and electrified door hardware. • Consult with an instruct Owner's personnel on recommended maintenance procedures • Replace door hardware items that have deteriorated or failed due to faulty design, materials, or installation of door hardware units.	03.01.22	
Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate and maintain door hardware and door hardware finishes.	03.01.22	
Cylindrical leversets shall be heavy-duty ND series, Rhodes design.	03.01.22	
Leversets on classroom doors shall be storeroom function locks (same type/function as Schlage ND80 lever lock.)	03.01.22	
Leversets on all doors in middle and high schools shall be clutch function, "Vandalgard" type locks. Panic hardware shall be Von Duprin 99 Night Latch and Exit Only trim.	03.01.22	
Removable mullions shall be key removable.	03.01.22	
Through bolts shall be used for mounting all exit devices and door closures.	03.01.22	
If wall mounted door stops are installed, backing should be installed behind the wall surface. Otherwise, floor mounted door stops should be used.	03.01.22	
Toilet room hardware on stalls should be metal.	03.01.22	
Storefront systems shall not have internal vertical rods. Door-O-Matic is not acceptable.	03.01.22	
Closeout documents should include a detailed inventory of doors, frames, and hardware in an exportable format (i.e.: Excel) for possible use in the District's inventory system.	03.01.22	
Renovations and additions should provide the hardware outlined herein, regardless of the existing products in place in the remainder of the facility. Exceptions to this should be reviewed with the Project Team and the Maintenance and Operations Department.	03.01.22	
Renovations and additions shall use a factory registered keying system This system should be charted and registered from the factory large enough to accommodate the entire facility, not necessarily just those buildings included in the project. This will facilitate future upgrades.	03.01.22	
Where aluminum storefront doors must be used as exit doors, use Schlage or Von Duprin hardware. Door-O-Matic hardware is NOT acceptable.	03.01.22	

DIVISION 08 80 00 – GLAZING

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Review project and verify if any locations require Fire Rated Glass. Update spec as required.	03.01.22	
Owner must approve Glazing Color if other than Clear Type. Submit sample for verification.	03.01.22	
One-way glass applicable to doors and window frames if in the same wall in T.P./Observations Rooms. Verify requirements with Project Coordinator.	03.01.22	
Owner must approve Exterior Glazing Color. Submit sample for verification.	03.01.22	
Verify spec includes language to "Remove and replace glass that is broken, chipped, cracked, or abraded or that is damaged from natural causes, accidents, and vandalism, during the construction project."	03.01.22	
Verify spec includes language to "Wash glass on both exposed surfaces in each area of the project not more than 4 days before date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended in writing by the glass manufacturer."	03.01.22	

DIVISION 09 00 00 – FLOORING

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off

See below sections for Flooring minimum criteria. Floor Types in the following areas shall be:
• Classrooms
  ○ Elementary (PK-3): Carpet Tiles 24x24
  ○ Elementary (4-5): Carpet Tiles 24x24
  ○ Middle (6-8): VCT/LVT
  ○ High (9-12): VCT/LVT
• Single toilets: Ceramic Tile 2x2 mosaics
• Group toilets: Ceramic Tile 6x6 mosaics
• Media Center: Carpet Tiles 24x24
• Administrative: VCT/LVT
• Office: Carpet Tiles 24x24
• Lobby's/Receptions: LVT
• Clinics/ESE: VCT
• Stairs: Rubber treads and nosing interiors. Sealed cone or precast treads with nosing minimum.
	03.01.22	

Floor types in the following areas shall be:
• Weight Rooms: Rubber mat flooring, ½" minimum thickness.
• Dance Rooms: Wood floors on sleepers on SDG. No slab recess. Use rubber transitions to meet ADA requirements.
• Stage Flooring:
  ○ Elementary and Middle schools shall be VCT, or LVT if it is used in other areas of the school.
  ○ High schools shall be wood, 2-3/4" maple at proscenium, ¾" plywood, 2-3/4" system C stage.
• Gymnasium Flooring:
  ○ Middle and High schools shall be wood 2-3/4" system, recessed slab (Grade 3 or better).
  ○ A protective cover for gym floors should be provided by FFE budget.
	03.01.22	

DIVISION 09 21 16 – GYPSUM BOARD ASSEMBLIES

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Mockup shall be required and accepted by the Architect and Owner prior to proceeding with full scope of work in relation to level of wall finish.	03.01.22	
Add verbiage regarding STC rated partitions at corridors to classrooms and classroom to classroom locations.	03.01.22	
All walls shall be Level 4 Finish minimum orange peel finish. Curved walls shall be Level 5 finish, no exceptions. If Walltakers wall covering product is provided on project walls at those locations shall be Level 5 Finish.	03.01.22	
Verify specified manufacturers are current with industry.	03.01.22	
Sealant shall be provided at base of ALL drywall partitions (whether sound rated or not). Also add note to Partition Type Details. This prevents vinyl base from kicking under from Maintenance equipment. Drywall cannot extend to floor to avoid wicking from cleaning.	03.01.22	
Per the use of Semi-Gloss Paint a Level 4 wall finish shall be specified. In High Profile Areas within the building and/or at curved wall locations a Level 5 wall finish shall be specified. A mockup of both a Level 4 and a Level 5 wall finish shall also be provided for Owner and Gypsum Representative Review.	03.01.22	
Metal cornerbeads are NOT permitted. Corner bead on outside corners shall be Smart Series 90 by No-Coat Structural Laminate Drywall Corner System (2-inch type). LC-bead with both face and back flanges; face flange formed to receive joint compound. Smart Series LC Trim. L-bead with face flange only; face flange formed to receive joint compound. Smart Series L Trim. One-piece control joint formed with V-shaped slot and removable strip covering slot opening.	03.01.22	
Abuse Resistant Gypsum Board shall be used. High Impact Gypsum Board shall not be used. Board shall be 4'-0" A.F.F. in Elementary Schools and 8'-0" A.F.F. in Middle and High Schools.	03.01.22	
Areas required are all student occupied corridors, public reception, media/collaboration areas, cafeterias/multi-purpose rooms, gymnasiums, gymnasium lobby, locker rooms (where not covered by a metal locker) and building receiving area.	03.01.22	
Mop sinks should have backsplashes to waterproof the area anear the sink. Mop sinks shall have stainless steel backsplash adjacent to the sink floor up to 54".	03.01.22	

DIVISION 09 30 00 – TILE

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Mockup shall be required and accepted by the Architect and Owner prior to proceeding with full scope of work.	03.01.22	
Wall tile in single toilet rooms shall be 6'-0" height all walls minimum. Height of tile in group toilet rooms shall be determined by Project Coordinator. Kitchen wall tile height shall be 8' or determined by Project Coordinator. Wall tile shall be provided at EWC locations. Wall tile is preferred on all walls to 6'.	03.01.22	
Epoxy Grout shall be Mapei-Kerapoxy CQ-Epoxy Mortar and Grout. Architect to ensure grout release agent is correctly specified.	03.01.22	
Glazed Wall Tile shall be 6-inch x 6-inch.	03.01.22	
Unglazed Ceramic Floor Tile shall be 6-inch x 6-inch. Showers only shall be 2-inch x 2-inch.	03.01.22	
Large Format Porcelain and Wall Tile may or may not be used on project. If proposed review with Project Coordinator for approval of material and locations.	03.01.22	
Wall grout shall be urethane type (sealed).	03.01.22	
Floor grout shall be epoxy type (non-sealed).	03.01.22	
Quarry Tile shall be unglazed and textured 8-inch x 8-inch. Quarry tile shall be used in Kitchens (all schools) nonskid type and services.	03.01.22	
In rooms that have wall tile the inside corners shall receive sealant, NOT grout. Sealant shall match grout color.	03.01.22	
Add Section for Grout Release. Apply Grout Release product in accordance with Manufacturer's recommendations. Basis of Design shall be: Aqua Mix Grout Release by Custom Building Products.	03.01.22	
Quarry Tile grout joints must be flush with quarry tile.	03.01.22	
Architect to review Manufacturer requirements for sealing tile and grout and ensure specifications meet Manufacturer recommendations.	03.01.22	
Quarry Tile: • Titan rubber flooring is the preferred flooring material for walk-in cooler/freezers. Otherwise, the alternate preferred flooring is stainless steel diamond plate.	03.01.22	
Ceramic Tile: • The desired locations for ceramic tile are: group toilet rooms, classroom toilet rooms, clinic toilet room and others as deemed appropriate by the Project Team.	03.01.22	
Where toilet room tile does not go from floor to ceiling ensure toilet accessories and toilet partitions are coordinated to ensure tile height is one course above the highest accessory and/or toilet partition.	03.01.22	
Wall tile shall be provided 5'-0" high minimum at all drinking fountain/bottle filler locations. Walkoff mats installed at these locations shall be carefully coordinated to align with the wall tile.	03.01.22	
Mop sinks should have backsplashes to waterproof the area anear the sink. Mop sinks shall have stainless steel backsplash adjacent to the sink floor up to 54".	03.01.22	

DIVISION 09 51 13 – ACOUSTICAL PANEL CEILINGS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
24-inch x 24-inch ceiling panels shall be the standard throughout the school.	03.01.22	
Acoustical Clouds may or may not be used on project. If proposed review with Project Coordinator for approval of material and locations.	03.01.22	
No wire hangers can be placed through cable trays or attached to conduit, cable trays, or other similar items.	03.01.22	
ACT-1: CertainTeed Corporation's "Fine Fissured HHF-457 HNRC." Or equal. **ACT-2:** USG Interiors "Clean Room ClimaPlus Class 10M -100M Perforated 5/8." Or equal. Performance Characteristics, ACT-1 and ACT-2: • Color/Light Reflectance Coefficient: White/LR 0.80 minimum. • Noise Reduction Coefficient: NRC 0.70 (except membrane overlaid). • Ceiling Sound Transmission Class: CAC 35 (except membrane overlaid). • Edge Detail: Square. • Size: 24 inches by 24 inches by ¾ inch.	03.01.22	
All acoustical panel ceiling grid wire hanger ends shall be tightly wrapped or crimped for safety of maintenance personnel servicing above ceiling equipment.	03.01.22	
Attic stock requirements to be transmitted to Project Director at project closeout: • Maintenance Stock: a minimum of 1% of area of each size, type, and thickness installed on the job. This extra stock is for the Owner's use after construction period or during the 60-day period following Substantial Completion. Properly package, seal, and identify extra stocked material. • Replacement Stock: in addition to the maintenance stock specified above, provide extra replacement stock of acoustical materials, consisting of a minimum of 1% of area of each size, type and thickness installed on the job. This extra stock is for replacement of damaged materials during the 60-day period following Substantial Completion, when the party responsible for the damage cannot be ascertained by the Owner's agent. Replacement stock, which is not used, shall be furnished to the Owner as Maintenance Stock.	03.01.22	
Basis of Design is Armstrong World Industries. Acceptable alternates include: • USG Interiors, Inc., and CertainTeed.	03.01.22	

DIVISION 09 51 13 – ACOUSTICAL PANEL CEILINGS (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Ceiling Grid Label Designations for Above Ceiling Equipment:	03.01.22	

System/Equipment Type	Label Type	Label Naming Convention
EPO Contractors (Relays)	Clear P-Touch label with Black letters	EPO Contactor
Lighting Relays	Clear P-Touch label with Black letters	Lighting Relay
VAV's	Clear P-Touch label with Black letters	VAV ####
Exhaust Fan's	Clear P-Touch label with Black letters	RF ####
Concealed BAS Control Panel	Clear P-Touch label with Black letters	BAS ####
Wireless Access Point	Clear P-Touch label with Black letters	WAP ####|Patch Panel letter and Port ####|IDF Room ####|Patch Panel letter and Port ####
Fire Dampers	Clear P-Touch label with Black letters	Fire Damper
Smoke Dampers	Clear P-Touch label with Black letters	Smoke Damper
Fire / Smoke Dampers	Clear P-Touch label with Black letters	Fire/Smoke Damper
Main building Balancing Damper	Clear P-Touch label with Black letters	AHU Damper
Domestic Water Valves	Blue Adhesive Dot	N/A
Fire Sprinkler Drain	Ceiling Mounted White Sign	Fire Line Drain Valve

DIVISION 09 65 00 – RESILIENT TILE FLOORING

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
VCT: • Armstrong is preferred. Basis of Design. • The flooring installer shall clean, strip, and wax the VCT per the manufacturer's requirements (minimum of 4 coats). I-Shine by Spartan is the preferred wax finish.	03.01.22	
Insert requirement for Pre-Installation Waxing Meeting with DCS Maintenance Staff and Plant Manager.	03.01.22	
Stair treads and risers shall be rubber type except at Stages where stairs run the entire length of the stage from the Multi-Purpose Room. At this location stairs shall be carpet.	03.01.22	
Insert DCS current Waxing Standards for VCT into project specifications. Request current information from Project Coordinator.	03.01.22	
In renovation projects where VCT is applied to existing concrete slabs moisture mitigation testing shall be performed during the Preconstruction Phase to ensure that the proper Allowance is included in the GMP for moisture mitigation (if required).	03.01.22	
Insert language that CM shall provide Ramboard, Proflex, Cover Guard or equivalent protection board and be responsible for full protection of floor finishes until Final Completion.	03.01.22	
Provide feature strips all door threshold transitions.	03.01.22	

DIVISION 09 65 21 – LUXURY VINYL TILE

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Luxury Vinyl Tile (LVT): • LVT may be considered for in cafeterias, hallways, assembly areas. • Armstrong Natural Creations with Diamond 10, or higher or equal. • Must Use LVT adhesive for up to 97% relative humidity. • Provide a 20-year warranty on wear.	03.01.22	
Sheet vinyl (limited applications): • Sheet metal may be considered for specialty locations such as clinics, ESE rooms, portable restrooms, etc. • Armstrong Medintech.	03.01.22	
Insert language that CM shall provide Ramboard, Proflex, Cover Guard or equivalent protection board and be responsible for full protection of floor finishes until Final Completion.	10.24.23	

DIVISION 09 68 00 – CARPETING

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Shop Drawings shall be required to show changes in pattern, seam locations, different carpet types and colors, types of transition strips and locations, etc.	03.01.22	
Closeout documents shall be specified. Methods for cleaning, stain removal, manufacturer recommendations for cleaning and maintenance schedule. Precautions that can be detrimental to the carpet.	03.01.22	
CM shall provide Surface Shield CS36500 or equivalent and be responsible for full protection of finishes.	03.01.22	
Stair treads and risers shall be carpet where stairs run the entire length of the stage from the Multi-Purpose Room.	03.01.22	
Insert language that CM shall provide Ramboard, Proflex, or equivalent protection board and be responsible for full protection of floor finishes prior to Substantial Completion.	03.01.22	
For new construction, test slab relative humidity, pH, and vapor transmission before installation. For existing slabs, test slab relative humidity, pH, and vapor transmission during design and before installation, preferably during the rainy season. In addition, for existing slabs, core drill 4" diameter cores at a rate of 3 per 10,000 s.f. of existing floor to determine existence and condition of vapor barrier. Retain these slabs to check for dimensional stability if necessary. If moisture is a problem, an encapsulate and/or water vapor barrier must be included under all flooring types. Flooring adhesives should allow for 97% RH at the time of installation. Exceptions to this requirement will be reviewed by the Project Team and Operations. SDMC requires that the flooring manufacturers train and pre-approve flooring subcontractors to ensure quality installations.	03.01.22	

Carpet/Carpet-tiles or planks:
• Approved carpets include:
  ○ Interface Cubic carpet tiles ReadyBac for high moisture 1st floor applications, GlasBac for all other applications
  ○ Tarkett Color Spectrum carpet tiles
  ○ Shaw Broadweave or other roll goods may be used where tiles are not appropriate. Use of this alternative must be reviewed by the Project Team and the Operations Supervisor.
  ○ Alternate products must be reviewed by the Project Team.
• Test slab relative humidity, pH, and vapor transmission during design (if existing slabs) and before installation. If moisture is a problem, an encapsulate and/or water vapor barrier must be included.
• Use only manufacturer adhesives for all carpet installations. If the project conditions indicate a higher RH than approved for use with manufacturer adhesives, use an alternate adhesive with a warranty that replaces the manufacturer's warranty for same.
• For large installations on new construction projects, request a technical representative from the mill visit the project.
• Provide a 10-year warranty on wear and edge ravel.
• Include "walk off mats" at entrances at high traffic areas and entrances off of play areas (non-recessed).
	03.01.22	

Attic stock requirements to be transmitted to the Project Director at closeout: • Carpet tile: 2% of each material used for each color and size. • Vinyl tile: 2% of each material used for each color and size.	03.01.22	

DIVISION 09 84 13 – ACOUSTICAL WALL PANELS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Elevations shall be provided to show all panels joint locations and demonstrate coordination of MEP items. NO outlets and/or other devices shall be located in any acoustical panel. Note must also be provided on Architectural Elevations and Electrical and Fire Alarm drawings noting such.	03.01.22	
Gluing of any acoustical panel to walls is NOT permitted.	03.01.22	
Request Music Room Acoustical Panel and Ceiling requirements from Project Coordinator if this is a component of your project.	03.01.22	

DIVISION 09 90 00 – PAINTING

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Paint Specifications for Renovation and New Construction should differ. Different requirements/products/prep of surfaces are required for existing vs new substrates. Prep standards to be established for existing structures.	03.01.22	
Request SDMC current Paint Specification for incorporation to Construction Documents.	03.01.22	
Fire Hydrant and Cap Paint Colors: • Hydrant – Chrome Safety Yellow – SW4084 • Cap – Light Blue – SW4063 • Cap – Safety Green – SW4085 • Cap – Safety Orange – SW4083 • Cap – Safety Red – SW4081 • Cap color is determined by flow of the hydrant. Site Contractor to provide.	03.01.22	
For all paint colors selected, provide the Owner with a corresponding match number. Acceptable manufacturers are Porter, Sherwin Williams, and Florida Paint.	10.24.23	
Subcontractor shall provide a list of painted surfaces and their corresponding color name and number from the paint schedule. This will be included in the Closeout Documents.	03.01.22	
Paint finish preference is semi-gloss for walls, doors, and frames.	03.01.22	
Consider the use of anti-microbial paint based on location.	03.01.22	
Exterior Paint Schedule: Florida Paint is Basis of Design – SW & Porter are approved equals • Concrete, Stucco: Provide the following finish systems over exterior concrete, stucco surfaces: Acrylic Finish: Glades #1320. ○ 1st coat Florida Paint #3692 Aquaseal Latex surface conditioner (white) ○ 2nd & 3rd coat Glades #1320 Acrylic Velvet Supercoat ○ This system shall be mildew, fade, and sulfide stain resistant and shall carry a minimum 5-year labor and material warranty. • Concrete Masonry Units: Provide the following finish systems over exterior concrete masonry units: ○ 1st coat Florida Paint #3850 Ultra 100% Acrylic latex Block Filler ○ 2nd & 3rd coat Glades #1320 Acrylic Velvet Supercoat Ferrous Metal: Provide the following finish systems over exterior ferrous metal. Primer is not required on shop-primed items. • Acrylic-Enamel Finish: 2 finish coats over a rust-inhibitive primer: All Prime (Zinner) ○ Touch up existing primer with matching primer or prime unprimed metal with Ironman Alkyd Metal Primer #5450 White or #5453 Red Oxide. ○ 2nd and 3rd coat Florida Paint #8430 Ultra 100% Acrylic Semi-Gloss Supercoat • Zinc-Coated Metal: Provide the following finish systems over exterior zinccoated ○ 1st coat Scott #692 Aquaseal Latex surface Conditioner. 1st coat Devoe Uni-group for exposed metal decking. ○ 2nd & 3rd coat Scott Florida Paint #8430 Ultra 100% Acrylic Semi-Gloss Supercoat	03.01.22 07.05.24 (Updated)	

DIVISION 09 90 00 – PAINTING (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off

Interior Paint Schedule:
• Concrete: Provide the following paint systems over interior concrete floor surfaces scheduled to be sealed:
  ○ 1st coat Scott #700-709 Silicone Acrylic Concrete Stain, reduced 25% with xylene
  ○ 2nd & 3rd coats Scott #700-709 Silicone Acrylic Concrete Stain, full strength
  ○ Broadcast fine carborundum between first and second coat apply at rate of 10 pounds per 100 square feet.
• Concrete Masonry Units: Provide the following finish systems over interior concrete masonry block units:
  ○ 1st coat Scott #402 Ultra 100% Acrylic Block Filler
  ○ 2nd & 3rd coat Scott #435 Allgrip Acrylic Semi-Gloss
• Concrete Masonry Units in restrooms, Semi-Gloss Epoxy:
  ○ 1st coat Scott #402 Ultra 100% Acrylic Block Filler
  ○ 2nd & 3rd coat Florida Paint #8430 Acry-Poxy Acrylic Epoxy Enamel Semi- Gloss
• Gypsum Board: Provide the following finish systems over interior gypsum board surfaces:
  ○ 1st coat Scott Scrubmaster #692 Latex Drywall Primer/surface conditioner
  ○ 2nd & 3rd coat Florida Paint #4400 Acrylic Semi-Gloss
• Stained Woodwork: Provide the following stained finishes over, new interior woodwork:
  ○ Stain of Desired Color
  ○ 1st Coat Bruning #505-13 Polyurethane Satin Coating
  ○ 2nd & 3rd coat Bruning #505-13 Polyurethane Satin Coating sand lightly between first and second coat.
• Ferrous Metal: Provide the following finish systems over ferrous metal:
  ○ 1st coat Scott #692 Aquaseal Latex Surface Conditioner (white)
  ○ 2nd & 3rd coat Florida Paint #8430 Allgrip Acrylic Semi-Gloss
• Zinc-Coated Meal: Provide the following finish systems over zinc-coated metal:
  ○ 1st coat Florida Paint #3692 Aquaseal Latex Surface Conditioner (white)
  ○ 2nd & 3rd coat Florida Paint #8430 Allgrip Acrylic Semi-Gloss
	03.01.22	

Green Screen Walls: • All Green Screen Walls shall be provided with curved corners and base on 3 walls in filming area (U-shape configuration – formed with drywall). Integrate PROCYC Virtual Green Pro Matte flooring or equivalent. All filming walls shall be Chroma Key Green (unless school colors are green). Pro Cyc – (503) 723-7448 – www.procyc.com.	03.01.22	

DIVISION 10 11 00 – VISUAL DISPLAY BOARDS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
On main teaching wall in Music Rooms provide 8'-0" music staff line marker board and an 8'-0" regular marker board.	03.01.22	
All marker boards shall be 5'-0" high and shall be used for projection surface.	03.01.22	
Where a marker or tack board is installed on an exterior block wall means shall be provided to provide air gap between board and wall.	03.01.22	
Do NOT glue any board to the wall that is less than 16'-0" long. Boards 16'-0" or greater shall be glued and mechanically attached.	03.01.22	
Tack/Marker Boards: • Installed per the minimum quantities established in the State Requirements for Educational Facilities (SFER). • Mounted on adjustable rails at all exterior walls to create an air space behind them in order to eliminate mold and to allow for adjustments in their location.	03.01.22	
Mounting Heights for 4'-0"H Marker Boards (A.F.F.): ○ Classrooms (Elementary): 32-inches ○ Classrooms (Middle & High): 36-inches	03.01.22	
Classrooms: • Provide (1) 4'-0"H x 16'-0"W marker board at the teaching wall • Provide (1) 4'-0"H x 8'-0"W tack board adjacent to the marker board	03.01.22	
Band/Choral Rooms: • Provide (1) 4'-0"H x 8'-0"W marker board at the teaching wall. • Provide (1) 4'-0"H x 8'-0"W marker board with music staff and lines at the teaching wall. • Provide (1) 4'-0"H x 8'-0"W tack board adjacent to the marker board.	03.01.22	
Ensemble Rooms (High School): • Provide (1) 4'-0"H x 8'-0"W marker board with music staff and lines at the teaching wall.	03.01.22	
Multi-Purpose/Dining: • Provide (2) 4'-0"H x 8'-0"W tack boards.	03.01.22	
Kitchen Managers Office: • Provide (1) 4'-0"H x 4'-0"W tack board.	03.01.22	
Teacher Lounge, Break Rooms, Work Rooms: • Provide (1) 4'-0"H x 8'-0"W tack board.	03.01.22	
Conference Rooms: • Provide (1) 4'-0"H x 8'-0"W marker board. • Provide (1) 4'-0"H x 4'-0"W tack board.	03.01.22	
Kitchen Locker Room, Receiving area near Plant Manager Office, Plant Manager Office: • Provide (1) 4'-0"H x 4'-0"W tack board.	03.01.22	
Offices: • Provide (1) 4'-0"H x 4'-0"W tack board. Coordinate location with furniture plans.	03.01.22	

DIVISION 10 14 00 – SIGNS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
See Appendix for DCS Dedication Plaque Standard.	03.01.22	
Request DCS Planning Department review Signage Room Numbering and Naming prior to approving Room Signage Shop Drawings.	03.01.22	
Life Safety Exit Map Signs shall be 12" x 12" (see SDMC sign elevation).	03.01.22	
Life Safety Exit Map Signs shall be preprinted type.	03.01.22	
FDC sign is required at FDC locations and shall identify the building(s) served. Confirm size of sign with DCS Fire Marshal.	03.01.22	
Building address signage shall be provided at the School Marquee and at the Main Building Entrance I. Height, spacing, and color of address shall be visible at 30-feet.	03.01.22	
Request DCS FISH Code Sign Guideline prior to creating Signage Schedule from Project Coordinator. Plan Room Name will likely be different than the Signage Room Name.	03.01.22	
Signs applied to glass shall NOT have fastener holes and shall be supplied with a backplate on the other side of the glass to hide the mounting tape.	03.01.22	
Plaque: • Provided for all major construction projects. • Shall include the following: full names of Board members and Superintendent from the contract execution through substantial completion, the proper name of the school, the full name of the architectural firm and construction manager, and the completion date of the project. New plaque content and layout shall be submitted to the Superintendent for approval prior to ordering. • Size: between 12" x 16" and 20" x 30" as indicated. • Material: cast bronze or aluminum. • Location: a highly visible area (entry, reception). • Special attention should be given to plaques at existing facilities which are renovated and/or replaced and should be relocated and placed with the new project plaque.	03.01.22	
Signage: • Electronic, programmable school and site signs shall be installed on all new construction projects, major renovation projects and in some cases, classroom wing additions. • Shall comply with the Manatee County Sign Ordinance, as required. • Street address numbers shall be posted at the front of the school. Minimum size is 6". • Building number signs shall be mounted on each building. Minimum size is 6". • FISH numbers should correspond with room numbers whenever possible.	03.01.22	

DIVISION 10 21 13 – TOILET AND SHOWER COMPARTMENTS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Continuous hinges shall be used.	03.01.22	
Overhead bracing shall be required.	03.01.22	
Where Toilet Partitions are exposed to Public View ensure toilet partitions and doors are 12-inches or less A.F.F. to ensure privacy of the user.	03.01.22	
Provide matching plastic (non-ferrous) shoes.	03.01.22	
Toilet Partitions: Floor mounted, overhead braced with anti-grip tops and metal bottoms. Doors, pilasters, dividers shall be solid plastic material. All partitions to be similar to Santana – Black Paisley Finish.	03.01.22	

DIVISION 10 21 23 – CUBICLES

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Cubicles track and lighting must be indicated and coordinated on the architectural, reflected ceiling, and electrical drawings.	03.01.22	

DIVISION 10 26 00 – WALL AND DOOR PROTECTION

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Corner guards shall be provided and denoted on drawings at all high impact areas. Submit corner guard plan to Project Coordinator for review.	03.01.22	
Add section for attic stock and include 10 minimum extra.	03.01.22	
Corner guards shall be 4'-0" high and 2-inches wide. Stainless Steel shall be used in Kitchen and Receiving Areas. Acrovyn 4000 SM-20N or equivalent shall be used at other locations. Corner guards shall be installed directly above the wall base material and shall match the wall color it is installed upon. If the wall cannot be color matched provide a clear plastic corner guard so wall color is visible.	03.01.22	

DIVISION 10 28 00 – TOILET AND BATH ACCESSORIES

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Paper Towel Dispensers shall be located at all sinks throughout school except at group toilet and locker rooms (inclusive of classroom locations and other).	03.01.22	
No Paper towel/Trash can Combo Units. SDMC provides free standing trash cans.	03.01.22	
Soap Dispensers are **Owner supplied/Contractor Installed**. Get cut sheet from Project Coordinator for coordination purposes. (Size/location).	11.01.24	
Provide Sanitary Napkin Disposal in all girls and unisex toilet rooms serving 3rd grade and up.	03.01.22	
Electric Hand Dryers shall be provided at Group Toilet Rooms and Locker Rooms. Do NOT place in ADA stalls. Use regular paper towel dispenser at this location.	03.01.22	
Paper Towel Dispensers shall have locks and be C- fold/Multifold type	03.01.22	
Provide ADA compliant mirrors at all ADA sink locations.	03.01.22	
Do NOT install mirrors on dissimilar wall surfaces (i.e. mirror shall not extend beyond wall tile onto gypsum board at partially tiled walls).	03.01.22	
Toilet Accessories for schools: • Paper towel dispensers: Triple S Sterling Select 2.0 8" Touchfree Mechanical Roll Towel Dispenser (Item SSS-76112) – NOT for Elementary School • Paper towel dispensers: Multifold Dispenser: SJ-T1905X5, SJ-T1905WH or SSS-4090W. • Soap dispensers: INOPAK HS-D800MIL-X • Owner furnished and CM installed. • Toilet paper dispensers: Triple S Sterling Select 2.0 9" Jumbo Roll Tissue Junior Dispenser (Item SSS-76111). • Trash receptacles: SDMC provides free standing trash cans.	11.01.24	

DIVISION 10 44 00 – FIRE EXTINGUISHER, CABINETS, AND ACCESSORIES

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
All computer labs shall receive a "water mist" type extinguisher.	03.01.22	
"FIRE EXTINGUISHER" lettering shall be permanent part of cabinet door assembly.	03.01.22	
Caulk between wall and cabinet.	03.01.22	
Fire extinguisher cabinets shall have round corners.	03.01.22	
The Construction Manager shall furnish, install, and certify all fire extinguishers.	03.01.22	
The Construction Manager is responsible for installing all backing and brackets required for the installation of the fire extinguishers.	03.01.22	

DIVISION 10 51 13 – METAL LOCKERS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Provide anchor support substantial enough to keep benches from being uplifted by student rough housing when applicable to project type.	03.01.22	
Sloped tops are required at all lockers.	03.01.22	
Island lockers shall not exceed 4" - 6" in height inclusive of sloped top for supervision.	03.01.22	
All lockers shall be floor mounted on 4-inch-high concrete curb, minimum.	03.01.22	
Built-in Combination Locks are NOT permitted. Outfit for user provided combo lock.	03.01.22	
Middle School lockers (when provided) shall not exceed 5-feet in height to top of locker assembly.	03.01.22	
Kitchen Staff Lockers: Provide double height units Elementary School: 8 required Middle School: 14 required High School: 20 required	03.01.22	

DIVISION 10 73 00 – ALUMINUM WALKWAY COVERS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Add mesh fabric over deck where children can view from above and throw objects onto roof.	03.01.22	
Walkway Covers shall be sloped to accommodate drainage. Clearly indicate slopes on Shop Drawings.	03.01.22	
Add verbiage that wet columns shall drain into landscaped areas ensuring water does not divert back to the walking surface. No drains shall be permitted to drain directly onto the walking surface. Where wet columns drain into sloped landscape areas where water will divert back onto the walking surface tie into storm drainage system. All walking surfaces shall be free of standing water.	03.01.22	
Walkway canopy locations shall be thorough reviewed in relation to accessing windows above. Canopies improperly located cause issues with window washing and or exterior building maintenance.	03.01.22	
Utilize small LED fixtures in lieu of 1x4 fixtures and do not mount to bottom of deck pan. See details in Appendix A.	06.01.22	

DIVISION 10 75 00 – FLAGPOLES

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Flagpole with Light: • Provide American Flagpole with Cylinder Up Light (91012 Series) with finish to match the flagpole or equivalent. Ground mounted flagpole lighting is NOT permissible due to continued damage. • Aluminum poles which meet structural wind load requirements. • Halyard type. • A coverplate should be considered.	03.01.22	

DIVISION 10 90 50 – MISCELLANEOUS SPECIALTIES

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Section should be tailored to specific project and may include such items: Knox Box • All new construction projects shall include two knox boxes (one in front for fire and one in back for law enforcement).	03.01.22	
• Knox Box: Recessed mount, 1/4-inch-thick plate steel housings, 5/8-inch-thick steel door with interior gasket seal and stainless-steel hinge, and tamper-resistant fasteners; finish to be selected by Architect. Coordinate mounting height and location in field with Architect (Typically 60" to center AFF). Both Knox boxes to be keyed to **School District knox keyway**. See Fire Prevention – SDMC Fire Official Requirements – Knox Box Section for requirements & ordering instructions. ○ Product: Knox Company; Knox Box, Recessed Knox Box #3275 with Hinged Door	10.30.24 10.30.24	
• Exterior Walk off Mats • Bike Racks • Exterior Changeable Copy Sign • Vented Flammable Safety Cabinets • Germicidal Cabinets • Vented Acid Storage Cabinets • Aluminum Framed Pegboards	03.01.22	

DIVISION 11 40 00 – FOOD SERVICE

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Kitchen Equipment: • All kitchen equipment plans, schedules and specifications shall be reviewed with Food & Nutrition Services (FNS.) SDMC has kitchen prototypes for elementary, middle and high schools. Refer to Food & Nutrition Services required equipment list, preferred vendors and specifications. • When designing kitchen equipment layout, consider cart traffic. • Provide protection from carts for gas valves and equipment. • Customized serving lines. LowTemp (LTI, IND.) is a preferred vendor. FNS needs to approve serving line layout and design before ordering. • Provide hookups and utilities for a commercial washer and dryer in the Kitchen, for use only by cafeteria. • Stainless steel surfaces are preferred at the dish return area and where students line up in the Cafeteria (serving lines). These are high use wall areas that require frequent repair and/or replacement. • Walk-in freezer and cooler need to have white walls. • Walk-in freezer and cooler need to have Titan thermoplastic flooring. • Walk-in freezer and cooler need to be separate with separate entry doors. • Hand sinks are not required (or desired) IN the serving lines. They are preferred on the wall behind the serving line. • Full size copies of the plans shall be sent to Barbara Will, Manatee County Department of Health at 410 6th Avenue East, Bradenton, FL 34208.	03.01.22	
Trash compactors/Dumpsters: • As of 6/1/2020, the District is moving away from trash compactors; however, the Project Team must coordinate the electrical, water, grease trap and other items required for a working system.		
DCS FNS Department provides design layout input and specifications for all DCS Kitchen Facilities. It is the Architects responsibility to provide the CAD equipment layout and ensure all equipment is sized on the plans per the FNS cutsheets and that correct clearances between equipment are provided and that ADA accessibility is provided where required. Health Department Permitting will be through DCS Department for FNS Kitchens only.	03.01.22	
Kitchen floors: Shall be 8”x8” quarry tile. Grout color should be medium to dark color. The kitchen floor shall be level with small sump with slope at drains only.	03.01.22	
Kitchen Hoods: Do NOT have Fire Suppression Systems as our kitchens do not have Fryers. All Kitchen Hoods shall be Type 2 Non Ansul. Kitchen Hoods shall be certified prior to Substantial Completion. Non Ansul. Kitchen Hoods shall be certified prior to Substantial Completion.	03.01.22	
Water softener: Shall be provided in the kitchen for the dishwasher and shall be Marlo Incorporated, Marlo MGT-150-1 ½” Single Water Meter Demand type. Water softeners shall serve both HOT and COLD Water at the dishwasher. Provide floor drain for water softener.	03.01.22	
Kitchen Door Bell: Provide doorbell at back door to notify Kitchen Manager when someone is at the door. Install shall include Doorbells Direct CHBR-BS bell, a C905 transformer, and a DBS lighted push button. Contractor shall supply all doorbell wiring needed (6-8 DC). Waxed Brushed Steel, 6.25 Diameter bell. 20-gauge bell is finished in deep silvery luster.	03.01.22	
Kitchen Manager Office: Space shall be provided for a safe. Upper Cabinets shall be 15-inch deep. 12-inch-deep cabinets are not permitted. Cabinet width shall be 24-inches. Counters shall be 24-inches-wide. Workspaces shall be provided for (3) persons. Undercounter file drawer, regular drawer, and pencil drawer unit shall be provided at each of the (3) workspaces. All outlets shall be under the work surface counter with grommets provided for access. Kitchen Manager Office plan and elevations shall be submitted to FNS for review/approval.	03.01.22	
Can Wash shall be provided with lid if not under full cover.	03.01.22	
FNS will provide a Keybox that requires keys for the following: • Kitchen managers office • Kitchen back door • Kitchen dry food storage door • Walk-in cooler	03.01.22	

DIVISION 11 51 23 –DIGITAL DISPLAYS AND PROJECTION SCREENS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Verify Screen Type has a concealed mounting cover and trim. Recessed opening shall be finished.	03.01.22	
Digital Displays are owner provided and contractor installed in each classroom, conference rooms, media center, front office location, administrative locations, safe room and cafetorium.		
Ceiling Mounted Projectors and Project Screens: • SDMC approved Projector with bracket shall be owner provided and contractor installed in all large presentation venues.	10.17.23	
• All Projector locations shall have a duplex outlet. ○ Projection Screen: ○ A Wireless Display Receiver device is required at all future projector installations. ○ All Projectors are Owner Provided and Contractor Installed. ○ All Wireless Display Receivers are Owner Provided and Contractor Installed.	03.01.22 10.17.23 10.17.23 10.17.23	
• Electrically Operated Front Projection Screens: ○ Provide manufacturer's standard UL-listed and UL-marked units consisting of case, screen, motor, controls, mounting accessories, and other components required for a complete installation and to comply with requirements indicated for screen surface and controls and for case, motor, and screen under description of operation and type. Remotely control operation of each screen to comply with the following: ▪ Single Station Control: Three-position, UL-listed control switch for each screen with metal device box and cover plate for flush wall mounting and for connection to 120 V a.c. power supply. ▪ Recessed, Electrically Operated Screens with Automatic Ceiling Closure: End-mounted motor units designed and fabricated for recessed installation in ceiling; with bottom of case composed of two panels fully enclosing screen, motor, and wiring, one panel hinged and designed to open and close automatically when screen is lowered and fully raised, the other removable or openable for access to interior case, if needed. ▪ Projection Screen Sizes: Determined at Design and Review. ▪ Products: Da-Lite Screen Company; Executive Electrol, Draper Inc.; Ambassador. ▪ Motorized Projection Screens shall have key switch to operate.	03.01.22	

DIVISION 11 61 43 – STAGE CURTAINS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
ES and MS have same stage curtain requirements. For HS request additional requirements.	03.01.22	

DIVISION 11 90 50 – MISCELLANEOUS EQUIPMENT

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Section should be tailored to specific project and may include such items: • Residential Appliances • LED Digital Display and Bracket • ESE Platform Lifts • ESE Hook • Athletic Equipment	03.01.22	
Residential Appliances: • Residential Microwave shelf needs to be deep enough to accommodate microwave overhang. Locate power on side of unit if possible. • Provide full size refrigerator with ice maker in Clinic with hasp lock. • Washer and Dryer door swings shall be opposite and not adjacent so that washed items can be placed in the dryer without going around the door. Show swings on plans. • Power and Data must be located outside the interior limits of the Digital Display Bracket for accessibility and shall also be concealed behind the limits of the Digital Display screen for easy access to cords. Additionally, the power and data must also be located in coordination with the Digital Display component jacks (i.e. Digital Display jacks on rights side of screen…power/data on right side or vice versa. • Minimum duplex power outlet at all projector locations. • Residential Appliance require a third party 3-Year Parts, Labor, and Material Warranty. • In an educational or ancillary facility, all ranges or stovetops must have range hoods vented to the exterior, in accordance with Chapter 69A- 58.008 (9) (j) 4 of the Fire Code. This is true for new construction and existing facilities.	03.01.22	
OT/PT swings: • MCSD prefers mobile OT/PT swing units. • No permanent hooks are required.	03.01.22	
Kilns: • Where required, kilns are to be provided by Purchasing and coordinated by the Construction Project Team. • Kilns must have provisions for proper room construction, including adequate venting and exhausting. • Kiln shall be Furnished by Contractor and Installed by Contractor. One kiln shall be provided for schools with 800 or less students. Two kilns shall be provided for schools with more than 800 students. The Vendor is Blick – (800) 447-8192. http://www.dickblick.com/products/skutt-km-series-kilnmaster-automatic-kilns/ ○ Item # Model # ▪ 30118-0000 Skutt KM Series Automatic Kiln, KM-1027, 3PH 1DT 208V-3P 31.7A ▪ 30110-0000 Skutt EnviroVent 2 System with EnviroLink ▪ 30177-1008 EnviroVent 2 8ft extension Kit ▪ 30102-1027 Skutt Kiln Furniture Kit Model 1027 • Kilns shall be vented directly to the outside. Provide transition and flex to kiln manufacturer provided fan and route to exterior per building code requirements. • For Kiln Room, provide exhaust fan controlled by wall mounted line voltage thermostat set at 85F. Thermostat shall also control 120V motorized damper to allow for outside air intake. Route outside air intake from exterior to 12” A.F.F. and finish with ½” x ½” wire mesh. • Provide a heat detector in kiln room. • Provide 4’-0” door at Kiln Room. Ensure that all doors leading from Kiln Room to the building exterior are also 4”-0” minimum.	03.01.22	
Athletic Equipment: • High School • Middle School • Elementary School	03.01.22	

DIVISION 11 90 50 – MISCELLANEOUS EQUIPMENT (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Rubberized Tracks: • For tracks over new, well-draining asphalt, use Plexitrac Accelerator pervious, latex rubberized coating. • For specialty tracks or tracks over existing asphalt that may not drain as well, use Beynon 200 impervious, polyurethane rubberized coating. • All tracks and amenities shall be red in color. This helps keep temperatures down in hotter months.	03.01.22	
Convex mirrors: • Provide convex mirrors for hard to see areas such as stairwells, blind corridors, corners, • Provide size, mounting, manufacturer, and warranty.	03.01.22	
DIGITAL DISPLAY: • Digital Display Menu Boards and chromeboxes shall be provided in the /Cafetorium Digital Display menu boards located 7'-0" or higher A.F.F. Digital Display Menu Board at Elementary Schools shall be located near the entrance to the serving line. Digital Display Menu Boards at Middle and High Schools shall be mounted near serving line on the wall and/or above the serving line. Digital Display. Verify quantity and locations with FNS/IT during Design Development and Shop Drawing Review. • Digital Display's shall also be placed in the following locations at a minimum: ○ Administration Office Lobby: 65" ○ Conference Rooms: 75" or 85" (Room Size) ○ Media Center: 75" and 85" and 86" (if applicable) ○ Collaboration Spaces: 75" (if applicable) ○ MP/Cafetorium: 85"and/or 75" and/or 65" ○ Principal Office: 65" or 75" (if applicable) ○ Safe Room: (1) 50" or 65" Digital Display	03.01.22 10.17.23 10.17.23 10.17.23	
Clocks: • Clocks shall be mounted 12-inches below the finished ceiling height in Classrooms and Offices. Classroom clocks shall be located on the wall opposite to the teaching wall. Where ceilings are 9'-0" or higher mounting height will be altered for best viewing in the room and in relation to the room lighting. Clocks shall be coordinated by the Architect to be in a consistent location in each room throughout the project.	03.01.22	
WAPS & WAP Brackets: • All WAPS are Owner Provided and Contractor Installed. Installed in center of room on drop ceiling grid. • External WAP locations to be considered during design to service common areas, court yards, agriculture area, athletic areas, PE, Parent pickup and bus loop. Final locations to be approved by Network Support Services	03.01.22 10.17.23	
Microphone/Speaker: • Administration reception lobbies with transaction windows shall have microphone/speaker system equal to Haven Tech SC300.	07.05.24	

DIVISION 11 90 50 – MISCELLANEOUS EQUIPMENT (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Vending Machines (Owner Provided): • Elementary School: Provide up to 2 vending machines (1 student, 1 adult) • Middle School: Provide up to 7 vending machines (5 student, 2 adult) • High School: Provide up to 20 vending machines (17 student, 3 adult) • The actual placement of the machines will be determined by student traffic evaluations, enrollment, Free & Reduced percentages, and Place program locations, among other considerations. • During the design phase, confirm potential locations with FNS staff and Request specific model information from FNS staff as well.	03.01.22	
• Access and Egress: ○ When planning for vending placement, access to the space for machine installation and product delivery must be considered such as ramp or elevator.	03.01.22	
• Student Vending Machines: ○ A typical vending machine is Height 72” x Width 41” x Depth 38”. Doorways through which a machine passes must be at least 3 ft -6”. Each vending machine needs a separate data line and electrical circuit mounted at 72” A.F.F. For outside installations: the plug orientates to the left; if an outside electrical circuit is housed in a covered box, the hinge needs to be on right (verses top) so that the plug fits.	03.01.22	
• Cameras: ○ Cameras shall be positioned at an angle so that you can see someone approaching and exiting and see the face of a person using the machine to help identify vandalism/fraud/theft. Cameras should also be able to capture images in the dark-clearly enough to identify personal detail.	03.01.22	
• Alcoves: ○ Alcoves designed to hold vending machines where possible is desirable, however machines should not be enclosed by security gates.	03.01.22	
• Adult/Staff Machines: ○ The model used for adult/staff machines is Height 72” x Width 29 ½” x Depth 38”. Our preference is for the one staff machine to be located in the administration workroom; extra space may be required to accommodate. For high school: two other staff lounges should be equipped with data and electric; middle and elementary: one other staff lounge should be equipped with data and electric. Camera placement on staff machines is left to the discretion of administration.	03.01.22	
• Data Ports and Network Switch: ○ Install data ports within 2 feet of electrical outlet. ○ Network Switches are owner provided and contractor installed/patched.	03.01.22	
○ **Note**: Extension cords may not be used.		
Golf Cart Storage/Charging Area: • Locate Golf Cart Storage/Charging Area in an exterior covered location near Central Receiving Area. Provide proper electrical connections for charging of golf carts. Confirm number of charging stations with Project Coordinator/Plant Manager. ○ Elementary School: Typically provide (1) golf cart outlet. ○ Middle School: Typically provide (3) golf cart outlet. ○ High Middle: Typically provide (4) golf cart outlet.	03.01.22	
• Review Site Plan with SDMC Custodial Services and/or Plant Manager to ensure Golf Cart access is provided throughout the campus as necessary.	03.01.22	

DIVISION 11 90 50 – MISCELLANEOUS EQUIPMENT (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Dumpsters & Recycling Containers: • Dumpster and Recycling Containers counts are determined by School Capacity. Provide School Capacity to PC and Resource & Recovery Office for number of required containers, size of containers, and enclosure size. Please note Dumpster & Recycling Enclosures shall be designed with containers set at an angle within the enclosure and NOT perpendicular to the enclosure walls.	03.01.22	
Bollards: • It is preferred to have a curbed edge/sidewalk adjacent to all site vehicular traffic. Where this is NOT feasible per site constraints bollards shall be provided.	03.01.22	
Athletics: • At each athletic field location provide an Osprey Stand when athletic field lighting is provided.	03.01.22	
Ice Machines: • Non Food Service related Ice Machines shall be Hoshizaki - with full size ice cubes. Ice machines locations may include, but are not limited to Teacher Lounge, PE First Aid, High School Concession Stand, etc. Verify locations with Project Coordinator.	03.01.22	

DIVISION 12 00 00 – FURNISHINGS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Furnishings, furniture, and related equipment will be handled by the SDMC's DCS Department Project Coordinator. Architect shall provide furniture plans and coordinate with the DCS Project Coordinator. This will include delivery, setup, installation, and removal of debris from these operations.	03.01.22	
The Project Team will be responsible for providing a "move-in" date for these items and updating Purchasing if this date changes.	03.01.22	
The procedure for moving existing furniture, furnishings and equipment is: • A professional moving company shall be employed to handle the majority of the moving process. • Teachers are responsible for packing their own personal items. The movers will not be responsible for any personal, fragile items. • All paper and wood objects being moved into a new or renovated building shall be packed in boxes to be fumigated. • All filing cabinets shall be emptied prior to being moved. The contents of all filing cabinets shall be fumigated as outlined in the above section. • All faculty and staff shall be encouraged to discard items that are no longer useful, as it is costly to move them. • Teachers shall label items in their classroom that are to be moved, according to the instructions and labels furnished by the mover. The label should include, at a minimum: the teachers name and new classroom number. Items not so labeled will be stored, sold, or destroyed. • A schedule for this process shall be developed with the appropriate Purchasing, Maintenance, and Construction personnel.	03.01.22	

DIVISION 12 21 16 – VERTICAL LOUVER BLINDS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Add section for attic stock material for control wands, chains, and chain holders.	03.01.22	
Vertical blinds are preferred.	03.01.22	
Vertical blinds should not be motorized.	03.01.22	
Vertical blinds should be limited to the width of the window and should not extend on the wall beyond the window.	03.01.22	
Vertical blinds should cover the entire window.	03.01.22	
All door windows shall have blinds.	03.01.22	
Horizontal blinds: • Horizontal blinds may be used where vertical blinds are not practical. • Approved manufacturers: Graber (Ft. Lauderdale), Vista (Sarasota). • Horizontal blinds size should be limited to the width of the window and should not extend on the wall beyond the window. • Horizontal blinds should cover the entire window. • All door windows shall have blinds.	03.01.22	
Exterior windows shall have Vertical Louver Blinds. Interior windows depending on location and use of room shall have either horizontal windows blinds or roller shades. All regularly student occupied rooms shall have window treatments at full size panel windows for lockdown purposes. Provide 5% attic stock for vertical panels and wands for vertical and horizontal blinds.	03.01.22	

DIVISION 12 50 00 – GYMNASIUM

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off

Gymnasiums:
• High School and Middle Schools:
  ○ Fully covered padded acoustic baffling panels on all four walls from the top of the ceiling extending down approximately 12-16'.
  ○ Safety padding on both end walls behind baskets from floor to approximately 6' high that overs the full length of the walls. Not only provides an added safety feature but acts as additional acoustic baffling.
  ○ Proper speaker placement and aiming to match the model of whatever professional speakers are used.
  ○ Professional Audio equipment that is in a storage room that opens into the gym so the sound can be adjusted while listening live.
  ○ Wherever possible, full-length bleachers on both sides with 10-12 rows, high enough to accommodate necessary capacity.
	03.01.22	

Gymnasium Bleachers: • Motorized, wood gymnasium bleachers may be considered. Plastic seats preferred. • HDPE bleachers will be considered, provided that they have reasonable replacement provisions (ie: replace a few seats, not a whole row). • Warranty of ten (10) years is required. • Bleacher shop drawings with seat counts shall be submitted to DCS and at Closeout.	03.01.22	

DIVISION 13 00 00 – SPECIAL CONSTRUCTION

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Administration area/main entrance shall have a secure vestibule area, separating visitors from employees.	03.01.22	
Stadium Bleachers: • Aluminum construction. • Warranty of ten (10) years is required.	03.01.22	
Time Out Rooms: • Time Out Rooms should not be used unless the specific educational program in a facility requires such a room. • This decision will need to be made on a project-by-project basis and must involve meeting with Instruction.	03.01.22	

DIVISION 14 20 00 – ELEVATORS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Schindler Group is NOT an approved manufacturer.	03.01.22	
Gearless/Traction Elevators are NOT permissible.	03.01.22	
Remove Kone. They no longer produce Hydraulic Elevators.	03.01.22	
Elevator shall have Card Reader Access	03.01.22	
Elevator and wheelchair lift certificate should be submitted to the Project Director who shall coordinate the acquisition of this certificate with Maintenance. This documentation will be transmitted to the appropriate representative in Tallahassee.	03.01.22	
Contractor to provide two Cat 6a cables from the building IDF to be terminated in the Elevator Equipment Room.	03.01.22	
A dedicated phone service is required for the elevator and provided by the District.	03.01.22	
Coordinate the start-up of the elevator with the District's elevator monitoring company, via the Maintenance Department.	03.01.22	
Preferred manufacturer: Thyssen Krupp, others include Otis, Miami.	03.01.22	
Machine room less units are not acceptable, unless approved by DCS.	03.01.22	
Fire alarm system should be integrated in the elevator, per Code.	03.01.22	
Elevator(s) shall be covered by a maintenance agreement and third-party inspectors for one (1) year after Substantial Completion.	03.01.22	

DIVISION 21 00 00 – FIRE PROTECTION

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
We have no preference on head type (Recessed, semi-recessed etc).	03.01.22	
Electric fire pumps are preferred.	03.01.22	
Diesel pumps are not preferred.	03.01.22	
Project team to meet with local fire marshal to determine fire riser locations.	03.01.22	
Provide exterior access to all riser rooms.	03.01.22	
Coordinate location of inspector stations with the Project team.	03.01.22	
In ANSUL systems (kitchen hoods), R-102 tanks should be stainless steel.	03.01.22	
Do not install a sprinkler head in the cooler/freezer, unless mandated.	03.01.22	

DIVISION 21 13 13 – WET PIPE SPRINKLER SYSTEMS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Red vs. Black pipe (both are acceptable).	03.01.22	
Flexible type sprinkler fittings are permissible in lieu of conventional rigid pipe fittings providing that 2016 NFPA 9.2.1.3.3 Flexible Sprinkler Hose Fittings and the associated Explanatory Material, that explains all additional requirements for flexible sprinkler pipe. Note: The ceiling grid system must meet ASTM C635 and ASTM C636. The flexible piping method uses the ceiling grid to support the piping whereas the conventional method of rigid piping is supported from the structure.	03.01.22	

DIVISION 22 05 01 – PLUMBING

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Electric Water Cooler with Bottle Filling Station Electric Water Coolers with Bottle Filling Stations shall be provided in strategic locations throughout the project. Basis of Design shall be Elkay Vandal-Resistant Bi-level Water Cooler with Bottle Filler EZH2O model VRCTL8WS or equivalent. Provide duplex outlet, protected by GFI circuit breaker. Duplex receptacle shall be mounted concealed in the coolers utility space. Models that contain electronic solenoid valves to control water are NOT permitted as they cannot be utilized when the power is out.	03.01.22	
Ball valves shall be bronze in lieu of cast iron. Cast Iron contains lead.	03.01.22	
Smoke Testing for Leak Detection shall be required for the building sanitary system. Sanitary Camera Inspection shall also be required for the building sanitary system (interior of building to exterior cleanout).	03.01.22	
Group Toilet Rooms and Locker Rooms shall have key access hose bibs.	03.01.22	
Single Fixture Toilet Rooms shall be required to have floor drains. Group Toilet Rooms and Locker Rooms shall BE required to have floor drains.	03.01.22	
Provide hose bibs on roof for Maintenance use only when HVAC equipment is rooftop mounted requiring water to service/clean the equipment.	03.01.22	
DWV Double Wye Fittings are NOT permitted in the Sanitary Waste line.	03.01.22	
Vacuum breaker at the Can Wash shall be mounted exterior to the fixture controls accessible for maintenance and replacement.	03.01.22	
All Circulation Pumps must be specified as Maintenance Free Type.	03.01.22	
Thermostatic Mixing Valves shall be required at the water heater and NOT fixture.	03.01.22	
Isolation valves shall be provided at each individual building. Shutoff valves shall be provided at trunk line branches within a building so that water service shutdowns do not affect an entire building for isolated situations and in main piping within large buildings with long pipe runs. Valves shall be located above acoustic tile ceilings. Where not possible a minimum 24”x24” ceiling access panel shall be provided to facilitate maintenance.	03.01.22	
Cross fittings are NOT permitted in sanitary waste pipe.	03.01.22	
Preference is for sanitary drain piping to minimize routing beneath Student Classroom spaces. Routing of sanitary mains beneath corridor with cleanouts in the corridor (or non- student occupied spaces adjoining the corridor) is preferred.	03.01.22	
Design Hot Water Temperatures 110-degree F: Clinic Sinks, Showers, Staff Toilet Room Sinks, Custodial Mop Sinks, Kitchen Sinks. Design Hot Water Temperatures 140-degree F: Pot Wash	03.01.22	
Hot Water Piping shall be designed as a single loop to ensure consistently available hot water. Main trunk with multiple branches each equipped with a balancing valve are NOT desired.	03.01.22	
Cleanout installed outside the building shall be configured with two separate Y fittings installed in opposing directions instead of single 2-way cleanout fitting.	03.01.22	

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Faucets should NOT have exposed set screws and have replacements parts that are readily available. • Acceptable suppliers: ○ Kohler ○ Gerber ○ American Standard ○ T&S Brass ○ Moen ○ Chicago ○ **NO Zurn faucets**	03.01.22	
Place valves where they are readily accessible for maintenance.	03.01.22	
No quarter-turn stop valves shall be used.	03.01.22	
No trap primers (unless it's required by Code). Use deep-seal traps.	03.01.22	
Use floor mount toilets, mounted on flanges with metal rims. NO Zurn China	03.01.22	
No gate valves. Use ball valves only.	03.01.22	
Do not install water heaters in the ceiling space.	03.01.22	
No 8" center faucets for hot water in locations where hot water is not provided.	03.01.22	
In Kitchens, Mop Rooms, Laundry Rooms, Custodial Closets, Bathrooms, etc. consider the type of Automatic Soap Dispenser that is used by the District. Install dedicated water line and power as required.	03.01.22	
Non-PVC P-traps shall have brass nuts. LAP-traps are acceptable.	03.01.22	
Place a hose-bib in covered play areas for wash down. All hose bibs need a designated isolation valve	03.01.22	
Install a hose bib in or directly adjacent to all air handler rooms. All hose bibs need a designated isolation valve	03.01.22	
Install hose bib in the chiller yard. All hose bibs need a designated isolation valve	03.01.22	
Water coolers shall be anchored on top and bottom.	03.01.22	
Metered lavatories are preferred.	03.01.22	
Manual flush valves are preferred.	03.01.22	
For large demand water heaters, Nortiz (Model 1991) or Navien (NPE-240S2) gas instantaneous water heaters are preferred for kitchens and locker room/showers. Where available use natural gas, otherwise use LP tank.	03.01.22	
For other water heaters, electric, tank style water heaters are preferred. One required in each custodial area. Rheem and Lochinvar are preferred.	03.01.22	
Provide hot water in all public, group restrooms, Gym Lobby, Dining, Auditorium Lobbies, Administration, and ESE restrooms and classrooms sinks. Electric tanks are preferred for these large toilet rooms.	03.01.22	
Hot water circulation pumps are preferred on water heaters servicing large areas, whether gas or electric.	03.01.22	
For high school science classrooms, all acid pipe sinks shall be tied together and routed to a single, on-site acid neutralization tank in an exterior location.	03.01.22	
The main shut off for water in science labs shall not turn off the water to the eye wash stations. A continuous water supply is required for eye wash stations. A ball valve should be located directly above (in the ceiling) each eye wash station.	03.01.22	
Clay traps (Zurn Z-1180) are preferred at all sinks in Art Classrooms. Stainless steel sinks are preferred in Art Classrooms.	03.01.22	
Floor drains shall be installed in single and group restrooms. Slope should be sufficient to allow for proper water drainage. Use deep seal traps in lieu of trap primers.	03.01.22	
Include a floor drain and hub drain in each mechanical room. Condensate shall be discharge to the storm system.	03.01.22	
Speakman faucets are not preferred due to ease of theft of parts and lack of availability of replacements. NO Zurn faucets.	03.01.22	
In areas where back venting is required (i.e., Kitchens, Home Ec Rooms, Gang Bathrooms, etc), wall clean-outs are preferred over floor clean-outs, and they must be above flood rim of fixtures.	03.01.22	

DIVISION 22 05 01 – PLUMBING (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Hose Bibs at covered play area, chiller yard, and dumpster area should have designated isolation valve. • Place a hose-bib in covered play areas for wash down. All hose bibs need a designated isolation valve • Install a hose bib in or directly adjacent to all air handler rooms. All hose bibs need a designated isolation valve • Install hose bib in the chiller yard. All hose bibs need a designated isolation valve	06.01.22	
In general, wall clean-outs are preferred over floor clean-outs. Cleanouts should be placed in easily accessible areas. Limit placement of clean-outs in student occupied areas.	03.01.22	
Sloan flush valves are preferred.	03.01.22	
No cast iron pipe for plumbing.	03.01.22	
Rain leaders should be insulated PVC.	03.01.22	
Use Type L copper piping above slab and Type K copper below slab is preferred.	03.01.22	
No CPVC pipe for plumbing.	03.01.22	
Stainless steel splash-guards are required around all mop sinks. In all cases, the wall shall be sealed directly to the sink.	03.01.22	
Place a water cooler with drain in covered play areas.	03.01.22	
Grease Traps: • Concrete grease traps are preferred. • Install the minimum number required. • Note: Manatee County has a Sewer Use Ordinance that may conflict with District desires.	03.01.22	
Provide hookups and utilities for a commercial washer and dryer in the Kitchen.	03.01.22	
Provide domestic water at agricultural program areas.	03.01.22	
Natural gas appliances preferred for water heaters and kitchen equipment. If natural gas is not available, provide installation of propane tanks. LP tanks shall be above ground.	03.01.22	
Gas Utility Service (where available): • For natural gas lines, the lines that feed kitchens shall be metered separately from the rest of the plant, so costs can be captured accurately for Food & Nutrition Services (FNS.) The meter shall be installed, maintained, and read by the gas service supplier. No third-party meters are acceptable. • For liquid propane service, tanks shall be above ground and the service for the kitchen shall be provided by a separate tank or tanks.	03.01.22	

DIVISION 22 05 53 – PLUMBING IDENTIFICATION

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
All exposed copper pipe in kitchens shall be chrome plated or painted gray.	03.01.22	
Concealed plumbing valves shall be identified on ceilings grids at all locations with a blue dot.	03.01.22	
Color Coding Plumbing Pipes and Equipment: • Chilled Water Pipe: Blue or match existing • Condenser Water Pipe: Green or match existing • Exterior Pipe Supports: Match exterior finish of building and coordinate with Owner for approved finish color • Support Steel, Equipment Tanks, etc.: Battleship Gray • Valves: Green body, Red handles • Housekeeping Pads/Inertia Bases: Battleship Gray • Fire Protection and Sprinkler Piping: Red • Steam and Condensate: Yellow • Natural Gas, Propane, Oil, etc.: Yellow • Non-Potable Water: Yellow • Pipe Hangers/Supports: Black unless factory painted • Exterior Piping: Aluminum Jacketing (No Paint)	03.01.22	
Provide local floor plan in each Mechanical Room showing the location of all plumbing shut off valves. Locate plumbing valves in accessible areas, in corridors if possible. Do not located above stalls.	03.01.22	

DIVISION 22 44 00 – PLUMBING FIXTURES

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Self-sustaining white Centaco 500 toilet seats shall be used.	03.01.22	
No P-trap cleanouts to be used. Deep seal required.	03.01.22	
Waterless Urinals are NOT permitted.	03.01.22	
Middle School and High School Band Room Instrument Storage Rooms shall be provided with a stainless-steel fabricated Tuba Tub (follow dimensional information – Item Section **S-11 Approved Plumbing Fixture List**).	10.30.24	

DIVISION 23 00 00 – HVAC

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
At Substantial Completion, replace temporary filters with permanent and clean the AHU. Attic stock required: one set of belts and filters.	03.01.22	
Chiller manufacturers: Trane, Daikin. No substitution.	03.01.22	
Provide a 10-year extended warranty & preventative maintenance on the chiller.	03.01.22	
VAV manufacturers: Trane, Titus, Metalaire, Daikin (all should have differential pressure switches).	03.01.22	
Training: Factory representatives shall provide system-specific training for all new systems, primarily boilers and chillers.	03.01.22	
Provide emergency condensate overflow pans under HVAC equipment located over ceilings. Provide a conspicuous secondary drainage and float switches to signal a drainage problem.	03.01.22	
Use of four-pipe chilled water system. Mandatory	03.01.22	
Do not install make-up water stations higher than 5’ off of finish floor.	03.01.22	
Chilled and hot water piping should be steel or copper, not PVC. HDPE piping may be considered for underground chilled water piping.	03.01.22	
In all strainer installations, provide full port ball valves to allow for flushing.	03.01.22	
All hoods (including those for residential appliances) shall be exhausted to the exterior.	03.01.22	
Sound attenuation packages must be included for all chillers. Special consideration should be given to Manatee County’s Noise Ordinance, as well as each projects proximity to current and future neighbors.	03.01.22	
SDMC prefers dual path air handlers for occupied spaces.	03.01.22	
SDMC prefers hot water heat at the discharge of each VAV box. Hot water coils shall be included in the AHU for all single zone units.	03.01.22	
No more than three offices shall be served by a single VAV box.	03.01.22	
Provide a humidity sensor for each air handling unit system that will initiate an “Unoccupied” Humidity Override controls sequence. This “Unoccupied” Humidity Override sequence will cool the air in an override mode to remove moisture, but the outside air and exhaust air will remain off. Locate at least one room humidity sensor in the occupied zone in a room serviced by the air handling unit. Coordinate humidity sensor location with Project Team.	03.01.22	
Return air plenum systems are prohibited.	03.01.22	

DIVISION 23 00 00 – HVAC (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Provide hinged access panels in supply and return at all air handlers to facilitate cleaning of coils and air handlers. Provide proper clearance for cleaning and service. All air handler sections shall have factory installed access panels to access any area of air handler. All field installed duct plenums shall have field installed access panels. All panels shall be latched by means of bulkhead type latches. Air handler shall be of double wall construction and frame and panels shall be galvanized.	03.01.22	
Condensate drain piping size and routing shall be shown on the documents. Condensate shall be routed to outside stormwater collection system. Alternate routing for specific installations (ie: renovation where the condensate is remote from the stormwater system, split units in MDF rooms, etc.) will be considered by the Project Team.	03.01.22	
Kiln rooms shall be conditioned and include an exhaust fan dedicated to the space. The exhaust fan shall energize based on an increase in room temperature. Where possible, install direct kiln ventilation to the exterior.	03.01.22	
Filter requirements – Pleated, minimum MERV 8.	03.01.22	
Use a Variable/Primary pumping scheme for chilled water systems.	03.01.22	
Install all AHUs on 6” high concrete housekeeping pads.	03.01.22	
Elementary and Middle Schools - Use air-cooled scroll compressor.	03.01.22	
High Schools – Use water cooled centrifugal chillers and cooling towers.	03.01.22	
No roof mounted ac/ mechanical equipment allowed on the roof without approval from the District.	03.01.22	
Provide factory dipped condenser coils. Spray/field applications are NOT acceptable.	03.01.22	
Fan coil units are not preferred for classrooms.	03.01.22	
Installation of air handler units (AHU’s) above ceilings is not preferred.	03.01.22	
DX units are to be installed in the following locations: dry food storage, MDF/IDF rooms, etc. Locations for these units must be approved by the Project Team.	03.01.22	
Provide adequate space (36” minimum preferred) around air handling units and other equipment that requires maintenance and/or servicing.	03.01.22	
Pair of 3’ wide doors is preferred for mechanical rooms.	03.01.22	
No air handler or mechanical room is to be used as a plenum.	03.01.22	

DIVISION 23 00 00 – HVAC (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Install isolation shut-off valves on supply and return branch lines, to each mechanical space, and to each building. Shut off valves and separate balancing valves.	03.01.22	
Place all equipment where it is readily accessible and removable for maintenance purposes.	03.01.22	
Place all supply and return pressure and temperature taps where they are readily accessible for maintenance purposes.	03.01.22	
Clearly label all lines as to function and flow. Stick-on labels are preferred.	03.01.22	
Insulate chilled water lines with closed cell insulation, not fiberglass.	03.01.22	
Refrigeration: • Sleeve walls for all refrigeration tubing. • Place AHU for dry storage below the ceiling in a conditioned space. • Preferred location of condensing units is on the ground. • 12” minimum clearance on both sides of electric water coolers for maintenance purposes is preferred. • Water coolers shall be anchored on top and bottom. • Clearance for ice machines should comply with manufacturer’s recommendations.	03.01.22	

Heating:
• Use of steel or copper is preferred for hot water and heating lines.
• Iron body valves and/or pumps shall not be used in domestic hot water lines.
• Steam boilers shall not be used.
• Fuel oil-fired equipment shall not be used.
• Prefer the use of boiler(s) for heating. (Natural or LP gas is preferred).
• SDMC is working on factory training and staff development for maintaining condensing boilers. On new projects where a condensing boiler is desired, the Project Team will include factory training for maintenance staff.
• Install full flow ball valves with unions or flanges (in lieu of sweating).
• Provide separate heating sources for potable and non-potable water.
• Boiler manufacturers preferred:
  ○ RayPac (preferred)
  ○ Bryan
  ○ Cleaver Brooks
  ○ No Lochinvar
	03.01.22	

DIVISION 23 05 13 – COMMON MOTOR REQUIREMENTS FOR HVAC

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Motorized exhaust fans are to have speed control, use solid state speed control. No electronically commutated motors (ECM). ECM's are NOT permitted in AHU's, Blower Coils, and/or Fan Powered VAV's.	03.01.22	

DIVISION 23 05 53 – HVAC IDENTIFICATION

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Duct Labels: • Multilayer, multicolor, plastic labels for mechanical engraving. 1/8-inch thick with predrilled holes. White letter color. Black background color. Able to withstand temperatures up to 160 degrees F. Minimum 2x4-inch label size (size will vary based on required label content). Minimum letter size – ¼- inch for name of units if viewing distance is less than 24-inches. ½-inch for name of units for viewing distances up to 72-inches, and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-fourths the size or principal lettering. Stainless Steel fasteners/rivets. Contact type permanent adhesive, compatible with label and with substrate.	03.01.22	
Duct Label Content: • Include identification of duct service using same designations or abbreviations as used on the Drawings, duct size, and an arrow indicating flow direction. Flow Direction Arrows shall be integral with duct system service lettering to accommodate both directions, or as separate unit on each duct label to indicate flow direction. Lettering size at least 1 ½ -inches high.	03.01.22	
Duct Label Installation: • Install plastic-laminated duct labels with permanent adhesive on air ducts in the following color codes: ○ Blue: Cold Air Supply Ducts ○ Yellow: Hot Air Supply Ducts ○ Green: Exhaust, Outside, Relief, Return, and Mixed Air Ducts ○ ASME A13.1 Color and Designs: Hazardous Material Exhaust	03.01.22	
• Locate labels at air handlers, near points where ducts enter into concealed spaces and at maximum intervals of 50-feet in each space where ducts are exposed or concealed by removable ceiling system. Identify as to air handling unit number and service (supply air, return air, exhaust, outside air, etc.).	03.01.22	
• Pipe Label Color: ○ Chilled Water Piping: Background Color Blue Letter Color White ○ Refrigerant Piping: Background Color White Letter Color Black	03.01.22	

DIVISION 23 05 93 – TESTING, ADJUSTING, AND BALANCING

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Add to section at the end of the sentence, "and EMS temperature reading."	03.01.22	
Add to section: TESTING, BALANCING, AND COMMISSIONING OF HVAC SYSTEMS Selection: • The Construction Manager or Contractor, herein referred to as Contractor, shall procure the services of and have a contract with an independent Test, Balance, and Commissioning Agency {Agency}, which specializes in the balancing, testing, and commissioning of heating, ventilating, and air conditioning systems. The Agency shall balance, adjust, and test all water circulating and air moving equipment, air distribution, and exhaust systems, and temperature control equipment as herein specified and shown on the drawings. The Contractor shall award the test balance and commissioning contract to the Agency as soon as possible to allow them to schedule the work in cooperation with other trades and to meet the completion date. The contractor shall prepare a critical path schedule, coordinated with all subcontractors, whereas to accomplish all tasks required of the Agency as scheduled herein. • Work performed under those sections in Division 23 is herein referred to as the Installer. Refer to specific items of work provided by each installer and outlined in this section, 'MECHANICAL CONTRACTORS RESPONSIBILITIES". Installers shall cooperate with the Agency as required during execution of the work under this section. • The Agency shall inspect all work under the above as it relates to work under this section and report in writing to the Contractor and Architect any deviations from plans and specifications that will affect the performance of the systems. All correspondence (written, fax, electronic mail, and the like) is to be copied to the School Districts Project Coordinator.	03.01.22	
Add to section: AGENCY QUALIFICATIONS • The Agency shall be a member in good standing with The Associated Air Balance Council (AABC) or National Environmental Balancing Bureau (NEBB) and shall provide AABC National Project Certification Performance Guaranty, or equivalent, to the School District of Manatee County upon request. The Agency must be totally independent, having no affiliation with any contractor, design engineer, or equipment manufacturer/supplier of HVAC related equipment. • The Agency shall have a fully staffed office within one hundred fifty (150) miles of the site and have been regularly engaged in the testing, balancing, and commissioning of heating, ventilating, and air conditioning systems. • The Agency shall provide proof that personnel performing work have successfully completed at least five (5) projects of similar size and scope, with at least three (3) projects with School District of Manatee County. A complete list of reference projects, including name and phone number of contacts, shall be submitted with the bid. • The Agency shall have a Florida Registered Professional Engineer on its staff. • All instruments used shall be accurately calibrated within six months of balancing and maintained in good working order. If requested, the test shall be conducted in the presence of the Architect/Engineer and/or his representative. • No shut-off combination balancing valves. • Balancing valves shall be separate.	03.01.22	
Commissioning: • Owner shall engage a Third Party for HVAC commissioning on each project. Full Scope to be determined by the Project Coordinator.	06.01.22	

DIVISION 23 09 00 – INSTRUMENTATION AND CONTROL FOR HVAC

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Install UPS at main controller and chiller control panel.	03.01.22	
Control systems shall be Trane, Reliable (preferred) With 5-year warranty.	11.05.24	
Where a new addition is planned, controls must match existing campus system, unless controls are slated for an upgrade.	06.01.22	
Belimo actuators and pressure independent valves are preferred	03.01.22	
Actuators should be mounted above the valve stem.	03.01.22	
Provide the latest controls software version available.	03.01.22	
Control systems should be server based.	03.01.22	
Fiber optic controls wiring is preferred between buildings or for long runs.	03.01.22	
Graphics should cover every point in the system and all points should be controllable from the graphics page. Use FISH numbers when labeling graphics.	03.01.22	
Provide a bid alternate for one week of training at the factory for four people, including expenses.	03.01.22	
Provide a network connection and 120v outlet in each AHU room.	03.01.22	
Interface controls with chillers to read all chiller points, including amps on chillers.	03.01.22	
Start pumps with the chillers, not controls system.	03.01.22	
Do not use change over for heating and cooling, we need both at the same time.	03.01.22	
Fire dampers should not be attached to the controls system.	03.01.22	
All conditioned spaces shall have a dedicated temperature sensor with slide adjustment. These shall not be located on exterior walls.	03.01.22	
Provide at least three modes of building operation: • "Occupied"-normal, daytime, student occupied times. • "Unoccupied"-after hour operation for maintenance/service • "Off"-nights and weekends	03.01.22	
Control Safeties: • Monitor AHU cooling & heating source availability. If cooling or heating source is not available, operate in "Vacant" mode. Upon return of cooling and heating source availability, return AHU control mode to scheduled operations. The purpose of this is to prevent unconditioned, humid air to cause an unfavorable rise in the space humidity ratio. • AHU configuration where hydronic heating coil is downstream of the cooling coil: o If hydronic heating loop temperature falls below 80 degrees, the software should lock out heating hydronic pump to stop position.	03.01.22	

DIVISION 23 21 13 – HYDRONIC PIPING

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Field Quality Control: Flush Hydronic Piping System with clean water. Contractor shall provide temporary pump and strainers and not use the house system for this process. District Representative shall be onsite to inspect strainers.	03.01.22	
Bypass Chemical Feeder (Shot feeder) to include sock filter.	03.01.22	

DIVISION 23 31 13 – METAL DUCTS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
When exposed ductwork is utilized spiral or double wall shall be specified. Painted wrapped insulated ductwork is NOT permissible.	03.01.22	
Snap Lock Pipe is NOT permissible.	03.01.22	
No internally lined ducts permitted.	03.01.22	

DIVISION 23 33 00 – AIR DUCT ACCESSORIES

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Flex Master 10-inch WG positive pressure Flex Master 6-inch WG negative pressure thru 12 Flex Master 5-inches WG negative 14 & 16 Flex Master 1-inch WG 18 & 20	03.01.22	
Nylon strapping used to support Flexduct is NOT permitted. Galvanized metal strapping shall be used.	03.01.22	
Flex connections to returns are permissible.	03.01.22	

DIVISION 23 34 23 – HVAC FANS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Power ventilators direct drive is preferred over belt driven.	03.01.22	

DIVISION 23 42 00 – AIR PURIFICATION SYSTEMS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Air Purification System shall NOT be used.	03.01.22	

DIVISION 23 60 00 – CENTRAL COOLING EQUIPMENT

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Pre-Approved Manufactures are Daikin, Trane. No exceptions.	03.01.22	
Add meter for makeup water.	03.01.22	
Chilled Water Air Cooled Chillers shall be specified for ES and MS. Water Cooled shall be for HS.	03.01.22	

DIVISION 23 73 00 – ROOFTOP AIR HANDLING UNITS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Provide 2 spare filter sets and 1 final filter set. For a total of 3 sets. Also provide filter list for each type of filter used on project prior to Closeout.	03.01.22	

DIVISION 23 74 13 – DEDICATED OUTDOOR AIR UNITS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Provide 2 spare filter sets and 1 final filter set. For a total of 3 sets. Also provide filter list for each type of filter used on project prior to Closeout.	03.01.22	

DIVISION 26 05 00 – ELECTRICAL

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Install 3, 20A receptacle outlets in all mechanical rooms.	03.01.22	
Install 2, 20A receptacle outlets in the chiller yard.	03.01.22	
Electrical pull-boxes shall be concrete, Quazite or equal, with traffic covers for outdoor grade level boxes (plastic construction is not permitted).	03.01.22	
Die-cast fittings shall not be permitted.	03.01.22	
Electrical panel installations shall comply with NEC. For new construction, provide new electrical rooms. For renovations, using panelboards in mechanical rooms is acceptable, if the requirements of NEC Article 110-26 are adhered to. (Rooms shall be of adequate size to provide required clearances with mechanical equipment installed).	03.01.22	
The main switch gear shall be equipped with shunt trips, voltage meter, amperage meter and ground fault, and copper bus bars as needed. Use of copper clad steel bus bars are not	03.01.22	
Kitchen metering is not required.	03.01.22	
Bolt-in type breakers shall be used on all switchboards, panel boards and load centers.	03.01.22	
Acceptable manufacturers: • GE • Siemens • Square D • Eaton/Cutler Hammer	03.01.22	
Provide dedicated sub-panel boards for computers with no less than 10% spare capacity and 20% prepared space. Provide panel board neutral sized at 200% to help with harmonics problems.	03.01.22	
Power and communications to HVAC control systems (EMS or DDC) shall be protected with surge suppression and battery backup.	03.01.22	
Use of aluminum conductors is not preferred.	03.01.22	
Dedicated neutrals shall be provided on every circuit.	03.01.22	
MC Cable will be considered. Confirm locations with Project Team. It is not preferred in walls.	03.01.22	
GFI protection shall be at the outlet in lieu of in the panel.	03.01.22	
Provide electrical service outlets for rooftop access.	03.01.22	
Provide lightning protection systems on new construction projects. For renovations and additions, the Project Team should review feasibility of adding lightning protection system.	03.01.22	
Included in Division 270761 Integrated Communications Systems are the following wireless/power requirements: • Wireless Access Point (WAP): one (1) duplex electrical outlet is required to be installed above the ceiling tile next to every WAP location throughout the project. • Hallways: one (1) (possibly more depending on the hallway length) duplex electric outlets are required to be installed above the ceiling tile or 8 feet up from the floor in open ceiling construction. Outlets need to be equally spaced along the length of the hallway, one outlet every 50 feet. • Auditorium, Cafetorium and Gyms: a minimum of two (2) duplex electric outlets are required to be installed above the ceiling tile or 8 feet up from the floor in open ceiling construction. These outlets need to be placed on opposite walls in high ceiling design rooms or equally spaced distance for regular height tile ceiling designs. • Office spaces: one (1) duplex electrical outlet is required to be installed in multiple locations within the office open spaces. Quantities needed will vary depending on the building design and will be determined during project review. • Outdoor spaces: one (1) duplex electrical outlet is required to be installed in outdoor locations where staff and students commonly gather for outdoor activities. This outlet needs to be 8 feet up from finished ground level and visible from the outdoor activities area. • Any 2 story building must have an electrical room that feeds the upper floor.	03.01.22	

DIVISION 26 05 00 – ELECTRICAL (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Power Connection to Air Handlers: • To avoid future electrical "shorts", specifications need to state: "nonmetallic flexible seal tight conduit shall be used to connect air handler units from motor connection point to the first junction. Not to exceed 6-feet".	03.01.22	
No gangable boxes shall be used.	03.01.22	
Label panel and circuit on cover plate.	03.01.22	
Footer bond required on all new building construction. On existing buildings, the existing building ground system shall be tested and verified for resistance.	03.01.22	
EMT shall be immediate from finished floor. (Remove higher than 8 foot).	03.01.22	
Galvanized underground conduit shall be coated with 2 coats of bituminous paint.	03.01.22	
Underground conduit shall be spaced 2-inches apart.	03.01.22	
Painting for Electrical Work: • 120/208v: White • 277/480v: Orange • Fire Alarm: Red • Intercom: Yellow • Cable Digital Display: Black • Clocks: Green • Data: Blue	03.01.22	
Color Key shall reside in all Electrical Rooms.	03.01.22	
Goggle cabinet receptacles shall be located above the cabinet.	03.01.22	
Cover plates in wet locations shall be "while in-use" listed metallic die cast (plastic not permitted).	03.01.22	
All wiring devices cover plates for receptacles, lighting switches, etc. shall be permanently engraved/etched with panel name and associated circuit number(s) in black stencil lettering and number(s).	03.01.22	
Where extension rings are required to accommodate for wiring fill capacity, there shall be no more than one extension ring at any location.	03.01.22	
Group Toilets and locker rooms install key switches (No barrel keys) for lighting control (BOD Hubbel HBL 122xRKL). All locks shall be keyed alike for authorized school personnel. Extra keys shall be provided for school staff custodial staff. Prefer motion switches where possible.	03.01.22	
Outdoor Ground boxes shall be Legrand Model XB814 or equivalent.	03.01.22	
Horizontal runs of Low Voltage Cabling for Security, Fire Alarm, and Data cabling are permitted to be free wired on J-hooks, where located above an accessible ceiling. All wiring in walls, in exposed locations, or above hard ceilings shall be run in conduit. Provide plenum rated cable where applicable per project.	03.01.22	
Aluminum Panel Feeders are NOT acceptable. No aluminum for branch circuits are permitted.	03.01.22	
Electrical identification shall be provided on ceilings grids with a red dot at all emergency lay- in fixtures. For all electrical equipment above ceiling a red dot and P-touch label shall be provided with panel and circuit number.	03.01.22	
A convenience outlet shall be provided adjacent to each Classroom door for custodial equipment plug in. Same location at all Classrooms.	03.01.22	
Electrical Rooms with 800-amp main circuit breaker or higher must have panic bar hardware on the exit door. EOR shall coordinate with AOR.	03.01.22	

DIVISION 26 23 00 – ELECTRICAL GEAR

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Fire Alarm circuit breaker handles shall be painted red and be locked in the ON position. This shall include smoke and fire damper circuits.	03.01.22	

DIVISION 26 32 13 – GENERATOR

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Provide manual transfer switch for portable generator at all new schools. Loads and systems to be connected to the generator shall be reviewed with the Project Team for each project.	03.01.22	
In all new schools designated as EHPA's, provide a manual transfer switch for the required systems, including Code required ventilation fans, receptacles, lighting, IDF closets (for VoIP), etc. In addition, the kitchen equipment and cooler/freezer shall also be included.	03.01.22	
A portable generator (or permanent generator) shall be provided by others and hooked up to the transfer switch as required for EHPA operation.	03.01.22	
Locate generator so that refueling truck can supply oil from 75 feet maximum from the generator. Fueling truck is NOT permitted to drive over a street curb to access generator. Truck can drive on grass, if school permits.	03.01.22	
Basis of Design shall be Kohler. Caterpillar & Cummins is also acceptable manufacturer.	03.01.22	
The following is the standard list of circuits to be fed from the emergency generator in an EHPA Building. • Emergency and exit lights • Fire Pump (if required) • Security System • Sewage Lift Station • HVAC Controls • MDF Room Receptacles • Cash Register Receptacles • Radio Repeater • Principal Office • Exhaust Fans • Air Handlers and/or Fan Coil Units • Emergency Receptacles • Access Control System • Fire Alarm System • Smoke Evacuation Fans or Smoke Dampers • Intercom System • Elevator Equipment • Walk-in Freezer/Cooler/E-Controls • IDF Room Receptacles • Master Clock System • Clinic Refrigerator • Plant Manager Office • Well Pump • Circulating Fans • EHPA Manager Office	03.01.22	
The following is the standard list of circuits to be fed from the emergency generator in a NON- • Emergency and Exit Lights • Fire Pump (if required) • Security System • Sewage Lift Station • HVAC Controls • MDF Room Receptacles • Cash Register Receptacles • Radio Repeater • Principal Office • Kitchen Manager Office • Public Safety DAS/BDA System • Building Paging System • Fire Alarm System • Smoke Evacuation Fans or Smoke Dampers • Intercom System • Elevator Equipment • Walk-in Freezer/Cooler/E-Controls • IDF Room Receptacles • Master Clock System • Clinic Refrigerator • Plant Manager Office • Admin Reception Desk Workstations • First Responder Digital Display's in • Access Control System	03.01.22	
Equipment to be Controlled by EMS: All electric water heaters circuits of the project shall be controlled by the EMS system via contactors. Contactors shall be mounted adjacent to the source electrical panel and labeled to indicate device(s) controlled.	03.01.22	
Specify 5-Year Extended Warranty.	03.01.22	

DIVISION 26 51 00 – LIGHTING

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Light fixtures shall be fastened to the structure above and not laid in ceiling grid.	03.01.22	
All new schools and ancillary facilities should include Full Spectrum Lighting.	03.01.22	
Basis of design lighting fixtures shall be Cree.	03.01.22	
Approved manufacturers are: Cree, Lithonia and Cooper.	03.01.22	
Basis of design for lighting control shall be Lutron Vive. Alternates shall be approved by the Project Team. (nLight is not acceptable.)	03.01.22	
Lighting control shall be wireless, networked control systems. The basis of design shall be Lutron Vive.	03.01.22	
Lighting manufacturers shall include a 10-year materials/parts warranty in the base bid.	03.01.22	
Install LED fixtures in all locations. For renovations, LED retrofit type fixtures will be considered.	03.01.22	
Provide 2'x2' LED recess fixtures or 2'x4' in lay-in ceilings.	03.01.22	
Site lighting shall be controlled by time clocks.	03.01.22	
All lighting timers need to be 24-hour or be electronic. The preferred time clocks are Intermatic 24 hours, model T102 (277/208) or T103 (120).	03.01.22	
Aisle lighting for High School Auditorium seating areas shall be integral to the furniture and not provided in the floor.	03.01.22	
Provide LED lighting for High School ballfields including football, baseball and softball. Musco Lighting is the preferred manufacturer. Practice fields do not require lighting. Football fields are to be an average 60FC with a 90 CRI rating. Baseball & softball 50/30 on fields.	03.01.22	
Emergency light fixtures shall include integral battery or shall be served from generator panels (if provided).	03.01.22	
Lighting on the building exterior walls is preferred at covered walkways. As an alternate to this, lighting in the covered walkway structure (preferably on the columns and not the deck) will be considered by the Project Team. No 480-volt fixtures.	03.01.22	
Concrete light poles are required.	03.01.22	
Pole bases and direct burial light poles are acceptable.	03.01.22	
Only parking lot lights should be 277 volt or 480 volt.	06.01.22	

DIVISION 26 51 01 – LUMINARIES

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Lighting emergency bypass relays shall be installed in separate junction boxes located within 3-feet of the room door above accessible ceilings.	03.01.22	
Attic stock lighting drivers shall be provided for EACH type of lighting fixture on the project. Provide 5 drivers of each LED luminaire type indicated on the Luminaire Schedule. Luminaires with variations of reflectors shall be considered one luminaire type with one driver type.	03.01.22	
Lighting Control Panels shall NOT be used to control to lighting system. Contactors shall be tied into BAS Controls only. All Contactors controlling lighting shall FAIL in the CLOSED position. The intent being that if something goes wrong with the EMS System the lights will remain ON if they have power.	03.01.22	
Relays with on/off rating shall be Lutron – 1 million on/off rating.	03.01.22	

DIVISION 27 06 00 – INSTRUCTIONAL TELEVISION SYSTEM

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Scope: • The following design principals should be implemented when designing the Instruction Television System and School based TV Studio.	03.01.22	
Basis of Design: • 4" PVC Wall Pipe *CC: ○ There is to be one or two four-inch PVC Pipe installed in the wall between the control room and studio to allow cables to pass from one room into the other.	03.01.22	

• Curtain/ Sound / Floor *CC:
  ○ Studios will be equipped with a curtain on a track. The curtain will run the full length of the wall and be able to move on rollers. The curtain color is to be decided by the Owner, it will most likely be black or royal blue.
  ○ Elementary and Middle Schools should have carpet in the studio. High School Black VTC (or like) flooring. Sound proofing/insulation should be taken into effect. Doors should be metal.
	03.01.22
	12.14.23	

• Green Screen *CC: ○ Each studio will have two walls designated as a green screen wall. The wall will be free of all fire alarms, fire safety lights, and wall power receptacles. Power outlets should be located on adjoining walls near the green screen wall. The wall will be smooth finished with no texture. The wall will be primed, then painted with Rosco Chroma Key Paint.	03.01.22	
• Studio Lighting: *CC: ○ The district standard is IKAN 5 pin DMX Controlled LED studio light fixtures. The CM will run an Owner provided DMX and XLR Cable from the control room to the studio lighting grid. The main overhead LED lights in the room must be on a switch and be able to be turn off. There should be no motion on/off sensor on the primary lights. There will be six (6) Quad Power outlets located in the ceiling of the studio tied to a light switch in the studio. The Owner will determine location at the time of design.	12.14.23	
• Control Room Window: *CC: ○ There will be a window between the control room and the studio.	03.01.22	

DIVISION 27 06 00 – INSTRUCTIONAL TELEVISION SYSTEM (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
• Control Room Countertop *CC: ○ A countertop is to be installed in the control room under the window looking out into the studio. This countertop should run the length of the wall. There are to be data eight (8) ports below the countertop.	03.01.22	
• Studio - Wall Mounted TV*CM / OOO: ○ The CM is to wall mount a 55" display in the TV Studio. This should be celling high above the window. Behind the display shall be two (2) data ports and (2) wall receptacles. A HDMI cable will be run from the control room AV2 wall box/plate to the display. Owner will provide AV1 and AV2 design information. • Wall Audio Inputs: ○ The CM will install high quality audio cabling in the wall of the TV studio. There will be a total of eight jacks (inputs). The eight jacks will be split into four (4) input per wall plate. Each on the opposite sides of the wall. The outputs will be located on a bulkhead plate in the control room. These are AV1 and AV2 on design. Owner can provide more information as needed. • Studio Equipment (OOO): ○ Studio equipment will be ordered by the district. The construction budget will hold the following amounts in reserve for studio equipment. When needed, the district may hire a district approved broadcast engineer / installer that may increase the cost below. As the district has moved to an IPTV model and is no longer installing Coax cable / distribution into schools, as updates are made at schools the following budgets should be taken into account to replace TV studio equipment to be IPTV compatible to accommodate the school and new / renovated space. ▪ Elementary: $45,000 ▪ Middle: $50,000 ▪ High: $150,000	12.14.23	
• Definitions: ○ Owner provided, Owner Ordered, CM Installed (OOC) ○ Owner provided, Owner Ordered, Owner Installed (OOO) ○ CM Ordered, CM Installed (CC)	03.01.22	

DIVISION 27 06 50 – EDUCATIONAL BROADCAST SYSTEM (EBS)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
As of May 2020, the district has moved its EBS system to IPTV based transmission.	03.01.22	
In general, the following notes should be taken into consideration when designing a system: • Projectors (Cafeterias, Theatres, or any other location) must have an IPTV box as a source. District will provide equipment list at time of design. • Schools will be equipped with a four (4) Channel IPTV Head-end. This includes three blue ray players and a cable provider cable box. District will provide equipment list at time of design.	03.01.22	
School Based IPTV Headend Equipment (Typical Configuration): • Rack space to be allocated in media center IDF. • District Information Technology and Television Services Departments will provide equipment list at time of design.	03.01.22	

DIVISION 27 07 20 – CLASSROOM TECHNOLOGY

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Scope: • Provide and install components required to implement the system described herein and on the drawings. The Classroom System shall be able to input and process various incoming audio and video signals from a variety of multi-media sources such as Computers, and Digital Display.	03.01.22	
Basis of Design: • Products similar to digital/interactive displays mounted on identified teaching wall. District Information Technology will provide equipment list at time of design.	03.01.22	
General: • The Classroom System may consist of a wall mounted panel (75" or Greater), and a Wireless AV receiver as directed by the IT Department. Displays and Wireless AV receiver will be provided by the District (IT Department). District Information Technology will provide equipment list at time of design.	03.01.22	
Execution: • The J-box (Chief box) is to include 4 power outlets, 3 RJ-45 connections, District Information Technology Department will provide equipment list at time of design. ○ Elementary and Secondary Teacher Panel - J-Box (Chief box) installed at 86" at the top of the panel A.F.F. ○ Science Lab Student Panel- J-box (Chief box) installed at 74" A.F.F. Confirm at design. • The display should be mounted at the appropriate height per grade level requirements. ○ Mounting height for high and middle school classrooms not to exceed 84" at the top of the panel A.F.F. If 84" is not possible, the height should not be lower than 80" at the top of panel A.F.F. ○ Mounting height for elementary school classrooms not to exceed 82" at the top of the panel A.F.F. If 82" is not possible, the height should not be lower than 78" at the top of panel A.F.F. • Science Labs: ○ District Information Technology Department will provide equipment list at time of design. • Middle / High School Science Rooms: ○ A science classroom consists of a 75-inch or greater teacher display panel that will mirror its contents to the various student learning pods. The method by which the main display will connect to the student pods will be provided by the IT Department at the time of the construction design. ○ A typical science classroom setup consists of four to six student collaboration spaces. A collaboration space contains a 50" display. The District IT Department will provide guidance on the room location/placement of technology infrastructure. District IT Department will provide a current equipment list for the science rooms at time of construction. No IT equipment shall be installed within 3 feet of any sinks, showers, or chemical splash zones.	03.01.22 10.17.23 10.30.24 10.30.24 05.01.24 05.01.24 05.01.24	

DIVISION 27 07 25 – PUBLIC ANNOUNCEMENT SYSTEM

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Basis of design for all new construction shall be Audio Enhancement EPIC, unless otherwise stated during design. • For renovation/remodel projects, replace existing OR upgrade zones with an analog station bridge (NQ-E7030) on the LAN and rack mounted in each IDF/MDF with UPS backup power supply. If portable classrooms are present, install an interior IP Speaker, Nyquist NQ-S1810WT-G2. External PA coverage to be considered when portables are used for student / staff overflow. NQ-A2060-G2 amplifier to be used to power analog horn speakers (SPT30A). The Project Team will coordinate this with IT.	11.01.24 10.17.23	
Install a system that will allow communication with the District's head end, located at the School Support Center Data Center.	03.01.22	
Provide an IP speaker in each classroom. This will be coordinated with the Project Team.	03.01.22	
No Volume Control knobs shall be installed/provided during new construction installations and/or renovations. PA/Intercom volume levels will be set in line with District requirements through initial programming and set up. Adjustments to volume control will be addressed through the IT Service Desk and managed through IT Department.	01.17.24	
Speakers in the common areas shall be analog. Provide zone for "All Call" in common areas, interior areas, and/or exterior areas. Interior and exterior speakers shall be on separate zones.	03.01.22	
Public address system shall provide for the distribution of selected paging, voice, bell tones/schedules and/or music programs throughout the campus and shall be uni-directional from the head end.	03.01.22	
An output from the campus telephone system shall override and mute any program signals to permit the telephone input signal to provide "All-Call" announcements via the telephone system. The signal is then distributed to all system speakers.	03.01.22	
A communication device shall be located at the Reception Area/Front Office to provide the same function as described above for the telephone system input. Provide another access device at the EHPA shelter manager's office, if applicable.	03.01.22	
The public-address system Installer shall coordinate this integration with the telephone equipment supplier and provide a completely functional system. The system Installer shall provide all required interface equipment and coordinate its installation with the telephone equipment installer.	03.01.22	
Interior IP Speakers shall be Owner Provided/Contractor Installed.	11.01.24	
Interior analog Speakers shall be Owner Provided/Contractor Installed.	03.01.22	
Weatherproof Speakers: In exterior canopies, locker/shower rooms and in other designated damp areas, provide weatherproof speakers. Speakers shall be Atlas/IED Model APF-15T with L2-211 back box and VP 161 aluminum vandal proof grille or equivalent, matching transformer 25/70v with adjustable taps.	03.01.22	
Terminal cabinets shall be non-locking.	03.01.22	

DIVISION 27 07 25 – PUBLIC ANNOUNCEMENT SYSTEM (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
PA and Speakers: • PA and Speakers shall be provided in all regularly occupied students spaces, offices, conference rooms, work rooms, and corridors, etc. PA shall override sound systems in large gathering spaces. • ES Car Loop and Covered Play Area PA shall be included in building PA loop. Consideration for exterior spaces where students regularly occupy for PE/Play/Outdoor Work Areas should also be reviewed to ensure announcements are heard for safety purposes.	11.01.24	
Horizontal runs of Public Address cabling are permitted to be free wired on J-hooks, where located above an accessible ceiling. All wiring in walls, in exposed locations, or above hard ceilings shall be run in conduit. Provide plenum rated cable if required. All requirements for NEC cabling must be followed.	03.01.22	
All instruction spaces, including gym, cafeteria, and clinic, get a ceiling speaker. All other areas, such as offices, get speakers. Corridors shall have speakers. Exterior speakers shall be installed at covered play areas, outdoor PE field/area, bus loading areas, parent dop-off areas, parking lots, stairwells, and other building exteriors necessary.	10.17.23	
Provide additional conduits from building to building as determined by the Project Team.	03.01.22	
Provide 5-year extended warranty with all software updates at no additional cost to Owner.	03.01.22	

DIVISION 27 07 61 – INTERGRATED COMMUNICATION SYSTEM

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
SDMC IT Department furnishes the network equipment for CM installation and patching.	03.01.22	

MDF and IDF Rooms:
• MDF and IDF Rooms shall have exposed ceilings. No ACT or grid. Maintain 12-inches minimum from face of wall to face of cable tray. All MDF and IDF Rooms shall have dedicated Minisplit System.
  ○ MDF Room Size: 10’ x 20’ minimum.
  ○ IDF Room Size: 10’ x 10’ minimum.
	03.01.22	

All underground pipes in the MDF and IDF rooms shall be permanently labeled with source and destination room numbers for each pipe.	03.01.22	
Provide one 4 post server rack in the MDF Room.	03.01.22	
Do not use coaxial cable.	03.01.22	
Multimode fiber optic cable will be used to connect communication closets with each other. All fiber optic cable will be home run from each communication closet to the main distribution frame without splicing or cross-connections. Category 6A UTP cable will be used between the communication closets and the communications station outlets. A single manufacturer’s product will be used for all like system components.	03.01.22	
Upon completion of the GMP, the CM will provide quantities of telecommunication outlets (data drops) to the Project Director. This information will be provided to and coordinated with IT for ordering network equipment.	03.01.22	
Fiber Optic Patch Panels: All communication closets shall terminate fibers with LC type ceramic connectors manufactured by Belden, or approved equivalent.	10.17.23	
Fiber Optic Cable: Each outlying IDF communication closet will have one pair multimode fiber optic cable for every 48-station cable drops per closet, plus three additional pairs of each type for future growth. The minimum number of multimode pairs per closet will be six of each type. The cables will be home run to the MDF closet without splices or cross connects and will be rated for the environment in which it is installed. OM4 50/125 MULTIMODE fiber is to be used for all interconnecting MDF to IDF runs including portable feeds.	03.01.22	
Fiber Optic Patch Cables: Contractor shall supply one fiber optic jumper/patch cords for each termination in each communication closet. Patch cords shall be two meters long with LC-type ceramic connectors on both ends.	03.01.22	
Station Outlet Patch Panels: Category 6A patch panels shall consist of RJ45 non-keyed modular jacks with all 8 pin positions prewired to self-contained 110D type IDC blocks. Patch panels shall be 24 or 48 port and manufactured by Belden, or prior approved equivalent.	10.17.23	
Station Outlet Cables: Terminate in EIA-568-B configuration. All cables will be Category 6A UTP and shall be continuous from each communications outlet to the patch panel without splices.	03.01.22	
Station Outlet Patch Cables: Contractor will provide one station outlet cable and one IDF communication closet patch cable for every data drop. Provide 25% of cables 3'-0" long, 25% of cables 5'-0" long, 25% of cables 9'-0" long and 25% of cables 15'-0" long. Contractor shall provide manufacturer terminated patch cables. • Acceptable manufacturers include: ○ Belden is the approved low voltage cabling standard by the District IT Department.	03.01.22	

DIVISION 27 07 61 – INTERGRATED COMMUNICATION SYSTEM (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Data Cables: All data cables shall be yellow Category 6A, consisting of 4 pair, 24 AWG copper, 8 pos, 8 conductor.	03.01.22	
Station Outlets: Classroom Category 6A communications outlets shall consist of a single gang faceplate with three non-keyed RJ45 modular to 110 type inserts. Classrooms will have three of these communication outlets per room to be located on opposite walls. One outlet is incorporated into the Digital Display detailed elsewhere in this document.	03.01.22	
WAP Outlet: Install two Category 6A communication cables outlet per classroom. The cables are to be located in the center of each room, terminated with a non-keyed RJ45 modular to 100 type insert, coiled with 20' of slack and tie wrapped to the ceiling structure one foot above the ceiling. Place the following label ("WAP-Room #") on the ceiling grid where the cables are located using a machine generated label. Install two Category 6A communication outlets (each with two cables) in the administrative area, cafeteria, and gymnasium. The cables are to be located at opposite ends of each building/room, terminated with a non-keyed RJ45 modular to 100 type inserts, coiled with 20' of slack and tie wrapped to the ceiling structure one foot above the ceiling. Place the following label ("WAP-Room #") on the ceiling grid where the cable is located using a machine generated label. If the structure is built with an open ceiling, the WAP outlets are to be installed on sidewalls at the same level as the ceiling support structure.	03.01.22	
Grounding Bus Assemblies: Provide ground bus assembly with lugs in each communication closet and to every equipment and relay rack.	03.01.22	
There are to be no floor communication outlets.	03.01.22	
All office and storage rooms shall have one Category 6A communication outlet consisting of a single gang faceplate with three, non-keyed, RJ45 modular to 110 type inserts.	03.01.22	
Each Cafeteria Manager's office shall have one, Category 6A, single gang faceplate communications outlet with three non-keyed RJ45 modular to 110 type inserts. Each Cafeteria point of sale (POS) station location shall have one, Category 6A, single gang faceplate communications outlet with two non-keyed RJ45 modular to 110 type inserts.	03.01.22	
The Custodian's Office shall have one Category 6A single gang faceplate communications outlet with three, non-keyed, RJ45 modular to 110 type inserts.	03.01.22	
Each Mechanical Room shall have one Category 6A single gang faceplate communications outlet with three, non-keyed, RJ45 modular to 110 type inserts.	03.01.22	
Modular jacks shall have a 45-degree downward tilt and shall be interchangeable with removable circuit labels. All jacks shall be white in color and be labeled at both ends.	03.01.22	
Location of communication outlets will be determined by the IT Department and are not to be located under Digital Displays, next to sinks, or within five feet of doorways. Duplex electrical outlets shall be installed next to every communications outlet. Flush mounted, dual receptable electrical outlets are needed next to the ceiling "WAP" outlet for additional technology and life safety Crisis Communication System (Alyssa's Alert).	10.17.23	
Self-supporting 19" x 7' tall freestanding racks, having standard EIA hole pattern on front and rear flange with overhead support cross members and front mounted wire management panels.	03.01.22	
Contractor will provide 20 - 12-24 pan head mounting screws with each rack for the mounting of electronic equipment.	03.01.22	
Contractor shall provide one, multi-outlet, surge protected receptacle strip for each rack. Unit shall be 19" rack mount, six outlets, and circuit breaker with 6'-0" line cord.	03.01.22	
The contractor will install a 7' high, 4 post server rack in the MDF next to the equipment racks to include two front and two rear adjustable rail tracks for the mounting of servers. The rack will be securely mounted to the floor and grounded to the building system.	03.01.22	
Contractor shall provide ladder type cable runway tray sections and accessories in all communication closets.	03.01.22	

DIVISION 27 07 61 – INTERGRATED COMMUNICATION SYSTEM (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Provide one 19" equipment shelf for each rack.	03.01.22	

Each communication outlet shall have a permanent label on the outlet faceplate and the patch panel jack. Port labels shall also be permanently attached to the UTP cables at both ends. Brother P-Touch tape marking system labels are acceptable. Handwritten labels are not acceptable. The following scheme shall be used in the labeling process:
• *Communication Closet (CC) Room Number*
• *Position on Patch Panel*
• For example, Classroom # 212 has 3 Cat 6A cables that terminate in Closet # 245.
• The Classroom outlet would be labeled:
  ○ *CC245* (Communication Closet room number)
  ○ *9 - 10 – 11* (corresponding positions on the patch panel)
• The Communication Closet would be labeled:
  ○ *212-9, 212-10, 212-11*
  ○ (212 is the Classroom number & 9–10–11 are jack identification numbers)
• The communication closet patch panels will be labeled above each port with the room number each jack services and will correspond with the jack in each room.
	03.01.22	

Each patch panel shall be labeled sequentially from left to right, top to bottom with the room number and port number such that the ports can be located easily on the panel.	03.01.22	
All fibers in each fiber optic cable shall be identified at each end on the interconnect cabinet with permanent plastic labels. Fiber cabinets shall be identified with the building number, room number and corresponding fiber number for the far end of the cables.	03.01.22	
Every portable in the district used for instructional purposes will have the following network communication infrastructure and will be equipment and designed as follows.	03.01.22	
No cable splices will be allowed outside the termination locations described in this document or on the prints.	03.01.22	
All cables will be labeled on both ends with clear permanent machine generated labels matching the numbering plan indicated herein.	03.01.22	
Provide and install a Hubbell Rebox (Commercial Remote Equipment Cabinet) model RE2 inside each portable next to an electrical outlet. Determination of the mounting location will vary depending on the design of each portable and must be approved by the SDMC Network Services Manager prior to installation.	03.01.22	
Install a 1" steel conduit pipe to be run from the RE2 cabinet to the exterior of the portable and terminate into a NEMA 3 weatherproof 8" x 8" x 6" J Box with an accessible cover.	03.01.22	
Install two, separate inner duct conduit pipes exiting the bottom of the J Box and buried in the ground to terminate into a 12"x 18" pull box installed near each portable. One pull box can be shared by multiple portables if the distance between the pull box and the portable is not greater than 30 feet.	03.01.22	
Install two, separate 1" conduit pipes buried at least 12" deep from the pull box to either an exterior weatherproof cabinet mounted at least four feet up on a backboard or a larger buried pull box at least 2 feet x 2 feet. The type of termination required will vary from site to site and will be determined by Owner.	03.01.22	

DIVISION 27 07 61 – INTERGRATED COMMUNICATION SYSTEM (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Install two, separate 2" conduit pipes buried at least 12" deep between the above determined location to the closest permanent buildings Communication Closest.	03.01.22	
Install a two-strand fiber optic cable which is suitable for underground installation between each portable's RE2 cabinet and either the external backboard cabinet or building communication closet.	03.01.22	
Install a 4-conductor 20 AWG P.A. cable with 1-pair shielded and a drain wire (West Penn 359 or equivalent) between each portable's RE2 cabinet and either to external backboard cabinet or building communications closet which has available P.A. circuits.	03.01.22	
Labeling shall be as follows; each pair of fiber in the permanent buildings' communication closet will have a label that denotes the portable # in which each pair of fiber is terminated. The portable will have a label on the fiber denoting the permanent buildings communication closet room #.	03.01.22	

• Portable Internal Wiring:
  ○ Install three communication outlet boxes on opposite walls in each portable and located next to power outlets. Determination of the mounting location will vary depending on the design of each portable.
  ○ Each outlet will have three Category 6A cables contained in each outlet box. These cables are to be run inside the walls if possible; otherwise, they can be run on the interior surface of the finished wall, into and above the drop ceiling space and down the wall into the RE2 cabinet.
  ○ Terminate all cables onto Cat 6A patch panels located inside the RE2 cabinet and label both ends of all cables. Install cable wire mold over all exposed cable runs inside the portable.
• Contractor shall be responsible for providing a complete, functional data communications systems. All needed infrastructure including but not limited to conduit, ground pull boxes, racks, cabinets, termination panels, outlets and cabling are to be provided by this Contractor. Coordinate all requirements with other trades prior to submitting shop drawings. The Contractor shall provide for 20% growth on patch panels and punch down locations.
• The cabling plant shall consist of a Main Distribution Frame (MDF) and multiple Intermediate Distribution Frames (IDFs), as shown on the drawings. All conduit and cable interconnecting the MDF to the IDFs shall be a part of this scope. All network cabling shall be installed with a 25-year manufacturer's performance warranty for 10-Gbps. The system is to be constructed with all like components and the installing Contractor is to be certified in the installation of the system and its components (must be pre-approved). The system shall also include a 4" conduit with three inter ducts to be installed from the MDF to the main road public right of way along and terminated into a 2x3 pull box.
• The installation shall include all (fiber optic and twisted-pair copper) cabling, connectors, jumpers, patch panels, vertical wire management (no horizontal), telecommunications outlets, and racks or cabinets. At least 50% (i.e., the lower half) of each rack shall be reserved for Owner provided electronics.
	03.01.22	

DIVISION 27 07 61 – INTERGRATED COMMUNICATION SYSTEM (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
• All fiber strands shall be terminated with LC connectors utilizing Fusion splicing and landed on the fiber interconnect patch panels. All copper station cables shall be terminated on patch panels (MDF / IDF end) and data communications outlets (workstation end). Upon completion of installation, Contractor shall test all fiber and copper cable, record the test results, and provide results to the district, as specified herein. • Install/terminate fiber from the MDF to every individual IDF building. These runs shall all be in a star configuration. These backbone cables shall all be dedicated direct links between the MDF and the IDF. Provide rack mount fiber and copper panels in all closets and mount all equipment on a rack or cabinet, as required by this specification or the drawings. • **The Contractor shall rack-mount and patch all owner provided network equipment.** • Contractor shall provide Category 6A cabling system. • The intended function of the data communications cable system is to transmit data signals from a central location to individual data outlet locations. Upon completion of the work outlined in this specification, the system shall be capable of supporting Gigabit Ethernet data signals per IEEE 802.3ab, IEEE 802.3z, IEEE 802.3ae, and 1.2 Gb/s ATM. Fiber optic cable shall be laser or Vertical Cavity Surface Emitting Laser (VCSEL) optimized.	03.01.22	

Fiber Optic Cabling:
• It is the intent that the inter-building fiber optic cabling, installed on this project, accommodates the data, fire alarm, HVAC controls, and surveillance systems. Fibers dedicated to these systems shall be labeled as to their use. All high school construction projects shall have fiber run to the sports field press boxes for phone and data communications.
• All OSP fiber cable that is run 50 feet or more inside a building shall be installed in no less than two inch GRC above ceiling from entry point to termination point. Provide 20 foot slack loop at each closet termination end. Cable is to be homerun (i.e., no splices or cross patching through IDFs).
• Outside Plant Fiber – Multi-Mode:
  ○ Provide for inter-building backbones: loose tube, gel filled, moisture proof, outside plant, multi-strand, multi-mode fiber optic cable. Provide 50/125 and in quantities indicated on drawing interconnect diagram. Multimode fiber strands shall be optimized for VCSEL based systems. Fiber strands shall exceeded TIA/EIA 568-3.D and IEEE802.3z specifications. All fiber shall be installed with pull strings for future use. See drawings for number of fibers per cable.
  ○ Approved Manufacturers:
  ▪ Belden FX Indoor/Outdoor OM4 Distribution Tight Buffer OM4 (FD4D024P9). Provide counts per drawings.
  ▪ Pre-approved equal.
	03.01.22
	
	10.17.23	

DIVISION 27 07 61 – INTERGRATED COMMUNICATION SYSTEM (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
• Indoor Plant Fiber – Multi-Mode: ○ Provide for intra-building backbones: gel-free, inside plant, multistrand, multi-mode fiber optic cable. Provide 50/125 and in quantities indicated on drawing interconnect diagram. Multimode fiber strands shall be optimized for VCSEL based systems. Fiber strands shall exceeded TIA/EIA 568-3.D and IEEE802.3z specifications. All fiber shall be installed with pull strings for future use. See drawings for number of fibers per cable.	03.01.22	
○ Approved Manufacturers: ▪ Belden FX Indoor/Outdoor OM4 Distribution Tight Buffer OM4 (FD4D024P9). Provide counts per drawings. ▪ Pre-Approved Equal.	03.01.22 10.17.23	
Fiber Optic Cabling Connectors: • Provide small form factor, fiber optic connectors at each end of all fibers installed. Ferrule material shall be zirconia ceramic and pre-radiused. Each installed connector shall not exceed –0.1 dB/0.5 dB per connector pair. Provide connector protectors at each connection point to prevent accidental damage to connectors (dust covers). Terminate fiber on “LC” duplex connectors appropriate to fiber type, in quantities indicated on drawings.	03.01.22	
○ Approved Manufacturers: ▪ Belden FX Fusion Splice-On Connector, OM3-4, LC SIMPLEX, 900UM TIGHT BUFFER or Pre-Approved Equal. • Protect all 250 µm fibers with cable end kit and fan out tubing kit or breakout jacketing kit.	03.01.22 10.17.23	
○ Approved Manufacturers: ▪ Belden or Pre-Approved Equal.	10.17.23	
Fiber Optic Cable Interconnect Devices: • Fiber Optic Interconnect Cabinets (Rack-Mounted). • Rack Mount Fiber Enclosures shall be constructed of code gauge steel protecting fiber terminations on all sides. Cabinets shall install in a 19" data rack with standard EIA hole spacing. • Provide hinged, removable front and rear doors with drawer that slides forward and backward. • Patching compartment shall be accessible through a hinged rear mounted cover (removable). • In quantities required, provide ports with “LC” type duplex couplers for multi-mode OM4 fiber optic cable. Cover empty slots with blank adapter panels, as applicable. • Cabinets shall be equipped with fiber optic splice trays and cable management. For transition to vertical cable managers, provide integral bend radius control.	03.01.22	
• Approved Manufacturers: ○ Belden FiberExpress ECX Patch Panel Housing. Quantities and blanks, as necessary: 50/125 µm MM Fiber, Belden OM4 Standard FX ECX Frames (6 / 12 pair LC). ○ Belden, or Pre-approved Equal.	10.17.23	

DIVISION 27 07 61 – INTERGRATED COMMUNICATION SYSTEM (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Equipment Racks: • Connect separate, solid, #4 AWG, insulated, grounding wire between the ground bus and the building's grounding system. Grounding Bus Assemblies: Provide ground bus assembly, 12" long (minimum) with lugs in each IDF / MDF closet and to every equipment and relay rack if not existing. • Provide rack with mounting hardware and all accessories required to complete installation of the rack. • Provide Velcro tie wraps for cable management within racks. Nylon tie wraps shall not be used within racks.	03.01.22	
• Relay Racks and Frame: ○ Relay racks and frame shall be height, as specified, and provided with EIA 19" ○ Securely mount to floor (on an isolation pad and utilize non-conductive washers) and provide ladder rack/attachment hardware, at no less than 12" width, with required front and rear clearances. ○ Provide 12-24 pan head mounting screws with each rack for the mounting of electronic equipment (i.e., switches) in quantities corresponding to the installed number of patch panels (i.e., one switch to each patch panel). ○ Equipment shall be constructed of extruded aluminum or cold rolled steel with standard EIA hole pattern on front and rear. Finish shall be anodized black.	03.01.22	
○ Acceptable Manufacturers: ▪ Chatsworth Products Model 48353-703 (Relay) and Model 15251-703 (Four Post). ▪ Pre-approved Equal.	03.01.22	
○ Per drawings, provide cable management system. Provide vertical cable channel guide panels with covers to handle all terminated cables, as per drawings. Contractor shall install all owner provided network equipment and patch all drops onto equipment in an orderly and neat fashion utilizing the minimum required cable lengths through the cable management system. Orderly and neat to be evaluated by the Owner/Engineer. Contractor shall redo to comply with Owner's opinion/aesthetics.	03.01.22	
○ Acceptable Manufacturers: ▪ Chatsworth Products, Evolution g1 35511-703 (Vertical) and Evolution 35441-702 (Horizontal). ▪ Pre-approved Equal.	03.01.22	
○ Provide support for each rack/frame, as required. For required backboard, provide as manufactured by Pathway & Spaces, Inc. Backboard Kits or pre-approved equal. ○ Provide APC Smart-UPS X 3000VA Rack/Tower LCD 100-127V with Network Card SMX3000LVNC with APC Temperature & Humidity Sensor AP9335TH in the MDF Room. Install one L5-30 – 125V 30A electric outlet behind the network rack for the above UPS. If the school is to be used as a public shelter and is equipped with a generator, the Contractor shall provide backup power to this outlet in each MDF / IDF electrical outlet that is designated as a shelter space. ○ Provide APC Smart-UPS X, Line Interactive, 1500VA, Rack/tower convertible 2U, 120V, 8x 5-15R NEMA, Smart Connect Port+NMC with APC Temperature & Humidity Sensor AP9335TH in all IDF rooms.	03.01.22	

DIVISION 27 07 61 – INTERGRATED COMMUNICATION SYSTEM (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
UTP Horizontal Cabling: • Provide color putty, plenum-rated, Category 6A compliant, unshielded twisted pair (UTP) copper cable with integrated pair divider with a flame-retardant PVC jacket. Cable shall contain thermoplastic insulated primaries to comply with Article 800 NEC. Coordinate final color of cable with Owner prior to ordering. • The Contractor shall inspect all cable prior to installation to verify that it is identified properly on the reel identification label, that it is of proper gauge, containing the correct number of pairs, etc. Damaged cable, or any other components, failing to meet specifications shall not be used in the installation. • Horizontal runs shall not exceed the 90 meters including the patch cords and slack. If such an instance is identified by this Contractor (due to routing or other constructability issues), this Contractor shall notify the Engineer, prior to installation, in order to adjust the design to comply with standards. • Provide three feet of "s"-coiled cable above ceiling at each outlet location.	03.01.22	
• Acceptable Manufacturers: ○ Belden 10GXS Category 6A Enhanced Cable, 4 Pair, U/UTP, CMP (include all needed accessories). ○ Pre-approved Equal.	10.17.23	
• Any exposed cables shall be completely installed in black wire loom.	03.01.22	
Data Jack System (T568B): • Recessed Mount—Provide faceplate and specified number of eight position eight conductor connectors in a four-port configuration. The jacks shall individually snap-in to faceplate from the back of the faceplate. There shall be no front access to the jack termination once faceplate is secured to back box. Data outlet shall provide compliance with TIA-568-0.D, 568-1.D, 568-2.D, and TIA-606-B specifications. Termination of all jacks shall be 110-type insulation displacement connectors (IDC), T568B pin/pair assignment and shall utilize printed circuit board technology. Tilt RJ-45 jacks at 45-degree angle.	03.01.22	
• Acceptable Manufacturers: ○ Belden KeyConnect Faceplate, single gang, flush, compatible with KeyConnect style modular jacks, electric white, (AX102660, AX102655, AX102661, AX102249, AX102251), faceplate openings to accommodate jacks specified. Provide blanks, as necessary. ○ Pre-approved Equal.	03.01.22	
• WAPs shall be installed on the drop ceiling grid in center of room. Provide biscuit termination with no less than 20 feet slack.	03.01.22	

DIVISION 27 07 61 – INTERGRATED COMMUNICATION SYSTEM (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Labeling: • Each cable shall be permanently labeled at both ends with the MDF or IDF Room Number, Patch Panel Number, and Patch Panel Port Number. The system identification administration shall meet the requirements of TIA 606-B. • Each box shall have a recessed designation strip with clear plastic cover for jack identification. Lettering shall be typed – not handwritten. • All fibers in each fiber optic cable shall be identified at each end on the interconnect cabinet with permanent plastic labels. Fiber cabinets shall be identified with the building number and corresponding fiber number for the far end of the cables.	03.01.22	
Patch Panels (T568B): • Provide loaded, Category 6A UTP patch panels (rack mount) per TIA 568-2.D as verified by ETL. Panels shall have 110 IDC type to eight position eight conductor connectors with no exposed PC boards. Jacks shall be manufactured with printed circuit board (PCB) and have T568B pin/pair assignment (unless otherwise noted on the drawings). Patch panels shall be provided with individual port and patch panel labeling identification areas and shall be labeled consistent with the data jack system labeling outlined in this specification. • Provide quantity to accommodate number of outlets indicated on drawings plus 20% growth. • Provide rear cable management and horizontal cable management guide either as an integral part of the patch panel or provide as a separate piece and station support bars. • The building and room number in which the patch panel resides shall be prominently displayed. • Patch panels shall be alphabetically labeled from top to bottom, left to right, beginning with the letter A and proceeding through the alphabet. Each port of each patch panel must be numbered and labeled with the originating jack identification using building, room, and jack designation.	03.01.22	
• Acceptable Manufacturers: ○ Belden Cat 6A 10GX REVConnect Patch Panel, quantities as indicated on the drawings. ○ Pre-approved Equal.	10.17.23	
Floor Boxes: • Floor Boxes are not permitted.	10.17.23	
Fiber Jumpers and Patch Cords: • Fiber Jumpers: ○ Provide one, fiber optic jumper/patch cord for each termination in each communication closet. Jumpers shall consist of two, 50/125 µm, multimode OM4 fibers; 2 meters long with type LC ceramic connectors on both ends. Refer to fiber specifications - this section.	03.01.22	

DIVISION 27 07 61 – INTERGRATED COMMUNICATION SYSTEM (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
• Category 6A Patch Cords: ○ Provide snagless, Category 6A compliant cords (with an RJ-45 8P8C jack on each end). One patch cord shall be provided for each end of each Category 6A link (i.e., two per link), as shown on the drawings, plus spares. Cords shall be installed by this Contractor. ▪ Provide yellow patch cords in the following lengths (if lengths are not exactly as listed provide closest length, even if slightly longer): ❖ At closet: 40% - 3 feet, 40% at 7 feet, 20% at 10 feet. Provide 20% spare patch cords (Qty/Lengths: ½ at 3 feet and ½ at 7 feet). ❖ At station, 75% - 10 feet and 25% - 15 feet. Provide 20% spare cords per color (Qty/Lengths: ¾ at 10 feet and ¼ at 15 feet).	03.01.22	
▪ Approved Manufacturers: ❖ Belden CAT 6A 10GX Copper Patch Cord UTP LSZH, 26 AWG, FX Patch Cord, OM4, LC Duplex - LC Duplex, 2 M, OFNR, Duplex Zip 2.0 MM, A-TO-B, Aqua Jacket. ❖ Pre-approved Equal.	10.17.23	
Zoned Paging: • This Contractor shall provide pre-cabling for speakers to be installed under Section 17a of this Manual. • Provide 10-foot coil of cable at each analog speaker location shown on drawings and at MDF/IDF prior to termination. The cabling shall be homerun from each speaker location to the appropriate IDF and terminated on 66-block patch panels for analog. • For exterior speakers, provide a 4 x 4 recessed box without plaster ring and with extension box. • For ceilings (plaster and tile), cut in and install backbox, run cable in conduit back to accessible area. For tile ceiling, support tile grid for speaker location from building. For ceiling mount, no excessive weight shall be borne by the ceiling tiles - provide straps or otherwise approved hardware for bar joist suspension, as needed. • The paging system shall be utilized for emergency announcements. All components shall meet UL, CSA, and FCC requirements. • Ensure conduit and junction boxes are installed accessible for maintenance or re-pulling wire.	03.01.22	
Miscellaneous Equipment: • As per the needs of the installation, miscellaneous equipment shall be required at the Contractor's expense. It is the Contractor's responsibility to identify and bid all miscellaneous equipment necessary to provide a complete and properly functioning system. • All backboards shall be ¾" AC Grade plywood painted on all sides with gray flame retardant paint as manufactured by Pathway Spaces, Inc. Plywood shall be 8-feet in height and mounted 8-inches AFF. Fire-rated plywood is not permitted. Backboard Kits or pre-approved equal. Label shall be visible.	03.01.22	

DIVISION 27 07 61 – INTERGRATED COMMUNICATION SYSTEM (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Multi-Mode Fiber Testing (to be Submitted at Substantial Completion): • TESTING: Contractor shall test each fiber strand and each pair of each twisted-pair copper cable. The Owner/Engineer reserves the right to have a representative present during all or a portion of the testing. A testing schedule shall be planned and agreed upon beforehand. ○ FIBER-OPTIC BACKBONE CABLE: Each fiber in every backbone cable run shall be tested with a optical light source and power meter as manufactured by Noyes Fiber Systems or HP/Agilent Technologies. Each multimode fiber shall be tested at both 850 and 1,300 nm. Maximum fiber strand attenuation shall be determined using the following link attenuation equation: ○ Maximum link attenuation = Connector attenuation + Cable attenuation + Splice attenuation	03.01.22	
○ Maximum attenuation per component: ▪ Connector attenuation: 0.75dB/1 mated connector pair. ▪ Cable attenuation: 3.5dB/km @ 850nm and 1.5dB/km @ 1300nm	03.01.22	
○ Contractor shall calculate the acceptance values for each fiber strand based on the above criteria. The fiber certification report shall be submitted listing the power loss budget dB value, the measured dB loss, and the dB margin of each measured fiber strand to the acceptance values per test limit: TIA Backbone Fiber Standard 568C.	03.01.22	
• Backbone lengths shall be verified with an OTDR or Light Source/Power Meter with length based standard testing as manufactured by Noyes Fiber Systems, Agilent, or pre-approved equal. Per this specification, maximum distance shall not exceed 500 meters to support LAN equipment operating at 850 nm and 1,000 meters to support LAN equipment operating at 1300 nm. Optical power meter and OTDR results shall be in the form of tester report print outs, handwritten results will not be accepted. Photocopies of test results will not be accepted; only original signed print outs will be accepted. These results shall be submitted to the Engineer.	03.01.22	
○ Fiber backbone test results shall include: ▪ Wavelength ▪ Fiber Type ▪ Cable Length ▪ dB Loss ▪ Power Loss Budget for Measured Cable Length ▪ Loss Margin ▪ Continuity ▪ Attenuation Specification ▪ Bandwidth Specification ▪ Fiber and Cable Number ▪ Measurement Direction ▪ Reference Set-up ▪ Test Equipment Model and Serial Numbers ▪ Test Date ▪ Operator (Crew Member)	03.01.22	

DIVISION 27 07 61 – INTERGRATED COMMUNICATION SYSTEM (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Horizontal Copper Testing (to be Submitted at Substantial Completion): • TESTING: Contractor shall test each horizontal, twisted-pair, copper channel. The Owner/Engineer reserves the right to have a representative present during all or a portion of the testing. A testing schedule shall be planned and agreed upon beforehand. ○ HORIZONTAL UTP CABLE: Each horizontal cable run shall be tested for all frequencies from 1 MHz to 550 MHz. The test shall be a channel configuration which includes the patch cord, patch panel, UTP cable, workstation jack, and workstation cord. The cable tester shall be set for channel parameters before testing. Each Category 6A cable shall be tested using a Level IIIe tester compliant with TIA specifications for testing of Category 6 configurations with the latest software upgrade available at time of bid. Tester shall be consistent with the manufacturer's requirements for hardware and software for a certified system and shall be based on compliance with TIA requirements. No tester shall be approved without meeting these requirements. Prior to testing UTP runs, the tester shall be calibrated per manufacturer's guidelines. Contractor to submit documentation of calibration upon request. The correct cable NVP shall be entered into tester to assure proper length and attenuation readings. Category 6A test results shall be in the form of tester software print outs. Photocopies shall not be accepted; only original signed reports shall be accepted. Test results shall be furnished to the Engineer.	03.01.22	
○ Category 6A UTP cable testing shall include: ▪ Cable Length ▪ Wire Map	03.01.22	
▪ Insertion Loss ❖ Cable ❖ Connecting Hardware ❖ Channel	03.01.22	
▪ Pair-to-Pair Near End Cross Talk (NEXT) Loss ❖ Cable ❖ Connecting Hardware ❖ Work Area, Equipment, and Patch Cord ❖ Channel	03.01.22	
▪ Power Sum NEXT Loss ❖ Cable ❖ Channel	03.01.22	
▪ Pair-to-Pair Equal Level Far End Cross Talk (ELFEXT) ❖ Cable ❖ Channel	03.01.22	
▪ Connecting Hardware Pair-to-Pair FECT Loss ▪ Power Sum ELFEXT ❖ Cable ❖ Channel	03.01.22	

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
▪ Return Loss ❖ Horizontal Cable ❖ Connecting Hardware ❖ Work Area, Equipment, and Patch Cord ❖ Channel	03.01.22	
▪ Propagation Delay ❖ Cable ❖ Channel	03.01.22	
▪ Propagation Delay Skew ❖ Cable ❖ Channel	03.01.22	
▪ LCL (Longitudinal Conversion Loss) ❖ Cable (in both directions) ❖ Connecting Hardware	03.01.22	
○ MULTI-PAIR UTP BACKBONE CABLE: Each pair shall be tested from termination block in MDF to termination block in IDF for continuity.	03.01.22	
Documentation: • Contractor shall provide documentation to include test results and as-built drawings. Drawings shall be developed in CAD (i.e., AutoCAD 2014 or higher). The following documents shall be provided to the Engineer: ○ Each MDF and IDF shall contain a copy of that building's as-built drawing affixed to an adjacent wall or located in an interior pouch for quick reference. Revised rack and equipment cabinet elevations shall be provided including serial numbers of all installed equipment. ○ Three sets of black line, as-built drawing sets. ○ Provide USB drive reflecting all the work with actual device and equipment locations. Drawings to be submitted in .dwg or .dxf and pdf format.	03.01.22	
• Provide the testing results database on USB for the completed job (i.e., fiber and copper). The USB thumb drive shall include the software tools required to view, inspect, and print any selection of test reports. ○ Additionally, provide one hard copy of the fiber optic cabling test results and one hard copy of UTP cabling results. These results shall be submitted to the Engineer prior to the Contractor calling for substantial completion inspection. ○ Provide each communications room with its own notebook containing the corresponding test reports for both the fiber and copper cabling. Each notebook shall have a clear front pocket and be labeled with that communications room's designation.	03.01.22	
• Provide a bill of materials of all installed equipment and wiring, rack, and backboard equipment layouts showing placement of support equipment, and model and serial numbers of all installed equipment.	03.01.22	

DIVISION 27 07 61 – INTERGRATED COMMUNICATION SYSTEM (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Acceptance: • Acceptance of the Data Communications System, by the Owner and the District's Technology Department, shall be based on: ○ Copy of all test results. ▪ All fiber segments and all workstation data cables must meet the criteria established in section above. The Contractor is responsible for additional fiber strands and UTP cable to be installed if any show defective during testing.	03.01.22	
○ Copy of as-built drawings shall contain the following. ▪ Changes and/or deviations from the construction (bid) prints. ▪ All communication outlet addresses and locations. ▪ Horizontal cable routing. ▪ Backbone cable routing.	03.01.22	
Training: • Provide a minimum of two site personnel with training on the network cabling system for up to two hours on site. Training shall cover the location labeling scheme, documentation structure and contents, documentation orientation, and system reconfiguration (i.e., reassignment of Communication Outlet function via patching). Training shall take place at time of Substantial Completion before building is occupied by Owner.	03.01.22	

DIVISION 27 07 50 – TELEPHONE SYSTEM

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
The intent is for the raceways, conduits, rough-in boxes, and electrical power to be provided and installed by the Electrical Contractor. This Contractor shall provide any items not included but required to make this a complete and working system.	03.01.22	
This Contractor shall provide the above system and interfaces (i.e., hardware and coordination) to meet the requirements as described herein. This Contractor shall provide coordination services with the Owner's telephone installer (throughout the warranty period) in order to achieve a working system.	03.01.22	
The intent is to utilize the School's LAN (and District's WAN). This Contractor shall provide any cross connects or hardware requirements to provide a complete and working system. This Contractor shall be responsible for providing and installing the equipment, configuring equipment, and connections for an integrated and operational system and coordinate programming.	03.01.22	
Provide for UPS consumption power chart.	03.01.22	
Indicate quantities of patch panels and port counts.	03.01.22	
Indicate patch cords count.	03.01.22	
Provide wiring diagrams. Each diagram shall have a descriptive title and all sub-parts of each drawing shall be labeled. All drawings shall have the name and locations of the project as well as System Installation Company's name in the title block.	03.01.22	

VoIP Phone Installation:
• Contractor shall install the following district IP phones.
  ○ Classrooms, Teacher Planning areas, Sports Field Press Boxes and Concession Stands: Contact the District Information Technology Department for VoIP Handset configuration and quantities. District Information Technology Department will provide equipment list at time of design.
  ○ Front Desk, Administrative Offices, Cafeteria Managers Office, Media Center and Conference Rooms: Contact the District Information Technology Department for VoIP Handset configuration and quantities. District Information Technology Department will provide equipment list at time of design.
  ○ Elevators: Contractor to provide two Cat 6a cables from the building IDF to be terminated in the Elevator Equipment Room. Telco Service provided by District Information Technology Department.
• Telco Interface and Cutover –Shall be performed by the Information Technology Department.
	03.01.22	

IP Paging System: • The interface between the VoIP System and the IP Paging System shall be performed by the Information Technology Department.	03.01.22	
Miscellaneous: • Information Technology Department shall install telephones/Handsets. Information Technology Department will test all emergency notification features and calls that are to be configured.	03.01.22	
This Contractor shall be prepared to verify the performance of any portion of the installation by demonstration, listening and viewing test, and instrumented measurements. This Contractor shall make additional adjustments within the scope of work and which are deemed necessary	03.01.22	

DIVISION 27 07 50 – TELEPHONE SYSTEM (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Prior to final acceptance, provide three sets of drawings and one AutoCAD (Release 2014 or later) and a pdf file on a USB drive indicating all cable numbers and construction details in accordance with the actual system installation before final payment shall be issued. Revise all shop drawings to represent actual installation conditions. These Record Drawings shall be used during "Final Acceptance Testing."	10.17.23	
Warranty: • Provide a five -year warranty on the installed equipment. If any defects are found within the warranty period, this Contractor shall replace the defective equipment at no cost to the Owner (i.e., to include equipment and labor). • If the equipment cannot be repaired within 24 hours of service visit, the Contractor shall provide "loaner" equipment to the school at no additional charge.	03.01.22	
Emergency Service: • This Contractor shall maintain sales and service presence in the area of adequate size and quality to assure the Owner of rapid response to emergency service requests. Rapid emergency service response shall mean arrival of service personnel at trouble site within four hours of notice during normal business hours (i.e., 8:00 AM to 6:00 PM) and within 24 hours of said notice during all other hours on a 7-day per week basis. Service personnel shall arrive on site within 48 hours of receiving a request for routine or nonemergency service.	03.01.22	
The Contractor shall deliver complete and working system, fully tested, that meet the requirements of this guideline. All systems shall be completed and ready for immediate use.	03.01.22	
Cabling plant consists of an MDF and multiple IDFs. All conduit and cable, which interconnects the MDF to the IDFs to the devices, shall be provided by this Contractor, if not existing.	03.01.22	
Scope of Work: • Provide the following communications system: IP Telephone System. This Contractor shall provide and install, as described herein. • This Contractor shall be required to sub-contract to the Construction Manager.	03.01.22	

Shop Drawing Submittals:
• Submit pdf copy (with book marks to each section and product) of required information prior to proceeding with the work.
  ○ Provide detailed equipment assemblies and indicate dimensions, weights, required clearances, method of field assembly, components, location of each field connection, and a complete schedule of all equipment and materials with associated manufacturer's product information which are to be used.
  ○ Indicate that the rack space and power requirements for equipment are adequate.
  ○ Provide a Visio, or simpler diagram, describing IP addressing and proposed VLAN scheme and multicast containment.
• Review and approval of shop drawings by the Engineer does not supersede the requirement to provide a complete and functioning system in compliance with the Contract Documents.
	03.01.22	

Contractor Qualifications: • If requested, this Contractor shall submit to the Owner, before work begins, certificates of successfully completed manufacturers' training classes, specifically related to the equipment being installed.	03.01.22	

DIVISION 27 07 50 – TELEPHONE SYSTEM (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Examination: • Prior to installation of equipment, Contractor shall examine conditions for compliance with requirements and other conditions affecting the performance of telephone system. • Contractor shall not proceed until unsatisfactory conditions have been corrected. • Installation shall be performed only by experienced installers who are familiar with the project requirements. • All equipment and materials are to be installed in accordance with all applicable standards of the National Electric Code and any other applicable codes including local municipality codes, safety codes, and ordinances. • This Contractor shall provide and coordinate with an Electrical Contractor for the connection of power and ground wiring to the system and all wiring installed by the Electrical Contractor. In addition, the Contractor shall provide a power surge protector to coordinate installation at the panel on the circuit into which the system shall be plugged. • This Contractor shall coordinate all work with other trades to avoid conflicts and delays in construction schedule. This Contractor shall take whatever steps necessary to meet the construction schedule, including but not limited to, expediting the delivery of materials and/or providing additional labor at no charge to the Owner.	03.01.22	
Installation: • Install system in accordance with NFPA 70 and other applicable codes. Install equipment in accordance with manufacturer's written instructions. • Furnish and install all material, devices, components, and equipment for a complete operational system. • Impedance and Level Matching: Carefully match input and output impedances and signal levels at signal interfaces. Provide matching networks, where required. • Control Circuit Wiring: Install control circuits in accordance with NFPA 70 and as indicated. Provide number of conductors, as recommended by system manufacturer, to provide control functions indicated or specified. • The Contractor shall provide necessary transient protection as recommended by the equipment supplier and referenced to earth ground. • Provide physical separation, as recommended by equipment manufacturer for other system conductors. • Identification of Conductors and Cables: Use color coding of conductors and apply wire and cable marking tape to designate wires and cables so all media are identified in coordination with system wiring diagrams. • Weatherproofing: Provide weatherproof enclosures for items to be mounted outdoors or exposed to weather.	03.01.22	
Field Quality Control: • Manufacturer's Field Services: Provide services of a duly factory-authorized service representative (for this project's location) to review field assembly, to review connection of components, and to provide the testing and adjustment of the system. • Inspection: Make observations to verify that equipment and controls are properly labeled and interconnecting wires and terminals are identified. • Testing: Rectify deficiencies indicated by tests and completely re-test work affected by such deficiencies at Contractor's expense. Verify, by the system test, that the total system meets the Specifications and complies with applicable standards.	03.01.22	

DIVISION 27 07 50 – TELEPHONE SYSTEM (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Final Acceptance Testing: • The Final Acceptance Testing shall be provided to the Owner or the Owner's designated representative. Final acceptance testing to any other trade or service provider for the project shall not comply with the requirements of this section. • The Contractor shall provide a Final Acceptance Test record document signed by both the Contractor and the Owner or designated Owner's Representative establishing the "In Warranty" date. The warranty period shall not commence until the Final Acceptance Test is completed. • This Contractor shall be prepared to verify the performance of any portion of the installation by demonstration, listening and viewing test, and instrumented measurements. This Contractor shall make additional adjustments within the scope of work and which are deemed necessary by the Owner because of the acceptance test.	03.01.22	

Project Submittals Prior to Acceptance:
• Installer Certificates: Signed by Contractor certifying that installers complied with requirements.
• Acceptance Documents (include record of final settings and measurements certified by Installer).
• Electronic documentation of method to load music, to create and edit zones, to adjust volume, etc.
• Maintenance Data: For equipment to be included in maintenance manuals:
  ○ Record of equipment-programming option decisions.
  ○ All instructions necessary for proper operation and manufacturer's instructions (three hard copies and one electronic copy).
  ○ Proof of performance and safety compliance information.
  ○ Manufacturer's maintenance information (document with updated and accurate web links).
  ○ Electronic copies of software programs and system information on all programmable features of the installed platform.
	03.01.22	

Cleaning and Protection: • Prior to final acceptance, this Contractor shall vacuum and clean all system components and protect them from damage and deterioration. All blank spaces in equipment cabinets shall be covered with blank panels. Top and side panels and all cabinet doors shall be installed, as applicable. All general areas within and around all equipment rack/cabinets in the facility shall be swept, vacuumed, and cleaned up. No cabinets shall be left unlocked and all cabinet keys shall be turned over to the Owner or Designated Owner's Representative.	03.01.22	

DIVISION 27 08 00 – AUDIO AND VISUAL SYSTEMS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
General Notes: • All AV systems should be designed for ease of use and be cost effective. When systems are designed. The control system should be basic in nature. If needed a basic Extron control system can be implemented. It should be noted the district does not approve of Crestron or AMX control systems. • Auditoriums, Cafetorium's and/or Multi-Purpose Rooms should have speakers that provide an even distribution of sound. This is especially important when the room has an operable partition and can be used for two different functions. Ceiling speakers should be 2x2 JBL speakers, no round speakers. • Wireless microphones should accommodate at least four (4) handheld microphones and at least four (4) lavaliere-style (clip on) microphones. Shure SLXD • Wiring and microphone connectors should be high quality as they will stay in place when equipment is replaced and/or when technology is upgraded. • District Standard Equipment lists have been provided. • We would like to have the ability to process video feed (from DVD, Bluetooth receiver or cameras) and the associated audio through the "house system" to ceiling mounted laser Epson video projector. • District Information Technology Departments will provide equipment list at time of design.	03.01.22 12.14.23	
Auditorium / Theatre: • The Control Room should be installed so that the lighting and sound controls are in visual range and can be heard from the stage. • Monitor speakers with a separate power amplifier located at the mixer board in the Control Room should be installed on the side or rear of the stage. This will allow performers on stage to hear the program, without turning up the entire program sound and causing feedback. • The Control Room should have a slide mixer board with at least 8-16 channels and should be placed on a countertop, not in a box on the wall. • No Intercom (Clearcom, Telex, etc) system are to be installed at elementary and middle schools. • Television Services Departments will provide equipment list at time of design.	03.01.22	
Cafetorium: • The Control Room should be installed so that the lighting and sound controls are in visual range and can be heard from the stage. • Monitor speakers with a separate power amplifier located at the mixer board in the Control Room should be installed on the side or rear of the stage. This will allow performers on stage to hear the program, without turning up the entire program sound and causing feedback. • The Control Room should have an analog slide mixer board with at least 8-16 channels and should be placed on a countertop, not in a box on the wall. • Each Cafetorium will have digital display panels and projector system controlled by an AV Control System as specified in the District-provided equipment list. • District Information Technology Department will provide appropriate equipment list at time of design.	03.01.22	
Music Room: • District Information Technology Department will provide appropriate equipment list at time of design.	03.01.22	

DIVISION 27 08 00 – AUDIO AND VISUAL SYSTEMS (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Media Center Audio/Video: • District Information Technology Department will provide appropriate equipment list at time of design. • Each Media Center will have digital display panels as specified in the District-provided equipment list. • Each Media Center's technology devices and locations will be determined by the District and provided at time of design.	03.01.22	

DIVISION 27 13 00 – WIRELESS CLOCK SYSTEM

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
If included in the project, the Basis of Design is Sapling/Bogen.	03.01.22	
CM shall to pre-qualify this installation by the manufacturer's representative or authorized distributor.	03.01.22	
For renovations or building add projects, CM to validate existing clock system on campus during design to determine equipment needs. Building adds to existing campuses without an active wireless clock system will need an independent system provided to support new clock system in added building(s).	01.17.24	
The system shall be UL listed and include: • SMA 3000 Master Clock/Transceiver/Transmitter: ○ LCD display two row by 20-character, numeric keypad. Mount in location indicted on drawings. ○ Mounting location of keypad shall be pre-approved during construction by Owner/Engineer (wall vs. rack). ○ Automatic Daylight-Saving Time and Leap Year correction. ○ Password security protection. • Repeaters (as required per installation): ○ SMA 1000 Wireless Repeater: The repeater shall be a Sapling Wireless Repeater. The repeater shall wirelessly transmit and receive data. The repeater shall be capable of transmitting to the SAL wireless analog clock. ○ SMA 1000 Network Repeater: The repeater shall be a Sapling Network Repeater. The repeater shall receive its time via TCP/IP from the main SMA 3000 master clock in the application. The repeater shall be capable of transmitting to the SAL wireless analog clock.	03.01.22	
• Analog Clock – Sapling SAL Series wireless clock with 915-928 MHZ frequency hopping technology: ○ Provide in locations indicated on drawings: ▪ Classrooms ▪ Main Office ▪ Cafeteria ▪ Media Center ▪ Principal Office ▪ Assistant Principal Office ▪ Gymnasium ▪ Auditorium ○ Battery-powered with two, D cell batteries (included with clock) – new at time of install. ○ Provide clock guards in Gymnasium, if applicable.	03.01.22	
○ BOGEN Equivalent Master Clock Part Numbers Below: ▪ BCMA 3000 Series Master Clock ▪ BCAL Series Wireless 900MHz Round Clock ▪ BOGEN Network & Wireless Repeater (V2)	01.17.24	

DIVISION 27 13 00 – WIRELESS CLOCK SYSTEM (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
The CM shall review this project with the manufacturer's representative or authorized distributor to ensure communication of devices. If deficiencies are noted, this CM will correct to ensure a	03.01.22	
Operation and Maintenance Data: • Instructions for maintaining and operating system shall be included in the Closeout Documents.	03.01.22	
Warranty: • The CM shall and does hereby warrant all materials and equipment furnished under this scope of work to be free from defects and function or operate satisfactorily for a period of one year from the date of the Final Substantial Completion of this project.	03.01.22	

DIVISION 28 07 27 – SECURITY SYSTEM

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
New Construction: • Furnish and install a turnkey, UL Listed, commercial, supervised, zoned and partitioned Security System, fully programmed with Owner provided access codes, passwords and partitions. The Contractor shall be a licensed, experienced Installer who is a factory-authorized service representative and who is certified to furnish and install.	03.01.22	
• Basis of Design: Napco ○ Napco 255 panel ○ Napco Zone Expander GEM-EZM 8 ○ Napco Keypad IBR-Touch ○ Napco Starlink Cell SLE-LTEV-C ○ Door Contacts: GRI 8080 ¾” ○ Ceiling Mounted Motion: BoschDS9370/DS9371 ○ Wall Mounted Motion: iWISE RK815DTGL	03.01.22	
• Temperature Sensors: In the cooler, freezer, and boiler room (if applicable), provide a Windland Electronics, Inc., EnviroAlert EA200-12 display and #1107 Probe. Connect as separate security zone on continuous monitoring. In the kitchen area, provide a temperature sensor and humidity sensor. These devices shall be located where maintenance personnel can easily access it and staff can easily view the displays.	03.01.22	
• Zone Alarm Maps: Provide security alarm zone maps for each building or zone, indicating the location of each device and its zone. Maps shall be in covered frames, located at each security terminal cabinet or control panel and in the Administration area.	03.01.22	
• Alarm Horns/Strobes: provide one for each building. For exterior alarm horns, provide ELK Products, Inc., Model ELK-150RT or approved equal with stainless steel enclosures and tamper switches. For exterior alarm strobes affixed to horn, provide ELK Model 150 RT blue strobe, or approved equal.	03.01.22	
• The Owner shall provide a list of passwords, access codes, telephone numbers, partitions, and zone assignments for programming by the Contractor.	03.01.22	
• Provide security alarm contacts at roof hatch locations.	03.01.22	
• Provide battery backup for a minimum standby operation time of eight hours.	03.01.22	
• Install with surge protection for the control panel.	03.01.22	
• A two-year warranty shall be provided for wiring, loudspeakers, and zone controls.	03.01.22	
Remodel/Renovations: • Basis of Design: Napco or match existing system(s).	03.01.22	
New Construction: • The complete security camera system shall include equipment, software, programming, training, and warranty. • New systems shall be IP based. • Camera system Basis of Design is Open Eye.	03.01.22	
• Minimum camera system requirements: Camera licenses to match number of cameras. ○ High Schools: 128 Cameras NVR: Open Eye MK Series Cloud managed server for all ○ Middle School: 64 Cameras ○ Elementary School: 32 Cameras	03.01.22	

DIVISION 28 07 82 – SECURITY CAMERA SYSTEM

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
• Hard drives for NVR's: Westem Digital 16TB (add up to meet terabyte total).	03.01.22	
• Specialty Cameras: o For all interior & many exterior spaces (ie: Vivotek CC9381 (bubble eye) cafeterias, gyms): o For large outdoor areas (ie: playgrounds): Open Eye C99120M20 (multi-sensor)	03.01.22 01.17.24	
• The Project Team will coordinate camera locations and programming parameters with the District's Maintenance and Security Departments.	03.01.22	
• Monitors: o Install one small monitor adjacent to the security camera headend (i.e., MDF room). o Install one large viewing monitor at the reception area of the school.	03.01.22	
• Each Project Team should consider establishing stubbed-out camera-ready locations for adding or relocating cameras easily. • Administrators and SROs should have remote monitoring access on their computer desktops through the Local Area Network (LAN). Requirements for the computer station shall be determined by the Project Team. Need specifications for Camera Monitor Room (command center) requested. • Surge protection and lightning protection should be provided for the security camera system. The preferred manufacturer is EDCO. • Power source at the head-end shall be on a fused, dedicated circuit, tied to the generator (if applicable) with a UPS back-up. Power supplies at locations other than the head-end shall be on dedicated circuits. • Use of the Security Camera System shall be in accordance with School District of Manatee County's Policies. • A space shall be allocated on the IT rack for the dedicated surveillance switch. • Horizontal runs of Video Surveillance cabling are permitted to be free wired on J-hooks, where located above an accessible ceiling. All wiring in walls, in exposed locations, or above hard ceilings shall be run in conduit. Provide plenum rated cable if required. All requirements for NEC cabling must be followed. • Training: Factory certified representatives shall provide system-specific training for all new systems for a minimum of eight hours.	03.01.22 03.01.22	
Remodel/Renovations: • Basis of Design: Retrofit, replace with new or match existing system(s). • The Project Team will coordinate camera locations and programming parameters with the District's IT and Maintenance departments.	03.01.22	

28 13 00 – CARD ACCESS SYSTEM

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Card Access Systems will be required at all new schools and facilities.	03.01.22	
Priority areas include front/public entrance areas, kitchen/receiving areas, common exit areas to playgrounds/outside recreation areas.	03.01.22	
Basis of Design: • IDenticard Premisys System with PC-based Access Control and Monitoring Software. Components shall be compatible with Premisys software and consist of the following: • Site licensing-include site licensing for two users for each new facility. • Controller shall be PREM-CTLR2RDR IP controller with two reader ports. • Expansion PREM-BRD2RDR 2 reader expansion board. • Enclosure PREM-ENCLG large enclosure with lock and tamper. • Power Supply: Altronix AL-1200 • Magnetic Lock: Securitron M62 • REX Motion: Visonic DA5 • REX Button: STI NT-SS101 EN Exit Handwave Station • Card Readers: HID Proximity • Cards: HID Corporation Model #GPROX-H@2xxxxx ○ Provide 100 cards for Elementary Schools, Middle Schools and Ancillary Sites. ○ Provide 200 cards for High Schools.	03.01.22 10.30.24	
Regardless of whether an access control (card reader) system has been specified for the facility, all exterior main entrance doors shall be prepared for access control devices. These doors and their openings shall be prepped for future installation of appropriate electronic locking devices, request to exit devices, handwave station buttons and card readers. Door jambs and walls shall have suitable sized conduit installed to accommodate wiring for future devices.	10.30.24	
The type and location of future devices shall be determined by the Project Team in collaboration with the District's Maintenance department.	03.01.22	
Provide necessary surge/lightning protection for the complete card access system, including magnetic lock devices.	03.01.22	
Electrified hardware and electric strikes are not allowed, except mag locks.	03.01.22	
Access control door (door position) contacts shall not be installed.	03.01.22	
Install a card reader at the elevator to call the elevator.	03.01.22	
Patch cords for access control shall be orange.	03.01.22	
Mag lock locations and lock down readers shall be reviewed with the District's Maintenance department.	03.01.22	

DIVISION 28 31 00 – FIRE DECTECTION AND ALARM SYSTEM

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
The Fire Alarm Voice Evacuation language shall be programmed to state: Attention! An emergency has been reported. Be aware of your surroundings and any threats as you evacuate the building.	03.01.22	
Horizontal runs of Fire Alarm cabling are permitted to be free wired on J-hooks, where located above an accessible ceiling. All wiring in walls, in exposed locations, or above hard ceilings shall be run in conduit. Provide plenum rated cable if required. All requirements for NEC cabling must be followed.	03.01.22	
New Construction: • Fire alarm system shall be Pyrotronics/Siemen's Cerberous Pro. • The fire alarm system shall be addressable. • The fire alarm system shall meet current code(s). • The main fire alarm panel should be located in an MDF or IDF room. (In EHPA projects, locate in manager's office.) This room shall be provided with air conditioning separate from the main HVAC system. • Transponders should be located in each separate building. • The remote annunciator panel shall be located in Administration area. • Network cabling shall be via fiber. No copper between buildings. • Cellular dialer rated for fire system use shall be used in place of a standard analog communicator. District Maintenance Department must approve dialer before installation. The dialer must be tested for strength of signal to insure communication. • A manual evacuation drill switch shall not be provided. • Activation of independent manual bypass switches shall override the selected automatic functions, including air handling unit/fan shutdown, gas supply cut-off, and door holder release. • The fire alarm systems shall be connected to the generator, including portable generator, where available. Provide 8 hours of standby battery operation. • Maintenance Service Contract: Provide maintenance of fire alarm systems and equipment for a period of 12 months commencing with Substantial Completion, using factory-authorized service representatives. Provide one complete fire alarm recertification inspection 12 months from acceptance date in the presence of Owner's representatives. Services within the above 12-month period not classified as routine maintenance or as warranty work when authorized in writing. Compensation for additional services must be agreed upon in writing prior to performing services. ○ Basic Services: Systematic, routine maintenance visits on an annual basis at times coordinated with the Owner. In addition, respond to service calls within 3 hours of notification of system trouble. Adjust and replace defective parts and components with original manufacturer's replacement parts, components, and supplies. ○ Renewal of Maintenance Service Contract: No later than 60 days prior to the expiration of the maintenance services contract, provide a proposal for an additional 12-month maintenance and repair services contract. Owner will be under no obligation to accept this additional maintenance service contract renewal. • Provide zone map at annunciator, ACP, and all network nodes. Zone map to be framed and under glass. Zone map to include all room numbers in the facility, all fire sprinkler risers and all duct detector locations.	03.01.22	
• Provide and install 24 Volt DC gas solenoid shutoff valves.	03.01.22	
• Provide laptop computer and docking station for Owner's use.	03.01.22	
• Provide electronic copies of all program and data software upon completion of training.	03.01.22	
• Issue a site license for the use of the programming software to the Owner.	03.01.22	

DIVISION 28 31 00 – FIRE DECTECTION AND ALARM SYSTEM (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
• At the end of the project, provide on-site training, specific for the project. Review sequence of operation, drawings, programming, and panel operations.	03.01.22	
• If the project utilizes a newer version of the fire alarm system than the District staff is certified on, include sending factory training/certification for four employees. Please check with the Project Director to clarify.	03.01.22	
• Provide voice evacuation, where required.	03.01.22	
• For security purposes, pull station locations shall be limited to the Administration area near the fire panel and in large assembly spaces such as Cafeterias, Gymnasiums and Auditoriums.	03.01.22	
Remodel/Renovations: • Basis of Design: Retrofit, replace with new or match existing system(s) at Owner's discretion.	03.01.22	

DIVISION 31 00 00 – SITEWORK/EARTHWORK

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Boundary surveys are required for all new construction projects.	03.01.22	
Underground Marker Tape: • All below grade utilities (i.e. storm, sanitary, potable water, electrical, etc.) shall be marked with 6-inch wide, colored detectable plastic tape bearing the name of system. Tape shall be installed continuously for the full run of the system and shall be located 12-inches below the finished grade above the centerline of the piping.	03.01.22	
Soil treatment shall provide a five-year warranty for termite damage and shall include provisions for replacement of the structure. Must follow the label of the product.	03.01.22	
Radon testing shall be done prior to starting any new construction or renovation projects. Imported fill material shall meet the following requirements for radon: • Beneath occupied 2 pci/g or less • Exterior General Use: 11 pci/g or less • Paved parking or roadway no limitation	03.01.22	
• All imported fill must be certified in writing to be in conformance with the above requirements prior to being deposited on site.	03.01.22	
Clean fill material shall be used. (No organic material, rocks, debris, asphalt, etc.)	03.01.22	
Site considerations: • Storm Water – Flooding and Drainage ○ Load bearing grates in traffic areas shall be cast iron. (No stamped or riveted grates.) ○ Grates shall be secured with hold down straps. ○ All storm water piping shall be Class III Reinforced Concrete pipe without lifting holes or HDPE corrugated plastic pipe. Metal storm water pipe shall not be used. The use of elliptical pipe is permitted but shall only be used when project conditions preclude the use of round pipe. ○ Trees in slopes shall be minimized to allow for mowing and in no case shall result in mowing widths less than 6 feet.	03.01.22	
• Potable Water and Sewer Facilities: ○ The demarcation between the sanitary sewer system and the domestic wastewater collection system (DWCS) shall be clearly shown on all plans. ○ All gravity sewer lines shall be tested by pulling a mandrel and air pressure testing.	03.01.22	
• Fire Main: ○ Fire hydrants shall be painted to comply with the local Fire Department requirements.	03.01.22	
Parking Lot Islands and Curbing: • Parking lot perimeter Islands shall have a Type D or F-curb, assuming there is adequate access for maintenance. All interior parking lot islands that are smaller in nature shall have a Type B-curb. All parking lot islands shall have trees and grass. NO groundcover or mulch are permitted.	03.01.22	

DIVISION 31 00 00 – SITEWORK/EARTHWORK (Cont.)

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Slopes should not exceed 4:1.	03.01.22	
Roof drains should be tied into a storm drain system and should not discharge onto sod, landscaped areas, sidewalks, into building walls. Exceptions to this must be reviewed with the Project Team.	03.01.22	
All new construction projects should have balanced sites. Plan wherever possible for balanced cut and fill to maximize the use of on-site materials and minimize the need for imported fill.	03.01.22	
All fill material used should not contain deleterious or hazardous substances in excess of the minimum threshold limits established by the appropriate Governmental Agency.	03.01.22	
Bus drives should be separated from all other traffic drives.	03.01.22	
A separate service drive area should be provided for trash removal and parking of dumpster containers, and to serve the kitchen for deliveries and school staff.	03.01.22	
School buses currently in use by SDMC have a minimum turning radius of 75 feet. All road designs shall conform to this requirement. Allowance shall be made on turns and tangents for a bus to pull around a stalled or parked bus. The SDMC Transportation Department shall be consulted in the initial design phase of the project.	03.01.22	
Dumpster Areas: • School District of Manatee County recycles paper, plastic, cans, and cardboard products in a single stream process. • Trucks that haul this material are front loading. • Construct the dumpster area adjacent to the building, if possible. • Dumpsters require power and a grease trap. These requirements should be reviewed during the design phase. • SDMC no longer uses trash compactors; however, power and drainage should be installed in the event trash compactors are used again in the future. • Trash bin areas should be 12' X 16' with 3 sides, with double chain link gates. These gates should swing from a separate post, not trash bin walls, and should have "bulldog" hinges. • An area of 20' is required for the trucks to pull beyond dumpster area.	03.01.22	
Round catch basin lids are preferred.	03.01.22	
All in & out flow pipe to have head wall or miter ends. This sloped edge and surrounding grading needs to allow for mowing.	03.01.22	
The use of soil cement is not preferred; however, it may be used in lieu of crushed concrete as a base material.	03.01.22	
Speed bumps may be installed on District roadways, if necessary to control vehicular traffic. This should be verified with Maintenance and Transportation.	03.01.22	
Sheet flow drainage should not be located over sidewalks.	03.01.22	
Drains under the building slab should be minimized.	03.01.22	
Oversize retention areas wherever possible. This allows for future expansions without having to do significant modifications to the site.	03.01.22	
On the plans, show locations and stub outs for "Future Portables and/or Addition" space. This will require the teams to review the most effective placement of future items on site.	03.01.22	
PE areas and playgrounds should be separate, wherever possible.	03.01.22	
Covered play areas should include protective padding at the poles.	03.01.22	

DIVISION 32 16 50 – PLAY FIELDS AND PLAYGROUNDS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Play Fields – Baseball/Softball: • For elementary schools, use Bahia sod throughout, with clay at the diamond infield. • For middle schools, use Bermuda sod throughout, with clay at the diamond infield or otherwise as determined by the Project Team. • For high schools, use Bermuda sod with full clay areas. Some bleacher seating and dugouts should be installed for high school baseball and softball facilities. • General purpose play areas and fields shall be bahia.	03.01.22	
Playgrounds: • Equipment shall comply with NIPSI specifications. • Playgrounds should be located in the back portion of the campus, close to an exit door. • Playgrounds should be located away from egress windows. • If "Gaga pits" are installed, they must have padding installed on the tops. Students must be taught the game with an emphasis on safety and Risk Management must be informed. This applies to areas built by volunteers, installed by sponsors, or acquired with non-District funds.	03.01.22	
Athletic Facilities: • High Schools shall have: ○ High School athletic fields shall meet National Association of State High School Associations (NFHS) minimum guidelines, for competition. ○ One Women' softball field ○ One Men's baseball field with bleacher seating and dugout facilities. ○ Five tennis courts with "Laycool" type topping or equal. ○ Football stadiums shall have 3,000 home and 1,000 visitor seats.	03.01.22	
○ Athletic Tracks: ▪ Rubberized permeable Plexitrac Accelerator polyresin synthetic in Red, impermeable Beynon 200 polyurethane synthetic in Red, or acceptable alternative to these two products ▪ Where rubberized tracks are installed, concrete curbs are preferred.	03.01.22	
▪ Athletic Equipment: ❖ Where rubberized tracks are installed, the CM shall provide an acceptable quantity of protective mats. Confirm this with the Project Team and Site Administrator or designee.	03.01.22	
○ Track amenities shall include a pole vault, long jump/triple jump, javelin and shot put/discus and track runway	03.01.22	
○ Football fields with Certified Celebration Bermuda grass and appropriate lighting. Field lighting shall have bird deterrents.	03.01.22	
○ Concession stands with provisions for commercial cooking for football and baseball/softball events. ▪ This could be an exterior fenced in cooking grill area. ▪ LP gas tank areas should be secured with a fence.	03.01.22	
Athletic fields should be laser graded and regraded after irrigation is installed.	03.01.22	

DIVISION 32 17 23 – SITE SIGNS

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Refer to DCS Fire Marshall standards for Fire lane and No Parking Signage.	03.01.22	

DIVISION 32 31 00 – CHAIN LINK FENCING AND GATES

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Verify gates are wide enough for lawn equipment and palette jacks to pass through. Get gate sign off from Plant Manager and Project Coordinator.	03.01.22	
Vinyl to be used at front of school only. Regular fencing at balance of the campus.	03.01.22	
Ornamental fencing may be used at front of school only. Confirm with Project Coordinator where acceptable.	03.01.22	
At grade level where accessible to students provide fencing and gates at all backflow preventers, disconnect switches, transformers, electrical panels, etc.	03.01.22	
Provide fencing plan to Project Coordinator for all fenced MEP equipment to verify acceptable clearances and fencing material (based on location). Ensure that equipment pads are properly sized in relation to fence to avoid maintenance issues of grass within the enclosures that cannot be easily maintained.	03.01.22	
All steel fences shall have wire ties.	03.01.22	
Fencing shall be required in the following areas: • School and ancillary site perimeters (6' high chain link fence with pedestrian portals and vehicular gates as required) • Play areas and athletic fields. • Bicycle parking areas • Drop-off and pick-up lanes (include openings for student drop-off/pick-up). • Bus drop (include openings for student drop-off/pick-up). • Mechanical areas and/or chiller yards • Perimeter fence and retention ponds ○ Retention ponds should have a 6' high chain link fence with at least one 10' wide double gate. • All portable classrooms, provide 25' wide access for delivery and removal of portables.	03.01.22 01.11.24	
All chain link fence fabric and tension wire shall be 9 gauge. Fabric shall be knuckle to knuckle type.	03.01.22	
All chain link fence tension bands, loop caps, brace bands, and "hog rings" shall be steel.	03.01.22	
All chain link fence rail ends and dome caps shall be aluminum.	03.01.22	
All chain link fence ties shall be 9 gauge, TWISTED aluminum.	03.01.22	
All chain link fence ties on backstops shall be 9 gauge, TWISTED steel.	03.01.22	
All chain link fence gates over 6' wide shall have a 10" tire or larger.	03.01.22	
Fence corners shall not be greater than 90 degrees.	03.01.22	
Fences shall be of non-flammable materials. Fencing which has high public visibility (such as the front of the school) shall be 4' chain link coated with green or black polyvinyl chloride, all other fence shall be galvanized chain link. (Higher fencing may be required in certain areas such as boundaries, retention ponds, baseball areas, etc.)	03.01.22	
Fencing plans shall be reviewed and approved by the School District's Security and Grounds Maintenance Departments.	03.01.22	
Line posts shall be no more than 10' on center. 8' on center is preferred.	03.01.22	
Fences should be set back 15' from the top of sloped areas and trees should not be planted in this area.	03.01.22	
Vehicle gates should be lockable with a 3210 key in both the open and closed positions and should be painted bright yellow and have reflective signage for high visibility.	03.01.22	
All fencing plans should be reviewed and approved by the Security Department and Grounds Maintenance Department.	03.01.22	
Chain link fences shall have top rails with bottom wire.		

DIVISION 32 80 00 - LANDSCAPE

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Provide a 12’ wide and 14’ high access route for interior courtyards and any other areas that require mowing or trimming.	03.01.22	
Coordinate installation of landscaping with Enhanced Hurricane Protection Area (EHPA) requirements.	03.01.22	
All plant materials shall be Florida #1 grade.	03.01.22	
Fibar ADA mulch or approved equal with approved border material shall be used at playground areas.	03.01.22	
High School athletic fields shall be certified Celebration Bermuda grass. Middle school fields should be Celebration Bermuda grass.	03.01.22	
Use native plant species.	03.01.22	
Oak trees should be spaced at least 40’ apart and a minimum distance of 30’ from buildings. Minimize use of oak trees near sidewalks, buildings, pavement to keep roots from causing damage.	03.01.22	
Trees should not be planted under lights, wires or transmission lines.	03.01.22	
Trees, mulch, plants, shrubs and any other landscape items should not be placed directly adjacent to buildings or structures.	03.01.22	
Drain covers should not be installed in or near flower beds or planting areas.	03.01.22	
Bahia sod is preferred in all areas, except specific areas noted elsewhere in this Planning Manual.	03.01.22	
Limit the use of cabbage/sabal palms, date palms and queen palms due to high initial cost and susceptibility to disease.	03.01.22	

DIVISION 32 90 00 - IRRIGATION

Item to verify and/or incorporate	Date Added	A/E/CM Sign Off
Well installation, capping, plugging, and permitting must be coordinated through the District's Executive Planner.	03.01.22	
All grass and planted areas shall be irrigated as follows: • Areas that do not require irrigation: berms, agriculture program areas, dry retention areas. • Areas that DO require irrigation: front yard, courtyard, play fields, athletic fields, planters.	03.01.22	
Irrigation heads in turf areas must have 100% head-to-head coverage.	03.01.22	
Any special hardware required to maintain the irrigation systems must be provided to the Owner at Closeout.	03.01.22	
The irrigation rate for Bermuda grass shall be 1" per hour.	03.01.22	
Reclaimed water shall not be used.	03.01.22	
A special permit is required for wells 6" in diameter or greater.	03.01.22	
Wells 6" in diameter or greater are required to be monitored and reported to SWFWMD.	03.01.22	
Preferred manufacturers: • Rainbird • Toro • Hunter • Hoover well pump systems are not acceptable. • No surface water system permitted.	03.01.22	
Do not locate valve boxes next to roads or parking lots, unless they have curbs, bollards and/or car stops.	03.01.22	
Separate irrigation zones should be established for ornamental plant areas and tree areas.	03.01.22	
For High School athletic fields: • Well water required. • This area should have its own controller and timer. • Irrigation should run from goal post to goal post. All stadium areas must be irrigated. • Crown fields for proper drainage. • Locate drains 2' from edge of track (or curb for track).	03.01.22	

APPENDIX A

CUT SHEETS, DIAGRAMS, & DETAILS

Issue Date: 11/01/2024

Fifth Edition

Appendix

Exhibits

Cubic

Interface

Installation Method

Non Directional

All product specifications reflect averages derived from product sample testing, are subject to normal manufacturing and testing tolerances and inherent pattern variances, and may be changed without notice. For more information about these and other important attributes of the product(s) described herein, including recycled content and product warranty information, please see www.interface.com/disclaimer.

Product Cubic **Color** 106072 Zenith **Collection** Honor Roll **Backing** ReadyBac™

Product Specifications		
Product Number	1380102501	
Product Construction	Tufted Textured Loop	
Yarn System	100% Recycled Content Nylon	
Yarn Manufacturer	Aquafil	
Dye Method	100% Solution Dyed	
Soil/Stain Protection	Protekt²®	
Preservative Protection	Intersept®	
	Imperial	**Metric**
Tufted Yarn Weight	18 oz/yd²	610 g/m²
Machine Gauge	1/12 in	47.2 ends/10cm
Pile Height	0.14 in	3.7 mm
Pile Thickness	0.093 in	2.4 mm
Stitches	8.2 /in	32.1 ends/10cm
Pile Density	6,968 oz/yd³	258,372 g/m³
Size	19.69 in x 19.69 in	50cm x 50cm
Performance Specifications		
Flooring Radiant Panel	(ASTM E-648) Passes	
Smoke Density	(ASTM E 662) ≤ 450	
Flammability	Passes Methenamine Pill Test (DOC-FF1-70)	
Lightfastness	(AATCC 16 - E) ≥ 4.0 @ 60 AFU's	
Static	(AATCC - 134) < 3.0 KV	
Dimensional Stability	AACHEN Din 54318 <.10%	
Traffic Classification	Severe	
Fiber Modification Ratio	1.9 to 2.2	
Preservative Efficacy	(AATCC 174 Parts 2&3) 99% Reduction/No Mold 7 Days (ASTM E-2471) Complete Inhibition	
Health + Environmental Specifications		
Carbon Footprint		
Embodied Carbon (Cradle to Gate)	5.4 (based upon 20 oz face weight) Kg CO_2/M^2 | (see in EC3)	
Full Life Cycle Carbon Emissions	Certified Carbon Neutral Floors™	
Total Recycled Content	70%	
Recycled Content (Pre Consumer)	56%	
Recycled Content (Post Consumer)	14%	
Indoor Air Quality	CDPH 01350 Green Label Plus #GLP0820	
Material Composition	Free of Added Heavy Metals, Ortho Phthalates, Formaldehyde, Fluorinated Chemicals (PFAS), and Halogenated Flame Retardants.	
Disclosure of Environmental Impacts	Environmental Product Declaration	
Disclosure of Product Ingredients	Health Product Declaration	
Environmental Certifications	NSF/ANSI 140 Platinum	
LEED v4	Contributes to multiple IEQ and MR credits	
End of Life	Carpet to Carpet Recycling through ReEntry®	
Technical Information		
Installation	Interface Installation Guidelines online	
Maintenance	Recommended Interface Maintenance Guidelines	
Reclamation	Recyclable through ReEntry® - Call 1.888.733.6873 (U.S.) / 1.866.398.3191 (Canada)	
Warranty	15 Year Standard Carpet Warranty	

May 20, 2022

Installation Method	Non Directional
Standard Backing	GlasBac®
Backing Options (Learn more)	CQuest™ Bio, CQuest™ GB, GlasBac®, CushionBac Renew™, GlasBac® RE, ReadyBac™, CushionBac Plus
Tile Size Options	50cm x 50cm
Manufacturing Location	ISO 9001 & 14001 Certified facilities in Troup County, Georgia, United States

Approved VCT Waxing Standards

Prior to Waxing a Preinstallation Meeting shall be held with the Project Coordinator, Construction Manager, Subcontractor, Plant Manager, and SDMC Custodial Area Specialist.

Cleaning, Waxing, and Protection

A – Perform the following operations according to manufacturer's recommendation after completing tile installation.

1. Do not wash floors until after the period recommended by the resilient floor tile manufacturer.
2. Remove all visible tape, adhesives and surface blemishes from tile. Vacuum all edges and dust mop all tile surfaces using microfiber dust mop approved by SDMC Custodial Area Specialist.
3. Remove all visible adhesives, soil, and manufacturers factory coating **using Simoniz Ultra Line Stripper NC** solvent based cleaner as recommended by the tile manufacturer. Refer to additional Manufacturer requirements for Stripper instructions. Rinse floor immediately and thoroughly after vacuuming up stripper. Do not allow stripper to dry to floor without rinsing.
4. After thoroughly rinsing floor, allow floor to dry completely before applying Floor Sealer.

Sealer and Finish application

1. Sealer and finish must be applied to VCT using a dispensing unit or similar device and a finish applicator flat mop.
2. Products must be applied evenly throughout.
3. Use of a string mop and/or bucket application are NOT permitted.

B – Apply (3) coats of District School Board of Manatee County approved Spartan I-Shine Floor Finish, strictly adhering to recommended manufacturers drying time between coats.

1. First coat applied up to edges to assure proper blending.
2. Second and third coat applied up to 6-inches away from edges.
3. Use different mop for sealing and finishing.

Allow to dry for 24 hours.

C – Apply (4) coats of District School Board of Manatee County approved Spartan I-Shine Floor Finish as follows, strictly adhering to recommended manufacturers drying time between coats.

1. First coat applied up to edges to assure proper blending.
2. Second and third coat applied up to 6-inches away from edges.
3. Fourth coat applied up to edges to assure proper blending.
4. Use different mop for sealing and finishing.

D – Burnish floor finish (after allowing sufficient drying time) using a high-speed propane burnished and a recommended manufacturers pad.

E – Protect flooring against mars, marks, indentations and other damage from construction operations and placement of equipment and fixtures during the remainder of construction period. Use protection methods indicated or recommended by tile manufacturer.

Products	Product Number
Simoniz Ultra Line Stripper NC	**UL1110**
Simoniz Super Sealer	**CS0700**
Simoniz Premier-Urethane Fortified Sealer	**CS0654**

Waxing Vendors that have done acceptable work for SDMC: Millennium Cleaning | Esteem Enterprises

Approved Floor Finishes List

Location	Type
Admin Reception/Lobby	LVT or VCT permissible
Admin Offices	Carpet
Admin Corridors	Carpet or VCT (Principals discretion)
Work Rooms	VCT
Material Storage and Storage Rooms	VCT
Clinic	VCT
Toilet Rooms	Ceramic Tile (No Mosaic) See SDMC Spec Checklist Dex-O-Tex Epoxy permissible
Stairs (Interior)	VCT
Corridors (High Traffic)	VCT
Elevator	LVT and/or VCT permissible
Classrooms (Elementary Schools)	VCT
Classrooms (Middle and High Schools	VCT
General Building Lobbies	VCT
Multi-Purpose Room/Dining	VCT
Kitchen	Quarry Tile Dex-O-Tex Epoxy permissible
Kitchen Manager Office, Dry Storage, Locker Rooms, Laundry, Break Room	Quarry TileDex-O-Tex Epoxy permissible
Serving Line	Quarry Tile Dex-O-Tex Epoxy permissible
PE Locker Rooms	Quarry Tile Dex-O-Tex Epoxy permissible
Music, Band, Chorus Rooms	Carpet
Art Room	VCT
Kiln Room	VCT
Dance Classrooms	Wood (Sprung)
Gymnasium	Wood (Sprung)
Conference Rooms	Carpet
Custodial Closets	VCT or Sealed Concrete
Central Receiving	Sealed Concrete
Electrical Rooms	Sealed Concrete
Mechanical Rooms	Sealed Concrete
Fire Riser Room	Sealed Concrete
MDF/IDF, Data, Telecom Rooms	VCT
Plant Manager Office	Walkoff Mat Carpet
Offices, Conference Rooms, Computer Classrooms/Labs that have recessed floor box power/data (only)	Carpet

- Gym Flooring shall be Connor Sports RezillBase SP-111.
- Walkoff Mat material shall be installed at all Drinking Fountain/Bottle Filler locations where abutting VCT and/or carpet.

Approved Toilet Accessories List

Accessories are based on specific Bobrick Washroom Equipment, Inc. items and associated function/options with the Model Number listed. Equivalents are acceptable providing all accessory function/options are matched.

- All Female Student and Staff Toilet Rooms shall be provided with sanitary napkin disposals.
- All sinks throughout the school shall be provided with a Paper Towel Dispenser including but not limited to the following: Toilet Rooms, Kitchen, Receiving Area, Art Classrooms, Science Classrooms & Labs, Break & Work Rooms, etc.

	Accessory Name	Note	Model #
01a	Toilet Tissue Dispenser	Controlled Delivery at School Student Toilet Rooms	BO-B-2088 & SSS-7611
01b	Toilet Tissue Dispenser	Non-Controlled Delivery at all other Toilet Rooms	B-2740
02	Paper Towel Dispenser (Surface Mounted/Key Lock)	Touch Free – NOT for Elementary School	SSS-76122
03	Paper Towel Dispenser (Surface Mounted/Key Lock)	Multifold	SJ-T1905XC SSS-4090W & SJ-T1905WH
04	Sanitary Napkin Disposal (Surface Mounted)		**B-270**
05	Tilt Mirror with Stainless Steel Frame (ADA Compliant)		**B-293**
06	Shower Curtain Rod (Heavy Duty)		**B-6107**
07	Shower Curtain (Vinyl)		**B-204-2**
08	Shower Curtain Hook (Stainless Steel)		**B-204-1**
09	Shower Soap Dish (Recessed/Heavy Duty)		**B-4380**
10	Shower Seat (Reversible/Solid Phenolic/Folding)		**B-5181**
11	Clothes Hook	Changing Stalls	**B-233**
12	Grab Bars		**B-6806**
13	Hand Dryer (Electric)	Group Toilet Rooms Only	**B-7120**
14	Mop/Broom Holder with Shelf and Rag Hooks	Janitor Closets	**B-224**
15	Foam Soap Dispenser	Owner Provided/Contractor Installed	HS-D800MIL-X
16	Trash Cans	Owner Provided	
17	Mirror with Stainless Steel Frame		**B-1658**

Handsoap dispensers and refills

VENDOR	DESCRIPTION	BRAND	ITEM NUMBER	NOTES	
Maintenance too	handsoap dispenser	INOPAK	HS-D800MIL-X		
Warehouse	Handsoap dispenser refill	INOPAK	W5100431		
Warehouse	Handsoap dispenser refill	INOPAK	W5100432		

Paper Towel dispensers and refills

VENDOR	DESCRIPTION	BRAND	ITEM NUMBER	NOTES	
West Florida	Multi Fold towel dispenser	San Jamar - Chrome	SJ-T1905XC	Universal dispenser *Can be ordered directly from website*	
West Florida	Multi Fold towel dispenser	San Jamar - White	SJ-T1905WH	Universal dispenser *Can be ordered directly from website*	
Gem Supply	Multi Fold towel dispenser	Impact Metal Combo Towel Dispenser	SSS-4090W	Universal dispenser	
West Florida	Roll Towel Dispenser	Empress Lever Roll Towel Dispenser	RJS EMP950	Universal dispenser	
Gem Supply	Roll Towel Dispenser	SSS Sterling Select 2.08 Touchfree Mechanical Dispenser	SSS-76122	Proprietary	
Gem Supply	Roll Towel Refill	Triple S Brand 800' Natural Hand Towel	SSS-76019	Proprietary	

Toilet Paper dispenser and refills

VENDOR	DESCRIPTION	BRAND	ITEM NUMBER	NOTES	
West Florida	Toilet Paper Dispenser	Bobrick Commercial toilet paper dispense over under stainless. Surface Mounted	BO-B-2088	Universal dispenser *Can be ordered directly from website*	
West Florida	Toilet Paper Dispenser	ASI toilet paper dispenser commercial. Surface Mounted	ASI-0030	Universal dispenser *Can be ordered directly from website*	
Gem Supply	Toilet Paper Dispenser	SSS Sterling Select 2.09" Twin Jumbo Roll Dispenser	SSS-7611	Proprietary	
Gem Supply	Toilet Paper	Triple S Brand 2 ply JRT 1000' TP	SSS-76307	Proprietary	

DATE ADDED: 5/28/2024

Approved Plumbing Fixture List

The Plumbing Fixtures listed have been established for consistency between projects and ease of maintenance throughout the District. The A/E/CM shall be responsible for verifying all fixtures are reviewed, confirmed to work with specific project requirements, and are current in meeting Code requirements. If there are any changes/conflicts to or with the Fixture List submit in writing to your Project Coordinator. If a fixture below is NOT utilized on your project mark as NOT USED. If additional fixtures are utilized, please add as the next number in line after the Standard Fixtures. For ease of review the main fixture list Item Designations shall NOT be altered.

Item	Fixture	Description/Acceptable Manufacturers
WC-1	Water Closet Adult Non-Handicap	**Bowl:** White floor mounted with bottom outlet, vitreous china, siphonjet, elongated bowl, 15" AFF to rim, 12" rough-in, bolt caps with caulk, single flush. Bowl and seat dimensions must match within ¼ inch. **Acceptable manufacturers:** American Standard 2234.001 Kohler Gerber NO Zurn fixtures **Seat:** **White solid plastic**, heavy duty, elongated, open front (less cover), stainless steel self-sustaining check hinges, integral molded bumpers **Acceptable manufacturers:** Centoco 500 **Flush valve assembly:** 11-1/2" high above rim, exposed diaphragm valve, chrome finish, ADA compliant non-hold-open handle, 1-inch inlet, 1-1/2" outlet, integral screwdriver adjustable angle stop and check valve with cover, vacuum breaker, wall and spud flanges, adjustable tail piece, sweat solder adapter kit. Single flush action. **Acceptable manufacturers:** SLOAN 111-1.28
Item	**Fixture**	**Description/Acceptable Manufacturers**
WC-2 	Water Closet Handicap	**Bowl:** White floor mounted with bottom outlet, vitreous china, siphonjet, elongated bowl, 17" AFF to rim, 12" rough-in, bolt caps with caulk, single. Bowl and seat dimensions must match within ¼ inch. **Acceptable manufacturers:** American standard 3043.001 Kohler Gerber NO Zurn fixtures **Seat:** **White solid plastic**, heavy duty, elongated, open front (less cover), stainless steel self-sustaining check hinges, integral molded bumpers **Acceptable manufacturers:** Centoco 500 **Flush valve assembly:** 11-1/2" high above rim, exposed diaphragm valve, chrome finish, ADA compliant non-hold-open handle, 1-inch inlet, 1-1/2" outlet, integral screwdriver adjustable angle stop and check valve with cover, vacuum breaker, wall and spud flanges, adjustable tail piece, sweat solder adapter kit. Single flush action. **Acceptable manufacturers:** SLOAN 111-1.28

Item	Fixture	Description/Acceptable Manufacturers
U-1	Urinal	**Provide at Middle and High Schools only** **Urinal:** White wall mounted, washout urinal, vitreous china, 14-inch extended rim, ¾" top spud, 0.50 gpf, ¾" inlet spud, 2" outlet spud, strainer, and (2) hangers. 24" AFF to rim. **Acceptable manufacturers:** American Standard 6550001.020 Kohler Gerber **Flush valve assembly:** 11-1/2" high above rim, exposed diaphragm valve, chrome finish, ADA compliant non-hold-open handle, ¾-inch inlet, 2-inch outlet, integral screwdriver adjustable angle stop and check valve with cover, vacuum breaker, wall and spud flanges, adjustable tail piece, sweat solder adapter kit. Position handle to wide side of room. **Acceptable manufacturers:** Regal 186-0.5
Item	**Fixture**	**Description/Acceptable Manufacturers**
U-2 	Urinal ADA	**Provide at Middle and High Schools only** Same as U-1 except mount at 17" AFF to rim.
Item	**Fixture**	**Description/Acceptable Manufacturers**
L-1	Lavatory Non-Handicap Student	**Bowl:** White wall mounted, vitreous china, 20x18 inches, ADA compliant. Mount 30 inches to rim (max.), 24 inches to apron (min.) at Elementary and Middle Schools. Mount 34 inches to rim (max.), 29 inches to apron (min.) at High Schools. Provide floor mounted wall carrier with concealed arms. Provide ADA compliant offset tailpiece. Insulate trap and water supplies with Truebro Under sink Shroud Model No. 2018-AS-D. **Acceptable manufacturers:** American standard 0356.421: single hole Kohler Briggs NO Zurn products **Faucet:** Chrome plated solid brass construction, metering type adjustable time cycle, ADA compliant push handle, 0.5 gpm, vandal resistant aerator and vandal resistant deck plate, drain with perforated strainer and 1-1/4" tailpiece. **Acceptable manufacturers:** Moen 8884 (no exceptions) T&S Kohler **P-trap:** 1-1/4" inlet and 1-1/2" outlet polished chrome plated cast brass body adjustable P-trap without cleanout, with 17-gauge seamless tubular wall bend, cast brass slip nuts and chrome plated set screw escutcheon. Provide trap primer, TP-1, at locations shown on plans. **Acceptable manufacturers:** Mcguire Model B8902 CNC **Carrier:** Floor mounted, concealed arms, dura coated. Coordinate dimensions (including floor plate) with available wall space, prior to ordering. Secure carrier to floor. **Acceptable manufacturers:** Zurn – Z1231 or Z-1231-D (back-to-back installation) Jr smith Josam **Supply:** ½" comp x 3/8" comp heavy cast brass angle stop, loose key handle, annealed vertical tube, chrome plated cast brass set screw escutcheon, C.P. brass nipple to wall. **Acceptable manufacturers:** Brasscraft OCR-19 or equal (stops) Brasscraft 1-20AC or equal (supply connectors)

Item	Fixture	Description/Acceptable Manufacturers
L-2 	Lavatory ADA Student	**Provide at Middle and High Schools only** Same as L-1 except mount 34 inches to rim (max.), 29 inches to apron (min.) at all student locations.
Item	**Fixture**	**Description/Acceptable Manufacturers**
L-3 	Lavatory Staff All	**Bowl:** White wall mounted, vitreous china, 20x18 inches, ADA compliant 4-inch center faucet holes, mount 34 inches to rim (max.), 29 inches to apron (min.). Provide floor mounted wall carrier with concealed arms. Provide ADA compliant offset tailpiece. Insulate trap and water supplies with Truebro Under sink Shroud Model No. 2018-AS-D. **Acceptable manufacturers:** American standard 0355.012: 4" centers Kohler Briggs **NO Zurn products** **Faucet:** Chrome plated solid brass construction, dual metering type adjustable time cycle, ADA compliant push handle, 0.5 gpm, vandal resistant aerator and vandal resistant deck plate, drain with perforated strainer and 1-1/4" tailpiece. **Acceptable manufacturers:** Moen 8886 (no exceptions) T&S Kohler **P-trap:** 1-1/4" inlet and 1-1/2" outlet polished chrome plated cast brass body adjustable P-trap without cleanout, with 17-gauge seamless tubular wall bend, cast brass slip nuts and chrome plated set screw escutcheon. Provide trap primer, TP-1, at locations shown on plans. **Acceptable manufacturers:** Mcguire Model B8902 CNC **Carrier:** Floor mounted, concealed arms, dura coated. Coordinate dimensions (including floor plate) with available wall space, prior to ordering. Secure carrier to floor. **Acceptable manufacturers:** Zurn – Z1231 or Z-1231-D (back-to-back installation) Jr smith Josam **Supply:** ½" comp x 3/8" comp heavy cast brass angle stop, loose key handle, annealed vertical tube, chrome plated cast brass set screw escutcheon, C.P. brass nipple to wall. **Acceptable manufacturers:** Brasscraft OCR-19 or equal (stops) Brasscraft 1-20AC or equal (supply connectors)

Item	Fixture	Description/Acceptable Manufacturers
S-1 	Sink ADA Compliant	**Sink:** Single bowl, countertop mounted, 18-gauge type 304 stainless steel, self-rimming, 22”x19”x6.5” deep, one faucet hole centered on back flange. Provide U channel type mounting system. **Acceptable manufacturers:** Elkay No. LRAD2219-65 Kindred Just SLN-ADA-1921-A-GR **Faucet:** Center-set, rigid 8” gooseneck faucet, 1.5 gpm vandal resistant aerator. (T&S Brass Aerator Model #B-0199-06F), lever handle. **Acceptable manufacturers:** T&S B-0305-13X Chicago 350-GN8AE35ABCP Kohler **Drain:** 304 stainless steel drain body, stainless steel flat strainer and 1-1/2” O.D. stainless steel tailpiece, 4” long. **Acceptable manufacturers:** Just Model # J-35-SSF **P-trap:** 1-1/2” polished chrome plated cast brass body adjustable P-trap without cleanout, with 17-gauge seamless tubular wall bend, cast brass slip nuts and chrome plated set screw escutcheon. **Acceptable manufacturers:** Mcguire Model C8912 CNC **Supply:** One required, ½” comp x 3/8” comp heavy cast brass angle stop, loose key handle, annealed vertical tube, chrome plated cast brass set screw escutcheon, C.P. brass nipple to wall. **Acceptable manufacturers:** Brasscraft OCR-19 or equal (stops) Brasscraft 1-20AC or equal (supply connectors)
Item	**Fixture**	**Description/Acceptable Manufacturers**
S-2 	Sink ADA Compliant ESE Hot Water (110°) Will Be Needed in All ESE Sinks	**Sink:** Single bowl, countertop mounted with two side ledges, 18-gauge type 304 stainless steel, self- rimming, 25”x17”x6” deep, one faucet hole centered on left flange. Provide U channel type mounting system. **Acceptable manufacturers:** Elkay No. DRKAD2517 Kindred Just CRA-ADA-1725-A-GR **Faucet:** Center-set, rigid 8” gooseneck faucet, 1.5 gpm vandal resistant aerator. (T&S Brass Aerator Model #B-0199-06F), lever handle. **Acceptable manufacturers:** Chicago 350-GN8AE35ABCP T&S B-0305-135X Kohler **Drain:** 304 stainless steel drain body, stainless steel flat strainer and 1-1/2” O.D. stainless steel tailpiece, 4” long. **Acceptable manufacturers:** Just model # J-35-SSF **P-trap:** 1-1/2” polished chrome plated cast brass body adjustable P-trap without cleanout, with 17-gauge seamless tubular wall bend, cast brass slip nuts and chrome plated set screw escutcheon.

		Acceptable manufacturers: Mcguire model 8912CNC **Supply:** Two required, ½" comp x 3/8" comp heavy cast brass angle stop, loose key handle, annealed vertical tube, chrome plated cast brass set screw escutcheon, C.P. brass nipple to wall. **Acceptable manufacturers:** Brasscraft OCR-19 or equal (stops) Brasscraft 1-20A C or equal (supply connectors)
Item	**Fixture**	**Description/Acceptable Manufacturers**
S-3 	Sink ADA Compliant Clinic	**Sink:** Single bowl, countertop mounted, 18-gauge type 304 stainless steel, self-rimming, 22"x19"x5 ½" deep, one faucet hole centered on back flange. Provide U channel type mounting system. **Acceptable manufacturers:** Elkay LRAD221955 Kindred Just SLN-ADA-1921-A-GR **Faucet:** Center-set, rigid 8"gooseneck faucet, 1.5 gpm vandal resistant aerator, (T&S Brass Aerator Model #B-0199-06F), lever handles. **Acceptable manufacturers:** Chicago 50-GN8E35ABCP T&S B-0301-135X Kohler **Drain:** 304 stainless steel drain body, stainless steel flat strainer and 1-1/2" O.D. stainless steel tailpiece, 4" long. **Acceptable manufacturers:** Just model # J-35-SSF **P-trap:** 1-1/2" polished chrome plated cast brass body adjustable P-trap without cleanout, with 17-gauge seamless tubular wall bend, cast brass slip nuts and chrome plated set screw escutcheon. **Acceptable manufacturers:** Mcguire model 8912CNC **Supply:** Two required, ½" comp x 3/8" comp heavy cast brass angle stop, loose key handle, annealed vertical tube, chrome plated cast brass set screw escutcheon, C.P. brass nipple to wall. **Acceptable manufacturers:** Brasscraft OCR-19 or equal (stops) Brasscraft 1-20A C or equal (supply connectors)
Item	**Fixture**	**Description/Acceptable Manufacturers**
S-4 	Sink Double Bowl	**Bowl:** Two compartment, stainless steel, countertop-mounted 18 gauge-type 304, self-rim, 33 x 21 x 6-1/2 inches overall, three faucet holes in center of back flange, ADA compliant include U channel type mounting system. **Acceptable manufacturers:** Elkay Type LRAD3321 Kindred Dayton **Faucet:** 9-1/2-inch swing spout, 1.5 gpm vandal resistant aerator, (T&S Brass Aerator Model #B-0199-06F), lever handles, chrome finished, ADA compliant with side spray. **Acceptable manufacturers:** Moen 73430 (no exceptions) T&S Kohler **Drain:** 304 stainless steel drain body, stainless steel flat strainer and 1-1/2" O.D. stainless steel tailpiece, 4" long.

		Acceptable manufacturers: Just model #J-35-SSF **P-trap:** 1-1/2" polished chrome plated cast brass body adjustable P-trap without cleanout, with 17-gauge seamless tubular wall bend, cast brass slip nuts and chrome plated set screw escutcheon. **Acceptable manufacturers:** Mcguire model 8912CNC **Supply:** Two required, ½" comp x 3/8" comp heavy cast brass angle stop, loose key handle, annealed vertical tube, chrome plated cast brass set screw escutcheon, C.P. brass nipple to wall. **Acceptable manufacturers:** Brasscraft OCR-19 or equal (stops) Brasscraft 1-20A C or equal (supply connectors)
Item	**Fixture**	**Description/Acceptable Manufacturers**
S-5 	Sink Kitchen	**Bowl & faucet:** Provided by others. Refer to food service plans **Drain:** 304 stainless steel drain body, stainless steel flat strainer and 1-1/2" O.D. stainless steel tailpiece, 4" long. **Acceptable manufacturers:** Just model #J-35-SSF **P-trap:** 1-1/2" polished chrome plated cast brass body adjustable p-trap without cleanout, with 17-gauge seamless tubular wall bend, cast brass slip nuts and chrome plated set screw escutcheon. Provide trap primer, TP-1, at locations shown on plans. **Acceptable manufacturers:** Mcguire model 8912CNC **Supply:** Two required, ½" comp x 3/8" comp heavy cast brass angle stop, loose key handle, annealed vertical tube, chrome plated cast brass set screw escutcheon, C.P. brass nipple to wall. **Acceptable manufacturers:** Brasscraft OCR-19 or equal (stops) Brasscraft 1-20A C or equal (supply connectors)
Item	**Fixture**	**Description/Acceptable Manufacturers**
S-6 	Sink Art Studios	**Bowl:** Single bowl, stainless steel, counter top mounted, 18 gauge-type 304, inside minimum bowl dimensions 33" long x 21" wide x 10" deep, one faucet hole at back of sink, provide under counter mounting clips (LKUCLIP8) **Acceptable manufacturers:** Stainless Steel Sinks S-2133-A-GR Elkay Type LRAD 3321 Dayton Kindred **Faucet:** 8" rigid/swing gooseneck spout. 1.5 gpm vandal resistant aerator, (T&S Brass Aerator Model #B-0199-06F), lever handles, chrome finished, ADA compliant. Rotate faucet body so handles face front of cabinet. **Acceptable manufacturers:** Chicago 350-GN8AE35ABCP T&S B-0305-135X **Kohler** **Drain:** 304 stainless steel drain body, stainless steel flat strainer and 1-1/2" O.D. stainless steel tailpiece, 4" long. **Acceptable manufacturers:** Just model # J-35-SSF

		Clay trap with top access: Acid resistant composite, 1-1/2-inch inlet and outlet with unions, wall escutcheon, stainless steel latches and hardware. Refer to solids interceptor detail. **Acceptable manufacturers:** Zurn 1180 **Supply:** Four required, ½" comp x 3/8" comp heavy cast brass angle stop, loose key handle, annealed vertical tube, chrome plated cast brass set screw escutcheon, C.P. brass nipple to wall. **Acceptable manufacturers:** Brasscraft OCR-19 or equal (stops) Brasscraft 1-20A C or equal (supply connectors)
Item	**Fixture**	**Description/Acceptable Manufacturers**
S-7 	Sink ADA Compliant with Bubbler	**Sink:** Single bowl, counter top mounted with faucet ledges, 18-gauge type 304 stainless steel, self-rimming, 25"x17"x6" deep, one faucet hole centered on left and one faucet hole on right front. Provide u channel type mounting system. **Acceptable manufacturers:** Elkay No. DRKAD2517 Kindred ALHS4605P-1/2DR Just CRA-1725-A-6R **Faucet:** Rigid 8" gooseneck faucet, chrome plated solid brass construction, 0.5 gpm, vandal resistant aerator and vandal resistant deck plate, drain with perforated strainer and 1-1/4" tailpiece. **Acceptable manufacturers:** Chicago 350-GN8AE35ABCP T&S B-0305-135X Kohler **Bubbler:** Deck mounted single hole, chrome plated. Metering push handle, vandal resistant, manual volume control, ADA compliant. **Acceptable manufactures:** Haws NO Zurn products **Drain:** 304 stainless steel drain body, stainless steel flat strainer and 1-1/2" O.D. stainless steel tailpiece, 4" long. **Acceptable manufacturers:** Just Model # J-35-SSF **P-trap:** 1-1/2" polished chrome plated cast brass body adjustable p-trap without cleanout, with 17-gauge seamless tubular wall bend, cast brass slip nuts and chrome plated set screw escutcheon. **Acceptable manufacturers:** Mcguire Model 8912CNC **Supply:** Two required, ½" comp x 3/8" comp heavy cast brass angle stop, loose key handle, annealed vertical tube, chrome plated cast brass set screw escutcheon, C.P. brass nipple to wall. **Acceptable manufacturers:** Brasscraft OCR-19 or equal (stops) Brasscraft 1-20A C or equal (supply connectors) Fixture likely will only be used in a renovation project where drinking fountains are not provided throughout the school.

Item	Fixture	Description/Acceptable Manufacturers
S-8	Sink Science Classroom/ Lab	**Science sinks need to be piped to outside neutralization tank. They are not to be neutralized at every individual sink.** **Bowl Drain:** Provided as part of the Science Lab Equipment Package. Field Coordinate Rough-In. **Faucet:** 6" rigid gooseneck faucet with vandal resistant separation hose end, chrome finish, vacuum breaker, and single lever handles. **Acceptable manufacturers:** Chicago 928-VR-LH Included with Casework Kohler T&S Brass Moen No Zurn products **P-trap:** Provide corrosion resistant solid separator and waste assembly. **Acceptable manufacturers:** Zurn Z-1180 **Supply:** One required, ½" IPS – 3/8" O.D. heavy cast brass angle stop, loose key handle, annealed vertical tube, and chrome plated cast brass nipple to wall. **Acceptable manufacturers:** McGuire FL2165CCLK X H2165LK
Item	**Fixture**	**Description/Acceptable Manufacturers**
S-9	Multipurpose Sink	**Sink:** White, single compartment, multi-purpose sink, polypropylene with seamless corners and edge. Floor mounted, overall 26"x22"x14", coated steel, self-leveling legs. **Acceptable manufacturers:** Zurn MS2620-F-AW-PF Fiat **Faucet:** 14" rigid gooseneck faucet with vandal resistant metal levers, mounting hardware, and flex connection hoses, chrome finish, vacuum breaker, and single lever handles. (T&S Brass Aerator Model #B-0199-06F). **Acceptable manufacturers:** Moen Kohler T&S Brass NO Zurn products **P-trap:** 1-1/2" polished chrome plated cast brass body adjustable p-trap without cleanout, with 17-gauge seamless tubular wall bend, cast brass slip nuts and chrome plated set screw escutcheon. Provide trap primer, TP-1, at locations shown on plans. **Acceptable manufacturers:** Mcguire model 8912CNC **Supply:** One required, ½" comp x 3/8" comp heavy cast brass angle stop, loose key handle, annealed vertical tube, chrome plated cast brass set screw escutcheon, C.P. brass nipple to wall. **Acceptable manufacturers:** Brasscraft OCR-19 or equal (stops) Brasscraft 1-20A C or equal (supply connectors)
Item	**Fixture**	**Description/Acceptable Manufacturers**
S-11	Music Tuba Tub (Middle & High School only)	**Receptor:** Scullery type, overall size 50"x 28 (front to back), 21" deep, 12" high backsplash. Inside dimensions 45" wide, 21" (front to back), 18" deep (rim at 34" for ADA) with left side drainboard. Seamless welded construction of 14-gauge type 304, 18-8 stainless steel with polished non-porous interior surfaces, and brush finish on exposed exterior surfaces. Provide with four 1 5/8" stainless steel tubular legs with fully enclosed gussets and adjustable bullet feet. No hole punches for faucet (faucet mounted in side wall). Perforated strainer. **Acceptable manufacturers:** Just Manufacturing Elkay Custom

		Faucet: 8" wall mount mixing faucet with polished chrome plated brass body, add-on faucet with compression cartridge and lever handle, 12" swing nozzle with stream regulator outlet, 104" flexible stainless steel hose with heat resistant handle, 90deg swivel adapter arm, 1.15 GPM angled spray valve, compression cartridges with spring checks, lever handles, ½" NPT female inlets and hose hanger hook. Certified to ASME A112.18.1/CSA B125.1, NSF 61-Section 9 and NSF 372. 2019 DOE PRSV – Class II compliant. **Acceptable manufacturers:** T&S B-0175 Kohler Moen **Drain**: 304 stainless steel drain body, stainless steel flat strainer and 1-1/2" stainless steel tailpiece, 4" long. Provide extended drain arm as required to reach from drain to wall. **Acceptable manufacturers:** Just Model # J-35-SSF **P-trap:** 1-1/2" polished chrome plated cast brass body adjustable P-trap without cleanout, with 17-gauge seamless tubular wall ben, cast brass slip nuts and chrome plated set screw escutcheon. **Acceptable manufacturers:** Mcguire Model C8912 CNC **Supply:** One required, ½" comp x ½" comp heavy cast brass angle stop, loose key handle, annealed vertical tube, chrome plated cast brass set screw escutcheon, C.P. brass nipple to wall. **Acceptable manufacturers:** Brasscraft or equal (stops) Brasscraft or equal (supply connectors)
Item	**Fixture**	**Description/Acceptable Manufacturers**
SS-1	Service Sink Custodial	**Sink:** Molded one-piece 24"x24x10" mop service sink with 3" IPS cast brass drain and a 3" drain seal gasket. **Acceptable manufacturers:** Fiat MSB-2424: 24"x24"x10" Moen T&S Brass Kohler NO Zurn products **Accessories:** Mop sink faucet – Fiat 830-AA, Zurn 21996-SF, T&S B-0674-BSTP Hose and hose holder – Fiat 832-AA. Stainless steel wall guards (36-inches high/Qty. = 2) Mop hanger – Fiat 889-CC. Locate mop hanger rack over Stainless steel bumper guards (Qty. = 2) – Fiat E-88-AA Stainless steel shelf
Item	**Fixture**	**Description/Acceptable Manufacturers**
SS-2	Service Sink Kitchen	**Sink:** Molded one-piece 36"x24"X10" mop service sink with 3" IPS cast brass drain and a 3" drain seal gasket **Acceptable manufacturers:** Fiat MSB-2424: 36"x24"x10" NO Zurn products **Accessories:** Mop sink faucet – Fiat 830-AA, Zurn 21996-SF Hose and hose holder – Fiat 832-AA. Stainless steel wall guards (36-inches high/Qty. = 2) Mop hanger – Fiat 889-CC. Locate mop hanger rack over mop sink. Stainless steel bumper guards (Qty. = 2) – Fiat E-88-AA Stainless steel shelf

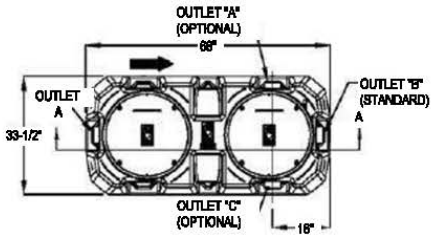
Item	Fixture	Description/Acceptable Manufacturers
EWC-1 	Electric Water Cooler ADA Compliant with Bottle Filling Station (Double Unit)	**Bi-level drinking fountain water cooler:** Bi-level stainless-steel basin with grey stone powder coated galvanized steel cabinet with bottle filling station, vandal resistant pushbutton activation, 8.0 gph cooled to 50°f at 370 watts, 5.0 fla. Unit shall incorporate a mechanically operated valve to maintain water stream without power to unit, automatic 20 second shutoff. Install lower unit in compliance with children's ADA mounting requirements, (30" max to bubbler). Provide one supply and trap. Non-Filtered. **Acceptable manufacturers:** Elkay with bottle filler E2H20, E2WSR **Carrier (block wall):** Water cooler support with adjustable dura-coated top and bottom support plates, complete with mounting fasteners. **Carrier acceptable manufacturers:** Zurn Z1259 **Carrier (stud wall):** Water cooler support system with top and bottom plates, complete with dura-coated rectangular steel uprights with welded feet, cast iron adjustable headers, steel sleeves, alignment truss and mounting fasteners. **Carrier acceptable manufacturers:** Zurn No. Z1225 Note: PVC Traps must be provided.
Item	**Fixture**	**Description/Acceptable Manufacturers**
EWC-2 	Electric Water Cooler ADA Compliant with Bottle Filling Station (Single Unit)	**Water cooler:** Single unit stainless-steel basin with grey stone powder coated galvanized steel cabinet with bottle filling station, vandal resistant pushbutton activation, 8.0 gph cooled to 50°f at 370 watts, 5.0 fla. Unit shall incorporate a mechanically operated valve to maintain water stream without power to unit, automatic 20 second shutoff. Install lower unit in compliance with children's ADA mounting requirements, (30" max to bubbler). Provide one supply and trap. Non- Filtered. **Acceptable manufacturers:** Elkay Model No. VRC8WC **Carrier (block wall):** Water cooler support with adjustable dura-coated top and bottom support plates, complete with mounting fasteners. **Carrier acceptable manufacturers:** Zurn Z1259 **Carrier (stud wall):** Water cooler support system with top and bottom plates, complete with dura-coated rectangular steel uprights with welded feet, cast iron adjustable headers, steel sleeves, alignment truss and mounting fasteners. Note: PVC Traps must be provided.
Item	**Fixture**	**Description/Acceptable Manufacturers**
EWS-1	Eye/Face Wash/ Shower Combo	**Shower/face wash:** Combination drench shower and eye/face wash unit with independently operated shower and eye/face wash. Shower valve operated by a stainless-steel pull rod with triangular handle, eye/face wash operates by a large, highly visible, yellow PVC push handle. Shower head shall be 10" diameter, yellow impact-resistant plastic. Eye/face wash spray head shall have twin-perforated disc wash heads with protective pop-off spray head covers. Galvanized steel pipe construction with safety yellow coating. Unit to be specifically made for areas subject to freezing. Provide floor drain at drench shower. **Acceptable manufacturers:** Bradley No. S19314-AA1BEFAON Note: Emergency Eye Wash drain outlet shall be plumbed to drain through the wall and not on the floor.

Item	Fixture	Description/Acceptable Manufacturers
EWS-2	Deck Mounted Hand Held Horse Spray with Dual Spray Heads	**Spray Heads:** Deck-mounted, perforated, ABS plastic dual spray heads for cleansing eyes and face with stay open valve and 8' yellow reinforced thermoplastic hose. **Acceptable manufacturers:** Bradley No. S19-465EFW Shall be located in all Science Classrooms that Do NOT have an Emergency Eye/Face/Shower unit at Middle and High Schools. (1) EWS-2 per Classroom at sink. Sink should be easily accessible.
Item	**Fixture**	**Description/Acceptable Manufacturers**
SH-1 	Shower ADA Compliant	**Receptor:** Refer to architectural plans for shower construction. **Control:** Concealed valve with angle check stops, ½" inlet / outlet and combination (thermostatic / pressure balance) control, tub outlet shall be plugged. Equal to Speakman Model SM-5000. **Hand held shower set:** Wall outlet, 60" white vinyl hose, 24" long vertical grab bar mounted at 6'-6" to top, sliding spray bracket and vacuum breaker. Centerline of spray arm to be installed at 6'-6" AFF equal to Speakman VS-1001-ADA-PC. Provide ¼ turn 100% shut off valve, solid brass construction, chrome plated, Zoe industries, mounted at end of arm. **Drain:** Refer to FD-1 (3") **Acceptable manufacturers:** Speakman Powers Leonard Symmons
Item	**Fixture**	**Description/Acceptable Manufacturers**
SH-2	Shower Non ADA Compliant	**Receptor:** Refer to architectural plans for shower construction **Control:** Concealed valve with angle check stops, ½" inlet / outlet and combination (thermostatic / pressure balance) control, tub outlet shall be plugged. Equal to Speakman Model SM-5000. Shower Head & Arm: Zurn Z7000-i2-1.25 and S-2540 or equal. Provide ¼ turn 100% shut off valve, solid brass construction, chrome plated, Zoe industries, mounted at end of arm. **Drain:** Refer to FD-1 (3") **Acceptable manufacturers:** Speakman Powers Leonard Symmons
Item	**Fixture**	**Description/Acceptable Manufacturers**
FS-1	Floor Sink Kitchen	**Floor sink:** 12"x12"x8" deep cast iron body and square slotted light duty half grate with white acid resisting porcelain enamel interior and top complete with white abs anti-splash interior bottom dome strainer. Provide with deep seal trap and trap primer. Refer to plans for trap primer locations. **Acceptable manufacturers:** Zurn No. ZN1901

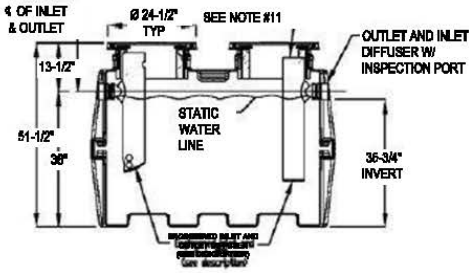
Item	Fixture	Description/Acceptable Manufacturers
FS-2	Floor Sink Kitchen Water Softener	Provide Fiberglass grate in lieu of metal at Water Softener location only.
Item	**Fixture**	**Description/Acceptable Manufacturers**
FD-1	Floor Drain Light Duty	**Floor drain:** Floor and shower drain, dura coated cast iron body with bottom outlet, combination invertible membrane clamp and adjustable collar with "Type S" polished nickel bronze, 6" square heel-proof, light duty strainer. Provide with deep seal trap. Refer to plans for trap primer locations. **Acceptable manufacturers:** Zurn No. Z415-6S
Item	**Fixture**	**Description/Acceptable Manufacturers**
FD-3	Floor Drain Linear Shower	**Shower drain:** Type 304 (CF8) fabricated stainless steel linear shower drain. Complete with vertically adjustable anchoring support legs, anti-ponding, v-shaped channel with 2" no-hub center outlet, secured, light-duty heel proof grate. **Acceptable manufacturers:** Zurn No. ZS880
Item	**Fixture**	**Description/Acceptable Manufacturers**
MV-1	Mixing Value	**Mixing valve:** Thermostatic water mixing valve shall consist of a piston control mechanism and wax filled thermostatic control element. Bronze body and cap with replaceable corrosion resistant components, stainless steel piston. Lead free. ASSE 1070 compliant. **Acceptable manufacturers:** Bradley No. S59-4016N
Item	**Fixture**	**Description/Acceptable Manufacturers**
MV-2	Mixing Value	**Mixing valve:** Thermostatic water mixing valve shall consist of liquid-filled motor and a piston control mechanism with positive shut-off of hot water when cold water supply is lost. All flow is shut off in the event of thermostat failure. Construction shall be bronze body and cap with replaceable corrosion resistant components, including stainless steel piston and liner. Valve shall come equipped with integral check stops and removable strainers. Provide with dial thermometer and recessed S.S. wall cabinet. **Acceptable manufacturers:** Bradley No. S59-3045
Item	**Fixture**	**Description/Acceptable Manufacturers**
MV-3	Mixing Value	**Mixing valve**: Thermostatic water mixing valve shall consist of liquid-filled motor and a piston control mechanism with positive shut-off of hot water when cold water supply is lost. All flow is shut off in the event of thermostat failure. Construction shall be bronze body and cap with replaceable corrosion resistant components, including stainless steel piston and liner. Valve shall come equipped with integral check stops and removable strainers. Provide with dial thermometer and wall mounting bracket, piped assembly with inlet and outlet shutoffs. **Acceptable manufacturers:** Bradley No. S59-3080
Item	**Fixture**	**Description/Acceptable Manufacturers**
WCO-1	Wall Clean Out	Wall cleanout with round stainless-steel wall access cover complete with securing screw and bronze raised hex head plug. Zurn Model ZS1468, mount 18" AFF.
Item	**Fixture**	**Description/Acceptable Manufacturers**
WH-1	Wall Faucet	**Wall Faucet:** Anti-Siphon vacuum breaker protected wall faucet. Housed in a flush mounted, tamper resistant brass wall box. Once piece box construction. ¾" female inlet, ¾" male hose connection, mount 18" AFF. **Acceptable manufacturers:** Woodford No. B24

Item	Fixture	Description/Acceptable Manufacturers
CP-1	Circulating Pump	Bell & Gossett Series PL 30 Iron & Lead Free Bronze Booster Pumps, 1/12hp, 10 gpm, 10ft. Head, 1750 rpm, 115v/1 phase, all bronze construction. Applicable for potable hot water use. Provide Aquastat set at 110f. Mount at or Below 6'-0" A.F.F.
Item	**Fixture**	**Description/Acceptable Manufacturers**
HB-1	Hose Bibb	**Faucet:** Bronze body hose bib, bronze body, key operated control valve, ¾" IP female inlet, ¾" male hose connection, chrome finish, anti-siphon, non-removable vacuum breaker. **Acceptable manufacturers:** Woodford No. 24
Item	**Fixture**	**Description/Acceptable Manufacturers**
HB-2	Hose Bibb Kitchen	**Faucet:** Bronze body hose bib, bronze body, plastic wheel handle control valve, ¾" IP female inlet, ¾" male hose connection, chrome finish, anti-siphon, non-removable vacuum breaker. **Acceptable manufacturers:** Woodford No. 24
Item	**Fixture**	**Description/Acceptable Manufacturers**
HD-1	Hub Drain	Zurn No. 326-DB indirect waste funnel with bottom dome strainer, deep seal trap. Refer to hub drain detail.
Item	**Fixture**	**Description/Acceptable Manufacturers**
FS-1	Floor Sink	**Floor sink:** 8"x8"x5.75" deep cast iron body and square slotted light duty half grate with white acid resisting porcelain enamel interior and top complete with white abs anti-splash interior bottom dome strainer. Provide with deep seal trap and trap primer. Refer to plans for trap primer locations. **Acceptable manufacturers:** Zurn No. FD2378-NH3-H
Item	**Fixture**	**Description/Acceptable Manufacturers**
WB-1	Washing Machine Box	**Box:** Pre-manufactured unit, white powder coated steel. T series ¾" hose bibs, 2" PVC drain connection. **Acceptable manufacturers:** Guy Gray T200TPPVC
Item	**Fixture**	**Description/Acceptable Manufacturers**
IM-1	Ice Machine Box	**Box:** Pre-manufactured unit with chromed angle valve with ¼-inch inlet and outlet pipes with integral water hammer. **Acceptable manufacturers:** Hoshizaki preferred Water-Tite 87978

Item	Fixture	Description/Acceptable Manufacturers
CW-1	Can Wash	Zurn 1464 water supply control box assembly 18-8, Type 304 stainless steel with cylinder lock and hinged cover, bronze control valves, screwdriver stops and vacuum breaker. The exposed vacuum breaker shall be mounted on the exterior face of the building and shall not be recessed within the wall or cabinet. **Drain:** Zurn No. Z1982-WB-11 12" square top drain, Sani-Flor can wash drain 12x12x8 deep fabricated SS body with bottom outlet, anchor pan, medium duty SS vandal proof grate with standing sediment bucket; deep seal trap.
Item	**Fixture**	**Description/Acceptable Manufacturers**
TP-1	Trap Primer Sinks	**Trap Primer:** Water Saver Tail Piece Trap Primer, cast brass body, ground joint connections, 1 ½" NTP outlet, slip joint nuts, washers, escutcheons, ½" primer tube with compression fitting connection at wall. **Acceptable manufacturers:** Precision Plumbing Products LTP-1500 J.R. Smith Trap Primers shall be indicated on the Plumbing Drawings.
Item	**Fixture**	**Description/Acceptable Manufacturers**
TP-2	Trap Primer Floor Drains	**Trap Primer:** Dual Flow Automatic Pressure Drop Trap Primer, ½" inlet and ½" outlet with service shutoff valve, Type K copper body. **Acceptable manufacturers:** Precision Plumbing Products CPO-500 J.R. Smith
Item	**Fixture**	**Description/Acceptable Manufacturers**
WHA-1	Water Hammer Arrestor	**Water Hammer Arrestors:** Stainless Steel shell with non-toxic gas and fluid. Sized per PDI Standard WH-201. **Acceptable manufacturers:** Zurn Z1700 Josam 75000 Series Ancon J.R. Smith Wade
Item	**Fixture**	**Description/Acceptable Manufacturers**
CO-1	Cleanout Exterior at Grade	**Cleanout:** Exterior grade type, round bronze heavy duty top, cast in 12"x12"x4" minimum concrete collar, flush with grade. Bronze cleanout plug and pipe adapters. **Acceptable manufacturers:** Zurn Z-1440-BPX Josam 56040 Ancon J.R. Smith Wade
Item	**Fixture**	**Description/Acceptable Manufacturers**
EWH	Electric Water Heaters	**Acceptable manufacturers:** A.O. Smith Lochinvar Rheem Water heaters MUST be 119 gallons or less in size. NO EXCEPTIONS.
Item	**Fixture**	**Description/Acceptable Manufacturers**
ET	Expansion Tank	**Acceptable manufacturers:** A.O. Smith Lochinvar Rheem

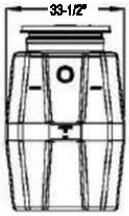


TOP VIEW



SECTION "A-A"

ISOMETRIC VIEW



OUTLET END VIEW

DIFFUSION FLOW TECHNOLOGY

THE INLET DIFFUSER SPLITS INCOMING EFFLUENT INTO TWO PATHS THAT UTILIZE THE ENTIRE LIQUID VOLUME OF THE TANK FOR EFFICIENT GREASE SEPARATION. THE CALIBRATED OPENINGS GREATLY REDUCE EFFLUENT TURBULENCE. THE EFFLUENT ENTERS THE MAIN CHAMBER WITHOUT DISTURBING THE EXISTING GREASE OR SEDIMENT LAYERS.

THE INTEGRAL AIR RELIEF / ANTI-SIPHON IN THE TOP OF THE OUTLET DIFFUSER ALLOWS PRESSURE STABILIZATION WITHIN THE UNIT DURING OPERATION. THE BOTTOM OF THE OUTLET DIFFUSER ALLOWS ONLY EFFLUENT WHICH IS FREE OF GREASE TO EXIT THE TANK. IT CAN EASILY BE ATTACHED TO ANY OF THE THREE OUTLETS PROVIDED TO EASE JOBSITE PIPING LAYOUTS.

ENGINEER SPECIFICATION GUIDE

SCHIER GREAT BASIN GREASE INTERCEPTOR MODEL #GB-250 SHALL BE LIFETIME GUARANTEED AND MADE IN USA OF SEAMLESS, ROTATIONALLY-MOLDED HIGH DENSITY POLYETHYLENE. INTERCEPTOR SHALL BE FURNISHED FOR ABOVE OR BELOW GRADE INSTALLATION. INTERCEPTOR SHALL BE CERTIFIED TO ASME A112.14.3 (TYPE C) AND CSA B481.1, WITH FIELD ADJUSTABLE RISER SYSTEM, BUILT-IN FLOW CONTROL, BUILT-IN FLOW CONTROL, BUILT-IN TEST CAPS AND THREE OUTLET OPTIONS. INTERCEPTOR FLOW RATE SHALL BE 100 GPM. INTERCEPTOR GREASE CAPACITY SHALL BE 1,076 LBS. COVER SHALL PROVIDE WATER / GAS-TIGHT SEAL AND HAVE MINIMUM 16,000 LBS. LOAD CAPACITY.

OPTIONS:

- HIGHWAY RATED COVER: 16,000LB. CAPACITY.
- TELEGUIDE FIELD ADJUSTABLE RISERS FOR EXTENDING COVERS TO GRADE
- HIGH WATER ANCHOR KIT
- CLAMPING COLLAR KIT

SPECIFICATIONS:

1. 4" INLET / OUTLET SCH. 40. PLAIN END (NO HUB)
2. MAX FLOW RATE: 100 GPM
3. LIQUID CAPACITY: 275 GALLONS
4. MAX GREASE CAPACITY: 1,076 LBS. (147.4 GALLONS)
5. MAX SOLIDS / SEDIMENT CAPACITY: 105 GALLONS
6. UNIT WEIGHT W/STD COVERS: 230 LBS.
7. HIGHWAY RATED (16,00 LB. LOAD). BOLTED, GAS / WATER TIGHT COMPOSITE COVERS (CHOOSE ONE).
8. MAXIMUM OPERATING TEMPERATURE 190°F CONTINUOUS
9. SEAMLESS MOLDED POLYETHYLENE

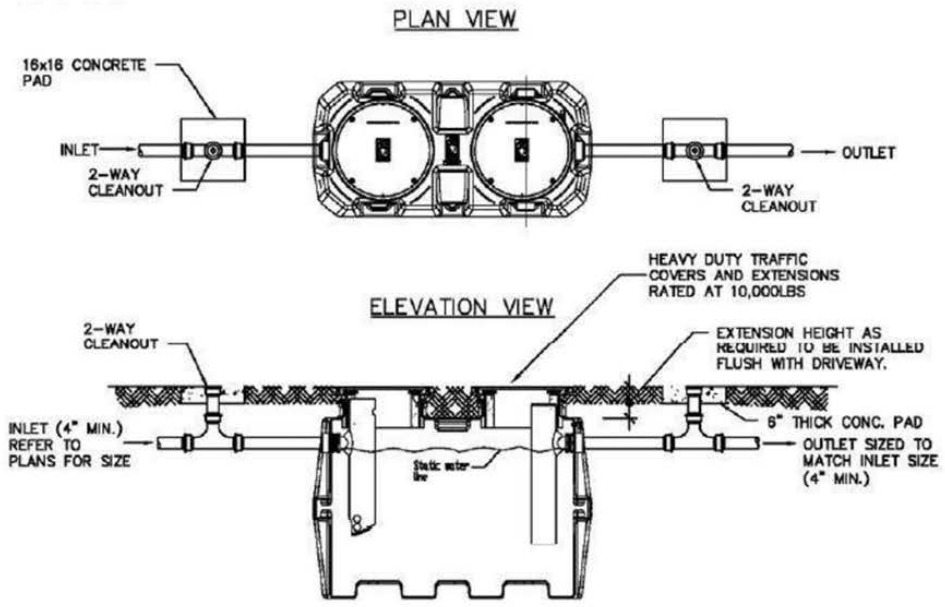
NOTES:

1. LISTED BY IAPMO TO ASME GREASE INTERCEPTOR STANDARD #A112.14.3 AND CSA B481.1
2. FACTORY INSTALLED BUILT-IN FLOW CONTROL.
3. FOR GRAVITY DRAINAGE APPLICATIONS ONLY.
4. SEAMLESS HIGH DENSITY POLYETHYLENE TANK.
5. UNIT SUPPLIED WITH BUILT-IN ADAPTER(S) FOR UP TO 6" OF ADJUSTABILITY. ADDITIONAL RISER(S) AVAILABLE FOR DEEPER BURIAL DEPTH.
6. COVER PLACEMENT ALLOWS FULL ACCESS TO TANK FOR PROPER MAINTENANCE.
7. VENT NOT REQUIRED UNLESS PER CODE.
8. NARROW FOOTPRINT ALLOWS CLEARANCE THROUGH DOORWAYS AND STAIRWELLS.
9. ENGINEERED INLET AND OUTLET DIFFUSER ARE REMOVABLE TI INSPECT / CLEAN PIPING.
10. FOR ON-THE-FLOOR OR BURIED APPLICATION
11. INTEGRAL AIR RELIEF / ANTI-SIPHON / SAMPLING ACCESS.
12. THREE OUTLET OPTION FOR EASY ROUGH IN. UNIT SHIPPED WITH OUTLET DIFFUSER IN OUTLET "B".

1 100 GPM POLYETHYLENE GREASE INTERCEPTOR DETAIL

SCALE: NTS

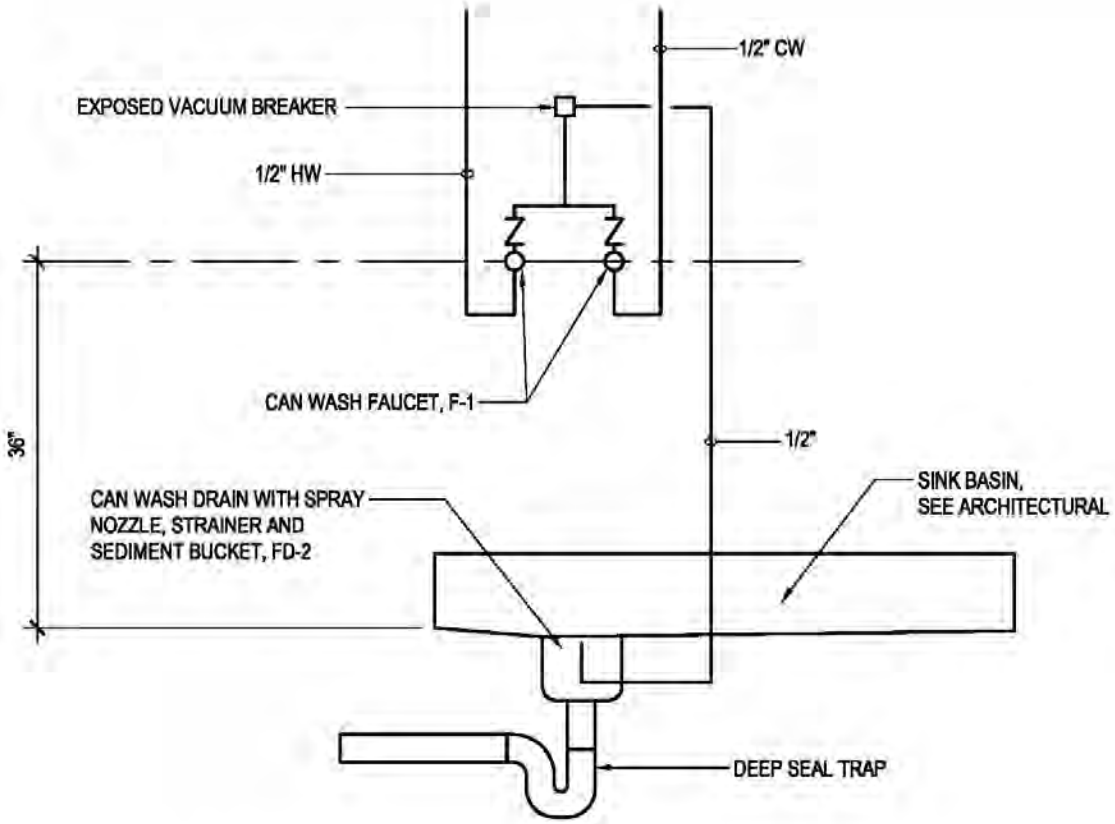
DESIGN STANDARDS		
DEPARTMENT OF CONSTRUCTION SERVICES SCHOOL DISTRICT OF MANATEE COUNTY 1 Matzke Way, Bradenton, FL 34208 T: (941) 708-8770		SK-P1 ISSUED: 7-1-2022



1 **GREASE INTERCEPTOR DETAIL**

SCALE: NTS

DESIGN STANDARDS		
DEPARTMENT OF CONSTRUCTION SERVICES SCHOOL DISTRICT OF MANATEE COUNTY 1 Matzke Way, Bradenton, FL 34208 T: (941) 708-8770		SK-P2 ISSUED: 7-1-2022

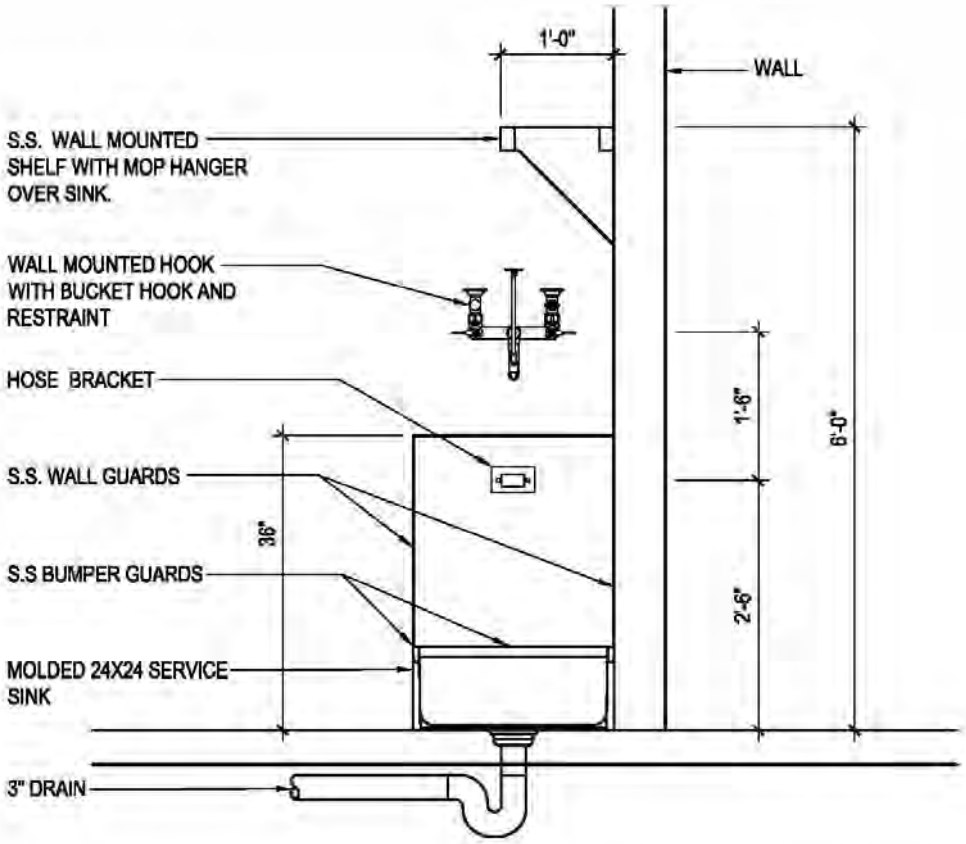


** Note: Can wash handles need to be placed 3 to 4 feet offset from the can wash so the user does not get sprayed when activated. Exposed vacuum breaker shall be mounted on the exterior face for the building for maintenance access (placing in box in wall is NOT permitted. Provide stainless steel hinged lid with hold open catch to limit storm water intrusion.

1 GARBAGE CAN WASH DETAIL

SCALE: NTS

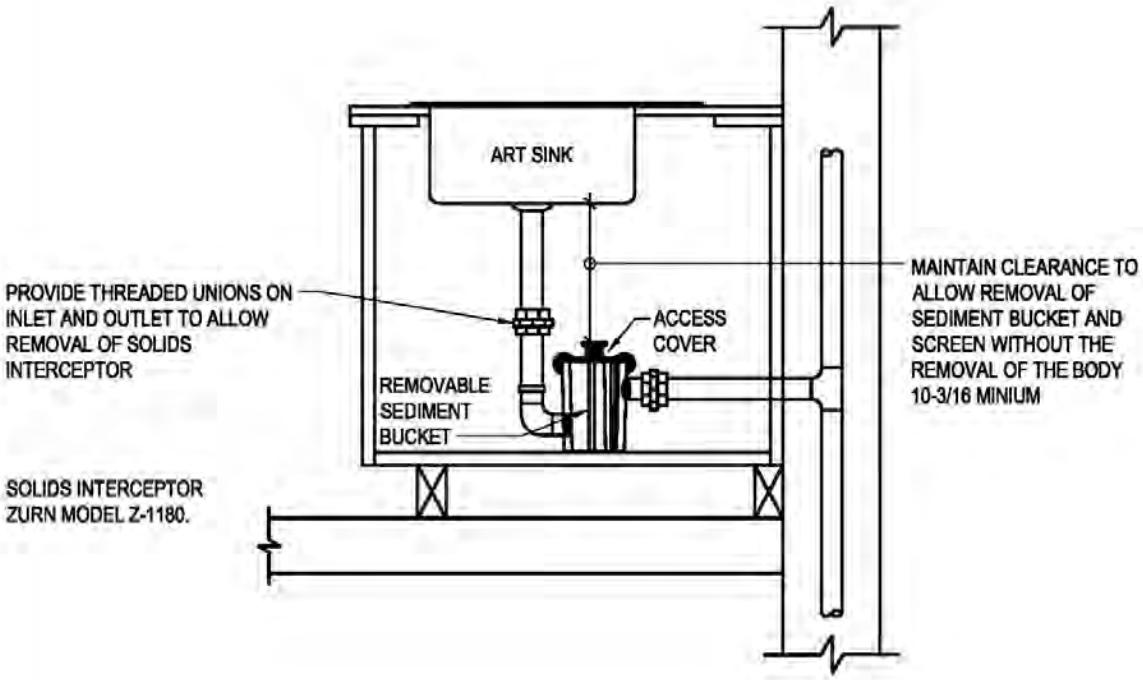
DESIGN STANDARDS		
DEPARTMENT OF CONSTRUCTION SERVICES SCHOOL DISTRICT OF MANATEE COUNTY 1 Matzke Way, Bradenton, FL 34208 T: (941) 708-8770		SK-P3 ISSUED: 7-1-2022



1 SERVICE SINK DETAIL

SCALE: NTS

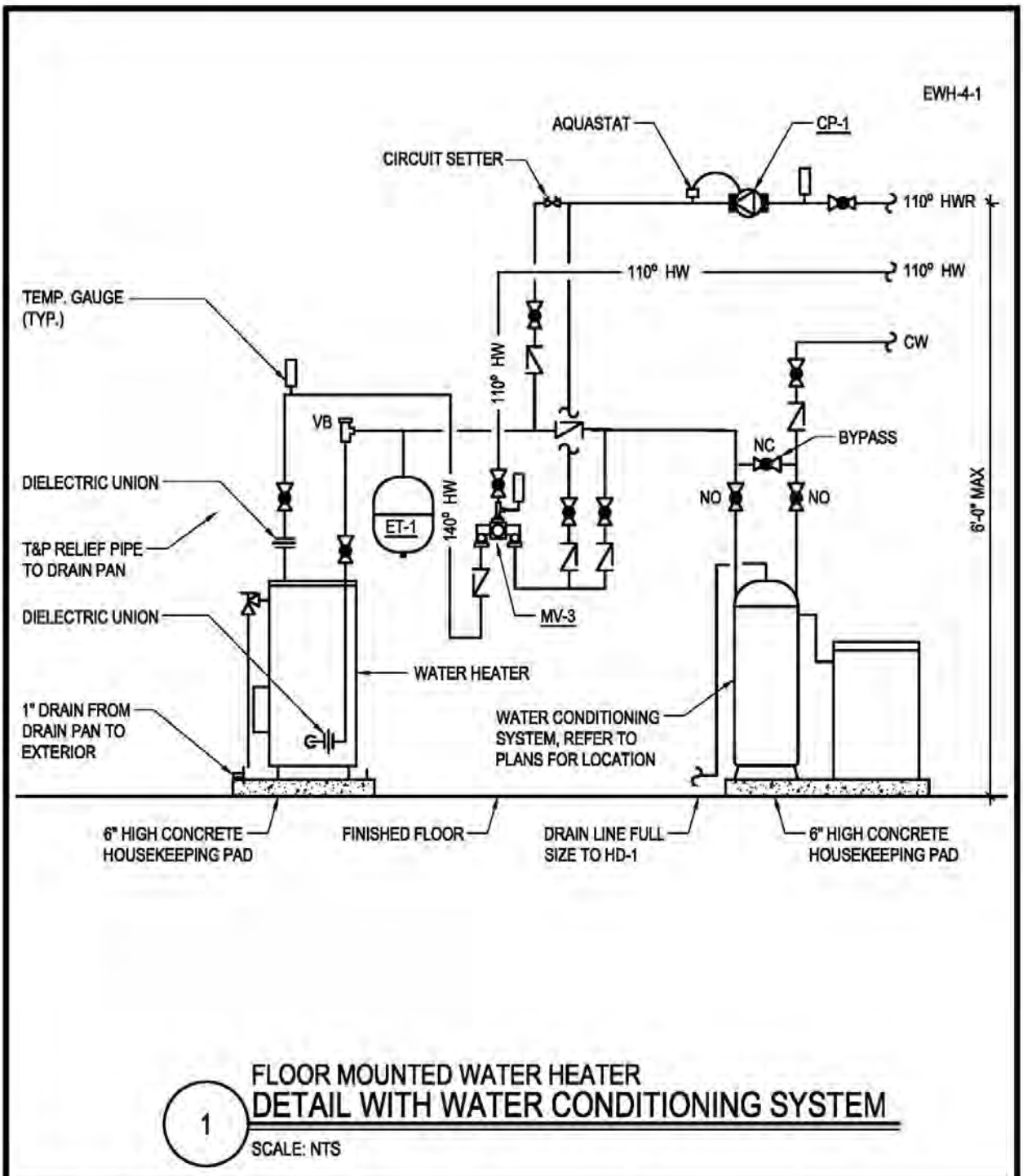
DESIGN STANDARDS		
DEPARTMENT OF CONSTRUCTION SERVICES SCHOOL DISTRICT OF MANATEE COUNTY 1 Matzke Way, Bradenton, FL 34208 T: (941) 708-8770		SK-P4 ISSUED: 7-1-2022



1 SOLIDS INTERCEPTOR DETAIL

SCALE: NTS

DESIGN STANDARDS		
DEPARTMENT OF CONSTRUCTION SERVICES SCHOOL DISTRICT OF MANATEE COUNTY 1 Matzke Way, Bradenton, FL 34208 T: (941) 708-8770		SK-P5 ISSUED: 7-1-2022



1 FLOOR MOUNTED WATER HEATER
DETAIL WITH WATER CONDITIONING SYSTEM

SCALE: NTS

DESIGN STANDARDS		
DEPARTMENT OF CONSTRUCTION SERVICES SCHOOL DISTRICT OF MANATEE COUNTY 1 Matzke Way, Bradenton, FL 34208 T: (941) 708-8770		SK-P6 ISSUED: 7-1-2022

Mechanical Systems

Mechanical Systems are tailored to be project specific. A Predesign Meeting shall be scheduled during Schematic Design to discuss Mechanical System Options with Construction Services and the SDMC Maintenance Department. Life Cycle Cost Analysis shall commence immediately after determinations from this meeting.

When dedicated 100% outside air systems are utilized, the District experienced better results with systems that are configured such that the pre-conditioned outside air is delivered directly to the conditioned space at a room neutral temperature. Systems that introduce pre-conditioned outside air into the return air system of the primary AC unit have not worked as well.

Central Plant:

A Primary/Secondary pumping configuration is shall be provided for the new air-cooled/water cooled chiller plants. This provides the most efficient pumping system and is also the lowest first cost due to the reduced number of pumps. Provide three pumps with one providing redundancy. Chiller specifications shall include a 10-year bumper to bumper parts and labor warranty including refrigerant. A 10-year preventative maintenance program. Make up water to be metered.

Conventional:

Chillers: Air-cooled package chillers. Water-cooled chiller.

Pumps: Frame mounted, end suction optional vertical inline.

De-coupled Air Handler System:

- For Common Areas: Gym, Cafeteria, Auditorium, and Music use, dedicated constant volume air handlers with hydronic heat located in the air handler.
- VAV Air Handlers with VFD for All Areas: Classrooms, Administration, and Media Center use, dedicated variable volume air handlers with pressure independent hydronic heat at the VAV boxes.

Dual-path Air Handler System:

- For Each Space: Gym (2 AHU), Cafeteria, Auditorium. Music, Classrooms, Administration and Media Center, use a single variable air volume air handler with two cooling coils; one coil for outside air and one coil for recirculation air.
- For Common Area: Gym, Cafeteria, Auditorium and Music use, constant volume dual-path air handlers with hydronic heat located in the air handler. For other areas: Classrooms, Administration, and Media Center use, variable volume dual-path air handlers (constant outside air flow and variable recirculation air flow) with pressure independent hydronic heat at the VAV boxes.

Standard Mixed Air VAV:

- VAV Air Handlers with VFD for All Areas: Classrooms, Administration, and Media Center use, dedicated variable volume air handlers with pressure independent hydronic heat at the VAV boxes.

Motorized exhaust fans are to have speed control, use solid state speed control. NO electronically communicated motors (ECM). ECM's are NOT permitted in AHU's, Blower Coils (unless ECM's come with 5-Year replacement warranty). Direct Drive is preferred. Belt driven must be approved in advance if required.

Controls system sensors for Temperature, Relative Humidity and CO2 are to be installed within the conditioned zones in lieu of in the return air duct system.

The number of temperature sensors will be agreed upon during the design. In general, each of the following spaces will be provided with its own temperature sensor: Individual Classrooms, Executive offices, Corner offices, Corridors, Conference rooms, Admin Reception/Lobby, Large assembly areas such as Dining, Gym, Media, and General-purpose offices will group nominally 3 offices per temperature sensor.

Sequence of Operation shall be required to be provided with Design Development Submittal Package for Owner Review.

ASHRAE guidelines state 'acceptable' noise criteria(NC) for classrooms is 25-30. Selection of FPVAVs will be based on NC levels of 25-30

Mini-Split Units: Provide Daikin Mini-Splits as Basis of Design. Mitsubishi mini-splits not preferred. Provide Little Giant in lieu of inline condensate pump (120 volt) or equivalent. Provide appropriate receptacle within 6-feet of pump. Mini-Split units shall be provided at Kitchen Manager, Dry Storage, Plant Manager, Elevator Machine Room, IDF, and MDF rooms. At Middle and High Schools verify rooms that have Uniforms. These rooms must be temperature controlled (i.e. Band, Choral, ROTC, Athletics).

The District prefers redundancy in the chiller sections.

Colling towers shall be Marley Stainless Steel preferred. Evapco alternate. NO fiberglass.

Air-Conditioned Spaces: Corridors and Group Toilet Rooms shall be Air Conditioned.

Non Air-Conditioned Spaces: Stairwells and Receiving Area shall NOT be Air Conditioned.

All Mechanical Systems above **Classroom ceilings** and air movement at registers shall comply with ASHRAE Guidelines for "Acceptable" NC criteria of 25-30 decibels MAXIMUM.

RTU Intakes shall NEVER be placed next to Plumbing Vent Stacks on the Roof.

Housekeeping pads shall extend beyond the face of mechanical equipment located outside where rock is used around the pads. The pad must be wide enough to support a ladder on all sides so that the equipment can be safely maintained.

Test and Balance & Commissioning (Cx)

Pre-Approved T&S & Cx Contractors:

- The Phoenix Agency
- Pro-Tech Diversified
- Southern Independent Testing Agency
- Spec Tech
- TABC Independent Testing Engineers

T&S Contractors shall be hired independently from the Mechanical Contractor through the Construction Manager. Cx Contractors shall be hired independently from the Mechanical Contractor through the Construction Manager.

T&S and Cx Contractors cannot be the same company for the project.

Controls

SDMC disables heating when outside ambient air temp is above 55 degrees (adjustable). SDMC disables cooling when outside ambient air temp is below 65 degrees (adjustable). Maintain humidity to less than 60% (adjustable).
Listed below are the design temperatures for the District:

- Outdoor Cooling Design temperature – 95 degrees.
- Outdoor Heating Design temperature – 35 degrees (Tampa is 39.6°F per ASHRAE)
- Indoor temp in Cooling mode – 74 degrees +/- 2 degrees
- Indoor temp in Heating mode – 70 degrees (8 degree offset from cooling mode).
- Indoor temperature in Cooling mode for Kitchens – 74 degrees +/- 2 degrees

The DDC controls system shall have an adjustable set point to enable the "Dehumidification Mode". The initial set point shall be 60% RH, but shall be user adjustable. He DDC controls system shall have an adjustable set point for the outside air-cooling coil leaving temperature. The initial set point shall be 55 degrees, but shall be user adjustable. The set points shall be reset by the DDC with these point Minimum Discharge Air Temp, Maximum Discharge Air Temp, and Reset Time with all points being user adjustable. In addition to controlling the HVAC equipment, the DDC system shall control the electric water heaters, electric water coolers and some lighting circuits of the project.

Energy Recovery Ventilators are NOT desired by the District due to the increased cost, space requirements and maintenance requirements. The design team will evaluate whether each system is required by Code to have ERVs installed, or whether certain exemptions may be complied with that eliminate the requirement for ERVs.

Chilled Water Control Valves shall be Ball Valve Type. No exceptions.

Pre-Approved Controls Contractors:

- **Reliable**
- **Trane**
- **Daikin is NOT an Approved Controls Contractor**

Cx (Commissioning)

Request current SDMC HVAC & Lighting Systems Commissioning (Cx) specification from Project Coordinator.

The A/E/CM shall be responsible for verifying all light fixtures are reviewed, confirmed to work with specific project requirements, and are current in meeting Code requirements.

Lighting and Electrical Control System

Provide a complete and proper installation of lighting control systems meeting the latest applicable Florida Building Code (FBC) Energy Conservation requirements. All devices and equipment shall be made by a reputable company normally engaged in manufacturing of lighting control equipment not less than five (5) years. The system shall include, but not limited to: material, labor, programming, calibration, training and testing of the system as required to install a complete and fully operational system in accordance with the applicable codes, drawings, and the project specifications. In addition, a functional testing of the control devices shall be performed by the Lighting control devices' manufacturer representative in the presence of the design professional.

The electrical contractor shall provide all required devices and equipment under his/her base contract: switches, dimmers, vacancy sensors, daylight harvesting photodiodes and other peripheral devices and wiring required to complete the system installation per plans, specifications and in compliance with applicable codes.
All control devices and power supplies shall be located above the ceiling directly over the control switches which shall be labeled with associated functions. E.g. First Switch is "teaching wall", Second Switch is "room lighting" and third switch when required is "Daylighting Harvesting".

Control Devices

Install dual technology occupancy sensors in the following spaces:

1. Classrooms
2. Conference rooms
3. Work rooms
4. lounges
5. Dining
6. Media Center
7. Break rooms
8. Private offices
9. Data closets
10. Receiving area
11. other spaces 300 sq. ft. or less that are enclosed by floor to ceiling height partitions

Install Passive infra-red occupancy sensors in the following spaces:

1. Storage rooms
2. Janitorial closets
3. Corridors
4. Gang Bathrooms (no switch)

The Occupancy sensors shall be programmed for vacancy off manual on. Sensors shall automatically turn off all the luminaires in the space with-in 30 minutes of occupants leaving the space.

Switching Devices

- Each classroom shall be provided with 0-10 VDC wireless dimmers. Dimmer switches shall control (1) row of luminaires at the teaching wall, (2) the remaining.
- Conference, workrooms, lounges, dining, media center, breakrooms and office luminaires shall be controlled by a minimum of one switch. In large areas such as dining room and media center with different types of luminaires each like type luminaires shall be grouped to be controlled by one dimmer. Provide 3-way and 4-way dimmers as required.
- Locker rooms or large areas where occupancy sensors may be subject to damage luminaires shall be controlled by the Energy Management System (EMS) via contactors located adjacent to the source electrical panel. Provide an override switch at room entries in order to override the EMS for a maximum of two (2) hours after business hours. The override switches shall be programmed to be disabled during business hours.
- Kitchen luminaires shall be controlled by manual on/off switches with the associated circuit(s) to be controlled by the Energy Management System (EMS) via contactors located adjacent to the source electrical panel. Provide an override switch adjacent to the switches in order to override the EMS for a maximum of two (2) hours after business hours. The override switches shall be programmed to be disabled during business hours. An independent program schedule shall be provided for kitchen luminaires circuits to accommodate for kitchen business hours.
- Electrical and mechanical rooms shall be controlled by manual on/off switches and no occupancy sensors.
- Data closets, receiving area and janitorial closets shall be controlled by manual on/off switches.
- Corridors and lobbies luminaires shall be fully automatic utilizing passive infra-red occupancy.
- Single occupant restrooms luminaires shall be controlled by passive infra-red wall switch.
- Buildings' exteriors and stairs luminaires shall be controlled by the Energy Management System via contactors located adjacent to the source electrical panel. Luminaires shall be wired to emergency life safety circuits and shall turn on upon loss of normal power.
- Parking Lot Luminaires shall be controlled by the Time Clock via contactors located adjacent to the source electrical panel.
- Auditorium main seating area luminaires shall be controlled by the Energy Management System via contactors located adjacent to the source electrical panel. Provide an override switches adjacent to the area switches located at main entries to the area in order to override the EMS for a maximum of two (2) hours after business hours. The override switches shall be programmed to be disabled during business hours.
- Gymnasium playing court area luminaires shall be controlled by the Energy Management System via contactors located adjacent to the source electrical panel. Provide an override switch adjacent to the area switches located at main entries to the area in order to override the EMS for a maximum of two (2) hours after business hours. The override switches shall be programmed to be disabled during business hours.

Power Receptacles (Energy Management Controlled)

Requirement is no longer mandated per the FBC 2020 Edition for 50% of the outlets to be controlled.

Lighting Control Sequence of Operations

Buildings Operating Under Utility Power (Normal Daily Operation)

- The lighting circuits controlled by the energy management system shall be programmed to turn on per district normal schedule.
- Normal lighting is powered and manually controlled by dimmers/switches, as applicable to the room switching type, and overridden by the room vacancy sensor(s).
- The required life safety emergency lighting is powered and manually controlled by dimmers/switches, as applicable to the room switching type, and overridden by the room vacancy sensor(s).
- Exit signs shall remain lighted (unswitched) and powered from emergency power circuit.

Buildings Operating Under Utility power (End of Business Day)

- The lighting circuits controlled by the energy management system shall be programmed to turn off per district normal schedule and allowed to be turned on during off hours by an override switch(s) for a maximum period of 2 hours.
- Normal lighting is powered and manually controlled by dimmers/switches, as applicable to the room switching type, and overridden by the room vacancy sensor(s).
- The required life safety emergency lighting is powered and manually controlled by dimmers/switches, as applicable to the room switching type, and overridden by the room vacancy sensor(s).
- Exit signs shall remain lighted (unswitched) and powered from emergency power circuit.

Buildings Operating Under Emergency Generator Power

- Normal lighting is not powered by loss of utility power.
- Required life safety lighting is powered by the generator and turned on utilizing UL 924 by-pass relays. By-pass relays shall upon loss of normal local power circuit will turn on emergency lights to full power (by-pass the dimming controls).
- Exit signs shall remain lighted (unswitched) and powered from emergency power circuit.

EHPA Buildings Operating Under Utility Power

- The lighting circuits controlled by the energy management system shall be programmed to turn off per district normal schedule and allowed to be turned on during off hours by an override switch(s) for a maximum period of 2 hours.
- Normal lighting is powered and manually controlled by dimmers/switches, as applicable to the room switching type, and overridden by the room vacancy sensor(s).
- The required life safety emergency lighting is powered and manually controlled by dimmers/switches, as applicable to the room switching type, and overridden by the room vacancy sensor(s).
- Exit signs shall remain lighted (unswitched) and powered from emergency power circuit.

EHPA Buildings Operating Under Emergency Generator Power

- The lighting circuits controlled by the energy management system shall be programmed to turn on by an emergency key switch located in the EHPA manager's office and stay on as long as the key switch is in EHPA mode. When key is turned off, the circuits shall resume its normal schedule.
- Normal lighting is not powered by loss of utility power.
- Required life safety lighting is powered by the generator (minimum 10 foot-candle) and turned on utilizing UL 924 by pass Devices.
- EHPA manager's office lighting shall be wired to an emergency generator circuit. In addition, there shall be at least five (5) power receptacles in office, each to a dedicated emergency generator circuit.
- Exit signs shall remain lighted (unswitched) and powered from emergency power circuit.
- Lighting shall be provided with manual lighting controls to be able to reduce light levels to ½ F.C.

THIS CONTROL SEQUENCE SHALL BE PRINTED, FRAMED, AND DISPLAYED IN THE EMERGENCY MANAGERS OFFICE AND THE HEAD CUSTODIAN'S OFFICE.

Approved Electrical Equipment List

The Electrical Equipment listed has been established for consistency between projects and ease of maintenance throughout the District. The A/E/CM shall be responsible for verifying all equipment is reviewed, confirmed to work with specific project requirements, and are current in meeting Code requirements. If there are any changes/conflicts to/with the Equipment List, please submit in writing to your Project Coordinator.

Wiring Devices

Device grade shall be Industrial Specification Grade. Approved Manufacturers: Hubbell, Leviton, Bryant.

Switches

Switches shall be rated for 120/277 volts, 20 amps. Snap switches shall be of the silent type and in compliance with U.L. 20, NEMA WD-1, and tested for compliance with Federal Specification W-S-896E. Switches shall be gray in color. Provide Hubbell switches or approved equal. Unless otherwise noted, install light switches on the strike side of doors. Light switches installed in bathrooms or other areas with ventilation fan interlocked with local light shall be time delay type. Switch shall function as follows:

a. Switch "ON": Light on and fan on instantly.
b. Switch "OFF": Light off instantly, Fan 10-minute delay off.
c. At ESE Classrooms and Group Toilets and Locker Rooms install key switches for lighting control. (No barrel switches)

LED luminaires dimmers and switches. The dimmer shall be compatible with the LED luminaires driver to achieve full range, continuously variable dimming for a range of 10- 100%. The dimmers shall be gray in color. Refer to plans for basis of design dimmer type. The 3 and 4-way switches shall be the same style and be compatible with the dimmers for operation. Motor rated switches shall be size and type to suit application. (Refer to 26-23-00).

Category	Description	Manufacturer	Model #
Switches, Single Pole		Hubbell	CSB120
Switches, Two Pole		Hubbell	CSB220
Switches, Three Pole		Hubbell	CSB320
Switches, Four Way		Hubbell	CSB420
Switches, Time Delay	(2) Position toggle switch. Switch shall be (2) circuit operating on 120 VAC.	NCC	T1517-120
Switches, Group Toilet	Key Lock	Hubbell	
Switches, Locker Room	Key Lock	Hubbell	
Switches, ESE Classrooms and Auxiliary Student Accessible Spaces	Key Lock	Hubbell	

Acceptable manufacturer are: Hubbell, Pass & Seymore, Lutron

Receptacles

Receptacles shall be in strict compliance with NEMA Standards WD-1 and WD-6, UL 498, and Federal Specification: WC 596F. Provide gray color devices for switches and receptacles. Provide red color devices serving emergency generator. Provide blue color devices for receptacles serving data. Install vertically mounted receptacles with ground pin down. Goggle cabinet receptacle shall be located directly above the cabinet.

Category	Description	Manufacturer	Model #
Receptacles, General Duty Duplex	120-volt, 20-amp, gray, extra heavy-duty industrial specification grade, NEMA 5-20R duplex.	Hubbell	HBL5362GY
Receptacles, General Duty Simplex	120-volt, 20-amp, gray, extra heavy-duty industrial specification grade, NEMA 5-20R simplex.	Hubbell	HBL5361-GYU
Receptacles, Water Resistant	120 VAC, 20-amp ground fault circuit interrupter type WR rated with zinc die cast housing.	Hubbell	GFTR20GY
Receptacles, Computer	120-volt, 20 amp, blue, NEMA 5-20R duplex or double duplex.	Hubbell	HBL5352-BL
Receptacles, Generator	120-volt, 20 amp, red, NEMA 5-20R duplex or double duplex.	Hubbell	HBL5352-R

Receptacle Cover plates

Provide one-piece construction, sectional plates are NOT acceptable. Use metal screws to secure plates to devices; screw heads colored to match finish of plates. Cover plates shall be Type 302 satin stainless steel. All wiring devices cover plates for receptacles, lighting switches, etc. shall be permanently etched/engraved with associated circuit number(s) in black stencil lettering and number(s). Special purpose receptacles shall also have stainless steel cover plates. In-Use covers shall be provided in wet locations.

Category	Description	Manufacturer	Model #
Cover and plate, Exterior and/or Damp Locations		Legrand	
Cover plate, Exterior In Use and/or Wet Locations		Legrand	WIUCAST

Boxes

Outlet measurements are made to center of box and may vary 2” to match block joints, or as required by architectural elements. Exterior outlet boxes shall be waterproof and have weather resistant in-use flip lid cover of cast aluminum or stainless steel. Sectional or gangable boxes shall NOT be used. Boxes shall be located so that they can be reached for maintenance. Boxes located above hard ceilings should be avoided. If required, shall have hinged access covers in the ceiling to provide adequate access. Boxes should not be located above equipment that makes access difficult and unsafe for maintenance.

Conduit

Galvanized Rigid Steel (GRS): Shall meet weight and welding requirements of the ASA standards and shall conform to all provisions of UL 6, ANSI C80.1, and WWC 581E. Conduit shall be galvanized by hot dipped or sherardizing process after cutting.

Typical Screw Type EMT fittings are acceptable except where prohibited by code.

Make concrete slab penetrations with metallic conduit. Exception: Under main switch gear can be PVC. Exposed conduit shall be GRS to the first box or panel without transition to EMT. Concealed conduit shall transition to EMT conduit above finished floor. Make roof penetrations with GRS conduit. Exterior conduit lower than 8'-0" above finished grade shall be GRS conduit. Exposed conduit lower than 8'-0" above finished floor in mechanical rooms, machine rooms, or service areas shall be GRS conduit. Any conduit in areas subject to mechanical damage shall be GRS conduit. All conduit in NEC class I or II areas, corrosive environments, or flammable storage areas shall be GRS, with seal-offs. Conduit in areas continuously exposed to moisture shall be GRS conduit. Underground GRS conduits shall be coated with two coats of bituminous paint.

Electrical Metallic Tubing (EMT): Shall meet the dimensions, weight, and welding requirements of the ASA standards and shall conform to all provisions of UL 797, ANSI C80.3, and WWC-563A. E.M.T. materials shall be electro-galvanized.

Poly Vinyl Chloride (PVC) Conduit: Shall be Schedule 40 or 80, Gray, UV stabilized and conform to all provisions of UL 651, NEMA TC-2, and WC-1094A. PVC conduit shall be UL Listed for use in direct burial and concrete.

Acceptable Manufacturers: National Republic, Triangle, Spang, Walker, Wheatland, Pittsburgh Standard, Allied, or approved equal.

Flexible liquid-tight conduit: Shall consist of a moisture and oil proof jacket extruded over a galvanized steel flexible conduit and shall conform to all provisions of UL 360. Not permitted in concealed locations.

Acceptable Manufacturer: Alflex or approved equal.

Flexible non-liquid-tight conduit: Shall be galvanized steel flexible conduit and shall conform to all provisions of UL 350 and WWC-C-566C. Lengths shall not exceed 24-inches. Use only for or equipment requiring flexible connections.

Acceptable manufacturers: Greenfield, Alflex, or pre-approved equal.

Aluminum Flexible: May be used as luminaires whips only. Aluminum Flexible is not acceptable in any other application. Use flexible conduit for fixture connection or for installation in existing walls, length not to exceed 6-0". Use flexible conduit for permanent connection to vibrating or moveable equipment such as; HVAC equipment, motor loads, transformers, kitchen equipment etc. Flexible whips shall not be more than 24" in length.

Use galvanized steel conduit in the following areas:

a. Permanent connections to equipment in kitchens.
b. Connections to equipment in exterior locations.
c. Connections to equipment in areas subject to contamination or moisture (i.e. mechanical and machine rooms, service areas, loading docks etc.
d. Connections from below the ceilings to roof mounted equipment.

Where conduit is exposed, run parallel to or at right angles with lines of the building. Make bends with standard conduit elbows or conduit bent to not less than the same radius. Make bends free from dents and flattening. Where conduits pierce the roof, provide 24-gauge galvanized iron roof jacks. Where steel conduit is installed in direct contact with earth or in slab it shall be coated with (2) coatings of approved Bitumastic paint prior to installation. Engineer must inspect conduit prior to covering. First coat shall be allowed to dry before second coat is applied.

Underground conduit shall be a minimum of 36" below finished grade. Conduit under slab shall be 6" (minimum) below bottom of slab. Underground conduits shall be spaced 2-inches apart.

Concrete Duct Bank:

a. Conduit encased in concrete shall be installed minimum of 18" B.F.G. to top of concrete.
b. Conduit spacing shall be a minimum of 2".
c. Conduit shall be supported with PVC duct bank spacer 6' on center.
d. Reinforce with #4 rebar 2" in from corners.
e. Provide 2" concrete cover between conduit and edge on duct bank.
f. Concrete shall be 2500 PSI.

Exposed conduits and raceways shall be painted to match surrounding conditions with two coats of approved paint.

Empty conduits shall have pull rope installed, capped, and labeled for exact locations.

Where more than two conduits run parallel, contractor shall use Unistrut supports and Unistrut clamps to rack conduits. Unistrut supports shall be rigidly secured to building structure.

Conduit shall not be installed within 12" of hot water or steam pipes.

Conduit interiors shall be clean and dry prior to installation of wire or cables. Minimum conduit size shall be I.A.W. National Electric Code.

Where conduit crosses building expansion joints, expansion fittings shall be used. Where conduit crosses separated building canopies that overlap use LB fittings and short sections of weatherproof flexible conduit or expansion fittings (power only).

Conduit stub ups:

1. Conduit stub-ups shall extend to overhead support structure such as bar joist, and turn out in a 90° elbow. Turn elbow in the direction of wire pull if possible.
2. Empty conduit stub-ups shall have pull string installed with outlet box covered by blank cover plate to match device cover plates.
3. Terminate conduit stub-ups with insulated throat conduit connector.
4. Minimum conduit stub-up size shall be ¾" dia. For general services and 1" diameter for communications outlets.

Metal Surface Raceway:

1. The Electrical Contractor shall provide a complete metal surface mounted raceway system with all associated components only as shown on the plans or specified herein.
2. The Electrical Contractor shall coordinate surface metal raceway routing and mounting with architectural details and existing conditions in order to perform the most aesthetically pleasing installation possible.
3. The Electrical Contractor shall paint the raceway system to the engineer's approval. Consult engineer for the type and color paint.
4. Make connections from conduit system to surface metal raceway systems in areas out of public view, preferably in the ceiling space or through wall connections.
5. Unless otherwise noted or approved, outlet sections shall be punched at the factory, and not drilled or formed in the field.
6. Recessed Surface Metal Raceway systems shall be installed using supporting backboards or other approved materials and methods. The intent is to sufficient mounting surface to support the raceway.
7. Method of attachment:
   a. 700 series: Wiremold V5703 supporting clip 24" on center (Max.).
   b. Use 2" Tap-cons on concrete or CMU walls.
   c. Use Rawl: Poly-toggles, Mollies, or toggle bolts on paneling, wall board, Dry wall or other similar material.

Classified Areas:

1. Conduit in classified areas shall be rigid metal and grounded to the building ground.
2. Wiring in classified areas must conform to applicable articles of the National Electric Code (NEC).
3. Each conduit run leaving a Class I, Division 01 hazardous area must have a seal fitting installed.
4. The seal fitting should be within six inches of the boundary between the hazardous and non-hazardous area. Seal offs should be located in the hazardous area whenever possible. Vertical seal offs are preferred. No union, coupling, box, or fitting in the conduit shall be permitted between sealing fittings and point where the conduit leaves the hazardous location. Seal offs shall be installed following manufactures recommendations.
5. Unless otherwise noted, seal offs shall be EYS type. Acceptable manufactures: Crouse Hinds, Appleton.
6. Sealing compounds shall be approved for the purpose and application and shall not be affected by surrounding conditions.
   Sealing compounds shall not have a melting point of less than 200 degrees.
7. Conduit penetrations thru Fire and Smoke partitions shall be properly installed and sealed by UL Listed materials and Methods.

Conduit Hangers and Supports

Single Conduit: Shall be two-hole steel strap, two-hole steel conduit clamp, or steel conduit hanger. GRS and IMC use pipe straps. Conduit hangers shall use nut and bolt to secure conduit. Push-in clip type conduit hangers are NOT acceptable.

Multiple Conduit: Unistrut trapeze hangers with conduit clamps and threaded rod supports. Bar joist: Use set screw beam clamps. Do NOT drill bar joist.

Conduit throughout the project shall be securely and rigidly supported to the building structure in a neat and workman-like manner, and wherever possible, parallel runs of horizontal conduit shall be grouped together on adjustable trapeze hangers. Support spacing shall not exceed (8) feet.

Conduit Attachment: Conduit shall be supported by two-hole straps, suitable beam clamps, or trapeze conduit hangers with support rod. Arrangements and methods of fastening all conduit shall be subject to Engineer's direction and approval. Galvanized wire or push-in clip type hangers shall not be used to support or secure conduit. Wire or ty-wraps are prohibited for supporting or securing conduit, boxes or equipment.

Single conduit (2) inches and larger run concealed horizontally shall be supported by suitable beam clamps or conduit hangers with support rod.
Multiple runs of conduit shall be grouped together on trapeze hangers where possible. Vertical runs shall be supported by steel riser clamps spaced at (6) feet (minimum).

Conduit (1-1/2) inches and smaller run concealed above ceiling may be supported directly to the building structure with strap hangers support spacing shall not exceed (8) feet.

Manholes and Handholes

Install nylon wall mounted cable racks in interior of boxes. Conduit entering boxes shall be terminated with bell ends.

Handholes: Provide precast handholes formed out of 28-day concrete with a compression 3500 PSI. Handholes shall be provided with traffic rated covers, pulling irons with open bottom and six inches of rock fill. Conduits entering and leaving shall be grouped neatly with adequate space between them and separated by their destinations. Covers shall have beaded weld lettering identifying the system enclosed. Handholes interior dimensions shall not exceed 30"w x 48"l x 36"d.

Manholes: Provide precast manholes formed out of 28-day concrete with a compression 4000 PSI. Handholes shall be provided with traffic rated covers, pulling irons on all four sides, duct terminators, cable racks, ladders, and open bottom. Covers shall have beaded weld or cast lettering identifying the system enclosed.

Quazite fibercrete boxes with same strength as outlined above are acceptable.

Acceptable Manufacturers: Quazite, or equivalent.

Floor Boxes

Flush floor boxes shall be cast iron, watertight, with required brackets and trim. Boxes shall be UL514A and UL514C for scrub water test for carpet and wood floors. Brackets: (2) duplex receptacle brackets, (2) communications brackets per system requirements to accept trackjack data modules.

Category	Description	Manufacturer	Model #
Floor Box, Power & Communications	Four compartment multi-service Cast Iron, flush with floor (carpet or vct). Provide with (2) duplex 20 Amp receptacles and (2) duplex data jacks.	Wiremold	RFB4-CI-1
Floor Box, Trim	Recessed, brushed aluminum, tele/data with trim to match flooring and wire management blocks. (Verify Mfr/Model #)	Wiremold	FPBTCBS
Floor Box, Power Only	Single service, Provide 1, 2, or 3 gang units with 20 Amp duplex receptacle(s) as per application requirements. Provide brass flanges with brass cover plate(s) and cover plate with two (2) screw plug openings.	Wiremold	880SX Box 828SPTC Cover
Poke Thru's		Wiremold	RC4 Series

Conductors

For line voltages, provide 600 V insulated solid copper wire for size #10 and #12 and all other larger sizes shall be stranded copper wire and cable, NEC standard, of types specified below for different applications with UL label, and color coded as required by governmental agencies having jurisdiction. Conductors #6 AWG and larger shall be continuous from overcurrent device to equipment connection. No splices shall be made without prior approval of the engineer.

Time Clocks

Provide 7-day digital time clock with super capacitor to keep time during power outage.

Category	Description	Manufacturer	Model #
Time Clock	Electronic Time Clock	Intermatic	T102(277/208V) T103 (120V)

Lighting Emergency Bi-Pass

Category	Description	Manufacturer	Model #
Emergency Bi-Pass	For LED Luminaires with dimming control	Lutron	LUT-ALCR-D

Grounding

Ground all equipment, including switchboards, transformers, conduit systems, motors, and other apparatus, by conduit and conductor. Use driven ground rods, building steel, metallic water pipe and building footer connections to establish service ground.

Equipment

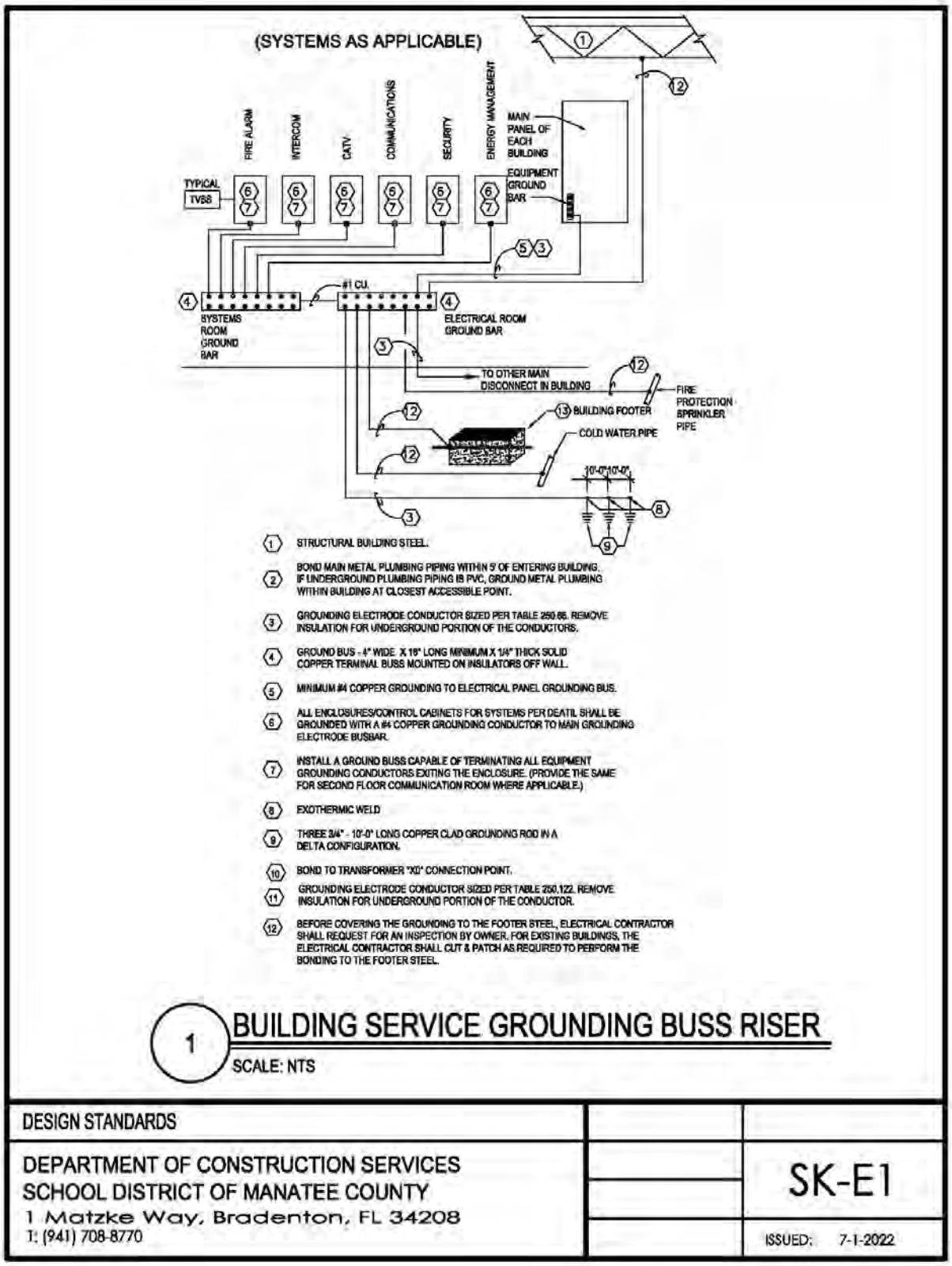
Contractor shall check all equipment to insure they are of the proper voltage to operate on this system and that each motor has a thermal overload protection, properly sized to name plate data.

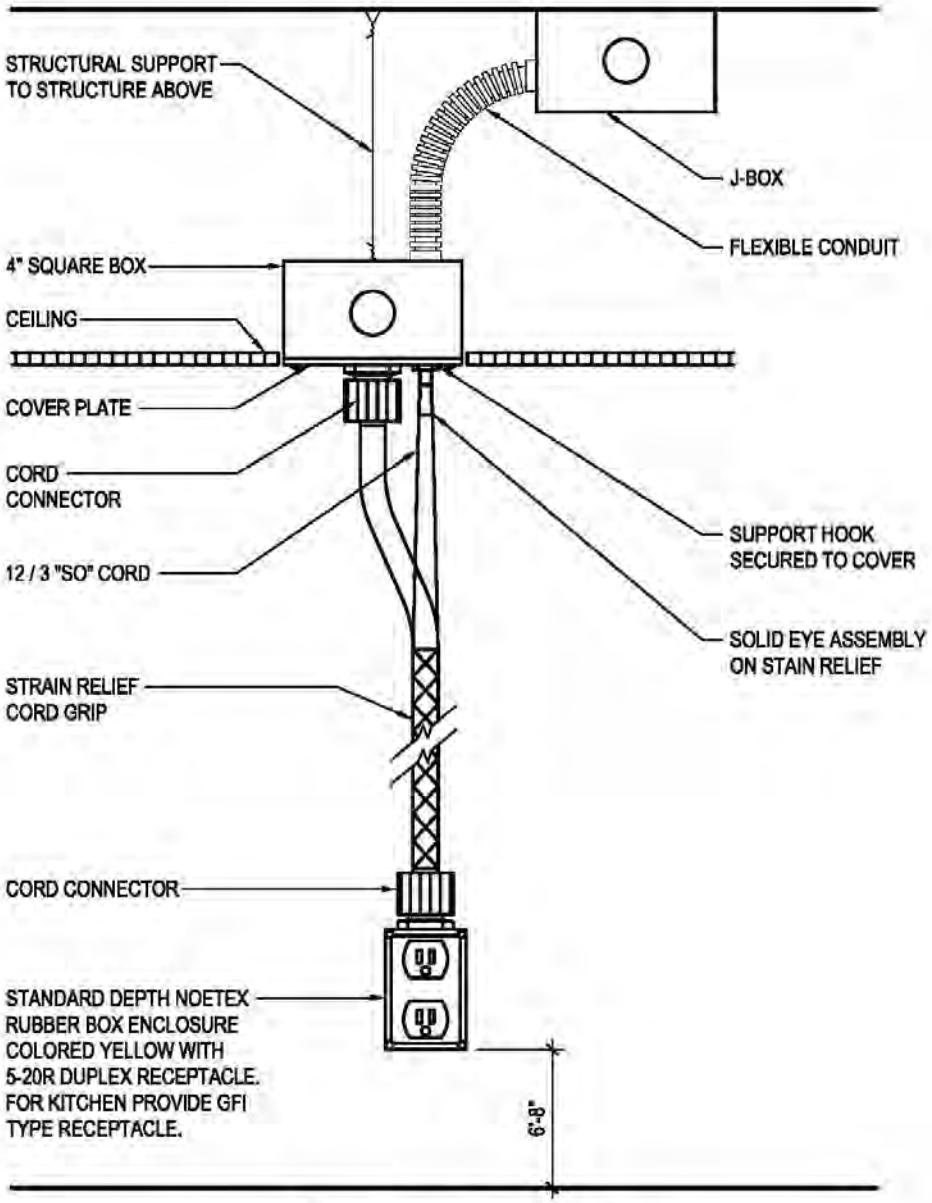
Access to Electrical Work

Provide access panels for concealed junction boxes, ballasts, disconnect switches, or other electrical devices where concealed in areas not otherwise accessible. Avoid concealing wherever possible.

Generator Annunciator Panel

Generator Annunciator Panel Location: Main Office in proximity to Fire Alarm. Provide in EOC Office only if required by code. Wire size for Annunciator Panel must be upgraded to cover voltage drop. EOR to confirm this has been accommodated.

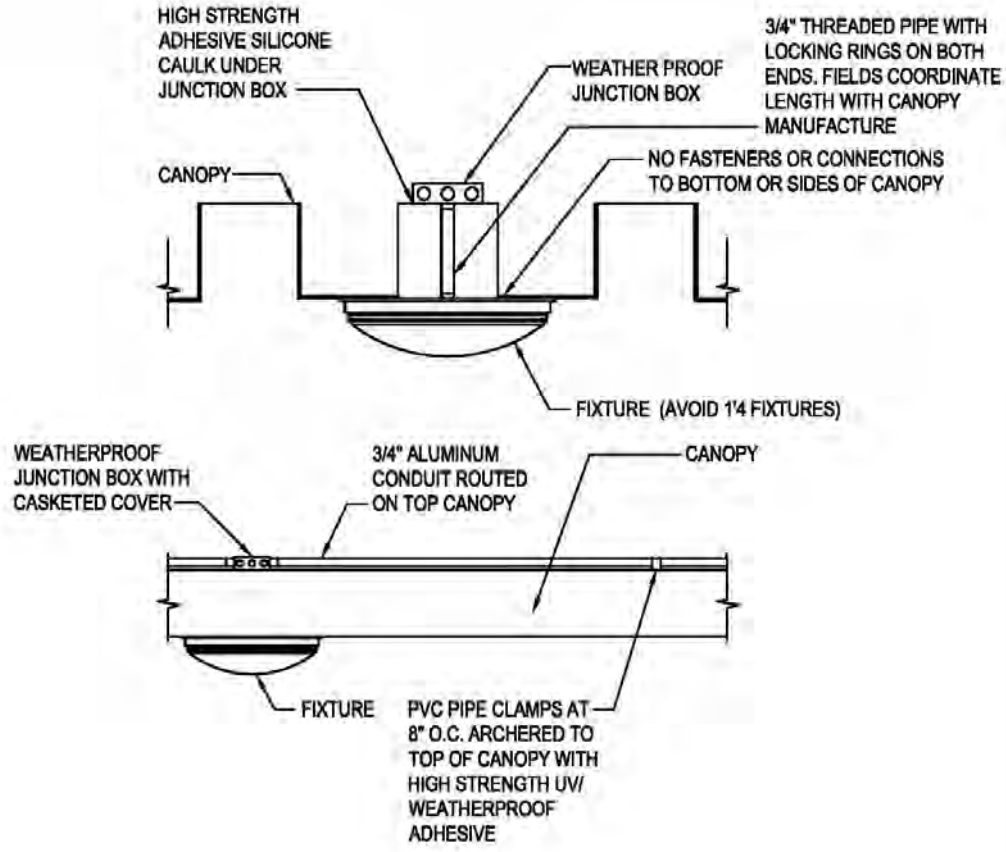

(SYSTEMS AS APPLICABLE)
FIRE ALARM
INTERCOM
CATV
COMMUNICATIONS
SECURITY
ENERGY MANAGEMENT
MAIN PANEL OF EACH BUILDING
EQUIPMENT GROUND BAR
TYPICAL TVSS
#1 CU.
SYSTEMS ROOM GROUND BAR
ELECTRICAL ROOM GROUND BAR
TO OTHER MAIN DISCONNECT IN BUILDING
FIRE PROTECTION SPRINKLER PIPE
BUILDING FOOTER
COLD WATER PIPE
10'-0"
10'-0"
1 STRUCTURAL BUILDING STEEL.
2 BOND MAIN METAL PLUMBING PIPING WITHIN 5' OF ENTERING BUILDING. IF UNDERGROUND PLUMBING PIPING IS PVC, GROUND METAL PLUMBING WITHIN BUILDING AT CLOSEST ACCESSIBLE POINT.
3 GROUNDING ELECTRODE CONDUCTOR SIZED PER TABLE 250.66. REMOVE INSULATION FOR UNDERGROUND PORTION OF THE CONDUCTORS.
4 GROUND BUS - 4" WIDE X 19" LONG MINIMUM X 1/4" THICK SOLID COPPER TERMINAL BUSS MOUNTED ON INSULATORS OFF WALL.
5 MINIMUM #4 COPPER GROUNDING TO ELECTRICAL PANEL GROUNDING BUS.
6 ALL ENCLOSURES/CONTROL CABINETS FOR SYSTEMS PER DEATIL SHALL BE GROUNDED WITH A #4 COPPER GROUNDING CONDUCTOR TO MAIN GROUNDING ELECTRODE BUSBAR.
7 INSTALL A GROUND BUSS CAPABLE OF TERMINATING ALL EQUIPMENT GROUNDING CONDUCTORS EXITING THE ENCLOSURE. (PROVIDE THE SAME FOR SECOND FLOOR COMMUNICATION ROOM WHERE APPLICABLE.)
8 EXOTHERMIC WELD
9 THREE 3/4" - 10'-0" LONG COPPER CLAD GROUNDING ROD IN A DELTA CONFIGURATION.
10 BOND TO TRANSFORMER "X0" CONNECTION POINT.
11 GROUNDING ELECTRODE CONDUCTOR SIZED PER TABLE 250.122. REMOVE INSULATION FOR UNDERGROUND PORTION OF THE CONDUCTOR.
12 BEFORE COVERING THE GROUNDING TO THE FOOTER STEEL, ELECTRICAL CONTRACTOR SHALL REQUEST FOR AN INSPECTION BY OWNER. FOR EXISTING BUILDINGS, THE ELECTRICAL CONTRACTOR SHALL CUT & PATCH AS REQUIRED TO PERFORM THE BONDING TO THE FOOTER STEEL.
1 BUILDING SERVICE GROUNDING BUSS RISER
SCALE: NTS
DESIGN STANDARDS
DEPARTMENT OF CONSTRUCTION SERVICES
SCHOOL DISTRICT OF MANATEE COUNTY
1 Matzke Way, Bradenton, FL 34208
T: (941) 708-8770
SK-E1
ISSUED: 7-1-2022



1 DROP CORD DETAIL

SCALE: NTS

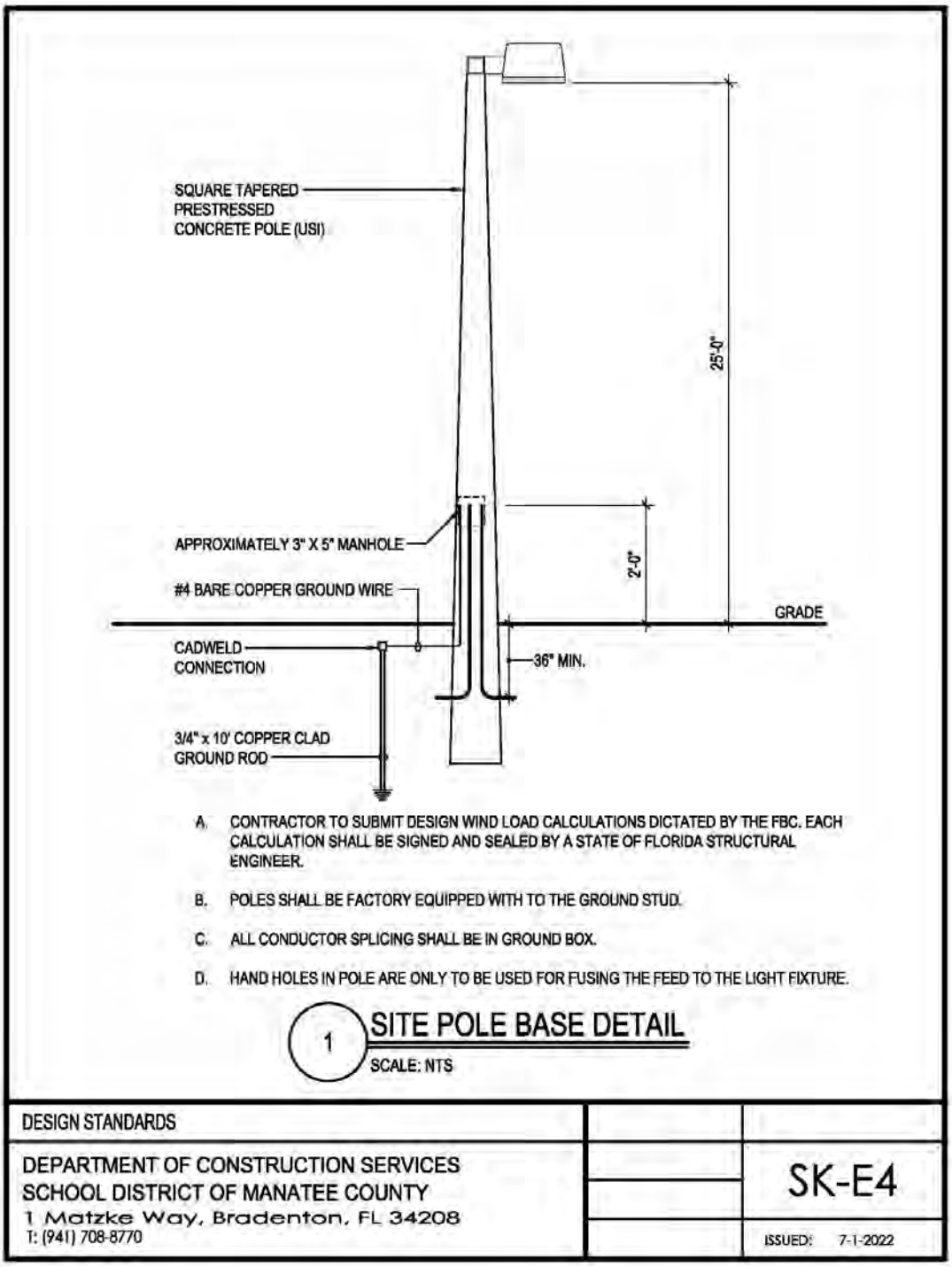
DESIGN STANDARDS		
DEPARTMENT OF CONSTRUCTION SERVICES SCHOOL DISTRICT OF MANATEE COUNTY 1 Matzke Way, Bradenton, FL 34208 T: (941) 708-8770		SK-E2
		ISSUED: 7-1-2022



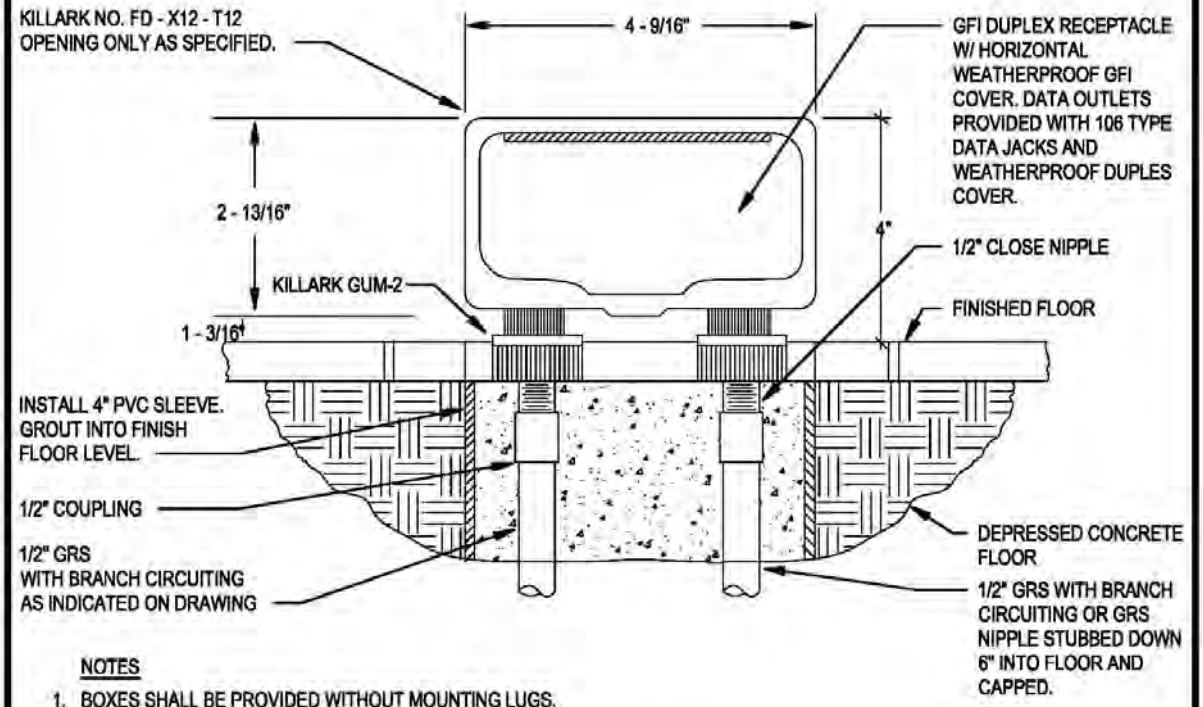
1 CANOPY FIXTURES MOUNTING DETAIL

SCALE: NTS

DESIGN STANDARDS		
DEPARTMENT OF CONSTRUCTION SERVICES SCHOOL DISTRICT OF MANATEE COUNTY 1 Matzke Way, Bradenton, FL 34208 T: (941) 708-8770		SK-E3 ISSUED: 7-1-2022



A. Contractor to Submit Design Wind Load Calculations certifying conformance of pole assembly as dictated by the FBC. Each calculation shall be signed and sealed by a State of Florida Structural Engineer.
B. Poles shall be factory equipped with grounding studs. Equipment grounding conductor shall be bonded to the ground stud.
C. All conductor splicing shall be in ground box.
D. Hand holes in pole are only to be used for fusing the feed to the light fixture.



NOTES

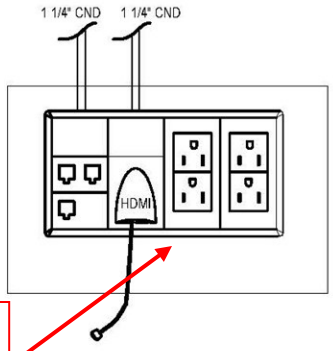
1. BOXES SHALL BE PROVIDED WITHOUT MOUNTING LUGS.
2. ALL BOXES SHALL BE PROVIDED WITH (2) GRS CONDUITS FOR SUPPORT.
3. ALL BOXES SHALL BE MOUNTED HORIZONTALLY WITH A MAXIMUM OVERALL HEIGHT OF 4" ABOVE FINISHED TILE.
4. FOR ALL EQUIPMENT APPLIANCES NOT PROVIDED WITH CORD AND PLUG BUT INDICATED TO BE SO BY OUTLET SPECIFIED, ELECTRICAL CONTRACTOR SHALL INTALL REQUIRED DISCONECTING MEANS WITHIN SITE OF APPLIANCE OR CORD AND PLUG AS REQUIRED, BY N.E.C., TO SERVE AS DISCONNECTING MEANS.
5. FOR EQUIPMENT AND APPLIANCES REQUIRING LARGER CONDUIT FEEDS THAN 1" PIPE, INSTALL TYPE "FD" BOX WITH REQUIRED OPENINGS FOR (2) PIPE SUPPORTS AND REQUIRED KILLARK #GUM UNION FITTINGS, NIPPLE, ETC.

1 PEDESTAL RECEPTACLE MOUNTING DETAIL

SCALE: NTS

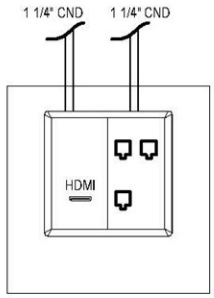
DESIGN STANDARDS		
DEPARTMENT OF CONSTRUCTION SERVICES SCHOOL DISTRICT OF MANATEE COUNTY 1 Matzke Way, Bradenton, FL 34208 T: (941) 708-8770		SK-E5 ISSUED: 7-1-2022

TYPICAL CLASSROOM LAYOUT

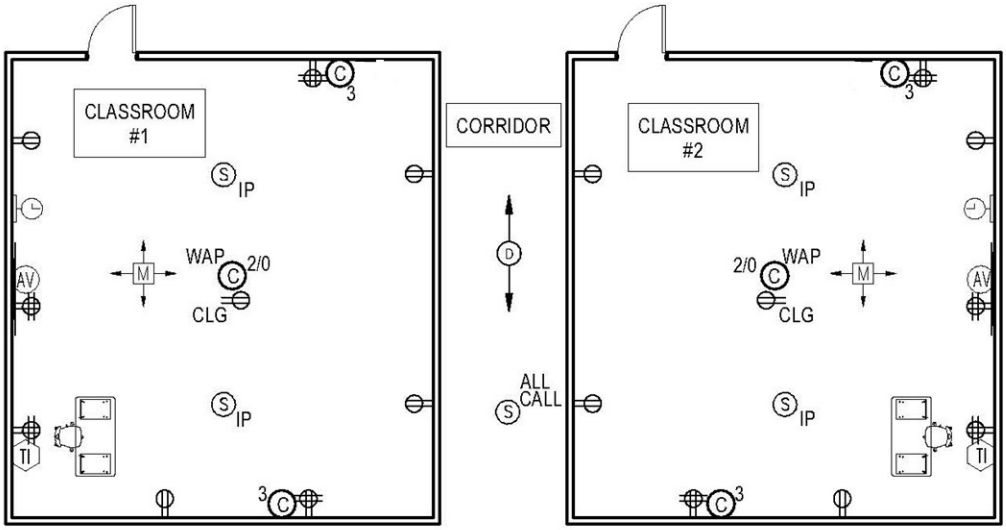


CHIEF WALL BOX
MODEL #PAC526FCW

AV WALL OUTLET BOX DETAIL



TI OUTLET BOX DETAIL



ENTRY DOOR AT FRONT OF CLASSROOM

ENTRY DOOR AT REAR OF CLASSROOM

SYMBOL LEGEND

- MOTION SENSOR
- CAMERA
- WAP DEVICE
- IP SPEAKER
- ANALOG SPEAKER ALL CALL
- DATA OUTLET 3-JACKS
- TEACHER INTERFACE
- QUADRUPLEX RECEPTACLE
- DUPLEX RECEPTACLE
- RECEPTACLE MOUNTED ABOVE CEILING

SDMC Information Technology Department Requirements

From our Infrastructure Support Services (ISS)

The LAN requirements below should be used as a guide for all District projects. A cursory meeting shall be held with the ISS team to review/discuss these requirements to ensure the specification and drawings meet District Criteria.

Contact: Matthew Bauer, Supervisor, Network Support Services (bauer3m@manateeschools.net)
Charles Newsome, Supervisor, Site Support Services (newsome@manateeschools.net)

SDMC General Requirements

The Classroom System may consist of a wall mounted panel, 75" or Greater and Wireless AV receiver. The Wireless AV receiver need will be determined by the IT Department for each classroom. Displays and Wireless AV receiver will be provided by the District (IT Department). District Information Technology will provide equipment list at time of design. The exact configuration will be determined based on the needs of the school.

J-box installed at 86" for elementary and secondary schools. The box is to include 4 power outlets, 3 RJ-45 connections District Information Technology Department will provide equipment list at time of design. The display should be mounted at the appropriate height per grade level requirements.

SCIENCE LABS: District Information Technology Department will provide equipment list at time of design.

MIDDLE / HIGH SCHOOL SCIENCE ROOMS: A science classroom consists of a 75-inch or greater teacher display panel that will mirror to various student learning pods. The main display may have a Wireless AV receiver to the student pods. A typical classroom setup consists of four to six student collaboration stations. A collaboration station contains a 50" display. The District IT Department will provide guidance on the room location/placement of technology infrastructure. District IT Department will provide a current equipment list for the science rooms at time of construction. IT fiber optic HDMI connectivity solution shall be owner provided and contractor installed in all middle/high school science labs. This fiber solution shall require 2-inch stub out conduit to a dedicated outlet in each location from teacher station to each student station. IT fiber optic HDMI solution shall be owner provided and contractor installed. No IT equipment shall be installed within 3 feet of any sinks, showers, or chemical splash zones.

Teacher Station, View B

Located Above Ceiling

Teacher Station, View A

Located Above Ceiling

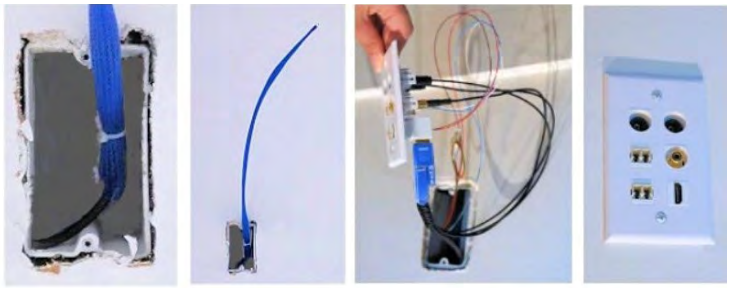
Teacher Station, View C

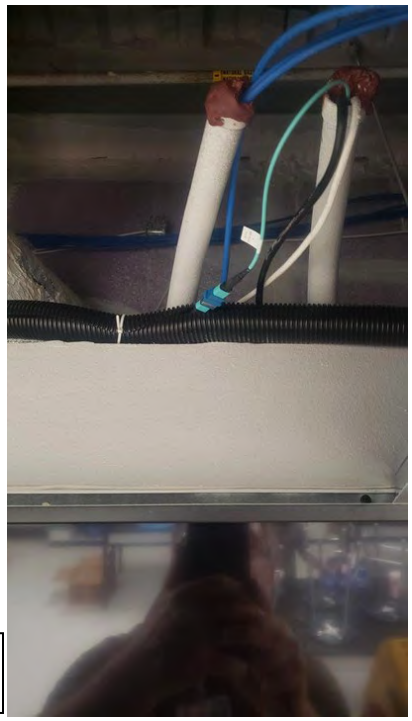
Located Above Ceiling

HDMI Splitter

HDMI Faceplate

Typical Installation Kit





2-inch conduit stub out

LAN System

Furnish and install a complete and properly functioning communication network for data systems to include all cabling and distribution equipment as specified and/or required. The premise distribution system shall adhere to the ANSI/EIA/TIA-568C, 569A, 607A, 758, and 492AAA standards, the latest edition of the BICSI Telecommunications Distribution Methods Manual, and be compliant with the National Electric Code. Category 6A Cabling System shall be compliant with ITA/EIA 568C.2 component and channel requirements. The Contractor shall provide equipment/materials for 25% growth on patch panels and punch down locations.

Multimode fiber optic cables will be used to connect communication closets with each other. All fiber optic cable will be home run from each communication closet to the main distribution frame without splicing or cross-connections. Category 6A UTP cable will be used between the communication closets and the communications station outlets. A single manufacturer's product will be used for all like system components.

Each outlying IDF communication closet will have one pair multimode fiber optic cable for every 48-station cable drops per closet, plus three additional pairs of each type for future growth. The minimum number of multimode pairs per closet will be twelve strands. The cables will be home run to the MDF closet without splices or cross connects and will be rated for the environment in which it is installed.

Warranty

In addition to the Contractor's 1-Year Warranty on all labor and materials, the manufacturer of the horizontal distribution system shall provide a 25-Year System Performance Warranty. If system qualifies for a longer warranty solution, the performance warranty shall be the longest warranty offered. The contractor shall submit and verify all materials and work required to turn over warranty to owner.

The installation of the Horizontal Distribution System shall be in accordance with Manufacturer's specifications as required to satisfy the conditions of the Manufacturer's System Warranty. A qualified representative of the Manufacturer shall inspect the system and provide written certification the system satisfies the conditions of the warranty.

Active Electronics

Network Electronics will be furnished by the Owner and installed and patched by the Contractor. The Contractor shall familiarize themselves with the locations, space requirements, and specific mounting requirements of these electronics. All requirements shall be known before building out the
(MDF/MXC) and (IDF/IXC).

Innerduct

Fiber optic backbone cabling shall be INSTALLED WITH 1" minimum innerduct for protection of fiber strands in shared use pathways. Innerduct shall be corrugated for low coefficient of friction and pre-threaded with a mule tape. Per NEC Article 770 innerduct installed in plenum and riser spaces shall be rated for these spaces. All innerduct not installed in plenum shall be riser rated. For backbone pathways between buildings and underground PE innerduct is permitted. Innerduct couplers shall be uses as required for continuity of duct. Innerduct sealing plugs shall be used on innerduct terminations. ALL 4" distribution conduits shall have (4) 1" innerducts installed for voice/fiber/tv cabling. No other system wiring shall accompany voice/fiber cabling in the designated 4" conduit.

Communication Outlets

Communications outlets shall consist of faceplate, modules, stainless steel mounting screws, and all related mounting hardware. Modules shall be snap in type. Empty ports shall be filled with blank modules.

Communication Patch Panels

The contractor shall provide ETL verified component level Category 6A modular communication patch panels. Patch panels shall be low profile, high density in 24 or 48 port sizes as specified. Patch panels shall be (8) wire, RJ45 modular in front to 110 type connectors on the back. Patch panels shall be rated for operation I.A.W. TIA/EIA B.2-10 Category 6A standards. The patch panels shall have permanent front panel number marking system and removable front panel circuit label tabs. Contractor shall provide rear cable management attach to the patch panel.

Data Racks/Enclosures

Contractor shall supply equipment rack, and all mounting hardware required for mounting patch panels, horizontal and vertical cable management, ground bar, ladder rack, cable radius drop, insulator Kits and surge strip.

Telecommunications cable management racks shall be freestanding type and located in each telecommunications room as drawings indicate. Provide one 4 post server rack in the MDF room. Cable management rack shall be black, 84 inches high with EIA 19-inch-wide mounting rails. Rack shall be secured with proper support at bottom, top, sides, ends and walls so as not to move, shake or wobble. The horizontal cabling transitioning from overhead cable runway shall incorporate waterfalls or cable drop devices for cable protection. Rack shall be complete with 2 top angles for added strength and all racks to use rack base insulator kits. To maintain proper bend radius, ladder rack shall be mounted above rack with cable runway radius drop located above rack vertical cable management section. Rack shall be bonded to ground bar in TR with #4 THHN/THWN. Ladder rack shall be elevated above racks by an elevation kit to aid in transition to vertical cable management.

Owner Provided Configurations

Network routers/switches and other designated network equipment shall be furnished by Owner. Network routers/switches shall be installed and patched by the Contractor. All other equipment, materials, services, hardware, and incidentals required to complete the installation of the system shall be provided by the contractor. Obtain equipment configuration requirements from owner prior to IDF and MDF build outs. The installing contractor shall field coordinate all installation requirements with the owner before beginning construction.

Approved LAN Equipment List

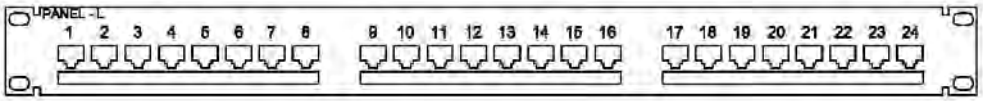
The LAN Equipment listed has been established for consistency between projects and ease of maintenance throughout the District. The A/E/CM shall be responsible for verifying all equipment components are reviewed, confirmed to work with specific project requirements, and are current in meeting Code requirements. If there are any changes/conflicts to/with the Equipment List, please submit in writing to your Project Coordinator.

	Category	Description	Manufacturer	Model #
01	Cabling Unshielded Twisted Pair (UTP), Category 6A	Unshielded Twisted Pair Cable (UTP), Category 6A, 4 pair, 23 AWG, copper cable, non-plenum rated, flame retardant PVC jacket. Cable shall have surface markings "Type CMR, UL Verified, Category 6A".	Belden	
02	Cabling Fiber Optic (FO), Multi Stand	Fiber Optic Cable (FO)Multi Strand, supportable distance 5,000 meters for Gigabit Ethernet transmission at 1300nm. Dry Block, Sunlight Resistant, Indoor/Outdoor.	Belden or Corning (OM4)	
03	Cabling Fiber Optic (FO), Multi-Mode, Multi Stand Outside Plant Fiber	Provide for inter-building backbones: loose tube, gel filled, moisture proof, outside plant, multi-strand, multi-mode fiber optic cable. Provide 50/125 and in quantities indicated on drawing interconnect diagram. Multimode fiber strands shall be optimized for VCSEL based systems. Fiber strands shall exceeded TIA/EIA 568-3.D and IEEE802.3z specifications. All fiber shall be installed with pull strings for future use.	Belden (OM4)	
	Cabling Fiber Optic (FO)Multi-Mode, Multi-Stand, Indoor Plant Fiber	Provide for intra-building backbones: gel-free, inside plant, multistrand, multi-mode fiber optic cable. Provide 50/125 and in quantities indicated on drawing interconnect diagram. Multimode fiber strands shall be optimized for VCSEL based systems. Fiber strands shall exceeded TIA/EIA 568-3.D and IEEE802.3z specifications. All fiber shall be installed with pull strings for future use.	Belden (OM4)	
	Cable Connectors	Fiber Optic, LC Type.	Belden	FX Fusion Splice-On
	Fiber Optic Termination Centers Multi-Mode	Rack mounted fiber interconnect cabinet, code gauge steel, sized for 19-inch rack with EIA hole spacing. Patching/termination compartment separated by steel panel, low profile IU high, LC Type couplers, and cable management.	Belden	OM4 FiberExpress (FX) Enterprise Closet X (ECX) Fiber Patch Panel (include all needed accessories) Fiber and Patch. Quantities are blanks as necessary. 50mm/125µm MM fiber, OM4 Standard FX ECX Frames (6/12 pair LC)
	Innerduct	Fiber optic backbone cabling, 1-inch minimum, corrugated and pre-threaded with a pull tape.	ENDOT	Endocor/RI Endocor/PL Endocor/100
	Patch Cords		Belden	UTP 6A
	Jacks	T568B, white Tilt 12J-45 jacks at 45-degree angle.	Belden	

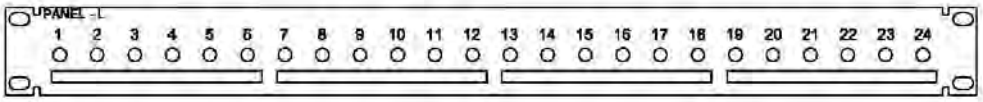
	Faceplate	DataJack Faceplate, single gang, plastic, white.	Bedden KeyConnect Faceplate	AX102660 AX102665 AX102261 AX102249 AX102251
	Patch Panels	ETL verified component level Cat6a modular, low profile, high density in 48 port sizes specified, 8 wire, RJ45 modular in front to 110 type connectors on the back. Rate for per I.A.W. TIA/EIA B.2-10 Category 6a standards. Provide permanent front panel number marking system and removable front panel circuit label tabs. Attached rear cable management to patch panel. T568B Dim/Pair assignment.	Belden	Cat 6A 10GX REVConnect Patch Panel
	Wire Management Horizontal	Horizontal/Vertical wire hanger above and below each patch panel and each stackable hub, minimum of 9 horizontal managers per rack.	Chatsworth	Evolution 35441-702
	Wire Management Vertical	Double sized wire manager along both sides of the rack accessible from front of the rack.	Chatsworth	Evolution g135511-703
	Data Rack (Relay)	EIA 19-inch-wide mounting rails.	Chatsworth	48353-703
	Data Rack (four post)	EIA 19-inch-wide mounting rails	Chatsworth	15251-703
	Data Rack Ladder	Cable runway wall to rack kit, radius drop, for runs larger than 54-inches, with required mounting hardware, and runaway elevation kit and Waterfall supports. Moveable crossmembers where required	Chatsworth	10250-718 10250-712 10506-706 12100-712 12100-718 12115-712 12115-718
	Remote Equipment Cabinet	Install Hubbel RE2 inside each portable next to an electrical outlet	Hubbel	REbox
	Data Cabinet Wall Mounted	Wall mounted cabinet, black with plexiglass door, with horizontal wire management.	Chatsworth	11900-748
	Surge Protector	Rack Mountable AC surge protector with on/off switch and LED indicator, built in circuit breaker, and 10-foot power cord.	RACMAX	RM3400
	Cable Tray	Chatsworth Pemsa Wiremesh Tray / Cablofil Wiremesh		18”W x 4”H
	Cable Jhook	Caddy CAT HP Series CAT32HP/CAT48HP/CAT64HP	Caddy	32/48/64 HP
	UPS	Network Card SMX300LVNC with APC Temperature & Humidity Sensor AP9335TH in the MDF Room. Provide APC Smart-UPS X, Line Interactive, 1500VA, Rack/tower convertible 2U, 120V, 8x5-15R NEMA, SmartConnect port+NMC (SMX1500RM2UCNC) with APC temperature & humidity sensor AP9335TH in all IDF rooms.	APC Smart-UPS	X-3000VA ((MDF) X-1500VA (IDF)
	Grounding Bus Bar		Chatsworth	40153-020 MDF 13622-012 IDF

PATCH PANEL LABELING

UNIQUE PATCH PANEL ID
(A, B, C .....AA, BB, ETC.)



FIBER PANEL LABELING

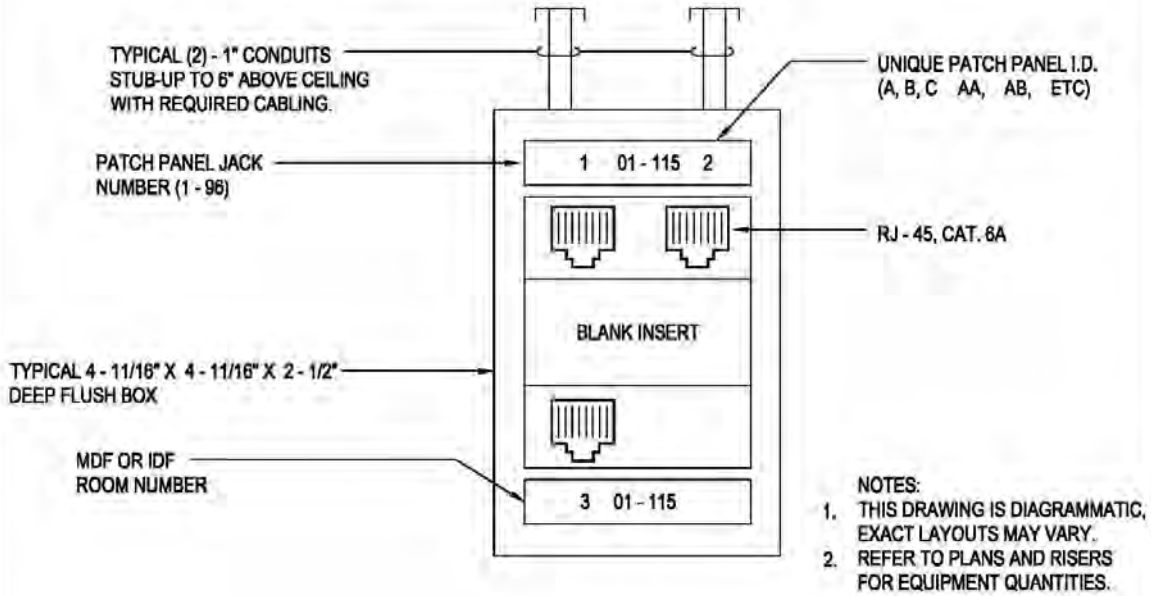


NOTES:
1. THIS DRAWING IS DIAGRAMMATIC, EXACT LAYOUTS MAY VARY
2. REFER TO PLANS AND RISERS FOR EQUIPMENT QUANTITIES

1 TYPICAL PATCH PANEL / FIBER PANEL LABELING CONFIGURATION

SCALE: NTS

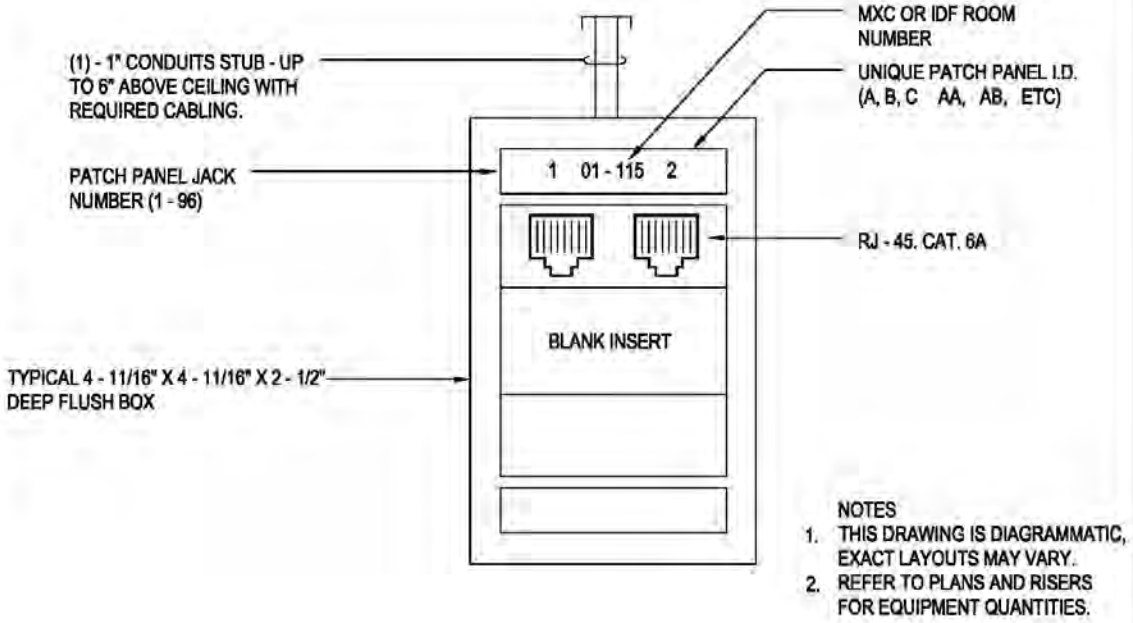
DESIGN STANDARDS		
DEPARTMENT OF CONSTRUCTION SERVICES SCHOOL DISTRICT OF MANATEE COUNTY 1 Matzke Way, Bradenton, FL 34208 T: (941) 708-8770		SK-T1 ISSUED: 7-1-2022



1 TYPICAL PATCH PANEL LABELING CONFIGURATION

SCALE: NTS

DESIGN STANDARDS		
DEPARTMENT OF CONSTRUCTION SERVICES SCHOOL DISTRICT OF MANATEE COUNTY 1 Matzke Way, Bradenton, FL 34208 T: (941) 708-8770		SK-T2 ISSUED: 7-1-2022



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1 TYPICAL PATCH PANEL LABELING CONFIGURATION

SCALE: NTS

DESIGN STANDARDS		
DEPARTMENT OF CONSTRUCTION SERVICES SCHOOL DISTRICT OF MANATEE COUNTY 1 Matzke Way, Bradenton, FL 34208 T: (941) 708-8770		SK-T3 ISSUED: 7-1-2022

SDMC Low Voltage Electronics Requirements

The Low Voltage Systems requirements below should be used a guide for our District for your project. If at any time you have any questions in regard to these Systems, please don't hesitate to call. We look forward to working with you.

CONTACT: SDMC Construction Services Project Manager

Public Address System

"All-call" feature shall connect the all-call sound signal simultaneously to all zones regardless of zone or channel switch settings. Telephone SIP trunk shall allow paging by dialing from any local telephone instrument and speaking into the telephone. Produce a program-signal tone that is amplified and sounded over all speakers, overriding signals currently being distributed. Reproduce high-quality sound that is free of noise and distortion at all loudspeakers at all times during equipment operation including standby mode with inputs off; output free of non-uniform coverage of amplified sound. Coordinate component features to form an integrated system. Match components and interconnections for optimum performance of specified functions. Comply with UL 813. Equipment shall be modular, using solid-state components, and fully rated for continuous duty unless otherwise indicated. Select equipment for normal operation on input power usually supplied at 110 to 130 V, 60 Hz. Where rack, cabinet, or console mounting is indicated, equipment shall be designed to mount in a 19-inch (483-mm) housing complying with TIA/EIA-310-D. Design engineer shall consult with SDMC IT ISS for current Public Address equipment model numbers and installation locations.

Approved Public Address Paging System Equipment

Category	Description	Manufacturer	Model #
System Controller			
Analog Station Bridge			
Matrix Mixer			
2-channel Amplifier (60,120,300W)			
Admin phone			
Classroom IP Speaker			
Portable Classroom IP Speaker			
Analog Interior Speaker			
Weatherproof Speakers			
Exterior Horn (15,30W)			
Analog Speaker Cable			
Cabling Unshielded Twisted Pair (UTP), Category 6A For IP speaker installation			

VoIP Phone System

Each VoIP phone shall require a dedicated data jack in new construction applications. All VoIP phones shall receive power using PoE from the network switchport. VoIP phones will not use a stand-alone power supply. The survivability gateway shall be installed in the MDF network rack. Offices, classrooms, and workspaces (non-storage areas) shall require a VoIP phone. All VoIP equipment shall require a Cat6A cable or greater. Design engineer shall consult with SDMC IT ISS for current VoIP phone system equipment model numbers.

Approved VoIP Phone System Equipment

Category	Description	Manufacturer	Model #
Gateway (High School, Admin Bldg)	Survivability LSG	FortiNet	FVE-500F
Gateway (Middle, Elementary School)	Survivability LSG	FortiNet	FVE-200F8
Classroom Phone	Teachers, Support Staff	FortiNet	FON-380
Admin Phone	Front Office Staff	FortiNet	FON-570
Receptionist Phone	Operator Staff	FortiNet	FON-575
Conference Phone	Large Conference Rooms	FortiNet	FON-C71
Cordless Phone	Base and Handset	FortiNet	FON-D71-B, FON-D71-H
Exterior Door Intercom	SIP device (Public entrance)	Algo	Algo 8201 IP PoE Intercom
ATA Device	Analog telephone adapter (fax/elevator)	Grand Stream	HT802

Master Clock System Requirements

Master Clock System

Furnish and install new wireless clock system as specified and shown on drawings. Provide wire, conduit, upgrades, and miscellaneous materials required to connect to the new main head equipment Sapling Master Clock & Signal Control System to be located on drawings.

A factory representative of the master clock system manufacturer shall visit the site and ensure all devices specified and submitted are compatible with the system. Submittal shall be signed by the factory representative insuring such an inspection has been performed.

Wireless master clock system shall be a synchronous, wireless clock system with programming to provide scheduled program signals throughout the school, shall be capable of automatic daylight savings time and leap year correction. The wireless master clock shall have password security protection.

Approved Master Clock System Equipment

Category	Description	Manufacturer	Model #
Main Head End	Master Clock & Signal System control.	Sapling/BOGEN	SMA 3000/BCMA 30000
Clocks	Classrooms, Main Office, Cafeteria, Media Center, Principal Office, Asst. Principal Office, Gymnasium, Auditorium	Sapling/BOGEN	SAL Series Wireless Clock with 915-928 MHz frequency hopping technology/ BCAL Series Wireless 900MHz Round Clock
Repeaters	Provide as required per installation	Sapling Network Repeater/ BOGEN Network Repeater	SMA 1000 Wireless Repeater/ BCMA-1SR Wireless Repeater V2
Battery	Included with clock – new at time of install	N/A	D Cell Batteries
Clock Guards	Provide in gymnasium if applicable	-	-

Approved Audio and Visual System Equipment List

The A/V equipment listed has been established for consistency between projects and ease of maintenance throughout the district. The A/E/CM shall be responsible for verifying all equipment components are reviewed, confirmed to work with specific project requirements, and are current in meeting Code requirements. If there are any changes/conflicts to/with the Equipment List, please submit it in writing to your Project Coordinator.

See below example for a typical Cafeteria A/V system equipment list. Architect/Engineer of Record shall coordinate this equipment list with District Information Technology Department to verify that the part numbers are up to date and represent the district's current requirements at the time of design.

Category	Description	Manufacturer	Model #
Ceiling Speaker	JBL Ceiling speaker with 8" driver. (Typical of 4)	JBL	LCT 81C/T
Digital Wireless Handheld	Dual-Channel Digital Wireless Handheld Microphone System	Shure	SLXD24D/SMG58-
Digital Wireless Bodypack	Dual-Channel Digital Wireless Bodypack System with No	Shure	SLXD14D-G58
Cardioid Lavalier	Low-profile Cardioid Lavalier Microphone. (Typical of 2)	Shure	WL185
Bluetooth Audio Adapter	Logitech Bluetooth Audio Adapter	Logitech	980-000910
Rack Shelf/Drawer	Reversible Sliding 1 RU Rack Shelf/Drawer (Black)	Lowell	RSD-116
Rack Drawer	3 RU Lockable Rack Drawer	Gator	GRW-DRW3
Power Conditioner	9-Outlet Power Conditioner	Furman	M-8DX
Feedback Suppression Processor	Dual-Channel Advanced Feedback Suppression Processor	DBX	DBXAFS2-V
Column Loudspeaker	Line Array Column Loudspeaker (White) (Typical of 2)	JBL	CBT 70J-1-WH
Mixer	16-Channel 4-Bus Compact Mixer	Mackie	1604-VLZ4
Bracket Set	RotoPod Bracket Set	Mackie	9005090
Portable PA Loudspeakers	Dual Thump212 Kit with Speaker Covers, Tripod Stands, Stand Bag, and XLR Cables	Mackie	MATHUMP212DK
Speaker Tote Bag Kit	Universal Speaker Tote Bag Kit for 12" Speakers (2-Pack) (Typical of 2)	Gator	GPA-TOTE12
Speaker Stands	Deluxe Lightweight Height-Adjustable Aluminum Speaker Stands with Tripod Base and Carrying Case	Auray	SS-47A-PB
Microphone Cable	XLR Male to XLR Female Microphone Cable (25', Black) (Typical of 2)	Kopul	M3025
Microphone Cable	XLR Male to XLR Female Microphone Cable (15', Black) (Typical of 2)	Kopul	M3015

Microphone Cable	XLR Male to XLR Female Microphone Cable (10', Red)	Kopul	M3010-RD
Microphone Cable	XLR Male to XLR Female Microphone Cable (10', Yellow)	Kopul	M3010-Y
Microphone Cable	XLR Male to XLR Female Microphone Cable (10', Green)	Kopul	M3010-GR
Microphone Cable	XLR Male to XLR Female Microphone Cable (10', Blue)	Kopul	M3010-BL
Microphone Cable	XLR Male to XLR Female Microphone Cable (10', Violet)	Kopul	M3010-V
Microphone Cable	XLR Male to XLR Female Microphone Cable (10', White)	Kopul	M3010-W
Microphone Cable	XLR Male to XLR Female Microphone Cable (10', Orange)	Kopul	M3010-O
Microphone Cable	XLR Male to XLR Female Microphone Cable (6', Black) (Typical of 4)	Kopul	M3006
Microphone Cable	XLR Male to XLR Female Microphone Cable (100', Black)	Kopul	M2100
Microphone Cable	XLR Male to XLR Female Microphone Cable (50', Black) (Typical of 8)	Kopul	M2050
Microphone Cable	XLR Male to XLR Female Microphone Cable (25', Black)	Kopul	M2025
Microphone Cable	XLR Male to XLR Female Microphone Cable (15', Black) (Typical of 3)	Kopul	M2015
Microphone Cable	XLR Male to XLR Female Microphone Cable (10', Black) (Typical of 3)	Kopul	M2010
Touch Fastener Straps	0.5 x 6" Touch Fastener Straps (Black, 10-Pack) (Typical of 2)	Pearstone	S0506-10-B
Dual 1/4" to RCA Audio Interconnect Cable	Two 1/4" Phone Male to Two RCA Male Unbalanced Cable (Molded Plugs) - 6.6'	Hosa	CPR-202
Gooseneck Microphone	12" Cardioid Gooseneck Microphone (Typical of 3)	Shure	MX412/C
VP Boom Stand & Cable	VP Boom Stand & Cable (3-Pack)	Samson	SABL3VP
Microphone Clip	Microphone Clip (Typical of 4)	Shure	A57F
Vocal Microphone	Vocal Microphone with On/Off Switch (Typical of 2)	Shure	SM58S
Male to Dual 1/4" Male Audio Cable	3.5mm Male to Dual 1/4" Male Audio Cable (6')	D'Addario	PW-MPTS-06
Screws & Washers	10-32 3/4" Philips Truss-Head Screws & Washers 25 Pieces (Black)	Middle Atlantic	HPS
Combo Rack Case	Flight Zone ATA DLX Combo Rack Case (Black and Chrome)	Odyssey	FZ1316WDLX
DSP Power Amplifier	FIR Drive Power Amplifier 1300W	Dynacord	C1300FDI-US

Access Control System Requirements

Access Control System

Provide a complete electronic access control system by Identicard Premisys System Electronic Access Control System inclusive of cables, connectors, hardware, and materials required for a complete and workable access control system. Work includes the furnishing and installation of all equipment, materials, labor, and tools required for system installation, and a final terminations and system commissioning performed by a factory certified technician. Access Control System shall be fully coordinated with Door Hardware components furnished under Section 087100 "Finish Hardware". Locate workstation as directed by Project Coordinator. Program the entire access control system and instruct the Owner how to use the Client Workstation. The Access Control System will be directly connected to the District Server in lieu of the Maintenance Server. All badges/cards will be issued by the District Office.

Access Control Card Readers

Provide Identicard Premisys System with PC-based Access Control and monitoring software.

Provide Access Control at PLACE Schools. Verify location with Project Coordinator which door shall receive this Card Reader. PLACE Keypad only shall be HID Corporation Model #GPROX-H2XXXX.

Provide Access Control at school elevator (all floors).

System Software and Server Software Base Package

- Transaction and Alarm monitoring / routing
- Cardholder management (includes special access needs)
- Unlimited card holder capacity
- Unlimited card reader capacity
- Unlimited alarm capacity
- Unlimited operator capacity
- Manage online and off-line locks/readers
- Portrait Capture and card production (printers not included)
- Video and Camera control via Vanderbilt NVR & DVR's (not included) Guest Pass management and badge creation (printer not included) Complete Auditing/Reporting capabilities.
- Auto scheduling of predefined reports
- Enrollment reader capable.
- System will be networked to an existing, district-wide server.

System Hardware

Reader Controller: Reader Controller models PREM-CTLR2RDR IP Controller with two reader ports as manufactured by Identicard Premisys System.

The reader controllers shall be independently programmed, intelligent devices, which shall be able to make decisions and store transactions at the local level. The system shall provide reader controllers for one read head and up to 16 reader capacity, and field configurable by standard system software. Capable of being full networked into (TCP/IP LAN/WAN) network connectivity. Downstream, communication shall be through RS-485. Enclosure to be PREM-ENCLS large enclosure with lock and tamper.

Downstream communication via RS-485 connects directly to the following devices:

a. Expansion board
b. Card readers

Downstream communication via RS-485 with option for RS-232 and connects directly to the following devices:

a. One reader.

Expansion Board: Expansion Board Model PREM-BRD2RDR as manufactured by Identicard Premisys System. Each expansion board shall have eight (8) input points and six output relays and communicates to any Identicard Premisys

controller and up to two card readers. SRC via RS485 protocol. The board shall be equipped with eight (8) supervised or unsupervised contact inputs and six (6) form "C" SP/DT relay outputs.

Power Supplies

AL1012ULACMCB as manufactured by Altronix.

1. Eight (8) independently controlled Fail-Safe and/or Fail-Secure power outputs
2. Class 2 Rated power-limited PTC Protected Outputs (auto-resettable) –
3. Eight (8) auxiliary power outputs (unswitched) –
4. Output PTCs are rated @ 2.5A –
5. Filtered and electronically regulated outputs –
6. Supervision: - AC Fail - Battery Fail and Battery Presence –
7. Fire Alarm disconnect (latching or non-latching) is individually selectable for any or all of the eight (8) outputs Alarm output relay indicates that FACP input is triggered –
8. Fire Alarm disconnect input options: a) Normally open (NO) or normally closed (NC) dry contact input b) Polarity reversal input from FACP signaling circuit
9. Built-in charger for sealed lead acid or gel type batteries –
10. Instantaneous transfer to stand-by batteries - UL
11. Listed in the U.S. and Canada –
12. Lifetime Warranty

Door Hardware

Magnetic lock: Securitron M62

Approved Access Control System Equipment

Category	Description	Manufacturer	Model #
Access Control System		Identicard Premisys System	
Server Software	MS Window Server 2008 R2 Operating System,	Microsoft	
Enclosure	Large enclosure with lock and tamper		PREM-ENCLG
Reader Controller		Identicard Premisys System	PREM-CTLR2RDR
Expansion	Reader expansion board	Identicard Premisys System	PREM-BRD2RDR
Card readers		Identicard Premisys	HID Proximity
Cards	Provide 100 cards for Elementary Schools, Middle Schools, and Ancillary Sites. Provide 200 cards for High Schools.	Identicard Premisys	GPROX-H@2XXXX
Power Supply		Altronix	AL1012ULACMCB
Cable	18 AWG 4 Conductor Bare Copper, Shielded Plenum	Smartwire	4422344
Cable	18 AWG 2 Conductor Bare Copper, Shielded Plenum	Smartwire	4422320
Cable	22 AWG 2 Pair Bare Copper, Shielded Plenum	Smartwire	4150105
Magnetic Lock		Securitron	M62
Request to Exit Motion Sensor		Visonic	DA5
Request to Exit Push Button	Provide with 30 second timer No Touch Stainless Steel IR Switch	STI	NT-SS101-EN EXIT

Security System Requirements

Control Panel

Provide eight fully programmable hardwired zones with expansion capabilities up to (128) hardwired zones. Provide expander module where additional zones are required. Panel shall have the capacity to add an additional (30) wireless zones. Provide separate zone inputs for normally closed contacts. Provide security control panel(s) as shown on plans. Security system shall be designed with one zone per device. Network IP communicator and program the panel for a complete and operable system.

Terminal Cabinet

Provide flush mount terminal cabinet with 1"x 1" wire minders similar to Ty-Duct "E" series and painted (white) ½" thick plywood backboard spanning the entire back plane of the cabinet. Provide cabinet below control panel. Mount power outlet and phone jack in bottom of terminal cabinet. Mount a keypad in each building.

Cable

System device wire shall be 4 conductor 16 gauge, stranded, unshielded cabling. For exterior cable utilize West Penn #AQC245 or approved equal. For interior cable utilize West Penn #245 or approved equal. Phone cable shall be category 3 (4) pair 24-gauge UTP, CMR rated. Data cable shall be category Cat. 6A cable.

Motion Detectors & Door Contacts

Motion detectors shall provide uniform detection capability throughout pattern, with optimum field of view for man-sized targets. Dynamic Data Discrimination Signal processing shall be used to reduce the likelihood of false alarms caused by events such as rapid temperature change in a fixed object. An LED on the sensor shall indicate when it is in alarm condition. Field coordinate device selection, with mounting requirements, device location, and owner. Provide all required accessories and mounting hardware.

Motion detectors shall be located at entrances and exits of the Administration Suite, Media, Kitchen, Multi-Purpose Room, Receiving, Computer Labs, and any other high dollar areas of concern throughout the school that have direct exterior access to a specific room.

Programming

Security panel shall be fully programmed by the security system contractor for up to thirty (30) users names. Users names and code numbers will be provided by owner. Program each device at to visually indicate via the control panel and the remote key pad(s) LCD display the zone number, room number and name of room. Where a room contains more than one device indicate location of each device such as west, south etc. Partition the key pads to control the group of devices in the associated building or area. Example, key pad in the kitchen area to control the devices of the kitchen and the dining room.

Security Keypads

Security Keypad Locations: Main Office near main entry doors, Kitchen by back exterior entry door, Plant Manager entry door if not located adjacent to Kitchen, Gym (project specific location TBD), Multi-Purpose Dining (project specific location TBD), and Classroom Building (project specific location TBD).

Approved Security System Equipment

Category	Description	Manufacturer	Model #
Security Control Panel		Napco	Napco 255 Panel
Security Keypads	(3) Numerical LCD Security Keypads. (1) at Admin Entry, (1) at Kitchen backdoor, and (1) at Plant Manager Receiving.	Napco	IBR-Touch
IP Communicator		StarLink Ceel	SLE-LTEV-C
Battery	NP7 12V/7AH battery	Yuasa	NP7-12
Dialer Surge Protector		DITECK	DTK
Zone Expander		Napco	GEM-EZM8
Power Supply	(4) power supplies with Nema 5-20 plug and 6-foot 12/3 SJT cord.	Altronix	SMP-5PMCTX
Phone Lines	4-pair in conduit to phone board for remote monitoring.		
Phone Line Cords	(2) phone line cords.		
Data Cable	(1) data cable.		
Phone Jack	(1) RJ31X phone jack.		
Cable, System Exterior	System device wire shall be 4 conductor 16 gauge, stranded, unshielded cabling.	West Penn	AQ245
Cable, System Interior	System device wire shall be 4 conductor 16 gauge, stranded, unshielded cabling.	West Penn	245
Cable, Phone	Category 6A.	Same type as LAN	Same type as LAN
Cable, Data	Category 6A.	Same type as LAN	Same type as LAN
Motion Detectors (Ceiling)	Provide with ceiling mount bracket	Bosch	DS9370/DS9371
Motion Detectors (Wall)	Provide with wall mounted bracket	iWISE	RK815DTGL
Door Contacts		GRI	8080 3/4”
Alarm Horns / Strobes	One for each building. Provide stainless steel enclosures and tamper switches	ELK	Horns: ELK-150RT or approved equal Strobes: ELK-150RT blue strobe or approved equal
Temperature Sensors	Cooler, freezer, and boiler room (if applicable)	Windland Electronics	Display: EnviroAlert EA200-12 Probe: #1107

Video Surveillance System Requirements

From our Network Design Analyst

The Video Surveillance System requirements below should be used a guide for our District for your project. A cursory meeting should be held with our Department to review/discuss these requirements to ensure the specification and drawings meet District Criteria. If at any time you have any questions, please don't hesitate to call. We look forward to working with you.

Project Director shall communicate with District Security Department and District IT.

Video Surveillance System

Provide video surveillance system consisting of cameras, data transmission wiring, and a control station with its associated equipment. Provide a 48 port 6A Patch Panel for camera cabling Termination in each Telecom Room. Provide a wall mounted Data surface box and Tracjack for all Exterior Camera locations, located within 12-inches of the Thru-wall sleeve on the inside wall. Terminate 6A cabling to this jack. Provide a T-grid Mount (Caddy ATA41) and Data Box (Ortronics OR-404TJ2) with Trackjack at all ceiling mounted locations, mounted to T-grid. Terminate 6A cabling to this jack.

Data Patch Cable for each camera will be Contractor Supplied, Contractor Installed.

All NVR's for the project shall be Contractor furnished and installed, however each NVR shall be given to Owner's Representative before installation for initial programming and configuration. NVR will be returned to contractor for Installation at the school.

Parking Lot cameras are NOT preferred. Where possible bracket mount cameras to the buildings and use long range camera.

Security Camera Testing

Prior to Final Completion the Video Surveillance Cameras shall be tested and adjusted to ensure cameras are providing intended coverage. Once testing and adjustment has occurred obtain sign off from Principal of school.

Video Surveillance System Equipment

Category	Description	Manufacturer	Model #
Camera	Larger spaces (i.e., cafeterias, gyms)	Vivotek	CC9381 (Bubble eye)
Camera	Large outdoor spaces (i.e., playgrounds)	Open Eye	OE C99120M20
Camera Bracket	Mini-Dome Camera Wall Mount	Vivotek	
Camera Bracket	Mini-Dome Camera Ceiling Tile Mount	Vivotek	
Camera Bracket	Bullet Camera Ceiling Wall Mount	Vivotek	
NVR	16 Channel NVR with POE, 8 TB HS Size	Open Eye	MK Series Cloud managed server; OE-MMX64-Manatee
Cabling	Category 6A Plenum Cable, Green in color	Belden	10GXS130041000
Rack Tray	Rack Mount Tray for NVR	Honeywell	HENHQATRAY
Camera Patch Cables XX=Length	Patch Cables for cameras, Green Varying Lengths	Belden	UTP6A; Green
Monitors	Provide one small monitor adjacent to the security camera headend. Provide one large view monitor at the reception area at the school	Vivotek	
Surge Protection Devices		EDCO	

Fire Alarm System Requirements (Voice Evac & Smoke Evac)

Fire Alarm System

Provide and install Voice Evacuation Fire Alarm and Smoke Detection system throughout the facility. The system shall include, but not limited to: material, labor, training and testing of the system required to install a complete and fully certified and operational system in accordance with the local Authority Having Jurisdiction (AHJ), applicable codes, drawings and the project specifications.

The fire alarm contractor shall provide all required devices and equipment under his/her base contract: notifications devices, initiation devices, shutdown relays, gas and oil solenoids, sound system mute relays, flow switches, tamper switches, tone generators, terminal cabinets and other peripheral devices required to complete the fire alarm system installation per plans, specifications and in compliance with the AHJ.

The system shall be programmed for point reporting, to report device(s) type, location, room name and number to the remote central station.

System Operation

Under normal condition, the front panel shall display a "SYSTEM NORMAL" message and the current time and date.
The operation of any initiation device shall automatically place the fire alarm system into alarm as follow:

- Sound all fire alarm speakers with the appropriate message throughout the facility.
- Shut off all gas supplied to the facility via solenoid valves. Kitchen hood gas supply to be controlled by the hood suppression system.
- Flash all Alarms strobes throughout the facility.
- Automatically shut down all HVAC air handlers.
- Release all magnetically held smoke and fire doors and magnetically locked doors throughout the facility.
- Visually indicate via the control panel and any remote annunciator LCD the address of the energized initiation device.

Activation of the elevator smoke and/or heat detector shall place the fire alarm system into alarm and initiate elevator recall. Activation of the fire alarm shall not cause elevator capture to occur.

Acceptable Manufacturers

- Pyrothronics/Siemen's Cerberous Pro

Control Panels

The system supplied shall utilize node to node, direct fiber connected multi-priority peer-to-peer network operations. All network wiring shall be fiber optic. The peer-to-peer network shall contain multiple nodes consisting of the command center, main controller, remote control panels, LCD/LED annunciation nodes, and workstations. Each node is an equal, active functional node of the network, which is capable of making all local decisions and generating network tasks to other nodes in the event of node failure or fiber communications failure between the nodes. When a network is fiber connected in a Class A configuration, a single break on the network fiber isolates the system into two groups of panels. Each group continues to function as a peer-to-peer network working with their combined databases. Should multiple fiber connection faults occur, the network re-configures into many sub-networks and continues to respond to alarm events from every panel that can transmit and receive network messages. Fire alarm fiber optics shall be dedicated to the fire alarm system and independent from the facility data network.

Voice Communications

The system shall incorporate one-way voice communication and tone generating capabilities. With true digital integrated audio system into the peer-to-peer direct fiber optic network, multiplexing 8 independent audio channels. The system shall include distributed Audio Amplifiers, one for each speaker circuit, for the ultimate in system survivability. The 8 Channels of simultaneous audio for fire alarm activation shall be programmed as follows:

- Channel #1 Mass Notification Message (Highest Priority)
- Channel #2 Fire Alarm Message
- Channel #3 Alert Message
- Channel #4 Stand-by Message
- Channel #5 Weather Message
- Channel #6 Spare (future use)
- Channel #7 Telephone Input Paging
- Channel #8 Manual Paging

Fire Alarm Power Supply and Communicator

Category	Description	Manufacturer	Model #
IP FA Communicator	IP and Fire Alarm communicator with built in dialer.		
Antenna	50-Foot Indoor/Outdoor Antenna		

Installation

Installation of the Fire Alarm/Life Safety System shall be in strict compliance with manufacturer's recommendations, Local, State, and National codes. Consult the manufacturers Control Panel and Peripheral Equipment Installation Manuals for all wiring diagrams, schematics, physical equipment sizes, special instructions, etc. before beginning system installation. Control panels and terminal cabinets shall be attached to or installed in non-load-bearing walls and shall be held firmly in place. Fastening and supports shall be adequate to support the required load. Coordinate rough-in or flush mounted equipment. The entire system shall be installed in a workmanlike manner in accordance with approved manufacturers manuals and wiring diagrams. The Fire Alarm Contractor shall furnish all wiring necessary for the complete installation. End of Line Resistors: Shall be furnished as required and installed per the manufacturer's recommendations. The system shall be installed and fully tested under the supervision of trained manufacturer's representative. The system shall be demonstrated to perform all the functions as specified. Prior to beginning construction, the Contractor shall verify with the AHJ, the preferred operation of exhaust and supply fans (including cooking hood and heat removal fans) during alarm. Notify the engineer of any conflicts immediately upon discovery. If the AHJ's requirements are in conflict with the electrical drawings or specifications. The electrical contractor shall provide labor and materials to meet the AHJ's requirements. Batteries shall be located in a separate battery box near the FACP. Wall mount fire alarm terminal cabinet above Fire Alarm Control Panel. All fire alarm devices shall be mounted on appropriately sized flush mount or surface mount (as application dictates) outlet boxes. Refer to plans.

Testing

Each individual system operation on a point by point basis shall be tested for its complete operation. Procedures for testing the entire fire alarm system shall be set forth with the consent of local authority having jurisdiction, the Engineer, and the manufacturer. A hard copy of the analog value of each initiating input/device (addressable point and traditional zone) shall be given to the Engineer and AHJ upon completion of system test. All duct smoke detectors shall be flow tested for proper operation. Relocate duct smoke detectors not meeting minimum flow requirements.

Training

Provide (4) hours of training time for Owner's representative. Demonstrate programming, maintenance, and operational procedures.

Final System Acceptance

The system will be accepted only after a satisfactory test of the entire system has been accomplished by a Factory–Trained Distributor in the presence of the Owner's Representative. The contractor shall turn over the completed "as-built" Fire Alarm system drawings, software and closeout documentation.

Irrigation & Landscaping

Irrigation

Irrigation Control Clock shall be: **See page 107 in manual**. Slack wire shall be provided in valve boxes for future repairs. Irrigation valves shall NOT be located in front of gate openings. If a shutoff valve is put at the irrigation valve it should be at least 18-inches minimum away and in a separate box. Irrigation Main Trunk lines shall NOT be installed with 6-feet of a tree. The top of irrigation valves shall be a minimum of 3-inches under the top of the valve box.

Athletic Sports Fields with Bermuda grass shall be on a separate irrigation zone from other turf grass species. Bermuda Sports
Field turf has different watering requirements than standard Bahia grass. Grass needs are 1 inch per hour water.

Domestic water Quick connects need to be installed on Baseball and Softball Fields.

As-Built Irrigation Zone Drawing/Map shall be located at the Irrigation Timer.

Landscaping

All landscaping material shall be relatively low cost, low maintenance, based on long term sustainability. **Florida-Friendly Landscaping/native plant material** shall be high percentage of overall landscaping. Plant material that are known to require frequent pruning and/or drop noxious fruit or plant parts should not be used. Plant material shall be water wise, as well as disease, pest, and drought tolerant. The focus of landscaping shall be concentrated at the front entry of the school with some color accents. The balance of the landscaping shall be minimal. Provide Shredded Cypress Mulch, Grade A, not bigger than 3" in size and must comply with all plant and nursery stock rules and regulations for Federal, State, County and Local governments. Only cypress mulch, free of foreign matter, shall be considered acceptable. All cypress mulch used must be CCA free.

Trees shall NOT be planted within 6-feet of Irrigation Main Trunk lines. Trees shall NOT be planted under overhead power lines. Sufficient distance shall be maintained so the full growth trees do not interfere with overhead power lines.

HIGH SCHOOL ATHLETIC FIELDS shall be Certified Celebration Bermuda. 8 to 10-inches of 80-20 Standard Rootzone Mix (dirt from site not permitted) shall be placed for the top layer of soil. Field shall be top dressed until the field is free of divots.

MIDDLE SCHOOL ATHLETIC FIELDS shall be Bermuda Grass. Field shall be top dressed until the field is free of divots. Field must be irrigated. Parking lot islands shall be planted with trees and grass. Groundcover and Mulch are NOT permitted.

Plant List

TROPICALS:	TROPICALS CONTINUED:
Allamanda (3G-Bush)	Cordyline (3G Red Sister)
Allamanda (3G-Dwarf)	Cordyline (3G Xeros)
Azalea Standard (7G Lavender Formosa)	Crinum Lily (3G)
Bird of Paradise (3G Orange)	Croton (3G Excellent)
Bird of Paradise (3G White)	Croton (3G Gold Dust)
Bird of Paradise (7G Orange)	Croton (3G Mammey)
Bird of Paradise (7G White)	Croton (3G Mrs. Iceton)

Bird of Paradise (15G White)	Croton (3G Petra)
	Dipladenia (3G Red)
Bush Daisy	Fire Bush (3G)
Butterfly Bush (3G Purple)	Fire Cracker (3G)
Butterfly Tuti Fruiti Petite Pink (3G)	Florida Orchid (3G)
Camelia (Red & Light Pink)	Gardenia (3G Frost Proof Standard)
Carolina Jasmine (3G Bush)	Gardenia (7G Standard)
Carolina Jasmine (3G Trellis)	Hibiscus (15G Standard Mixed Colors)
Chinese Hat (3G Yellow & Red Standard)	Hibiscus (3G Bush Various Colors)
Cordyline (3G Black Magic)	Hibiscus (3G Red Hot)
Cordyline (3G Florida)	Hibiscus (3G Snow Queen)
Cordyline (3G Maria)	Hibiscus (3G Standard Red, Pink, Peach)
Cordyline (3G Red Sensation)	Ixora (3G Dwarf Taiwanese)
TROPICALS CONTINUED:	**3 GALLON CONTINUED:**
Ixora (3G Maui Red)	Ilex Schilling
Ixora (3G Yellow)	Indian Hawthorn
Jasmine (3G Manchero)	Japanese Boxwood
Jasmine (3G Pinwheel)	Jasmine Confederate Standard
Thryallis (3G)	Jasmine Downy
Thumbergia Purple	Jasmine Night Blooming
Topiary (3G Eugenia 2 Ball)	Jasmine Pinwheel
Topiary (3G Eugenia Spiral Petite)	Jasmine Star
Topiary (3G Eugenia Spiral)	Ligustrum Jack Frost
	Ligustrum Green
	Ligustrum Recurve
1 GALLON:	Ligustrum Howardi Variegated
Agapanthus	Loropetalum
Aztec Grass	Muhly Grass
Flax Lily	Pampass Grass
Jasmine Minima	Pittosporum Variegated
Jasmine Minima Angel	Plumbago Blue
Jasmine Minima Tri Color	Plumbago White
Jasmine Minima Variegated)	Red Fountain Grass
Lantana Purple	Ruella
Lantana White	Sand Cordline
Lantana Yellow	Serissa
Liriope	Viburnum Odoratissimum
Mondo Grass (Dwarf)	Viburnum Suspensum
	Viburnum Dwarf Walters

Society Garlic	Wax Myrtle
	White Fountain Grass
3 GALLON:	
African Iris (Yellow & White)	
Arboricola	
Azalea (White, Pink, Lavender, Red)	
Eleagnus (Silverthorn)	
Fakahatchee	
Fakahatchee (Dwarf)	
Goldmound	
Honeysuckle (Bush – Coral)	
Honeysuckle (Standard – Coral)	
Ilex Compacta	
7 GALLON:	**30 GALLON CONTINUED:**
Arborvitae American	Red Cedar
Crape Myrtle (Standard & Multi – Red, Pink)	Red Maple
Eleagnus Silverthorn	Sweetgum
Ligustrum Jack Frost	Viburnum Odoratissimum
Ligustrum Recurve	Wax Myrtle
Loropetalum	
Tea Olive	
Viburnum Odoratissimum	**45 GALLON:**
Viburnum Suspensum	Bottlebrush Weeping Standard
	Ligustrum Lucidium
15 GALLON:	**PALMS:**
Bottlebrush Weeping Standard	Areca (3G)
Bottlebrush Red Cluster Standard	Areca (7G)
Crape Myrtle Multi Standard – Red, Purple, Raspberry	Areca (15G)
Crape Myrtle Multi Standard – Musk, Lavender, Natchez,	Areca (25G)
Ligustrum Lucidium	Fishtail Palm (15G)
Ligustrum Recurve	Foxtail (7G)
Loropetalum Tree	Foxtail (15G-Single)
Red Cedar	Foxtail (B&B-Single)
Toroluso	Foxtail (B&B-Double)
Viburnum Odoratissimum	Foxtail (B&B-Triple)
Wax Myrtle	Ponytail (45G)

	Queen (30G)
	Queen (B&B)
30 GALLON:	Roebellini (3G)
Bald Cypress	Roebellini (5G)
Bottlebrush Moyette/Weeping Standard	Roebellini (15G)
Crape Myrtle Multi Trunk	Roebellini (30G)
Holly Dahoon	Roebellini (B&B single, double, triple)
Holly Eagleston	Roebellini (Larger B&B and up)
Holly East Palatka	
Hong Kong Orchid	Magnolia Little Gem
Ligustrum Green	
Ligustrum Howardi	
Ligustrum Recurve	
NOT PERMISSABLE PLANT LIST:	**NOT PERMISSABLE PALM LIST:**
Crown of Thorns	Andonidia
Duranta	Bismark
Tibouchina of any kind	Chinese Fan
Xanadu	European
Mimosa	Reclinata
Drift Rose	Royal
Knock Out Rose	Sago (of any kind)
Lantanna Confetti	Sylvester
Nandina Domestica	Washingtonian
Split leaf	
Holly Nellie R. Stevens	
Oleander	
Holly Daphoon	
East Palatka	
Podocarpus	
Milkweed	
Perennial Peanut	
Bromelaid	
PLANT EXCEPTIONS:	
Allamanda (Only Nerifolia)	
Fire bush (Only dwarf)	
Lantana (NO Camera varieties)	
Ruelia (Only Brittoniana or Makoyana)	

Extended Warranties

Roof membrane, flashing	2-year
Lockers	2-year
Acoustical Wall Panels	2-year
Window Blinds/Shades	3-year
Pest Control	5-year
Glazing	5-year
Joint Sealants	5-year
Paint	5-year
VCT	5-year
Refrigeration Compressor	5-year
Chiller	10-year
LED Lighting (Luminaires)	5-year
Generator	5-year
Transfer Switch	5-year
Video Surveillance	5-year
Fire Extinguisher	6-year
HVAC Compressor	10-year
Door Hardware – Overhead Door Closers	10 Year
Aluminum Storefront	10 year
Surge Protection	10-year
Bathroom Accessories	15-year
Roofing	20-year NDL
Local Area Network (LAN)	25-year
Sports Lighting	25-year
Flush Wood Doors	Life of Installation
Door Hardware – Schlage Locks	Lifetime
Carpet	Lifetime limited
Signage	Lifetime
HVAC Controls	Lifetime

EXHIBIT A

Refer to Division 017700 - Closeout Procedures

The CM Agreement, Exhibit C outlines the documents required for project closeout:

EXHIBIT C

DOCUMENTS REQUIRED TO REQUEST FINAL PAYMENT

_____ 1. Final Pay Request (3 copies with original signatures)

_____ 2. Consent of Surety to make Final Payment (signed and sealed), if required

_____ 3. Power of Attorney from Surety for Release of Final Payment (Signed, sealed and dated same as Consent of Surety), if required

_____ 4. Contractor's Affidavit of Contract Completion

_____ 5. Satisfactory Conclusion or Release of Lien from all subcontractors or vendors who have filed Notice to Owner, filed Intent to Lien, or have indicated non-payment from the CM

CLOSEOUT DOCUMENTS REQUIRED TO RELEASE FINAL PAYMENT

Submit one (1) hard copy and one (1) electronic copy of the following:

_____ 1. One (1) Year Warranty from date of Substantial Completion (if phased project, provide warranty for each portion based on Substantial Completion dates)

_____ 2. Operations manuals, shop drawings, as-builts, brochures, warranties, subcontractor list (with telephone numbers and addresses) keying schedule, paint schedule and other items required by the Construction Documents

_____ 3. Recorded system operations training and attendance lists (i.e. HVAC, controls, fire alarm, etc.)

_____ 4. Roof Warranty naming School Board of Manatee County as the Owner (if applicable)

_____ 5. Other special warranties as required by Construction Documents, naming School Board of Manatee County as the Owner

_____ 6. Architect's Certificate "Specification of No Asbestos-Containing Materials"

_____ 7. CM's Certificate "Use of No Asbestos-Containing Materials"

_____ 8. Certificate(s) of Occupancy as required (if phased project, provide Certificate of Occupancy for each phase)

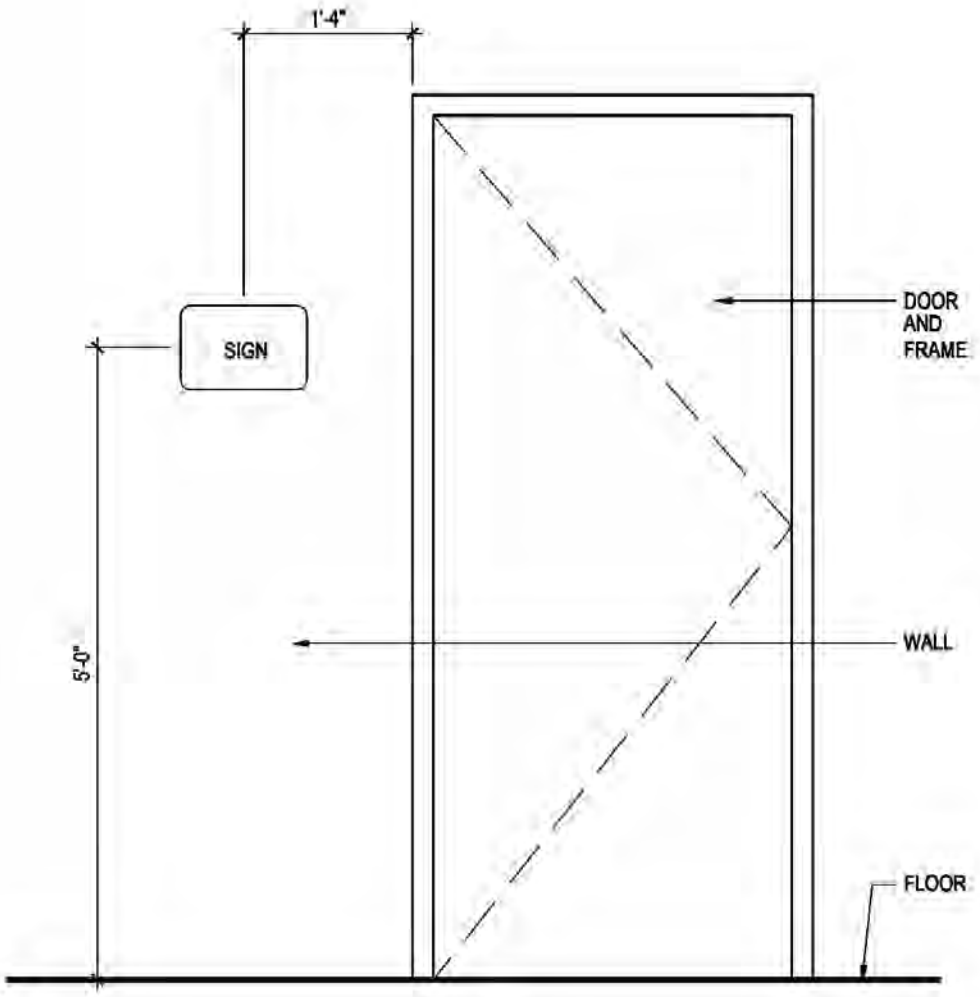
By submitting this completed form, the CM affirms that all required closeout documentation is accurate and complete, so that final payment may be released.

Project Number: _____

Project Name: _____

CM Signature: _____ Date: _____

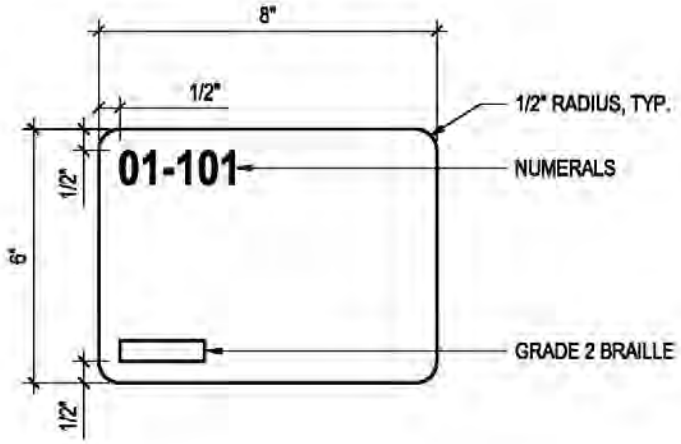
Project Director Signature: _____ Date: _____



1 ELEVATION- TYPICAL SIGN LOCATION

SCALE: NTS

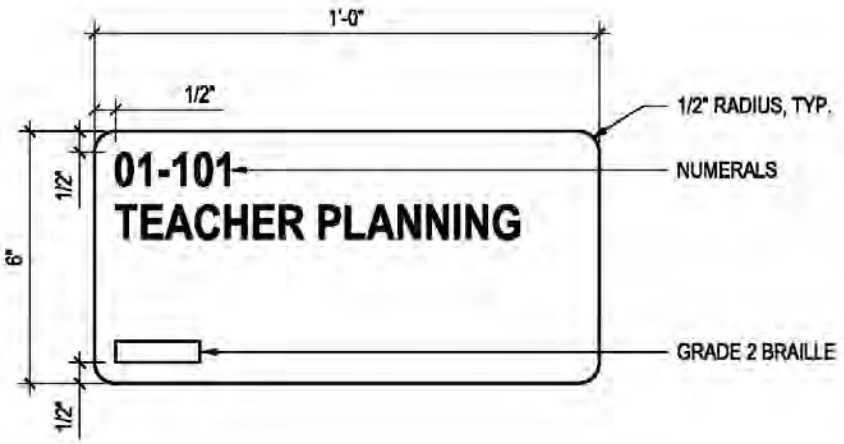
DESIGN STANDARDS		
DEPARTMENT OF CONSTRUCTION SERVICES SCHOOL DISTRICT OF MANATEE COUNTY 1 Matzke Way, Bradenton, FL 34208 T: (941) 708-8770		SK-1 ISSUED: 7-1-2022



1 ROOM SIGN WITHOUT ROOM NAME

SCALE: NTS

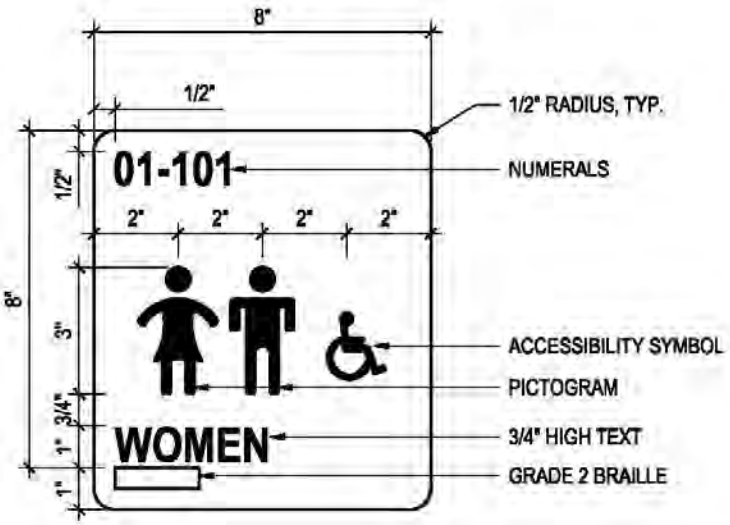
DESIGN STANDARDS		
DEPARTMENT OF CONSTRUCTION SERVICES SCHOOL DISTRICT OF MANATEE COUNTY 1 Matzke Way, Bradenton, FL 34208 T: (941) 708-8770		SK-2 ISSUED: 7-1-2022



1 ROOM SIGN WITH ROOM NAME

SCALE: NTS

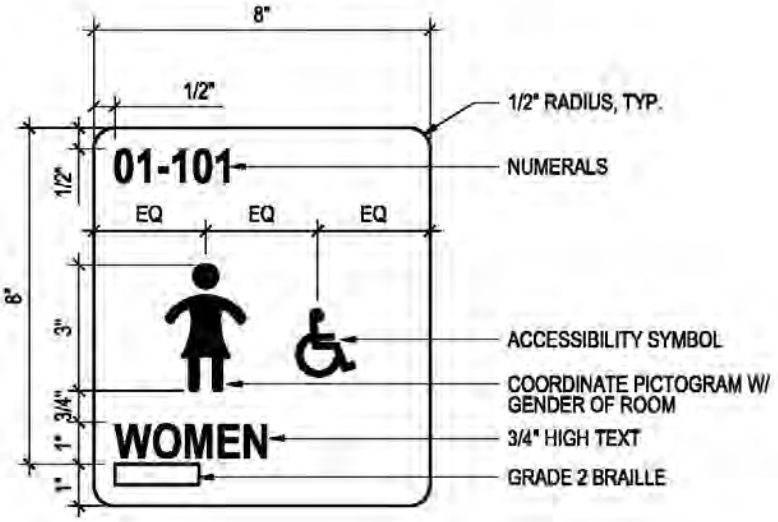
DESIGN STANDARDS		
DEPARTMENT OF CONSTRUCTION SERVICES SCHOOL DISTRICT OF MANATEE COUNTY 1 Matzke Way, Bradenton, FL 34208 T: (941) 708-8770		SK-3 ISSUED: 7-1-2022



1 UNISEX TOILET ROOM SIGN

SCALE: NTS

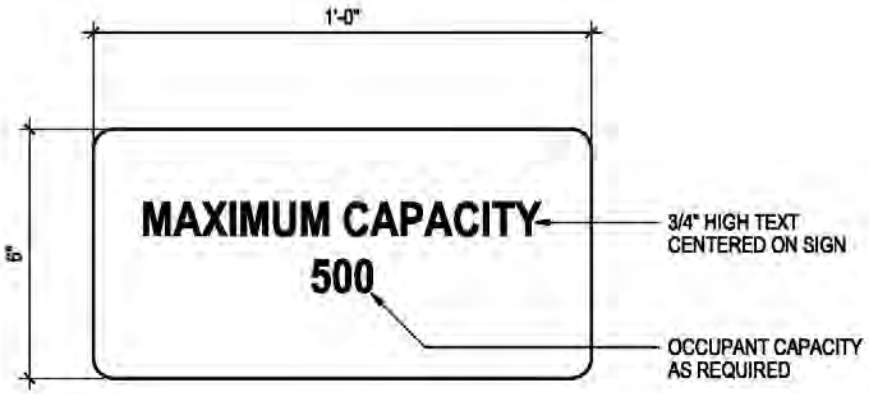
DESIGN STANDARDS		
DEPARTMENT OF CONSTRUCTION SERVICES SCHOOL DISTRICT OF MANATEE COUNTY 1 Matzke Way, Bradenton, FL 34208 T: (941) 708-8770		SK-4 ISSUED: 7-1-2022



1 TOILET ROOM SIGN

SCALE: NTS

DESIGN STANDARDS		
DEPARTMENT OF CONSTRUCTION SERVICES SCHOOL DISTRICT OF MANATEE COUNTY 1 Matzke Way, Bradenton, FL 34208 T: (941) 708-8770		SK-5 ISSUED: 7-1-2022



1 MAXIMUM CAPACITY SIGN

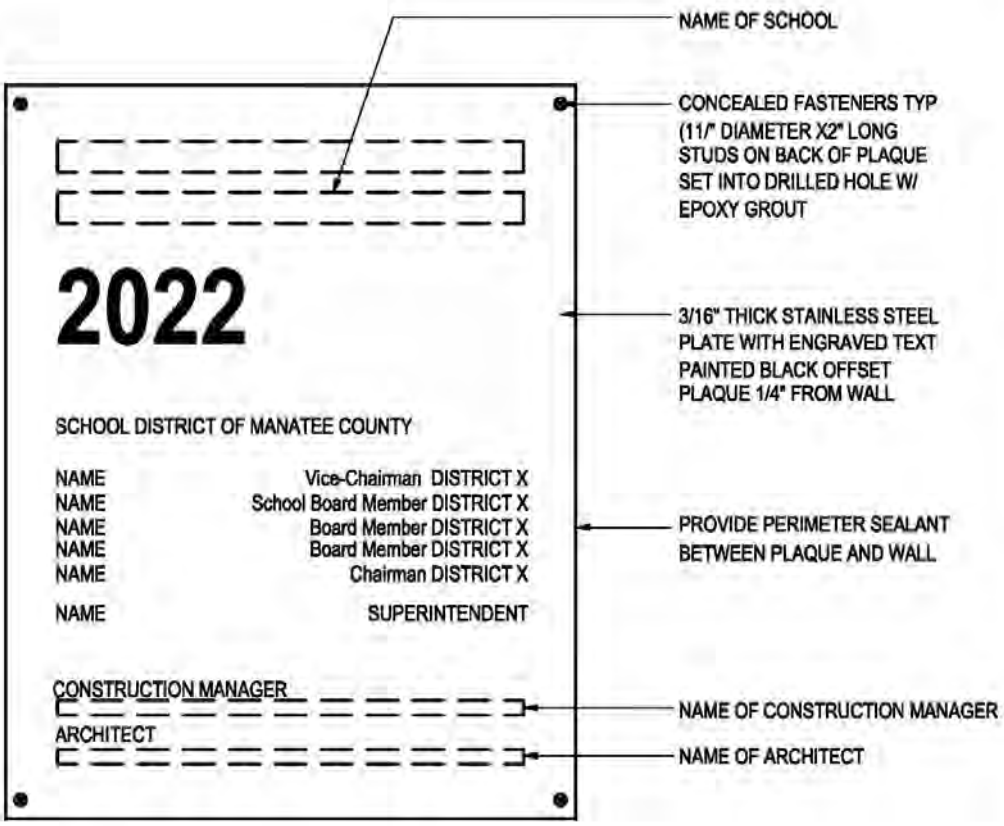
SCALE: NTS

DESIGN STANDARDS		
DEPARTMENT OF CONSTRUCTION SERVICES SCHOOL DISTRICT OF MANATEE COUNTY 1 Matzke Way, Bradenton, FL 34208 T: (941) 708-8770		SK-6 ISSUED: 7-1-2022

1 FA PULL STATION SIGN

SCALE: NTS

DESIGN STANDARDS		
DEPARTMENT OF CONSTRUCTION SERVICES SCHOOL DISTRICT OF MANATEE COUNTY 1 Matzke Way, Bradenton, FL 34208 T: (941) 708-8770		SK-7 ISSUED: 7-1-2022



NOTE

*PROPORTION LETTER SPACING TO CONFORM TO SPECIFIED PLAQUE SIZE

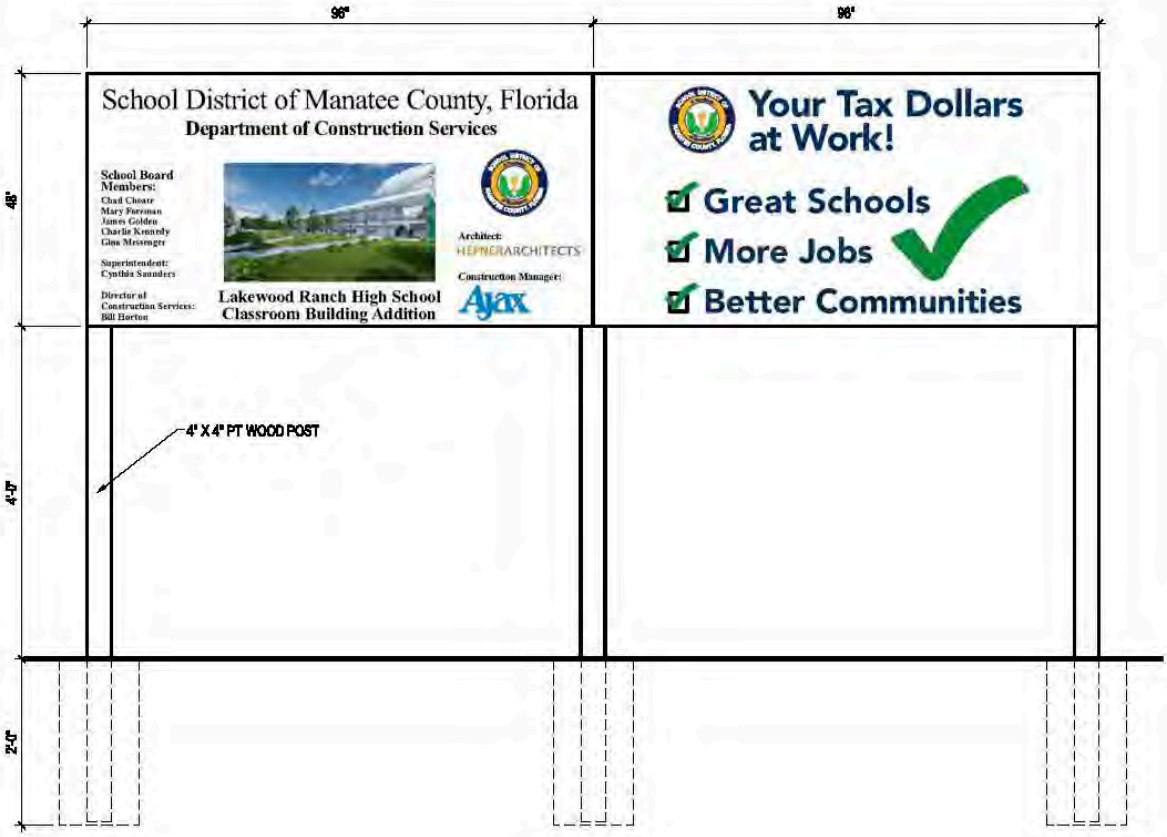
**CONTRACTOR SHALL VERIFY NAMES OF BOARD MEMBERS

***CONTRACTOR SHALL COORDINATE LOCATION WITH ARCHITECT

1 BUILDING PLAQUE

SCALE: NTS

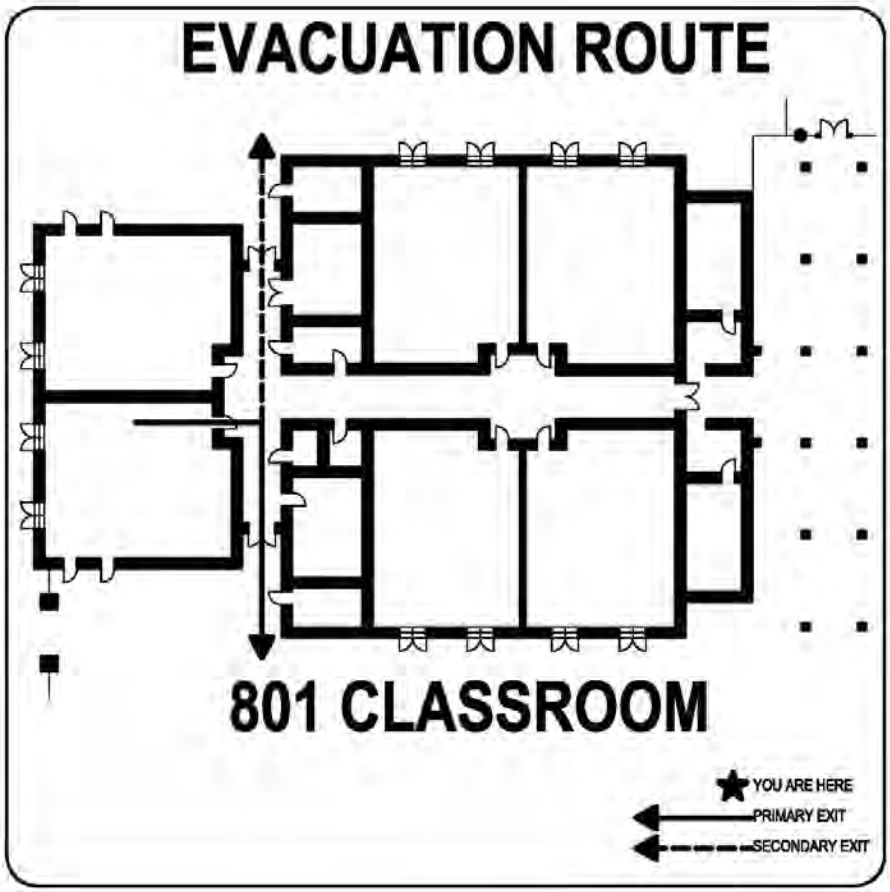
DESIGN STANDARDS		
DEPARTMENT OF CONSTRUCTION SERVICES SCHOOL DISTRICT OF MANATEE COUNTY 1 Matzke Way, Bradenton, FL 34208 T: (941) 708-8770		SK-8 ISSUED: 7-1-2022



1 CONSTRUCTION SIGN

SCALE: NTS

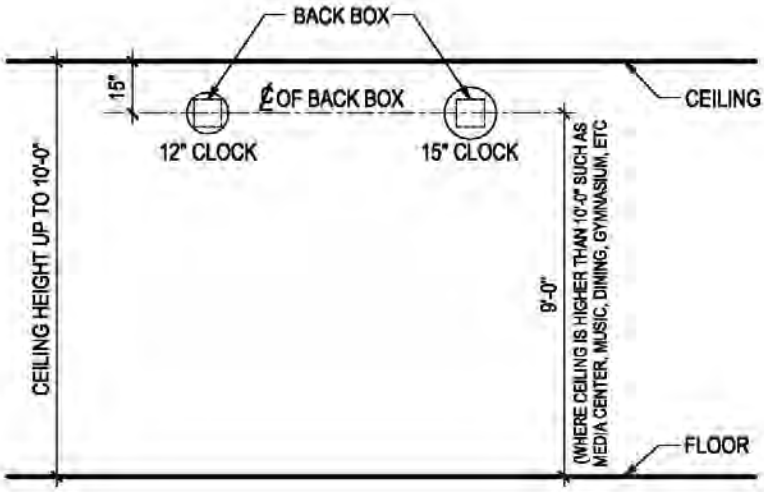
DESIGN STANDARDS		
DEPARTMENT OF CONSTRUCTION SERVICES SCHOOL DISTRICT OF MANATEE COUNTY 1 Matzke Way, Bradenton, FL 34208 T: (941) 708-8770		SK-9 ISSUED: 5-1-2024



1 EVACUATION SIGN

SCALE: NTS

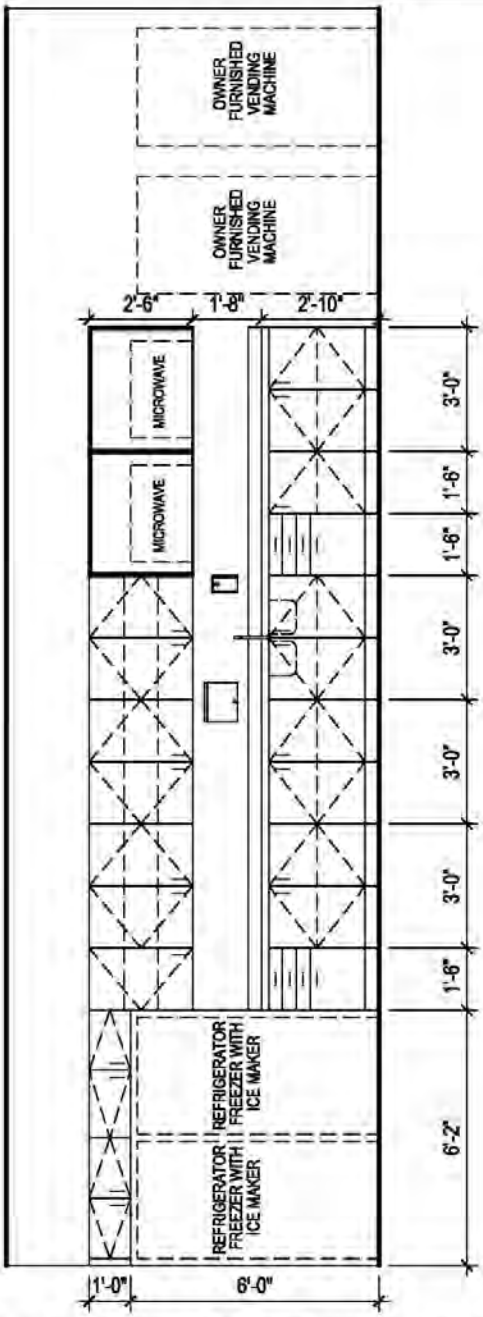
DESIGN STANDARDS		
DEPARTMENT OF CONSTRUCTION SERVICES SCHOOL DISTRICT OF MANATEE COUNTY 1 Matzke Way, Bradenton, FL 34208 T: (941) 708-8770		SK-10 ISSUED: 7-1-2022



1 TYPICAL CLOCK BACK BOX INSTALLATION

SCALE: NTS

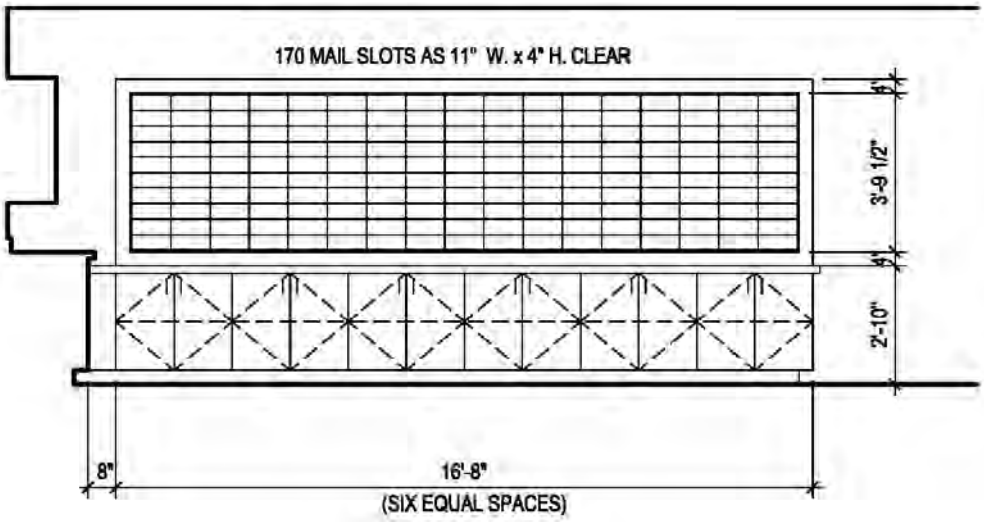
DESIGN STANDARDS		
DEPARTMENT OF CONSTRUCTION SERVICES SCHOOL DISTRICT OF MANATEE COUNTY 1 Matzke Way, Bradenton, FL 34208 T: (941) 708-8770		SK-12 ISSUED: 7-1-2022



1 TYPICAL LOUNGE - MIDDLE & HIGH SCHOOLS

SCALE: NTS

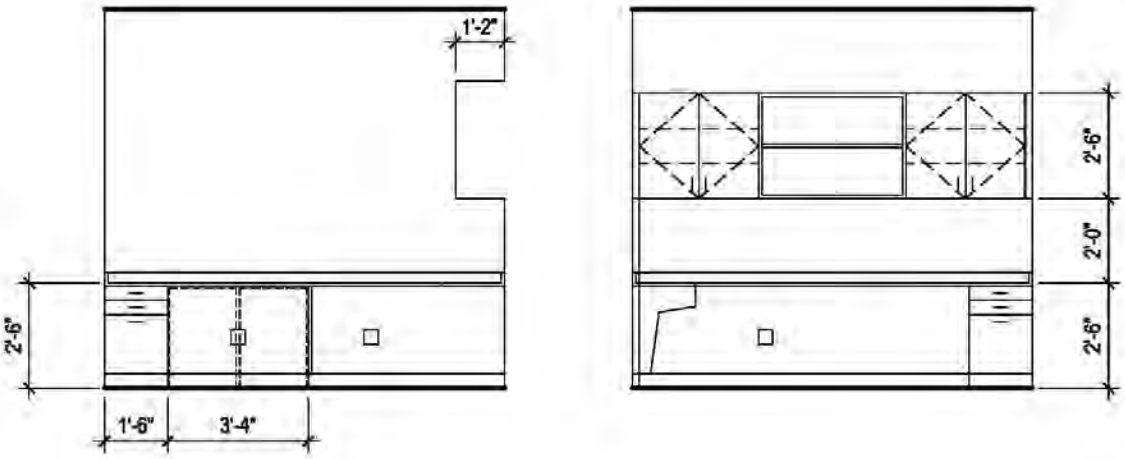
DESIGN STANDARDS		
DEPARTMENT OF CONSTRUCTION SERVICES SCHOOL DISTRICT OF MANATEE COUNTY 1 Matzke Way, Bradenton, FL 34208 T: (941) 708-8770		SK-14 ISSUED: 7-1-2022



1 TYPICAL WORKROOM MAILSLOTS - MIDDLE & HIGH SCHOOL

SCALE: NTS

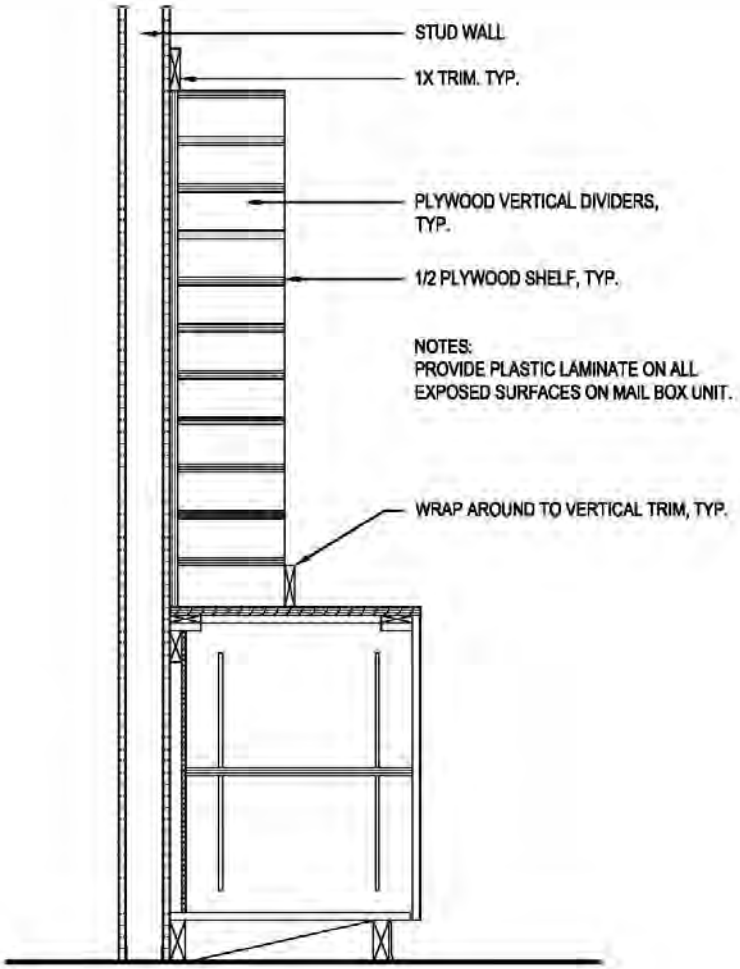
DESIGN STANDARDS		
DEPARTMENT OF CONSTRUCTION SERVICES SCHOOL DISTRICT OF MANATEE COUNTY 1 Matzke Way, Bradenton, FL 34208 T: (941) 708-8770		SK-15 ISSUED: 7-1-2022



1 TYPICAL KITCHEN MANAGER'S OFFICE

SCALE: NTS

DESIGN STANDARDS		
DEPARTMENT OF CONSTRUCTION SERVICES SCHOOL DISTRICT OF MANATEE COUNTY 1 Matzke Way, Bradenton, FL 34208 T: (941) 708-8770		SK-16 ISSUED: 7-1-2022

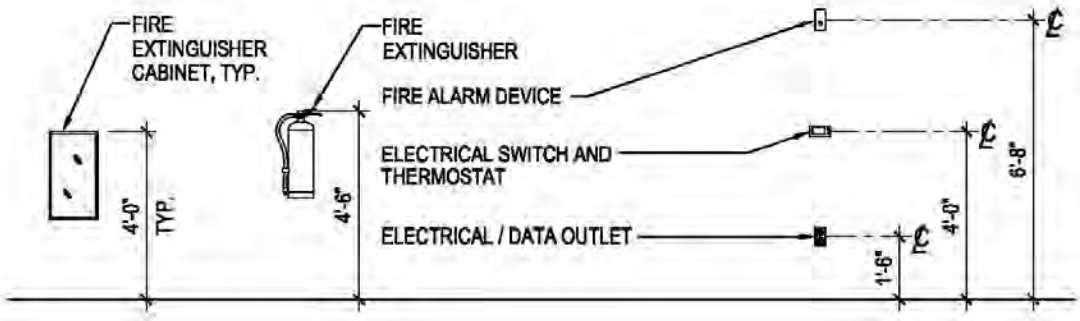


1

TYPICAL MAIL BOX UNIT
ELEMENTARY, MIDDLE AND HIGH SCHOOLS

SCALE: NTS

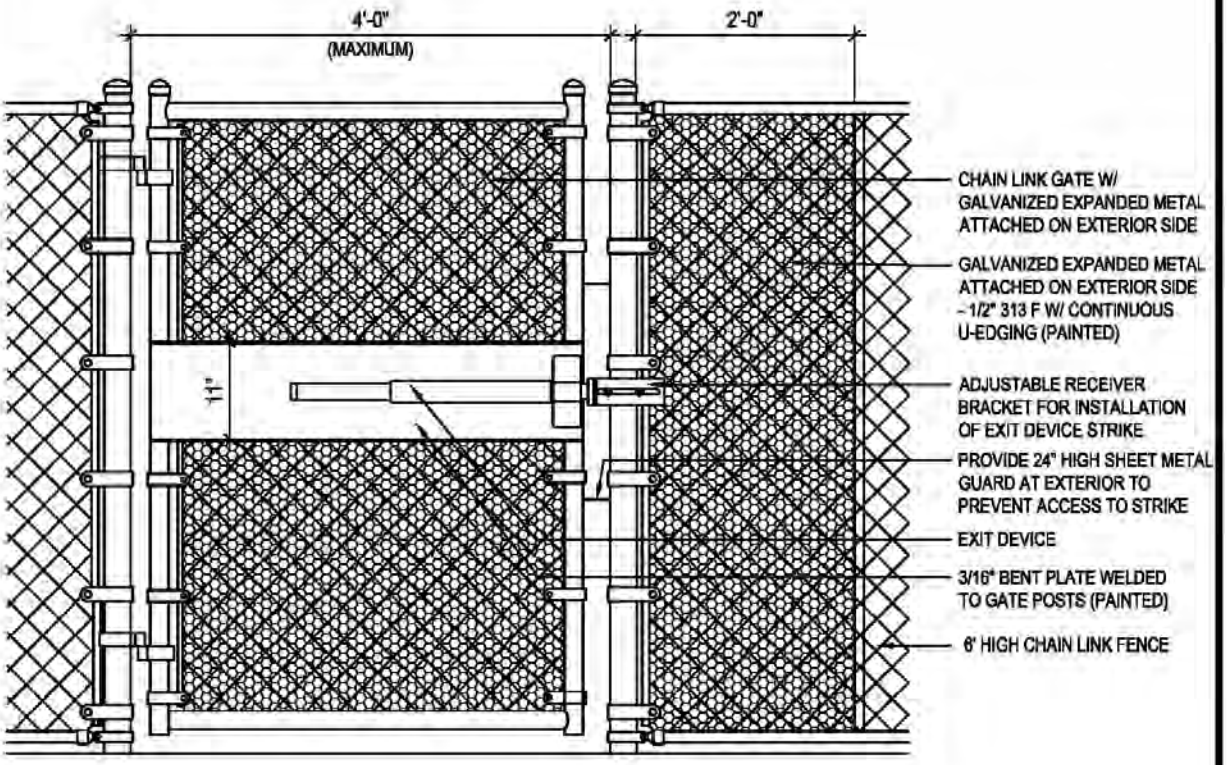
DESIGN STANDARDS		
DEPARTMENT OF CONSTRUCTION SERVICES SCHOOL DISTRICT OF MANATEE COUNTY 1 Matzke Way, Bradenton, FL 34208 T: (941) 708-8770		SK-17 ISSUED: 7-1-2022



1 TYPICAL MOUNTING HEIGHT

SCALE: NTS

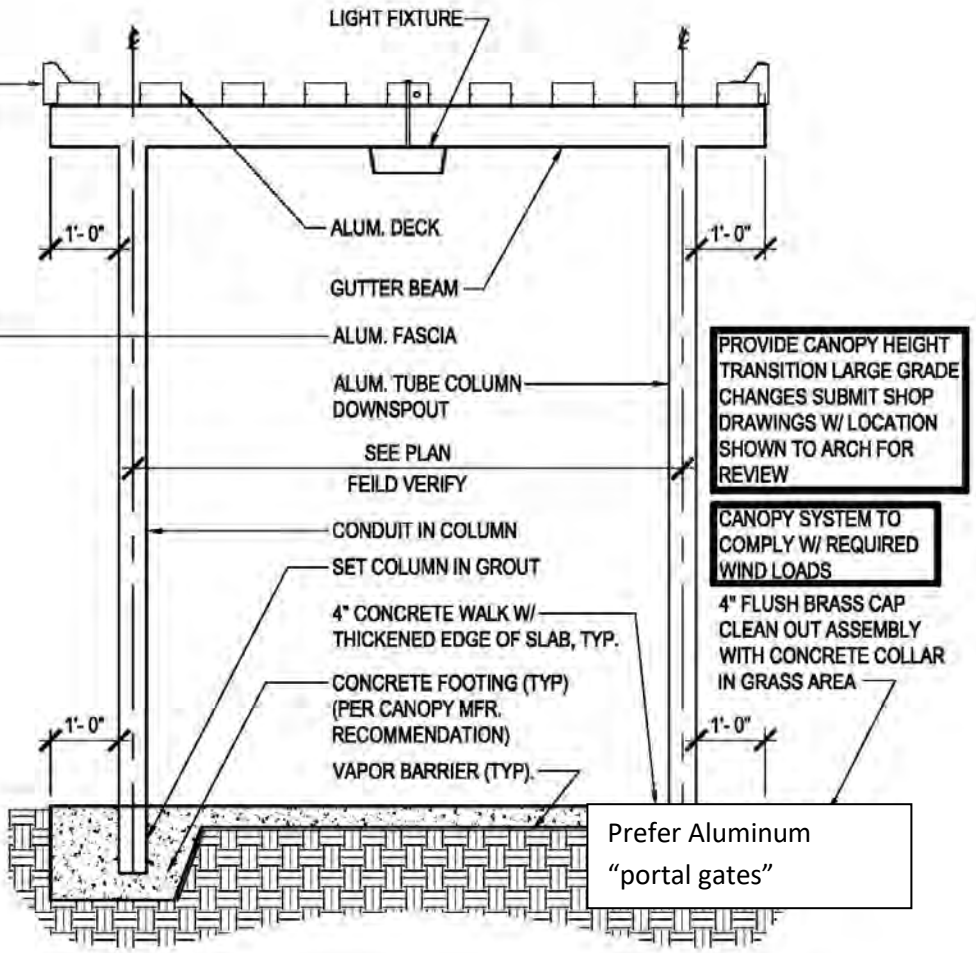
DESIGN STANDARDS		
DEPARTMENT OF CONSTRUCTION SERVICES SCHOOL DISTRICT OF MANATEE COUNTY 1 Matzke Way, Bradenton, FL 34208 T: (941) 708-8770		SK-18 ISSUED: 7-1-2022



1 CHAIN LINK GATE WITH EXIT DEVICE

SCALE: NTS

DESIGN STANDARDS		
DEPARTMENT OF CONSTRUCTION SERVICES SCHOOL DISTRICT OF MANATEE COUNTY 1 Matzke Way, Bradenton, FL 34208 T: (941) 708-8770		SK-19 ISSUED: 7-1-2022



1 CANOPY DETAIL

SCALE: NTS

DESIGN STANDARDS		
DEPARTMENT OF CONSTRUCTION SERVICES SCHOOL DISTRICT OF MANATEE COUNTY 1 Matzke Way, Bradenton, FL 34208 T: (941) 708-8770		SK-21 ISSUED: 7-1-2022

APPENDIX B

FOOD SERVICE EQUIPMENT & CUT SHEETS

Issue Date: 11/01/2024

Fifth Edition

Appendix B

APPENDIX C

GUARANTEED MAXIMUM PRICE (GMP) INSTRUCTIONS TO CONSTRUCTION MANAGER (CM)

GMP BOOK

Issue Date: 11/01/2024

Fifth Edition

Appendix C

Guaranteed Maximum Price (GMP) Instructions to Construction Manager (CM) – GMP Book

1. Provide a cover letter indicating the date the proposal is submitted and the general scope work of the project.
2. Provide a listing of all documents and drawings (sheet numbers) upon which the proposal was developed.
3. Provide a detailed and specific list of all assumptions and clarifications upon which the proposal is based. The list shall clearly indicate items that are included or excluded (if indicated on the construction documents) from the proposal.
4. Provide a list of all allowances in the proposal.
5. Provide a listing of all reimbursable expense items and labor consistent with the agreement. Equipment listed shall be deemed SDMC property and turned over to SDMC at project completion.
6. Provide a list of any contingency amounts in the proposal.
7. Provide the project area building square footage and site acreage. The building areas shall be identified separately between new construction and remodeling/renovations.
8. Provide the GMP proposal formatted in accordance with the Construction Specifications Institute (CSI) 40 Division MasterFormat®. Each section shall have costs allocated such that the total of all sections equals the GMP proposal.
9. Provide a summary sheet by division indicating the allocated cost and the appropriate unit cost of each item per division.
10. Provide a Gantt chart schedule of the project indicating all project phases and critical milestones, start and completion dates.
11. Provide a listing of subcontractor bid tabulations and the scope adjustment sheets indicating the apparent low bidder.
12. Provide a listing and associated cost impact by item of recommended Value Engineered (VE) items.
13. If the proposal exceeds the project construction budget amount, an explanation indicating the reasons and circumstances for the proposal cost overrun.
14. CM monthly draw request worksheets:
    a. Each building should be independently listed (Building 1 – Administration; Building 2 – Media, etc.) and include all applicable CSI Sections.
    b. Unforeseen Conditions Funds tracked, and forms provided by building.
15. Project Safety:
    a. The following certification logs shall be maintained and submitted along with the PMIS monthly report. As appropriate for accuracy, include employee name, name and level of certification, expiration date, dates on the project site, etc.
        i. OSHA Safety Training
            1. AE – all – 10 hours
            2. CM
                a. Project Executive – 10 hours
                b. Project Manager – 10 hours
                c. Administrative – 10 hours
                d. Superintendent – 30 hours, plus explosive materials
                e. Assistant Superintendent's – 30 hours, plus explosive materials
                f. Sub tier supervisor's – 30 hours
                g. Sub tier employees – 10 hours

3. Project Safety Work Plan and Review
    a. In accordance with OSHA requirements and recommendations.
    b. Review onsite prior to the performance an any work.
    c. Openly available onsite to all project employees.
4. Weekly Safety Meetings
    a. Conducted by CM with subcontractors and subcontractors employee safety meetings. Record all infractions and corrections made for Owner's review.

ii. Asbestos Containing Material
iii. Welding
iv. Equipment Operators – lull, crane, high-lifts, scaffolding, etc.
v. Jessica Lunsford Act
    1. AE – all personnel that visits or works at the project site.
    2. CM management staff – all employees
        a. Temporary administrative labor – all employees
        b. Temporary laborers – all employees
    3. Sub tier contractors – all employees
vi. Additional Documents required for Closeout
    1. Student station cost per building number and use – see draw request above.
    2. Square foot cost per building number and use – see draw request above.
    3. Building cost per BTU
    4. Outdoor and Indoor Bleachers – number of seats, contact information of manufacturer and installer, model number of bleachers, motors – (manufacturer, model numbers, voltage requirements, etc.)
    5. As-Built drawings on 24"x36" format and thumb drive.