

ADDENDUM # 01

Y1 New Middle School
York School District 1
JCS PROJECT NO: 25003
September 30, 2025



This addendum modifies the Contract Documents only in the manner and to the extent stated herein and shown on any accompanying drawings and will become a part of the Contract Documents. Except as specified or otherwise indicated by this addendum, all work shall be in accordance with the basic requirements of the Contract Documents.

GENERAL:

1. See attached sign in sheets and meeting minutes from the Pre-Bid Meeting held on September 23, 2025.
2. Requests for CAD drawings must be submitted with the Release form to the Architect or Engineer of Record. Please email request for form to the AofR or EofR. CAD drawings will be issued after completion and submittal of the release form with the A/E. A list of sheets must be included on the form.
3. There are eight (8) Bid Alternates. See Specification Section 01 2300 Alternates (revised and included in this addendum) for details
4. Owner will be responsible for tap fees.
5. Owner will be responsible for Builders risk
6. Refer to Phase 1 Environmental Site Assessment Report (included in this addendum #1 in Appendix H) for reference to existing structures on site to be demolished. No asbestos sampling or report has been conducted for these structures.
7. General Contractor is responsible for all temporary utility consumption throughout the duration of the construction until substantial completion.
8. No building permit is required for this project. However, the General Contractor will be responsible for any other permit fees required by the county such as sign permit and any and all licensing permit fees.
9. The owner will contract with a materials and special inspection contractor for this project. GC is responsible for coordinating with Construction Manager for scheduling tests and inspection and will be responsible for cost of any re-inspections due to failed inspections. Refer to Specification 01 4001.
10. Sample AIA Documents to be used for contracting with General Contractor will be provided in addendum #2.
11. Temporary Fencing around the entire site is not required. General Contractor is to provide fencing required for scope of work. General Contractor is encouraged to install gates at both construction entrances to control traffic into the construction site.
There is one existing residential type well on site that the General Contractor may be use for temporary water until the permanent water is brought to the site. The owner makes no claim to the dependability or capacity of the well and will not be responsible for any maintenance work to the well to make it functional if the General Contractor chooses to utilize it. **Any existing water wells encountered during project demolition and/or construction activities, will need to be removed/abandoned in accordance with SCDES regulations/requirements.**
12. The District has a pole relocation work order from Duke Energy and the District will pay (directly to Duke Energy) for the relocation of the power pole currently located in the middle of the designed site entrance drive. The GC will be responsible for assisting in coordination of this work with Duke Energy.
13. FSSSS sheets are included in the bid documents on the Fire Suppression Drawing and in the specifications.

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SPECIFICATIONS:

Note: Replace the following specification sections or paragraphs with the updated specification sections or paragraphs included in this addendum or add new specifications sections or paragraphs included in this addendum.

SECTION	SECTION TITLE	DESCRIPTION
00 0110	Table of Contents	DELETE Spec Section 00 0110 Table of Contents included in the specification and REPLACE with 00 0110 Table of Contents included in this addendum.
01 0000	General Requirements	DELETE Spec Section 01 0000 General Requirements included in the specification and REPLACE with 01 0000 General Requirements included in this addendum
00 2610	Submittal of Substitutions	Add to Specification Manual (it was left out of the original bound set)
00 4113	Bid Form – Base Bid	Delete bid form in specification and replace with Revised Bid from in this addendum
00 4113	Bid Form – Alternate Bid	Delete bid form in specification and replace with Revised Bid from in this addendum
Appendix E	GeoTechnical Report	This report is included in the Specification Manual After Appendix Cover D. NOTE: NO SOIL IMPROVEMENTS NOT NOTED ON CIVIL DRAWING SUCH AS AGGREGATE PIERS ARE ANTICIPATED ON THIS SITE AND SHOULD NOT BE INCLUDED IN THE BID.
01 2100	Allowances	DELETE Spec Section 01 2113 Cash Allowances included in the specification and REPLACE with 01 2100 Allowances included in this addendum.
01 2300	Alternates	DELETE Spec Section 01 2300 Alternates included in the specification and REPLACE with -1 2300 Alternates included in this addendum.
01 5000	Temporary Facilities and Controls	Trailer for CM and AE is required per 3.3E.
01 7300	Execution Requirements	Final Property Survey per 3.4D is required.
04 2000	Unit Masonry	DELETE Spec Section 04 200 Unit Masonry included in the specification and REPLACE Section 04 200 Unit Masonry included in this addendum. NOTE: SINGLE LUMP SUM SUBCONTRACT has been deleted from this specification.
06 4023	Interior Architectural Woodwork	Note: This scope of work can be provided by the same company or a subcontract to the company providing casework in Specification 12 300. Specification must be met.
07 5100	4-Ply Modified Bitumen Roofing	DELETE Spec Section 07 5100 4 Ply Modified Bitumen Roofing included in the specification
07 5216	Modified Bitumen Roofing	ADD Spec Section 07 5216 Modified Bitumen Roofing included in this specification.
09 5113	Floating Suspended Ceiling System	DELETE Spec Section 09 5113 Floating Suspended Ceiling System included in the specification and REPLACE with Section 09 5113 Floating Suspended Ceiling System included in this addendum.
09 5123	Acoustical Tile Ceilings	DELETE Spec Section 09 5123 Acoustical Tile Ceiling included in the specification and REPLACE with 09 5123 Acoustical Tile Ceiling included in this addendum.

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09 6600	Resilient Tile Flooring LVT	DELETE Spec Section 09 6600 Resilient Tile Flooring LVT included in the specification and REPLACE with Section 09 6600 Resilient Tile Flooring LVT included in this addendum.
09 6723	Epoxy Floor	Insert Specification 09 6723 included in this addendum
10 7516	Ground Set Flagpoles	Clarifications: 2 flag poles will be required. 30' at the front of the school as shown on AS101 and 35' at the athletic fields. Exact locations to be determined by owner and architect during construction.
12 3000	High Pressure Melamine Construction	Clarification: Paragraph 1.8: Manufacturers Must be a certified participant in AWI's Quality Certification Program.
27 8306	Radio Enhancement System	Clarification: This scope of work does not have to be performed by a subcontractor of Electrical Contractor. GC will be responsible to coordinate with roofer for penetrations of the roof for BDA antennae.
28 3100	Fire Alarm Systems	Clarification: This scope of work per this specification section is included in the Allowances Specification 01 2100.
32 1823	Baseball Infield	Insert Specification 32 1823 Baseball Infield included in this addendum.
Appendix H	Phase One ESA Report	Insert Report included in this addendum

DRAWINGS - ARCHITECTURAL:

Note: Replace the following sheets with the updated sheets included in this addendum or add new sheets included in this addendum.

SHEET NUMBER/DETAIL	SHEET NAME	DESCRIPTION
A301	First Level Floor Plan - Area A	Replace Sheet A301 in Bid Set with Revised A301 included in this Addendum. Media shelving has been added to the Media Center A134. Refer to specifications Section 12 3550 Media Center Shelving .
A501	Finish Schedule	Replace Sheet A501 with Revised A501 included in this Addendum.
A607	Media Center Interior Elevations	Replace Sheet A607 in Bid Set with Revised A607 included in this Addendum Wall shelving has been added to the Media Center A134.
I-301 thru I-309	Floor Finish Plans	Ignore all interior elevation references for this scope of work.
A906, A907, A908, A909	REFLECTED CEILING PLANS	Clarification: Bulkhead that divide ceiling areas are to be 2" below lowest adjacent ceiling height unless noted otherwise in RCPs or in wall sections cut through the area and indicated on the wall section.

DRAWINGS – PLUMBING AND FIRE SUPPRESSION:

Note: Replace the following sheets with the updated sheets included in this addendum or add new sheets included in this addendum.

SHEET NUMBER/DETAIL	SHEET NAME	DESCRIPTION
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P204	First Level Floor Plan – Area D – Supply Piping	See Revised Sheet P204 included in this addendum Added 1" make-up water line for chilled water HVAC system.
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DRAWINGS - HVAC:

Note: Replace the following sheets with the updated sheets included in this addendum or add new sheets included in this addendum.

SHEET NUMBER/DETAIL	SHEET NAME	DESCRIPTION
M001		Refer to General Note #39 regarding operation of the HVAC Systems during construction.

DRAWINGS - ELECTRICAL:

Note: Replace the following sheets with the updated sheets included in this addendum or add new sheets included in this addendum.

SHEET NUMBER/DETAIL	SHEET NAME	DESCRIPTION
		These sheets are to be replaced with sheets attached in this addendum
E007	EQUIPMENT SCHEDULES	Updated switch sizes for water heaters and dish exhaust fan.
E091	OVERALL ELECTRICAL SITE PLAN	Clarification on which site panels should remain if associated building alternate is accepted or not.
E101F	AREA F LEVEL 01 LIGHTING PLAN	Changed locker room lighting to grid lay-in fixtures.
E501	ENLARGED CAFETERIA STAGE PLANS	Updated AV requirements for stage.
E600, E402D	PANEL SCHEDULES	Updated breaker size for dishwasher exhaust fan.
E606, E401E	PANEL SCHEDULES	Updated breaker size for water heater 8 and 6.

DRAWINGS - CIVIL:

Note: Replace the following sheets with the updated sheets included in this addendum or add new sheets included in this addendum.

SHEET NUMBER/DETAIL	SHEET NAME	DESCRIPTION
C-013, C-012		1. Details on sheets C-012 and C-013 have been updated/revised accordingly. No artificial turf is proposed as part of the project's athletic facilities. 2. Please refer to updated/revised track detail shown on C-013.
C-700		Proposed 2" irrigation meter and backflow is proposed and shown on C-700. It is understood that this line/meter diameter will be sufficient to appropriately irrigate the areas of the site intended by the Owner. Detailed irrigation design will need to be coordinated with the Owner or Owner's representatives and designed-by- Others. A sprinkler allowance will be added to the bid documents

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C-006 and C-200		Acknowledged; conflicting information for proposed pavement sections have now been revised/updated and shown on C-006 and C-200. Per the recommendations of the site's geotechnical report, the proposed light duty pavement section will be 1.5"/1.5"/6" and heavy duty pavement section will be 2"/2"/8".
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SUBSTITUTION REQUESTS:

Note: Manufacturers listed below as "APPROVED" shall meet ALL requirements of the written specification.

SECTION	SECTION TITLE	MANUFACTURER	DISPOSITION
12 3450	High Pressure Melamine Construction Modular Casework	Cabinets by Design	Approved must meet all specs
12 2413	Interior Roller Window Shades (Motorized)	Mecho Shades	Approved must meet all specs
12 2415	Interior Roller Window Shades (Manual)	Mech Shades	Approved must meet all specs
22 0010	Plumbing Fixtures	Acorn Sinks	APPROVED
23 0010	Rooftop Air Handling Units	Daikin	APPROVED
23 0010	Refrigeration Machines	Daikin	APPROVED
23 0010	Ductless Split Heat Pumps	Daikin	APPROVED
26 5668	Exterior Sports Field Lighting	Premier Lighting	Approved – must meet specs

END OF Y1 New Middle School – ADDENDUM #1

YSD#1 – New MS Pre-Bid Conference

September 23, 2025

2pm

Meeting Minutes

1. Britton opened the meeting with introductions and reviewed the items on the agenda.
2. Turner reviewed the civil documents.
3. Long reviewed Architectural Documents
4. General Discussion / Questions
 - a. The District has canceled the previously bid sitework package and this work scope is included in the New Middle School package.
 - b. The first addendum is scheduled to be released on Monday September 29th. All current plan holders will be notified.
 - c. The bid opening will be in two phases, as follows:
 - i. The base bid bids will be due at 2pm. Bid Bonds to be included in the base bid package.
 - ii. The alternate bids will be due at 3pm. Both bids will be opened at 3pm.
 - iii. Addendum No. 1 will have revised bid forms; one form for the base bid and one form for the alternates.
 - d. The Geotechnical Report is included in the previously released construction documents.
 - e. A cash allowance will be added for irrigation.
 - f. Duke Power is the electrical service provider. A utility pole will need to be relocated (interferes with driveway). The firm awarded the GC package will be responsible for coordinating with Duke Power.

- g. ESP to address the pavement cross sections as there are multiple details for heavy duty asphalt.
- h. The District will be leasing the parking lot lighting from Duke Power but the GC will be responsible for installing conduit under asphalt, curb & gutter, and other hard surfaces. ESP to issue a sleeve plan.
- i. The District will consider substitutions for all products but the substitution form included in the construction documents must be used.
- j. BIM modeling will be required. The architect will issue the required files.
- h. If the alternate associated with the auditorium is awarded, the substantial completion date for said alternate will be later than that of the base bid. With that said, the auditorium must be dried in and all masonry associated with the auditorium must be completed at the base bid substantial completion date. Specific information for completion date extension will be included in addendum #1 (Spec Section 00-21-13.1).
- i. The demo of structures located on the site (shown on drawings) is included in the contract documents. The Phase I report for the house on the site was noted to have asbestos containing material and the GC is to follow code required demolition practices.
- j. The site has segmental retaining walls and York County requires walls over 48" to be permitted through them. The permitting for this work is the responsibility of the GC.
- k. The project is located in York County and the utilities will be provided by the City of York (water / sewer) and Duke (Electrical).
- l. Masonry will not be required to be procured "turn key" and unit price operations can be used. All other masonry specifications are to be enforced.
- m. Substitution requests are to be submitted by September 30, 2025.
- n. Last day for questions is October 2, 2025.

NEW MIDDLE SCHOOL
 Pre-Bid Meeting
 September 23, 2025 – 2:00PM

Sign – In Sheet

<u>Name</u>	<u>Representing & Contact Information</u>
<u>Amy Hagner</u>	<u>LYL</u> <u>York School District</u>
<u>Daquann Barrett</u>	<u>Bug Out - 980-418-3474</u> daquann.barrett@bugoutservice.com
<u>Lizzie Hobart</u>	<u>Qualite Sports Lighting - 854-895-2928</u> lhobart@qualite.com
<u>ERIC CARROLL</u>	<u>IMPACT FIRE 704-724-4434</u>
<u>RYAN TURNER</u>	<u>ESP ASSOCIATES</u> wdrummond@espco.com
<u>WES DRUMMOND</u>	<u>SM COPE 803-920-9498</u>
<u>Tyler White</u>	<u>JM Cope twhite@jmcopc.com 864-237-7468</u>
<u>Tommy Clark</u>	<u>JmCope tclark@JmCope.com 803-571-313</u>
<u>Jennifer McClure</u>	<u>jennifer.m@thwestbrookco.com</u>
<u>Justin Heitz</u>	<u>jheitz@shelcolc.com</u>
<u>Darin Vickers</u>	<u>dvickers@shelcolc.com</u>
<u>Jerry Anderson</u>	<u>jerry@leitnergrp.com</u>
<u>Brandon Stegall</u>	<u>bstegall@TSportslight.com</u>
<u>TRAVIS PERLEY</u>	<u>TPerley@TSportslight.com</u>
<u>Clayton Yunt</u>	<u>ClaytonYunt@THSConstructors.com</u>

NEW MIDDLE SCHOOL
 Pre-Bid Meeting
 September 23, 2025 – 2:00PM

Sign – In Sheet

<u>Name</u>	<u>Representing & Contact Information</u>	
Perry Isenbarg	Rogers Grading	PIsenbarg210@gmail.com
David Briggs	Rogers Grading	davidmbriggs@yahoo.com
CARLY MORRIS	SWINERTON	CARLY.MORRIS@SWINERTON.COM
Joseph Dail	Stelco Electric	joseph@stelco-electric.com
Matthew Erni	Johnson Controls	Matthew.Erni@jci.com
Juan Lopez	EMR Services Inc	Ruben@EMRServicesInc.com
Justin Clark	A1 Fence	jclark@a1fencech.com
Huck Huxley	Axis Portable Air	hhuxley@axisair.com
Logan Hoffman	Sack Company	lhoffman@HASack.com

DIVISION 00 PROCUREMENT AND CONTRACTING REQUIREMENTS

INTRODUCTORY INFORMATION

00 0101	Project Title Page
00 0107	Seals Page – Architectural
00 0107.1	Seals Page - Structural
00 0107.2	Seals Page – Plumbing, Fire Protection, HVAC
00 0107.3	Seals Page – Electrical
00 0110	Table of Contents

INTRODUCTORY INFORMATION

00 1116	Invitation to Bids
00 2113	Information to Bidders
00 2113.1	Supplemental Instruction to Bidders
00 2610	Submittal of Substitutions
00 4113	Bid Form- Base Bid
00 4113	Bid Form – Alternate Bid
00 4324	Bidders Request for Information Form
00 4325	Substitution Request Form

CONTRACTING REQUIREMENTS

00 52 00	Agreement Forms
	AIA Document A101/CMA-1992, Standard Form of Agreement Between Owner and Contractor
	AIA Document A312-1984, Performance and Payment Bond
	AIA Document A201/CMA-1992, General Conditions of the Contract for Construction
	Supplementary Conditions to the General Conditions of the Contract for Construction

DIVISION 01 GENERAL REQUIREMENTS (BALANCE BY CM@R)

01 0000	General Requirements
01 1000	Summary of Work
01 1400	Work Restrictions
01 2100	Allowances
01 2113	Cash Allowances
01 2300	Alternates
01 2653	Proposal Requests
01 2973	Schedule of Values
01 2976	Progress Payment Procedures
01 3119	Project Meetings
01 3216	Construction Progress Schedule
01 3300	Submittal Procedures
01 3223	Project Survey and Layout
01 4000	Quality Requirements
01 4001	Chapter 1 and Chapter 17 Special Inspections
01 4100	Regulatory Requirements
01 4126	Permits
01 4200	References
01 4300	Quality Assurance
01 4523	Testing and Inspecting Services
01 5000	Temporary Facilities and Controls
01 5639	Temporary Tree and Plant Protection
01 5713	Erosion and Sedimentation Control
01 6000	Product Requirements
01 6400	Owner Furnished Products
01 6500	Product Delivery Requirements
01 7123	Field Engineering
01 7300	Execution Requirements

01 7329	Cutting and Patching
01 7400	Cleaning and Waste Management
01 7419	Construction Waste Management and Disposal (CIVIL)
01 7700	Closeout Procedures
01 7823	Operation and Maintenance Data
01 7839	Project Record Documents

DIVISION 02 EXISTING CONDITIONS

02 3000	Subsurface Investigation – Report Available Upon Request
02 4119	Selective Demolition

DIVISION 03 CONCRETE

03 3000	Cast-In-Place Concrete
03 3616	Dye Stained Colored Ground & Polished Concrete

DIVISION 04 MASONRY

04 2000	Unit Masonry
04 2300	Reinforced Unit Masonry
04 7200	Cast Stone Masonry

DIVISION 05 METALS

05 1200	Structural Steel Framing
05 2100	Steel Joist Framing
05 3100	Steel Decking
05 4000	Cold Formed Metal Framing
05 5000	Metal Fabrications
05 5113	Metal Pan Stairs
05 5116	Metal Floor Plate Stairs
05 5213	Pipe and Tube Railings

DIVISION 06 WOOD, PLASTICS, AND COMPOSITES

06 1000	Rough Carpentry
06 1600	Wood Sheathing
06 1920	Wood Trusses
06 4023	Interior Architectural Woodwork
06 4219	High Pressure Plastic Laminate Composite Wood Wall Panels

DIVISION 07 THERMAL AND MOISTURE PROTECTION

07 1300	Sheet Waterproofing
07 1900	Water Repellents
07 2100	Thermal Insulation
07 2219	Closed Cell Foamed-in-Place Insulation System
07 3110	Fiberglass Based Asphalt Shingles
07 4210	Composite Framing Support (CFS) Clip System
07 4243	Composite Wall Panels
07 4295	Metal Soffit and Fascia Panels
07 4296	Aluminum Composite Material Wall Panels
07 5100	~~4-Ply Modified Roof System~~
07 5216	Modified Bitumen Roofing
07 6200	Sheet Metal Flashing and Trim
07 7200	Roof Accessories
07 8400	Firestopping & Smoke Seals
07 9005	Joint Sealers
07 9500	Expansion Control

DIVISION 08 OPENINGS

08 1113	Hollow Metal Doors Frames
08 1416	Flush Wood Doors
08 3100	Access Doors and Panels
08 3313	Rolling Counter Doors
08 3323	Overhead Coiling Doors
08 3326	Overhead Coiling Grilles
08 4110	Aluminum-Framed Entrances and Storefronts
08 4500	Insulated Translucent Fiberglass Sandwich Panel Wall & Roof Assemblies
08 7100	Finish Hardware
08 8000	Glazing
08 9200	Louvered Equipment Enclosures

DIVISION 09 FINISHES

09 2116	Gypsum Board Assemblies
09 2423	Commercial Cement Plaster
09 5113	Floating Suspended Ceiling System
09 5120	Acoustical Treatment
09 5123	Acoustical Tile Ceilings
09 6453	Wood Performance Stage Floor
09 6466	Thrust-a-Cushion Panel Wood Floor Systems
09 6600	Resilient Flooring LVT
09 6610	Rubber Flooring Accessories
09 6640	Rubber Flooring
09 6723	Epoxy Floor
09 6800	Tile Carpeting
09 9113	Exterior Paint
09 9123	Interior Paint

DIVISION 10 SPECIALTIES

10 1101	Visual Display Boards
10 1110	Magnetic Glass Markerboard System
10 1400	Signage (by Allowance)
10 1900	Suspended Mounted Cubical Tracks
10 2116	Solid Phenolic Toilet Compartments
10 2800	Toilet Accessories
10 4400	Fire Protection Specialties
10 5100	Lockers
10 5300	Covered Walkway System
10 6700	Storage Shelving
10 7516	Ground-Set Flagpoles
10 9100	Miscellaneous Specialties

DIVISION 11 EQUIPMENT

11 2300	Athletic Laundry Equipment
11 3100	Residential Appliances
11 4000	Food Service Equipment
11 6100	Performance Equipment
11 6143	Stage Drapery and Curtain
11 6600	Interior Athletic Equipment
11 6624	Single-Sided Basketball Score Board
11 6653	Overhead Divider Curtain
11 6800	Exterior Athletic Equipment
11 6843	Baseball-Softball Scoreboard
11 6845	Soccer/Lacrosse/Track/Football Scoreboard
11 6848	Football Timing Display Clocks

DIVISION 12 FURNISHINGS

12 2413	Interior Roller Window Shades (Motorized)
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12 2415	Interior Roller Window Shades (Manual)
12 3000	High Pressure/Melamine Construction Modular Casework
12 3450	Science Casework and Equipment
12 3501	Music Instrument Storage Casework
12 3550	Media Center Shelving
12 3661	Solid Surfacing Countertops and Sills
12 6100	Fixed Audience Seating
12 7600	Telescoping Gymnasium Seating
12 9301	Bicycle Racks

DIVISION 13 SPECIAL CONSTRUCTION

13 1250	Exterior Bleachers (Angle Frame Semi Closed Deck)
13 3419	Press Box – Football

DIVISION 14 CONVEYING EQUIPMENT

14 2400	Hydraulic Elevators
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DIVISION 21 FIRE SUPPRESSION

21 0010	General Provisions – Fire Protection
21 0500	Fire Protection

DIVISION 22 PLUMBING

22 0010	General Provisions, Plumbing
22 0500	Plumbing
22 0700	Plumbing Insulation

DIVISION 23 HEATING, VENTILATING AND AIR CONDITIONING (HVAC)

23 0010	General Provisions – HVAC
23 0500	Heating, Ventilation, and Air Conditioning
23 0548	Vibration Isolation and Seismic/Wind Restraint
23 0700	HVAC Insulation
23 0900	HVAC Controls

DIVISION 26 ELECTRICAL

26 0500	Common Work Results for Electrical
26 0519	Low Voltage Electrical Power Conductors and Cables
26 0526	Grounding and Bonding for Electrical Systems
26 0529	Hangers and Supports for Electrical Systems
26 0533	Raceways and Boxes for Electrical Systems
26 0534	Floor Boxes for Electrical Systems
26 0536	Cable Trays for Electrical Systems
26 0548	Vibration and Seismic Controls for Electrical Systems
26 0553	Identification for Electrical Systems
26 0574	Arc Flash, OCP, Short Circuit Study
26 0583	Equipment Wiring Connections
26 0923	Lighting Control Devices
26 2200	Low Voltage Transformers
26 2413	Low Voltage Switchboards
26 2416	Panelboards
26 2417	Coordination Panelboards – Fusible
26 2726	Wiring Devices
26 2813	Fuses
26 2819	Enclosed Switches
26 2823	Enclosed Circuit Breakers
26 2826	Enclosed Transfer Switches
26 3213	Engine Generator System
26 4100	Facility Lightning Protection

26 4300	Surge Protective Devices
26 5100	Interior Lighting
26 5200	Emergency Lighting
26 5600	Exterior Lighting
26 5668	Exterior Sports Field Lighting

DIVISION 27 COMMUNICATIONS

27 5123	Intercommunications Systems
27 8306	Radio Enhancement System

DIVISION 28 ELECTRONIC SAFETY AND SECURITY

28 3100	Fire Alarm Systems
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DIVISION 31 EARTHWORK

31 1000	Site Clearing
312000	Earth Moving
312319	Dewatering
31 3116	Termite Control
31 5000	Excavation Support and Protection

DIVISION 32 EXTERIOR IMPROVEMENTS

32 1216	Asphalt Paving
321313	Concrete Paving
32 1723	Pavement Markings
32 1823	Baseball Infield
32 3113	Chain Link Fences and Gates
32 3118	Ornamental Metal Fence System
32 3119	Exodus-Egress Gate System – Pre-hung Gate
32 3223	Segmental Retaining Walls
32 9200	Turf and Grasses

DIVISION 33 UTILITIES

33 1000	Water Utilities
33 3000	Sanitary Sewer Utilities
33 4100	Storm Utility Drainage Piping

APPENDIX 'A'

ASHRAE 90.1-2007	COMcheck Mechanical Systems (HVAC) & Water Heating Compliance(Swygert)
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APPENDIX 'B'

ASHRAE 90.1-2007	COMcheck Lighting Compliance Certificate (Belka)
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APPENDIX 'C'

NFPA 13-2016	Fire Sprinkler System – Above Ground (Swygert)
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APPENDIX 'D'

ASHRAE 90.1-2007	COMcheck Envelope Compliance Certificate (MPS)
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APPENDIX "E"

Geotechnical Report

APPENDIX "F"

CITY OF YORK – Sanitary Sewer Specifications

APPENDIX "G"

CITY OF YORK – Water Main Specifications

APPENDIX "H"

Phase 1 Environmental Site Assessment (sent as a separate file in Addendum #1 because of file size)

END OF SECTION

PART 1 - GENERAL

1.1 Related Documents

- 1.1.1 Documents affecting work of this section include, but are not necessarily limited to, the contract documents, addenda and General and Supplementary Conditions.

1.2 Products Lists

- 1.2.1 Within the bidding period for non-specified manufacturers of items specified by reference standards, submit to Architect/Engineer five (5) copies of complete list of major products, which are proposed for installation.
- 1.2.2 Tabulate products by specifications' section number and title.
- 1.2.3 For products only by reference standards, list for each product:
 - A. Name and address of manufacturer
 - B. Trade name
 - C. Model or catalog designation
 - D. Manufacturer's data:
 - 1) Reference standards
 - 2) Performance test data

1.3 Contractor's Options

- 1.3.1 For products specified only by reference standard, select product meeting that standard by any manufacturer.
- 1.3.2 For products specified by naming several products or manufacturers, select any one of the products and manufacturers named which complies with the specifications.
- 1.3.3 For products specified by naming several products or manufacturers and stating "or equivalent", "or equal," or "or approved equal" submit a request as for substitutions, for any product or manufacturer which is not specifically named.

1.4 Substitutions

- 1.4.1 Contractor's Base Bid shall be in strict accordance with the drawings and project manual. Contractor has the option of requesting substitutions during the bidding period by submitting completed substitution requests a minimum of ten (10) days prior to Bid Date.
 - A. After end of that period, requests will be considered only in case of product unavailability or other conditions beyond the control of the Contractor.
- 1.4.2 Submit separate requests for each substitution. Support each request with the following:
 - A. Complete data substantiating compliance of proposed substitution with requirements stated in contract documents:

SECTION 00 26 10 – SUBMITTAL OF SUBSTITUTIONS

- 1) Product identification, including the manufacturer's name and address.
 - 2) Manufacturer's literature; identify:
 - a. Product description
 - b. Reference standards
 - c. Performance and test data
 - 3) Samples, as applicable.
 - 4) Name and address of similar projects on which product has been used, and date of each installation.
- B. Itemized comparison of the proposed substitution with product specified; list significant variations.
- C. Data relating to changes in construction schedule.
- D. Any effect of substitution on separate contracts.
- E. List of changes required in other work or products.
- F. Designation of required license fees or royalties.
- G. Designation of availability of maintenance services, sources of replacement materials.

1.4.3 Substitutions will not be considered for acceptance when:

- A. They are indicated or implied on shop drawings or product data submittals without formal request from Contractor.
- B. Acceptance will require substantial revision of contract documents.
- C. In the judgment of Architect/Engineer, do not include adequate information necessary for a complete evaluation.
- D. If requested after contract award directly by a trade Contractor, sub-contractor or supplier.

1.4.4 Substitute products shall not be ordered or installed without written acceptance of Architect/Engineer.

1.4.5 Architect/Engineer will determine acceptability of proposed substitutions.

1.5 Contractor's Representation

1.5.1 In making formal request for substitution, Contractor represents the following:

- A. He has investigated the proposed product and has determined that it is equivalent to or superior in all respects to that specified.
- B. He will provide same warranties or bonds for substitution as for product specified.
- C. He will coordinate installation of accepted substitution into the work, and make such changes as may be required for the work to be complete in all respects.

SECTION 00 26 10 – SUBMITTAL OF SUBSTITUTIONS

- D. He waives claims for additional costs caused by substitution, which may subsequently become apparent.

1.6 Architect/Engineer Duties

1.6.1 Review Contractor's request for substitutions with reasonable promptness.

1.6.2 Notification to Contractor shall be in accordance with contract documents.

1.7 Substitution Request Form

1.7.1 See Section 00 43 25 for Substitution Request Form.

END OF SECTION



SOLICITATION: 2025-0911

NEW MIDDLE SCHOOL
REVISED

BIDDER NAME: _____

BIDDER PHONE: _____

BIDDER EMAIL: _____

YORK SCHOOL DISTRICT #1
1475 EAST LIBERTY STREET
YORK, SOUTH CAROLINA 29745

BASE BID WORK SCOPE BID FORM – Due at 2pm

All Parties:

Having carefully examined the Drawings and Specifications for the above noted project(s), as well as the premises and conditions affecting the work, the undersigned proposes to furnish all materials, labor, equipment, and services called for by them for a lump sum consideration of:

BASE BID: \$_____ (NUMERICAL AMOUNT HERE)

_____ (WRITTEN DOLLARS HERE)

The above stated bid is based on the above-mentioned Drawings, Specifications, Pre-Bid Schedule and any Addenda issued subsequent to the basic Drawings and Specifications. (List all Addenda with dates of any issued. If no additional Addenda are issued, write the word "NONE".)

Addendum Number

Date

Alternate Bid will be received at 3pm and should be submitted using the specific bid form for alternates. Both base bid and alternate packages will be opened at 3pm and read aloud together.

If any of the following Alternates are accepted, the above stated sum (base bid amount) will be altered by the amount(s) indicated below.

UNIT PRICES

Enter the requested unit prices below. The amount listed will be used for contract deductions in cases of credits and contract increases in cases of work scope additions. The amount listed should be fully inclusive of labor, material, equipment, taxes, insurance, overhead, profit, etc.

The unit rate below is to be used in cases of determining the amount of credit or additional cost if the work scope changes. The unit rate is to be actual cost without overhead and profit included. Overhead and Profit will be added / deducted using the form included in this project manual at the time of the formal Change Order:

1. Unsuitable Soil: Remove and replace soil with suitable material found on site. Unsuitable soil shall remain on site. **INCLUDE 10,000 CY in base bid.**

Unit Price / CY for add / credit: _____

Listing Of Subcontractors:

In the below space, list the requested subcontractor(s) and the amount included in the **Base Bid** for this subcontractor(s):

Grading Contractor: _____

Fire Sprinkler Contractor: _____

Plumbing Contractor: _____

HVAC Contractor: _____

Electrical Contractor: _____

If notified of the acceptance of this bid or any Alternate within ninety (90) days after the date fixed for the opening of the bid, the undersigned agrees to execute and deliver the specified Contract and Contractor's Bond within ten (10) days. The undersigned agrees, if awarded the Contract within ninety (90) days from the fixed date for opening of the bids, to faithfully and properly complete the whole work within the specified time, consistent with the best interest of the Owner, the safety of the public and in accordance with first-class workmanship.

The undersigned agrees that the Owner may retain the sum of money specified as "Liquidated Damaged" as indicated within the Contract Documents, from the amount of compensation to be paid the undersigned for each calendar day that work remains uncompleted and unaccepted after the maximum duration of time for the work to be completed. This amount is agreed upon as the proper measure of liquidated damages, which the Owner sustains per day by failure of the undersigned to complete the work in the stipulated time and is not to be construed in any sense as a penalty.

Attached hereto is a Bid Bond, which shall not be less than five percent (5%) of the principal's bid, made payable to the Owner.

The undersigned agrees, if awarded the Contract, to comply with all provisions regarding commencement, prosecution, completion and acceptance of the work as described in the above-mentioned Specifications, "Bid Form", Construction Contract and Performance Bond. If the undersigned fails to perform according to these documents, the Bid Bond shall be paid as liquidated damages for such failure; otherwise, the Bid Bond accompanying this proposal shall be returned to the undersigned.

A Performance and Payment Bond, executed on AIA Document A312, will be required in the amount of one hundred percent (100%) of the Contract amount. Cost of bonds shall be included in the bid.

It is agreed that the undersigned has completed and/or will comply with all requirements concerning licensing and with all other local, state, and national laws and that no legal requirement has been or will be violated in making or accepting this proposal, in awarding the Contract to him and/or in the performance of the Work required there under.

By submission of this bid, the undersigned declares that the person or persons signing this proposal is/are authorized to sign the proposal on behalf of the firm listed and to fully bind the firm listed to all the conditions and provisions thereof. Furthermore, each person signing on behalf of any bidder certifies, under penalty of perjury that, to the best of its knowledge and belief, each bidder is not on the list created pursuant to Section 11-57-310 of the South Carolina Code of Laws.

Respectfully submitted this _____ day of _____, 2025.

(Name of Firm)

(S.C. Contractor's License)

(Address)

By: _____
(Signed Name)

(Printed Name & Title)

***** Be sure to include this page in your proposal *****



SOLICITATION: 2025-0911

NEW MIDDLE SCHOOL
REVISED

BIDDER NAME: _____

BIDDER PHONE: _____

BIDDER EMAIL: _____

YORK SCHOOL DISTRICT #1
1475 EAST LIBERTY STREET
YORK, SOUTH CAROLINA 29745

ALTERNATE WORK SCOPE BID FORM – Due at 3pm

All Parties:

Having carefully examined the Drawings and Specifications for the above noted project(s), as well as the premises and conditions affecting the work, the undersigned proposes to furnish all materials, labor, equipment, and services called for by them for a lump sum consideration of:

The above stated bid is based on the above-mentioned Drawings, Specifications, Pre-Bid Schedule and any Addenda issued subsequent to the basic Drawings and Specifications. (List all Addenda with dates of any issued. If no additional Addenda are issued, write the word "NONE".)

Addendum Number

Date

If any of the following Alternates are accepted, the above stated sum (base bid amount) will be altered by the amount(s) indicated below.

- a. If no Alternates are indicated, enter the term "NOT APPLICABLE" after the dollar (\$) sign.
- b. If Alternates are indicated, strike through completely either "add" or "deduct" in order to leave exposed the proper change to the base bid amount and indicate the amount of the change in numbers after the dollar (\$) sign.

- c. If Alternates are indicated, but there is no change to the base bid amount, enter the term "NO CHARGE" after the dollar (\$) sign.

ALTERNATE #1

State the amount to be ADDED to the Base Bid for work associated with constructing the Platform D101B in the Cafeteria.D101 as shown in Drawings. Alternate is to include front and rear curtains as specified.

\$_____

ALTERNATE #2

State the amount to be ADDED to the Base Bid for work associated with constructing the Auditorium E152, Stage E155 and all associated areas and Lobby E150 as shown on Sheet A305A and ALL associated Mechanical, Plumbing, Electrical, Fire Protection systems.

\$_____

ALTERNATE #3

State the amount to be ADDED to the Base Bid for work associated with constructing Athletic Concession /Toilet Building as shown on Sheets A105, S901 and ALL associated Mechanical, Plumbing, Electrical, Fire Protection systems.

\$_____

ALTERNATE #4

State the amount to be ADDED to the Base Bid for work associated with constructing Softball and Baseball Dugouts and Press box / Storage Buildings as shown on Sheets A101, A102, A103, A104, and ALL associated Mechanical, Plumbing, Electrical, Fire Protection systems.

\$_____

ALTERNATE #5

State the amount to be ADDED to the Base Bid for work associated with constructing the Football Bleachers and Pre-fabricated Press box at the Football/Soccer Field as shown on Civil Drawings and associated Electrical Drawings (Concrete slab under bleacher and all surrounding sidewalks are to be included in base bid).

\$_____

ALTERNATE #6

State the amount to be ADDED/DEDUCTED to the Base Bid for work associated with preferred Musco Athletic lighting per specification section 26 5668 with a 25 year warranty. All other approved manufacturer/installers for this scope of work are to be included in the base bid.

\$_____

ALTERNATE #7

State the amount to be ADDED to the Base Bid for work associated with artificial turf in the courtyard as identified on civil / landscape (drawing to be issued in Addendum #2).

\$ _____

ALTERNATE #8

State the amount to be ADDED to the Base Bid for work associated with expediting the construction schedule from 19 months to 18 months. Based on a Notice To Proceed Date of November 21, 2025, and maintaining the Substantial Completion date of June 1, 2027. This date alternate does not include Alternate #2 if awarded. Alternate #2 completion schedule is per dates included in Addendum #1.

\$ _____

If notified of the acceptance of this bid or any Alternate within ninety (90) days after the date fixed for the opening of the bid, the undersigned agrees to execute and deliver the specified Contract and Contractor's Bond within ten (10) days. The undersigned agrees, if awarded the Contract within ninety (90) days from the fixed date for opening of the bids, to faithfully and properly complete the whole work within the specified time, consistent with the best interest of the Owner, the safety of the public and in accordance with first-class workmanship.

The undersigned agrees that the Owner may retain the sum of money specified as "Liquidated Damaged" as indicated within the Contract Documents, from the amount of compensation to be paid the undersigned for each calendar day that work remains uncompleted and unaccepted after the maximum duration of time for the work to be completed. This amount is agreed upon as the proper measure of liquidated damages, which the Owner sustains per day by failure of the undersigned to complete the work in the stipulated time and is not to be construed in any sense as a penalty.

Attached hereto is a Bid Bond, which shall not be less than five percent (5%) of the principal's bid, made payable to the Owner.

The undersigned agrees, if awarded the Contract, to comply with all provisions regarding commencement, prosecution, completion and acceptance of the work as described in the above-mentioned Specifications, "Bid Form", Construction Contract and Performance Bond. If the undersigned fails to perform according to these documents, the Bid Bond shall be paid as liquidated damages for such failure; otherwise, the Bid Bond accompanying this proposal shall be returned to the undersigned.

A Performance and Payment Bond, executed on AIA Document A312, will be required in the amount of one hundred percent (100%) of the Contract amount. Cost of bonds shall be included in the bid.

SECTION 00 43 13 – BID FORM - ALTERNATES

It is agreed that the undersigned has completed and/or will comply with all requirements concerning licensing and with all other local, state, and national laws and that no legal requirement has been or will be violated in making or accepting this proposal, in awarding the Contract to him and/or in the performance of the Work required there under.

By submission of this bid, the undersigned declares that the person or persons signing this proposal is/are authorized to sign the proposal on behalf of the firm listed and to fully bind the firm listed to all the conditions and provisions thereof. Furthermore, each person signing on behalf of any bidder certifies, under penalty of perjury that, to the best of its knowledge and belief, each bidder is not on the list created pursuant to Section 11-57-310 of the South Carolina Code of Laws.

Respectfully submitted this _____ day of _____, 2025.

(Name of Firm)

(S.C. Contractor's License)

(Address)

By: _____
(Signed Name)

(Printed Name & Title)

***** Be sure to include this page in your proposal *****

1.0 GENERAL

The provisions of the Instruction to Bidders and of the Special Conditions, General Conditions, and Supplementary Conditions of these Specifications shall govern the work under this Division or Section the same as if incorporated herein.

1.1 QUALITY ASSURANCE

Qualifications of Manufacturers: Products used in the Work shall be produced by manufacturers regularly engaged in the manufacture of similar items and with a history of successful production acceptable to the Architect/Engineer.

Qualifications of Workmen: Use adequate numbers of workmen who are thoroughly trained and experienced in the necessary skills, completely familiar with the manufacturer's recommended methods of application and completely familiar with the specific requirements of the work.

Codes and Standards: Comply with the 2018 Edition of the International Building Code or other Governing Local Codes and Standard. Comply also with all instructions and recommendations from the manufacturers of various materials. Notify Architect immediately of any systems which do not comply with the 2018 International Building Code or any local codes that may be more stringent.

1.2 PRODUCT HANDLING

Delivery and Storage:

Deliver all packaged materials to the job site in their original unopened containers with all labels intact and legible at time of inspection.

Store all materials in an approved manner, protecting from contact with soil and from exposure to the elements. Limit the amount of weight of materials placed on roofs or floors not on grade at anytime making sure stored materials are DISTRIBUTED OVER LARGE AREAS AND NOT CONCENTRATED.

Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect/Engineer and at no additional cost to the Owner.

1.3 SCHEDULING AND COORDINATION

All work shall be scheduled and coordinated with the Owner.

1.4 MATERIAL AND WORKMANSHIP

Fitting Job Conditions: The Contractor and material suppliers shall be responsible for inspecting all job conditions affecting the installation of an item and taking all field measurements required prior to fabrication of an item to ensure that the item concerned will integrate properly with all adjacent materials and fit all other conditions as they exist or will exist in the finished project.

1.5 CODES AND LAWS

All construction will comply with the latest edition of the 2018 International Building Code, National Fire Protection Association Code, Section 504 of the Rehabilitation Act of 1973 and all general and permanent Laws of the State of South Carolina. This District places major emphasis on the safety and well-being of its students, faculty and staff. It is the first duty of supervisors and all other persons in authority to provide for safety and fire prevention.

1.6 OCCUPATIONAL SAFETY AND HEALTH

The construction shall be governed, at all times, by applicable provisions of the Federal Law(s), including but not limited to the following, as amended to date.

Williams-Steiger Occupational Safety and Health Act of 1970, Public Law 91-596.

Part 1910 - Occupational Safety and Health Standards, Chapter XVII of Title 29, Code of Federal Regulations; and

Part 1518 - Safety and Health Regulations for Construction, Chapter XIII of Title 29, Code of Federal Regulations.

END OF SECTION

BGENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for alternates.

1.2 DEFINITIONS

- A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the base bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
 - 1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
 - 2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.
 - 3. The Alternates are not in precise order of acceptance and may be accepted, rejected, or deferred in any order.

1.3 PROCEDURES

- A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
 - 1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
- B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been Accepted, Rejected, or Deferred for later consideration. Include a complete description of negotiated modifications to alternates, if any.
- C. Execute accepted alternates under the same conditions as other work of the Contract.
- D. Alternate prices may be held 90-days beyond contract acceptance. Alternate prices listed below shall be good for ninety (90) days beyond the date of contract acceptance. The Owner may accept or reject any or all alternates within the above stated time frame.
- E. Schedule: A schedule of alternates is included at the end of this Section. The related Specification Sections contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

3.2 ALTERNATE #1

State the amount to be ADDED to the Base Bid for work associated with constructing the Platform D101B in the Cafeteria.D101 as shown in Drawings. Alternate is to include front and rear curtains as specified and all associated Mechanical, Plumbing, Electrical, Fire Protection systems required. Note that the Fire Alarm is included in the allowances and is not to be included in the Alternate bid pricing.

ALTERNATE #2

State the amount to be ADDED to the Base Bid for work associated with constructing the Auditorium E152, Stage E155 and all associated areas and Lobby E150 as shown on Sheet A305A and ALL associated Mechanical, Plumbing, Electrical, Fire Protection systems. Note that the Fire Alarm is included in the allowances is not to be included in the Alternate bid pricing.

ALTERNATE #3

State the amount to be ADDED to the Base Bid for work associated with constructing Athletic Concession /Toilet Building as shown on Sheets A105, S901 and ALL associated Mechanical, Plumbing, Electrical.

ALTERNATE #4

State the amount to be ADDED to the Base Bid for work associated with constructing Softball and Baseball Dugouts and Press box / Storage Buildings as shown on Sheets A101, A102, A103, A104, and ALL associated Mechanical, Plumbing, Electrical.

ALTERNATE #5

State the amount to be ADDED to the Base Bid for work associated with constructing the Football Bleachers and Pre-fabricated Press box at the Football/Soccer Field as shown on Civil Drawings and associated Electrical Drawings (Concrete slab under bleacher and all surrounding sidewalks are to be included in base bid)

ALTERNATE #6

State the amount to be ADDED/DEDUCTED to the Base Bid for work associated with preferred Musco Athletic lighting per specification section 26 5668 with a 25 year warranty. All other approved manufacturer/installers for this scope of work are to be included in the base bid.

ALTERNATE #7

State the amount to be ADDED to the Base Bid for work associated with artificial turf in the courtyard as identified on civil / landscape (drawing to be issued in Addendum #2).

ALTERNATE #8

State the amount to be ADDED to the Base Bid for work associated with expediting the construction schedule from 19 months to 18 months. Based on a Notice To Proceed Date of November 21, 2025, and maintaining the Substantial Completion date of June 1, 2027. This date alternate does not include Alternate #2 if awarded. Alternate #2 completion schedule is per dates included in Addendum #1.

END OF SECTION

1.0 GENERAL

1.1 RELATED DOCUMENTS: Drawings and general provisions of Contract including General & Supplementary Conditions and other Division-1 specification sections, apply to work of this section.

1.2 SCOPE: This section describes the allowances that are to be included in the contractor's bid and entered on the Form of Proposal

1.3 ALLOWANCE: The following allowances to be used as directed by Architect. Any unused portion of these allowances shall be credited to the Owner at the completion of the work. These allowances shall be considered actual costs and the contractor's profit, insurance, taxes, installation cost, and protection of installed products, will be figured in the bids, except as otherwise noted.

1.4 SUBMITTALS

- A. Submit proposals for purchase of products or systems included in allowances, in form specified for Submittals.
- B. Submit invoices or delivery slips to indicate actual quantities of materials delivered to site for use in fulfillment of each allowance.

1.5 UNUSED MATERIALS

- A. Return unused materials to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.
- B. When not economically feasible to return unused material for credit and when requested by Program Manager, prepare unused material for Owner's storage, and deliver to Owner's storage

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 INSPECTION

- A. Inspect product covered by allowance promptly upon delivery for damage or defects.

3.2 PREPARATION

- A. Coordinate materials and installation for each allowance with related construction to ensure that each allowance item is completely integrated and interfaced with related construction activities.

3.3 SCHEDULE OF ALLOWANCES

All allowances shall include Material, S.C. Sales Tax and Installation (unless noted otherwise). Attic stock for materials is to be included as noted in individual specification sections for the product and/or scope of work.

1. General Contingency Allowance	\$ 250,000.00
2. Signage (interior and exterior – see Spec 10 1400)	\$ 100,000.00
3. Carpet Tile (material only, labor is to be included in base bid)	\$ 350,000.00
4. Performance Equipment	
a. Gymnasium Audio/Visual	\$ 25,000.00
b. Auditorium Audio/Visual (To be included in Alternate #2)	\$ 225,000.00
c. Platform in Cafeteria Audio/Visual (To be included in alternate #1)	\$ 115,000.00
d. Baseball/Softball Audio/Visual (To be included in Alternate #4)	\$ 10,500.00
e. Football Stadium Audio/Visual (To be included in Alternate #5)	\$ 14,500.00
f. BDA system	\$ 83,000.00
g. Site Irrigation System for Football Field	\$ 35,000.00
h. Site Irrigation System for Baseball Field	\$ 25,000.00
i. Fire Alarm Allowance	
i. BASE BID	\$327,500.00
ii. Alternate 1 (Platform at Cafeteria)	\$ 5,250.00
iii. Alternate 2 (Auditorium)	\$ 15,750.00

NOTE: Allowance money shall be used as directed by the Owner/Construction Manager and Architect for the work list and/or other work as deemed necessary for a successful project by the Owner.

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Concrete Block.
- B. Concrete Brick.
- C. Clay Facing Brick.
- D. Mortar and Grout.
- E. Reinforcement and Anchorage.
- F. Lintels.
- G. Accessories.

1.02 RELATED REQUIREMENTS

- A. Section 04 2300 - Reinforced Unit Masonry: Additional requirements for reinforced load-bearing masonry.
- B. Section 05 5000 - Metal Fabrications: Loose steel lintels.
- C. Section 06 1000 - Rough Carpentry: Nailing strips built into masonry.
- D. Section 07 2119 - Closed Cell Foamed-in-Place Insulating System: Weather barrier for masonry surfaces and membrane flashings.
- E. Section 07 1900 - Water Repellents: Masonry waterproofing.
- F. Section 07 2100 - Thermal Insulation: Insulation for cavity spaces.
- G. Section 07 9005 - Joint Sealers: Backing rod and sealant at control and expansion joints.

1.04 PRICE AND PAYMENT PROCEDURES (Not applicable to this project)

- A. This allowance includes purchase, sales tax and delivery of face brick. Installation is not included in the allowance but is specified in this section and is part of the Contract Sum/Price.

1.05 REFERENCE STANDARDS

- A. ACI 216.1/TMS 0216.1 - Standard Method for Determining Fire Resistance of Concrete and Masonry Construction Assemblies
- B. ACI 530/ASCE 5/TMS 402 - Building Code Requirements for Masonry Structures; American Concrete Institute International; 2008.
- C. ACI 530.1/ASCE 6/TMS 602 - Specification for Masonry Structures; American Concrete Institute International; 2008.
- D. ASTM A 82/A 82M - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement; 2007.
- E. ASTM A 153/A 153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2009.
- F. ASTM A 615/A 615M - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement; 2009b.
- G. ASTM C 33 - Standard Specification for Concrete Aggregates, 2007.
- H. ASTM C 55 - Standard Specification for Concrete Brick; 2009.

- I. ASTM C 67 - Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile; 2009.
- J. ASTM C 90 - Standard Specification for Load bearing Concrete Masonry Units; 2009.
- K. ASTM C 91 - Standard Specification for Masonry Cement; 2005.
- L. ASTM C 128 - Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Fine Aggregate.
- M. ASTM C 140 - Standard Test Methods of Sampling and Testing Concrete Masonry Units and Related Units; 2010.
- N. ASTM C 144 - Standard Specification for Aggregate for Masonry Mortar; 2004.
- O. ASTM C 150 - Standard Specification for Portland Cement; 2007.
- P. ASTM C 207 - Standard Specification for Hydrated Lime for Masonry Purposes; 2006.
- Q. ASTM C 216 - Standard Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale); 2007a.
- R. ASTM C 270 - Standard Specification for Mortar for Unit Masonry; 2008a.
- S. ASTM C330 - Standard Specification for Lightweight Aggregates for Structural Concrete.
- T. ASTM C 331 - Standard Specification for Lightweight Aggregates for Concrete Masonry Units; 2005.
- U. ASTM C 404 - Standard Specification for Aggregates for Masonry Grout; 2007.
- V. ASTM C 476 - Standard Specification for Grout for Masonry; 2009.
- W. ASTM C 780 - Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry; 2009.
- X. ASTM C 1634 - Standard Specification for Concrete Facing Brick; 2009.
- Y. ASTM D 226 - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing; 2006.
- Z. UL (FRD) - Fire Resistance Directory; Underwriters Laboratories Inc.; current edition.

1.05 SUBMITTALS

- A. See Section 01 3300 - Submittal Procedures, for submittal procedures.
- B. Product Data: Provide data for masonry units, fabricated wire reinforcement, mortar, and masonry accessories.
- C. Samples: Submit four full-size samples of facing brick and each type of concrete block units to illustrate color, texture, and extremes of color range.
- D. Manufacturer's Certificate: Certify that masonry units meet or exceed specified requirements.
 - 1. The producer of the concrete masonry units shall furnish a letter of certification stating that all aggregates used conform to the specifications as noted herein and ASTM standards. Certificate shall indicate the type of aggregates that are used in the mix design.
 - a. Certificate shall include ACI 216 fire resistance certification.
 - b. Certificate shall include UL fire resistance certification.
 - c. Certificate shall include ASTM C90 certification.
 - d. Certificate shall certify that lightweight aggregate complies with ASTM C331 with 6% to 10% absorption when tested in accordance with ASTM C128.
 - e. Certificate by independent testing facility that the lightweight aggregates are 100% recycled material.
 - f. Certificate stating minimum STC rating of each type block and that block meet

- specified sound transmission requirements.
- g. Test Report showing stain index per ASTM C641 =0.
- h. Test Report showing organic impurities per ASTM C40 < 1.
- 2. Brick test reports shall show:
 - a. Compressive strength.
 - b. 24 - hr. cold water absorption.
 - c. 5 - hr. boil absorption.
 - d. Saturation coefficient.
 - e. Initial rate of absorption (suction).
- 3. Provide certificates for each type of fire rated masonry.
- E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements, for additional provisions.
- F. Contractor shall provide the Owner with one cube (1,000 brick) of utility brick for each color used on the project upon project completion. Deliver to storage location as directed by Owner.

1.07 QUALITY ASSURANCE

- A. Comply with provisions of ACI 530/ASCE 5/TMS 402 and ACI 530.1/ASCE 6/TMS 602, except where exceeded by requirements of the contract documents.
- B. Fire Rated Assemblies: Conform to applicable code and UL requirements for fire rated masonry construction as noted on drawings.
- C. All membrane wall and flashings around building openings are to be installed by an established and qualified waterproofing contractor.

1.08 EXTERIOR WALL ASSEMBLY MOCK-UP for COLOR (Facing the sun)

- A. Construct a masonry wall as a mock-up panel sized as detailed in drawings; include mortar and accessories, structural backup, and each type of unit as directed by Architect for brick color approval.
 - 1. Mock-up panel shall show the complete and full range of exposed texture and color to be expected in the work and shall indicate materials, bond, joint tooling and workmanship to be expected in the final work.
- B. Locate where directed.
- C. A minimum of five (5) 3' x 4' panels will be required to be constructed for the purposes of selecting exterior masonry and mortar colors
- D. Mock-up may not remain as part of the Work.
 - 1. Retain panel during construction as standard for judging completed masonry work. Do not alter, move or destroy panel until work is completed and accepted.

1.09 COLOR SELECTION PANELS

- A. A minimum of (5) 3' x 4' panels will be required to be constructed for the purposes of selecting exterior masonry and mortar colors.
- B. Following color selections by the architect; the exterior wall assembly mock up panel is to be constructed in the selected colors

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.
- B. Handle and store masonry units in protective cartons or trays. Do not remove from protective

packaging until ready for installation. Stored units shall remain covered until installed.

- C. Units shall be handled to avoid breakage and chipping. Any chips outside of the requirements of specified ASTM standards shall not be placed in the finished wall. Units placed in the wall will be the responsibility of the installer and damaged units shall be replaced as directed by the Architect.
- D. Protect reinforcement from elements

1.11 JOB CONDITIONS:

- A. Protection of Work:
 - 1. During erection, cover top of wall with strong waterproof membrane at end of each day or shutdown. Cover partially completed walls when work is not in progress. Extend cover minimum of 24 in. (610 mm) down both sides. Hold cover securely in place.
 - 2. Protect door jambs and corners from damage during construction.
- B. Load Application:
 - 1. Do not apply uniform floor or roof loading for at least 12 hours after building masonry columns or walls.
 - 2. Do not apply concentrated loads for at least 3 days after building masonry columns or walls.
- C. Staining:
 - 1. Prevent grout or mortar from staining the face of masonry to be left exposed or painted. Remove excess grout or mortar immediately that is in contact with face of masonry. Protect all sills, ledges and projections from droppings of mortar.
 - 2. Protect the base of all walls from rain, mud and mortar splashes with straw or sand.

PART 2 PRODUCTS

2.01 MANUFACTURERS OF CONCRETE MASONRY UNITS

- A. Acceptable Manufacturers:
 - 1. Adams Products Company; www.adamsproducts.com
 - 2. Johnson Concrete Products; www.johnsoncmu.com
 - 3. Van Smith Block Company; www.van-smith.com
 - 4. Southeastern Concrete Products; www.seconcreteproducts.net
 - 5. Substitutions: See Section 01 60 00 Product Requirements.

2.02 CONCRETE MASONRY UNITS

- A. Concrete Block: Comply with referenced standards and as follows:
 - 1. LEED requirements:
 - a. Regional Materials - Concrete Masonry Units shall be manufactured within 500 miles of Project site from aggregates and cement that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles of Project site.
 - b. Concrete block walls consisting of 8" x 8" x 16" units shall meet STC rating of 45 or more.
 - c. Recycled Content of Lightweight Aggregate: Postconsumer recycled content plus one-half of pre-consumer recycled content not less than 50 percent.
 - d. Lightweight aggregates shall be certified by an independent testing facility that lightweight aggregates meet all qualifications of 100% recycled material.
 - 2. Size: Standard units shall be modular with nominal face dimensions of 16 x 8 inches and nominal depths as indicated on the drawings for specific locations.
 - a. Units shall be sound, free from cracks, chipped edges and other defects and have a uniform fine texture.

- b. Units shall be delivered to the project site in an air-dried condition.
- 3. Aggregates: All units shall be free of organic impurities that will cause rusting, staining or pop outs, and shall contain no combustible matter.
 - a. Lightweight Aggregate: ASTM C331 and C330; Lightweight aggregate shall be 100% expanded shale Stalite material produced by the rotary kiln process with 6% to 10% absorption when tested in accordance with ASTM C128 and shall be graded to assure constant texture.
 - b. Normal weight Aggregate: ASTM C33
- 4. All 8-inch deep or larger units shall meet ACI 216 requirements for 2 hour or greater fire resistance.
- 5. Special Shapes: Provide non-standard blocks configured for square corners, lintels, headers, control joint edges, bond beams, and other detailed conditions.
 - a. Provide radius corners.
- 6. Load-Bearing Units: ASTM C 90, lightweight. (25 lb block minimum with STC rating 45 minimum for 8" and 12" units)
 - a. Hollow block.
 - b. Exposed faces: Manufacturer's standard color and texture where indicated.
 - c. 2 & 3-hour fire resistance rating certified by UL.
- 7. Fire Resistance: Provide units that comply with fire rating indicated as shown. Fire-rated units shall be manufactured to comply with the minimum equivalent thickness required for the fire resistance indicated and the type of aggregate used.
 - a. Provide 2 & 3-hour fire resistance rating certified by UL.

B. Concrete Brick:

- 1. For architectural and paver use, ASTM C 1634 (or ASTM C 55-03 Grade N), non-cored (solid), medium weight.
- 2. For other uses, ASTM C 55, medium weight.
- 3. Size: As indicated on drawings.

2.03 SPLIT FACE CMU:

- A. Split Face Colored Facing Masonry Units shall be as manufactured by Adams Concrete Products Company, Durham, North Carolina, or approved equal.
- B. The color the units shall be:
 - 1. Color for field shall be "Ivory" tinted to match the existing building with matching mortar colors supplied by the block manufacturer.
 - 2. Color for banding shall be "Terra-cotta" tinted to match the existing building with matching mortar colors supplied by the block manufacturer.
- C. Materials: Cementitious materials, admixture and aggregates shall conform to pertinent ASTM Specifications and shall be suitable for use in cure concrete masonry.
- D. The minimum average of compressive strength, PSI on Net Area, will be 3,000 lbs. For 5 specimens, the minimum strength of individual units shall be 2,700 PSI (net area).
- E. Weight of Concrete: The oven dry weight of the concrete shall be 128 lbs. plus or minus 8 lbs. per cubic foot.
- F. Absorption: The absorption shall not exceed 10 lbs. per cubic foot.
- G. Moisture Content: Moisture content at time of delivery shall not exceed 35% of total absorption

and shall be in equilibrium with the average relative humidity at the time of laying the wall. The Contractor shall keep all units covered as they are received on the job. The covering will protect the masonry units from moisture and staining.

- H. Appearance and Visual Inspection: Color and surface textures of units shall be within the normal range established by agreement between the manufacturer and Architect and as represented by a protected sample wall panel erected at the Contractor's expense.

2.04 CLAY BRICK UNITS

- A. LEED requirements:
1. Regional Materials: Brick shall be manufactured within 500 miles of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles of Project Site.
- B. Facing Brick: ASTM C 216, Type FBS, Grade SW.
1. Color and texture: (Below selections to be used for purposes of bidding)
 - a. Brick Color #1 (Field): Utility Brick, 4 x 4 x 12 (Nominal) Pewter Gray or Pewter (as selected by architect and owner) by Palmetto Brick
 - b. Brick Color #2 (Accent): Utility Brick, 4 x 4 x 12 (Nominal) Platinum by Palmetto Brick
 2. Nominal size: Utility - 3-5/8" high x 11-5/8" wide x 3-1/2" deep;
Closure brick - 3-5/8" high x 7-5/8" wide x 3-1/2" deep
 3. Special shapes: Molded units as required by conditions indicated, unless standard units can be sawn to produce equivalent effect.
 4. Compressive strength: 8,000 psi, measured in accordance with ASTM C 67.
 5. Provide brick similar in texture and physical properties to those available for inspection at the Architect/Engineer's office.
 6. Do not exceed variations in color and texture of samples accepted by the Architect/Engineer.
- C. Facing Brick shall have the full range of brick colors mixed throughout in a uniform percentage of colors. All brick to be delivered to the site shall match throughout the project. Provide solid units, closure units, corner units and special shapes as required for the work. See drawings for special shapes required in the work.

2.05 MORTAR AND GROUT MATERIALS

- A. LEED Requirements:
1. Regional Materials - Aggregate for mortar and grout, cement, and lime shall be manufactured within 500 miles of Project site from aggregates and cement that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles of Project site.
- B. Masonry Cement: ASTM C 91, Type S load bearing and below ground masonry. Type N for all other masonry including masonry veneer and cast stone masonry.
1. Mortar color shall be standard gray for CMU (unless otherwise indicated), and shall match for the duration of the project.
- C. Portland Cement: ASTM C 150, Type I; color as required to produce approved color sample.
1. Hydrated Lime: ASTM C 207, Type S.
 2. Mortar Aggregate: ASTM C 144.
 3. Grout Aggregate: ASTM C 404.
 - a. Sand: White, washed masonry sand. UNWASHED SAND WILL NOT BE ALLOWED AND WILL BE CAUSE FOR REJECTION OF WORK.
- D. Water: Clean and potable.

- E. Moisture-Resistant Admixture: Water repellent compound designed to reduce capillarity.

2.06 REINFORCEMENT AND ANCHORAGE

- A. Manufacturers of Joint Reinforcement and Anchors:
1. Dur-O-Wal: www.dur-o-wal.com.
 2. Hohmann & Barnard, Inc: www.h-b.com.
 3. Masonry Reinforcing Corporation of America: www.wirebond.com.
 4. Substitutions: See Section 01 25 00 - Substitution Procedures.
- B. Reinforcing Steel: ASTM A 615/A 615M Grade 60 (420) deformed billet bars; galvanized.
- C. Single Wythe Joint Reinforcement: Ladder type; ASTM A 82/A 82M steel wire, hot dip galvanized after fabrication to ASTM A 153/A 153M, Class B; 0.1483-inch side rods with 0.1483-inch cross rods; width as required to provide not more than 1 inch and not less than 1/2 inch of mortar coverage on each exposure.
- D. Multiple Wythe Joint Reinforcement: Ladder type; ASTM A 82/A 82M steel wire, hot dip galvanized after fabrication to ASTM A 153/A 153M, Class B; 0.1483-inch side rods with 0.1483-inch cross rods; width as required to provide not more than 1 inch and not less than 1/2 inch of mortar coverage on each exposure.
- E. Adjustable Multiple Wythe Joint Reinforcement: Ladder type with adjustable ties or tabs spaced at 16 in on center ASTM A 82/A 82M steel wire, hot dip galvanized after fabrication to ASTM A 153/A 153M, Class B; 0.1875 inch side rods with 0.1483 inch cross rods and adjustable components of 0.1875 inch wire; width of components as required to provide not more than 1 inch and not less than 1/2 inch of mortar coverage from each masonry face.
1. Vertical adjustment: Not less than 3-1/2 inches.
 2. Seismic Feature: Provide lip, hook, or clip on extended leg of wall ties to engage or enclose not less than one continuous horizontal joint reinforcement wire of 0.1483-inch diameter.
 3. Insulation Clips: Provide clips at tabs or ties designed to secure insulation against outer face of inner wythe of masonry.
- F. Flexible Anchors: 2-piece anchors that permit differential movement between masonry and building frame, sized to provide not more than 1 inch and not less than 1/2 inch of mortar coverage from masonry face.
1. Steel frame: Crimped wire anchors for welding to frame, 0.25-inch thick, with trapezoidal wire ties 0.1875-inch-thick, hot dip galvanized to ASTM A 153/A 153M, Class B.

2.07 FLASHINGS

- A. Metal Flashing Materials: Shall be as specified in Section 07 6200.
- B. Thru-wall Membrane Flashing Materials: Textroflash by Hohmann & Barnard; 40 mil thick thru-wall flashing/surface-mounted composite membrane flashing with an adhesive backing factory-laminated to a rugged, polyethylene sheeting, yielding a flexible membrane suitable for use on masonry, concrete, steel, gypsum and wood. Apply Primer-SA Hohmann & Barnard's water-based primer for self-adhering flashing on all surfaces to receive this membrane flashing. Apply in strict accordance per the membrane manufacturer's written instructions. UV resistance is for up to 120 days. The masonry contractor is to coordinate with the waterproofing contractor well in advance for the installation ALL membrane flashing.

2.08 ACCESSORIES

- A. Preformed Control Joints: Rubber material. Provide with corner and tee accessories, fused joints.
- B. Joint Filler: Closed cell polyvinyl chloride; oversized 50 percent to joint width; self-expanding; 3-inch-wide x by maximum lengths available.
- C. Cavity Mortar Control: Semi-rigid polyethylene or polyester mesh panels, sized to thickness of

wall cavity, and designed to prevent mortar droppings from clogging weeps and cavity vents and allow proper cavity drainage.

1. Airspace Maintenance and Drainage Material: Polymer mesh panels for fitting between masonry ties to loosely fill masonry cavity. Installed continuous at all sills, heads, and all other horizontal conditions. Drainage Mat shall be 16" in height.

- a. Manufacturers:

- 1) CavClear/Archovations, Inc; CavClear Masonry Mat: www.cavclear.com.
- 2) Substitutions: See Section 01 6000 - Product Requirements.

D. Building Paper: ASTM D 226, Type I ("No.15") asphalt felt.

E. Weeps: Molded PVC grilles, insect resistant.

1. Manufacturers:

- a. Wire-Bond; Product - #3601 Cell Vent for weep holes. Color as selected by architect, jumbo size.
- b. Williams Products, Inc.; Product - Williams-Goodco brick vent for cavity walls
- c. Substitutions: See Section 01 6000 - Product Requirements.

F. Cavity Vents: Molded PVC grilles, insect resistant.

1. Manufacturers:

- a. Wire-Bond; Product - #3601 Cell Vent for weep holes. Color as selected by architect, jumbo size.
- b. Williams Products, Inc.; Product - Williams-Goodco brick vent for cavity walls:
- c. Substitutions: See Section 01 6000 - Product Requirements.

G. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.

2.09 LINTELS

A. See Structural Drawings.

2.10 MORTAR AND GROUT MIXES

A. Mortar for Unit Masonry: ASTM C 270, using the Proportion Specification.

1. Masonry below grade and in contact with earth: Type S.
2. Exterior, loadbearing masonry: Type S.
3. Exterior, non-loadbearing masonry: Type N.
4. Interior, loadbearing masonry: Type N.
5. Interior, non-loadbearing masonry: Type N.

B. Colored Mortar: Proportion selected pigments and other ingredients to match Architect's sample, without exceeding manufacturer's recommended pigment-to-cement ratio. Submit samples to Architect for selection.

1. Brick Mortar Color – Color as selected by Architect.

Note: Mortar Color for Bricks #1, #2, shall be Argos "Khaki" for bidding purposes. Final mortar colors will be determined upon completion of the exterior wall assembly mock-up.

Mortar shall be selected from the following mortar manufacturers:

1. Holcim (US) Inc.
2. LaFarge North America Inc.

C. Grout: ASTM C 476. Consistency required to fill completely volumes indicated for grouting; fine grout for spaces with smallest horizontal dimension of 2 inches or less; coarse grout for spaces with smallest horizontal dimension greater than 2 inches.

D. Mixing: Use mechanical batch mixer and comply with referenced standards.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive masonry.
- B. Verify that related items provided under other sections are properly sized and located.
- C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

3.02 PREPARATION

- A. Direct and coordinate placement of metal anchors supplied for installation under other sections.
- B. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.
- C. Cleaning Reinforcement: Before being placed, remove loose rust, ice and other coatings from reinforcement.
- D. Wet brick with absorption rates in excess of 30 g./30 sq. in./min. (30 g./194 cm²/min.) determined by ASTM C 67, so that rate of absorption when laid does not exceed this amount.

3.03 COLD AND HOT WEATHER REQUIREMENTS

- A. Comply with requirements of ACI 530.1/ASCE 6/TMS 602 or applicable building code, whichever is more stringent.
- B. Remove all masonry deemed frozen or damaged.
- C. Do not use wet or frozen CMW units.

3.04 COURSING

- A. Establish lines, levels, and coursing indicated. Protect from displacement.
- B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness (3/8").
- C. Concrete Masonry Units:
 - 1. Bond: Running Bond
 - 2. Coursing: One unit and one mortar joint to equal 8 inches.
 - 3. Mortar Joints: "Concave" Joint.
- D. Brick Units:
 - 1. Bond: 1/3 Running Bond
 - 2. Coursing: Two units and two mortar joints to equal 8 inches.
 - 3. Mortar Joints: "Concave".

3.05 PLACING AND BONDING

- A. Layout walls in advance for accurate spacing of surface bond patterns with uniform joint widths and to properly locate openings, movement-type joints, returns and offsets. Avoid the use of less-than-half-size units at corners, jambs and wherever possible at other locations.
 - 1. Face Brick: Mix brick from several pallets at a time during installation.
- B. Layup walls plumb and true and with courses level, accurately spaced and coordinated with other work.
- C. Lay in fire rated walls with masonry units that comply with fire rating shown.
- D. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.
- E. Lay hollow masonry units with face shell bedding on head and bed joints.

- F. Buttering corners of joints or excessive furrowing of mortar joints is not permitted.
- G. Remove excess mortar and mortar smears as work progresses.
- H. Interlock intersections and external corners.
- I. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.
- J. Stop off horizontal run of masonry by racking back 1/2 length of unit in each course. Toothing is not permitted except upon written acceptance of the Architect/Engineer.
- K. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.
- L. Cut mortar joints flush where wall tile is scheduled and other concealed locations.
- M. Provide radius corner at all outside corners in the interior of the building, except first course above finish floor and top course at ceiling line shall have square corners for joints at wall base and ceiling suspension system.
- N. Isolate masonry partitions from vertical structural framing members with a control joint.
- O. Isolate top joint of masonry partitions from horizontal structural framing members and slabs or decks with compressible joint filler.

3.06 MORTAR BEDDING AND JOINTING:

- A. Lay brick and other solid masonry units with complete filled bed and head joint; and shove into place. Do not slush head joints.
- B. Lay hollow concrete masonry units with full mortar coverage on horizontal and vertical face shells; also, bed webs in mortar in starting course on footing and foundation walls and in all courses of piers, columns and pilasters and where adjacent to cells or cavities to be reinforced or to be filled with concrete or grout.
- C. Remove masonry units disturbed after laying; clean and relay in fresh mortar. Do not pound corners at jambs to fit stretcher units which have been set in position. If adjustments are required, remove units, clean off mortar and reset in fresh mortar.
- D. Joints: Maintain joint widths shown, except for minor variations required to maintain bond alignment. Rake out mortar where applicable in preparation for application of caulking or sealants.
- E. Tool all masonry joints on exposed faces. ALSO, TOOL ALL JOINTS ON OUTSIDE FACE OF THE INTERIOR WYTHE OF MASONRY WITHIN CAVITY TO RECEIVE FLUID-APPLIED AIR BARRIER MEMBRANE. JOINTS SHALL BE COMPLETELY FILLED AND TOOLED WITHOUT VOIDS.
- F. Thoroughly clean all excess mortar droppings off brick ties and CMU faces prior to application of the fluid-applied air barrier membrane.
- G. All surfaces will be inspected by the waterproofing contractor for acceptance prior to application of the fluid-applied air barrier membrane. Any areas or conditions of non-compliance must be corrected at the mason's expense.

3.07 WEEPS/CAVITY VENTS

- A. Install weep in veneer and cavity walls at 24 inches on center horizontally above through-wall flashing, above shelf angles and lintels, and at bottom of walls. Weeps must be installed directly on top of flashing to avoid damming.
- B. Install cavity vents in veneer and cavity walls at 32 inches on center horizontally below shelf angles and lintels, and near top of walls.

3.08 CAVITY MORTAR CONTROL

- A. Do not permit mortar to drop or accumulate into cavity air space or to plug weep/cavity vents.
- B. For cavity walls, build inner wythe ahead of outer wythe to accommodate accessories.
- C. Install cavity mortar control panels continuously throughout exterior masonry cavities during construction of exterior wythe, complying with manufacturer's installation instructions. Verify that airspace width is no more than 3/8 inch greater than panel thickness. Install horizontally between joint reinforcement. Stagger end joints in adjacent rows. Fit to perimeter construction and penetrations without voids.

3.09 REINFORCEMENT AND ANCHORAGE - GENERAL

- A. Unless otherwise indicated on drawings or specified under specific wall type, install horizontal joint reinforcement 16 inches on center.
- B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
- C. Place continuous joint reinforcement in first and second joint below top of walls.
- D. Lap joint reinforcement ends minimum 6 inches.
- E. Horizontal Reinforcement: Fully embed longitudinal side rods in mortar for their entire length with a minimum cover of 3/4" on exterior side of walls and 1/2" at other locations. Provide continuity at corners and wall intersections by use of prefabricated "L" and "T" sections. Cut and bend units as directed by manufacturer for continuity at returns, offsets, column fireproofing, pipe enclosures and other special conditions.
- F. Fasten anchors to structural framing and embed in masonry joints as masonry is laid. Unless otherwise indicated on drawings or closer spacing is indicated under specific wall type, space anchors at maximum of 36 inches horizontally and 24 inches vertically.

3.10 REINFORCEMENT AND ANCHORAGE - SINGLE WYTHER MASONRY

- A. Install horizontal joint reinforcement 16 inches on center.
- B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
- C. Place continuous joint reinforcement in first and second joint below top of walls.
- D. Lap joint reinforcement ends minimum 6 inches.

3.11 REINFORCEMENT AND ANCHORAGE - MASONRY VENEER

- A. Install horizontal joint reinforcement 16 inches on center.
- B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
- C. Place continuous joint reinforcement in first and second joint below top of walls.
- D. Lap joint reinforcement ends minimum 6 inches.
- E. Seismic Reinforcement: Connect veneer anchors with continuous horizontal wire reinforcement before embedding anchors in mortar.

3.12 REINFORCEMENT AND ANCHORAGES - CAVITY WALL MASONRY

- A. Install horizontal joint reinforcement 16 inches on center.
- B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of openings.

- C. Place continuous joint reinforcement in first and second joint below top of walls.
- D. Lap joint reinforcement ends minimum 6 inches.
- E. Fasten anchors to structural framing and embed in masonry joints as masonry is laid. Space anchors at maximum of 24 inches horizontally and 24 inches vertically.
- F. Keep cavity clean of mortar droppings during construction. Strike joints facing cavity flush.

3.13 MASONRY FLASHINGS

- A. Whether or not specifically indicated, install masonry flashing to divert water to exterior at all locations where downward flow of water will be interrupted. Coordinate with waterproofing contractor to ensure proper installation locations of membrane flashings on the substrate. The waterproofing contractor will install all membrane flashings on the substrates and the masonry contractor will continue the installation within the masonry veneer.
 - 1. Extend flashings full width at such interruptions and at least 8 inches into adjacent masonry or turn up at least 4 inches to form watertight pan at non-masonry construction.
 - 2. Remove or cover protrusions or sharp edges that could puncture flashings.
 - 3. Seal lapped ends and penetrations of flashing before covering with mortar.
- B. Extend metal flashings through exterior face of masonry and turn down to form drip. Install joint sealer below drip edge to prevent moisture migration under flashing.
- C. Extend laminated flashings to within 1/4 inch of exterior face of masonry.
- D. Lap end joints of flashings at least 4 inches and seal watertight with mastic or elastic sealant.
- E. Provide surface primer at all surfaces in strict accordance with membrane flashing manufacturer's written instructions.

3.14 LINTELS

- A. Install loose steel lintels over openings.
- B. Install reinforced unit masonry lintels over openings where steel or precast concrete lintels are not scheduled.
 - 1. Do not splice reinforcing bars.
 - 2. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.
 - 3. Place and consolidate grout fill without displacing reinforcing.
 - 4. Allow masonry lintels to attain specified strength before removing temporary supports.
- C. Maintain minimum 8-inch bearing on each side of opening.

3.15 GROUTED COMPONENTS

- A. Grout all CMU cells solid.
- B. Place reinforcement in bond beams and columns as shown on structural drawings.
- C. Lap splices minimum 24 bar diameters.
- D. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.
- E. Place and consolidate grout fill without displacing reinforcing.
- F. Grout all block cores at walls where noted on drawings.

3.16 CONTROL AND EXPANSION JOINTS

- A. Provide vertical expansion, control and isolation joints in masonry where shown. If not shown provide at a distance of 3 times the wall height not to exceed 35'-0" and 4'-0" off corners. In any case, consult architect before placement. Built-in related masonry accessory items as the

masonry work progresses. Rake out mortar in preparation for application of sealant backing rod and sealant. Insert a build-in Styrofoam insulation board in vertical expansion joints where shown on plans. (The waterproofing contractor will install a 12" vertical strip of continuous 40 mil flash shall be placed on the cavity side of the interior wall and turned out below floor level). CMU control joints, if indicated, are to be used as a guide only. Contractor is to coordinate with all openings and position as required.

- B. Do not continue horizontal joint reinforcement through control and expansion joints.
- C. Form control joint with a sheet building paper bond breaker fitted to one side of the hollow contour end of the block unit. Fill the resultant core with grout fill. Rake joint at exposed unit faces for placement of backer rod and sealant.
- D. Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.
- E. Size control joint in accordance with Section 07 90 05 for sealant performance.
- F. Form expansion joint as detailed.

3.17 BUILT-IN WORK

- A. As work progresses, install built-in metal door frames, glazed frames, anchor bolts, and plates and other items to be built into the work and furnished under other sections.
 - 1. Fill space between hollow metal frames and masonry solidly with mortar.
 - 2. Leave joints around outside perimeters of aluminum storefront exterior doors, window frames and other wall openings to receive joint sealant.
- B. Install built-in items plumb, level, and true to line.
- C. Bed anchors of metal door frames in adjacent mortar joints. Fill frame voids solid with grout.
 - 1. Fill adjacent masonry cores with grout minimum 12 inches from framed openings.
- D. Do not build into masonry construction organic materials that are subject to deterioration.

3.18 CUTTING AND FITTING

- A. Cut and fit for chases, pipes, conduit, sleeves, and ducts. Coordinate with other sections of work to provide correct size, shape, and location.
- B. Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.19 FIELD QUALITY CONTROL

- A. An independent testing agency will perform field quality control tests, as specified in Section 01 4500.
- B. Clay Masonry Unit Tests: Test each variety of clay masonry in accordance with ASTM C 67 requirements, sampling 5 randomly chosen units for each 50,000 installed.
- C. Concrete Masonry Unit Tests: Test each variety of concrete unit masonry in accordance with ASTM C 140 for conformance to requirements of this specification.
- D. Mortar Tests: Test each type of mortar in accordance with ASTM C 780, testing with same frequency as masonry samples.
- E. Special inspections
 - 1. Verify all reinforcement placement, including required laps, before grouting.
 - 2. Verify that all grout placement complies with code and construction document provisions.
 - 3. No grouting of masonry to be performed until testing laboratory has inspected re-bar placement.
 - 4. Grout shall be sampled and tested for compressive strength per ASTM C1019.

3.20 CLEANING

- A. Remove excess mortar and mortar droppings.
- B. Replace defective mortar. Match adjacent work.
- C. Clean soiled surfaces with cleaning solution.
 - 1. Clean exposed CMU masonry by dry brushing at the end of each day's work and after final pointing to remove mortar spots and droppings. Remove efflorescence prior to final acceptance of the project.
 - 2. Clean architectural polished colored CMU masonry with clean, soft, damp rags. Wipe off at once all mortar smears and spatters. Do not allow hardening. Final clean down to be in strict accordance with block manufacturer's recommendations, including thorough rinsing. Damp-dry with clean, soft rags. Do not use acid, steel wool, or other abrasives.
 - 3. Clean exposed brick masonry surfaces as recommended by BIA Technical Notes "Cleaning Brick Masonry". Clean exposed masonry from top down. Chemical cleaners shall be mixed and applied in accordance with the manufacturer's recommended specifications. Use of muriatic acid is prohibited.
 - 4. BRICK: PRIOR TO APPLICATION OF CHEMICAL CLEANERS, THE EXPOSED FACE OF THE BRICK SHALL BE THOROUGHLY SATURATED WITH WATER. APPLY CHEMICAL CLEANERS IN CAREFUL ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. AFTER CLEANING OPERATIONS ARE COMPLETED, THOROUGHLY FLUSH THE FACE OF THE BRICK WITH WATER UNTIL ALL CLEANING RESIDUE HAS BEEN REMOVED.
 - 5. PROTECT ALL ADJACENT NON-MASONRY SURFACES FROM COMING INTO CONTACT WITH CHEMICAL CLEANERS. ANY DAMAGE TO ADJACENT SURFACES SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE.
- D. Use non-metallic tools in cleaning operations.

3.21 PROTECTION

- A. Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Provide an SBS modified bituminous membrane system consisting of two plies of asphalt elastomeric membrane reinforced with polyester and/or fiberglass mat.

1.02 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections, apply to this Section, including but not limited to:

- | | |
|----------------------------------|-----------------|
| 1. Steel Roof Deck | Section 05 3100 |
| 2. Rough Carpentry | Section 06 1000 |
| 3. Roof Insulation | Section 07 2216 |
| 4. Sheet Metal Flashing and Trim | Section 07 6200 |
| 5. Roof Accessories | Section 07 7200 |

1.03 REFERENCES

- A. Refer to the following references, current edition for specification compliance:

1. 2021 International Building Code with South Carolina Amendments
2. National Roofing Contractors Association – NRCA
 - a. NRCA Roofing and Waterproofing Manual
3. ASTM International
 - b. ASTM D 41 Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing.
 - c. ASTM E 108 Standard Test Methods for Fire Tests of Roof Coverings
 - d. ASTM E 119 Standard Test Methods for Fire Tests of Building Construction Materials.
 - e. ASTM D 3019 Standard Specification for Lap Cement Used with Asphalt Roll Roofing, Non-Fibered, Asbestos Fibered and Non Asbestos Fibered.
 - f. ASTM D 3409 Standard Test Method for Adhesion of Asphalt-Roof Cement to Damp, Wet, or Underwater Surfaces.
 - g. ASTM D 4479 Standard Specification for Asphalt Roof Coatings – Asbestos Free.
 - h. ASTM D 4586 Specification for Asphalt Roofing Cement, Asbestos Free.
 - i. ASTM D 6162 Specification for SBS Modified Bitumen Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements.
 - j. ASTM D 6163 Specification for SBS Modified Bitumen Sheet Materials Using Glass Fiber Reinforcements.
 - k. ASTM D 6164 Specification for SBS Modified Bitumen Sheet Materials Using Polyester Reinforcements.
4. Asphalt Roofing Manufacturers Association – ARMA

5. FM Global

- l. FM 4450 – Approval Standard for Class 1 Insulated Steel Deck Roofs
- m. FM 4470 – Approval Standard for Class 1 Roof Coverings

6. Underwriters Laboratories, Inc. – UL

- n. UL 580 – Test for Uplift Resistance of Roof Assemblies
- o. UL 790 – Tests for Fire Resistance of Roof Covering Materials
- p. UL 1897 – Uplift Resistance for Roof Covering Systems

1.04 SUBMITTALS

- A. Refer to Section 01 3300-Submittal Procedures for Submittals.
- B. Latest edition of the Manufacturer's current material specifications and installation instructions.
- C. Manufacturer's Product Data Sheets for all materials specified certifying material complies with all specified requirements.
- D. Submit documentation of approved, tested roof system to meet the specified requirements for the following:
 - 1. Wind uplift pressures
 - 2. UL Fire Resistance Rating
- E. Certified Roofing Torch Applicator (CERTA) credentials from NRCA.
- F. Manufacturer's written certification of installers. Certification by roofing manufacturer's other than that being used on this project is not acceptable.

1.05 QUALITY ASSURANCE

- A. Roofing applicator shall be approved by the material manufacturer. Additionally, roofing applicator shall have the experience of 5 similar roof projects. Verification shall be provided to the Architect or Engineer (Owner's Third Party Envelope Inspector) upon request or with the submittal package. Whichever comes first.
- B. Install roofing system to meet UL 790 Class A/ASTM E 108 Class A Fire Rating.
- C. Wind Design: Install roofing system to meet or exceed the requirements of the current adopted version of ASCE-7, and shall be an approved assembly tested to the wind uplift pressures. Pressures shall be as determined by the roofing manufacturer per project requirements.
- D. Manufacturer shall have been producing modified bitumen products in the United States for a minimum of 10 years. The primary roofing products shall have maintained a consistent composition for a minimum of five years without a change in the basic product design or SBS modified bitumen blend (e.g. no substantive changes in product composition, polymer specification, asphalt or filler formulation).

- E. The base ply and flashing reinforcing ply shall be fully inspected by the owner's 3rd party roofing inspector and periodically as described below by the manufacturer's technical representative, and repaired and prepared to meet the Manufacturer's requirements prior to installing the surface ply.
- F. The base ply shall not be exposed for longer than the manufacturer's maximum requirement for exposure and shall be acceptable for surface ply applications. Any base ply exposed longer than the maximum requirement will be subject to rejection or additional remedial requirements prior to application of the surface ply.
- G. General Contractor is responsible for coordination and phasing of roofing installation with roofing contractor to avoid damage to any roofing system installation by adjacent construction work.
- H. The Owner shall employ a third party inspector (Engineer/Roofing/ Building Envelope Consultant) to verify that roof materials and installation meet specifications, roofing practices and other requirements associated with the roof warranty. Copies of this report shall be distributed to the manufacturer, installer and architect. Reinspection(s) by the third party inspector shall be required if needed at no additional cost to the owner. The third party inspector shall be:

a. REI

- 1. The above company shall be at the pre-roofing conference and shall make inspections as determined in the pre-roofing conference when roofing work is in progress. The 25%, 50%, 75% and final inspections shall coincide with the manufacturer's inspections. The architect must also be notified of these inspections. Notify the architect ten (10) days prior to inspection dates.

1.06 PRE-ROOFING CONFERENCE

- A. Hold roofing pre-construction conference at the project site, not more than one week prior to beginning roofing and scheduled at least two weeks in advance. The roofing system submittal and shop drawing process must be 100% complete including review and return to the contractor from the architect, roofing consultant and any other party prior to the Pre-roofing Conference.
- B. Attendance is mandatory for: roofing sub-contractor, roofing foreman, contractor's superintendent, roofing manufacturer's representative, architect's representative and owner's roofing consultant., Owner's representative, mechanical subcontractor, sheet metal subcontractor, and anyone else responsible for items penetrating or in contact with roof.
- C. Agenda:
 - 1. Review in detail Architect's specifications, roof plans and all roof and flashing details.
 - 2. If a manufacturer's specification is used, review and resolve all deviations or differences from the Architect's specifications.
 - 3. Review and understand Factory Mutual and Underwriters Laboratories requirements and resolve all conflicts between FM or UL specifications and the Architect's/manufacturer's specifications.

4. Review roof plans for slope, deck type, drainage, membrane attachment, expansion joints, flashing and details. Resolve all conflicts regarding what is considered good roofing practice and the specifications.
5. Review proposed roofing system and recommended work practices for its installation.
6. Study all plans to determine whether different roof areas have different requirements.
7. Designate which areas on site will be available for use as storage and working areas.
8. Review procedures to be followed to provide proper protection of roof system during and after construction of roof.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Delivery. Materials shall be delivered in the manufacturer's original sealed and labeled containers and in quantities required to allow continuity of application.
- B. Storage: Store materials out of direct exposure to the elements on pallets at least 4 inches above ground level at site location acceptable to the Owner.
 1. Storage trailers are acceptable provided they are equipped with a lock and located at a site location acceptable to the Owner.
 2. Utilize tarps that will completely cover materials to prevent moisture contamination. Remove or slit factory shrouds and/or visqueen; do not use these materials as tarps.
 3. When storing on the ground, store in areas on top of a continuous vapor barrier or other means to prevent potential damage due to moisture from below.
 4. Store roll goods on end on a clean flat surface.
 5. Remove damaged or deteriorated materials from the job site.
- C. Handling. Material shall be handled in such manner as to preclude damage and contamination with moisture or foreign matter.

1.08 PROJECT CONDITIONS

- A. Environmental Requirements
 1. Roofing shall not be applied during precipitation and shall not be started in the event there is a probability of precipitation during applications.
 2. The membrane shall not be applied at or below the dew point temperature.
 3. When conditions are damp and where adjacent roof areas have moisture or dew, the roof shall be fully dried to prevent tracking water over the membrane substrates.
 4. At ambient temperatures of 40°F and below, including wind chill, take all precautions to ensure all adhesives and other materials maintain the minimum acceptable

temperature at the point of roofing application as recommended by the membrane manufacturer.

B. Protection

1. Protect against staining and mechanical damage of adjacent surfaces and work areas during application. Staining, mechanical damage, or discoloration of the membrane shall be cause for rejection.
2. Post a fire watch on site for a minimum of sixty (60) minutes subsequent to the completion of any open flame activities. Sufficient number of fire extinguishers to handle any contingency which might develop are to be on the roof at all times. The roofing applicators shall be trained in the proper use of fire extinguishers. Extinguish torches when not in use.
3. Prevent smoke and other fumes from entering facility by coordinating with Facility representative and by temporary intake shut down and/or covering intake.
4. Protect materials being installed and storage of materials against wind related damage.
5. Arrange work sequence to avoid use of newly constructed roofing as a walking surface or for equipment movement and storage. Where such access is absolutely required, the Applicator shall provide all necessary protection and barriers to segregate the work area and to prevent damage to adjacent areas. A protection layer of plywood over insulation board shall be provided for all new and existing roof areas that receive rooftop traffic during construction.

1.09 TORCH OPERATION AND SAFETY

- A. List requirements for torch operation and safety and hot work permit.

1.10 WARRANTY

- A. Manufacturer's standard form, non-pro-rated, without monetary limitation or deductibles, in which manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period. Failure includes roof leaks or breaches in the primary roof membrane causing moisture to enter the substrate below (even if visible leaks are not observed inside the facility). Warranty to remain in effect for wind speeds up to 74 mph. Warranties requiring the Owner's signature will not be acceptable.
1. Warranty to include but not be limited to membrane, insulation, base sheet, mastics, adhesives, fasteners, sealants, base flashings, etc.
 2. Warranty Period: Twenty years from date of Substantial Completion
- B. Provide Installer's Guarantee of all working roof against failure for two (2) years. Installer will be responsible for all materials and labor as required to perform any correct work. All work must be in accordance with the roofing manufacturer's written instructions in order to maintain the manufacturer's No Dollar Limit Guarantee. Guarantee to run from date of substantial completion for the entire project.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Subject to compliance with requirements herein, the following manufacturers are approved:

1. Siplast
2. Soprema, Inc.
3. Johns Manville (JM)

2.02 MEMBRANE MATERIALS

A. Roof Membrane Assembly:

1. A dimensionally stable roof membrane assembly consisting of 2 plies of a prefabricated, reinforced, homogeneous Styrene-Butadiene-Styrene (SBS) block copolymer modified asphalt membrane secured to a prepared substrate. Both reinforcement mats shall be impregnated and coated each side with a high quality SBS modified bitumen blend.
2. The roof system shall pass ASTM D 5849, Resistance to Cyclic Joint Displacement at 14°F. Passing results shall show no signs of membrane cracking or interply delamination after 500 cycles as manufactured and 200 cycles after heat conditioning according to ASTM D 5147.
3. Base Ply Membrane: Glass fiber and/or polyester reinforced ply sheet manufactured for torch application, meeting or exceeding requirements of ASTM D 6163 or D 6164, Type I or II, Grade S.
 - a. Siplast Paradiene 20 TG
 - b. Soprema Elastophene Flam
 - c. JM Dynaweld 180 S Base Sheet
 - d. Siplast Paradiene 30 FR TG
 - e. Soprema Elastophene Flam FR GR
 - f. JM Dynaweld Cap 180 FR

B. Base Flashing shall consist of a minimum of two plies (reinforcing ply followed by flashing ply):

1. Reinforcing/Stripping Ply:
 - a. Siplast Paradiene 20 TG
 - b. Soprema Sopralene Flam 180
 - c. JM Dynaweld Base Sheet
2. Flashing/Target Ply:
 - d. Siplast Parafor 50 LT
 - e. Soprema 180 Flam GR
 - f. JM Dynaweld Cap 180 FR
3. Stripping Ply: Shall be same as Reinforcing Ply.

4. Target Play: Shall be same as Flashing Ply

C. Fluid Applied Flashing System: Shall be membrane manufacturer's polyurethane based resin with polyester fleece flashing system.

1. Siplast Parapro

2. Soprema Alsan RS

3. JM Permaflash

2.03 RELATED MATERIALS

A. Asphalt primer: Shall meet ASTM D-41 requirements and be approved for intended use by membrane manufacturer.

B. Utility Roof Cement: An asphalt cutback general utility mastic, reinforced with non-asbestos fibers, used as a base for setting metal flanges and temporary seals conforming to ASTM D 4586 Type II requirements.

C. Sealant: An SBS polymer modified asphaltic flashing cement in a 10.4 ounce cartridge conforming to ASTM 4586 requirements approved by the roofing membrane manufacturer for use in conjunction with the roofing membrane materials.

D. Ceramic granules: Shall be of color scheme matching the granule surfacing of the cap sheet comparable to No. 11 granules.

E. Walk Pad Material: Shall be a prefabricated (by the membrane manufacturer), puncture resistant polyester core reinforced, polymer modified bitumen sheet material topped with a ceramic granule wearing surface.

F. Expansion Joints: Provide roofing manufacturer's standard water tight expansion joint unless otherwise indicated.

2.04 FASTENERS

A. Base Flashing Fasteners (Wood): Shall be galvanized ring shank nail with one inch diameter cap, such as Regular Round Head Fasteners as manufactured by Simplex Nails. Fastener length shall be one inch minimum and must be approved by the membrane manufacturer for inclusion in warranty.

B. Base Flashing Fasteners (Concrete/Masonry): Shall be 1/4" diameter metal based expansion anchor for use in concrete or masonry substrates with length to penetrate substrate a minimum of 1-1/2".

C. Base Flashing Fasteners (Steel): #12 stainless steel, 5/16 HWH with length to penetrate substrate a minimum of 1-1/2". Provide with bonded EPDM washer.

D. Termination Bar: 1/8" X 1" stainless steel flat bar with pre-drilled oversized or slotted holes 8" on center.

PART 3 EXECUTION

3.01 INSPECTION

- A. A pre-job conference shall be conducted as described above prior to the application of the roofing.
- B. Contractor shall verify that work penetrating the roof deck or work which may otherwise affect the roofing has been properly completed.
- C. Contractor shall inspect insulation system substrate prior to application of membrane. Commencement of work signifies Contractor's acceptance of substrate. Any defects in roofing work resulting from such accepted substrates shall be corrected to Owner's satisfaction at no additional expense.

3.02 PREPARATION

- A. General. All surfaces shall be swept or vacuumed prior to commencement of roofing.
- B. All membranes shall be unrolled and allowed to relax in accordance with membrane manufacturer's recommendations or a minimum of thirty minutes, whichever is greater.
- C. Where walls, curbs, expansion joints, etc. present an unacceptable substrate for flashing and where flashings substrates are combustible, a layer of non-combustible overlayment insulation shall be fastened to provide a suitable substrate for flashing.

3.03 APPLICATION

- A. General:
 - 1. Apply roofing in accordance with roofing system manufacturer's instructions and the following requirements. Application of the roofing membrane base ply shall immediately follow application of base sheet/insulation system as a continuous operation. Any phasing must also be acceptable to the roofing manufacturer in order to maintain all warranty conditions.
 - 2. Aesthetic Considerations: An aesthetically pleasing overall appearance of the finished roof application is a standard requirement for this project. Make necessary preparations, utilize manufacturer's recommended application techniques, apply the specified materials (i.e. granules, etc.), and exercise care in ensuring that the finished application is acceptable to the Owner. Excessive footprints or impressions in the surface ply will be grounds for rejection thereby requiring complete membrane tear-off and replacement.
 - 3. Priming:
 - a. Prime metal flanges, concrete and masonry surfaces with a uniform coating of asphalt primer.
 - b. Primer shall provide full coverage to ensure surfaces are dark brown to black. No less than 1 to 1-1/4 gallons per square will be accepted.
 - c. Allow primer to fully dry prior to application of asphalt/adhesive.
 - 4. Inspect membrane and flashing application each day. Repair all deficiencies daily prior to beginning or resuming other work.

- a. Membrane deficiencies shall be cut open and removed as necessary.
- b. Repairs shall extend from lap to lap.

B. Roof Membrane:

1. Apply membrane in accordance with the manufacturer's instructions and the following requirements.
2. Apply all layers of roofing free of wrinkles, creases or fishmouths.
3. Exert sufficient pressure by use of roller or broom on the roll during application to ensure prevention of air pockets.
4. Stagger the lap seams between the base ply layer and the finish ply layer.
5. Apply all layers of roofing perpendicular to the slope of the deck.
6. Fully bond the base ply to the prepared substrate, utilizing minimum 3-inch side and end laps. Apply each sheet directly behind the torch applicator. Cut a dog ear angle at the end laps on overlapping selvage edges. Using a clean trowel, apply top pressure to top seal T-laps immediately following sheet application. Stagger end laps a minimum of 3 feet.
7. Fully bond the surface ply to the base ply, utilizing minimum 3-inch side and end laps. Apply each sheet directly behind the torch applicator. Stagger end laps of the surface ply a minimum 3 feet. Cut a dog ear angle at the end laps on overlapping selvage edges. Using a clean trowel, apply top pressure to top seal T-laps immediately following sheet application. Stagger side laps of the surface ply a minimum 12 inches from side laps in the underlying base ply. Stagger end laps of the surface ply a minimum 3 feet from end laps in the underlying base ply.

C. Torch Application:

1. Utilize heat welders experienced in torch application.
2. Warm the surface to which the membrane is being applied, preheat portions of the roll which are about to be applied and melt the modified asphalt on the back of the sheet which will be used to adhere the membrane. The area of the roll where the modified asphalt is being melted is the most critical. Roll must be heated evenly across the entire width of the sheet being heat welded.
3. Ensure a small bead of asphalt precedes the roll as it is laid down. Bead of asphalt shall be visible to the applicator and should flow out on both sides of the sheet.

D. Granule Embedment: Embed granules at all locations where membrane material will be installed over a granulated surface and a selvage edge is not present. Using a torch or embedment tool, heat the area and push the granules down into the heated bitumen. Do not scrape or remove the granules from the surface.

E. Water cut-off: At end of day's work, or when precipitation is imminent, construct a water cut-off at all open edges. Cut-offs can be built using asphalt or plastic cement and roofing felts, constructed to withstand protracted periods of service. Cut-offs must be completely removed prior to the resumption of roofing.

F. Flashings: Shall be installed concurrently with the membrane installation.

1. Prior to installing flashings over plywood substrates, install a layer of rosin paper and base sheet. Secure materials to plywood with approved fasteners at 6" on center staggered in all directions.
2. Base flashing shall be accomplished using a reinforcing ply and flashing ply. The reinforcing sheet shall be lapped a minimum of three (3) inches to itself and shall extend a minimum of four (4) inches onto the base ply surface from the base of the cant and a minimum of three (3) inches up the vertical termination above the toe of the cant. The flashing sheet shall be lapped a minimum of three (3) inches to itself and shall extend a minimum of six (6) inches from the toe of the cant onto the surface ply surface and a minimum of three (3) inches up the vertical termination above the toe of the cant or as noted in the detail drawings. Lap seams in the reinforcing layer shall never coincide with the laps of the flashing layer. All flashing sheets shall be cut off the end of the roll and be applied vertically, always working to a selvedge edge.
3. Base flashing shall be mechanically terminated a minimum of eight (8) inches above the finished roof surface.
 - a. Wood Substrate: Base flashing shall be mechanically terminated using approved fasteners eight (8) inches on center. Fastener heads shall be covered with a three-course roof cement and fabric.
 - b. Concrete/Masonry Substrate: Base flashing shall be mechanically terminated using approved fasteners and termination bar.
 - c. Gypsum Sheathing Substrate over Metal Stud Wall: Provide 3" wide by 20-ga. galvanized steel behind top edge of base flashing termination secured to metal studs. Base flashing shall be mechanically terminated using approved fasteners at 8" o.c. and termination bar into metal strip.
4. Base flashing shall be terminated at all roof edges by extending the base flashing at least two inches beyond the edge of the roof and mechanically attaching a termination bar vertically with appropriate fasteners eight inches on center. Provide a continuous bead of sealant along outside edge of termination bar.
5. Sheet metal incorporated into the roofing system shall be sealed off with stripping ply. Stripping plies shall be installed in roof cement and fit tight to the edge of the sheet metal. The stripping ply shall extend four inches beyond sheet metal onto roof membrane. Stripping ply shall be installed prior to application of surface ply.
6. Provide sealant installed to fill void between edge of sheet metal and surface ply edge (i.e. at metal edge, pipe penetrations, etc.) properly tooled to ensure adhesion and slope to shed water. Broadcast granules into properly installed sealant.

G. Fluid Applied Flashing Application

1. Using masking tape, mask the perimeter of the area to receive the flashing system. Apply resin primer to substrates requiring additional preparation and allow primer to set.
2. Pre-cut fleece to ensure a proper fit at transitions and corners prior to membrane application.
3. Refer to manufacturer's installation instructions for application rates and additional

installation information.

4. Broadcast granules into horizontal surface of fluid to match adjacent surface ply.

H. Walk Pad Material

1. Apply walk pad material to a clean, dry surface.
2. Prior to application, cut walk pad material into maximum 5' lengths and allow to relax until flat. A straight edge or chalk line should be used to ensure straight square cuts. Do not cut the walk pad material directly on the roof surface.
3. Position walk pad material so as to leave minimum 2" gaps between panels to allow for proper drainage.
4. Adhere walk pad panels to surface ply with roof cement applied to the back of the panels in spots approximately 5" square. Use a notched trowel to keep the cement 3/8" thick.
5. Walk-in each panel to ensure complete contact with the membrane surface.
6. Provide 5' wide walk pads around perimeter of all roof top mechanical equipment.

I. Ponding Water

1. The ponding of any water on the roof surface after installation of the roofing system is not acceptable and will be grounds for rejection of the roof. Ponding is herein defined as precipitation remaining in a four square foot area or larger, 1/4 inch or deeper for a period of 24 hours from the termination of precipitation. Contractor shall not apply surface ply until verification of proper drainage has been determined. Verification must be obtained without the use of water or flooding the surface. Contractor shall be responsible for modifications to roof system to ensure proper drainage including but not limited to reinstallation of roof system, installation of additional tapered insulation and/or installation of additional base plies.

3.04 CLEAN UP

- A. Remove all debris and excess material from the roof area. Pick-up all loose fasteners and sheet metal scraps.
- B. The Contractor shall clean off/remove excess adhesive, sealant, stains and residue on the membrane and flashing surfaces.

END OF SECTION

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Section Includes

Drawings and general conditions of Contract, including General and Supplementary Conditions and Divisions-1 Specification sections apply to work of this section

1.2 SUMMARY

A. Section Includes

1. Acoustical tile ceiling panels in clouds
2. Ceiling cloud perimeter trim system
3. Wire hangers, fasteners, main runners, cross tees, and wall angle moldings

B. Related Sections:

1. Section 09 5123 Acoustical Tile Ceilings
2. Division 21 – Fire suppression System
3. Division 23 - HVAC Air Distribution
4. Division 26 - Electrical work and lighting

C. Substitutions

1. Prior Approval: Unless otherwise provided for in the Contract documents, proposed product substitutions may be submitted no later than TEN (10) working days prior to the date established for receipt of bids. Acceptability of a proposed substitution is contingent upon the Architect's review of the proposal for acceptability and approved products will be set forth by the Addenda. If included in a Bid are substitute products that have not been approved by Addenda, the specified products shall be provided without additional compensation.
2. Submittals that do not provide adequate data for the product evaluation will not be considered. The proposed substitution must meet all requirements of this section, including but not necessarily limited to, the following: Single source materials suppliers (if specified in Section 1.5); Underwriters' Laboratories Classified Acoustical performance; Panel design, size, composition, color, and finish; Suspension system component profiles and sizes; Compliance with the referenced standards.

1.3 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. ASTM A 1008 Standard Specification for Steel, Sheet, Cold Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability
2. ASTM A 641 Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire
3. ASTM A 653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process
4. ASTM C 423 Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method
5. ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials

6. ASTM E 580 Installation of Metal Suspension Systems in Areas Requiring Moderate Seismic Restraint
7. ASTM E 1111 Standard Test Method for Measuring the Interzone Attenuation of Ceilings Systems
8. ASTM E 1414 Standard Test Method for Airborne Sound Attenuation Between Rooms Sharing a Common Ceiling Plenum
9. ASTM E 1264 Classification for Acoustical Ceiling Products
- B. International Building Code 2012
- C. ASHRAE Standard 62.1-2004 Ventilation for Acceptable Indoor Air Quality
- D. NFPA 70 National Electrical Code
- E. ASCE 7 American Society of Civil Engineers, Minimum Design Loads for Buildings and Other Structures
- F. International Code Council-Evaluation Services - AC 156 Acceptance Criteria for Seismic Qualification Testing of Non-structural Components
- G. International Code Council-Evaluation Services Report - Seismic Engineer Report
 1. ESR 1308 - Armstrong Suspension Systems
- H. International Association of Plumbing and Mechanical Officials - Seismic Engineer Report
 1. 0244 - Armstrong Single Span Suspension System
- I. California Department of Public Health CDPH/EHLB Emission Standard Method Version 1.1 2010
- J. Green Globes - is a set of rating systems for the sustainable design, construction, operation, and maintenance of green buildings

1.4 SYSTEM DESCRIPTION

Aircraft Cable Suspended Ceiling Clouds

- A. **(Clouds)** "AXIOM Classic Straight and Curved Perimeter Trim System – ***Aircraft Cable Suspended Ceiling Clouds***
- B. **(Tiles)** "LYRA PB" with Plant-based Binder – Tegular, Wood Look, 2' x 2' x 9/16" Square Tegular visual

1.5 SUBMITTALS

- A. Product Data: Submit manufacturer's technical data for each type of acoustical ceiling unit and suspension system required.
- B. Sustainable Design Submittals:
 1. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.
- C. Samples: Minimum 6-inch x 6-inch samples of specified acoustical panel; 8-inch-long samples of exposed wall molding and suspension system, including main runner and 4-foot cross tees.
- D. Shop Drawings: Layout and details of acoustical ceilings show locations of items that are to be coordinated with, or supported by the ceilings.
- D. Coordination Drawings: Drawn to scale and coordinating acoustical tile ceiling installation with hanger attachment to building structure and ceiling mounted items. Show size and location of initial access modules.
- E. Certifications: Manufacturer's certifications that products comply with specified requirements, including laboratory reports showing compliance with specified tests and standards. For acoustical performance, each carton of material must carry an approved independent laboratory classification of NRC, CAC, and AC.

- F. If the material supplied by the acoustical subcontractor does not have an Underwriter's Laboratory classification of acoustical performance on every carton, subcontractor shall be required to send material from every production run appearing on the job to an independent or NVLAP approved laboratory for testing, at the architect's or owner's discretion. All products not conforming to manufacturer's current published values must be removed, disposed of and replaced with complying product at the expense of the Contractor performing the work.
- G. Manufacturer's Research/evaluation reports.

1.6 QUALITY ASSURANCE

- A. Single-Source Responsibility: Provide perimeter trim components and grid components by a single manufacturer.
- B. Fire Performance Characteristics: Identify acoustical tile components with appropriate markings of applicable testing and inspecting organization.
 - a. Surface Burning Characteristics: As follows, tested per ASTM E 84 and complying with ASTM E 1264 Classification.
- C. Acoustical Tile: As with other architectural features located at the ceiling, may obstruct or skew the planned fire sprinkler water distribution pattern through possibly delay or accelerate the activation of the sprinkler or fire detection systems by channeling heat from a fire either toward or away from the device. Designers and installers are advised to consult a fire protection engineer, NFPA 13, or their local codes for guidance where automatic fire detection and suppression systems are present.
- D. Coordination of Work: Coordinate acoustical ceiling work with installers of related work including, but not limited to building insulation, gypsum board, light fixtures, mechanical systems, electrical systems, and sprinklers.
- E. Seismic Standard: Comply with the following:
 - 1. ASTM E 580/E 580M - Standard Practice for Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Subject to Earthquake Ground Motions; latest edition.
 - 2. Guidelines for Seismic Restraint of Direct-Hung Suspended Ceiling Assemblies. This project is in Seismic Design Category "C".
 - 3. ASCE 7, "Minimum Design Loads for Buildings and Other Structures;" Section 9, "Earthquake Loads."
 - 4. ESR reports must be included with the submittal.
- F. Pre-installation Conference: Conduct a conference at the project site. A pre-installation meeting with mandatory attendance by the general contractor, ceiling system installer, all adjacent related building trades and affected installers, Chapter 1 and Chapter 17 third party inspectors, shall be coordinated with the Construction Manager and conducted by the Ceiling System Manufacturer and Architect at least two weeks before commencing work. The manufacturer shall review and/or verify the following per product type indicated:
 - 1. Product data
 - 2. Coordination Drawings: Drawn to scale and coordinating acoustical tile ceiling installation with hanger attachment to building structure and ceiling mounted items. Show size and location of initial access modules.
 - 3. Conditions of the installation
 - 4. Samples of system and tiles
 - 5. Product test reports
 - 6. Research/evaluation reports
 - 7. Other items required for a complete system

1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver acoustical cloud ceiling perimeter trim and tile components to project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination, and other causes.
- B. Before installing acoustical ceiling units, permit them to reach room temperature and a stabilized moisture content.
- C. Handle acoustical ceiling units carefully to avoid chipping edges or damaged units in any way.

1.8 PROJECT CONDITIONS

- A. Space Enclosure:
Standard Ceilings: Do not install interior ceilings until space is enclosed and weatherproof; wet work in place is completed and nominally dry; work above ceilings is complete; and ambient conditions of temperature and humidity are continuously maintained at values near those intended for final occupancy.
- B. Building areas to receive ceilings shall be free of construction dust and debris. Suspension systems can be installed up to 120°F (49°C) and in spaces before the building is enclosed, where HVAC systems are cycled or not operating.

1.10 WARRANTY

- A. Acoustical Cloud Ceiling System: Submit a written warranty executed by the manufacturer, agreeing to repair or replace panels that fail within the warranty period. Failures include, but are not limited to the following:
 - 1. Acoustical Tile: Deflections and finish defects.
 - 2. Perimeter Trim System: Rusting and manufacturer's defects
- B. Warranty Period:
 - 1. Acoustical Tile: One (1) year from date of substantial completion
 - 2. Perimeter Cloud Trim and Suspension System: 10-Year Limited Warranty; 30-Year System Warranty
- C. The Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

1.11 MAINTENANCE

- A. Extra Materials: Deliver extra materials to Owner. Furnish extra materials described below that match products installed. Packaged with protective covering for storage and identified with appropriate labels.
 - 1. Acoustical Tile Units: Furnish quality of full-size units equal to 5.0 percent of amount installed.
 - 2. Exposed Cloud Trim and Suspension System Components: Furnish quantity of each exposed suspension component equal to 2.0 percent of amount installed.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Cloud Trim and Suspension System:
 - 1. Armstrong World Industries, Inc.
- B. Ceiling Acoustical Tiles:
 - 1. Armstrong World Industries, Inc.

2.2.1 CLOUD TRIM AND SUSPENSION CEILING SYSTEM

A. CLOUD TRIM SYSTEM

- 1. Types **AXIOM® Classic Straight and Curved Perimeter Trim (Interior Clouds):**
 - a. Surface Texture: Smooth
 - b. Composition: Extruded Aluminum Metal
 - c. Color: Surface Finish to be Factory-applied paint finish. Finish & color to be determined by Architect from manufacturer's standard colors. NOTE: Provide actual metal samples for selection during submittals. Selection will not be made by color chart.
 - d. Size: 10" H. x ¾" W. horizontal flange perimeter trim
 - e. Edge Profile: 10" High Profile with ¾ inch horizontal legs, straight or curved sections with special bosses formed for attachment to the Axiom tee-bar connection clip or hanging clip; commercial quality, extruded aluminum, factory-finished in color as selected by architect.
 - f. Acceptable Product: AXIOM® Classic Straight and Curved Perimeter Trim and Accessories as required, as manufactured by Armstrong World Industries, including:
 - .1 AXAC – Alignment clip, Sheet aluminum formed to fit into special trim channel bosses. Provides positive mechanical lock and screw-fastened connection to suspension members that intersect below the trim channel.
 - .2 AX2HGC – Hanging clip, commercial quality aluminum, unfinished, used when suspension wires must be attached directly to the trim sections.
 - .3 AXSPLICE2 – Splice with set screws, galvanized steel, unfinished, used to attached factory-mitered inside corners
 - .4 AX4SPLICE – Splice with set screws, galvanized steel, unfinished, used to attach joints between sections of trim.
 - .5 AXSPLICESS – Axim Splice Plate - Stainless Steel for non-ferrous project applications
 - .6 AXTBC – T-bar Connector Clip, galvanized steel, unfinished, used to attach channel trim to supporting suspension members. (AXTBCSS Stainless Steel for non-ferrous project applications)
 - .7 7239 - Adjustable Trim Clip - Allows Axiom® trim to be positioned up to 3-3/4" below the grid face to accommodate deeper panel offsets (best aesthetic with Axiom ≥ 6" tall).
 - .8 AXSPTHDC – Perimeter Trim Hold Down Clip used to secure cut edges of metal panels at the Axiom trim.
 - .9 AXBTSTR – Drywall Bottom Trim Straight, extruded aluminum, 120 inches x 1-9/64 inch x 27/32 inch, used to finish edges of 5/8 inch drywall that is applied to the bottom surface of the Axiom.
 - .10 AXBTCUR – Drywall Bottom Trim Curved, extruded aluminum, 120 inches x 1-9/64 inch x 27/32 inch, used to finish edges of 5/8 inch drywall that is applied to the bottom surface of the Axiom.

* Items ordered separately.

** Provided in lieu of the aluminum accessories based on the application as needed.

2.2.2 TEGULAR LAY-IN WOOD LOOK CEILING TILE SMOOTH TEXTURE

ACT-4 – Media Center – Wood Look acoustical tile shall be **Armstrong Lyra® PB with Plant-based Binder, Tegular Wood Look** panels. Standard Wood-look Visuals (9/16" Square Tegular) 2x2x1" with minimum .95 NRC. Grid to be **AXIOM® Classic Straight and Curved Perimeter Trim, by Armstrong. Color to be selected by Architect.**

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Do not proceed with installation until all wet work such as concrete, terrazzo, plastering and painting has been completed and thoroughly dried out, unless expressly permitted by manufacturer's printed recommendations.

3.2 PREPARATION

- A. Measure each ceiling area and establish layout of acoustical tiles to balance border widths at opposite edges of each ceiling. Avoid use of less than half width units at borders and comply with reflected ceiling plans. Coordinate tile layout with mechanical and electrical fixtures.
- B. Coordination: Furnish layouts for preset inserts, clips, and other ceiling anchors whose installation is specified in other sections.
- C. Coordinate panel layout with mechanical and electrical fixtures.

3.3 INSTALLATION

- A. Follow manufacturer installation instructions for curved and horizontal installations.
- B. Install suspension system and tiles in accordance with the manufacturer's instructions, and in compliance with ASTM C 636 and with the authorities having jurisdiction.
- C. Miter corners in grid where curved and straight sections intersect or install corner caps.
- D. Install acoustical tiles in coordination with suspended system, with edges resting on flanges of main runner and cross tees. Cut and fit panels neatly against abutting surfaces.

3.4 ADJUSTING AND CLEANING

- A. Replace damaged and broken tiles.
- B. Clean exposed surfaces of ceilings panels, including trim, edge moldings, and suspension members. Comply with manufacturer's instructions for cleaning and touch up of minor finish damage. Remove and replace work that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes acoustical tiles and concealed suspension systems for ceilings.

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Coordination Drawings: Drawn to scale and coordinating acoustical tile ceiling installation with hanger attachment to building structure and ceiling mounted items. Show size and location of initial access modules.
- C. Samples: For each exposed finish.
- D. Product test reports.
- E. Research/evaluation reports.
- F. Maintenance data.
- G. Sustainable Design Submittals:
 - 1. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.

1.3 QUALITY ASSURANCE

- A. Acoustical Testing Agency Qualifications: An independent testing laboratory, or an NVLAP-accredited laboratory.
- B. Fire - Test-Response Characteristics:
 - 1. Fire-Resistance Characteristics: Where indicated, provide acoustical tile ceilings identical to those of assemblies tested for fire resistance per ASTM E 119 by UL or another testing and inspecting agency acceptable to authorities having jurisdiction.
 - a. Identify materials with appropriate markings of applicable testing and inspecting agency.
 - 2. Surface-Burning Characteristics: Acoustical tiles complying with ASTM E 1264 for **Class A** materials, when tested per ASTM E 84.
 - a. Smoke-Developed Index: 450 or less.
- C. Seismic Standard: Comply with the following:
 - 3. Ceilings shall be installed using Seismic Design Category "C" guidelines.

1.4 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Acoustical Ceiling Units: Full-size tiles equal to 0.5 percent of quantity installed.
 - 4. Suspension System Components: Quantity of each concealed grid and exposed component equal to .05 percent of quantity installed.

PART 2 - PRODUCTS

2.1 ACOUSTICAL TILE CEILINGS, GENERAL

- A. Acoustical Tile Standard: Comply with ASTM E 1264.
 - 1. Recycled Content: Provide acoustical tiles with recycled content such that postconsumer recycled content plus one-half of pre-consumer recycled content constitutes a minimum of 48 percent by weight.
- B. Metal Suspension System Standard: Comply with ASTM C 635.
 - 1. Recycled Content: Provide products made from steel sheet with average recycled content such that postconsumer recycled content plus one-half of pre-consumer recycled content is not less than 3 percent.
- C. Attachment Devices: Size for five times the design load indicated in ASTM C 635, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.
 - 1. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hangers of type indicated, and with capability to sustain, without failure, a load equal to **10** times that imposed by ceiling construction, as determined by testing per ASTM E 1190, conducted by a qualified testing and inspecting agency.
- D. Wire Hangers, Braces, and Ties: Zinc-coated carbon-steel wire; ASTM A 641/A 641M, Class 1 zinc coating, soft temper.
 - 1. Size: Select wire diameter so its stress at 3 times hanger design load (ASTM C 635, Table 1, "Direct Hung") will be less than yield stress of wire, but provide not less than 0.106-inch- (2.69-mm-) diameter wire.
- E. Seismic struts and seismic clips.
- F. Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that comply with seismic design requirements; formed from sheet metal of same material, finish, and color as that used for exposed flanges of suspension system runners.

2.2 ACOUSTICAL TILES FOR ACOUSTICAL TILE CEILING

- A. ACT-1: (ALL Classroom and Teaching spaces Art Rooms, and Office Areas in Administration and Guidance, unless noted below) Provide USG (.70 NRC and 40 CAC) 2 x 2 x 3/4" tile #22521 Equal Product: Armstrong School Zone Fine Fissured #1810 (.70 NRC and 40 CAC) 2 x 2 x 3/4" tile . Submittals for approval of substitutions must be received at least 10 days prior to bid date and approved by Addendum.

- B. ACT-2 Kitchens and related areas, group toilets shall be USG Sheetrock ClimaPlus vinyl covered panels #3260. Grid shall be Donn DXLA26 HD grid cap coated and Donn MC11A25 aluminum wall molding. Armstrong: Kitchen Zone, 2x2, #673. Class A.
- C. ACT-3 Music, Orchestra Rooms, Areas shall be Armstrong Optima #3352 2x2x1" with minimum .90 NRC and Minimum 26 CAC. OR USG Halcyon #88221 with .90 NRC 27 CAC, with square edge
- D. Grid and Wall Mold: Prelude XL 8301 with BERC clip or Use Donn DX 26 HD Grid and Donn MS 174 with seismic clip.

Contractor's option for corridor to use Armstrong, Singlespan, Acoustic Corridor Suspension System or USG AdvanceSpan.

NOTE: Heavy Duty Grid is required on this Seismic Design Category 'C' project.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Comply with ASTM C 636, ASTM E580/E 580M and seismic design requirements indicated, per manufacturer's written instructions, along with the ceiling system manufacturer's IBC approved test and evaluation reports. Measure each ceiling area and establish layout of acoustical tiles to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width tiles at borders.
- B. Suspend ceiling hangers from building's structural members, plumb and free from contact with insulation or other objects within ceiling plenum. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, counter splaying, or other equally effective means. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers, use trapezes or equivalent devices. When steel framing does not permit installation of hanger wires at spacing required, install carrying channels or other supplemental support for attachment of hanger wires.
 - 1. Do not support ceilings directly from permanent metal forms or floor deck; anchor into concrete slabs.
 - 2. Do not attach hangers to steel deck tabs or to steel roof deck.
- C. Install edge moldings and trim of type indicated at perimeter of acoustical tile ceiling area and where necessary to conceal edges of acoustical tiles. Screw attach moldings to substrate at intervals not more than 16 inches (400 mm) o.c. and not more than 3 inches (75 mm) from ends, leveling with ceiling suspension system to a tolerance of 1/8 inch in 12 feet (3.2 mm in 3.6 m). Miter corners accurately and connect securely.
- D. Install suspension system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.
- E. Install acoustical tiles in coordination with suspension system and exposed moldings and trim. Place splines or suspension system flanges into kerfed edges so tile-to-tile joints are closed by double lap of material.

END OF SECTION 09 5123

1.0 GENERAL

1.1 SCOPE: This section covers resilient tile flooring, and base.

1.2 EXAMINATION OF SUBSTRATE: Installer must examine the substrate and the conditions under which the resilient tile work is to be performed and notify the contractor, in writing, of any unsatisfactory conditions. Do not proceed with installation until unsatisfactory conditions have been corrected in a manner acceptable to the Installer. Surface must be smooth, level at the required finish elevation, without more than 1/8" in 10'-0" variation from level or slopes, as shown.

1.3 SUBMITTALS:

- A. Manufacturer's Data: For information only, submit two copies of the manufacturer's specifications and installation instructions for each type of resilient tile required.
- B. Samples: Submit two sets of samples of each type and color required. Provide full-size samples of each type of tile required and show the range of color and pattern variation. Sample submittals will be reviewed for color, texture and pattern only. Compliance with all other requirements is the exclusive responsibility of the contractor
- C. Sustainable Design Submittals:
 - 1. Product Data: For adhesives, indicating VOC content.
 - 2. Laboratory Test Reports: For adhesives, indicating compliance with requirements for low-emitting materials.
 - 3. Product Data: For chemical-bonding compounds, indicating VOC content.
 - 4. Laboratory Test Reports: For chemical-bonding compounds, indicating compliance with requirements for low-emitting materials.
 - 5. Product Data: For sealants, indicating VOC content.
 - 6. Laboratory Test Reports: For sealants, indicating compliance with requirements for low-emitting materials.
 - 7. Laboratory Test Reports: For flooring products, indicating compliance with requirements for low-emitting materials.
 - 8. Environmental Product Declaration: For each product.
 - 9. Third-Party Certifications: For each product.
 - 10. Third-Party Certified Life Cycle Assessment: For each product.
- D. Maintenance Instructions: Resilient Tile Flooring: Submit manufacturers' written instructions for recommended practices for each type of tile work.
- E. Replacement of Material: Submit to Owner at project site, unless otherwise directed, one box of each type and color of tile for each 75 boxes, or fraction thereof, of each type and color installed.

2.0 PRODUCTS

2.1 PERFORMANCE REQUIREMENTS:

- A. Fire-Test-Response Characteristics: For resilient floor tile, as determined by testing identical products according to ASTM E 648 or NFPA 253 by a qualified testing agency.
 - 1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.
- B. Flooring products shall comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation

of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

2.2 RESILIENT FLOORING (HIGH PSI RATING AND VOC FREE)

- A. Manufacturers: The Architect reserves the right to select from the following manufacturers, depending on color selections and compliance with performance requirements.

1. Milliken

- B. **Luxury Vinyl Tile, areas noted on finish schedule:**

Collection: Lumenology or The Magic Hour, by Milliken.

See layout plans for floor patterns & distribution.

Construction: High Performance Luxury Vinyl Tile

Finish: ProGuard MAX™ Coating

Wear Layer Thickness: 22 mil (0.55 mm)

Overall Thickness: 5.0 mm (0.197")

Edge Profile: Square

Critical Radiant Flux (ASTM E648) – Pass – Class 1

Smoke Density (ASTM E662) - Pass – 450

Flexibility (ASTM F137) – Pass

Heat Stability by Color Change (ASTM F1514) – Pass

Light Stability (ASTM F1515)

Static Coefficient of Friction (ASTM D2047) – Pass

Dimensional Stability (ASTM F2199) - Pass

Resistance to Chemicals (ASTM F925) – Pass

Static Load Limit (ASTM F970) – Pass

Installation: Glue Down or Loose Lay

Tile Size: 25 cm x 100 cm (9.84" x 39.37") | 25 cm x 150 cm (9;84" x 59.06") |

50 cm x 50 cm (19.7" x 19.7") – depending on Collection / Pattern

Pieces Per Box: 6 / 8 / 10 – depending on Collection / Pattern

Weight Per Box: 37.21 lb / 46 lb / 50.9 lb – depending on Collection / Pattern

Quantity per Box: 21.5 SF / 24.22 SF / 26.91 SF – depending on Collection / Pattern

Warranties: 22 Year Limited Commercial Wear / 1 Year Manufacturing Defect
Warranty

- 2.4 ADHESIVES (Cement): Waterproof, stabilized type as recommended by the tile manufacturer. Asphalt emulsions and other non-waterproof types not acceptable.

- 2.5 CONCRETE SLAB PRIMER: Non-staining type with a cementitious body as recommended by tile manufacturer.

2.6 INSTALLATION MATERIALS:

- A. Trowelable Leveling and Patching Compounds: Latex-modified, portland-cement-based or blended hydraulic-cement-based formulation provided or approved by floor tile manufacturer for applications indicated.

- B. Adhesives: Water-resistant type recommended by floor tile and adhesive manufacturers to suit floor tile and substrate conditions indicated.

1. Adhesives shall have a VOC content of [50] [60] <Insert value> g/L or less.

2. Adhesive shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources

Using Environmental Chambers." The building concentration of formaldehyde shall not exceed half of the indoor recommended exposure limit or 33 mcg/cu. m and that of acetaldehyde shall not exceed 9 mcg/cu. m.

3.0 EXECUTION:

- 3.1 SUBFLOORS: Prior to start of laying the tile units, broom clean or vacuum all surfaces to be covered and inspect the subfloor. Start of laying tile will indicate acceptance of subfloor conditions and full responsibility for the completed work.
- 3.2 CONCRETE SLAB PRIMER: Apply if recommended by tile manufacturer, prior to application of the adhesive. Apply in compliance with manufacturer's directions.
- 3.3 LEVELING PADS: Provide 1/4" vinyl leveling pads at transitions from luxury vinyl tile to 3/8" thick Terrazzo Floor at doors of Classrooms and other adjacent areas for 36" into the area receiving from luxury vinyl tile.
- 3.4 CONTINUOUSLY HEAT Areas to receive tile to a temperature of 70 degrees F. for at least 48 hours prior to installation when project conditions are such that heating is required to raise the temperature to 70 degrees F., temperature continuously during and after installation as recommended by the tile manufacturer, but for not less than 48 hours.
- 3.5 INSTALL TILE: Only after all finishing operations, including painting, have been completed and permanent heating system is operating. Moisture content of concrete slabs, building with air temperature and relative humidity must be within limits recommended by tile manufacturer.
- 3.6 PLACE TILE UNITS with adhesive cement in strict compliance with the manufacturer's recommendations Butt tile units tightly to vertical surfaces, thresholds, nosing and edgings, Scribe as necessary around obstruction and to produce neat joints, laid tight, even and in straight parallel lines. Extend tile units into toe spaces, door reveals and into closet and similar openings.
- 3.7 MAINTAIN REFERENCE MARKERS, holes or openings that are in place or plainly marked for future cuttings by repeating on the finish tile as marked in the subfloor. Use chalk or other non-permanent marking devise.
- 3.8 LAY TILE FROM CENTER MARKS established with principal walls, discounting minor offsets, so that tile at opposite edges of the room are of equal width. Adjust as necessary to avoid use of cut widths less than 6" at room perimeters. Lay tile square to room axis, unless otherwise shown.
- 3.9 MATCH TILES for color and pattern by using tile from cartons in the same sequence as packaged. Cut tile neatly to and around all fixtures. Broken, cracked, chipped or deformed tile are not acceptable.
- 3.10 TIGHTLY CEMENT TILE to sub-base, without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks through tile, or other surface imperfections.
- 3.11 PLACE RESILIENT EDGE STRIPS tightly butted to tile and secure with adhesive. Provide edging strips at all unprotected edges of tile, unless otherwise shown.

- 3.12 ALLOW PROPER CURING TIME Assure adhesive curing by waiting at least 24 hours before allowing any foot traffic or covering the flooring. This period is crucial for the adhesive to set properly and ensure long-term performance

APPLY RESILIENT wall base to all columns, pilasters, science equipment, and other permanent fixtures in rooms or areas where base is required. Install base in as long lengths as practical with preformed units, or fabricate from base materials with mitered or coped intersections. Tightly bond base to backing throughout the length of each piece, with continuous contact at horizontal and vertical surfaces. ON masonry surfaces, or other similar irregular surfaces, fill voids along top edge of resilient wall base with manufacturer's recommended adhesive filler material.

- 3.13 APPLY FLOOR ACCESSORIES using methods as recommended by manufacturer.

- 3.14 CLEANING AND PROTECTION: If the LVT flooring is not the last portion of the construction project, the floor must be protected from construction traffic and potential damage. Cover the flooring with a protective barrier such as reinforced fiber protective board or heavy Kraft paper (minimum 60 lb). Avoid using plastic sheeting, as it may trap moisture.

- 3.15 FINISHING: After completion of the project and just prior to final inspection of the work, the GC will thoroughly clean tile floors and accessories.

END OF SECTION 09 6600

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes one resinous flooring system, one with epoxy body.
 - 1. Application Method: Squeegee, screed, and broadcast.

1.3 QUALITY ASSURANCE

- A. No request for substitution shall be considered that would change the generic type of floor system specified (i.e. epoxy based flake broadcast with mortar coat). Equivalent materials of other manufactures may be substituted only on approval of Architect or Engineer. Request for substitution will only be considered only if submitted 10 days prior to bid date. Request will be subject to specification requirements described in this section.
- B. Installer Qualifications: Engage an experienced installer (applicator) who is experienced in applying resinous flooring systems similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance, and who is acceptable to resinous flooring manufacturer.
 - 1. Engage an installer who is certified in writing by resinous flooring manufacturer as qualified to apply resinous flooring systems indicated.
 - 2. Contractor shall have completed at least 10 projects of similar size and complexity.
- C. Source Limitations: Obtain primary resinous flooring materials, including primers, resins, hardening agents, grouting coats, and topcoats, through one source from a single manufacturer, with not less than ten years of successful experience in manufacturing and installing principal materials described in this section. Provide secondary materials, including patching and fill material, joint sealant, and repair materials, of type and from source recommended by manufacturer of primary materials.
- D. Manufacturer Field Technical Service Representatives: Resinous flooring manufacture shall retain the services of Field Technical Service Representatives who are trained specifically on installing the system to be used on the project.
 - 1. Field Technical Services Representatives shall be employed by the system manufacture to assist in the quality assurance and quality control process of the installation and shall be available to perform field problem solving issues with the installer.

- E. Mockups: Apply mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Apply full-thickness mockups on 48-inch- (1200-mm-) square floor area selected by Architect.
 - a. Include 48-inch (1200-mm) length of integral cove base.
 - 2. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- F. Pre-installation Conference:
 - 1. General contractor shall arrange a meeting not less than thirty days prior to starting work.
 - 2. Attendance:
 - a. General Contractor
 - b. Architect/Owner's Representative.
 - c. Manufacturer/Installer's Representative.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in original packages and containers, with seals unbroken, bearing manufacturer's labels indicating brand name and directions for storage and mixing with other components.
- B. Store materials to prevent deterioration from moisture, heat, cold, direct sunlight, or other detrimental effects. Store material per product data sheet.
- C. All materials used shall be factory pre-weighed and pre-packaged in single, easy to manage batches to eliminate on site mixing errors. No on site weighing or volumetric measurements allowed.

1.5 PROJECT CONDITIONS

- A. Environmental Limitations: Comply with resinous flooring manufacturer's written instructions for substrate temperature, ambient temperature, moisture, ventilation, and other conditions affecting resinous flooring application.
 - 1. Maintain material and substrate temperature between 65 and 85 deg F (18 and 30 deg C) during resinous flooring application and for not less than 24 hours after application.
- B. Lighting: Provide permanent lighting or, if permanent lighting is not in place, simulate permanent lighting conditions during resinous flooring application.

- C. Close spaces to traffic during resinous flooring application and for not less than 24 hours after application, unless manufacturer recommends a longer period.
- D. Concrete substrate shall be properly cured. A vapor barrier must be present for concrete subfloors on or below grade. Otherwise, an osmotic pressure resistant grout must be installed prior to the resinous flooring

1.6 SUBMITTALS

- A. Product Data: For each type of product indicated. Include manufacturer's technical data, application instructions, and recommendations for each resinous flooring component required.
- B. Samples for Verification: For each resinous flooring system required, 5 inches (150 mm) square, applied to a rigid backing.
- C. Product Schedule: Use resinous flooring designations indicated in Part 2 and room designations indicated on Drawings in product schedule.
- D. Installer Certificates: Signed by manufacturer certifying that installers comply with specified requirements.
- E. Maintenance Data: For resinous flooring to include in maintenance manuals.

1.7 WARRANTY

- A. Manufacturer shall furnish a single, written warranty covering both material and workmanship for a period of (1) full years from date of installation, or provide a joint and several warranty signed on a single document by material manufacturer and applicator jointly and severally warranting the materials and workmanship for a period of (1) full year from date of installation. A sample warranty letter must be included with bid package or bid may be disqualified.

PART 2 - PRODUCTS

2.1 RESINOUS FLOORING

- A. Available Products: Subject to compliance with requirements.
 - 1. Confirm inclusion of 25mil body coat, and broadcast quartz into primer increasing bond strength. Products that may be incorporated into the work include,
- B. Products: Subject to compliance with requirements:
 - 1. EP-1-(group toilets/ student individual toilets/ toilets with showers/ janitor spaces),- Stonhard, Inc.; Stontec ERF®. Basis of Design, Pauline.Haber@stonhard.com 854-214-0963

2. EP-2-(Kitchen) -Stonhard, Inc.; Stonclad UT - Basis of Design.
Pauline.Haber@stonhard.com 854-214-0963
- C. EP-1 System Characteristics:
 1. Color and Pattern: Select from manufactures standards
 2. Wearing Surface: Standard
 3. Integral Cove Base: TBD
 4. Overall System Thickness: 2mm
- D. EP-1 System Components: Manufacturer's standard components that are compatible with each other and as follows:
 1. Primer:
 - a. Material Basis: Stonhard Standard Primer
 - b. Resin: Epoxy
 - c. Formulation Description: (2) two component 100 percent solids.
 - d. Application Method: Squeegee and roller.
 - e. Number of Coats: (1) one.
 - f. Aggregates: Broadcast quartz into wet primer coat.
 2. Body Coat(s):
 - a. Material Basis: Stonshield Undercoat.
 - b. Resin: Epoxy.
 - c. Formulation Description: (3) three component solvent free epoxy.
 - d. Application Method: Notched squeegee.
 - 1) Thickness of Coats: 25-30 mils with standard primer coat
 - 2) Number of Coats: (1) One.
 3. Broadcast:
 - a. Material Basis: Stontec Flakes
 - b. Formulation Description: Decorative flake (1/16" or 1/4)
 - c. Type: Tweed (chips to be mixed in Mfg. facility)
 - d. Finish: Broadcast to rejection.
 - e. Number of Coats: one.
 4. Topcoat:
 - a. Material Basis: Stonkote CE4
 - b. Resin: Epoxy.
 - c. Formulation Description: (2) component, UV stable, solvent free epoxy.
 - d. Type: Clear.
 - e. Finish: Gloss. (see finish schedule for texture options)
 - f. Number of Coats: Two.

Note: Components listed above are the basis of design intent; all bids will be compared to this standard including resin chemistry, color, wearing surface, thickness, and installation procedures,
RESINOUS FLOORING

including number of coats. Contractor shall be required to comply with all the requirements of the Specifications and all of the components required by the Specifications, whether or not such products are specifically listed above.

E. EP-1 SYSTEM PHYSICAL PROPERTIES

Provide resinous flooring system with the following minimum physical property requirements when tested according to test methods indicated:

1. Tensile Strength: 5,200 psi per ASTM D-638
2. Flexural Strength: 4,000 psi per ASTM D-790
3. Flexural Modulus of Elasticity: 1.7×10^6 psi per ASTM D-790
4. Hardness: .85 to .90 per ASTM D-2240, Shore D
5. Linear Coefficient of Thermal Expansion: 17×10^{-6} in./in. °F per ASTM C-531
6. Impact Resistance: Exceeds 160 in.-lbs. per ASTM D-4060, CS-17
7. Abrasion Resistance: 0.03 gm max. weight loss per ASTM D-4060, CS-17
8. Flammability: Class I per ASTM E-648

F. EP-2 System Characteristics:

1. Color and Pattern: Select from Mfg. Standards
2. Wearing Surface: Light texture
3. Integral Cove Base: TBD, may be 4" or 6" high
4. Overall System Thickness: nominal 3/16-1/4".

G. EP-2 System Components: Manufacturer's standard components that are compatible with each other and as follows:

1. Mortar:
 - a. Material design basis: Stonclad UT
 - b. Resin: Urethane.
 - c. Formulation Description: (4) four-component, 100 percent solids.
 - d. Application Method: Screed, Trowel.
 - 1) Thickness of Coats: 3/16".
 - 2) Number of Coats: One.
 - 3) Broadcast texture into wet mortar base.
 - e. Aggregates: Pigmented Blended aggregate.
2. Top coat:
 - a. Material design basis: Stonseal UT7
 - b. Resin: Urethane.
 - c. Formulation Description: (2) two-component, 100 percent solids.
 - d. Type: pigmented.
 - e. Finish: standard.
 - f. Number of Coats: One.

Note: Components listed above are the basis of design intent; all bids will be compared to this standard including resin chemistry, color, wearing surface, thickness, and installation procedures, RESINOUS FLOORING

including number of coats. Contractor shall be required to comply with all the requirements of the Specifications and all of the components required by the Specifications, whether or not such products are specifically listed above.

- H. EP-2 System Physical Properties: Provide resinous flooring system with the following minimum physical property requirements when tested according to test methods indicated:
 - 1. Compressive Strength: 7,700 psi after 7 days per ASTM C 579.
 - 2. Tensile Strength: 1,000 psi per ASTM C 307.
 - 3. Flexural Strength: 2,400 psi per ASTM C 580.
 - 4. Water Absorption: < 1% per ASTM C 413.
 - 5. Impact Resistance: > 160 in. lbs. per ASTM D 2794.
 - 6. Flammability: Class 1 per ASTM E-648.
 - 7. Hardness: .80 to .84, Shore D per ASTM D 2240.
 - 8. Flexural Modulus of Elasticity: 2.6×10^6 psi per ASTM C-580
 - 9. Thermal Coefficient of Linear Expansion: 1.1×10^{-5} in./in.°F per ASTM C-531

2.2 ACCESSORY MATERIALS

- A. Patching, Leveling and Fill Material: Resinous product of or approved by resinous flooring manufacturer and recommended by manufacturer for application indicated. No Single component or cementitious materials.
- B. Joint Sealant: Type recommended or produced by resinous flooring manufacturer for type of service and joint condition indicated.

PART 3 - EXECUTION

3.1 PREPARATION

- A. General: Prepare and clean substrates according to resinous flooring manufacturer's written instructions for substrate indicated. Provide clean and dry substrate for resinous flooring application.
- B. Concrete Substrates: Provide sound concrete surfaces free of laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants incompatible with resinous flooring.
 - 1. Mechanically prepare substrates as follows:
 - a. Mechanically prepare with the use of Diamond grinding equipment to provide surface sound concrete surfaces free of laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants incompatible with resinous flooring. Or,
 - b. Shot-blast surfaces with an apparatus that abrades the concrete surface, contains the dispensed shot within the apparatus, and recirculates the shot by vacuum pickup or Diamond Grind with a dust free system.

- c. Comply with ASTM C 811 requirements, unless manufacturer's written instructions are more stringent.
2. Repair damaged and deteriorated concrete according to resinous flooring manufacturer's written recommendations.
3. Verify that concrete substrates meet the following requirements.
 - a. Perform in situ probe test, ASTM F 2170. Proceed with application only after substrates do not exceed a maximum potential equilibrium relative humidity of 80 percent.
 - b. Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with application only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. of slab in 24 hours.
- C. Use patching and fill material to fill holes and depressions in substrates according to manufacturer's written instructions.
- D. Treat control joints and other nonmoving substrate cracks to prevent cracks from reflecting through resinous flooring according to manufacturer's written recommendations. Allowances should be included for Stonflex MP7 joint fill material.

3.2 APPLICATION

- A. General: Apply components of resinous flooring system according to manufacturer's written instructions to produce a uniform, monolithic wearing surface of thickness indicated.
 1. Coordinate application of components to provide optimum adhesion of resinous flooring system to substrate, and optimum intercoat adhesion.
 2. Cure resinous flooring components according to manufacturer's written instructions. Prevent contamination during application and curing processes.
 3. At substrate expansion and isolation joints, provide joint in resinous flooring to comply with resinous flooring manufacturer's written recommendations.
 - a. Apply joint sealant to comply with manufacturer's written recommendations.
- B. Mix and apply primer over properly prepared substrate with strict adherence to manufacturer's installation procedures and coverage rates
- C. Broadcast: Immediately broadcast quartz silica aggregate into the primer using manufacturer's specially designed spray caster. Strict adherence to manufacturer's installation procedures and coverage rates is imperative.
- D. Integral Cove Base: Apply cove base mix to wall surfaces before applying flooring. Apply according to manufacturer's written instructions and details including those for taping, mixing, priming, troweling, sanding, and top coating of cove base. Round internal and external corners. Refer to detail drawings.
- E. Body coat: Mix base material according to manufacturer's recommended procedures. Uniformly spread mixed material over previously primed substrate using manufacturer's installation tool. Roll material with strict adherence to manufacturer's installation procedures and coverage rates.

- F. Broadcast: Immediately broadcast decorative flakes into the body coat. Strict adherence to manufacturer's installation procedures and coverage rates is imperative.
- G. First Sealer: Remove excess un-bonded flakes by lightly brushing and vacuuming the floor surface. Mix and apply sealer with strict adherence to manufacturer's installation procedures.
- H. Second sealer: Lightly sand first sealer coat. Mix and apply second sealer coat with strict adherence to manufacturer's installation procedures.

3.3 TERMINATIONS

- A. Chase edges to "lock" the coating system into the concrete substrate along lines of termination.
- B. Penetration Treatment: Lap and seal coating onto the perimeter of the penetrating item by bridging over compatible elastomer at the interface to compensate for possible movement.
- C. Trenches: Continue coating system into trenches to maintain monolithic protection. Treat cold joints to assure bridging of potential cracks.
- D. Treat floor drains by chasing the coating to lock in place at point of termination.

3.4 JOINTS AND CRACKS

- A. Treat control joints to bridge potential cracks and to maintain monolithic protection.
- B. Treat cold joints and construction joints to and to maintain monolithic protection on horizontal and vertical surfaces as well as horizontal and vertical interfaces.
- C. Vertical and horizontal contraction and expansion joints are treated by installing backer rod and compatible sealant after coating installation is completed. Provide sealant type recommended by manufacturer for traffic conditions and chemical exposures to be encountered.

3.5 FIELD QUALITY CONTROL

- A. Material Sampling: Owner may at any time and any numbers of times during resinous flooring application require material samples for testing for compliance with requirements.
 - 1. Owner will engage an independent testing agency to take samples of materials being used. Material samples will be taken, identified, sealed, and certified in presence of Contractor.
 - 2. Testing agency will test samples for compliance with requirements, using applicable referenced testing procedures or, if not referenced, using testing procedures listed in manufacturer's product data.

3. If test results show applied materials do not comply with specified requirements, pay for testing, remove noncomplying materials, prepare surfaces coated with unacceptable materials, and reapply flooring materials to comply with requirements.

3.6 CLEANING, PROTECTING, AND CURING

- A. Cure resinous flooring materials in compliance with manufacturer's directions, taking care to prevent contamination during stages of application and prior to completion of curing process. Close area of application for a minimum of 24 hours.
- B. Protect resinous flooring materials from damage and wear during construction operation. Where temporary covering is required for this purpose, comply with manufacturer's recommendations for protective materials and method of application. General Contractor is responsible for protection.
- C. Cleaning: Remove temporary covering and clean resinous flooring just prior to final inspection. Use cleaning materials and procedures recommended by resinous flooring manufacturer. General Contractor is responsible for cleaning prior to inspection.

END OF SECTION 09 6723

SECTION 321823 – BASEBALL INFIELD

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

- A. Baseball fields shall be a sand/clay mixture. Extent of work is indicated on the drawings.

1.2 SUBMITTALS

- A. Submit samples of sand, silt, and clay individually. Also submit sample of mixture complying with requirements herein.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Textural Analysis

	Diameter of Sieve (mm)	Percentage
Sand	.05 to 2.0	Min 65-80%
Silt	.002 to 0.5	Remainder
Clay	Less than .002	Min 17%

- B. Sand Distribution

	U.S. Sieve (mesh)	Percentage
Gravel	10	No more than 3%
Very Coarse	18	No more than 10%
Coarse	35	Remainder of combined percentages
Medium	60	
Fine	100	
Very Fine	270	

- C. Sand: Shall be non-calcareous, clean and processed and meet the above particle size criteria.
1. No more than 10% including 3% fine gravel combined for sieve meshes 10 and 18.
 2. Minimum of 80% combined fractions for sieve meshes 35, 60, and 100.
 3. Combined fractions no more than 10% of material less than or equal to 0.05 in size.
- D. Clay Soil: Clay soils are defined as those complying with ASTM D 2487 soil classification groups SC and CL.
- E. Sand/Clay amendment: Turface or approved equal.

PART 3 - EXECUTION

3.1 BACKFILL AND FILL:

- A. General: Place acceptable material in layers to required grade elevations for each area classification listed below. Place mixture a minimum of 6 inches thick.
- B. Provide written certification that the baseball fields have been prepared to indicated grades and tolerances, and are free of debris as required herein.
- C. Infield areas: Use a 60% clay soil and 40% sand mixture. This may be installed as a premixed batch over infield areas or mixed onsite by installing a 1 ½" lift of each material starting with clay and alternating material with each lift (1 ½" clay, 1 ½" sand, 1 ½" clay, 1 ½" sand, etc.). After each lift is placed, thoroughly mix by discing, harrowing or pulverizing. Add 24 tons of Turface (12 tons per field), or equal, as approved by the Architect, to the clay and sand mixture on skinned areas.
- D. Form infields and warning tracks with temporary edging material of appropriate height and sufficient to hold mix for installation (to avoid mixing of mixture with sod/grasses). Remove edging prior to sodding, grassing, and compaction of field.

3.2 COMPACTION:

- A. General: Control soil compaction during construction providing minimum percentage of density specified for each area classification indicated below.
- B. Percentage of Maximum Density Requirements: Compact soil to not less than the following percentages of maximum density at a moisture content within 2% of optimum in accordance with ASTM D698:
 - 1. Infield areas: compact top 6" of subgrade and each layer of backfill or fill material at 95% maximum density.
- C. Moisture control: Where subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to surface of subgrade or layer of soil material to prevent free water appearing on surface during or subsequent to compaction operations.
- D. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density.
- E. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by discing, harrowing, or pulverizing until moisture content is reduced to a satisfactory value.

3.3 GRADING:

- A. General: Uniformly grade areas within limits of grading under this section, including adjacent transition areas. Smooth finished surface within specified tolerances, compact with uniform levels or slopes between points where elevations are indicated, or between such points and existing grades.

- B. Infields: finish areas to final grade/slope to within not more than 0.05' above or below required elevations. Area shall be free from depressions or high spots and shall be smooth and lump free.

END OF SECTION 321823.13

NEW MIDDLE SCHOOL
 Pre-Bid Meeting
 September 23, 2025 – 2:00PM

Sign – In Sheet

<u>Name</u>	<u>Representing & Contact Information</u>
Bulke, McManis	Second Look Construction, Inc. 980-258-3527
BEN STICKNEY	Elford Construction bstickney@elford.com
Josh Edwards	Edcon bids@edconinc.com
Jessi Procnier	Wharton-Smith cltestimating@whartonsmith.com
JOSEPH WILLARD	WHARTON-SMITH JWILLARD@WHARTONSMITH.COM
Ben Barnett	upstate Millwork ben@upstatemillwork.com
Wayne Sexton	upstate Site Development wayne@upstate.sitedev.com
Jason Parker	gandhiclearing@gmail.com
Jake Parker	upstate Site Development
Derik Harris	GC 904 226 2985
Lindsey Collins	Ronco (803) 365-3661 l.collins@ronco.net
Jennifer Carter	MPS Architecture 803-791-1020 ^{jecarter@} mcmillanpazzdan smith.com
Lori Long	" " llong@_____
Sam Guptill	Edison Food sguptill@edisonfood.com
Carter Davis	upstate Grading Inc. cdavis@upstategrading.com 864 708-0850
Alana Houle	Ronco (215) 805-5588 ~~(714)~~ ahoule@ronco.net