REGAN YOUNG ENGLAND BUTERA
REFERENDUMS • ENGINEERING • ARCHITECTURE • DESIGN

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(609) 265-2652 • 21AI00912100 • www.RYEBREAD.com

SOUTH JERSEY BIZ BEST OF BIZ 2020

A BLUEPRINT FOR BETTER

PROJECT MANUAL

BUILDING ENTRANCES SECURITY ENHANCEMENT

LINDENWOLD SCHOOL #4 – 900 GIBBSBORO ROAD

LINDENWOLD SCHOOL #5 – 550 CHEWS LANDING ROAD

LINDENWOLD MIDDLE SCHOOL – 40 WHITE HORSE AVENUE

LINDENWOLD HIGH SCHOOL – 801 EGG HARBOR ROAD

LINDENWOLD BOARD OF EDUCATION
801 EGG HARBOR ROAD
LINDENWOLD, NEW JERSEY 08021
(856) 783-0276

REGAN YOUNG, AIA
NEW JERSEY REGISTRATION NO. 21A00912100

RYEBREAD PROJECT 5643A
26 FEBRUARY 2021

Working together, we can create building envelopes/systems/interiors/contexts that are more safe, productive, healthy, efficient, and distinctive.

SECTION 000010 - TABLE OF CONTENTS

All sections have page numbers prefixed by the section number, as page number 000000-3 for page 3 of Section 000000.

DIVISION 09 - FINISHES

DIVISION 10 – SPECIALTIES

DIVISION 34 – APPENDIX AND EXHIBITS

NOTE: MEP SPECIFICATIONS ARE INCLUDED ON THE CONSTRUCTION DRAWINGS.

END OF SECTION 000010

SECTION 000030 - ABBREVIATIONS

PART 1 - GENERAL

SUMMARY

The following abbreviations and symbols are used throughout the Contract Documents.

SYMBOLS

<	angle
~	approximately
[	channel
x°	degree (s)
ø	diameter
#x	number
⊥	perpendicular
x#	pound (s)
●	extra mat'ls/service agreem'ts req'd

ABBREVIATIONS

ABV	above
AFF	above finish floor
ASC	above suspended ceiling
ACC	access
ACFL	access floor
AP	access panel
APC	acoustical panel ceiling
ATC	acoustical tile ceiling
ADJ	adjacent
ADJT	adjustable
AFFID	affidavit
AGG	aggregate
A/C	air conditioning
ALT	alternate
ALUM	aluminum
ADA	american w/ disability act
AB	anchor bolt
ANOD	anodized
APP	application
APPROX	approximate(ly)
ARCHT	architect(ural)
A/E	architect/engineer
AD	area drain
APM	as per manufacturer
ASPH	asphalt
A/V	audio visual
AUTO	automatic
AVE	avenue
BSMT	basement
BRM	bathroom
BM	beam
BRG	bearing
BRG PL	bearing plate
BM	bench mark
BLW	below
BET	between
BIT	bituminous
BLK	block
BLKG	blocking
BD	board
BO	bottom of...
BOT	bottom
BCB	bottom chord bearing
BOS	botttom of steel
BRK	brick
BLDG	building
BL	building line
CAB	cabinet
CTV	cable television
CPT	carpet(ed), (ing)
CSMT	casement
CI	cast iron
CIPC	cast-in place concrete
CST	cast stone
CB	catch basin
CLK	caulk(ing)
CLG	ceiling
CH	ceiling height
CTR	center
CC	center to center
CT	ceramic tile

CMT	ceramic mosaic tile
CERT	certificate
CHBD	chalkboard
CLRM	classroom
CO	clean out
CLR	clear(ance)
CL	closet
COL	column(s)
COMP	complete(d), (ing)
CONC	concrete
CMU	concrete masonry unit
CU	condensing unit
CONF	conference
CONST	construction
CONT	continue(ous)
CONTR	contract(or)
CLL	contract limit line
CJ	control joint
COORD	coordinate(tion)
CORR	corridor
CRS	course(ing), (s)
CFT	cubic foot
CU YD	cubic yard
DP	dampproofing
DL	dead load
DEG	degree
DEMO	demolish, demolition
DMT	demountable
DTL	detail(ed), (ing), (s)
DIAG	diagonal
DIA	diameter
DIM	dimension
DRM	dining room
DSPR	dispenser
DIV	division
DR	door
DA	doubleacting
DH	double hung
DN	down
DS	downspout
D	drain
DWG	drawing(s)
DF	drinking fountain
D/W	drywall
EA	each
EF	each face
E	east
ELEC	electric(al)
EC	electrical closet
EP	electrical panel
EWC	electric water cooler
EL	elevation
ELEV	elevator
EMER	emergency
EQ	equal
EQUIP	equipment
EST	estimate
EXCAV	excavate
EF	exhaust fan
EX	exist(ing)
EXIST(‘G)	exist(ing)
EJ	expansion joint
EXP	exposed
EXT	exterior
EIFS	ext insul & fin sys
FAB	fabricate(d)
FB	face brick
FOC	face of concrete
FOF	face of finish
FOM	face of masonry
FT	feet, foot
FBGL	fiberglass
FIN	finish
FF	finsh floor
FE	fire extinguisher
FEC	fire extinguisher cabinet
FPL	fireplace
FP	fireproof
FLASH’G	flashing
FLR	floor(ing)
FD	floor drain
FLUR	fluorescent
FJ	flush joint
FTG	footing
FND	foundation
FBO	furnished by others
GA	gauge
GALV	galvanized
GC	general contract(or)
GL	glass, glazing
GB	grab bar
GD	grade(ing)
GFI	groung fault interupt
GR	guard rail

GWB	gypsum wall board
HC	handicap
HR	handrail
HDW	hardware
HDR	header
HTR	heater
HVAC	heating/ventilating & a/c
HT	height
HC	hollow core
HM	hollow metal
HORZ	horizontal
HB	hose bibb
HWH	hot water heater
IRWC	impact resist. wall cover
ID	inside diameter
INSUL	insulate(d), (ion)
INT	interior
INV	invert
JC	janitor's closet
JST	joist
JT	joint
KIT	kitchen
LBL	lable
LAB	laboratory
LAV	lavatory
LH	left hand
L	length
LTG	lighting
LT FIX	light fixture
LF	lineal foot
LIN	linen closet
LTL	lintel
LL	live load
LIV	living room
LVR	louver
MH	manhole
MFR	manufacture(r)
MO	masonry opening
MAT'L	material(s)
MAX	maximum
MECH	mechanical
MC	medicine cabinet
MED	medium
MTL	metal
MIN	minimum
MIR	mirror
MISC	miscellaneous
MOD	modular
MT	mount(ed), (ing)
MHT	mounting height
NOM	nominal
N	north
NIC	not in contract
NTS	not to scale
NO	number
NJUCC	NJ Uniform Constr. Code
OFF	office
O/C	on center
OPN'G	opening
OPP	opposite
OPT	optional
OA	outside air
OD	outside diameter
OA	overall
OH	overhead
PNT	paint
PNL	panel
PAN	pantry
PAR	parallel
PKG	parking
PTN	partition
PVMT	pavement
PAYMT	payment
PL	plate
PLYWD	plywood
PNT	point
PVC	polyvinyl chloride
LBS	pounds
PCF	pounds per cubic foot
PLF	pounds per lineal foot
PSF	pounds per square foot
PSI	pounds per square foot
PCL	Precast lintel
PREFAB	prefabricate(d)
PTL	property line

PROP	proposed
RAD	radius
RAFT	rafter(s)
RAH	roof area hatch
RWC	rain water conductor
REF	reference
RYEB	Regan Young England Butera
REINF	reinforce(d), (ing)
REQ'D	required
RF	Resinous Flooring
RH	right hand
ROW	right of way
R	riser
RF'G	roofing
RD	roof drain
RM	room
RO	rough opening
RT	rubber tile
SAFB	sound attn fire blanket
SCHED	schedule
SAU	self-adhering underlayment
SHT	sheet(s)
SIM	similar
SKYLT	skylight
SC	solid core
S	south
SPEC	specification(s)
SQ FT	square feet, foot
SRVT	slip resistant vinyl tile
SST	stainless steel
STD	standard
STL	steel
STO	storage
SD	storm drain
STRUC	structure(ural)
SYM	symmetry(ical)
SYS	system
SV	sheet vinyl
TELE	telephone
THK	thick(ness)
TG	tempered glass
T&G	tongue and grove
TO	top of...
TOP	top of parapet
TOS	top of steel
TOW	top of wall
TB	towel bar
T	tread
TYP	typical
UC	under cut
U/D	unfinished drywall
UL	underwriters laboratory
UR	urinal
VERT	vertical
VB	vinyl base
VCT	vinyl composit tile
VT	vinyl tile
WTW	wall to wall
WC	water closet
WG	wire glass
WP	waterproof(ing)
WWF	welded wire fabric
W	west
WDW	window
WG	wire glass
W/	with
W/O	without
WOM	women
WD	wood
WPT	wood preservative treated
YD	yard

END OF SECTION 000030

SECTION 000100 - ADVERTISEMENT

NOTICE IS HEREBY GIVEN THAT SEALED PROPOSALS FOR:

BUILDING ENTRANCES SECURITY ENHANCEMENT AT THE LINDENWOLD SCHOOL DISTRICT; LINDENWOLD, NEW JERSEY 08021.

Will be received no later than 2:00 PM prevailing time, on 21 April 2021 in the Administrative Building at 801 Egg Harbor Road; Lindenwold, New Jersey 08021. Bid Proposals shall be submitted by either mail/delivery service or in person (drop-off only) to the Board of Education Offices. **Bid proposals will ONLY be accepted for drop-off between the hours of 9:00 AM-2:00 PM on 20 and 21 April 2021.**

Proposals must be addressed to the LINDENWOLD BOARD OF EDUCATION; 801 Egg Harbor Road; Lindenwold, New Jersey 08021; Attn.: Kathleen Huder, Business Administrator/Board Secretary. All bids received on time shall be opened and read publicly at the above time and date via a virtual bid opening. Electronic (e-mail) submissions shall not be accepted. The LINDENWOLD BOARD OF EDUCATION and REGAN YOUNG ENGLAND BUTERA, PC. assume no responsibility for bids mailed or misdirected in delivery.

Bidders will not be permitted to attend the bid opening in person. In an effort to minimize social contact, the District will conduct a video bid opening using Zoom video conferencing, where all bids will be opened and read aloud. The videoconference Bid Opening call-in directions will be provided to all plan holders of record. The conference will open at 1:45 PM. When calling in, please immediately identify your name and Company.

After the bid opening, any Bidder may request an electronic copy of any bid submission, by contacting Kathleen Huder, SBA.

The Architect will endeavor to post the results of all bids submitted within 24-hours of the opening of bids. Bidders may access the website and bid results at http://www.ryebread.com/bidding/.

Prime Bidders must be pre-qualified by the New Jersey Department of the Treasury, Department of Property and Management Construction, prior to the date that bids are received. Any bids submitted under the terms of New Jersey Statutes not including a copy of a valid and active Pre-qualified/Classification Certificate and New Jersey Department of Labor Contractor Registration Certificate may be rejected as being non-responsive to bid requirements.

One of the following DPMC-Classified Trade(s) and License(s) are required by the Overall Prime Bidder and/or their subcontractors:

C008 General Construction or C009 General Construction/Alterations and Additions
C029 Structural Steel & Ornamental Iron
C030 Plumbing
C032 Heating, Ventilation, Air Conditioning and Refrigeration (HVACr)
C047 Electrical

Sealed bids shall be received as a SINGLE GENERAL CONSTRUCTION contract for all work, goods and services required to complete the project. The bid must identify the name or

names of all subcontractors to whom the Prime Bidder will subcontract the furnishing of: (1) Plumbing and Gas Fitting; (2) Heating, Ventilation, Air Conditioning and Refrigeration; (3) Electrical Work, including any electrical power plant, tele-data, fire alarm, or security system and (4) Structural Steel & Ornamental Iron. Each of the Prime Subcontractors shall be qualified in the same manner as the Prime Bidder, in accordance with the requirements of N.J.S.A. 18A:18A-1 et seq. If none are required, the Prime Bidder shall input "None" on the List of Subcontractors.

The Project consist of, but not limited to, security enhancements for vestibule and office alterations at the Lindenwold School #4, Lindenwold School #5, Lindenwold Middle School, and the Lindenwold High School. Limited asbestos abatement is required at Lindenwold School #4, Lindenwold School #5 and the Lindenwold Middle School. The asbestos abatement required is part of the Work under this Contract.

The Work shall include, but not be limited to, aluminum entrances and storefronts, interior wood doors and hollow metal frames, transaction windows, architectural canopies, new floor, wall and ceiling finishes, asbestos abatement, and mechanical, electrical and plumbing alterations to support the security enhancements.

Proposal Forms, Instructions to Bidders, Specifications and other bid documents may be made available for Bidders from the office of REGAN YOUNG ENGLAND BUTERA, PC; 456 High Street; Mt. Holly, New Jersey 08060 during regular business hours. Additional information, including a list of (registered) Prime Bidders, can be obtained from the Architect's web site (www.RYEBREAD.com). Subcontractors and vendors may obtain copies from registered Prime Bidders. There is a $25.00 non-refundable cost to be a Prime Bidder, by check or credit card. An electronic copy of the specifications and drawings shall be made available to Prime Bidders; hard copies of the bidding documents shall not be provided. Access to the electronic documents shall be emailed to the Prime Bidder upon receipt of their payment and all of the following information:

Business name
Contact person
Business mailing address
Business phone number
Business facsimile number
Email address

Additional information, including Addenda, a list of Prime Bidders, and project budget can be obtained from the following webpage: http://www.ryebread.com/bidding/.

Inquiries shall be directed to:

Scott Charles England, AIA,
REGAN YOUNG ENGLAND BUTERA, PC
456 High Street
Mt. Holly, NJ 08060
(609) 265-2652/0333 Fax
sce@ryebread.com

A NON-MANDATORY PRE-BID CONFERENCE will be held at 2:00 PM prevailing time, on 07 April 2021. The Conference will be conducted in person starting at Lindenwold School #4. In order to maintain the District's safety protocols and social distancing requirements, all Pre-Bid

attendees will be required to Pre-Register with the architect. Attendees shall be required to submit the name of the person(s) attending, the company they represent, and a mobile number to sce@ryebread.com by no later than 2:00 PM on 05 April 2021. Attendance at the Pre-Bid Conference is encouraged but not mandatory. Attendance is limited to one person per Bidder and will require strict adherence with all CDC, Departments of Health, and Lindenwold BoE Covid protocols.

In accordance with Governor Murphy's applicable Executive Orders, Contractors also now required, at minimum, to comply with certain health standards, which include, but are not limited to, prohibition of non-essential visitors; stagger work schedules and breaks; all personnel must wear CDC recommended face masks and gloves (unless health is affected); institute infection control measures and frequent sanitation; limit sharing of tools; and provide sanitation materials. These additional measures are the contractor's responsibility and shall be adhered to at the contractor's expense.

Minimum policies are also required to be adopted and employed by construction projects: Immediately separate and send home workers who appear to have symptoms consistent with COVID-19; notify workers of potential exposure to the virus (but such notice must be in accordance with the law and privacy acts); follow all CDC, OSHA, Department of Health guidelines and directives for on-site health and safety.

Failure to comply with the Order (like all recent Executive Orders) may subject the Contractor to penalties, inclusive of possible fines.

Construction shall begin on or about 21 June 2021 and shall be substantially completed on or before 27 August 2021.

Bids must be made upon the official Form of Bid and shall include Bid Security in the form of a certified check, cashier's check, or by Bid Bond drawn to the order of the Owner in the amount of not less than ten percent (10%) of the Base Bid but in no case in excess of $20,000.00. The bid shall also be accompanied by an executed Consent of Surety in accordance with N.J.S.A. 18A:18A-25, agreeing to furnish a Performance Bond and a Payment Bond, each in the stated principal amount of one hundred percent (100%) of the contract amount, and a two-year Maintenance Bond in the amount of ten percent (10%) of the contract amount.

Contracts for work under these bids will obligate contractors and Subcontractors to (1) pay Prevailing Wages in accordance with N.J.S.A. 34:11-56(a) et. seq., (2) comply with equal opportunity laws in accordance with N.J.S.A. 10:5-31 et. seq., (3) comply with Affirmative Action laws in accordance with N.J.A.C. 17:27 and comply with Exhibit B of the Department of the Treasury, Guidelines for Administering EEO in Public Contracts), (4) provide ownership disclosure information per N.J.S.A. 52:25-24.2, (5) comply with New Jersey Business Registration laws in accordance with N.J.S.A. 52:32-44 and (6) comply with any and all successors, amendments or additions thereto.

Prime Bidders are required to comply with the requirements of the State of New Jersey Public School Contract Law, N.J.S.A. Title 18A bidding laws. A Prime Bidder that withdraws or modifies his/her bid prior to 60 days after the actual date of opening of bids may forfeit their bid security. All bid security, except for the security of the three apparent lowest responsible Prime Bidders shall, if requested, be returned after ten days from the opening of the bids, Saturdays,

Sundays and holidays excepted, and the bids of such Prime Bidders shall be considered as withdrawn.

These Projects are partially funded by the Securing Our Children's Future Bond Act through the New Jersey Department of Education. Contractor shall comply with the requirements of the Grant including record keeping and agrees to assist the Owner in obtaining reimbursement or assisting in the fulfillment of the Grant requirements.

Registered Bidders must submit questions concerning the project to the Architect on Form 006001 BIDDER REQUEST FOR INFORMATION that is included in the Project Manual by no later than 1:00 PM, 08 April 2021.

The LINDENWOLD BOARD OF EDUCATION has the right to award the contracts within sixty (60) days of the bid opening and reserves the right to reject any or all bids and to waive any non-material defects, as may be permitted by law.

By Order of the LINDENWOLD BOARD OF EDUCATION
Kathleen Huder, Business Administrator/Board Secretary

END OF SECTION 000100

SECTION 001000 - INSTRUCTIONS TO BIDDERS

PART 1 - GENERAL

Refer to Sections of Divisions 00 and 01 for additional information that may affect the preparation of bids. These Sections contain information pertaining to:

- Time, date and place for receipt of bids.
- Time for completion.
- Substitution of materials.
- Alternate prices, allowances, unit prices.
- Other conditions pertaining to the Work.

BIDDING DOCUMENTS

Bidding Documents consist of:

- The Project Manual containing:
  - Table of Contents.
  - List of Drawings.
  - Instructions to Bidders.
  - Contract Forms.
  - Modified AIA General Conditions of the Contract.
  - Specifications as listed in the TABLE OF CONTENTS.
- Drawings as listed in the PROJECT MANUAL.
- Any Addenda as may be subsequently issued to Bidders of Record.

Bidding Documents will be available to Prime Contract Bidders as stated in the ADVERTISEMENT. Sub-Contractors and vendors may obtain copies from registered Prime Contract Bidders. All documents furnished to any person, under any condition, shall remain the property of the Architect and shall not be reproduced or used on any other project without approval of the Architect in writing.

BID UPDATES

Bidders should regularly visit the Architect's website at the link indicated in the Advertisement and select the applicable project for relevant project information including, but not limited to, addenda, prospective bidders, and budget.

SINGLE OVERALL BID

In accordance with Title 18A, Public School Contracts Law, the Contractor submitting a bid to perform the work under a single contract shall furnish in writing at the time of Bid, the names of persons or entities proposed as Prime subcontractors. Prime subcontractors shall be qualified in accordance with N.J.S.A. 18A:18A-18. In addition, submit evidence of performance security of each Prime subcontractor simultaneously with the bid.

BID PREPARATION

Proposal for Contracts as listed in the Advertisement for Bids as hereinafter described, will be received for the performance of the Project. The bids shall cover all cost of any nature, incident to and growing out of the work. In explanation but not in limitation thereof, these costs shall include the cost of all work, labor, materials, equipment, transportation and cost of all else necessary to perform and complete the Project in the manner and within the time required, all incidental expenses in connection therewith, all costs on account of loss by damage or destruction of the Project, to the extent that the cost of such loss is not recovered from insurance carried by the Owner and the Contractor, and any additional expenses for unforeseen difficulties encountered, for settlement of damages and for replacement of defective work and materials.

Prior to submitting a bid, Bidder shall examine and thoroughly familiarize himself/herself with all of the following:

The Bidding Documents.
All applicable laws, ordinances, rules and regulations which may affect the Work.
The Site and all existing Work, buildings, utilities, roads, etc.
That the bidding Contractor can secure the necessary labor and equipment and that the materials specified herein may be obtained in the quantities and in the time required by the Contract.
All other conditions that may affect the Work.

Drawings and Specifications have been prepared on the basis of surveys and inspections of the Site and are intended to present an essentially accurate indication of the physical conditions at the Site. This shall not relieve the Bidder of the necessity of fully informing himself/herself as to the existing conditions at the site. The failure or omission of any Bidder to receive or examine any form instrument or document or to visit the site and acquaint themself with conditions there existing, shall not relieve any Bidder from obligation with respect to his bid.

If a Bidder finds discrepancies or ambiguities in, or omissions from the Documents, or if he/she is in doubt as to their meaning, he/she shall notify the Architect in writing by the time, date and method indicated in the ADVERTISEMENT. Failure to report any discrepancies, ambiguities, and/or omissions in the manner herein prescribed constitutes a waiver of any claim for additional compensation arising out of any and all additional work and/or materials necessary as a result of the Architect's decision(s) clarifying said discrepancies, ambiguities and/or omissions. If properly notified, the Architect will, if necessary, send written Addenda to all Bidders of Record. Direct inquiries to:

Scott England, AIA
REGAN YOUNG ENGLAND BUTERA, PC
456 High Street
Mt. Holly, NJ 08060
(609) 265-2652/0300 Fax
sce@ryebread.com

A NON-MANDATORY PRE-BID CONFERENCE will be held as stated in the Advertisement. The Conference will be conducted in person starting at Lindenwold School #4. In order to maintain the District's safety protocols and social distancing requirements, all Pre-Bid attendees will be required to Pre-Register with the architect. Attendees shall be required to submit the name of the person(s) attending, the company they represent, and a mobile number to sce@ryebread.com by no later than 2:00 PM two days prior to the Pre-Bid. Attendance at the Pre-Bid Conference is encouraged but not mandatory. Attendance is limited to one person per company and will require strict adherence with all CDC, Departments of Health, and Lindenwold BoE Covid protocols.

VISITATION OF EXISTING SITE AFTER PRE-BID CONFERENCE

Visit to the existing site may be arranged by calling:

Carl Haines, Supervisor of Facilities at (609) 685-4294.

REQUESTS FOR INFORMATION

Registered Prime Bidders requesting information or clarification to bidding or construction related issues shall fax the request to the Architect at (609) 265-0333 by the date and time indicated in the ADVERTISEMENT. Bidders must submit form 006001, BIDDER REQUEST FOR INFORMATION included in this Project Manual. Only requests submitted on the BIDDERS REQUEST FOR INFORMATION form will be answered.

Request must clearly identify the drawing number and/or specification section in question. All requests must be received in writing no later than the date & time indicated in the ADVERTISEMENT.

ORAL EXPLANATIONS

Oral explanations or instructions given before Award of Contract will not be binding. All authorized interpretations will be made by written Addenda.

ADDENDA

Written Addenda making changes or corrections to the Bidding Documents after they have been issued will be sent, if required, to Bidders of Record. Such Addenda shall take precedence over that portion of the Bidding Documents concerned and shall become a part of the Contract Documents. The failure to provide the additional notice to bidders shall not serve to void the award of the Contract(s). In accordance with N.J.S.A 18A:18A-21, Addenda shall be issued to reach registered Bidders at least 7 days prior, Saturdays, Sundays and holidays excepted, to the Date for Receipt of Bids. It is the responsibility of the Bidder to ascertain that he/she has received all issued Addenda, prior to submission of the bid.

Receipt of all Addenda shall be acknowledged by the Bidder on the FORM OF BID in the space provided. Failure to acknowledge Addenda may be cause for rejection of the bid.

PREQUALIFICATION/CLASSIFICATION

Pursuant to N.J.S.A. 52:35-1 et seq. and 18A:18A-26, 27 et seq., Bidders on any Contract for State Funded and/or Department of Education work in the State of New Jersey in which the entire

cost of the Contract exceeds $20,000 must be pre-qualified by the Department of Treasury, Division of Property Management and Construction, as to the character and amount of public work on which they may submit bids. Pre-qualified Bidders must submit with their Proposal a Notice of Classification setting forth the type of work and the amount of work for which he has been qualified, that there has been no material adverse change in his qualification information, the total amount of uncompleted work on contracts at the time of the bid opening. (Forms for this purpose are available from the Director of the Division of Property Management and Construction, Department of Treasury, Trenton, NJ 08625, www.state.nj.us/treasury/dpmc/forms.shtml).

Each bidder submitting a proposal for a single overall contract must include with its bid evidence that the prime subcontractors it proposes (if any) to utilize for structural steel work; plumbing and fire protection work; heating, ventilating and air conditioning work; and electrical work (prime subcontractors) are pre-qualified by the New Jersey Department of Treasury, Division of Property Management and Construction and shall submit with his/her bid a current Notice of Classification and a No Material Change in Qualification Information Form, and a Total Amount of Uncompleted Contracts Form (DPMC Form 701) for each of the above subcontractors.

Pursuant to N.J.S.A. 18A:7G-37, each prequalified contractor seeking to bid school facilities projects, along with any prime subcontractors required to be named shall, as a condition of bidding, submit a sworn Contractor Certification regarding their qualifications and credentials. A principal owner or officer of each company shall certify that their firm has the qualifications and credentials required by the Contractor Certification. A current, valid copy of a "Certification of Authority to perform work in New Jersey" issued by the Department of the Treasury shall be attached to each Contractor Certification form.

BUSINESS REGISTRATION OF PUBLIC CONTRACTORS

Pursuant to N.J.S.A.52:32-44, as set forth above, the bidder shall submit a copy of their Business Registration Certificate as well as each of their subcontractors or suppliers anticipated to be used in the fulfillment of the contract.

For the term of the contract, the contractor and each of its affiliates and a subcontractor and each of its affiliates N.J.S.A. 52:32-44(g)(3) shall collect and remit to the Director, New Jersey Division of Taxation, the use tax due pursuant to the Sales and Use Tax Act on all sales of tangible personal property delivered into this State, regardless of whether the tangible personal property is intended for a contract with a contracting agency.

A business organization that fails to provide a copy of a business registration as required pursuant to section 1 of P.L.2001, c.134 (C.52:32-44 et al.) or subsection e. or f. of section 92 of P.L.1977, c.110 (C.5:12-92), or that provides false business registration information under the requirements of either of those sections, shall be liable for a penalty of $25 for each day of violation, not to exceed $50,000 for each business registration copy not properly provided under a contract with a contracting agency.

PAYMENTS TO CONTRACTOR

This project is part of the District's 2021-2022 Budget and so the purchase order shall be dated 01 July 2021. Payment applications can be submitted with the understanding that the Lindenwold Board of Education will approve the first payment at their July 2021 Board of Education meeting. No payments under this Contract shall be authorized prior to these dates.

OWNER'S RIGHT TO ADDITIONAL INVESTIGATION

The Owner may make such additional investigations as it deems necessary to determine the ability of the Bidder to perform the work, and the Bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any bid if the evidence submitted by, or investigation of, such Bidder fails to satisfy the Owner that he is properly qualified to carry out the obligations of the Contract and to complete the work contemplated therein.

TIME FOR COMPLETION

Time for completion as indicated in the ADVERTISEMENT. Bidders attention is directed to MODIFIED AIA GENERAL CONDITIONS, Paragraph 8.1.

BIDDER'S LEGAL NAME

The Bidders legal name, address and telephone number shall be stated in full on the FORM OF BID. The Bid shall be signed in ink by a Principal duly authorized to bind the Bidder in contracts.

Bids by Partnerships shall indicate the full names of all partners and shall be signed in the partnership name by one of the partners or by a duly authorized representative followed by the designation of the person signing.

Bids by Corporations shall have the name of the corporation followed by the State of Incorporation and the designation of the corporate officer authorized to bind the corporation in this matter. Disclosure by the bidder must be continued until the individual names and addresses of every non-corporate stockholder and individual partner exceeding the 10% ownership criteria has been listed. (N.J. S.A.52:25-24.2).

DOCUMENTS ACCOMPANYING BID

Refer to Section 002000 - FORM OF BID for a list of all documents required to be submitted with the bid along with the required number of copies.

Failure to provide all required documents and required number of copies may be cause for disqualification and rejection of bid.

MAILED BID PROPOSALS

If a Bid is to be mailed, the bid envelope shall be enclosed in another opaque envelope stating "MAILED BID PROPOSAL" and addressed to:

Kathleen Huder, Business Administrator/ Board Secretary
LINDENWOLD BOARD OF EDUCATION
801 Egg Harbor Road
Lindenwold, New Jersey 08021

Electronic (e-mail) submissions shall not be accepted.

The Bidder assumes full responsibility for bids mailed or misdirected in delivery. The Owner is not responsible for any Bids that fail to arrive within the time specified by the ADVERTISEMENT regardless of fault.

BID OPENING

Bids shall be received and opened as stated in the ADVERTISEMENT.

The award of the Contract(s) or rejection of all bids must be made within sixty (60) days of the bid opening.

The execution of the Contract(s) shall be done within twenty-one (21) days of award of bid.

Award made to a Bidder whom is not a resident of the State of New Jersey is conditioned upon Bidder designating a proper agent in the State on whom service can be made in the event of litigation.

If the successful bidder is a corporation not organized under the laws of New Jersey, the award of Contract and payment of consideration thereunder shall be conditioned upon Corporation promptly filing a certificate of doing business in the State of New Jersey pursuant to the provisions of New Jersey law.

WITHDRAW OR MODIFICATION OF BID

No Bids may be withdrawn or modified after the time set for receipt of bids and for a period of 60 calendar days thereafter without consent of the Owner.

INFORMALITIES IN BID PROPOSALS

The Owner reserves the right to reject any or all bids, and to waive any bid requirements and/or any non-material bid defects, where such rejection or waiver is in the best interests of the Owner, and where such rejection or waiver is permitted by law.

FORM OF AGREEMENT

The Form of Agreement shall be the 2017 AIA Document A101 Standard Form of Agreement between Owner and Contractor (Stipulated Sum).

CONTRACTOR PREFORMANCE REVIEW

In accordance with N.J.S.A. 18A:18A-15, the Board of Education, through its authorized agent, shall upon completion of the contract report to the department as to the contractor's performance, and shall also furnish such report from time to time during performance if the contractor is then in default.

CHALLENGES TO BID SPECIFICATIONS

In accordance with N.J.S.A. 18A:18A-15, any prospective bidder who wishes to challenge a bid specification shall file such challenges in writing with the School Business Administrator/Board Secretary and the Architect no less than three (3) days prior to the opening of bids. Challenges

filed after that date shall be considered void and having no impact on the Board of Education or the award of a contract.

AMERICAN GOODS

In accordance with N.J.S.A. 18A:18A-20, only manufactured products of the United States, wherever available, and where possible are to be used with this project.

EQUIVALENT PRODUCTS: The use of manufacturers' brand names, catalogue numbers and similar proprietary identifying data in the Contract Documents are not intended to eliminate from consideration products that are equivalent in quality, appearance and function to those specified.

BONDING

Bid Security: Each bid shall include bid security by certified check, cashier's check or bid bond drawn to the Owner in an amount of not less than ten percent (10%) of the base bid but in no case in excess of $20,000.00.

Contract Bonds: The Bidder to whom the Contract has been awarded shall, within ten (10) days of the date of the award, furnish and deliver a Performance Bond and Payment Bond, equal to one hundred percent (100%) of the Contract amount. The Bidder(s) to whom the Contract(s) has been awarded shall, prior to requesting Final Payment, furnish and deliver a TWO (2) year Maintenance Bond, equal to ten percent (10%) of the Final Contract Amount. If, at any time after execution and approval of a Contract and Performance-Payment Bond required by Contract Documents, such Bond shall cease to be adequate security for the Owner, the Contractor shall, within five days after notice to do so, furnish a new or additional Bond, in form, sum and signed by such Sureties as shall be satisfactory to the Owner. No further payment shall be deemed due nor shall any further payment be made to the Contractor unless and until such new or additional Bond shall be furnished and approved.

Consent of Surety: All bids shall be accompanied by an executed Consent of Surety in accordance with 18A:18A-25, agreeing to furnish the required Performance, Labor and Material Payment Bond and Maintenance Bond.

The Contractor shall obligate their Surety to make periodic inquiries of the Board at reasonable times, to determine whether its Principal has performed or was performing the Contract in accordance with all of its terms and conditions, particularly in relation to the progress payments scheduled under said Contract with the Board.

Bidder shall provide proof of executed consent with his/her bid from an approved surety company licensed to conduct business in the State of New Jersey agreeing to furnish the required Maintenance Bond.

BOND AND PERMIT COSTS

The cost of all Bonds shall be paid for and obtained by the Contractor. Permits shall be coordinated by and obtained by the Contractor. If the municipality requires a fee for the review and release of construction permits, the Contractor shall pay all required fees and submit evidence of such to the Owner for full reimbursement of direct costs without any markup.

NON-COLLUSION AFFIDAVIT. Pursuant to N.J.S.A. 52:34-15, each bidder shall submit with his bid a Non-Collusion Affidavit in the form bound herein.

LAW AGAINST DISCRIMINATION

All contracts related to the project, whether between Owner and Contractor or Contractor and Subcontractors, shall comply with the anti-discrimination provisions of N.J.S.A. 10:2-1 *et seq.,* the New Jersey Law Against Discrimination, N.J.S.A 10:5-31 et seq., N.J.A.C. 17:27, N.J.A.C. 6A:7-1.8.

Pursuant to N.J.S.A. 10:2-1:

a. In the hiring of persons for the performance of work under this contract or any subcontract hereunder, or for the procurement, manufacture, assembling or furnishing of any such materials, equipment, supplies or services to be acquired under this contract, no contractor, nor any person acting on behalf of such contractor or subcontractor, shall, by reason of race, creed, color, national origin, ancestry, marital status, gender identity or expression, affectional or sexual orientation or sex, discriminate against any person who is qualified and available to perform the work to which the employment relates;

b. No contractor, subcontractor, nor any person on his behalf shall, in any manner, discriminate against or intimidate any employee engaged in the performance of work under this contract or any subcontract hereunder, or engaged in the procurement, manufacture, assembling or furnishing of any such materials, equipment, supplies or services to be acquired under such contract, on account of race, creed, color, national origin, ancestry, marital status, gender identity or expression, affectional or sexual orientation or sex;

c. There may be deducted from the amount payable to the contractor by the contracting public agency, under this contract, a penalty of $50.00 for each person for each calendar day during which such person is discriminated against or intimidated in violation of the provisions of the contract; and

d. This contract may be canceled or terminated by the contracting public agency, and all money due or to become due hereunder may be forfeited, for any violation of this section of the contract occurring after notice to the contractor from the contracting public agency of any prior violation of this section of the contract.

ANTI-BULLYING BILL OF RIGHTS—REPORTING OF HARASSMENT, INTIMIDATION AND BULLYING—CONTRACTED SERVICE

The contracted service provider shall comply with all applicable provisions of the New Jersey Anti-Bullying Bill of Rights Act—N.J.S.A. 18A:37-13.1 et seq., all applicable code and regulations, and the Anti-Bullying Policy of the Board of Education. The district shall provide to the contracted service provider a copy of the board's Anti-Bullying Policy.

In accordance with N.J.A.C. 6A:16-7.7 (c), a contracted service provider, who has witnessed, or has reliable information that a student has been subject to harassment, intimidation, or bullying shall immediately report the incident to any school administrator or safe schools resource officer, or the School Business Administrator/Board Secretary.

NEW JERSEY PREVAILING WAGE RATE: Bidders are required to comply with the State prevailing wage rate for public works, Chapter 150 Laws of 1963, N.J.S.A. 34:11-56.25 et seq.

PUBLIC WORKS CONTRACTOR REGISTRATION: In accordance with the "Public Works Contractor Registration Act" (N.J.S.A. 34:11-56.51) each bidder is required to be registered pursuant to the Act at the time of the bid and in accordance with N.J.S.A. 34:11-56.55 shall submit their certificate prior to awarding of the contract.

In accordance with N.J.S.A. 34:11-56.27, (a) bidders shall pay workers not less than the prevailing wage rate; (b) in the event it is found that any worker, employed by the contractor or any subcontractor covered by said contract, has been paid a rate of wages less than the prevailing wage required to be paid by such contract, the Owner may terminate the contractor's or subcontractor's right to proceed with the work, or such part of the work as to which there has been a failure to pay required wages and to prosecute the work to completion or otherwise.

Pursuant to N.J.S.A. 34:11-56.51, a contractor must be registered pursuant to the Public Works Contractor Registration Act in order to bid on a contract. All listed subcontractors must also be registered at the time the bid is submitted.

PAY TO PLAY: Bidders are advised to comply with the disclosure requirements of 6A:23A-6.3.

RESIDENT CITIZENS; PREFERRED IN EMPLOYMENT ON PUBLIC WORKS CONTRACTS

All bidders are to familiarize themselves with N.J.S.A. 34:9-2, which requires the contractor of any public work project to give preference in employment on the project, to citizens of the state of New Jersey. If the terms and conditions of N.J.S.A. 34:9-2 are not complied with, the contract shall be voidable.

CERTIFIED PAYROLL RECORDS

The bidder to whom the contract has been awarded agrees to submit certified payroll records to the public body for each payroll period within ten (10) days of payment of wages in accordance with current New Jersey Statutes. Copies of certified payroll forms may be obtained by calling or writing or calling the following agency:

NEW JERSEY DEPARTMENT OF LABOR
Division of Workplace Standards
Public Contracts Section
CN 389
Trenton, New Jersey 08626-0389
(609) 292-2259

CRIMINAL HISTORY BACKGROUND CHECKS

The contractor and all subcontractors for the project shall provide to the school district (Director of Facilities, Director of Security or School Business Administrator/Board Secretary) with evidence or proof that each worker assigned to the project has had a criminal history background check, and that said check indicates that no criminal history record information exists on file for that worker pursuant to N.J.S.A. 18A:6-7.2.

Bidders shall fully comply with the requirements of N.J.S.A. 18A:6-7.6 to 7.13 (P.L. 2018, c.5). Failure to provide the information required within ten (10) business days of a bidder's receipt of the District's notice of intent to award the contract may be cause for rejection of the Proposal.

Additional information can be obtained from the New Jersey Department of Education Office of Student Protection at (609) 376-3999 or nj.gov/education/crimhist.

Failure to provide a proof of criminal history background check for any contractor or subcontractor employee may be cause for breach of contract.

If it is discovered during the course of the contract that a contractor or subcontractor employee has a disqualifying criminal history, or the employee has not had a criminal history background check, that employee is to be removed from the project immediately.

RECORDS RETENTION

In accordance with N.J.A.C. 17:44-2.2 Bidders shall maintain all documentation related to products, transactions or services under this contract for a period of five years from the date of final payment. Such records shall be made available to the New Jersey Office of the State Comptroller upon request.

COMPLIANCE WITH EXECUTIVE ORDERS

In accordance with Governor Murphy's Executive Orders, that deemed K-12 school projects as "essential construction". Contractors also now required, at minimum, to comply with certain health standards, which include, but are not limited to: prohibition of non-essential visitors; staggering work schedules and breaks; all personnel must wear CDC recommended face masks and gloves (unless health is affected); institute infection control measures and frequent sanitation; limit sharing of tools; and provide sanitation materials. These additional measures are the contractor's responsibility and shall be adhered to at the contractor's expense.

Minimum policies are also required to be adopted and employed by the essential construction projects: Immediately separate and send home workers who appear to have symptoms consistent with COVID-19; notify workers of potential exposure to the virus (but such notice must be in accordance with the law and privacy acts); follow all CDC, OSHA, Department of Health guidelines and directives for on-site health and safety.

Failure to comply with the Order (like all recent Executive Orders) may subject the Contractor to penalties, inclusive of possible fines.

NEW JERSEY DEPARTMENT OF EDUCATION GRANT

These Projects are partially funded by the Securing Our Children's Future Bond Act through the New Jersey Department of Education. Contractor shall comply with the requirements of the Grant including record keeping and agrees to assist the Owner in obtaining reimbursement or assisting in the fulfillment of the Grant requirements.

PARTS 2 AND 3 (Not Applicable)

END OF SECTION 001000

SECTION 002000 - FORM OF BID

TO:
Kathleen Huder, Business Administrator/Board Secretary
LINDENWOLD BOARD OF EDUCATION
801 Egg Harbor Road
Lindenwold, New Jersey 08021

FROM:

_____ (NAME)

_____ (ADDRESS)

_____ (CITY, STATE, ZIP)

_____ (PHONE/FAX NUMBER)

_____ (EMAIL ADDRESS)

Operating as an individual, a partnership, corporation under the laws of the State of New Jersey

_____
(Input words that apply)

PROPOSAL FOR: RYEBREAD PROJECT NO. 5643A

BUILDING ENTRANCES SECURITY ENHANCEMENT
LINDENWOLD SCHOOL DISTRICT
Lindenwold, New Jersey 08021

This proposal is based on Specifications and Drawings dated 26 February 2021 and prepared by:

REGAN YOUNG ENGLAND BUTERA, PC
456 High Street
Mt. Holly, New Jersey 08060

OVERALL BASE BID – (ALL FOUR SCHOOLS COMBINED): Pursuant to and in compliance with your request for proposals for the above named project and contract, and having examined the site where the work is to be located, and having become familiar with local conditions as they may, in any way, affect the cost and/or execution of the work, and having carefully examined the specifications and drawings named above, the Undersigned Bidder hereby agrees to provide all plant, labor, materials, supplies equipment, transportation and other facilities necessary and proper for, or incidental to, or required for complete and satisfactory execution of work. For a one-time lump sum bid, which shall include the contingency allowance listed below:

_____($_____)

ALTERNATE BIDS below to be executed by the Undersigned Bidder in accordance with the Specifications and Drawings for the addition to (ADD), the Base Bid as follows.

All costs listed for each alternate shall include costs of related coordination, revision, or adjustment.

ALTERNATE No. 1 – LINDENWOLD SCHOOL #4 - WALL REMOVAL & NEW WALL: Extend new wall, ceiling, electric, etc. into the Main Corridor in accordance with the drawings. For a lump sum total of:

(ADD TO BASE-BID)

_____($_____)

ALTERNATE No. 2 – LINDENWOLD MIDDLE SCHOOL - Pre-engineered, pre-fabricated, aluminum canopy system. For a lump sum total of:

(ADD TO BASE-BID)

_____($_____)

ALLOWANCES below, which include labor, materials, taxes, insurance, overhead, profit and other costs in connection therewith, shall be included in the Base-Bid proposal for the quantities listed. Allowances listed shall include all incidental items required to render the allowance fully complete and operational whether specifically referenced or not. Any unused allowances shall be deducted from the contract value at the stated amount.

Contingency Allowance No. 01: Include in the Base-Bid a total contingency allowance amount of $15,000 for all four schools combined, as directed by the Architect and approved by the Owner.

NO MATERIAL ADVERSE CHANGE IN QUALIFICATION: The undersigned bidder hereby certifies that there has been no material adverse change in the qualification information last submitted to the New Jersey Department of the Treasury pursuant to NJSA 18A: 18A-28.

HOLD HARMLESS AGREEMENT: By submitting and executing a bid proposal the Bidder, if corporation, also responsible individual of corporation signing individually agrees to indemnify and hold harmless the Owner, Architect, and their agents and employees, from all and against all claims, damages, losses, and expenses, including reasonable attorney's fees in case it shall be necessary to file an action, arising out of bodily injury, illness or death, or for property damage, by the Contractor negligent act or omission or that of a Subcontractor, or that of anyone employed by them or for whose acts contractor or subcontractor may be liable. This indemnification and agreement shall apply in all instances whether Owner, Architect is made a party to the action by third-party in-pleading or is made party to a collateral action arising, in whole or in part, from any of the issues emanating from the original cause of action or claim.
TIME OF COMPLETION: The Undersigned Bidder agrees to complete the work as indicated in the Advertisement, (Bidder is referred to AIA GENERAL CONDITIONS, Par. 8.1).

DOCUMENTS ACCOMPANYING BID

Failure to provide all required documents and required number of copies may be cause for disqualification and rejection of bid.

Bidder shall correlate the following required documents in the order listed below & place an "X" in the box next to each item provided.

☐ 1. Form of Bid.

☐ 2. DPMC Notice of Classification.

☐ 3. Total Amount of Uncompleted Contracts Affidavit (DPMC Form 701).

☐ 4. Business Registration of Public Contractors from the New Jersey Division of Taxation.

☐ 5. Bid Security in the form of a Bid Bond, certified check or cashier's check in the amount of not less than 10% of the Base Bid, or $500.00 whichever is more, but in any event not more than $20,000.00. The Bid Security must be in a form consistent with the statutory requirements of the State of New Jersey.

☐ 6. Consent of Surety: Section 002800, or similar.

☐ 7. Surety Company & Agency Information: Section 002801.

☐ 8. Affirmative Action Evidence: Section 002850.

☐ 9. Ownership Certificate: Section 002900 or similar if Bidder is a partnership or a corporation.

☐ 10. Non-Collusion Affidavit: Section 002950.

☐ 11. No Material Change in Qualification Information Form: Section 002960.

☐ 12. Form of certification stating that bidder is not currently debarred, suspended or disqualified under N.J.A.C. section 19:32-1.8. Section 002970.

☐ 13. Disclosure of Investment Activities in Iran. Section 002980.

☐ 14. Contractor's Sworn Contractor Certification. Section 004580; and

Credentials A, B & C listed below must be stapled to this certification.

☐ A. "Contractor Registration Certificate" from the New Jersey Department of Labor in accordance with the "Public Works Contractor Registration Act."

☐ B. "Certificate of Authority" issued by the Department of Treasury.

☐ C. Contractor or trade license.

☐ 15. Political Contributions Disclosure Form: Section 004590.

☐ 16. Prevailing Wages Certification Form: Section 004595.

☐ 17. List of Prime Subcontractors: Section 005290.

For each Prime subcontractor listed, attached a copy of:

☐ A. DPMC Notice of Classification.

☐ B. Total Amount of Uncompleted Contracts Affidavit (DPMC Form 701).

☐ C. Business Registration of Public Contractors from the New Jersey Division of Taxation.

☐ D. No Material Change in Qualification Information Form: Section 002960.

☐ E. Contractor's Sworn Contractor Certification. Section 004580; and

Credentials 1, 2 & 3 listed below must be stapled to this certification.

☐ 1. "Contractor Registration Certificate" from the New Jersey Department of Labor in accordance with the "Public Works Contractor Registration Act."

☐ 2. "Certificate of Authority" issued by the Department of Treasury.

☐ 3. Contractor or trade license.

☐ F. Evidence of Prime Subcontractor's performance security. (Required only if Bidders Bid Bond does not cover Bidders Prime subcontractors.) (Attach to Prime Bidder's Bid Bond).

☐ 18. **TWO (2)** copies (One original and one copy) of all required documents.

IF AWARDED CONTRACT, the Undersigned Bidder agrees to execute the AGREEMENT and to furnish the required Performance and Payment Bonds and evidence of required insurance as soon as practicable after Notice of Acceptance of Proposal or in any event not later than 10 calendar days after receipt of such notification.

If the Undersigned Bidder fails to execute AGREEMENT and furnish required bond and evidence of insurance, the Bid Security accompanying this Proposal will be forfeited to the Owner as liquidated damages for the delay and loss caused to the Owner by reason of such failure by the Undersigned Bidder.

THE UNDERSIGNED BIDDER HAS COMPLIED with all requirements concerning licensing and with all Local, State and Federal laws. No legal requirement has been violated in making this Proposal nor will be violated in the execution of the Work if this Proposal is accepted.

In addition, the undersigned hereby certifies that there has been no material adverse change in the qualification information last submitted to the New Jersey Department of Treasury pursuant to N.J.S.A. 18A:18A-28.

IT IS UNDERSTOOD that the right is reserved by the Owner to reject any and all bids and to waive all informalities in connection therewith as may be permitted by law.

AWARD OF CONTRACT(S)

A Single Prime Contract shall be awarded for all of the work and materials required to complete the project, unless all bids are rejected, to the lowest responsible bidder based on the total amount of the Base Bid and Alternates (if any), accepted by the Owner.

IT IS AGREED THAT THIS BID MAY NOT BE WITHDRAWN for a period of 60 days after the actual date of receipt of bids.

RECEIPT OF THE FOLLOWING ADDENDA is acknowledged by the Undersigned bidder (List by number and date):

ADDENDUM NO.	DATED	ADDENDUM NO.	DATED

Respectfully submitted this _____ day of _____ 20_____.

_____(Name of Firm)

By: _____L.S.
Print

*(SEAL IF BIDDER
IS A CORPORATION)

_____
Signature

_____
Title

_____
Federal Employment Identification Number (FEIN)

END OF SECTION 002000

DOCUMENT 002600 - PROCUREMENT SUBSTITUTION PROCEDURES

1.1 DEFINITIONS

A. Procurement Substitution Requests: Requests for changes in products, materials, equipment, and methods of construction from those indicated in the Procurement and Contracting Documents, submitted prior to receipt of bids.

B. Substitution Requests: Requests for changes in products, materials, equipment, and methods of construction from those indicated in the Contract Documents, submitted following Contract award. See Section 012500 "Substitution Procedures" for conditions under which Substitution requests will be considered following Contract award.

1.2 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.3 PROCUREMENT SUBSTITUTIONS

A. Procurement Substitutions, General: By submitting a bid, the Bidder represents that its bid is based on materials and equipment described in the Procurement and Contracting Documents, including Addenda. Bidders are encouraged to request approval of qualifying substitute materials and equipment when the Specifications Sections list materials and equipment by product or manufacturer name.

B. Procurement Substitution Requests will be received and considered by Owner when the following conditions are satisfied, as determined by Architect; otherwise requests will be returned without action:

1. Extensive revisions to the Contract Documents are not required.
2. Proposed changes are in keeping with the general intent of the Contract Documents, including the level of quality of the Work represented by the requirements therein.
3. The request is fully documented and properly submitted.

1.4 SUBMITTALS

A. Procurement Substitution Request: Submit to Architect. Procurement Substitution Request must be made in writing by prime contract Bidder only in compliance with the following requirements:

1. Requests for substitution of materials and equipment will be considered if received no later than **10** days prior to date of bid opening the date and time for questions indicated in the ADVERTISEMENT.
2. Submittal Format: Submit one pdf copy of each written Procurement Substitution Request, using form 012501 Substitution Request form of the Project Manual.
3. Submittal Format: Submit Procurement Substitution Request, using format provided on Project Web site.

    a. Identify the product or the fabrication or installation method to be replaced in each request. Include related Specifications Sections and drawing numbers.
    b. Provide complete documentation on both the product specified and the proposed substitute, including the following information as appropriate:

        1) Point-by-point comparison of specified and proposed substitute product data, fabrication drawings, and installation procedures.
        2) Copies of current, independent third-party test data of salient product or system characteristics.
        3) Samples where applicable or when requested by Architect.
        4) Detailed comparison of significant qualities of the proposed substitute with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
        5) Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
        6) Research reports, where applicable, evidencing compliance with building code in effect for Project.a
        7) Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, which will become necessary to accommodate the proposed substitute.

    c. Bidder shall provide certification by manufacturer that the substitute proposed is equal to or superior to that required by the Procurement and Contracting Documents, and that its in-place performance will be equal to or superior to the product or equipment specified in the application indicated.
    d. By submitting the Procurement Substitution Request, Bidder waives the right to additional payment or an extension of Contract Time due to any failure of the substitute to perform as represented in the Procurement Substitution Request.

B. Architect's Action:

1. Architect may request additional information or documentation necessary for evaluation of the Procurement Substitution Request. Architect will notify all bidders of acceptance of the proposed substitute by means of an Addendum to the Procurement and Contracting Documents.

C. Architect's approval of a substitute during bidding does not relieve Contractor of the responsibility to submit required shop drawings and to comply with all other requirements of the Contract Documents.

END OF DOCUMENT 002600

SECTION 002800 - CONSENT OF SURETY

TO: LINDENWOLD BOARD OF EDUCATION (Owner).

_____

herein called the Surety hereby agrees that if the Contract

Contract No. _____(Title)

for the construction of the _____

_____ and approved Allowances, Alternates & Unit Prices (if any) _____

at the _____

be awarded to _____

herein called the Bidder, the Surety will provide the Bidder

with such form and sums that are required by said Contract.

Signed, sealed and dated this _____ day of 20_____.

_____
(Surety)

_____
(Bond No.)

(SEAL)

Attest: _____ By: _____
(Attorney in fact)

CONSENT OF SURETY MUST BE SIGNED BY AN AUTHORIZED AGENT OR REPRESENTATIVE OF A SURETY COMPANY AND NOT BY THE INDIVIDUAL OR COMPANY SUBMITTING THE BID.

END OF SECTION 002800

SECTION 002801 - SURETY COMPANY & AGENCY INFORMATION

PRIME BIDDER:

_____ (NAME)

_____(ADDRESS)

_____ (CITY, STATE, ZIP)

_____ (TELEPHONE NUMBER)

_____ (FACSIMILE NUMBER)

_____ (E-MAIL ADDRESS)

In accordance with the bidding requirements, the bidder hereby acknowledges the following responsible surety data for this project:

SURETY COMPANY

_____ (NAME)

_____(ADDRESS)

_____ (CITY, STATE, ZIP)

_____ (TELEPHONE NUMBER)

_____ (FACSIMILE NUMBER)

_____ (E-MAIL ADDRESS)

SURETY AGENCY

_____ (NAME)

_____(ADDRESS)

_____ (CITY, STATE, ZIP)

_____ (TELEPHONE NUMBER)

_____ (FACSIMILE NUMBER)

_____ (E-MAIL ADDRESS)

END OF SECTION 002801

SECTION 002850 – AFFIRMATIVE ACTION EVIDENCE FOR CONSTRUCTION PROJECTS

Bidder shall complete this form and submit it with his/her bid proposal.

Pursuant to N.J.S.A.10:5-31 et. seq. and N.J.A.C.17:27, all successful bidders are required to submit evidence of appropriate Affirmative Action compliance to the Division of Public Contracts Equal Employment Opportunity Compliance (hereafter referred to as "Division") and the awarding Public Agency. During a review, the Division representatives will review the Public Agency files to determine whether the Affirmative Action evidence has been submitted by the vendor/contractor. Specifically, each vendor/contractor shall submit to the Public Agency, prior to execution of Public Agency contract the following documents within seven (7) days after receipt of the notification of intent to award the contract or receipt of the contract, whichever is sooner:

The construction contractors shall complete and submit an Initial Project Workforce Report Form AA-201 upon notification of award. Proper completion and submission of this report shall constitute evidence of the contractor's compliance with the regulations. Failure to submit this form may result in the contract being terminated. The contractor also agrees to submit a copy of the Monthly Project Workforce Report Form AA-202 once a month thereafter for the duration of the contract to the Division and to the public agency compliance officer.

After notification of award, but prior to signing a construction contract the EEO/AA evidence must be submitted.

Upon award of a construction contract, it shall be the responsibility of the Public Agency to provide the contractor with Form AA-201, Initial Project Workforce Report. The Division does not supply this form to the contractor.

Failure on the Contractor's part to comply with their requirements of N.J.S.A. 10:5-31 et. seq. and N.J.A.C. 17:27 that result in sanctions and/or penalties against the Public Agency from the Division agree to pay all costs and expenses incurred by the Public Agency.

The undersigned contractor certifies that he/she is aware of the commitment to comply with the requirements of N.J.S.A. 10:5-31 et. seq. and N.J.A.C. 17:27 and agrees to furnish the required documentation pursuant to the Law.

Signed, sealed and dated this _____ day of 20_____.

_____ (Company)

_____ (Signature)

_____ (Title)

EXHIBIT B

MANDATORY EQUAL EMPLOYMENT OPPORTUNITY LANGUAGE
N.J.S.A. 10:5-31 et seq. (P.L.1975, c.127)
N.J.A.C.17:27 - 1.1 et seq.

CONSTRUCTION CONTRACTS

During the performance of this contract, the contractor agrees as follows:

The contractor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Except with respect to affectional or sexual orientation and gender identity or expression, the contractor will ensure that equal employment opportunity is afforded to such applicants in recruitment and employment, and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Such equal employment opportunity shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Public Agency Compliance Officer setting forth provisions of this nondiscrimination clause.

The contractor or subcontractor, where applicable will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex.

The contractor or subcontractor will send to each labor union, with which it has a collective bargaining agreement, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the contractor's commitments under this act and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

The contractor or subcontractor, where applicable, agrees to comply with any regulations promulgated by the Treasurer, pursuant to N.J.S.A. 10:5-31 et seq., as amended and supplemented from time to time and the Americans with Disabilities Act.

When hiring or scheduling workers in each construction trade, the contractor or subcontractor agrees to make good faith efforts to employ minority and women workers in each construction trade consistent with the targeted employment goal prescribed by N.J.A.C. l7:27-7.2; provided, however, that the Dept. of LWD, Construction EEO Monitoring Program, may, in its discretion, exempt a contractor or subcontractor from compliance with the good faith procedures prescribed by the following provisions, A, B, and C, as long as the Dept. of LWD, Construction EEO Monitoring Program is satisfied that the contractor or subcontractor is employing workers provided by a union which provides evidence, in accordance with standards prescribed by the Dept. of LWD, Construction EEO Monitoring Program, that its percentage of active “card carrying” members who are minority and women workers is equal to or greater than the targeted

employment goal established in accordance with N.J.A.C. 17:27-7.2. The contractor or subcontractor agrees that a good faith effort shall include compliance with the following procedures:

(A) If the contractor or subcontractor has a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor shall, within three business days of the contract award, seek assurances from the union that it will cooperate with the contractor or subcontractor as it fulfills its affirmative action obligations under this contract and in accordance with the rules promulgated by the Treasurer pursuant to N.J.S.A. 10:5-31 et. seq., as supplemented and amended from time to time and the Americans with Disabilities Act. If the contractor or subcontractor is unable to obtain said assurances from the construction trade union at least five business days prior to the commencement of construction work, the contractor or subcontractor agrees to afford equal employment opportunities minority and women workers directly, consistent with this chapter. If the contractor's or subcontractor's prior experience with a construction trade union, regardless of whether the union has provided said assurances, indicates a significant possibility that the trade union will not refer sufficient minority and women workers consistent with affording equal employment opportunities as specified in this chapter, the contractor or subcontractor agrees to be prepared to provide such opportunities to minority and women workers directly, consistent with this chapter, by complying with the hiring or scheduling procedures prescribed under (B) below; and the contractor or subcontractor further agrees to take said action immediately if it determines that the union is not referring minority and women workers consistent with the equal employment opportunity goals set forth in this chapter.

(B) If good faith efforts to meet targeted employment goals have not or cannot be met for each construction trade by adhering to the procedures of (A) above, or if the contractor does not have a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor agrees to take the following actions:

(l) To notify the public agency compliance officer, the Dept. of LWD, Construction EEO Monitoring Program, and minority and women referral organizations listed by the Division pursuant to N.J.A.C. 17:27-5.3, of its workforce needs, and request referral of minority and women workers;
(2) To notify any minority and women workers who have been listed with it as awaiting available vacancies;
(3) Prior to commencement of work, to request that the local construction trade union refer minority and women workers to fill job openings, provided the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade;
(4) To leave standing requests for additional referral to minority and women workers with the local construction trade union, provided the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade, the State Training and Employment Service and other approved referral sources in the area;
(5) If it is necessary to lay off some of the workers in a given trade on the construction site, layoffs shall be conducted in compliance with the equal employment opportunity and nondiscrimination standards set forth in this regulation, as well as with applicable Federal and State court decisions;
(6) To adhere to the following procedure when minority and women workers apply or are referred to the contractor or subcontractor:

(i) The contactor or subcontractor shall interview the referred minority or women worker.

(ii) If said individuals have never previously received any document or certification signifying a level of qualification lower than that required in order to perform the work of the construction trade, the contractor or subcontractor shall in good faith determine the qualifications of such individuals. The contractor or subcontractor shall hire or schedule those individuals who satisfy appropriate qualification standards in conformity with the equal employment opportunity and non-discrimination principles set forth in this chapter. However, a contractor or subcontractor shall determine that the individual at least possesses the requisite skills, and experience recognized by a union, apprentice program or a referral agency, provided the referral agency is acceptable to the Dept. of LWD, Construction EEO Monitoring Program. If necessary, the contractor or subcontractor shall hire or schedule minority and women workers who qualify as trainees pursuant to these rules. All of the requirements, however, are limited by the provisions of (C) below.

(iii) The name of any interested women or minority individual shall be maintained on a waiting list and shall be considered for employment as described in (i) above, whenever vacancies occur. At the request of the Dept. of LWD, Construction EEO Monitoring Program, the contractor or subcontractor shall provide evidence of its good faith efforts to employ women and minorities from the list to fill vacancies.

(iv) If, for any reason, said contractor or subcontractor determines that a minority individual or a woman is not qualified or if the individual qualifies as an advanced trainee or apprentice, the contractor or subcontractor shall inform the individual in writing of the reasons for the determination, maintain a copy of the determination in its files, and send a copy to the public agency compliance officer and to the Dept. of LWD, Construction EEO Monitoring Program.

(7) To keep a complete and accurate record of all requests made for the referral of workers in any trade covered by the contract, on forms made available by the Dept. of LWD, Construction EEO Monitoring Program and submitted promptly to the Dept. of LWD, Construction EEO Monitoring Program upon request.

(C) The contractor or subcontractor agrees that nothing contained in (B) above shall preclude the contractor or subcontractor from complying with the union hiring hall or apprenticeship policies in any applicable collective bargaining agreement or union hiring hall arrangement, and, where required by custom or agreement, it shall send journeymen and trainees to the union for referral, or to the apprenticeship program for admission, pursuant to such agreement or arrangement. However, where the practices of a union or apprenticeship program will result in the exclusion of minorities and women or the failure to refer minorities and women consistent with the targeted county employment goal, the contractor or subcontractor shall consider for employment persons referred pursuant to (B) above without regard to such agreement or arrangement; provided further, however, that the contractor or subcontractor shall not be required to employ women and minority advanced trainees and trainees in numbers which result in the employment of advanced trainees and trainees as a percentage of the total workforce for the construction trade, which percentage significantly exceeds the apprentice to journey worker ratio specified in the applicable collective bargaining agreement, or in the absence of a collective bargaining agreement, exceeds the ratio established by practice in the area for said construction trade. Also, the contractor or subcontractor agrees that, in implementing the procedures of (B) above, it shall, where

applicable, employ minority and women workers residing within the geographical jurisdiction of the union.

After notification of award, but prior to signing a construction contract, the contractor shall submit to the public agency compliance officer and the Dept. of LWD, Construction EEO Monitoring Program an initial project workforce report (Form AA-201) electronically provided to the public agency by the Dept. of LWD, Construction EEO Monitoring Program, through its website, for distribution to and completion by the contractor, in accordance with N.J.A.C. 17:27-7. The contractor also agrees to submit a copy of the Monthly Project Workforce Report once a month thereafter for the duration of this contract to the Dept. of LWD, Construction EEO Monitoring Program, and to the public agency compliance officer.

The contractor agrees to cooperate with the public agency in the payment of budgeted funds, as is necessary, for on-the-job and/or off-the job programs for outreach and training of minorities and women.

(D) The contractor and its subcontractors shall furnish such reports or other documents to the Dept. of LWD, Construction EEO Monitoring Program as may be requested by the Dept. of LWD, Construction EEO Monitoring Program from time to time in order to carry out the purposes of these regulations, and public agencies shall furnish such information as may be requested by the Dept. of LWD, Construction EEO Monitoring Program for conducting a compliance investigation pursuant to N.J.A.C. 17:27-1.1 et seq.

(Revised: January 2016)

END OF SECTION 002850

SECTION 002900 - STATEMENT OF OWNERSHIP DISCLOSURE

PART 1 - GENERAL

1.1 ORGANIZATION INFORMATION

A. Provide the following as per N.J.S.A. 52:25-24.2 (P.L. 1977, c.33, as amended by P.L. 2016, c.43).

B. This statement shall be completed, certified to, and included with all bid and proposal submissions. Failure to submit the required information is cause for automatic rejection of the bid or proposal.

Organization Name: _____

Organization Address: _____

_____

C. Type of Business Organization

1. Check the box that represents the type of business organization:

☐ Sole Proprietorship (skip PARTS 2 and 3, execute certification in PART 4)

☐ Non-Profit Corporation (skip PARTS 2 and 3, execute certification in PART 4)

☐ For-Profit Corporation (any type) ☐ Limited Liability Company (LLC)

☐ Partnership ☐ Limited Partnership ☐ Limited Liability Partnership (LLP)

☐ Other (be specific): _____

PART 2 - STOCKHOLDER INFORMATION

2.1 LIST OF CORPERATION STOCKHOLDERS

A. Percentage Amount

1. Check the box that represents the corporation’s stockholder percentages:

☐ The list below contains the names and addresses of all stockholders in the corporation who own 10 percent or more of its stock, of any class, or of all individual partners in the partnership who own a 10 percent or greater interest therein, or of all members in the limited liability company who own a 10 percent or greater interest therein, as the case may be. (**COMPLETE THE LIST BELOW IN THIS SECTION**)

(Please attach additional sheets if more space is needed):

Name of Individual or Business Entity	Home Address (for Individuals) or Business Address

☐ No one stockholder in the corporation owns 10 percent or more of its stock, of any class, or no individual partner in the partnership owns a 10 percent or greater interest therein, or no member in the limited liability company owns a 10 percent or greater interest therein, as the case may be. (**SKIP TO PART 4**)

PART 3 - STOCKHOLDER DISCLOSURE

3.1 DISCLOSURE OF 10% OR GREATER OWNERSHIP

A. Disclosure of 10% or greater ownership in the stockholders, partners or llc members listed in PART 2.

1. If a bidder has a direct or indirect parent entity which is publicly traded, and any person holds a 10 percent or greater beneficial interest in the publicly traded parent entity as of the last annual federal Security and Exchange Commission (SEC) or foreign equivalent filing, ownership disclosure can be met by providing links to the website(s) containing the last annual filing(s) with the federal Securities and Exchange Commission (or foreign equivalent) that contain the name and address of each person holding a 10% or greater beneficial interest in the publicly traded parent entity, along with the relevant page numbers of the filing(s) that contain the information on each such person.

(Please attach additional sheets if more space is needed):

Website (URL) containing the last annual SEC (or foreign equivalent) filing	**Page #'s**

2. List the names and addresses of each stockholder, partner or member owning a 10 percent or greater interest in any corresponding corporation, partnership and/or limited liability company (LLC) listed in PART 2 other than for any publicly traded parent entities referenced above. The disclosure shall be continued until names and addresses of every non-corporate stockholder, and individual partner, and member exceeding the 10 percent ownership criteria established pursuant to N.J.S.A. 52:25-24.2 has been listed.

(Please attach additional sheets if more space is needed):

Stockholder/Partner/Member & Corresponding Entity Listed In PART 2	**Home Address (for Individuals) or Business Address**

PART 4 - CERTIFICATION

4.1 I, being duly sworn upon my oath, hereby represent that the foregoing information and any attachments thereto to the best of my knowledge are true and complete.

A. I acknowledge: that I am authorized to execute this certification on behalf of the bidder/proposer; that the LINDENWOLD BOE is relying on the information contained herein and that I am under a continuing obligation from the date of this certification through the completion of any contracts with the LINDENWOLD BOE to notify them in writing of any changes to the information contained herein;

B. that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I am subject to criminal prosecution under the law and that it will constitute a material breach of my agreement(s) with the, permitting the LINDENWOLD BOE to declare any contract(s) resulting from this certification void and unenforceable.

Full Name (Print): _____

Title: _____

Signature: _____

Date: _____

END OF SECTION 002900

SECTION 002950 - NON-COLLUSION AFFIDAVIT

STATE OF NEW JERSEY

County of Camden Owner: LINDENWOLD BOARD OF EDUCATION

I,_____of_____(Municipality)

in the County of _____and the State of _____
of full age, being duly sworn according to law on my oath depose and say that:

I am _____of the firm of _____,
the bidder making the Bid for the above named Project, and that I have executed the said Bid with full authority so to do; that said Bidder has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free, competitive bidding in connection with the above named Project; and that all statements contained in said Bid and in this affidavit are true and correct, and made with full knowledge that the above named Owner relies upon the truth of the statements contained in said Bid and in the statements contained in this affidavit in awarding contract for the said Project.

I further warrant that no person or selling agency has been employed or retained to solicit or secure such contract upon an agreement or understanding for a commission, percentage, brokerage or contingent fee, except bona fide employees or bona fide established commercial or selling agencies maintained by

_____(Bidder)

By: _____(Type name)

Subscribed and sworn to before me this

_____day of_____, 20_____.

State of _____

Notary Public:_____

My commission expires _____, 20_____.

END OF SECTION 002950

SECTION 002960 – NO MATERIAL CHANGE OF CIRCUMSTANCES

I, _____ being of full age under oath depose and say:

1. I am a(n) owner, partner, shareholder or officer of the company set forth below and am duly authorized to execute this affidavit on its behalf.

2. A statement as to the financial ability, adequacy of plant and equipment, organization and prior experience of Bidder, as required by N.J.S.A. 18A:18A-28 has been submitted to the Department of Treasury within one (1) year preceding the date of opening of bids for this contract.

3. I certify, as required by N.J.S.A. 18A:18A-32 that there has been no material adverse change in the qualification information of Bidder since such statement was submitted to the Department of Treasury except:

_____

_____

_____

_____
TITLE

_____
COMPANY

Subscribed and sworn to before me this

_____day of_____, 20_____.

State of _____

Notary Public:_____

My commission expires _____, 20_____.

END OF SECTION 002960

SECTION 002970 - CERTIFICATION REGARDING THE DEBARMENT, SUSPENSION, DISQUALIFICATION, INELIGIBILITY AND VOLUNTARY EXCLUSION

I am _____ of the firm of _____
(title) (name of your organization)

_____.
(state the address of your organization)

CHOOSE ONE OF THE FOLLOWING

( ) A. I hereby certify on behalf of _____ that
(name of your organization)

neither it nor its principals are included on any State or Federal Government's List of Debarred, Suspended, or Disqualified Bidders as a result of action taken by any State or Federal Agency.

( ) B. I am unable to certify to any of the statements set forth in this certification. I have attached an explanation to this form.

_____ (SEAL)
(Signature)

_____
(Type Name & Title)

_____
(Date)

The Board of Education may not enter into a Contract for work with any person, company, or firm that is on the State Department of Labor and Workforce Development, Prevailing Wage Debarment List, or State of New Jersey Consolidated Debarment Report (eee.state.nj.us/treasury/debarred), or the Federal System for award –SAM.gov. By certifying this Form, the Contractor confirms neither it nor its principals are included on any State or Federal Government's List of Debarred, Suspended, or Disqualified Bidders as a result of action taken by any State or Federal Agency.

Subscribed and sworn to before me this

_____day of_____, 20_____.

State of _____

Notary Public:_____

My commission expires _____, 20_____.

END OF SECTION 002970

STATE OF NEW JERSEY -- DIVISION OF PURCHASE AND PROPERTY
DISCLOSURE OF INVESTMENT ACTIVITIES IN IRAN

Quote Number: _____ **Bidder/Offeror:** _____

PART 1: CERTIFICATION
BIDDERS MUST COMPLETE PART 1 BY CHECKING EITHER BOX.
FAILURE TO CHECK ONE OF THE BOXES WILL RENDER THE PROPOSAL NON-RESPONSIVE.

Pursuant to Public Law 2012, c. 25, any person or entity that submits a bid or proposal or otherwise proposes to enter into or renew a contract must complete the certification below to attest, under penalty of perjury, that neither the person or entity, nor any of its parents, subsidiaries, or affiliates, is identified on the Department of Treasury's Chapter 25 list as a person or entity engaging in investment activities in Iran. The Chapter 25 list is found on the Division's website at http://www.state.nj.us/treasury/purchase/pdf/Chapter25List.pdf. Bidders **must** review this list prior to completing the below certification. **Failure to complete the certification will render a bidder's proposal non-responsive.** If the Director finds a person or entity to be in violation of law, s/he shall take action as may be appropriate and provided by law, rule or contract, including but not limited to, imposing sanctions, seeking compliance, recovering damages, declaring the party in default and seeking debarment or suspension of the party

PLEASE CHECK THE APPROPRIATE BOX:

☐ **I certify, pursuant to Public Law 2012, c. 25, that neither the bidder listed above nor any of the bidder's parents, subsidiaries, or affiliates is listed** on the N.J. Department of the Treasury"s list of entities determined to be engaged in prohibited activities in Iran pursuant to P.L. 2012, c. 25 ("Chapter 25 List"). I further certify that I am the person listed above, or I am an officer or representative of the entity listed above and am authorized to make this certification on its behalf. **I will skip Part 2 and sign and complete the Certification below.**

OR

☐ **I am unable to certify as above because the bidder and/or one or more of its parents, subsidiaries, or affiliates is listed on the Department's Chapter 25 list. I will provide a detailed, accurate and precise description of the activities in Part 2 below and sign and complete the Certification below.** Failure to provide such will result in the proposal being rendered as non-responsive and appropriate penalties, fines and/or sanctions will be assessed as provided by law.

PART 2: PLEASE PROVIDE FURTHER INFORMATION RELATED TO INVESTMENT ACTIVITIES IN IRAN
You must provide a detailed, accurate and precise description of the activities of the bidding person/entity, or one of its parents, subsidiaries or affiliates, engaging in the investment activities in Iran outlined above by completing the boxes below.

EACH BOX WILL PROMPT YOU TO PROVIDE INFORMATION RELATIVE TO THE ABOVE QUESTIONS. PLEASE PROVIDE THOROUGH ANSWERS TO EACH QUESTION. IF YOU NEED TO MAKE ADDITIONAL ENTRIES, CLICK THE "ADD AN ADDITIONAL ACTIVITIES ENTRY" BUTTON.

Name _____ Relationship to Bidder/Offeror _____

Description of Activities _____

_____

Duration of Engagement _____ Anticipated Cessation Date _____

Bidder/Offeror Contact Name _____ Contact Phone Number _____

ADD AN ADDITIONAL ACTIVITIES ENTRY

Certification: I, being duly sworn upon my oath, hereby represent that the foregoing information and any attachments thereto to the best of my knowledge are true and complete. I acknowledge: that I am authorized to execute this certification on behalf of the bidder; that the State of New Jersey is relying on the information contained herein and that I am under a continuing obligation from the date of this certification through the completion of any contracts with the State to notify the State in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I am subject to criminal prosecution under the law and that it will constitute a material breach of my agreement(s) with the State, permitting the State to declare any contract(s) resulting from this certification void and unenforceable.

Full Name (Print): _____ Signature: _____

Do Not Enter PIN as a Signature

Title: _____ Date: _____

SECTION 004580 - SWORN CONTRACTOR CERTIFICATION REQUIREMENTS

In accordance with N.J.S.A. 18A:7G-37, a prequalified contractor seeking to bid school facilities projects, and any subcontractors, required to be named under N.J.S.A. 18A:7G-1. shall, as a condition of bidding, submit this Sworn Contractor Certification regarding qualifications and credentials.

By signing and submitting this Sworn Contractor Certification the principal Owner or Officer of the Company or Corporation certifies that the firm has the following qualifications and credentials:

Credentials 1, 2 & 3 listed below must be stapled to this certification.

(1) A current, valid certificate of registration issued pursuant to "The Public Works Contractor Registration Act", P.L. 1999, c.238 (C.34:11-56.48 et seq), N.J.S.A. 34:11-56.48 et seq., a copy of which is attached hereto;

(2) A current, valid "Certificate of Authority to perform work in New Jersey" issued by the Department of Treasury, a copy of which is attached hereto;

(3) A current, valid contractor or trade license required under applicable New Jersey Law for any trade or specialty area in which the firm seeks to perform work, a copy of which is attached hereto;

(4) During the term of construction of the school facilities project, I as principal Owner or Officer of the company or corporation, as contractor, will have in place a suitable quality control and quality insurance program and an appropriate safety and health plan.

As the principal Owner or Officer of the company or corporation, I certify that, at the time of bidding this project, the amount of the bid proposal and the value of all this firm's outstanding incomplete contracts does not exceed the firm's existing aggregate rating limit.

Company:_____

_____
(Signature)

_____
(Print Name)

Date: _____

Corporate Seal

Sworn and subscribed before me this

_____ day of _____ 20___.

NOTARY PUBLIC _____
(Signature)

_____
(Print Name)
SEAL

Notary Public - State of _____

My Commission Expires _____

END SECTION 004580

SECTION 004590 – POLITICAL CONTRIBUTIONS DISCLOSURE FORM

The undersigned, being authorized and knowledgeable of the circumstances, does hereby certify

that _____ (Business Entity) has made the following **reportable** political contributions to any elected official, political candidate or any political committee as defined in N.J.S.A. 19:44-20.26 during the twelve (12) months preceding this award of contract:

Reportable Contributions

Date of Contribution	Amount of Contribution	Name of Recipient Elected Official/ Committee/Candidate	Name of Contributor

The Business Entity may attach additional pages if needed.

☐ **No Reportable Contributions** (Please check (✓) if applicable.)

I certify that _____ (Business Entity) made no reportable contributions to any elected official, political candidate or any political committee as defined in N.J.S.A. 19:44-20.26.

CERTIFICATION

I certify, that the information provided above is in full compliance with Public Law 2005—Chapter 271.

Name of Authorized Agent: _____

Signature: _____

Title: _____

Business Entity: _____

END OF SECTION 004590

SECTION 004595 – PREVAILING WAGES CERTIFICATION FORM

It is the determination of the Lindenwold Board of Education that this is a public works project that in total will exceed $2,000.00 (two thousand dollars), therefore prevailing wages rules and regulations apply as promulgated by the New Jersey Prevailing Wage Act and in conformance with N.J.S.A. 34:11-56:25.

CERTIFICATION

1. I certify that our company understands that this project of the Lindenwold Township Board of Education requires prevailing wages to be paid in full accordance with the law.
2. I further certify that all subcontractors named in this bid understand that this project requires the subcontractor to pay prevailing wages in full accordance with the law.

NOTIFICATION OF VIOLATIONS – New Jersey Department of Labor

Has the bidder or any person having an "interest" with the bidder, been notified by the New Jersey Department of Labor by notice issued pursuant to N.J.S.A. 34:11-56:37 that he/she has been in violation for failure to pay prevailing wages as required by the New Jersey Prevailing Wage Act within the last five (5) years?

* Yes ☐ No ☐

*If yes, please attach a signed document explaining any/or all administrative proceedings with the NJDOL within the last five (5) years.

Please include any pending administrative proceedings with the NJDOL, if any.

Name of Company: _____

Authorized Agent: _____

Authorized Signature: _____

END OF SECTION 004595

SECTION 005290 - LIST OF PRIME SUBCONTRACTORS

BIDDER:

_____ (NAME)

_____(ADDRESS)

_____ (CITY, STATE, ZIP)

_____(PHONE/FAX NUMBER)

In accordance with N.J.S.A. 18A:18A-18, where the Bid requires and/or permits more than one of the specified branches of work to be under one contract, the bidder shall list below the applicable name or names of their Prime Subcontractors. If none are required, the Bidder shall input "None" on the list of those Subcontractors. **Subject to compliance with the Public Bidding Laws, if the Overall Bidder elects to undertake one or more of the subcontracts listed with their own forces, they MUST indicate their intentions on this form.**

LIST OF PRIME SUBCONTRACTORS

STRUCTURAL STEEL & ORNAMENTAL IRON (C029)

_____ (NAME)

_____(ADDRESS)

_____ (CITY, STATE, ZIP)

_____(PHONE/FAX NUMBER)

PLUMBING (C030)

_____ (NAME)

_____(ADDRESS)

_____ (CITY, STATE, ZIP)

_____(PHONE/FAX NUMBER)

HEATING, VENTILATION, AIR CONDITIONING AND REFRIGERATION (HVACr) (C032)

_____ (NAME)

_____(ADDRESS)

_____ (CITY, STATE, ZIP)

_____(PHONE/FAX NUMBER)

ELECTRICAL WORK (C047), including any electrical power plant, tele-data, fire alarm, or security

_____ (NAME)

_____(ADDRESS)

_____ (CITY, STATE, ZIP)

_____(PHONE/FAX NUMBER)

GENERAL CONSTRUCTION (C008 or C009), which shall include all other work goods and services required for the completion of the project.

_____ (NAME)

_____(ADDRESS)

_____ (CITY, STATE, ZIP)

_____(PHONE/FAX NUMBER)

END OF SECTION 005290

SECTION 006000 – PROJECT FORMS

1.1 FORM OF AGREEMENT AND GENERAL CONDITIONS

A. The following form of Owner/Contractor Agreement and form of the General Conditions shall be used for Project:

1. AIA Document A101-2017 "Standard Form of Agreement between Owner and Contractor Where the Basis of Payment is a Stipulated Sum."

   a. The General Conditions as modified by the Owner for Project are AIA Document A201-2017 "General Conditions of the Contract for Construction."
2. Form for Requests for Information (RFIs): Section 006001 – Bidder Request for Information is to be used during the Bidding Phase and is included in the Project Manual.
3. Notice to Proceed: Section 007100 – Notice to Proceed is included in the Project Manual.

1.2 ADMINISTRATIVE FORMS

A. Administrative Forms: Additional administrative forms are specified in Division 01 General Requirements.

B. Copies of AIA standard forms may be obtained from the American Institute of Architects; https://www.aiacontractdocs.org; (800) 942-7732.

C. State of New Jersey Pre-Qualification (Notice of Classification) information may be obtained from the New Jersey Department of Treasury at (609) 633-3990 or (609) 984-4708.

D. State of New Jersey WORKFORCE REPORTS may be obtained from the New Jersey Division of Public Contracts Equal Employment Opportunity Compliance at www.state.nj.us/treasury/contract_compliance.

E. Preconstruction Forms:

1. Form of Performance Bond and Labor and Material Bond: Bonding Company's standard form complying with the statutory requirements of the State of New Jersey.
2. Form of Payment Bond: AIA Document A312-2010 "Payment Bond."
3. Form of Performance Bond: AIA Document A312-2010 "Performance Bond."
4. Form of Certificate of Insurance: Insurance Company's standard form complying with the statutory requirements of the State of New Jersey.
5. Tracking Report: Initial Project Workforce Report - Building Construction (NJAAO Form AA-201).

F. Information and Modification Forms:

1. Form for Requests for Information (RFIs): Section 013100 – Contractor Request for Information is to be used during the Construction Phase and is included in the Project Manual.
2. Form for Requesting Substitutions: Section 012501 – Substitution Request is included in the Project Manual.
3. Form for Submitting Submittals: Section 013300 – Submittal Transmittal Form is included in the Project Manual.
4. Change Order Form: AIA Document G701-2017, "Change Order."
5. Prime Contractor Change Order Request Forms: Sections 012610 & 012610.1 - Prime Contractor COR Summary & Worksheet.
6. Subcontractor Change Order Request Forms: Sections 012620 & 012620.1 - Subcontractor COR Summary & Worksheet.
7. Form of Architect's Memorandum for Minor Changes in the Work: AIA Document G710-2017, "Architect's Supplemental Instructions."
8. Form of Change Directive: AIA Document G714-2017, "Construction Change Directive."

G. Payment Forms:

1. Schedule of Values Form: AIA Document G703-1992 "Continuation Sheet."
2. Payment Application: AIA Document G702-1992 "Application and Certificate for Payment."
3. Payroll Verification: Section 012910 – Payroll Verification Affidavit is included in the Project Manual.
4. Partial Release: Section 012911 – Partial Release of Liens is included in the Project Manual.
5. Stored Materials: Section 012920 – Bill of Sale/Certification for Stored Materials is included in the Project Manual.
6. Monthly Tracking Reports: Monthly Workforce Tracking - Building Construction (Form AA-202).
7. Form of Partial Release: AIA Document G707A-1994, “Consent of Surety to Reduction in or Partial Release of Retainage.

H. Close Out Forms:

1. Substantial Completion: AIA Document G704-2017, “Certificate of Substantial Completion.”
2. Payment Application: AIA Document G702/703-1992, "Application and Certificate for Payment and Continuation Sheet."
3. Form of Contractor's Affidavit: AIA Document G706-1994, "Contractor's Affidavit of Payment of Debts and Claims."
4. Form of Affidavit of Release of Liens: AIA Document G706A-1994, "Contractor's Affidavit of Payment of Release of Liens."
5. Form of Consent of Surety: AIA Document G707-1994, "Consent of Surety to Final Payment."

6. Maintenance Bond: Section 017721 - Maintenance Bond is included in the Project Manual.
7. Subcontractor Guaranty: Section 017722 – Subcontractor Guaranty is included in the Project Manual.

END OF DOCUMENT 006000

SECTION 006001 - BIDDER REQUEST FOR INFORMATION

FROM: _____

REQUEST DATE: _____ EMAIL _____

BIDDER'S RFI NUMBER: _____

TO:
Scott Charles England, AIA
REGAN YOUNG ENGLAND BUTERA, PC
Fax: (609) 265-0333 Email: sce@ryebread.com

REFERENCES (List all applicable drawings & specifications):

PLEASE RESPOND TO THE FOLLOWING:

RESPONSE:

DATE OF RESPONSE: _____ BY: _____

DISTRIBUTION: _____

END OF SECTION 006001

SECTION 007100 - NOTICE TO PROCEED

TO: _____ DATE: _____

_____ PROJECT: _____

_____ _____

_____ _____

You are hereby notified to commence WORK in accordance with the Agreement dated _____, on or before _____, and you are to complete the WORK within _____ consecutive calendar days thereafter. The date of completion of all WORK is therefore _____.

_____
(OWNER)

By: _____

Title: _____

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by:

_____,
(CONTRACTOR)

this the _____, 20_____

_____

By: _____

Title: _____

Employer ID #: _____

END OF SECTION 007100

AIA® Document A201® – 2017

General Conditions of the Contract for Construction

for the following PROJECT:
(Name and location or address)

Building Entrances Security Enhancement
Lindenwold School #4, Lindenwold School #5, Lindenwold Middle School & Lindenwold High School
Lindenwold, New Jersey 08021

THE OWNER:
(Name, legal status and address)

Lindenwold Board of Education
810 Egg Harbor Road, Lindenwold, New Jersey 08021

THE ARCHITECT:
(Name, legal status and address)

Regan Young England Butera, P.C.
456 High Street, Mount Holly, New Jersey 08060

TABLE OF ARTICLES

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.

Init.
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INDEX
(Topics and numbers in bold are Section headings.)

ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. The Contract Documents shall also include the Bidding Requirements, including, but not limited to Advertisement or Invitation to Bid, Instructions to Bidders, the Contractor's Bid Proposal Form and other bidding forms, Addenda or portions of the Addenda relating to any Bidding Documents. The Contract Documents shall apply to all Contractors for the Project and each Contractor is responsible for the content of all.

§ 1.1.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.2.1 The Contractor acknowledges and warrants that it has closely examined all of the Contract Documents, that they are suitable and sufficient to enable the Contractor to complete the Work in a timely manner for the Contract Sum, and that they include all Work, whether or not shown or described, which reasonably may be inferred to be required or useful for the completion of the Work in full compliance with all applicable codes, laws, ordinances and regulations and that questions regarding the bid documents and any interpretation(s) regarding same have been asked by the Contractor, in the form and manner required in the instructions to bidders.

§ 1.1.3 The Work

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.3.1 The Work shall include the obligation of the Contractor to visit the site of the Project before submitting a bid. Such site visit shall be for the purpose of familiarizing the Contractor with the conditions as they exist and the character of the operations to be carried on under the Contract Documents, including all existing site conditions, access to the site, physical characteristics of the site and surrounding areas.

§ 1.1.3.2 Nothing in these General Conditions shall be interpreted as imposing on either the Owner or Architect, or their respective agents, employees, officers, directors or consultants, any duty, obligation or authority with respect to any items that are not intended to be incorporated into the completed project, including but not limited to shoring, scaffolding, hoists, temporary weatherproofing, or any temporary facility or temporary activity, since these are the sole responsibility of the Contractor.

§ 1.1.4 The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

§ 1.1.5 The Drawings

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

§ 1.1.5 .1 The Drawings are diagrammatical and show the general arrangement and extent of the Work; exact locations and arrangements of parts shall be determined as the Work progresses and shall be subject to the Architect's approval.

.1 The right is reserved by the Architect to make any reasonable change in location of equipment, ductwork, and piping prior to roughing in without involving additional expense to the Owner.

.2 Contractor shall coordinate his Work with the Work of others and shall be responsible for the coordination work, so that interference between mechanical, electrical and other work and architectural and structural work does not occur.

.3 Contractor shall furnish and install supports, hangers, offsets, bends, turns, and the like in connection with this Work to avoid interference with work of other Contractors, to conceal Work where required, and to secure necessary clearance and access for operation and maintenance without involving additional expense to the Owner.

§ 1.1.6 The Specifications

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

(Paragraph deleted)

§ 1.2.1.1 The general character of the detail work is shown on the drawings, but minor modifications may be made in large-scale details. Where the word "similar" occurs on the drawings it shall be used in its general sense and not as meaning identical, and all details shall be worked out in relation to their location and their connection to other parts of the work.

.1 Where on any drawings a portion of the work is drawn out and the remainder is indicated in outline, the parts drawn out shall apply also to other like portions of the work.

.2 Where detail is indicated by starting only, such detail shall be continued throughout the courses or parts in which it occurs and shall also apply to all other similar parts in the work unless otherwise indicated.

.3 In case of differences between small and large-scale drawings, the larger scale drawings shall take precedence. Dimensions given shall take precedence over scale measurements.

.4 Any discrepancies or questions as to the application of, and interpretations related to 1.2.1.1, shall be referred to the Architect for adjustment before any work affected thereby has been performed.

§ 1.2.1.2 During the course of the work, should any ambiguities or discrepancies be found in the Specifications or on the Drawings; or should there be found any discrepancies between the Drawings and Specifications to which the Contractor has failed to call attention before submitting his bid, then the Architect will interpret the intent of the Drawings and Specifications; and the Contractor hereby agrees to abide by the Architect's interpretation and to carry out the work in accordance with the decision of the Architect.

§ 1.2.1.3 It is expressly stipulated that neither the Drawings nor the Specifications shall take precedence over the other, and it is further stipulated that the Architect may interpret or construe the Drawings and Specifications so as to secure in all cases the result most consistent with the needs and requirements of the Owner. In the event of such ambiguity or discrepancy subject to any Architect's interpretation, the Contractor shall comply with the more stringent requirement, and supply the better quality or greater quantity of work.

§ 1.2.1.4 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or

unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.2.1 The various materials and products specified in the specifications by name or description are given to establish a standard of quality and of cost for bid purposes. It is not the intent to limit the acceptance to any one material or product specified, but rather to name or describe it as the absolute minimum standard that is desired and acceptable, all determinations as to equality of a proposed product or material shall be at the discretion of the Architect and/or the Owner.

.1 A material or product of lesser quality will not be acceptable.

.2 Where "Basis of Design" products or manufacturer's names are used, whether or not followed by the words "or approved equal," they shall be subject to approved equals and authorized only by the Architect and/or the Owner.

§ 1.2.2.2 Substitutions lowering performance, quality, method of assembly or installation, or in general not in keeping with details and specifications or the requirements of the Owner, will not be permitted. Refer to substitution procedure indicated elsewhere in the Contract Documents.

§ 1.2.2.3 It is understood when a bid for any product or material is submitted, the bidder is aware of specified requirements and all materials or products within his bid are equal or better than such specified items.

§ 1.2.2.4 In addition to the Specifications, it shall be understood that details on Drawings shall become part of the Specification in determining the required "standard of quality."

§ 1.2.2.5 If a conflict occurs between Drawing details and Specifications, bidder during bidding process and/or Contractor shall bring such conflicts to the attention of the Architect in accordance with applicable requirements indicated elsewhere in other sections of Contract Documents.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

In the interest of brevity, the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.4.1 Whenever in the Contract Documents an item of work is referred to in the singular number, such reference shall apply to as many such items as are required to complete the work.

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely

and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use the Electronic Indemnification Form provided by the Architect to establish the protocols for the development, use, transmission, and exchange of digital data.

1.8 Not Used

(Paragraphs deleted)

§ 1.9 EXECUTION OF CONTRACT DOCUMENTS

§ 1.9.1 Execution of the Contract by the Contractor is a representation that said Contract Documents are full and complete, are sufficient to have enabled the Contractor to determine the cost of the Work therein to enter into the Contract and that the Contract Documents are sufficient to enable it to construct the Work outlined therein, and otherwise to fulfill all its obligations hereunder, including, but not limited to, Contractor's obligation to construct the Work for an amount not in excess of the Contract Sum on or before the date(s) of Substantial Completion established in the Agreement. The Contractor further acknowledges and declares that it has visited and examined the site, examined all physical, legal, and other conditions affecting the Work and is fully familiar with all of the conditions thereon and thereunder affecting the same. In connection therewith, Contractor specifically represents and warrants to Owner that it has, by careful examination, satisfied itself as to: (1) the nature, location and character of the Project and the site, including, without limitation, the surface and subsurface conditions of the site and all structures and obstructions thereon and thereunder, both natural and man-made, and all surface and subsurface water conditions of the site and the surrounding area; (2) the nature, location, and character of the general area in which the Project is located, including without limitation, its climatic conditions, available labor supply and labor costs, and available equipment supply and equipment costs; and (3) the quality and quantity of all materials, supplies, tools, equipment, labor, approvals, and professional services necessary to complete the Work in the manner and within the cost and time frame required by the Contract Documents. In connection with the foregoing, and having carefully examined all Contract Documents, as aforesaid, and having visited the site, the Contractor acknowledges and declares that it has no knowledge of any discrepancies, omissions, ambiguities, or conflicts in said Contract Documents and that if it becomes aware of any such discrepancies, omissions, ambiguities, or conflicts, it will promptly notify Owner and Architect of such fact.

§ 1.9.2 The Contract Documents include all items necessary for the proper execution and completion of the Work by the Contractor. The Work shall consist of all items specifically included in the Contract Documents as well as all additional items of work which are reasonable inferable from that which is specified in order to complete the Work in accordance with the Contract Documents. The Contract Documents are complementary, and what is required by any one Contract Document shall be as binding as if required by all. Any differences between the requirements of the Drawings and the Specifications or any differences noted within the Drawings themselves or within the Specifications themselves have been referred to the Owner and Architect by Contractor prior to the submission of bids and have been clarified by an Addendum issued to all bidders.

§ 1.9.2.1 If any such differences or conflicts were not called to the Owner's and Architect's attention prior to submission of bids, the Architect shall decide which of the conflicting requirements will govern based upon the most

stringent of the requirements, and, subject to the approval of the Owner, the Contractor shall perform the Work at no additional cost and/or time to the Owner in accordance with the Architect's decision. Work not covered in the Contract Documents will not be required unless it is consistent therewith and is reasonable inferable therefrom as being necessary to produce the intended results.

§ 1.9.2.2 The term "reasonably inferable" includes work necessary to "provide" work indicated or specified, as defined in section: Definitions and Standards; that is: furnish and install, complete, in place and ready for use.

§ 1.9.2.3 Details referenced to portions of the Work shall apply to other like portions of the Work not otherwise detailed.

§ 1.9.2.4 The Contractor shall request, from the Architect's interpretation of apparent discrepancies, conflicts, or omissions in the Specifications and Drawings. Subcontractors shall forward such requests through the Contractor. Such requests, and the Architect's interpretation, shall be in written form; other forms of communications shall be used to expedite resolution of concerns, but will not be binding.

§ 1.9.3 Explanatory notes shall take precedence over conflicting drawn note indications. Large-scale drawings shall take precedence over small-scale drawings. Figured dimensions shall take precedence over scaled measurements. Should contradictions be found, the Architect shall determine which indication is correct.

§ 1.9.4 Where it is required in the specifications that materials, products, processes, equipment, or the like be installed or applied in accordance with manufacturers' instructions, directions, or specifications, or words to this effect, it shall be construed to mean that said application or installation shall be in strict accordance with printed material concerned for use under conditions similar to those at the job site.

§ 1.9.5 Any material specified by reference to the number, symbol, or title of a Commercial Standard, Federal Specification, ASTM Specification, trade association standard, or other similar standards, shall comply with the requirements in the latest revision thereof and any amendments or supplements thereto in effect one month prior to the date on which bids are opened and read, except as limited to type, class, or grade, or modified in such reference. The standards referred to, except as modified in the specifications, shall have full force and effect as though printed in the specifications.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

(Paragraphs deleted)

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term "Architect" means the Architect or the Architect's authorized representative.

§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 2.3.4 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of

information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work. The furnishing of these surveys and the legal description of the site shall not relieve the Contractor from its duties under the Contract Documents. Neither Owner nor the Architect shall be required to furnish Contractor with any information concerning subsurface characteristics or conditions of the areas where the Work is to be performed. When the Owner or Architect has made investigations of subsurface characteristics or conditions of the areas where the Work is to be performed, such investigations, if any, were made solely for the purposes of Owner's study and Architect's design. Neither such investigations nor the records thereof are a part of the Contract between Owner and Contractor. To the extent such investigations or the records thereof are made available to the Contractor by the Owner or Architect, such information is furnished solely for the convenience of Contractor. Neither Owner nor Architect assumes any responsibility whatsoever in respect of the sufficiency or accuracy of the investigations thus made, the records thereof, or of the interpretations set forth therein or made by the Owner or Architect in its use thereof, and there is no warranty or guaranty, either express or implied, that the conditions indicated by such investigations or records thereof are representative of those existing throughout the areas where the Work is to be performed, or any part thereof, or that unforeseen developments may not occur, or that materials other than or in proportions different from those indicated may not be encountered. The Contractor shall undertake such further investigations and studies as may be necessary or useful to determine subsurface characteristics and conditions. In connection with the foregoing, Contractor shall be solely responsible for locating (and shall locate prior to performing any Work) all utility lines, telephone company lines and cables, sewer lines, water pipes, gas lines, electrical lines, including, without limitation, all buried pipelines and buried telephone cables and shall perform the Work in such a manner so as to avoid damaging any such lines, cables, pipes, and pipelines.

(Paragraphs deleted)

§ 2.3.4.1 After award of Contract and for construction purposes, designated Contractors will be furnished with printed signed and sealed Drawings and Specifications free of charge for filing with public bodies.

.1 Additional copies of Drawings and Specifications will be furnished upon receipt of the amount indicated in the Advertisement. Subcontractors and vendors shall obtain copies of the Drawings and Specifications through the Contractor from his/her allotment.

§ 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, or fails or refuses to provide a sufficient amount of properly supervised and coordinated labor, materials, or equipment so as to be able to complete the Work within the Contract Time or fails to remove and discharge (within ten days) any lien filed upon Owner's property by anyone claiming by, though or under Contractor, or disregards the instructions of Architect or Owner when based on the requirements of the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity.

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor and/or their Surety shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The term "Contractor" shall mean the respective Prime Contract person or entity

identified as such in the Owner Contractor Agreement, for each respective Prime Construction Contract, as responsible for the supervisory control over allocation, coordination of all Subcontractors or trades, performance and completion of all portions of the Work, including cooperation with those doing portions of the Work under Separate Contract with the Owner.

§ 3.1.1.2 The term "Contractor" shall mean and apply with equal force to each respective Prime Contractor and all other Contractors having a direct Contract with the Owner, or with each respective Contractor or other Prime Contractor for other branches of the Work, or his authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.1.4 Regularly scheduled job meetings shall be held at a location and time convenient to the Contractor, Owner's representatives and the Architect. The Contractor shall attend such meetings or be represented by a person with knowledge of the Project and with the authority to speak for and make decisions for the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

.1 If the Contractor requires clarification of the intent of the Contract Documents after award, the Contractor shall be responsible to issue a typewritten Request for Information (RFI) to the Architect utilizing the Architect's sample form via acceptable methods set forth in Article 4.2.

§ 3.2.2 In addition to and not in derogation of Contractor's duties under Paragraph 1.5.2, the Contractor shall carefully study and compare the Contract Documents with each other and shall at once report to the Architect errors, inconsistencies or omissions discovered. If the Contractor performs any construction activity involving an error, inconsistency or omission in the Contract Documents that the Contractor recognized or reasonably should have recognized without such notice to the Architect, the Contractor shall assume complete responsibility for such performance and shall bear the full amount of the attributable costs for correction. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents. However, any design errors or omissions noted by the Contractor during this review shall be reported promptly to the Architect.

§ 3.2.2.1 Conditions Precedent – Notice

.1 Notice of any alleged Conflict that have been reasonably identified prior to submitting a Bid shall be provided to the Architect immediately in order that the Architect in its discretion, may issue an Addendum.

.2 A Bidder's failure to do so constitutes an absolute waiver of any Conflict that may thereafter be asserted with respect thereto and shall bar any recovery regarding such Conflict.

.3 If any errors, inconsistencies or omissions appear in the drawings, specifications or other Contract Documents, which should reasonably have been discovered and concerning which interpretation had not been obtained from the Architect during the Bidding Period, the Contractor shall within ten (10) days after receiving written "Notice of Award" notify the Architect in writing of such error, inconsistency or omission. In the event the Contractor fails to give such notice, Contractor and its Surety may be required to indemnify Owner for the costs of any such errors, inconsistencies or omissions and the cost of rectifying same including attorney's fees. Interpretation of this procedure after the ten-day period will be made by the Architect and his decision will be final. By Submission of a bid, the Contractor acknowledges that the Contract Documents are full and complete, are sufficient to have enabled it to determine the cost of the Work and that the Drawings, the Specifications and all addenda are sufficient to enable the Contractor to construct the Work outlined therein in accordance with applicable laws, statutes, ordinances, building codes and regulations, and otherwise to fulfill all of its obligations under the Contract Documents.

.a The Contract Documents are sufficiently complete and detailed for the Contractor to perform the Work and comply with all requirements of the Contract Documents;

.b The Work required by the Contract Documents, including, without limitation, all construction details, construction means, methods, procedures, and techniques necessary to perform the Work, use of materials, selection of equipment, and requirements of products by manufacturers are consistent with;

- **.i** Good and sound practices within the construction industry;
- **.ii** Generally prevailing and accepted industry standards applicable to Work;
- **.iii** Requirements of any warranties applicable to the Work; and
- **.iv** All laws, ordinances, regulations, rules, and orders which bear upon the Contractor's performance of the Work.

.c The Contractor has read, understands and accepts the Contract Documents and its bid was made in accordance with them;

.d The Contract Sum is based upon the products, materials, systems and equipment required by the Contract Documents without exception. Where the Contract Documents list one or more manufacturer or brand name products, materials, systems and equipment as acceptable, the Contract sum is, in each instance, based upon one of the listed manufacturers or brand name products, materials, systems, and equipment, or, if the contract Sum is based upon the substitution of an "or equal" manufacturer or product, material, system or equipment, the Contractor has in each such instance sought and received the Architect's approval for the substitution either:

- **.i** Prior to the Bid in accordance Architect's Addenda; and
- **.ii** After commencement of the Work, under in conformance with substitution procedure elsewhere in the Contract Documents.

.e The Contract Sum is firm and all inclusive, and no escalation is contemplated for any reason whatsoever.

- **.i** The Contract Sum includes any and all costs associated with completion by those dates and times, including any and all costs associated with out-of-sequence work, come-back work, stand-by work, stacking of trades, coordination with the schedules and work of separate Contractors, allowing sufficient time, work and storage areas, and site access for separate Contractors to timely progress and complete their work, overtime, expediting and acceleration that may be required to complete the work by those dates and times.
- **.ii** The Contractor has reviewed the completion dates and times, and milestone dates set forth in the Contract Documents, agrees that such dates and times are reasonable and commits to achieve them.

.f The Contractor shall satisfy itself as to the accuracy of all dimensions and locations. In all cases of interconnection of its work with existing or other work, it shall verify at the site, all dimensions relating to such existing or other work. Any errors due to the Contractor's failure to verify all such locations or dimensions shall be promptly rectified by the Contractor without any additional cost to the Owner.

§ 3.2.2.2 Deviations from the construction documents must be noted by the Contractor at the time of shop drawing submission. Failure to do so will result in the implication of Section 3.2 of the General Conditions and Paragraph 3.2.1 and 3.2.1.1 above.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor and/or their Surety shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or

omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities; unless the Contractor recognized such error, inconsistency, omission or difference and knowingly failed to report it to the Architect.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.3.4 The Contractor, when requested by the Architect, shall meet with representative of the Architect at all times and furnish all information requested; he shall allow the Architect and Construction Code Officials to inspect the work at all times. Neither the Owner, nor the Architect shall be liable to the Contractor for extra compensation or damages for interference or delays on account of any such meetings, information, or inspections so requested or other acts of the Architect done in good faith and within the scope of their employment by the Owner.

.1 In addition the Contractor is entrusted with the oversight, management control, and general direction of this project to ensure that all contract completion dates are met. In the event that there are any delays caused to any subcontractor on this project, liability shall lie with the Contractor and not with the Owner.

§ 3.3.5 The Contractor has the responsibility to ensure that all material suppliers and Subcontractors, their agents, and employees adhere to the Contract Documents, and that they order materials on time, taking into account the current market and delivery conditions and that they provide materials on time. The Contractor shall coordinate its Work with that of all others on the Project including deliveries, storage, installations, and construction utilities. The Contractor shall be responsible for the space requirements, locations, and routing of its materials and equipment. In areas and locations where the proper and most effective space requirements, locations and routing cannot be made as indicated, the Contractor shall meet with all others involved, before installation, to plan the most effective and efficient method of overall installation.

§ 3.3.6 The Contractor shall establish and maintain bench marks and all other grades, lines, and levels necessary for the Work, report errors or inconsistencies to the Architect before commencing Work and review the placement of the building(s) and permanent facilities on the site with the Owner and Architect after all lines are staked out and before foundation Work is started. Contractor shall provide access to the Work for the Owner, the Architect, other persons designated by Owner, and governmental inspectors. Any encroachments made by Contractor or its Subcontractor (of any tier) on adjacent properties due to construction as revealed by an improvement survey, except for encroachments arising from errors or omissions not reasonably discoverable by Contractor in the Contract Documents, shall be the sole responsibility of the Contractor, and Contractor shall correct such encroachments within thirty (30) days of the improvement survey (or as soon thereafter as reasonably possible), at Contractor's sole cost and expense, either by the removal of the encroachment (and subsequent reconstruction on the Project site) or agreement with the adjacent property owner(s) (in form and substance satisfactory to Owner in its sole discretion) allowing the encroachments to remain.

§ 3.3.7 Coordination:

.1 In the case of a single prime Contract (single prime), the General Contractor becomes the sole responsible party for the coordination of the entire project, and all other contractors shall mean subcontractors. In the case of a multiple Prime Contract (separate prime), the General Contractor shall also be responsible to coordinate the relationships among the Prime Contractors.

.2 The General Contractor shall be responsible to coordinate and expedite the total construction process and all of its parts. The Owner relies upon the organization, management, skill, cooperation and efficiency of the General Contractor to supervise, direct, control and manage the work and to coordinate and expedite the efforts of the other prime contractors and subcontractors so as to deliver the work conforming to the contract within the scheduled time. The General Contractor is responsible for proper sequence and coordination. It shall determine the location of work and resolve conflicts amongst Contractors.

.3 The General Contractor shall provide a qualified full-time staff member or members to manage the project on site. This Construction Superintendent shall coordinate, organize and manage the project from the Contractor's on-site field office and oversee their own work and the work of their sub-contractors. Should the Prime Contractor be responsible for multiple projects at different sites, or multiple locations on one large site, then the Contractor shall provide a separate qualified superintendent for each of the projects or locations. This determination shall be made by and subject to the approval of the Owner, Architect who at all times may require additional manpower. The Superintendent shall be responsible for on-site safety, quality assurance, conformance with the Contract Documents and perform coordination with all on-site construction personnel and/or subcontractors. The Construction Superintendent shall be subject to the approval of the Owner and Architect who at all times have the right to require the contractor to replace this Construction Superintendent if they fail to perform.

.4 The other prime contractors (separate prime) or subcontractor's (single prime) shall also have a designated Superintendent and/or Foreman who will at all times be subject to the approval of the Owner, Architect. The Owner and Architect reserve the right to require the Contractor to replace the Superintendent and/or Foreman if, in the opinion of the Owner or Architect, the Superintendent and/or Foreman is not performing satisfactorily.

.5 Each prime contractor shall coordinate his activities with the activities of other contractors.

.6 All questions pertaining to the work are to be made to the Architect sufficiently in advance (via an RFI Form) of construction to permit comparisons investigation or references to drawings and shop drawings as necessary.

.7 The General Contractor is required to submit a site logistics plan coordinating all Owner functions with the access and safety of the job site.

.8 The Contractor is required to coordinate all the inspection and material testing to meet the contract documents specifications.

.9 The Contractor has full and sole responsibility for construction methods and implementation of a "quality control system" to insure coordination.

.10 The Contractor is responsible for field verification of all dimensions/measurements for the coordination of materials and trades. Check field dimensions, clearances, relationships to available space, and anchors.

.11 The Contractor shall make all necessary arrangements to conduct work so that all parts shall be carried on harmoniously and simultaneously or sequentially, so as components or increments of the same shall not interfere or retard the progress of others.

.12 Minor changes in locations of equipment, parts, etc. due to field conditions shall be made, if so directed, at no additional cost.

.13 The Contractor shall coordinate the delivery, unloading, movement, relocation, storage and protection of all materials.

.14 The Contractor shall examine the drawings and dimensions and is responsible for satisfactory joining and fitting of all parts of the work.

.15 Accurate dimensions, sleeved and opening drawings are to be submitted prior to placement in the field.

.16 Prepare coordination drawings for all above ceiling areas throughout the entire project. Drawings showing all piping, duct, cable trays, electrical ductbanks, and similar items, but not electrical conduit less than 4 inches in diameter. Complete architectural, mechanical and electrical reflected ceiling layouts, (including ductwork, conduits, piping, lighting, etc.).

.17 The Contractor is responsible for any omissions of the subcontractors and is required to provide a

complete operating facility.

.18 The General Contractor shall be responsible for preserving the integrity of ceiling heights and room sizes and shall:

- **.a** Check compatibility with equipment, other work, electrical characteristics, and operational control requirements. Check motor voltages and control characteristics. Coordinate controls, interlocks, wiring of pneumatic switches, and relays. Coordinate wiring and control wiring diagrams. Review the effect of changes on other work. Obtain and distribute installation data on each item of equipment requiring mechanical or electrical connections;
- **.b** Coordinate and observe start-up and demonstration of equipment and systems. Observe and maintain record of tests and inspections. Coordinate maintenance of record documents;
- **.c** Assist the Architect with final inspections;
- **.d** Coordinate all mechanical, plumbing, electrical, food service and equipment/furnishings work, and coordinate that work with all other work; and
- **.e** Inform the Owner via the Architect when coordination of his work is required.

.19 Where space is limited, coordinate arrangement of mechanical, electrical, and other work to fit, show plan and cross-section dimensions of space available, including structural obstructions and ceilings as applicable.

.20 Coordinate cutting and patching activities and sequencing.

.21 The Architect and Owner shall assist in resolution of any coordination items.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.2.1 Not later than ten (10) days from the Notice to Proceed, the Contractor shall provide a list showing the names of the manufacturers proposed to be used for each of the products identified in the Specifications and the installing Subcontractor's name(s).

§ 3.4.2.2 STANDARD OF QUALITY: The various materials and products specified in the specifications by name or description are given to establish a standard of quality and of cost for bid purposes.

.1 It is not the intent to limit the Contractor to any one material or product specified but rather to described as the minimum standard.

.2 When proprietary names are used as the "Basis of Design", for specified products or equipment, they shall be followed by the words "or approved equal in quality necessary to meet the specifications," unless otherwise indicated elsewhere in the Contact Documents.

§ 3.4.2.3 The Architect will evaluate alternatives and substitutions and shall be the sole judge of whether the alternatives, (substitutions), are acceptable or not.

.1 The burden of proving the alternatives, (substitutions), are equal, or better, to the specified product is that of the Contractor.

.2 Contractor shall submit request for substitution in accordance with substitution procedures indicated elsewhere in the Contract Documents.

.3 Any alternative names or products which do not meet the specifications will not be accepted.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.4.4 The Contractor will be held to be thoroughly familiar with all conditions affecting labor in the locale of the Project, including, but not limited to, trade jurisdictions and agreements, incentive and premium time, pay,

procurement, living and commuting conditions. Contractor shall assume responsibility for costs resulting from his failure to verify conditions affecting his labor.

§ 3.4.5 Contractor shall be responsible for labor peace on the Project and shall at all times make its best efforts and judgment as an experienced contractor to adopt and implement policies and practices designed to avoid work stoppages, slowdowns, disputes, or strikes where reasonably possible and practical under the circumstances and shall at all times maintain Project-wide labor harmony. Except as specifically provided in Subparagraph 8.3.1, Contractor shall be liable to Owner for all damages suffered by Owner occurring as a result of work stoppages, slowdowns, disputes, or strikes.

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 The Contractor represents that all manufacturer and supplier warranties shall run directly to or be specifically assignable to the Owner. The Contractor warrants that all portions of the work that will be covered by a manufacturer's or supplier's warranty shall be performed in such a manner so as to preserve all rights under such warranties. The Contractor hereby assigns to the Owner effective upon the termination of this contract all manufacturer's and supplier's warranties relating to the Work, and the Contractor shall upon request of the Owner, execute any document reasonably requested by Owner to effectuate such assignment. If the Owner attempts to enforce a claim based upon a manufacturer's or suppliers warranty and such manufacturer or supplier refuses to honor such warranty based in whole or in part on a claim of defective installation by the Contractor, the Contractor shall be responsible for any resulting loss or damages incurred by the Owner as a result of the manufacturer's or supplier's refusal to honor such warranty. The Contractor's obligations under this Subparagraph 3.5.1.1 shall survive the expiration or earlier termination of the Contract. The warranty period for all work of each Contractor shall not be less than two (2) years from the date of Substantial Completion and acceptance by the Owner unless otherwise specified.

§ 3.5.3 The Contractor represents and warrants the following to the Owner (in addition to the other representations and warranties contained in the Contract Documents), as an inducement to the Owner to execute the Owner-Contractor Agreement, which representations and warranties shall survive the execution and delivery of the Owner-Contractor Agreement and the final completion of the Work:

.1 That he/she is authorized to do business in the State, County, and/or City where construction will take place at the Project and is properly licensed by all necessary governmental and public authorities having jurisdiction over him/her and over the Work and the site of the Project;

.2 That he/she is familiar with all Federal, State, Municipal and Department laws, ordinances and regulations, which may in any way affect the work of those employed herein, including but not limited to any special acts relating to the work or to the project of which it is a part;

.3 That such temporary and permanent work required by the Contract Documents as is to be done by him/her, can be satisfactorily constructed and used for the purposes for which it is intended;

.4 That he/she is familiar with local trade jurisdictional practices at the site of the project;

.5 That he/she has carefully examined the plans; the specifications and the site of the work, and that from his own investigations, he/she has satisfied himself/herself as to the nature and location of the work, the character, quality and quantity of the surface and subsurface materials likely to be encountered, the character of equipment and other facilities needed for the performance of the work, and the general local conditions, and all other materials which may in any way affect the work or his/her performance; and

.6 That he/she has determined what local ordinances, if any, will affect his work. That he/she has checked for any County, City, Borough, or Township rules or regulations applicable to the area in which the Project is being constructed and in addition, for any rules or regulations of other organizations having jurisdiction, such as planning commission, industries, or utility companies who have jurisdiction over property on which the Work will be performed. Any costs of compliance with local controls are

included in the prices bid, even if documents of such local controlling agencies are not listed specifically in the Contract Documents.

§ 3.6 Taxes

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received, or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.6.1 The Owner is exempt from all taxes including Federal Excise Tax, fuel tax, transportation taxes and State Sales or Use Tax.

§ 3.6.2 The Contractor shall pay all social security taxes, unemployment insurance, contributions, or other taxes measured by wages of employees, attributable to, or performing the Work.

§ 3.7 Permits, Fees, Notices and Compliance with Laws

§ 3.7.1 The Contractor shall be required to secure permits or government approvals necessary for the proper execution and completion of the work. The Contractor shall obtain business licenses required by the State, County and/or City and shall give all notices and comply with all laws, ordinances, rules, regulations and orders of any public authority bearing on the performance of the work.

.1 It shall be the obligation of the Contractor to review the Contract Documents and to determine and to notify the Owner and Architect of any discrepancy between building codes and regulations of which the Contractor has knowledge or should be reasonably able to determine.

.2 The Contractor shall not violate any zoning, setback or other requirements of applicable laws, codes and ordinances, building codes, rules or regulations, the Contractor promptly shall notify the Architect, in writing, and necessary changes shall be accomplished by appropriate modification.

.3 The required Building Permit or Permits shall be secured by the Contractor for his trade; or by the Prime Contractor in charge of the Work when the Contract combines more than one trade under a Single Contract. Fees shall be paid for by the Owner or reimbursed after submission of receipt to the Architect for Owner's payment without additional mark-up.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.2.1 Subject to the other terms and conditions of these General Conditions, it is not the Contractor's responsibility to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations. However, if the Contractor observes that portions of the Contract Documents are at variance therewith, the Contractor shall promptly notify the Architect and Owner in writing, and necessary changes shall be accomplished by appropriate modification.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to the correction thereof or related thereto, including all fines and penalties.

§ 3.7.4 Concealed or Unknown Conditions

Claims for Concealed or Unknown Conditions: Subject to the Contractor's obligations under Articles 3.2, if conditions are encountered at the site which are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, then notice by the observing party shall be given to the other party promptly before conditions are disturbed and in no event later than five (5) days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. Claims by either party in opposition to such determination must be made within 21 days after the Architect has given notice of the decision. If the conditions encountered are materially

different, the Contract Sum and Contract Time shall be equitably adjusted, but if the Owner and Contractor cannot agree on an adjustment in the Contract Sum or Contract Time, the adjustment shall be referred to the Architect for initial determination, subject to further proceedings pursuant to Section 15.2.5.1.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

.1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts; and

.2 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect the difference between actual costs and the allowances under in the Contract Documents.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent full-time superintendent and necessary assistants, acceptable to the Owner and Architect who shall be in attendance at the Project site during performance of the Work and until final completion of all work including all corrective and punch list items. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor. If, in the Architect's opinion, the quality or progress of the work is adversely affected by the lack of adequate supervision, the Contractor shall increase the number of supervisory personnel at no increase in the Contract Sum. Each contractor must have supervisory personnel on site at all times during the execution of any work under their respective contract.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.9.4 A Superintendent for the contractor shall be required for the overall project and a Foreman shall be required at each project site. The number of necessary Assistants to the superintendent shall be determined by the areas where work is in progress so that the work areas are adequately supervised by the Contractor's superintendent or one of his assistants. If in the Architect's opinion, the quality or progress of the work are adversely affected by lack of adequate supervision, the Contractor shall be required to increase the number of supervisory personnel at no increase in the Contract sum.

§ 3.9.5 The Contractor shall provide a qualified full-time staff member or members to provide mechanical and electrical coordination and perform coordination with all their subcontractors.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the

Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project. The schedule which is prepared by the General Contractor shall indicate the proposed starting and completion date for the various subdivisions of the Work as well as the totality of the Work. The schedule shall be updated every thirty (30) days and must be submitted to the Architect with Contractor's Applications for Payment. If the schedule is not submitted with the payment application, no payment will be processed. Each schedule shall contain a comparison of actual progress with the estimated progress for such point in time started in the original schedule. If any schedule submitted sets forth a date for Substantial Completion for the Work or any phase of the Work beyond the date(s) of Substantial Completion established in the Contract (as the same may be extended as provided in the Contract Documents), then Contractor shall submit to Architect and Owner for their review and approval a description of the means and methods which Contractor intends to employ to expedite the progress of the Work to ensure timely completion of the various phases of the Work as well as the totality of the Work. To ensure such timely completion, Contractor shall take all necessary action including, without limitation, increasing the number of personnel and labor on the Project and implementing overtime and double shifts. In that event, Contractor shall not be entitled to an adjustment in the Contract Sum or the schedule.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors. Submittals which are not marked as reviewed for compliance with the Contract Documents and approved by the Contractor shall be returned by the Architect without action.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

§ 3.12.11 After the Contract has been executed, the Owner and the Architect will consider a formal request for the substitution of products in place of those specified only under the conditions set forth in "SUBSTITUTION PROCEDURES" and "PRODUCT REQUIREMENTS" in Division 01 of the Project Manual.

§ 3.12.12 All substitutions or deviations from the plans and specifications must be clearly noted as such on all Shop Drawings, Product Data, Samples or similar submittals. Contractor shall identify, coordinate and pay for any additional requirements as a result of substitutions, deviations, etc., including necessary change orders and additional work of other trades as a result of the substitution.

§ 3.12.13 All Shop Drawings, Product Data, Samples or similar submittals are to be submitted within the time frame indicated in the Contract Documents. Shop Drawings, Product Data, Samples or similar submittals logs shall be updated and submitted at each job meeting along with job meeting report form.

§ 3.12.14 All shop drawings are to include manufacturer's data. All shop drawings and samples are to be submitted by the Contractor to the Architect for review. Each sheet of the shop drawings shall identify the project, contractor, subcontractor, and fabricator or manufacturer and the date of the drawings. All shop drawings shall be numbered in consecutive sequence and each sheet shall indicate the total number of sheets in the set.

§ 3.13 Use of Site

§ 3.13.1 The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.13.2 The Contractor shall not place or maintain, or allow to be placed or maintained, any advertising matter, sign, bill, poster, etc., on or about the Site, except those required by law or by the Contract Documents, unless approved by the Architect.

§ 3.13.3 Contractor shall store materials on site only in areas as directed by the Owner and shall confine operations only to areas of new construction. The Contractor shall provide adequate protection around the designated storage areas. Workers will not be permitted in areas other than construction areas. When by exception, the Owner allows any room to be used as a shop, storeroom, etc., during the progress of the work, the Contractor making use of the space will be responsible for any repairs, patching, or cleaning arising from such use. Prior approval of Owner for use of such areas is mandatory and Contractor shall be required to provide full access to other trades for work activities. Contractors shall not be permitted to use partially completed spaces for storage areas or offices.

§ 3.13.4 If the Work is to be executed in areas occupied by the Owner, the Contractor shall inform the Owner in advance of the areas scheduled to be worked on so that the Owner's personnel may make proper preparations to protect equipment and records.

§ 3.13.5 All storage of materials at the site shall be subject to the approval or rejection of the Owner and such storage, even when approved, will be done as to minimize any impact upon the Owner's ongoing operations at the site.

§ 3.13.6 All materials delivered to the premises which are to form a part of the work are to be considered the property of the Owner and must not be removed without the Owner's consent; but the Contractor shall remove all surplus materials upon completion of each phase of the work and as directed by the Architect.

§ 3.13.7 The existing facilities may be in use during the progress of the work as indicated in the specifications. The Contractor shall schedule his work in conjunction with the use of the facility to permit operation by the Owner and cause the least disruption to the Owner's normal schedule.

§ 3.13.8 If the Contractor is required to work in areas that will also be occupied, he/she shall maintain adequate barricades, fences, etc. to protect the occupants and the work. Any work that is not possible to be completed while occupants are present shall be completed on weekends or evenings only with approval of the Owner. No work shall occur while the building is occupied without consent of the Owner.

§ 3.13.9 Construction shall be limited to the hours indicated in "SUMMARY" in Division 01 of the Project Manual.

§ 3.13.9.1 In the event that a Contractor will require working beyond 3:30 PM or on weekends, the Contractor agrees to pay the overtime expenses incurred by the Owner. The overtime rates per person will vary between $50.00 per hour to

$60.00 per hour depending on the individual selected by the Owner for building coverage. All construction shall be performed with a minimum of inconvenience to the building occupants or grounds.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.15.3 Each Prime Contractor shall perform a daily clean up and removal of debris from the site including that of his subcontractors. Each Prime Contractor shall maintain an adequate supply of laborers to accomplish daily clean up and removal of debris from the site and work areas. No debris will be allowed to accumulate in or around the building including masonry debris. The building site must be maintained free of all litter, dirt, dust and debris on a daily basis. The Owner's team may stop all work and require all personnel on site to clean up. Prior to installation of finishes, the floors shall be swept or vacuumed and kept free of dust and dirt until turned over to the Owner.

§ 3.15.4 Cleaning and debris removal may be considered a safety concern by judgment of the Owner or their agents, and as such the work may be stopped to provide time and labor for immediate clean up by the Contractor(s).

§ 3.15.5 Final Clean-Up: The Contractor has the responsibility for the final clean-up and policing of the entire site after other contractors have removed their own waste materials, rubbish, equipment, tools and plant. In addition, thereto, the General Construction Contractor shall have a professional cleaning company perform the following immediately prior to the Architect's inspection for Substantial Completion:

- **.1** Removal of all manufacturer's temporary labels from materials, equipment and fixtures;
- **.2** Removal of all stains from glass and mirrors; wash, polish, inside and outside;
- **.3** Removal of marks, stains, finger prints, other soil, dust, dirt, from painted, decorated, or stained woodwork, plaster or gypsum wall board, metal, acoustic tile, and equipment surfaces;
- **.4** Remove spots, paint, soil, from resilient flooring and carpeting;
- **.5** Remove temporary floor protections; clean, strip and provide three (3) coats of wax on new VCT floors or otherwise treat as directed by the material manufacturers recommendation, all finished floors. Final vacuum all carpet;
- **.6** Clean all interior finished surfaces, including doors and window frames, and hardware required to have a polished finish, of oil, stains, dust, dirt, paint, and the like; leave without finger prints, blemishes; and
- **.7** Final site cleanup shall extend beyond the Contract Limit Lines as reasonably required to insure the complete removal of all construction debris from the entire site, including staging areas.

§ 3.15.6 No accumulation of flammable material shall be permitted.

§ 3.16 Access to Work

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

§ 3.16.1 Contractor shall keep only necessary equipment on site and shall cooperate with the Owner regarding the location of stored material. Contractor shall not be allowed to unreasonably encumber the Project site (or building) with equipment and stored material and shall afford other contractors reasonable opportunity for introduction and storage of their materials and for execution of other work.

§ 3.16.2 General Contractor shall be responsible to maintain access/egress to building and site.

§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Owner's consultant's and agents, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent, reckless or intentional acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

.1 Contractor, for itself, its successors and assigns, agrees to indemnify and save Owner, the individual members (past, present and future), its successors, assigns, employees, agent, Architects, Engineers harmless from, and against any and all claims, demands, damages, actions or causes of action by any party, together with any and all losses, costs or expenses in connection therewith or related thereto, including, but not limited to, attorney fees and costs of suit, for bodily injuries, death or property damage arising in or in any manner growing out of the work performed, or to be performed under this Contract. Contractor and its successors and assigns agree to indemnify the Owner, its individual members (past, present and future), its successors, assigns, employees, agents, Architects, Engineers against all fines, penalties or losses incurred for, including, but not limited to, attorney fees and costs of suit, or by reason of the violation by Contractor in the performance of this Contract, or any ordinance, regulation, rule of law of any political subdivision or duly constituted public authority. Without limiting the foregoing, the Contractor, at the request of Owner, its individual members (past and present), its successors, assigns, employees, agents, Architects, Engineers agrees to defend at the Contractor's expense any suit or proceeding brought against Owner, its individual members (past, present and future), its successors, assigns, employees, agents, Architect, Engineers due to, or arising out of the work performed by the Contractor.

.2 The Contractor assumes the entire risk, responsibility, and liability for any and all damage or injury of every kind and nature whatsoever (including death resulting therefrom) to all persons, whether employees of the Contractor or otherwise, and to all property (including the Work itself) caused by, resulting from, arising out of or occurring in connection with the execution of the Work, or in preparation for the Work, or any extension, modification, or amendment to the Work by the Change Order or otherwise. To the fullest extent permitted by law, the Contractor and its Surety shall indemnify and save harmless the Owner, the Architect, the Architect's consultants, and the respective agents and employees of any of them (herein collectively called the Indemnitees) from and against any and all liability, loss, damages, interest, judgments, and liens growing out of, and any and all costs and expenses (including, but not limited to, counsel fees and disbursements) arising out of, relating to or incurred in connection with the Work including, any and all claims, demands, suits, actions, or proceedings which may be made or brought against any of the Indemnitees for or in relation to any breach of the Contract for Construction or any violation of the laws, statutes, ordinances, rules, regulations, or executive orders relating to or in any way affecting the performance or breach of the

Contract for Construction, whether or not such injuries to persons or damages to property are due or claimed to be due, in whole or in part, to any negligence, reckless or intentional acts of the Contractor or its employees, agents, subcontractors, or materialmen, excepting only such injuries and/or damages as are the result of the sole gross negligence of the Owner, Architect, or Engineer.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

§ 3.19 Re-Design

§ 3.19.1 If the Contractor makes or causes to be made, due to approval of substitute equipment or otherwise, any substantial change in the form, type, system and details of construction from those shown on the drawings, he/she shall pay for all costs arising from such changes. The Contractor shall reimburse the Owner for all Architectural and engineering fees required to check the adequacy of and/or document such changes. Any changes or departures from the construction and details shown shall be made only after written approval from the Architect.

ARTICLE 4 ARCHITECT

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 4.1.1.1 The Architect is REGAN YOUNG ENGLAND BUTERA, PC, a professional corporation under the laws of the State of New Jersey, with principal offices at 456 High Street, Mount Holly, New Jersey 08060, and is identified as "the Architect" in the Owner-Contractor Agreement and is referred to throughout the Contract Documents as "the Architect" as though singular in number. The term "the Architect" means REGAN YOUNG ENGLAND BUTERA, PC or its authorized representative. Engineering Services for Mechanical, Plumbing, and Electrical are provided under the Architect's contract.

§ 4.1.2 Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

§ 4.2 Administration of the Contract

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment and with the Owner's concurrence, from time to time during the two-year period for correction of Work described in Section 12.2. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents unless otherwise modified in writing in accordance with other provisions of the Contract.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4 and by regulations regarding "Change Orders" promulgated under the Public School Contracts Law, N.J.S.A. 18A:18A-1 et seq., and N.J.A.C. 6:20-8.3.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the language and intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

§ 4.2.15 Reference in the technical provisions of the specifications to standard specifications and test methods, including those of the American Society for Testing and Materials, the American Iron and Steel Institute, the American National Standards Institute, the American Society of Mechanical Engineers, the American Society of Heating, Refrigeration and Air Conditioning Engineers, the Factory Mutual System, the National Fire Protection Association, Federal Specifications, and other similar nationally recognized technical societies and agencies shall refer to the editions and revisions current with the date of the codes referenced in the Contract Documents.

§ 4.2.16 The Architect's decision with respect to proposed substitutions of material or equipment specified by trade name shall be final. The Architect reserves the right to waive specifications and to accept a proposed substitution, which in his opinion is superior to the material or product specified, or to limit the specification to the product specified.

§ 4.2.17 Approval of substitutions shall not relieve the Contractor of responsibility for adequate fulfillment of all the various parts of the work, nor from specified guarantees and maintenance. Modification of adjacent or connecting work required due to any substitution approval shall be provided as part of the substitution.

§ 4.2.18 Insofar as practicable, except as otherwise specified or shown, the material or product of one manufacturer shall be used throughout the work for each specified purpose.

§ 4.2.19 Manufactured articles, materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in strict accordance with the manufacturer's directions. Should such directions conflict with the Specifications, the Contractor shall request clarification from the Architect before proceeding.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a Separate Contractor or the subcontractors of a Separate Contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.1.1 In accordance with Title 18A, Public School Contracts Law, the Contractor submitting a bid to perform the work under a single contract shall furnish in writing at the time of Bid, the names of persons or entities proposed as Prime subcontractors. Prime subcontractors shall be qualified in accordance with N.J.S.A. 18A:18A-18. In addition, submit evidence of performance security of each Prime subcontractor simultaneously with the bid.

§ 5.2.1.2 In accordance with Chapter 150, Laws of 1963: Prime subcontractors appearing on the Commissioner of Labor and Industry's current list of subcontractors who have failed to pay prevailing wages, will be automatically rejected.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.2.1 Failure of the Owner or Architect to voice objection to a Subcontractor or material supplier shall not relieve the Contractor of responsibility for compliance with the Contract Documents.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.3.1 Prime Subcontractors or Subcontractors proposed by the Contractor will not be acceptable to either the Owner or Architect where evidence exists that such proposed Subcontractors (1) are unable or unwilling to comply with the requirements of the Contract Documents; (2) have experience, judged by the Owner or Architect, to be inconsistent with requirements for the Work; (3) or appear on the Department of Labor and Workforce Development Prevailing Wage Debarment List. In these instances, the Contractor will not be entitled to a change in the Contract Sum as provided in Subparagraph 5.2.3 and shall propose substitute Subcontractors for those not accepted for causes stated herein.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.2.5 No work shall take place on site by a subcontractor unless a qualified Contractor, responsible for the subcontractor's work, is on site to manage the work of their subcontractor.

§ 5.3 Subcontractual Relations

(Paragraphs deleted)

§ 5.3.1 By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.3.1.1 Where the Contractor sublets portions of the Work, the entire responsibility for the subdividing of Work rests with the Contractor. The Owner and Architect are not responsible for the manner of the subdivision of the Work and neither will enter into nor settle disagreements or disputes between Contractor and Subcontractors.

§ 5.3.2 The Contractor shall obligate each Subcontractor specifically to comply with the New Jersey Plan of Affirmative Action to avoid discriminatory practice in employment.

§ 5.3.3 The Contractor shall obligate each Subcontractor to comply with the applicable prevailing wage schedule of the Department of Labor of the State of New Jersey per 16.2.1 and 16.2.2.

§ 5.3.4 The Contractor shall obligate each Subcontractor to comply with the Public Works (the Public Works Contractor Registration Act of the State of New Jersey).

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Contractor shall be responsible to coordinate all Work. All trades have a mutual obligation to coordinate their work with the other trades and cooperate as necessary with the Contractor and the Construction Schedule to complete the work as required by the Owner. The Contractor is required to have their Superintendent or Foreman on site at all times when their work or that of their Subcontractors is in progress.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent. Should the Contractor be damaged by any other separate Contractor on the work by reason of such other Contractor's failure to perform properly his Contract with the Owner, no action will lie against the Owner or Architect, and the Owner and the Architect shall have no liability therefore, but the Contractor may assert his claim for damage against such separate Contractor as a third-party beneficiary under the Contract between such other Contractor and the Owner.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5 or to other completed or partially completed construction or property on the site or to property of any adjourning Owner or other party.

§ 6.2.4.1 Should the Contractor cause damage to the work or property of any separate Contractor on the Project, the Contractor shall, upon due notice, settle with such other Contractor by agreement or Court of Law if he will so settle. If such separate Contractor sues the Owner or Architect, or initiates a Court of Law proceeding on account of any damage alleged to have been so sustained, the Contractor agrees that he will hold the Owner and Architect harmless against any such suit, and that he will reimburse to the Owner or Architect, as the case may be, the cost of defending such suit, including reasonable attorney's fee and if judgment against Owner or Architect arises therefrom, the Contractor shall pay all judgment cost incurred by the Owner and Architect.

§ 6.2.5 The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible as the Owner determines to be just, based on the recommendation of the Architect.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.1.1 A field directive or field order shall not be recognized as having any impact upon the Contract Sum or the Contract Time and the Contractor shall have no claim therefore unless it shall, prior to complying with same and in no event no later than 10 working days from the date such direction or order was given, submit to the Owner for the Owner's approval its change proposal.

§ 7.1.1.2 When submitting its Change Order request, the Contractor shall include and set forth in clear and precise detail breakdowns of labor and materials for all trades involved and the estimated impact on the Construction Schedule. The Contractor shall use the Prime Contractor Change Order Request forms, 012610 and the Subcontractor Change Order Request forms, 012620 of the Project Manual.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone in accordance with Section 7.4.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

§ 7.1.4 Notwithstanding anything to the contrary contained in this article, all Change Orders shall be subject to the requirements of N.J.A.C. 6A:26-4.9 (2006).

§ 7.1.5 A directive or order from the Owner or Architect, other than a Change Order, a Construction Change Directive or any order for a minor change pursuant to this article 7, shall not be recognized as having any impact on the contract sum or the contract time and the Contractor shall have no claim therefore. If the Contractor believes that a directive or order would require it to perform work not required by the contract documents, the Contractor shall so inform the Owner and Architect in writing prior to complying with the same and in no event any later than five (5) working days from the day such direction or order was given and shall submit to the Owner and Architect for the Owner's and Architect's approval its change proposal.

§ 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect stating their agreement upon all of the following:

.1 The change in the Work;

.2 The amount of the adjustment, if any, in the Contract Sum; and

.3 The extent of the adjustment, if any, in the Contract Time.

§ 7.2.2 Change Orders shall include all costs, including cost of preparation of the Change Order, all impact and ripple costs associated with modifications or delays to the work an assessment of the amount and impact of any perceived potential delays, and all costs associated with modifications to other work.

.1 The Prime Contractor shall furnish all necessary documentation to support the additional cost, including but not limited to the following:

- .a Copy of subcontractor's proposal;
- .b Complete breakdown for all costs for labor and material;
- .c Complete breakdown of related costs; and
- .d Other information as may be requested by the Architect.

§ 7.2.3 The overall cost of the Change Order shall be inclusive, and once accepted by the Owner it shall be considered full and final.

§ 7.2.4 When a Change Order involves both additions and deletions in material, the net quantity is to be determined and the appropriate overhead and profit is to be applied to the net quantity.

§ 7.2.5 When any change in the Work, regardless of the reason therefore, requires or is alleged to require an adjustment in Contract Time, such request for time adjustment shall be submitted by the Contractor as part of the change proposal. Any Change Order approved by the Owner and for which payment is accepted by the Contractor, in which no adjustment in Contract Time is stipulated, shall be understood to mean that no such adjustment is required by reason of the change, and any and all rights of the Contractor or any subsequent request for adjustment of Contract Time by reason of the change is waived.

§ 7.2.6 Request by the Contractor for adjustment of the Contract Amount regardless of the reason therefore, shall be submitted to the Owner and Architect with itemized labor and material quantities and unit prices to permit proper evaluation of the request. A submission by the Contractor containing unsubstantiated lump sum requests for adjustment of the Contract Amount will not be considered by the Owner and Architect. The Owner and Architect will not be liable for any delay incurred by reason of the Contractor's failure to submit satisfactory justification and back-up with any request for adjustment to the Contract Amount.

§ 7.2.7 Agreement on any Change Order shall constitute a final settlement of all matters relating to the change in the initial Work which is the subject to the Change Order, including, but not limited to, all direct, indirect and impact costs associated with such change and any and all adjustment to the Contract Sum and the Construction Schedule. The Contractor will not be entitled to any compensation for additional work, impact costs or delays in the Construction Schedule not included in the Change Order.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

.1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;

.2 Unit prices stated in the Contract Documents or subsequently agreed upon;

.3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or

.4 As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

.1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance shall be in accordance with the Prevailing Wage Rates at the time the Contract is signed with no additional "labor burden", future increases or any other considerations;

.2 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others; and

.3 The allowance for overhead and profit combined, included in the total cost to the Owner, shall be based upon the following schedule, may only include a Contractor, his Subcontractor and shall be limited to a total of 15% of the cost:

.a In order to facilitate checking of quotations for extras or credits, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs, including labor, materials and subcontracts. Labor and materials shall be itemized in the manner prescribed above. Where major cost items are subcontractors, they shall be itemized.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without

prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.2.3.1 Contract Time shall start and end on the dates indicated in the Agreement plus any authorized extension(s) of time as approved by written Change Order.

§ 8.2.4 The Contractor shall have sole responsibility for any and all costs, charges, fees or expenses of any and all kinds from the failure to complete the work within the preceding time period, and such sums shall be deducted from the Contract Sum.

§ 8.2.5 Owner, or his representative, in coordination with the Contractor, shall set work hours. Contractor may be required to work nights, weekends or holidays as necessary to complete the work in accordance with the Schedule or in coordination with the Owner's activities. Under no circumstances shall the Contractor begin or continue with work that is adversely impacting the Owner's activity or operations. All utility shutdowns, interruptions, work in or adjacent to existing buildings will be coordinated through the Owner, or his representative, and may have to be performed during hours when the building is not in operation. All cutting, hammering or other activity that is noisy, produces smoke or fumes or is otherwise disruptive to the building occupants may have to be done during hours when the building is not in operation. Work required to be performed during non-operating hours, as determined by the Owner or his representative, will be performed at no additional cost to the Owner. Contractor agrees to increase manpower, increase work hours, and to increase equipment necessary to maintain the Project Construction Schedule, and when also requested by the Architect and the Owner, and shall be without additional cost or charge to the Owner.

§ 8.2.6 Work shall commence in accordance with the Notice to Proceed and shall proceed uninterrupted to Final Completion. The Contractor acknowledges and recognizes that the Owner is entitled to full and beneficial occupancy and use of all or part of the completed Work in accordance with the milestone dates set forth in other sections of the Contract Documents, as per approved Schedule, and that the Owner has made arrangements to discharge its public obligations based upon the Contractor's achieving Substantial Completion of all of the Work within the Contract Time. The Contractor further acknowledges and agrees that if the Contractor fails to complete substantially or cause the Substantial Completion of any portion of the Work as required by the Project Construction Schedule and/or within the Contract Time, the Owner will sustain extensive damages and serious loss as a result of such failure. The exact amount of such damages will be extremely difficult to ascertain. Therefore, the Owner and the Contractor agrees as set forth below:

.1 If the Contractor fails to achieve partial completion within the requirements of the milestone dates or the approved Schedule or to achieve Substantial Completion of all or part of the Work when and as required by the Project Construction Schedule and/or within the Contract Time, the Owner shall be

entitled to retain or recover from the Contractor and its Surety, as liquidated damages and not as a penalty, the amounts indicated in other sections of the Contract Documents and commencing upon the first day following expiration of the Project Construction Schedule and/or the Contract Time, as the case may be, and continuing until the actual Date of Substantial Completion.

.2 Adherence to Schedule:

.a Monthly progress payments will only be released after the Contractor reaches the status of completion for that month contemplated by the construction schedule.

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by occurrences beyond the control and without the fault or negligence of the Contractor and which by the exercise of reasonable diligence the Contractor is unable to prevent or provide against, including labor disputes (other than disputes limited to the work force of, or provided by, the Contractor or its Subcontractors), fire, unusual delay in deliveries not reasonably anticipatable, unavoidable casualties, or by other occurrences which the Architect, subject to the Owner's approval, determines may justify delay, then, provided that the Contractor is in compliance with Subparagraph 8.3.3 hereof, the Contract Time shall be extended by Change Order or Construction Change Directive for the length of time actually and directly caused by such occurrence as determined by the Architect and approved by the Contractor and Owner (such approval not to be unreasonably withheld, delayed, or conditioned); provided, however, that such extension of Contract Time shall be net of any delays caused by or due to the fault or negligence of the Contractor or which are otherwise the responsibility of the Contractor and shall also be net of any contingency or "float" time allowance included in the Contractor's construction schedule. The Contractor shall, in the event of any occurrence likely to cause a delay, cooperate in good faith with the Architect and Owner to minimize and mitigate the impact of any such occurrence and do all things reasonable under the circumstances to achieve this goal.

§ 8.3.2 Claims relating to time shall be made as follows:

.1 Any claim for extension of time should be made in writing to the Architect not more than five (5) days after the commencement of the delay, otherwise, it shall be waived. The Contractor shall provide an estimate of the probable effect of such delay on the progress of the work. No claim made beyond the five (5) days shall be considered valid; and

2 The Contractor agrees that if any delay in the Contractor's works unnecessarily delays the work of any other Contractor or Contractors, the Contractor shall in that case pay all costs and expenses incurred by such parties due to such delays and hereby authorizes the Owner to deduct the amount of such costs and expenses from any moneys due or to become due the Contractor under this Contract. The Architect shall be responsible for ascertaining whether the Contractor is responsible for delaying any of the work of any other Contractor. The Architect's decision shall be final.

§ 8.3.3 Notwithstanding anything to the contrary in the Contract Documents, any extension of the Contract Time, to the extent permitted under Paragraph 8.3.1, shall be the sole remedy of the Contractor for any (1) delay in the commencement, prosecution or completion of the Work, (2) hindrance or obstruction in the performance of the Work, (3) loss of productivity or (4) other similar claims (collectively referred to in this Paragraph 8.3.3 as "delays"), whether or not such delays are foreseeable, unless a delay is caused by acts of the Owner constituting active interference with the Contractor's performance of the Work and only to the extent such acts continue after the Contractor furnishes the Owner and Architect with written notice of such interference. In no event shall the Contractor be entitled to any compensation or recovery of any damages in connection with any delay including without limitation consequential damages, lost opportunity cost, impact damages or other similar remuneration. The Owner's exercise of any of its rights or remedies under the Contract Documents (including without limitation ordering changes in the Work or directing suspension, rescheduling or correction of the Work) regardless of the extent or frequency of the Owner's exercise of such rights or remedies shall not be construed as an act of interference with the Contractor's performance of the Work.

§ 8.3.4 The Contractor agrees that the Owner can deduct from the Contract Sum, any wages paid by the Owner to any Inspector, Architect, or other professional necessarily employed by the Owner for any number of days in excess of the number of days allowed in the specifications for completion of work.

§ 8.3.5 Where the cause of delay is due to weather conditions, an extension of time shall be granted only for unusually severe weather, as determined by reference to historical data. The term "historical data" as used in the previous

sentence shall be construed according to this formula: Average rainfall (or snow or low temperature) for the past five years.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

§ 9.2.1 Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work which in the aggregate equals the total Contract Sum, divided so as to facilitate payments to Subcontractors, supported by such evidence of correctness as the Architect may direct or as required by the Owner. It will be necessary for all Contractors to divide their contract into a separate schedule for the work performed at the project. These schedules, when approved by the Architect and Owner, shall be used to monitor the progress of the Work and as a basis for Certificates for Payment. All items with entered values will be transferred by the Contractor to the "Applications and Certificate for Payment," and shall include the latest approved Change Orders and Construction Change Directives. Change Order values and Construction Change Directive values shall be broken down to show the various subcontracts. The Application for Payment shall be on AIA Document G702 and G703. The approved Voucher is obtainable from the Owner. Each item shall show its total scheduled value, value of previous applications, value of the application, percentage completed, value completed and value yet to be completed. All blanks and columns must be filled in, including every percentage complete figure.

§ 9.2.2 Each Prime Contractor shall include the following separate items in their schedule of values:

- **.1** Punch List Work - Minimum of 1% of contract value.
- **.2** Value for testing.
- **.3** Value for Record Drawings and manuals.
- **.4** Value for final clean-up and monthly value for daily clean up by General Contractor.
- **.5** Value for equipment start-up and commissioning.
- **.6** Value for shop drawings.
- **.7** Safety protections.
- **.8** Project Schedule and monthly updates.
- **.9** Allowances.
- **.10** TAB coordination shiv, belts and modifications as required.
- **.11** Value for Owner's attic stock.
- **.12** Winter Protection.

§ 9.3 Applications for Payment

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values for their Contract on AIA Document G702 and G703 and the Contract Documents.

(Paragraphs deleted)

§ 9.3.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

(Paragraph deleted)

§ 9.3.3 Until substantial completion, the Owner will pay 98% of the amount due the Contractor on account of progress payments until a balance of $500,000 is due the Contractor. The retainage will then be increased to Five Percent (5%) of the $500,000.00 balance of the contract until final completion. The retainage will be held until final acceptance of the project by the Architect and the Owner. The Contractor shall submit a separate voucher for the full amount of the

retainage along with the Consent of Surety, A.I.A. Form G707A and the Contractor shall be required to furnish a Maintenance Bond for 10% of the Project Cost for a period of two (2) years from the Date of Substantial Completion.

§ 9.3.4 Upon acceptance of the work performed pursuant to this Contract for which the Contractor has agreed to the withholding of payments pursuant to Article 9 of this Contract, all amounts being withheld by the Owner shall be paid in accordance with Paragraph 9.3.3 without further withholding of any amounts for any purposes whatsoever, provided that the Contract has been satisfactorily completed.

§ 9.3.5 Each application for payment shall be accompanied by the following, all in form and substance satisfactory to the Owner and Architect:

.1 A current contractor's lien waiver and duly executed and acknowledged sworn statement by an officer of the Contractor showing all subcontractors and material supplier with whom the Contractor has entered into subcontracts, the amount of each such subcontract, the amount requested for any subcontractor and material supplier in the requested progress payment and the amount to be paid to the Contractor from such progress payment together with similar sworn statements from all such subcontractors and material supplier.

.2 Duly executed waivers of mechanics and material supplier's liens from all subcontractors and when appropriate, from material supplier and lower tier subcontractors establishing payment or satisfaction of payment of all amounts requested by the Contractor on behalf of such entities or persons in any previous application for payment.

.3 A Purchase Order or Voucher if required by the Owner.

.4 Payroll Verification Affidavit.

.5 Bill of Sale/Certification for Stored Materials.

.6 Monthly Project Workforce Report (AA-202).

§ 9.3.6 At the Owner's option, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with Paragraphs 9.3.1, 9.3.2, 9.3.3, 9.3.4 and 9.3.5 satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

§ 9.3.6.1 With each Application for Payment the Contractor shall submit to the Architect and Owner Section 012920 Bill of Sale/Certification for Stored Materials as found in the Project Manual identifying each location where materials are stored off the Project site and the value of materials at each location. The Contractor shall procure insurance satisfactory to the Owner for materials stored off the Project site in an amount not less than the total value thereof. The Contractor shall also provide picture(s) of the stored material(s).

§ 9.3.6.2 The consent of any surety shall be obtained to the extent required prior to the payment for any materials stored off the Project site.

§ 9.3.6.3 Representatives of the Owner shall have the right to make inspections of the off-site storage areas at any time.

§ 9.3.6.4 Materials stored off site shall be protected from diversion, destruction, theft and damage to the satisfaction of the Owner, shall specifically be marked for use on the Project and shall be segregated from other materials at the storage facility.

§ 9.3.7 The Contractor warrants and agrees that title to all Work will pass to the Owner either by incorporation in the construction or upon receipt of payment therefor by the Contractor; whichever occurs first, free and clear of all liens, claims, security interests, or encumbrances whatsoever, that the vesting of such title shall not impose any obligation on Owner or relieve Contractor of any of its obligations under the Contract, that the Contractor shall remain responsible for damages to or loss of the Work, whether completed or under construction, until responsibility for the Work has been accepted by Owner in the manner set forth in the Contract Documents, and that no Work covered by an Application for Payment will have been acquired by the Contractor, or by any other person performing Work at the site or furnishing materials and equipment for the Project, subject to an agreement under which an interest therein or an encumbrance thereon is retained by the seller or otherwise imposed by the Contractor or such other person.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, after receipt of the Contractor's Application for Payment, and as indicated in the Form of Agreement Between Owner and Contractor either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1 The Contractor warrants and agrees that title to all Work will pass to the Owner either by incorporation in the construction or upon receipt of payment therefor by the Contractor, whichever occurs first, free and clear of all liens, claims, security interests, or encumbrances whatsoever, that the vesting of such title shall not impose any obligation on Owner or relieve Contractor of any of its obligations under the Contract, that the Contractor shall remain responsible for damages to or loss of the Work, whether completed or under construction, until responsibility for the Work has been accepted by Owner in the manner set forth in the Contract Documents, and that no Work covered by an Application for Payment will have been acquired by the Contractor, or by any other person performing Work at the site or furnishing materials and equipment for the Project, subject to an agreement under which an interest therein or an encumbrance thereon is retained by the seller or otherwise imposed by the Contractor or such other person.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- **.1** defective Work not remedied;
- **.2** third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- **.3** failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- **.4** reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- **.5** damage to the Owner or a Separate Contractor;
- **.6** reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;
- **.7** repeated failure to carry out the Work in accordance with the Contract Documents.
- **.8** avoidable delay in the progress of the work;
- **.9** failure to cooperate with the Architect relative to the construction schedule, material storage, coordination with the Owner and/or other contractors, clean up and site safety;
- **.10** failure to submit shop drawings as required by the Contract Documents;
- **.11** failure of any Contractors to comply with mandatory requirements for maintaining record drawings. The Contractor shall be required to check record drawings each month. Written confirmation that the

record drawings are up-to-date shall be required by the Architect before approval of the Contractor's monthly payment requisition will be considered;

.12 safety violations; or

.13 insurance lapses.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

.1 If the Contractor disputes any determination by the Architect with regard to any Certificate of Payment, the Contractor nevertheless expeditiously shall continue to prosecute the Work.

.2 The failure of the Owner to retain any percentage payable to the Contractor or any change in or variation of the time, method or condition of payments to the Contractor shall not release or discharge to any extent whatsoever the Surety upon any bond given by Contractor hereunder. The Owner shall have the right, but not the duty, to disregard any schedule of items and costs that the Contractor may have furnished and defer or withhold in whole or in part any payment if it appears to the Owner, in its sole discretion, that the balance available in the Contract Sum as adjusted and less retained percentages, may be insufficient to complete the Work.

.3 Notwithstanding any provision of any law to the contrary, the Contractor agrees that the time and conditions for payment under the Contract for Construction shall be as stated in the Contract for Construction and in the Contract Documents. The Contractor specifically agrees that Owner's failure to give, or timely give, notice of:

.a Any error in an invoice or application for payment submitted by the Contractor for payment; or;

.b any deficiency or non-compliance with the Contract Documents with respect to any Work for which payment is requested, shall not waive or limit any of the Owner's rights or defenses under the Contract for Construction and the Contract Documents, or require the Owner to make a payment in advance of the time, or in an amount greater than, as provided by the Contract for Construction.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents and shall so notify the Architect. Notwithstanding Certification by the Architect, the Owner may refuse to make payment based on any default by the Contractor including, but not limited to those defaults set forth in Subparagraphs 9.5.1 through 9.5.1.13. The Owner shall not be deemed in default by reason of withholding payment while any of such defaults by the Contractor remain uncured.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than fourteen (14) days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors and suppliers (of any tier) within the same time.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and

suppliers to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

§ 9.6.9 The Owner will issue timely payments to the Contractor in accordance with the requirements of "The Prompt Payment Act", N.J.S.A**.** 2A:30A-1, et seq. The Contractor is hereby notified that the Owner, as a public entity, requires all payments to be approved at scheduled public meetings. The vote on authorization for payments will be made at the first public meeting of the Owner, following the Owner's receipt of the Architect's authorization for payment, and paid during the subsequent payment cycle.

§ 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within fourteen days after receipt of the Contractor's Application for Payment, or if the Owner does not, for reasons other than a default of the Contract, including but not limited to those defaults set forth in Subparagraphs 9.5.1.1 through 9.5.1.12, pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof which the Owner agrees to accept separately is sufficiently complete in accordance with this definition and the Contract Documents so that the Owner can occupy or utilize the Work for its intended use. The Work will not be considered substantially complete until all project systems included in the Work are operational as designed and scheduled, all designated or required inspections, certifications, permits, approvals, licenses and other documents from any governmental authority having jurisdiction thereof necessary for the beneficial use and occupancy of the Project are received, designated instruction of Owner's personnel has been completed, and all final finishes within the Contract are in place. In general, the only remaining Work shall be minor in nature, so that the Owner can occupy the building on that date and the completion of the Work by the Contractor would not materially interfere or hamper the Owner's (or those claiming by, through or under the Owner) normal operations. Contractor recognizes that normal operations requires the use and occupancy of the Work by building's intended occupants without interruption and that any punch list or corrective work shall be done at times when the Work is not so occupied. As a further condition of substantial completion acceptance, the Contractor shall certify that all remaining Work will be completed within thirty (30) consecutive calendar days or as agreed upon following the date of substantial completion. In addition to any other definitions of Substantial Completion as defined by the contract documents, the following is required before the project is considered "Substantially Complete":

.1 All required final inspections have been completed by the authority having jurisdiction resulting in a Temporary Certificate of Occupancy, Certificate of Occupancy or a Certificate of Approval.

2. Air Balancing Reports can be hand written field notes but must be reviewed and approved via the shop drawing process by the Mechanical Engineer. Final Air and Water Balancing Reports certified by the licensed balancer are required for "Final Acceptance" and the start of the warranty period. (These reports must be submitted in accordance with the shop drawing process to the Architect so that they can be tracked and approved and distributed to all applicable parties).

3. Equipment Start Up Reports can be hand written field notes but must be reviewed and approved via the shop drawing process by the Mechanical Engineer. (These reports must be submitted in accordance with the shop drawing process to the Architect so that they can be tracked and approved and distributed to all applicable parties).

4. Owner On-Site ATC Training: Refer to the ATC specifications for training requirements on-site and off-site. The Owner does not have beneficial use of the mechanical system until they can operate it following this training.

§ 9.8.2 Before the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list (Punch List) of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.2.1 The Contractor shall perform a Quality Control/Quality Assurance QC/QA Punch List of all work prior to requesting Substantial Completion and a Punch List from the Architect. The Architect shall take the lead and conduct an onsite review with the Contractor's superintendent and representation from every major sub prime contractor. Notification of this onsite walk-thru shall be provided from the Architect and Owner who may or may not choose to attend. The Architect shall record and distribute this Punch List to the Contractor for their use and who shall document the completion of the work and the date. After successful completion of the Punch List and all work, the Contractor shall request the Architect to perform a Punch List review walk thru. Substantial Completion shall be requested in accordance with paragraph 9.8.1.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents and the requirements above so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate.

§ 9.8.5.1 The Architect's Certificate of Substantial Completion shall be subject to the Owner's final approval.

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, who shall obtain all necessary modifications to its insurance coverage to permit such occupancy or use. In addition, Contractor shall obtain consent of those public authorities having jurisdiction over the Work. Such partial occupancy or use may commence whether or not the portion is substantially complete pursuant to the terms of that Agreement.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of any Work not complying with the requirements of the Contract Documents; and

.1 except as hereinafter stated, nor does it waive the Owner's right to Liquidated Damages. Final Acceptance of the Work shall be for the whole Work only and not part.

§ 9.9.4 As portions of the Project are completed, and occupied, Contractor shall ensure the continuing construction activity will not unreasonably interfere with the use, occupancy and quiet enjoyment of the completed portions thereof.

.1 The Contractor agrees to coordinate the Work with the Architect and the Owner in order to minimize disturbance to occupied portions of the structure.

.2 In the event performances or scheduled events by the Owner are conducted in close proximity to the Work in progress, the Contractor agrees to cease all work which may disturb the Owner's occupants at the site.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled. All required close out documentation pursuant to the Contract Documents, shall be assembled and delivered by the Contractor to the Architect as part of the final Application for Payment. The Architect will not issue the final Application for Payment to the Owner until all required close out documentation has been received and approved by the Architect and accepted by the Owner.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner, and (7) evidence of compliance with all requirements of the Contract Documents: notices, certificates, affidavits, other requirements to complete obligations under the Contract Documents, including but not limited to (a) instruction of Owner's representatives in the operation of mechanical, electrical, plumbing and other systems, (b) delivery of keys to Owner with keying schedule, master, sub-master and special keys, (c) delivery to Architect of Contractor's General Warranty as described in section 3.5 and each written warranty and assignment thereof prepared in duplicate, certificates of inspections, and bonds for Architect's review and delivery to Owner, (d) delivery to Architect a printed or typewritten operating, servicing, maintenance and cleaning instructions for all Work; parts lists and special tools for mechanical and electrical Work, in approval form, (e) delivery to the Architect of specified Project record documents, (f) delivery to the Architect all required "Attic Stock" and spare parts, and (g) delivery to Owner of a Final Waiver of Liens (AIA Document G-706 or other form satisfactory to Owner), covering all Work including that of all Subcontractors, vendors, labor, materials and services, executed by an authorized officer and duly notarized. In addition to the foregoing, all other submissions required by other articles and paragraphs of the Project Manual shall be submitted to the Architect before approval of final payment. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If a lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

.1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;

.2 failure of the Work to comply with the requirements of the Contract Documents;

.3 terms of special warranties required by the Contract Documents; or

.4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

9.11 Liquidated Damages

§ 9.11.1 The Contractor understands and agrees that all work must be performed in an orderly and closely coordinated sequence so that the date for substantial completion is met.

§ 9.11.2 If the Contractor fails to complete his/her work or fails to complete a portion of his/her work, he/she shall pay the Owner, as liquidated damages and not as a penalty, the sum as specified in sub-paragraphs 9.11.5. Such amount is agreed upon as a reasonable and proper measure which the Owner will sustain each calendar day by failure of the Contractor to complete work within the stipulated time. Liquidated damages shall also apply to all Phased construction milestone dates as established by the Phasing Schedule.

§ 9.11.3 Substantial completion will be determined by the Architect as defined in paragraph 9.8.1.

§ 9.11.4 For damage occurring at the time of delay, the Owner may retain the amount due to him/her under this clause from any payments due to the Contractor.

§ 9.11.5 The Owner will suffer financial loss if the project is not substantially complete on the date set forth in the Contract Documents. The Contractor and the Contractor's Surety shall be liable for and pay to the Owner the sums hereinafter stipulated and fixed, agreed as liquidated damages for each calendar day of delay as follows:

.1 ONE THOUSAND FIVE HUNDRED DOLLARS ($1,500.00) per calendar day of delay beyond the date of Substantial Completion.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract and the following:

.1 The Contractor must fully comply with the job safety requirements in addition to all Federal, State and Local safety guidelines. All cost associated with complying with all safety requirements shall be included in each contractor's bid.

.2 The Contractor will serve as the overall Project Safety Coordinator and shall be responsible for all issues of safety and protection. The Contractor shall designate a safety person at the job site while the contractor is working on the project site. The designated safety person shall be responsible for the safety of their work and for their workers and to make continuous inspections for all safety issues relating to his work. Each Contractor must comply with job Safety Requirements in addition to the Federal Occupational Safety and Health Act (OSHA) and local agency requirements. Failure to comply with safety issues will be grounds for withholding of payments.

.3 Contractor will comply with all reasonable requests of the Owner with respect to additional security

and protections required for work interfacing with Facility Operations. Safety is of utmost importance on this project and all issues relative to safety and protection of the Facility, Staff and Occupants will be treated as emergency needs and will not be subject to the seven-day notice requirements of Article 14.

.4 Contractor shall provide, relocate and /or maintain barricades, signage, provide flagmen etc. as necessary to ensure public safety and safe egress. Contractor to provide, maintain, relocate and remove in coordination with the Owner, the perimeter security fence.

.5 The proper execution of the required safety provisions is directly related to the general condition safety line item on the Schedule of Values. The failure to provide a competent person on site to properly identify and take immediate corrective action may result in deductions to the general condition safety line item of the Schedule of Values.

.6 The Contractor shall be responsible for the immediate investigation and resolution of all safety and environmental complaints/issues generated by Contractor employees, Owners, Owner's representatives or members of the public.

.7 The Contractor shall be responsible for providing and maintaining all temporary emergency egress routes. The Contractor shall obtain the approval of the Building and Fire Departments for all temporary emergency egress routes. General Contractor to provide for fire separation walls between occupied areas as required by local officials.

.8 Contractor shall maintain all egress routes throughout building. Contractor shall post exit signs as coordinated with the Owner. Contractor shall provide wall hung fire extinguishers throughout building as deemed necessary by the fire officials.

.9 The Contractor shall supply (2) two OSHA approved means of access/egress to each floor and roof for the course of the entire project for use by all applicable parties. The Contractor shall erect and maintain OSHA approved pedestrian walking bridges, for emergency access/egress and as necessary to protect personnel from overhead work.

.10 Contractor shall provide OSHA approved pedestrian walking bridges as required to protect against overhead hazards.

.11 Contractor's safety representative shall perform a daily safety inspection walk through to ensure that all requirements of the OSHA Standards, Fire Protection Standards and Safe Work Practices are being complied with and/or corrected. The responsibility of the Contractor is to provide a safe and healthy work environment for construction personnel, Owner's personnel and representative, and the public.

.12 Upon written receipt of safety concerns and/or issues, the Contractor shall respond in writing addressing how the safety concerns or issues were resolved. The Owner shall be copied on all safety-related correspondence.

.13 The Contractor's response and compliance with correction of deficiencies noted in the safety concerns notice issued by the Authority having jurisdiction is mandatory. Failure to comply will be grounds for withholding of progress payments until the conditions are acceptable to OSHA or Authority having local jurisdiction.

.14 The Contractor shall provide, when requested by the Architect a copy of all licenses (welding, asbestos, etc.) as required by applicable agencies.

.15 The Contractor shall provide, when requested by the Architect a copy of all testing and inspection reports.

.16 Contractor shall have all required personal protective equipment and materials available for use by each employee as required by Federal, State and Local guidelines.

.17 Contractor shall supply proper equipment and crew sizes as necessary to safely complete the work.

.18 Notify Owner immediately upon arrival of OSHA to the site.

.19 Contractor shall submit to the Owner all Material Safety Data Sheets and shall cooperate in the posting of all required notifications relative to the use of hazardous substances on the property. Contractor shall comply with New Jersey Law regarding the use or storage of hazardous substances in Schools.

.20 For the safety of occupants, staff, and the public, the steel erection must be scheduled and coordinated with the Owner and Architect. Swinging of steel and crane boom over occupied space will not be allowed. Steel contractor shall provide additional barricades and fencing around his crane and steel at all times.

.21 The speed limit within the project property is 5 MPH. Contractor employees operating vehicles in excess of the speed limit or in any otherwise unsafe manner will be directed to leave the site and will not be permitted to return.

.22 Contractor shall submit an acceptable OSHA compliant site specific written safety plan to the Owner for the project files within fourteen (14) days from the Notice to Proceed or prior to mobilizing on site,

whichever comes first.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

.1 employees on the Work and other persons who may be affected thereby;

.2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and

.3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction as well as any other real or personal property of the Owner; and

.4 The Contractor shall provide a third-party Insurance Safety Site Inspection Report monthly and remedy all issues promptly.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss and further, the Contractor shall give immediate notice to the Owner and Architect of the onset of any hazardous conditions at the site which could require the implementation of safety programs or measures by personnel on site.

§ 10.2.2.1 Contractor shall comply with all regulations required by the Federal Occupational Safety and Health Act (OSHA).

§ 10.2.2.2 The Contractor shall conform to all applicable New Jersey Department of Environmental Protection regulations.

§ 10.2.2.3 Contractor shall comply with Construction and Environmental Standards contained in Federal and State Regulations and other applicable laws.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities consistent with applicable laws, statutes, ordinances, codes, rules and regulations and lawful orders of public authorities, and prevailing industry practice.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods not prohibited by the Contract Documents are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property
If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.2.9 The Contractor shall provide and maintain in good operating condition suitable and adequate fire protection equipment and shall comply with all reasonable recommendations regarding fire protection made by the representatives of the fire insurance company carrying insurance on the Work or by the local fire chief or fire marshal. The area within the site limits under the Contractor's control shall be kept orderly and clean, and all combustible rubbish shall be promptly removed from the site. Contractor will comply with all reasonable requests of the Owner with respect to additional security and protections required for work interfacing with Owner's operations. Safety is of utmost importance on this project and all issues relative to safety and protection of the building and its occupants will be treated as emergency needs and will not be subject to the seven-day notice requirements of Article 14.

§ 10.2.10 The Contractor shall remove snow and/or ice, which may accumulate on the site within areas under his/her control which might result in damage or delay.

§ 10.2.11 The Contractor shall take all precautions necessary to prevent loss and/or damage caused by vandalism, theft, burglary, pilferage, or unexplained disappearance of property of the Owner and Contractor, whether or not forming part of the Work, located within those areas of the Project to which the Contractor has access. Whenever unattended, including nights and weekends, mobile equipment and operable machinery shall be kept locked and made inoperable and immovable.

§ 10.2.12 Neither the Owner or Architect shall be responsible for providing a safe working place for the Contractor, the Subcontractors or their employees, or any individual responsible to them for the work.

§ 10.2.13 The Contractor shall conform to requirements of OSHA, the Construction Safety Code of the State Department of Labor, those of the AGC Manual, and any other governing body having jurisdiction. The requirements of the New Jersey and Local Building Construction Codes shall apply where they are equal to or more restrictive than the requirements of the Federal Act.

§ 10.2.14 When all or a portion of the Work is suspended for any reason, the Contractor shall securely fasten down all coverings and protect the Work as necessary from damage or any cause.

§ 10.2.15 The Contractor shall promptly report in writing to the Owner and Architect all accidents arising out of or in connection with the Work which caused death, personal injury or property damage giving full details and statements of any witnesses. In addition, if death, serious personal injury or serious property damage is caused, the accident shall be reported immediately by telephone or messenger to the Owner and Architect.

§ 10.2.16 Contractor is required to follow and enforce the work rules set forth below. Failure to comply with or enforce any of these rules will be grounds for suspension and/or termination of their Contract:

- **.1** No use of alcoholic beverages prior to or during working hours. Anyone found impaired will be removed from the Project site.
- **.2** No use of illegal drugs or prescription medications which could induce drowsiness or otherwise impair perception or performance. Use of illegal drugs may result in prosecution to the fullest extent of the law. Any warning associated with use of prescription drugs must be complied with, particularly warning against operation of machinery and equipment.
- **.3** Horseplay or rough-housing will not be allowed.
- **.4** Sexual, racial, or ethnic harassment, or similar conduct will not be tolerated.
- **.5** All employees shall use proper sanitation habits including use of toilet and trash facilities.
- **.6** All employees shall dress in clothing that identifies their company and is appropriate for the work they are to perform. All personnel are to wear hardhats, safety shoes, glasses, gloves, masks or respirators, noise protection devices, and other protective clothing and equipment as required by OSHA standards.
- **.7** All equipment is to be property stored and/or secured at the end of the workday or if it is to remain idle for greater than one hour.

.8 All personnel are to be made aware of the availability of Material Safety Data Sheets for materials used at the Project site. This information is available from the Contractor using the product. The Contractor shall maintain a copy of all MSDS at the construction site for all personnel to review.

.9 Enforce a full time no smoking or alcohol use policy for all employees during the entire course of the project. Any worker found violating these restrictions, or being belligerent, will be subject to removal from the site. (Contractors shall post required signs).

§ 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

(Paragraph deleted)

§ 10.4 Emergencies

(Paragraph deleted)

§ 10.4.1 In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

§ 10.4.2 – Emergency/Safety Plan

.1 All parties involved in the construction process should be aware of emergency services that may be required during the construction process.

.2 Contractor shall establish the site-specific Emergency Action Plan and, after approval by the local authorities, shall display at site trailers and various locations at the site.

.3 In case of an accident, emergency, or injury on the job site, the Contractor shall immediately follow the Site-Specific Emergency Action Plan. Following the incident, the Contractor shall submit to the Owner a complete written accident report detailing the circumstances which caused the accident, extent of injuries, damage to the building, time of accident, corrective action required, etc.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 All insurance provisions shall be confirmed with Owner's Insurance Agent. Contractor shall, without in any way altering Contractor's liability under the Contract or applicable law, obtain, pay for and maintain insurance for the coverages and amounts of coverage not less than those set forth below in the Schedule of Insurance Coverages and shall provide to Owner certificates issued by insurance companies satisfactory to Owner to evidence such coverage no later than seven days of the date of the execution of this Contract and prior to any personnel or equipment being brought onto and/or before any work commences at the job site. The coverage afforded under any insurance obtained pursuant to this paragraph shall be primary and non-contributory to any valid and collectible insurance carried separately by any of the indemnities. Such certificates shall provide that there shall be no cancellation, non-renewal or material change of such coverage without thirty (30) days prior written notice to Owner. In the event of any failure by Contractor to comply with the provisions of this Paragraph 11.1, Owner may, at its option, on notice to Contractor, suspend the Contract for cause until there is full compliance with this Paragraph 11.1 and/or terminate the Contract for cause. Alternatively, Owner may purchase such insurance at Contractor's expense, provided that Owner shall have no obligation to do so, and if Owner shall do so, Contractor shall not be relieved of or excused from the obligation to obtain and maintain such insurance amounts and coverages. Contractor shall provide the Owner and Architect a copy of any and all applicable insurance policies.

.1 To the fullest extent permitted by law the Contractor shall indemnify and hold harmless all parties or persons described in Section 3.18.

§ 11.1.2 The Contractor shall require all Subcontractors to carry similar insurance coverages and limits of liability as required under this Article 11, adjusted to the nature of Subcontractors' operations and submit same through Contractor to Owner and Architect for approval, before any personnel or equipment is brought onto the site and/or before any work commences.

§ 11.1.3 In the event Contractor fails to obtain the required certificates of insurance from the Subcontractor and a claim is made or suffered, the Contractor shall indemnify, defend and hold harmless all parties or persons described in Section 3.18 from any and all claims for which the required insurance would have provided coverage. This indemnity obligation is in addition to any other indemnity obligation provided in the Contract.

§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) all parties or persons described in Section 3.18 as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner and Architect as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

§ 11.2 Schedule of Insurance Coverages

§ 11.2.1

.1 **Commercial General Liability** of not less than $5,000,000, naming all parties or persons described in Section 3.18 as additional insureds on a primary and non-contributory basis.

.2 **Worker's Compensation** in the Statutory amount together with Employer's Liability Insurance of $500,000 for each accident.

.3 **Comprehensive Automobile Liability Insurance** of $1,000,000, naming all parties or persons described in Section 3.18 as additional insureds on a primary and non-contributory basis.

.4 **Sexual Harassment** of not less than $1,000,000, naming all parties or persons described in Section 3.18 as additional insureds on a primary and non-contributory basis.

§ 11.2.2 Contractors Pollution Liability Insurance including limits of $1,000,000 each Incident/$2,000,000 aggregate and including full coverage for mold, legionella, asbestos, and lead. All parties or persons described in Section 3.18 are to be included as additional insureds on a primary and non-contributory basis.

§ 11.2.3 Builder's Risk Insurance Contractor shall provide for all risk of physical loss or damage to the property described hereunder in an amount equal to the Total Project Value and furnished under Construction Contracts for the School Facilities Project; excepting excavations, foundations and other structures customarily excluded by such insurance. The Policy shall name all parties or persons described in Section 3.18 as loss payee as their interests may appear on a primary and non-contributory basis. The Builders Risk Policy is to include coverage for the perils of Earthquake, Flood, Full Windstorm, Equipment Breakdown and Theft (excluding employee theft), contain an endorsement allowing permission to occupy and include coverage for both transit and offsite storage. The policy is also to include all Contractors, Subcontractors and Sub-subcontractors as well as all parties or persons described in Section 3.18 as additional insureds on a primary and non-contributory basis. The contractor and all subcontractors are responsible for all policy deductibles and uninsured or underinsured losses.

§ 11.3 Bonds, Performance and Payment

§ 11.3.1 Contractor shall furnish a performance bond and labor and material payment bond meeting all statutory requirements of the State of New Jersey in form and substance satisfactory to the Owner and without limitation complying with the following specific requirements:

.1 Except as otherwise required by statute, the form and substance of such bonds shall be satisfactory to the Owner in the Owner's sole judgment;

.2 The bonds shall be executed by a responsible surety licensed in the State of New Jersey Best's rating of no less than A-/X and shall remain in effect for a period of not less than two years following the date of final acceptance or the time required to resolve any items of incomplete or inadequate work and the payment of any disputed amounts, whichever time period is longer;

.3 The performance bond and the labor and material payment bond shall each be in an amount equal to the Contract Sum;

.4 The Contractor shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of his power of attorney indicating the monetary limit of such power;

.5 Any bond under this Paragraph 11.3.1 must display the surety's bond number. A rider including the following provisions shall be attached to each bond:

.a Surety hereby agrees that it consents to and waives notice of any addition, alteration, omission, change or other modification of the Contract Documents which singularly or in the aggregate equals or is less than 20% of the Contract Sum. Except as to increases in the Contract Sum in excess of the percentage set forth in this clause 11.3.1.5.a. Any other alterations, change, extension of time or other modification of the Contract Documents or a forbearance on the part of either the Owner or the Contractor to the other shall not release the surety of its obligations hereunder and notice to surety of such matter is hereby waived.

.b Surety further agrees that in the event of any default by the Owner in the performance of the Owner's obligations to the Contractor under the Contract, the Contractor or surety shall cause written notice of such default (specifying said default in writing) to be given to the Owner, and the Owner shall have 30 days after receipt of such notice within which to cure such default of such additional reasonable time as may be required if the nature of such default is such that it cannot be cured within 30 days. Such notice of default shall be sent by certified or registered U.S. mail, return receipt requested, first class postage prepaid to the Owner.

§ 11.4 Maintenance of Insurance

§ 11.4.1 If any of the foregoing insurance coverages are required to remain in force after final payment, including, but not limited to coverage for completed operations, an additional certificate evidencing continuation of such coverage shall be submitted to the Architect with the Final Application for Payment.

§ 11.4.2 In no event shall any failure of the Owner to receive certificates of policies required under paragraph 11.1 or to demand receipt of such certificates prior to the Contractor commencing Work be construed as a waiver of the Owner or the Architect of the Contractor's obligations to obtain insurance pursuant to this Article 11. The obligation to procure and maintain any insurance required by this Article 11 is a separate responsibility of the Contractor and independent of the duty to furnish a certificate of such insurance policies.

§ 11.4.3 If the Contractor fails to purchase and maintain or require to be purchased and maintained any insurance required under this Article 11, the Owner may, but shall not be obligated to, upon five days written notice to the Contractor, purchase such insurance on behalf of the Contractor and shall be entitled to deduct said cost from the Contractor's Contract Sum.

(Paragraphs deleted)

§ 11.4.4 When any required insurance due to the attainment of a normal expiration date or renewal date shall expire the Contractor shall supply the Owner with certificates of insurance and amendatory riders or endorsements that clearly evidence the continuation of all coverage in the same manner, limits of protection and scope as was provided by the previous policy. In the event any renewal or replacement policy for whatever reason obtained or required is written by a carrier other than that with whom the coverage was previously placed, or the subsequent policy differs in any way from the previous policy, the Contractor shall also furnish replacement policy unless the Owner provides the Contractor with prior written consent to submit only a certificate of insurance for any such policy. All renewal and or replacement policies shall be in form and substance satisfactory to the Owner and written by carriers acceptable to the Owner.

§ 11.4.5 The Contractor shall cause each subcontractor to (1) procure insurance in the amounts set for in Paragraph 11.2 and (2) name the indemnities under Paragraph 3.18 as additional insureds under the subcontractor's comprehensive general liability policy. The additional insured endorsement included on the subcontractor's comprehensive general liability policy shall state that coverage is afforded the additional insureds with respect to claims arising out of operations performed by or on behalf of the Contractor. If the additional insureds have other insurance, which is applicable to the claims, such other insurance shall be on an excess or contingent basis. The amount of the insurance liability under this insurance policy shall not be reduced by the existence of such other insurance.

§ 11.4.6 Property insurance provided by the Owner shall not cover any tools, apparatus, machinery, scaffolding, hoists, forms, staging, shoring, or other similar items commonly referred to as construction equipment which may be on the site and the capital value of which is not included in the work. The Contractor shall make its own arrangements for any insurance it might require on such construction requirement. Any such policy obtained by the Contractor under this Paragraph 11.4.6 shall include a waiver of subrogation.

§ 11.4.7 The Contractor may carry whatever additional insurance he/she deems necessary to protect him/herself against hazards not covered for theft, collapse, water damage, materials and equipment stored on the site, and for materials and equipment stored off site, and against loss of owned or rented capital equipment and tools owned by mechanics or any tools, equipment, scaffolding, staging, towers and forms owned or rented by the Contractor, the capital value of which is not included in the cost of the Work.

§ 11.4.8 All insurance coverage procured by the Contractor shall be provided by insurance companies having policy holder ratings no lower than "A-" and financial rating no lower than, "X" in the Best's Insurance guide, latest edition in effect as the date of the Contract and subsequently in effect at the time of the renewal of the policies required by the Contract Documents which coverage shall be maintained for no less than two (2) years following Substantial Completion.

§ 11.4.9 If the Owner or the Contractor is damaged by the failure of the other party to purchase or maintain insurance required under Article 11, then the party who failed to purchase or maintain the insurance shall bear all reasonable costs (including attorney's fees and court and settlement costs) properly attributable thereto.

§ 11.4.10 The Contractors must remove all "X, C & U" exclusions from their policies.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense. If prior to the date of Substantial Completion, the Contractor, a subcontractor or anyone for whom either is responsible, uses or damages any portion of the Work or existing conditions, including without limitation, mechanical, electrical, plumbing and other building systems, machinery, equipment or other mechanical device, the Contractor shall cause each such item to be restored to "like new condition" at no expense to the Owner.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within two (2) years after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the two-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

- **.1** The obligations under Paragraph 12.2 shall cover any repairs and replacement to any part of the Work or other property caused by the defective Work.
- **.2** Upon completion of any work under or pursuant to this Paragraph 12.2., the two-year correction period in connection with the work requiring correction shall be renewed and recommenced.

§ 12.2.2.2 The two-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The two-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the two-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work

§ 12.3.1 If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be affected whether or not final payment has been made This Subparagraph relates exclusively to the knowing acceptance of nonconforming work by the Owner. It has no applicability to work accepted by the Owner or Architect without the knowledge that such work fails to conform to the requirements of the Contract Documents.

§ 12.3.2 The Contractor and its Surety guaranty to make good, repair and/or correct, at no cost or expense to the Owner, any and all latent defects hereafter discovered, provided only that notice in writing, shall be given by the Owner to the Contractor within two years of the discovery of such defects.

.1 This obligation shall survive the termination of any or all other obligation or obligations under the contract Documents and it is agreed by the Contractor and its Surety that in the event the Owner is required to bring suit under this provision against the Contractor or its Surety to enforce this obligation, the contractor and its Surety hereby waive any defense of the status of limitations.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of New Jersey.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense The Contractor also agrees that the cost of testing services required for the convenience of the Contractor in his/her scheduling and performance of the Work and the cost of testing services related to remedial operations performed to correct deficiencies in the Work shall be borne by the Contractor.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.5 Interest

§ 13.5.1 The Contractor shall not be entitled to any payment of interest for any reason, action or inaction by the Architect or the Owner.

§ 13.5.2 Any payments withheld for time delays, faulty materials, or workmanship, shall not bear interest for period of delay or non-acceptance.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract in the manner provided in Subparagraph 14.1.2 if repeated suspensions, delays or interruptions by the Owner as described in Paragraph 14.3 constitute in the aggregate more than 100% of the total number of days scheduled for completion or 120 days in any 365-day period, whichever is less, or if all the Work is entirely stopped for a continuous period of 45 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

.1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;

.2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;

.3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents.

§ 14.1.2 If one of the above reasons exist, the Contractor may, upon fourteen (14) days written notice to the Owner and Architect, terminate the Contract, unless this reason is cured prior to the expiration of the notice, and recover from the Owner payment of work properly executed in accordance with the Contract Documents (the basis for such payment shall be as provided in the Contract) and for payment for cost directly related to work thereafter performed by Contractor in terminating such work including reasonable demobilization and cancellation charges provided said work is authorized in advance by Architect and Owner.

§ 14.1.3 The Owner shall not be responsible for damages for loss of anticipated profits on work not performed on account of any termination described in Subparagraph 14.1.1 and 14.1.2.

§ 14.1.4 If the Work is stopped for a period of 45 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

.1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials and/or equipment;

.2 fails to make prompt payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;

.3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority;

.4 disregards the instructions of Architect or Owner (when such instructions are based on the requirements of the Contract Documents);

.5 is adjudged bankrupt or insolvent, or makes a general assignment for the benefit of Contractor's creditors, or a trustee or a receiver is appointed for Contractor or for any of its property, or files a petition to take advantage of any debtor's act, or to recognize under bankruptcy or similar laws;

.6 breaches any warranty made by the Contractor under or pursuant to the Contact Documents;

.7 fails to furnish the Owner with assurances satisfactory to the Owner evidencing the Contractor's ability to complete the Work in compliance with the requirements of the Contract Documents;

.8 fails after the commencement of the Work to proceed continuously with the construction and completion of the work for more than 10 days except as permitted under the Contract Documents; or

.9 otherwise does not fully comply with the Contract Documents.

§ 14.2.2 When

(Paragraphs deleted)

the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.3 If the costs of finishing the Work, including compensation for the Architect's and any other Consultant's services and expenses made necessary thereby, and other costs and expenses identified hereinafter, exceed the unpaid balance of the Contract Sum, the Contractor and its Surety shall pay the difference to the Owner upon demand. The costs of finishing the Work include, without limitation, all reasonable attorney's fees, additional title costs, insurance, additional interest because of any delay in completing the Work, and all other direct and indirect consequential costs, including, without limitation, Liquidated Damages for untimely completion as specified in the Contract Documents, incurred by the Owner by reason of, or arising from, or relating to the termination of the Contractor as stated herein.

(Paragraph deleted)

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

.1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or

.2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause and request demobilization upon 10 days notice to Contractor. The Contractor will not be entitled to seek, any claim for increased costs, loss of profits, delay damages, or other similar consequential and direct damages incurred due to the District's Termination of the Project for Convenience.

§ 14.4.2 Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

.1 cease operations as directed by the Owner in the notice;

.2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and

.3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor shall be entitled to Owner payment for Work performed as of the date of termination in accordance with the contract Documents. The Contractor shall, as a condition of receiving the payments referred to herein, execute and deliver all such papers, turn over all plans, documents and files of whatsoever nature required by the Owner, and take all such steps, including the legal assignment of its contractual rights, as the Owner may require for the purpose of fully vesting in the Owner the rights and benefits of the Contractor. The Contractor warrants that it will enter into no subcontracts or other agreements that would adversely impact the Owner's rights or increase the Owner's obligations under this paragraph. In no event shall the Owner be liable to the Contractor for lost or anticipated profits or consequential damages, or for any amount in excess of the compensation due to the Contractor in accord with the Contract Documents for the Work performed as of the date of termination. The warranty and indemnity obligations of the Contractor and Surety shall survive and continue, notwithstanding any termination pursuant to this paragraph, with respect to the Work performed as of the date of termination.

§ 14.4.4 If Owner terminates the Contract for cause pursuant to Paragraph 14.2 and it is subsequently determined that the Owner was not authorized to terminate the Contract as provided in Paragraph 14.2, the Owner's termination shall be treated as a termination for convenience under this Paragraph 14.4 and the rights and obligations of the parties shall be the same as if the Owner has issued a notice of termination to the Contractor as provided in this Paragraph 14.4.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

§ 15.1.2.1 Issues involving the applicable statute of limitations shall be governed by New Jersey Law.

§ 15.1.2.2 No act or omission by the Owner or Architect, or by anyone acting on behalf of either shall be deemed or construed as a waiver or limitation of ant right or remedy under the Contract Documents, or as an admission, acceptance, or approval with respect to any breech in the Contract for Construction or failure to comply with the Contract Documents by the Contractor, unless the Owner expressly agrees in writing.

§ 15.1.2.3 The Owner's exercise or failure to exercise any rights, claims or remedies it may have arising out of or relating to the Contract Documents shall not release, prejudice, or discharge the Owner's other rights and remedies, nor shall it give rise to any right, claim, remedy or defense by any other person, including the Contractor, its Surety, any Subcontractor, or any other person or entity.

§ 15.1.2.4 Whenever possible, each provision of the Contract Documents shall be interpreted in a manner as to be effective and valid under applicable law. If, however, any provision of the Contract Documents or portion thereof is prohibited or found invalid by law, only such invalid provision or portion thereof shall be ineffective and shall not invalidate or affect the remaining provision of the Contract Documents or valid portions of such provision, which shall be deemed severable. Further, if any provision of this Contract is deemed inconsistent with applicable law, applicable law shall control.

§ 15.1.2.5 Contractor shall promptly pay to Owner all costs and reasonable attorney's fees incurred in connection with any action or proceeding in which Owner prevails, based on a breach of the Contract or other dispute arising out of or in connection with the Contract.

§ 15.1.2.6 In the event of the appointment of a trustee and/or receiver or any similar occurrence affecting the management of the account of the Contractor pertaining to the Work, it shall be the obligation of the Contractor, its

representatives, receivers, sureties, or successors in interest to continue the progress of the Work without delay and specifically to make timely payment to Subcontractors and Suppliers of all amounts that are lawfully due them and to provide the Owner and all Subcontractors and Suppliers whose work may be affected with timely notice of the status of receivership, bankruptcy, etc., and the status of their individual accounts.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within five days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.3.3 Injury or Damage to Person or Property. If either party to the Contract suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding five days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given to the Owner and Architect before proceeding to execute the Work and within five days after the occurrence of the event giving rise to such Claim for increase in the Construct Sum. The foregoing written notice shall contain a written statement from the Contractor setting forth in detail the nature and cause of the Claim and an itemized statement of the increase requested. No such written notice shall form the basis of an increase to the Contract Sum unless and until such increase has been authorized by a written Change Order executed and issued according to the terms and conditions set forth herein. The Contractor hereby acknowledges that the Contractor shall not have any right to, and the Owner will not consider any requests for an increase in the Contract Sum that is not submitted in compliance with the foregoing requirements. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided herein shall be given. Said notice shall itemize all claims and shall contain sufficient detail and substantiating data to permit evaluation of same by the Owner and Architect. No such claim shall be valid unless so made. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary. Any change in the Contract Sum resulting from such claim shall be authorized only by Change Order or Construction Change Directive, as the case may be. All required notices for additional costs shall be made in writing.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction.

(Paragraphs deleted)

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.5.1 All claims and disputes and other matters in question between the Contractor and the Owner arising out of or relating to the Contract Documents or a breach thereof with regard to the Initial Decision Maker 's decision, shall be decided through suit in New Jersey Superior Court and Contractor consents to the jurisdiction of the New Jersey Superior Court. The Contractor shall carry on all work and maintain its progress during such suit and the Owner shall continue to make payments not related to the dispute of the Contractor in accordance with Contract Documents.

§ 15.2.6 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

(Paragraph deleted)

§ 15.2.7 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

(Paragraphs deleted)

ARTICLE 16 NEW JERSEY REQUIREMENTS FOR PUBLIC WORK

(Paragraph deleted)

§ 16.1 Overtime

The Contractor or any subcontractor shall not employ any mechanic, worker or laborer engaged in the performance of the Work more than 8 hours in any one day in accordance with and subject to the exceptions named in Revised Statutes of New Jersey, Title 34, Chapter 10 and any and all revised statutes thereof.

(Paragraph deleted)

§ 16.2 Prevailing Wage

(Paragraph deleted)

§ 16.2.1 Pursuant to Revised Statutes of New Jersey, Title 34, Chapter 11, Article 28 as amended, wages for all laborers, workers and mechanics employed by the Contractor or any Subcontractor for the Work shall not be less than the prevailing wages for work of a similar nature in the vicinity of the Project Site as fixed by the Commissioner of Labor and Industry and made a part of Division 01 - Conditions of the Contract. Contractors are referred to Section 010001-PREVAILING WAGE RATES for wage determination.

(Paragraph deleted)

§ 16.2.2 The Contractor and Subcontractors shall do the following:

.1 Pay to all workers engaged in the performance of services directly upon the Work, the prevailing rate of wages specified in the Contract.

.2 Keep an accurate record showing the name, craft or trade and actual hourly rate of wages paid to each worker employed by him in connection with the Work. Records shall be preserved two years from the date of payment.

.3 Post the prevailing wage rates for each craft and classification involved, as determined by the Commissioner of Labor and Industry, including the effective date of any changes thereof, in prominent and easily accessible places at the site of the Work and at such place or places as are used by the employer to pay workers their wages.

.4 Before final payment, file written statements certifying to the amounts then due and owing to any and all workers for wages due on account of the Work. The statements shall set forth the names of the persons whose wages are unpaid and the amount due to each. The statement shall be verified by the oath of the Contractor or Subcontractor, as the case may be.

§ 16.3 Business Registration of Public Contractors

(Paragraph deleted)

§ 16.3.1 Pursuant to P.L. 2004, c.57, bidders shall include proof of its own business registration and proofs of business registration of those subcontractors required to be listed in the bidder's submission (i.e., "named subcontractors.") The proof of business registration shall be provided at the time the bid or proposal is officially received and opened by the contracting agency. If there are no subcontractors on a job, the Contractor must certify to that effect.

(Paragraphs deleted)

§ 16.3.2 After award of the contract, the Contractor shall obtain proof of business registration of subcontractors and suppliers through all tiers of a contract, when the value of the goods or services to be provided by the subcontractor or supplier exceeds 15% of the contracting agency's bid threshold.

(Paragraph deleted)

§ 16.3.3 The Contractor shall provide written notice to its subcontractors and suppliers of the responsibility to submit proof of business registration to the Contractor. The requirement of proof of business registration extends down through all levels (tiers) of the project.

§ 16.3.4 Before final payment on the Contract is made by the contracting agency, the Contractor shall submit an accurate list and the proof of business registration of each subcontractor or supplier used in the fulfillment of the Contract or shall attest that no subcontractors were used.

§ 16.3.5 A contractor or a contractor with a subcontractor that has entered into a contract with a contracting agency, and each of their affiliates, shall collect and remit to the Director of the Division of Taxation in the Department of the Treasury the use tax due pursuant to the "Sales and Use Tax Act," P.L.1966, c.30 (C.54:32B-1 et seq.) on all their sales of tangible personal property delivered into this State.

§ 16.3.6 A business organization that fails to provide a copy of a business registration as required pursuant to Section 1 of P.L.2001, c.134 (C.52:32-44 et al.) or subsection e. or f. of Section 92 of P.L.1977, c.110 (C.5:12-92), or that provides false business registration information under the requirements of either of those sections, shall be liable for a penalty of $25 for each day of violation, not to exceed $50,000 for each business registration copy not properly provided under a contract with a contracting agency."

§ 16.4 Workers and Community Right to Know Act

§ 16.4.1 Contractors shall be required to submit copies of all Material Safety Data Sheets to the Owner and shall cooperate in the posting of all required notifications relative to the use of hazardous substances on Owner's property. Contractor shall comply with New Jersey Law regarding the use or storage of hazardous substances in Schools and as follows:

§ 16.4.2 New Jersey Administrative Code 8:59 - 6.5

.1 Subcontractors:

.a When a public or private subcontractor produces, uses or stores hazardous substances at a public employer's facility in such a way that the employees of the public employer are or may be exposed to the hazardous substances, the public employer shall find out the identity of the hazardous substances and provide health hazard and protective procedure information about the substances to exposed and potentially exposed employees during the annual education and training program or upon request of an employee or employee representative, whichever occurs sooner.

.b If not part of the annual training program, such information may be provided to exposed and potentially exposed employees in writing. The public employer shall provide exposed and potentially exposed employees with appropriate hazardous substance fact sheets or Material Safety Data Sheets, if requested.

.c Contractor shall retain a copy of the Material Safety Data Sheet and Hazardous Substance Fact Sheets on the job site.

§ 16.5 Meghan's Law

During the performance of this contract, neither the Contractor nor any Subcontractor, where applicable, shall knowingly allow any employee registered pursuant to N.J.S.A. 2C:7-1, et seq. "Meghan's Law", as a Tier 3 offender (sex offenders determined to pose a relatively high risk of re-offense") or a Tier 2 offender (sex offenders determined to pose a moderate risk of re-offense), upon the Owner's property or the Project site.

SECTION 010002 - PREVAILING WAGE RATES

NEW JERSEY DEPARTMENT OF LABOR & WORKFORCE DEVELOPMENT PREVAILING WAGE RATES:

The Prevailing Wage Rate Determination by the New Jersey Department of Labor and Workforce Development pursuant to Chapter 150 of the New Jersey Laws of 1963.

Website:

https://www.nj.gov/labor/wagehour/wagehour_index.html

Wage & Hour - General Information

Tel. (609) 292-2305

Tel. (609) 292-2337

Fax (609) 695-1174

Public Contracts – For information about prevailing wage rates on public works projects:

Tel. (609) 292-2259

Fax (609) 695-1174

Contractor Registration – For information about registering with the Department of Labor and Workforce Development in order to bid on or engage in the performance of any public works project:

Tel. (609) 292-9464

Fax (609) 633-8591

The Prevailing Wage Rates in the locality is for each craft or trade or classification of all workers needed to perform the contract during the anticipated term thereof are hereby made a part of each Contract to be performed under this Project Manual.

It is the responsibility of the Contractor and each Subcontractor to use the current Prevailing Wage Rates when bidding this Project and, if awarded the Contract, to pay their employees the minimum amounts mandated by such Prevailing Wage Rate Determination and to submit all certified payroll records to the Owner in accordance with the regulations.

In the event it is found that any worker employed by the contractor, or any subcontractor covered by said contract, has been paid a rate of wages less than the prevailing wages required to be paid by such contract, the public body, the lessee to whom the public body is leasing a property or premises or the lessor from whom the public body is leasing or will be leasing a property or premises may terminate the contractor's or subcontractor's right to proceed with the work, or such part of the work as to which there has been a failure to pay required wages and to prosecute the work to completion or otherwise.

END OF SECTION 010002

SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Work under separate contracts.
4. Asbestos abatement.
5. Lead Based Paint.
6. Access to site.
7. Coordination with occupants.
8. Work restrictions.
9. Specification and Drawing conventions.
10. Miscellaneous provisions.

B. Related Requirements:

1. Section 000100 “Advertisement” for project information and work covered by the contract documents.
2. Section 015000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

C. All specification divisions and drawings listed are part of the Contract Documents. It is ultimately the responsibility of the Contractor and their subcontractors to review all the Contract Documents and all field conditions to determine the full extent of work for this project.

D. The Contractor shall provide all labor, materials, equipment and services for the complete and proper installation and operation of the work as indicated, required or implied by the Contract Documents.

E. The submission of a proposal by the Contractor will be considered an indication that a thorough review of the conditions, materials, and the Contract Documents have been made by the Contractor and their subcontractors, and the results of such investigations have been included in their proposal and accepted.

1.3 PROJECT INFORMATION

A. Projects Identification: Building Entrances Security Enhancement.

1. School #4 Project Location: 900 Gibbsboro Road, Lindenwold, New Jersey 08021.

2. School #5 Project Location: 550 Chews Landing Road, Lindenwold, New Jersey 08021.

3. Lindenwold Middle School Project Location: 40 White Horse Avenue, Lindenwold, New Jersey 08021.

4. Lindenwold High School Project Location: 801 Egg Harbor Road, Lindenwold. New Jersey 08021.

B. Owner: Lindenwold Board of Education.

1. Owner's Representative: Kathleen Huder, Business Administrator.

C. Architect: Regan Young England Butera, P.C.

D. Architect's MEP Consultants: Kelter & Gilligo, P.C.

E. Other Owner Consultants: Owner has retained the following design professionals who have prepared designated portions of the Contract Documents:

1. Asbestos Abatement: Horizon Environmental Group, Inc., has prepared the Asbestos Abatement portions of the Contract Documents.

1.4 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents and consists of the following:

1. Entrance Vestibules and other Work indicated in the Contract Documents.

B. Type of Contract:

1. Project will be constructed under a single prime contract.

2. Projects will be bid a separate packages along with an overall combined bid for all four schools together.

1.5 WORK UNDER SEPARATE CONTRACTS

A. General: Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying Work under this Contract or other contracts. Coordinate the Work of this Contract with work performed under separate contracts.

B. Concurrent Work: Owner or their subcontractor will perform the following construction operations at Project site. Those operations will be conducted simultaneously with Work under this Contract.

1. Data wiring/CCTV/card access, videophones for the security enhancements in support of the new Entrance Vestibule.

C. Subsequent Work: Owner will perform the following additional work at site after Substantial Completion. Completion of that work will depend on successful completion of preparatory Work under this Contract.

1. Data wiring/CCTV/card access, videophones for the security enhancements in support of the new Entrance Vestibule.

1.6 ASBESTOS ABATEMENT

A. Asbestos Abatement: Contractor shall conduct an asbestos abatement in accordance with a report prepared by Lindenwold BoE's environmental consultant, Horizon Environmental Inc. entitled, "Asbestos Abatement Work Plan (February 2021). This report is included in the Appendix and is a requirement for work conducted under this Contract.

1. Lindenwold Middle School: Parquet flooring & mastic.

2. Lindenwold School #4: Inner and exterior main entrance doors sealant and carpeting, asbestos floor tiles and mastic.

3. Lindenwold School #5: Carpeting, asbestos floor tiles and mastic.

1.7 LEAD BASED PAINT

A. Lead Based Paint: Contractors are to be certified under the USEPA's "Lead Renovation, Repair and Painting (RRP) rule (40 CFR 745) for work on buildings constructed prior to 1978. This Rule applies to Lindenwold School #4, School #5 and the Lindenwold Middle School.

1.8 ACCESS TO SITE

A. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.

B. Use of Site: Limit use of Project site to Work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.

1. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or for storage of materials.

a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.

D. Condition of Existing Grounds: Maintain portions of existing grounds, landscaping, and hardscaping affected by construction operations throughout construction period. Repair damage caused by construction operations.

1.9 COORDINATION WITH OCCUPANTS

A. Partial Owner Occupancy: Owner will occupy the premises during entire construction period, with the exception of areas under construction. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations. Maintain existing exits unless otherwise indicated.

1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and authorities having jurisdiction.
2. Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations.

1.10 WORK RESTRICTIONS

A. Work Restrictions, General: Comply with restrictions on construction operations.

1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.

B. On-Site Work Hours: Limit work in the existing building to normal business working hours of 7:00 a.m. to 3:30 p.m., Monday through Friday, unless otherwise indicated.

1. Weekend Hours: 72 hours notice and Owner approval.
2. Hours for Utility Shutdowns: After normal work hours, weekends, or holidays and as approved by Owner.

C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:

1. Notify Architect not less than two days in advance of proposed utility interruptions.
2. Obtain Architect's written permission before proceeding with utility interruptions.

D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.

1. Notify Architect not less than two days in advance of proposed disruptive operations.
2. Obtain Owner's written permission before proceeding with disruptive operations.

E. Nonsmoking Building: Smoking is not permitted on the Owner’s property.

F. Restricted Substances: Use of tobacco products and other controlled substances is not permitted.

G. Employee Identification: Provide identification tags for Contractor personnel working on Project site. Require personnel to use identification tags at all times.

H. Contractor employees shall also be required to have company shirts and photographic identification clearly displayed at all times that indicates the employees name, current photograph and company of employment. Anyone on site without proper credentials visibly displayed at all times shall be asked to leave the project site.

I. Employee Screening: Comply with Owner's requirements for drug and background screening of Contractor personnel working on Project site.

1. Maintain list of approved screened personnel with Owner's representative.

1.11 SPECIFICATION AND DRAWING CONVENTIONS

A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.

B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:

1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
2. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

1.12 MISCELLANEOUS PROVISIONS

A. The Contractor shall not perform any work or provide any services materials or supplies until an executed Notice to Proceed and an approved Purchase Order has been received from the Owner.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 012100 - ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements governing allowances.

B. Types of allowances include the following:

1. Contingency allowances.

C. Related Requirements:

1. Section 014000 "Quality Requirements" for procedures governing the use of allowances for field testing by an independent testing agency.

1.3 DEFINITIONS

A. Allowance is a quantity of work or dollar amount established in lieu of additional requirements, used to defer selection of actual materials and equipment to a later date when direction will be provided to Contractor. If necessary, additional requirements will be issued by Change Order.

1.4 SELECTION AND PURCHASE

A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection, or purchase and delivery, of each product or system described by an allowance must be completed by the Owner to avoid delaying the Work.

B. At Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.

C. Purchase products and systems selected by Architect from the designated supplier.

1.5 ACTION SUBMITTALS

A. Submit proposals for purchase of products or systems included in allowances on forms in Section 012610 “Prime Contractor Change Order Request Summary” and Section 012620 “Subcontractor Request Summary.”

1.6 INFORMATIONAL SUBMITTALS

A. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

B. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.

C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.7 CONTINGENCY ALLOWANCES

A. Use the contingency allowance only as directed by Architect for Owner's purposes and only by Change Orders that indicate amounts to be charged to the allowance.

B. Contractor's overhead, profit, and related costs for products and equipment ordered by Owner under the contingency allowance are included in the allowance and are not part of the Contract Sum. These costs include delivery, installation, insurance, equipment rental, and similar costs.

C. Change Orders authorizing use of funds from the contingency allowance will include Contractor's related costs and reasonable overhead and profit.

D. At Project closeout, credit unused amounts remaining in the contingency allowance to Owner by Change Order.

1.8 ADJUSTMENT OF ALLOWANCES

A. Allowance Adjustment: To adjust allowance amounts, prepare a Change Order proposal based on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place where applicable. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.

1. Include installation costs in purchase amount only where indicated as part of the allowance.
2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other markups.
3. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.

B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the purchase order amount or Contractor's handling, labor, installation, overhead, and profit.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

A. Refer to Section 002000 – Form of Bid, for Schedule of Allowances.

END OF SECTION 012100

SECTION 012300 - ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for alternates.

1.3 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 the 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 alternates into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

A. Coordination: Revise 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. Execute accepted alternates under the same conditions as other work of the Contract.

C. Schedule: A schedule of alternates is included at the end of this Section. Specification Sections referenced in schedule 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

A. Refer to Section 002000 – Form of Bid, for Schedule of Alternates.

END OF SECTION 012300

SECTION 012500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

B. Related Requirements:

1. Section 012100 "Allowances" for products selected under an allowance.
2. Section 016000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

1.3 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

1.4 ACTION SUBMITTALS

A. Substitution Requests: Submit three copies of each request for consideration. Submit one pdf copy of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Substitution Request Form: Use Section 012501 – Substitution Request form provided in Project Manual.
2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

a. Statement indicating why specified product or fabrication or installation method cannot be provided, if applicable.

b. Coordination of information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
c. Detailed comparison of significant qualities of proposed substitutions with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes, such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
e. Samples, where applicable or requested.
f. Certificates and qualification data, where applicable or requested.
g. List of similar installations for completed projects, with project names and addresses as well as names and addresses of architects and owners.
h. Material test reports from a qualified testing agency, indicating and interpreting test results for compliance with requirements indicated.
i. Research reports evidencing compliance with building code in effect for Project, from current edition of the New Jersey Uniform Construction Code.
j. Detailed comparison of Contractor's construction schedule using proposed substitutions with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
k. Cost information, including a proposal of change, if any, in the Contract Sum.
l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents, except as indicated in substitution request, is compatible with related materials and is appropriate for applications indicated.
m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.6 PROCEDURES

A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

1.7 SUBSTITUTIONS

A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.

1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

    a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
    b. Substitution request is fully documented and properly submitted.
    c. Requested substitution will not adversely affect Contractor's construction schedule.
    d. Requested substitution has received necessary approvals of authorities having jurisdiction.
    e. Requested substitution is compatible with other portions of the Work.
    f. Requested substitution has been coordinated with other portions of the Work.
    g. Requested substitution provides specified warranty.
    h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B. Substitutions for Convenience: Not allowed unless otherwise indicated.

C. Substitutions for Convenience: Architect will consider requests for substitution if received within 10 days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of Architect.

1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
b. Requested substitution does not require extensive revisions to the Contract Documents.
c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
d. Substitution request is fully documented and properly submitted.
e. Requested substitution will not adversely affect Contractor's construction schedule.
f. Requested substitution has received necessary approvals of authorities having jurisdiction.
g. Requested substitution is compatible with other portions of the Work.
h. Requested substitution has been coordinated with other portions of the Work.
i. Requested substitution provides specified warranty.
j. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

SECTION 012501 – SUBSTITUTION REQUEST

Project: _____ Substitution Request Number: _____

_____ From: _____

To: _____ Date: _____

_____ A/E Project Number: _____

Re: _____ Contract For: _____

Specification Title: _____ Description: _____

Section: _____ Page: _____ Article/Paragraph: _____

Proposed Substitution: _____

Manufacturer: _____ Address: _____ Phone: _____

Trade Name: _____ Model No.: _____

Installer: _____ Address: _____ Phone: _____

History: ☐ New product ☐ 2-5 years old ☐ 5-10 yrs old ☐ More than 10 years old

Differences between proposed substitution and specified product: _____

_____

_____

☐ Point-by-point comparative data attached - REQUIRED BY A/E

Reason for not providing specified item: _____

_____

Similar Installation:

Project: _____ Architect: _____

Address: _____ Owner: _____

_____ Date Installed: _____

Proposed substitution affects other parts of Work: ☐ No ☐ Yes; explain _____

_____

Savings to Owner for accepting substitution: _____ ($ _____).

Proposed substitution changes Contract Time: ☐ No ☐ Yes [Add] [Deduct] _____ days.

Supporting Data Attached: ☐ Drawings ☐ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ _____

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution is compliant with the building code in effect for Project.
- Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: _____

Signed by: _____

Firm: _____

Address: _____

_____

Telephone: _____

Attachments: _____

_____

_____

_____

A/E's REVIEW AND ACTION

☐ Substitution approved - Make submittals in accordance with Specification Section 013300.
☐ Substitution approved as noted - Make submittals in accordance with Specification Section 013300.
☐ Substitution rejected - Use specified materials.
☐ Substitution Request received too late - Use specified materials.

Signed by: Date:

Additional Comments: ☐ Contractor ☐ Subcontractor ☐ Supplier ☐ Manufacturer ☐ A/E ☐ _____

_____

_____

_____

_____

_____

_____

_____

SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for handling and processing Contract modifications.

B. Related Requirements:

1. Section 012500 "Substitution Procedures" for administrative procedures for handling requests for substitutions made after the Contract award.

1.3 MINOR CHANGES IN THE WORK

A. Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710.

1.4 PROPOSAL REQUESTS

A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.

1. Work Change Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
2. Within time specified in Proposal Request or 10 days, when not otherwise specified, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.

    a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
    b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
    c. Include costs of labor and supervision directly attributable to the change.
    d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and

finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

e. Quotation Form: Use Section 012610 “Prime Contractor Change Order Request Summary” and Section 012620 “Subcontractor Change Order Request Summary.” These documents will be provided by the Architect, in digital format to the Contractor.

B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect.

1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include costs of labor and supervision directly attributable to the change.
5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
6. Comply with requirements in Section 012500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
7. Proposal Request Form: Use Section 012610 “Prime Contractor Change Order Request Summary” and Section 012620 “Subcontractor Change Order Request Summary.” These documents will be provided by the Architect, in digital format to the Contractor.

1.5 ADMINISTRATIVE CHANGE ORDERS

A. Allowance Adjustment: See Section 012100 "Allowances" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect actual costs of allowances.

1.6 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Work Change Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on AIA Document G701 or similar.

1.7 CONSTRUCTION CHANGE DIRECTIVE

A. Construction Change Directive: Architect may issue a Construction Change Directive on AIA Document G714 or similar. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.

1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

SECTION 012610 - PRIME CONTRACTOR CHANGE ORDER REQUEST SUMMARY

PRIME CONTRACTOR: _____ C.O.R. NO.: _____

NUMBER OF DAYS REQUESTED FOR CONTRACT EXTENTION: _____ DATE: _____

DESCRIPTION OF CHANGE: _____

PRIME CONTRACTOR DIRECT COSTS

ADDITIONS

A	Material & Equipment		
B	Labor		
C	Subtotal of Additive Cost		$0.00

DEDUCTIONS *(use minus sign for all deduct figures)*

D	Material & Equipment		
E	Labor		
F	Subtotal of Deductive Cost		$0.00
G	Contractor's Total Direct Cost (C+F)		$0.00
H	Prime Contractor's Mark-up		$0.00

Line "H" mark-up is calculated in accordance with Article 7 of the General Conditions of the Contract for Construction. Mark-up percentages applied to the line "G" subtotal are as follows: Not to exceed 15% on first $50,000, 10% on balance beyond $50,000, 6% for credits.

I	**Total Prime Contractor Direct Costs + Mark-up** (Line G + H)	$0.00
J	Total Subcontractor Direct Costs	

(Note: If there are two or more subcontractors for this change item, then use a separate form for each subcontractor.)
Sum of Lines "I" and "L" from Subcontractor Change Order Request Summary 012620

K	Subcontractor Mark-up	

Sum of Lines "J","M","N" and "O" from Subcontractor Change Order Request Summary 012620

L	General Contractor's Mark-up on Subcontractor Direct Costs	$0.00

Line "L" mark-up is calculated in accordance with Article 7 of the General Conditions of the Contract for Construction. Mark-up percentages applied to the line "J" subtotal are as follows: Not to exceed 5% on first $50,000, 3% on balance beyond $50,000, 4% for credits.

M	**Total Prime Contractor Change Request** (Line I + J + K + L)	**$0.00**

Note: Include detailed breakdown of material, labor and equipment cost for each trade using Sections 012611 and 012621. Refer to AIA Document A201 General Conditions of the Contract for Construction, Article 7.

To the best of my knowledge and belief, I certify that all costs listed above are correct.

_____ _____

Contractor Name *Date*

_____

Contractor Signature

SECTION 012610.1 - PRIME CONTRACTOR CHANGE ORDER REQUEST WORKSHEET

PRIME CONTRACTOR: _____ C.O.R. NO.: _____

DATE: _____

Complete and attached this Worksheet to Section 012610 - Prime Contractor Change Order Request Summary.

PRIME CONTRACTOR DIRECT COSTS

ADDITIONS

	DESCRIPTION	MATERIAL & EQUIPMENT			LABOR			TOTAL
		QTY	COST	SUBTOTAL	HRS	RATE/HR	SUBTOTAL	
1				$0.00			$0.00	$0.00
2				$0.00			$0.00	$0.00
3				$0.00			$0.00	$0.00
4				$0.00			$0.00	$0.00
5				$0.00			$0.00	$0.00
6				$0.00			$0.00	$0.00
7				$0.00			$0.00	$0.00
8				$0.00			$0.00	$0.00
9				$0.00			$0.00	$0.00
10				$0.00			$0.00	$0.00
	ADDITIONS TOTAL			$0.00			$0.00	$0.00

DEDUCTIONS

	DESCRIPTION (Use minus sign for all deduct dollar figures)	MATERIAL & EQUIPMENT			LABOR			TOTAL
		QTY	COST (-)	SUBTOTAL	HRS	RATE/HR (-)	SUBTOTAL	
1				$0.00			$0.00	$0.00
2				$0.00			$0.00	$0.00
3				$0.00			$0.00	$0.00
4				$0.00			$0.00	$0.00
5				$0.00			$0.00	$0.00
6				$0.00			$0.00	$0.00
7				$0.00			$0.00	$0.00
8				$0.00			$0.00	$0.00
9				$0.00			$0.00	$0.00
10				$0.00			$0.00	$0.00
	DEDUCTIONS TOTAL			$0.00			$0.00	$0.00

GRAND TOTAL (Additions & Deductions)	**$0.00**

SECTION 012620 - SUBCONTRACTOR CHANGE ORDER REQUEST SUMMARY

SUBCONTRACTOR: _____ C.O.R. NO.: _____

NUMBER OF DAYS REQUESTED FOR CONTRACT EXTENTION: _____ DATE: _____

DESCRIPTION OF CHANGE: _____

SUBCONTRACTOR DIRECT COSTS

ADDITIONS

A	Material & Equipment		
B	Labor		
C	Subtotal of Additive Cost		$0.00

DEDUCTIONS *(use minus sign for all deduct figures)*

D	Material & Equipment		
E	Labor		
F	Subtotal of Deductive Cost		$0.00
G	Subcontractor's Total Direct Cost (C+F)		$0.00
H	Subontractor's Mark-up		$0.00

Line "H" mark-up is calculated in accordance with Article 7 of the General Conditions of the Contract for Construction. Mark-up percentages applied to the line "G" subtotal are as follows: Not to exceed 15% on first $50,000, 10% on balance beyond $50,000, 6% for credits.

I	**Total Subontractor Direct Costs + Mark-up** (Line G + H)	$0.00
J	Total of all Sub-subcontractor Direct Costs	
K	Sub-subcontractor Mark-up	$0.00

Line "K" mark-up is calculated in accordance with Article 7 of the General Conditions of the Contract for Construction. Mark-up percentages applied to the line "J" subtotal are as follows: Not to exceed 15% on first $50,000, 10% on balance beyond $50,000, 6% for credits.

L	Subcontractor's Mark-up on Sub-subcontractor Direct Costs	$0.00

Line "L" mark-up is calculated in accordance with Article 7 of the General Conditions of the Contract for Construction. Mark-up percentages applied to the line "J" subtotal are as follows: Not to exceed 5% on first $50,000, 3% on balance beyond $50,000, 4% for credits.

M	**Total Subcontractor Change Request** (Line I + J + K + L)	**$0.00**

Note: Include detailed breakdown of material, labor and equipment cost for each trade using Section 012621. Refer to AIA Document A201 General Conditions of the Contract for Construction, Article 7.

To the best of my knowledge and belief, I certify that all costs listed above are correct.

Contractor Name _____ *Date* _____

Contractor Signature _____

SECTION 012620.1 - SUBCONTRACTOR CHANGE ORDER REQUEST WORKSHEET

SUBCONTRACTOR: _____ C.O.R. NO.: _____

DATE: _____

Complete and attached this Worksheet to Section 012620 - Subcontractor Change Order Request Summary.

SUBCONTRACTOR DIRECT COSTS

ADDITIONS

	DESCRIPTION	MATERIAL & EQUIPMENT			LABOR			TOTAL
		QTY	COST	SUBTOTAL	HRS	RATE/HR	SUBTOTAL	
1				$0.00			$0.00	$0.00
2				$0.00			$0.00	$0.00
3				$0.00			$0.00	$0.00
4				$0.00			$0.00	$0.00
5				$0.00			$0.00	$0.00
6				$0.00			$0.00	$0.00
7				$0.00			$0.00	$0.00
8				$0.00			$0.00	$0.00
9				$0.00			$0.00	$0.00
10				$0.00			$0.00	$0.00
	ADDITIONS TOTAL			$0.00			$0.00	$0.00

DEDUCTIONS

	DESCRIPTION (Use minus sign for all deduct dollar figures)	MATERIAL & EQUIPMENT			LABOR			TOTAL
		QTY	COST (-)	SUBTOTAL	HRS	RATE/HR (-)	SUBTOTAL	
1				$0.00			$0.00	$0.00
2				$0.00			$0.00	$0.00
3				$0.00			$0.00	$0.00
4				$0.00			$0.00	$0.00
5				$0.00			$0.00	$0.00
6				$0.00			$0.00	$0.00
7				$0.00			$0.00	$0.00
8				$0.00			$0.00	$0.00
9				$0.00			$0.00	$0.00
10				$0.00			$0.00	$0.00
	DEDUCTIONS TOTAL			$0.00			$0.00	$0.00

GRAND TOTAL (Additions & Deductions)	**$0.00**

SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.

B. Related Requirements:

1. Section 012100 "Allowances" for procedural requirements governing the handling and processing of allowances.
2. Section 012600 "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
3. Section 012910 “Payroll Verification Affidavit” to be completed and attached to each application for payment.
4. Section 012911 “Partial Release of Liens” to be completed and attached to each application for payment.
5. Section 013200 "Construction Progress Documentation" for administrative requirements governing the preparation and submittal of the Contractor's construction schedule.

1.3 DEFINITIONS

A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.

1. Coordinate line items in the schedule of values with items required to be indicated as separate activities in Contractor's construction schedule.
2. Submit the schedule of values to Architect at earliest possible date, but no later than seven days before the date scheduled for submittal of initial Applications for Payment.

B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.

1. Identification: Include the following Project identification on the schedule of values:

a. Project name and location.
b. Name of Architect.
c. Architect's Project number.
d. Contractor's name and address.
e. Date of submittal.

2. Arrange schedule of values consistent with format of AIA Document G703.
3. Arrange the schedule of values in tabular form, with separate columns to indicate the following for each item listed:

a. Related Specification Section or Division.
b. Description of the Work.
c. Name of subcontractor.
d. Name of manufacturer or fabricator.
e. Name of supplier.
f. Change Orders (numbers) that affect value.
g. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent. Round dollar amounts to whole dollars, with total equal to Contract Sum.

1) Labor.
2) Materials.
3) Equipment.

4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Provide multiple line items for principal subcontract amounts in excess of two percent of the Contract Sum.
5. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.

a. Differentiate between items stored on-site and items stored off-site.

6. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.

1.5 APPLICATIONS FOR PAYMENT

A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.

B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.

1. Submit draft copy of Application for Payment seven days prior to due date for review by Architect.

C. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.

D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.

1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.

E. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.

1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment for stored materials.
2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
3. Provide summary documentation for stored materials indicating the following:

    a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
    b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
    c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.

F. Transmittal: Submit three signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

G. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.

1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
2. When an application shows completion of an item, submit conditional final or full waivers.
3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
4. Waiver Forms: Use Section 012911 – "Partial Release of Liens" of the Project Manual.
5. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.

H. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:

1. List of subcontractors.
2. Schedule of values.
3. Contractor's construction schedule (preliminary if not final).
4. Combined Contractor's construction schedule (preliminary if not final) incorporating Work of multiple contracts, with indication of acceptance of schedule by each Contractor.
5. Products list (preliminary if not final).
6. Schedule of unit prices.
7. Submittal schedule (preliminary if not final).
8. List of Contractor's staff assignments.
9. List of Contractor's principal consultants.
10. Copies of building permits.
11. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
12. Initial progress report.
13. Report of preconstruction conference.
14. Certificates of insurance and insurance policies.
15. Performance and payment bonds.
16. Data needed to acquire Owner's insurance.
17. Copies of Initial Project Workforce Report.
18. Copies of Monthly Workforce Tracking.

I. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.

1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

J. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of Project closeout requirements.
2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
3. Updated final statement, accounting for final changes to the Contract Sum.
4. AIA Document G706.
5. AIA Document G706A.
6. AIA Document G707.
7. Evidence that claims have been settled.
8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
9. Final liquidated damages settlement statement.
10. Letter on Contractor's letterhead stating that all Workforce Tracking forms and Weekly Certified Payroll Records have been submitted to the proper recipients.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

SECTION 012910 - PAYROLL VERIFICATION AFFIDAVIT

State of New Jersey

County of _____

_____ being duly sworn, on its oath deposes and says:

I swear that the payroll on the Project indicated below,

under contract with _____ (Owner) and for the payroll period indicated, was fully paid and that nothing is due and owing to any worker thereunder, and that the wages paid were, in no case, less than the applicable wage rates contained in the wage determination decision of the Secretary of Labor of New Jersey, and that the job classification for each worker conformed to the actual work he/she performed.

In addition, I have submitted to the Owner for their files one copy of all weekly-certified payroll records for this pay period.

The above statement applies in full to all of the sub-contractors under this contract.

Project Name & Location: _____

_____

Pay Period: _____

Contract No._____-_____(Name)

Contractor _____

BY:_____

TITLE:_____

Subscribed and sworn to before me this

_____day of_____, 20_____.

State of _____

Notary Public:_____

My commission expires _____, 20_____.

END OF SECTION 012910

SECTION 012911 - PARTIAL RELEASE OF LIENS

STATE OF NEW JERSEY

I,_____of_____(Municipality)

in the County of _____ and the State of

_____ of full age, being duly sworn according to law on my oath depose and say:

I am _____(Title)

of the firm of _____

(strike two of the three options below, which do not apply)

1.(Prime Contractor_____)

2.(Subcontractor to _____)

3.(Material supplier to _____)

in connection with construction of the _____

_____.
(Project name and location)

To be completed by Prime Contractor

To the date hereof, all labor and/or material(s) installed, including all applicable sales or use taxes furnished for this project has been fully paid for, and there are no sums due or to become due therefore, except as follows:

All labor directly employed by us for this project has been fully paid as of the date of our last payroll period

_____(Date), except as follows:

To be completed by Prime Contractor
To the date hereof, all labor and/or material(s) installed, including all applicable sales or use taxes furnished for this project has been fully paid for, and there are no sums due or to become due therefore, except as follows:

To be completed by Subcontractor and/or Material Supplier
All labor directly employed by us for this project has been fully paid as of the date of our last payroll period _____(Date), except as follows:

All withholding, Social Security, or Unemployment Taxes, all Union benefits and Welfare Funds, all Workman's Compensation, Public Liability, and accumulations of Withholding taxes are separately deposited in trust funds.

This affidavit is made with the full knowledge that _____

_____ (Owner)

relies hereon in making partial (final) payment $_
(Amount of payment) to us for labor and or material furnished and installed for the project named herein.

By: _____L.S.

*(SEAL IF BIDDER
IS A CORPORATION) _____

Subscribed and sworn to before me this

_____day of_____, 20_____.

State of _____

Notary Public:_____

My commission expires _____, 20_____.

END OF SECTION 012911

SECTION 012920-BILL OF SALE/CERTIFICATION FOR STORED MATERIAL

OWNER:_____

CONTRACTOR:_____

IN ACCORDANCE WITH THE CONTRACT DOCUMENTS on the above Project, the Owner has allowed the Contractor to purchase materials and/or equipment in advance of the time required for the installation of said materials and/or equipment and to requisition the Owner for payment of such material and/or equipment properly stored. The following is mutually agreed:

1. The Contractor certifies that he/she is the legal owner of the materials and/or equipment listed below and provides the Owner with a certificate of insurance naming the Owner as loss beneficiary for the full dollar amount representing the materials stored.

2. The Contractor agrees to transfer to the Owner the materials and/or equipment listed below and to transfer all rights, title and interest therein to the Owner.

3. The materials and/or equipment listed below has been properly stored where listed below and has been designated by a tag or other appropriate notice affixed thereto stating:

4. Nothing in these provisions shall be construed as relieving the Contractor from the sole responsibility for the care, custody and protection of such materials and/or equipment or as a waiver of the right of the Owner to require fulfillment of all terms and conditions of the Contract Documents.

5. When materials and/or equipment are stored off the Project Site, the Contractor certifies that such materials and/or equipment, listed below, are fully insured against the perils of fire, theft, extended coverage, vandalism and malicious mischief.

6. The Owner and Architect reserve the right to inspect materials and/or equipment, wherever stored, at their convenience during normal working hours.

7. The cost and expense, if any, involved in the storage and/or delivery to the Project Site will be borne by the Contractor.

LIST OF MATERIALS AND/OR EQUIPMENT STORED:

ITEM	DESCRIPTION	QUANTITY	TOTAL VALUE
1.			
2.			
3.			
4.			
5.			

PLACE AND METHOD OF STORAGE:

LOCATION	STORED BY	PROTECTED BY
( )Warehouse	( )Contractor	( )Building Cover
( )Storage Yard	( )Distributor	( )Plastic Cover
( )On Project Site	( )Manufacturer	( )Not Required

NAME AND ADDRESS OF PARTY STORING MATERIALS AND/OR EQUIPMENT

NAME: _____

ADDRESS: _____

CITY, STATE, ZIP: _____

BILL OF SALE:

In consideration of the sum or sums listed above in lawful money of the United States to be paid as provided in the Contract Documents, The Contractor does grant and convey unto the Owner title of ownership of all materials and/or equipment listed above to have and to hold the same unto the Owner forever.

The Contractor does, for himself/herself, his/her successors and assigns covenant and agree to warrant and defend the sale of the above listed materials and/or equipment hereby sold unto the Owner, against all claims or any claims or any person or persons whomsoever.

SWORN TO AND SUBSCRIBED

_____
Contractor

BEFORE ME THIS _____ DAY

OF _____, 20_____. By:_____
Name

_____
Notary Public of the State of
New Jersey.

_____
Title

My Commission Expires:_____

_____
Date

Accepted for Project Owner:

_____
Signature Title Date

END OF SECTION 012920

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

1. General coordination procedures.
2. Coordination drawings.
3. RFIs.
4. Digital project management procedures.
5. Project progress meetings.

B. Each contractor shall participate in coordination requirements. Certain areas of responsibility are assigned to a specific contractor.

C. Related Requirements:

1. Section 013200 "Construction Progress Documentation" for preparing and submitting Contractor's construction schedule.
2. Section 017300 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
3. Section 017700 "Closeout Procedures" for coordinating closeout of the Contract.

1.3 DEFINITIONS

A. RFI: Request for Information. Request from Owner, Architect, or Contractor seeking information required by or clarifications of the Contract Documents.

1.4 INFORMATIONAL SUBMITTALS

A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:

1. Name, address, telephone number, and email address of entity performing subcontract or supplying products.

2. Number and title of related Specification Section(s) covered by subcontract.
3. Drawing number and detail references, as appropriate, covered by subcontract.

B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.

1.5 GENERAL COORDINATION PROCEDURES

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included in different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's construction schedule.
2. Preparation of the schedule of values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.

1.6 REQUEST FOR INFORMATION (RFI)

A. General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.

1. Each Request for Information shall be limited to a single subject of inquiry.
2. Architect will return without response those RFIs submitted to Architect by other entities controlled by Contractor.
3. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

B. Content of the RFI: Clearly and concisely set forth the issue for which clarification or interpretation is sought and why a response is needed and when it is needed. Contractor shall provide their own interpretation or understanding of the requirement along with their reasons for how they reached such an understanding. Include a detailed, legible description of item needing information or interpretation and the following:

1. Project name.
2. Project number.
3. Date.
4. Name of Contractor.
5. Name of Architect.
6. RFI number, numbered sequentially.
7. RFI subject.
8. Specification Section number and title and related paragraphs, as appropriate.
9. Drawing number and detail references, as appropriate.
10. Field dimensions and conditions, as appropriate.
11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
12. Contractor's signature.
13. Potential cost impact & potential estimate.
14. Potential time impact & potential delay.
15. Change order required.
16. Date response needed.
17. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.

    a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.

C. RFI Forms: Use Contractor’s Request for Information included at end of Part 3.

1. Attachments shall be electronic files in PDF format.

D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow seven working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.

1. The following Contractor-generated RFIs will be returned without action and shall not be entered into the RFI Log:

    a. Requests for approval of submittals.
    b. Requests for approval of substitutions.
    c. Requests for approval of Contractor's means and methods.
    d. Requests for coordination information already indicated in the Contract Documents.
    e. Requests for adjustments in the Contract Time or the Contract Sum.
    f. Requests for interpretation of Architect's actions on submittals.
    g. Incomplete RFIs or inaccurately prepared RFIs.

2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt by Architect of additional information.
3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 012600 "Contract Modification Procedures."

    a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 10 working days of receipt of the RFI response. Failure to provide such written notice shall waive the Contractor’s right to seek additional time or cost.

E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Software log with not less than the following:

1. Project name.
2. Name and address of Contractor.
3. Name and address of Architect.
4. RFI number including RFIs that were returned without action or withdrawn.
5. RFI description.
6. Date the RFI was submitted.
7. Date Architect's response was received.
8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
9. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

F. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven days if Contractor disagrees with response.

1.7 DIGITAL PROJECT MANAGEMENT PROCEDURES

A. Use of Architect's Digital Data Files: Digital data files of Architect's CAD drawings will be provided by Architect for Contractor's use during construction.

1. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Contract Drawings.
2. Contractor shall execute a data licensing agreement in the form of Electronic Files Indemnification form provided by the Architect.

    a. Subcontractors, and other parties granted access by Contractor to Architect's digital data files shall execute a data licensing agreement in the form of Electronic Files Indemnification form provided by the Architect.

B. PDF Document Preparation: Where PDFs are required to be submitted to Architect, prepare as follows:

1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
2. Name file with submittal number or other unique identifier, including revision identifier.
3. Certifications: Where digitally submitted certificates and certifications are required, provide a digital signature with digital certificate on where indicated.

1.8 PROJECT MEETINGS

A. General: Architect will schedule and conduct meetings and conferences at Project site unless otherwise indicated.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times a minimum of 10 working days prior to meeting.
2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner, Contractor(s) and Architect, within three days of the meeting.
4. Contractor Progress Status Report: Prime Contractors shall distribute their progress report at each meeting to all invited attendees. Copy of form is included at end of Part 3.

B. Preconstruction Conference: Architect will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement.

1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Discuss items of significance that could affect progress, including the following:

    a. Responsibilities and personnel assignments.
    b. Tentative construction schedule.
    c. Permits.
    d. Phasing.

e. Critical work sequencing and long lead items.
f. Designation of key personnel and their duties.
g. Lines of communications.
h. Use of web-based Project software.
i. Procedures for processing field decisions and Change Orders.
j. Procedures for RFIs.
k. Procedures for testing and inspecting.
l. Procedures for processing Applications for Payment.
m. Distribution of the Contract Documents.
n. Submittal procedures.
o. Preparation of Record Documents.
p. Use of the premises and existing building]
q. Work restrictions.
r. Working hours.
s. Owner's occupancy requirements.
t. Responsibility for temporary facilities and controls.
u. Procedures for moisture and mold control.
v. Procedures for disruptions and shutdowns.
w. Construction waste management and recycling.
x. Parking availability.
y. Office, work, and storage areas.
z. Equipment deliveries and priorities.
aa. First aid.
bb. Security.
cc. Progress cleaning.

3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.

C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity when required by other sections and when required for coordination with other construction.

1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.
2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:

a. Contract Documents.
b. Options.
c. Related RFIs.
d. Related Change Orders.
e. Purchases.
f. Deliveries.
g. Submittals.
h. Possible conflicts.
i. Compatibility requirements.

j. Time schedules.
k. Weather limitations.
l. Manufacturer's written instructions.
m. Warranty requirements.
n. Compatibility of materials.
o. Acceptability of substrates.
p. Temporary facilities and controls.
q. Space and access limitations.
r. Regulations of authorities having jurisdiction.
s. Testing and inspecting requirements.
t. Installation procedures.
u. Coordination with other work.
v. Required performance results.
w. Protection of adjacent work.
x. Protection of construction and personnel.

3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

D. Project Closeout Conference: Schedule and conduct a project closeout conference, at a time convenient to Owner and Architect, but no later than 10 days prior to the scheduled date of Substantial Completion.

1. Conduct the conference to review requirements and responsibilities related to Project closeout.
2. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:

a. Preparation of Record Documents.
b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
c. Procedures for completing and archiving web-based Project software site data files.
d. Submittal of written warranties.
e. Requirements for preparing operations and maintenance data.
f. Requirements for delivery of material samples, attic stock, and spare parts.
g. Requirements for demonstration and training.
h. Preparation of Contractor's punch list.
i. Procedures for processing Applications for Payment at Substantial Completion and for final payment.

j. Submittal procedures.
k. Owner's partial occupancy requirements.
l. Installation of Owner's furniture, fixtures, and equipment.
m. Responsibility for removing temporary facilities and controls.

4. Minutes: Entity conducting meeting will record and distribute meeting minutes.

E. Progress Meetings: Architect will conduct progress meetings at bi-monthy intervals or as deemed necessary by the Architect.

1. Coordinate dates of meetings with preparation of payment requests.
2. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

1) Review schedule for next period.

b. Review present and future needs of each entity present, including the following:

1) Interface requirements.
2) Sequence of operations.
3) Status of submittals.
4) Deliveries.
5) Off-site fabrication.
6) Access.
7) Site use.
8) Temporary facilities and controls.
9) Progress cleaning.
10) Quality and work standards.
11) Status of correction of deficient items.
12) Field observations.
13) Status of RFIs.
14) Status of Proposal Requests.
15) Pending changes.
16) Status of Change Orders.
17) Pending claims and disputes.
18) Documentation of information for payment requests.

4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.

    a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

F. Coordination Meetings: Conduct Project coordination meetings at regular intervals. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.

1. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meetings shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

    a. Combined Contractor's Construction Schedule: Review progress since the last coordination meeting. Determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to combined Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
    b. Schedule Updating: Revise combined Contractor's construction schedule after each coordination meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.
    c. Review present and future needs of each contractor present, including the following:

        1) Interface requirements.
        2) Sequence of operations.
        3) Status of submittals.
        4) Deliveries.
        5) Off-site fabrication.
        6) Access.
        7) Site use.
        8) Temporary facilities and controls.
        9) Work hours.
        10) Hazards and risks.
        11) Progress cleaning.
        12) Quality and work standards.
        13) Status of RFIs.
        14) Proposal Requests.
        15) Change Orders.
        16) Pending changes.

3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

BUILDING ENTRANCES SECURITY ENHANCEMENT
LINDENWOLD SCHOOL DISTRICT
REGAN YOUNG ENGLAND BUTERA, PC PROJECT #5643A

CONTRACTOR REQUEST FOR INFORMATION

FROM: _____

REQUEST DATE: _____ EMAIL _____

CONTRACTOR'S RFI NUMBER: _____

TO:
Scott Charles England, AIA
REGAN YOUNG ENGLAND BUTERA, PC
Fax: (609) 265-0333 Email: sce@ryebread.com

REFERENCES (List all applicable drawings & specifications):

PLEASE RESPOND TO THE FOLLOWING:

POTENTIAL COST IMPACT & POTENTIAL ESTIMATE: _____

POTENTIAL TIME IMPACT & POTENTIAL DELAY: _____

CHANGE ORDER REQUIRED: ☐ Yes ☐ No

DATE RESPONSE NEEDED: _____

DESIGN PROFESSONAL'S RESPONSE:

DATE OF RESPONSE: _____ BY: _____

DISTRIBUTION: _____

Note: This reply is not an authorization to proceed with work involving additional cost, time or both. If any reply requires a change to the Contract Documents, a Change Order, Construction Change Directive, or a Minor Change in the work must be executed in accordance with the Contract Documents.

CONTRACTOR PROJECT STATUS REPORT

(To be submitted at each Job Meeting)

CONTRACTOR: _____ DATE _____

EST. % OF COMPLETION: _____ CONFORMANCE W/ SCHED(+,=,-): _____

WORK IN PROGRESS: (List main work items and % completion for each item)

A. _____

B. _____

C. _____

D. _____

E. _____

F. _____

G. _____

H. _____

PROJECTED WORK: (List only what you expect to perform in the next two weeks & include % of completion for each item)

A. _____

B. _____

C. _____

D. _____

E. _____

F. _____

G. _____

POINTS OF RECORD: (be brief)

A. _____

B. _____

C. _____

D. _____

SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:

1. Informational submittals.
2. Coordination.

3. Startup construction schedule.
4. Contractor's Construction Schedule.
5. Construction schedule updating reports.
6. Gantt-chart schedule requirements.
7. Reports.
8. Daily construction reports.
9. Material location reports.
10. Site condition reports.
11. Unusual event reports.

1.3 INFORMATIONAL SUBMITTALS

A. Format for Submittals: Submit required submittals in the following format:

1. Working electronic copy of schedule file, where indicated.
2. PDF file.

B. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.

1. Submit a working digital copy of schedule, using software indicated, and labeled to comply with requirements for submittals.

2. Maximum sheet size 8 1/2 x 11. Multiple sheets are acceptable.

C. Construction Schedule Updating Reports: Submit with Applications for Payment.

D. Daily Construction Reports: Submit at weekly intervals.

E. Site Condition Reports: Submit at time of discovery of differing conditions.

F. Unusual Event Reports: Submit at time of unusual event.

G. Qualification Data: For scheduling consultant.

1.4 COORDINATION

A. Coordinate Contractor's Construction Schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests, and other required schedules and reports.

1. Secure time commitments for performing critical elements of the Work from entities involved.
2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

1.5 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

A. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.

B. Time Frame: Extend schedule from date established for the Notice to Proceed to date of Substantial Completion and final completion].

1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

C. Activities: Treat each floor or separate area as a separate numbered activity for each main element of the Work. Comply with the following:

1. Activity Duration: Define activities so no activity is longer than 5 days, unless specifically allowed by Architect.
2. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
3. Submittal Review Time: Include review and resubmittal times indicated in Section 013300 "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with submittal schedule.
4. Startup and Testing Time: Include no fewer than 5 days for startup and testing.
5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
6. Punch List and Final Completion: Include not more 5 days for completion of punch list items and final completion.

D. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.

1. Phasing: Arrange list of activities on schedule by phase.
2. Work under More Than One Contract: Include a separate activity for each contract.
3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
4. Products Ordered in Advance: Include a separate activity for each product. Include delivery date indicated in Section 011000 "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
5. Work Restrictions: Show the effect of the following items on the schedule:

    a. Coordination with existing construction.
    b. Limitations of continued occupancies.
    c. Uninterruptible services.
    d. Partial occupancy before Substantial Completion.
    e. Use-of-premises restrictions.
    f. Provisions for future construction.
    g. Seasonal variations.
    h. Environmental control.

6. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:

    a. Subcontract awards.
    b. Submittals.
    c. Purchases.
    d. Mockups.
    e. Fabrication.
    f. Sample testing.
    g. Deliveries.
    h. Installation.
    i. Tests and inspections.
    j. Adjusting.
    k. Curing.
    l. Startup and placement into final use and operation.
    m. Commissioning.

E. Cost Correlation: Superimpose a cost correlation timeline, indicating planned and actual costs. On the line, show planned and actual dollar volume of the Work performed as of planned and actual dates used for preparation of payment requests.

1. See Section 012900 "Payment Procedures" for cost reporting and payment procedures.

F. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:

1. Unresolved issues.
2. Unanswered Requests for Information.

3. Rejected or unreturned submittals.
4. Notations on returned submittals.
5. Pending modifications affecting the Work and the Contract Time.

G. Contractor's Construction Schedule Updating: At bi-monthly intervals, and when requested by the Architect, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.

1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
3. As the Work progresses, indicate final completion percentage for each activity.

H. Recovery Schedule: When periodic update indicates the Work is 10 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, equipment required to achieve compliance, and date by which recovery will be accomplished.

I. Distribution: Distribute copies of approved schedule to Architect, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.

1. Post copies in Project meeting rooms and temporary field offices.
2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

1.6 STARTUP CONSTRUCTION SCHEDULE

A. Gantt-Chart Schedule: Submit startup, horizontal, Gantt-chart-type construction schedule within seven days of date established for the Notice to Proceed.

B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line. Outline significant construction activities for first 10 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

1.7 GANTT-CHART SCHEDULE REQUIREMENTS

A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal, Gantt-chart-type, Contractor's Construction Schedule within 10 days of date established for the Notice to Proceed.

1. Base schedule on the startup construction schedule and additional information received since the start of Project.

B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.

1. For construction activities that require three months or longer to complete, indicate an estimated completion percentage in 5 percent increments within time bar.

1.8 REPORTS

A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:

1. List of subcontractors at Project site.
2. List of separate contractors at Project site.
3. Approximate count of personnel at Project site.
4. Equipment at Project site.
5. Material deliveries.
6. High and low temperatures and general weather conditions, including presence of rain or snow.
7. Testing and inspection.
8. Accidents.
9. Meetings and significant decisions.
10. Unusual events.
11. Stoppages, delays, shortages, and losses.
12. Meter readings and similar recordings.
13. Emergency procedures.
14. Orders and requests of authorities having jurisdiction.
15. Change Orders received and implemented.
16. Construction Change Directives received and implemented.
17. Services connected and disconnected.
18. Equipment or system tests and startups.
19. Partial completions and occupancies.
20. Substantial Completions authorized.

B. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

C. Unusual Event Reports: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, responses by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

1. Submit unusual event reports directly to Owner within one day(s) of an occurrence. Distribute copies of report to parties affected by the occurrence.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013200

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Submittal schedule requirements.
2. Administrative and procedural requirements for submittals.

B. Related Requirements:

1. Section 012900 "Payment Procedures" for submitting Applications for Payment and the schedule of values.
2. Section 013100 "Project Management and Coordination" for submitting coordination drawings and subcontract list and for requirements for web-based Project software.
3. Section 013200 "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
4. Section 014000 "Quality Requirements" for submitting test and inspection reports, and schedule of tests and inspections.
5. Section 017700 "Closeout Procedures" for submitting closeout submittals and maintenance material submittals.
6. Section 017823 "Operation and Maintenance Data" for submitting operation and maintenance manuals.
7. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
8. Section 017900 "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."

B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with

requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

1.4 SUBMITTAL SCHEDULE

A. Submittal Schedule: Submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
2. Initial Submittal: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.

    a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.

4. Format: Arrange the following information in a tabular format:

    a. Scheduled date for first submittal.
    b. Specification Section number and title.
    c. Submittal Category: Action; informational.
    d. Name of subcontractor.
    e. Description of the Work covered.
    f. Scheduled date for Architect's final release or approval.

1.5 SUBMITTAL FORMATS

A. Submittal Information: Include the following information in each submittal:

1. Project name.
2. Date.
3. Name of Architect.
4. Name of Contractor.
5. Name of firm or entity that prepared submittal.
6. Names of subcontractor, manufacturer, and supplier.
7. Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier; and alphanumeric suffix for resubmittals.
8. Category and type of submittal.

9. Submittal purpose and description.
10. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
11. Drawing number and detail references, as appropriate.
12. Indication of full or partial submittal.
13. Location(s) where product is to be installed, as appropriate.
14. Other necessary identification.
15. Remarks.
16. Signature of transmitter.

B. Options: Identify options requiring selection by Architect.

C. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, other than those requested by Architect on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet.

D. Paper Submittals *(Only for submittals that require an original signature and/or raised seal)*:

1. Place a permanent label or title block on each submittal item for identification; include name of firm or entity that prepared submittal.
2. Provide a space approximately 6 by 8 inches (150 by 200 mm) on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
3. Action Submittals: Submit three paper copies of each submittal unless otherwise indicated. Architect, will return two copies.
4. Informational Submittals: Submit two paper copies of each submittal unless otherwise indicated. Architect will not return copies.
5. Additional Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
6. Transmittal for Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using Submittal Transmittal Form found at the end of Part 3.

E. PDF Submittals: Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number.

1. Transmittal Form for Electronic Submittals: Use Submittal Transmittal Form found at the end of Part 3.

1.6 SUBMITTAL PROCEDURES

A. Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

1. Email: Prepare submittals as PDF package, and transmit to Architect by sending via email. Include an executed PDF of the Submittal Transmittal Form. Include information in email subject line as requested by Architect.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
4. Coordinate transmittal of submittals for related parts of the Work specified in different Sections so processing will not be delayed because of need to review submittals concurrently for coordination.

    a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Resubmittal Review: Allow 15 days for review of each resubmittal.
4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 21 days for initial review of each submittal.

5. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Architect and to Architect's consultants, allow 15 days for review of each submittal. Submittal will be returned to Architect before being returned to Contractor.

    a. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Architect.

D. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.

E. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

F. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

1.7 SUBMITTAL REQUIREMENTS

A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

    a. Manufacturer's catalog cuts.
    b. Manufacturer's product specifications.
    c. Standard color charts.
    d. Statement of compliance with specified referenced standards.
    e. Testing by recognized testing agency.
    f. Application of testing agency labels and seals.
    g. Notation of coordination requirements.
    h. Availability and delivery time information.

4. For equipment, include the following in addition to the above, as applicable:

    a. Wiring diagrams that show factory-installed wiring.
    b. Printed performance curves.
    c. Operational range diagrams.
    d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

5. Submit Product Data before Shop Drawings, and before or concurrent with Samples.

B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data unless submittal based on Architect's digital data drawing files is otherwise permitted.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

    a. Identification of products.
    b. Schedules.
    c. Compliance with specified standards.
    d. Notation of coordination requirements.
    e. Notation of dimensions established by field measurement.

f. Relationship and attachment to adjoining construction clearly indicated.
g. Seal and signature of professional engineer if specified.

2. Paper Sheet Size: Except for templates, patterns, and similar full-size Drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (215 by 280 mm), but no larger than 30 by 42 inches (750 by 1067 mm).

a. Two opaque (bond) copies of each submittal. Architect will return one copy(ies).
b. One PDF submittal. Architect will return one PDF copy with appropriate action taken.

C. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other materials.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Permanently attach label on unexposed side of Samples that includes the following:

a. Project name and submittal number.
b. Generic description of Sample.
c. Product name and name of manufacturer.
d. Sample source.
e. Number and title of applicable Specification Section.
f. Specification paragraph number and generic name of each item.

3. Email Transmittal: Provide PDF transmittal. Include digital image file illustrating Sample characteristics, and identification information for record.
4. Paper Transmittal: Include paper transmittal including complete submittal information indicated.
5. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.

6. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.

a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect, will return submittal with options selected.

7. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and

physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

a. Number of Samples: Submit three sets of Samples. Architect will retain two Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a project record Sample.

1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

D. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
2. Manufacturer and product name, and model number if applicable.
3. Number and name of room or space.
4. Location within room or space.

E. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.

F. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.

G. Certificates:

1. Certificates and Certifications Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.
2. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
3. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

4. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
5. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
6. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.

H. Test and Research Reports:

1. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
2. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
3. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
4. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
5. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
6. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:

    a. Name of evaluation organization.
    b. Date of evaluation.
    c. Time period when report is in effect.
    d. Product and manufacturers' names.
    e. Description of product.
    f. Test procedures and results.
    g. Limitations of use.

1.8 CONTRACTOR'S REVIEW

A. Action Submittals and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

B. Contractor's Approval: Indicate Contractor's approval for each submittal by signing each Submittal Transmittal Form with a uniform approval stamp. Include name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

1. Architect will not review submittals received from Contractor that do not have Contractor's review and approval.

1.9 ARCHITECT'S REVIEW

A. Action Submittals: Architect will review each submittal, indicate corrections or revisions required, and return it.

1. PDF Submittals: Architect will indicate, via markup on each submittal, the appropriate action.

2. Paper Submittals: Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.

B. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.

C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.

D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

E. Architect will return without review submittals received from sources other than Contractor.

F. Submittals not required by the Contract Documents will be returned by Architect without action.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013300

SUBMITTAL TRANSMITTAL FORM

PRIME CONTRACTOR'S SUBMITTAL NO. _____

DATE:

PRIME CONTRACTOR:

SUBCONTRACTOR:

SUPPLIER:

MANUFACTURER:

ITEM: (Be Specific)

SPEC SECTION: DRAWING NO.:

NO. OF COPIES:

As, the above named PRIME CONTRACTOR we affirm that we have checked this submission for conformance with the design concept of the Project and with the Contract Documents; that the Contract Document requirements have been met and that we have verified all dimensions, conditions, and quantities as shown and/or corrected on this submittal; that the submittal will not cause conflict with or increase cost to other Prime Contractors or the Owner; and that all previous applicable changes made in the Project by Change Orders or other directives have been properly shown on each submittal affected.

Architect/Engineer Action Stamp

By: _____

Title: _____

SECTION 013310 - PROJECT START-UP SUBMITTALS

Submit copies of the following to the Architect immediately after the issuance of the Contract. This form is an internal form used by REGAN YOUNG ENGLAND BUTERA and shall be used only as a guide for submissions by the Contractor. Additional items not included on this list may be required at the discretion of the Architect or as referenced in their individual sections.

CONTRACTOR: _____

ADDRESS: _____

_____

TELEPHONE NUMBER: _____

ITEM	DATE RECEIVED
O Contract	
O Performance Bond & Payment Bond	
P Insurance Certificate	
O Notice to Proceed	
P Contractor's Certification of Subcontractor(s) Insurance Coverage's	
P Copies of Permits	
P Schedule of Values	
P Initial Workforce Report (Affirmative Action)	
P Required Cuts (see indiv. spec sections)	
P Construction Schedule	
P List of Subcontractors	
P List of Manufacturers/Suppliers	
P List of Contractor's Staff Assignments	
Digital copy of preconstruction photographs and/or videos (disk or thumb drive)	

O – Three Original copies required.
P – PDF copy required.

END OF SECTION 013310

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspection services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

1. Specific quality-assurance and quality-control requirements for individual work results are specified in their respective Specification Sections. Requirements in individual Sections may also cover production of standard products.
2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and quality-control procedures that facilitate compliance with the Contract Document requirements.
3. Requirements for Contractor to provide quality-assurance and quality-control services required by Architect, Owner or authorities having jurisdiction are not limited by provisions of this Section.
4. Specific test and inspection requirements are not specified in this Section.

C. Related Requirements:

1. Section 012100 "Allowances".

1.3 DEFINITIONS

A. Experienced: When used with an entity or individual, "experienced" unless otherwise further described means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

B. Field Quality-Control Tests: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

C. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, assembly, and similar operations.

1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).

D. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.

E. Product Tests: Tests and inspections that are performed by a nationally recognized testing laboratory (NRTL) according to 29 CFR 1910.7, by a testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program (NVLAP), or by a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.

F. Source Quality-Control Tests: Tests and inspections that are performed at the source; for example, plant, mill, factory, or shop.

G. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

H. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

I. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Contractor's quality-control services do not include contract administration activities performed by Architect[or Construction Manager].

1.4 CONFLICTING REQUIREMENTS

A. Conflicting Standards and Other Requirements: If compliance with two or more standards or requirements are specified and the standards or requirements establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for direction before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.5 INFORMATIONAL SUBMITTALS

A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.

B. Qualification Data: For Contractor's quality-control personnel.

C. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility submitted to authorities having jurisdiction before starting work on the following systems:

1. Seismic-force-resisting system, designated seismic system, or component listed in the Statement of Special Inspections.
2. Main wind-force-resisting system or a wind-resisting component listed in the Statement of Special Inspections.

D. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

E. Schedule of Tests and Inspections: Prepare in tabular form and include the following:

1. Specification Section number and title.
2. Entity responsible for performing tests and inspections.
3. Description of test and inspection.
4. Identification of applicable standards.
5. Identification of test and inspection methods.
6. Number of tests and inspections required.
7. Time schedule or time span for tests and inspections.
8. Requirements for obtaining samples.
9. Unique characteristics of each quality-control service.

F. Reports: Prepare and submit certified written reports and documents as specified.

G. Permits, Licenses, and Certificates: For Owner's record, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents established for compliance with standards and regulations bearing on performance of the Work.

1.6 CONTRACTOR'S QUALITY-CONTROL PLAN

A. Quality-Control Plan, General: Submit quality-control plan within 10 days of Notice to Proceed, and not less than five days prior to preconstruction conference. Submit in format acceptable to Architect. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities. Coordinate with Contractor's Construction Schedule.

B. Quality-Control Personnel Qualifications: Engage qualified personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.

1. Project quality-control manager may also serve as Project superintendent.

C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.

D. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:

1. Contractor-performed tests and inspections including Subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections. Distinguish source quality-control tests and inspections from field quality-control tests and inspections.
2. Special inspections required by authorities having jurisdiction and indicated on the Statement of Special Inspections.
3. Owner-performed tests and inspections indicated in the Contract Documents.

E. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mockups.

F. Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results. Include work Architect has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

1.7 REPORTS AND DOCUMENTS

A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, telephone number, and email address of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspection.

11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, telephone number, and email address of technical representative making report.
2. Statement on condition of substrates and their acceptability for installation of product.
3. Statement that products at Project site comply with requirements.
4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
6. Statement whether conditions, products, and installation will affect warranty.
7. Other required items indicated in individual Specification Sections.

C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, telephone number, and email address of factory-authorized service representative making report.
2. Statement that equipment complies with requirements.
3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
4. Statement whether conditions, products, and installation will affect warranty.
5. Other required items indicated in individual Specification Sections.

1.8 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units. As applicable, procure products from manufacturers able to meet qualification requirements, warranty requirements, and technical or factory-authorized service representative requirements.

C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Installer Qualifications: A firm or individual experienced in installing, erecting, applying, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.

F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.

G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspection indicated, as documented according to ASTM E 329, and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.

H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

J. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:

1. Contractor responsibilities include the following:

a. Provide test specimens representative of proposed products and construction.
b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.

2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

K. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:

1. Build mockups of size indicated.
2. Build mockups in location indicated or, if not indicated, as directed by Architect.
3. Notify Architect seven days in advance of dates and times when mockups will be constructed.
4. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed to perform same tasks during the construction at Project.
5. Demonstrate the proposed range of aesthetic effects and workmanship.
6. Obtain Architect's approval of mockups before starting corresponding work, fabrication, or construction.

    a. Allow seven days for initial review and each re-review of each mockup.

7. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
8. Demolish and remove mockups when directed unless otherwise indicated.

1.9 QUALITY CONTROL

A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.

1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspection they are engaged to perform.
2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor.

B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities, whether specified or not, to verify and document that the Work complies with requirements.

1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
2. Engage a qualified testing agency to perform quality-control services.

    a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.

3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspection will be performed.
4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
5. Testing and inspection requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

D. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. Determine the locations from which test samples will be taken and in which in-situ tests are conducted.
3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
6. Do not perform duties of Contractor.

E. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 013300 "Submittal Procedures."

F. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.

G. Associated Contractor Services: Cooperate with agencies and representatives performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspection. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.

5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspection equipment at Project site.

H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspection.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

I. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Coordinate and submit concurrently with Contractor's Construction Schedule. Update as the Work progresses.

1. Distribution: Distribute schedule to Owner, Architect testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.10 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections: Engage a qualified testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner and as follows:

1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
2. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.
4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
6. Retesting and reinspecting corrected work.

B. Special Tests and Inspections: Conducted by a qualified testing agency as required by authorities having jurisdiction, as indicated in individual Specification Sections and as follows:

1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
2. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.
4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.

5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
6. Retesting and reinspecting corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.
2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to Architect.
4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect's reference during normal working hours.

1. Submit log at Project closeout as part of Project Record Documents.

3.2 REPAIR AND PROTECTION

A. General: On completion of testing, inspection, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 017300 "Execution."

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

B. Related Requirements:

1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.

C. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities engaged in the Project to use temporary services and facilities without cost, including, but not limited to Architect, testing agencies, and authorities having jurisdiction.

D. Sewer Service: Owner will pay sewer-service use charges for sewer usage by all entities for construction operations.

E. Water Service: Owner will pay water-service use charges for water used by all entities for construction operations.

F. Electric Power Service: Owner will pay electric-power-service use charges for electricity used by all entities for construction operations.

G. Water and Sewer Service from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

H. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.3 INFORMATIONAL SUBMITTALS

A. Site Utilization Plan: Show temporary facilities, temporary utility lines and connections, staging areas, construction site entrances, vehicle circulation, and parking areas for construction personnel.

B. Implementation and Termination Schedule: Within 15 days of date established for commencement of the Work, submit schedule indicating implementation and termination dates of each temporary utility.

C. Project Identification and Temporary Signs: Show fabrication and installation details, including plans, elevations, details, layouts, typestyles, graphic elements, and message content.

D. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.

E. Moisture- and Mold-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage and mold.

F. Dust- and HVAC-Control Plan: Submit coordination drawing and narrative that indicates the dust- and HVAC-control measures proposed for use, proposed locations, and proposed time frame for their operation. Include the following:

1. Locations of dust-control partitions at each phase of work.
2. HVAC system isolation schematic drawing.
3. Location of proposed air-filtration system discharge.
4. Waste-handling procedures.
5. Other dust-control measures.

1.4 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

C. Accessible Temporary Egress: Comply with applicable provisions in the United States Access Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.

1.5 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Portable Chain-Link Fencing: Minimum 2-inch (50-mm), 0.148-inch- (3.8-mm-) thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet (1.8 m) high with galvanized-steel pipe posts; minimum 2-3/8-inch- (60-mm-) OD line posts and 2-7/8-inch- (73-mm-) OD corner and pull posts, with 1-5/8-inch- (42-mm-) OD top and bottom rails. Provide galvanized-steel bases for supporting posts.

B. Signage: Provide signage attached at 50 feet intervals advising “Construction Area – Keep Out”.

C. Orange Safety Fencing: Provide around the entire area of any and all earthwork, excavations, etc. and shall be maintained until the work is complete.

D. Floor Protection: Protect flooring during the construction period with hardboard panels or other suitable material approved by the Architect. Do not use paper or plastic sheeting. Do not move heavy and sharp objects directly over exist’g or proposed flooring.

E. Dust-Control Adhesive-Surface Walk-Off Mats: Provide mats minimum 36 by 60 inches (914 by 1524 mm).

2.2 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

B. HVAC Equipment: Unless Owner authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.

1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
2. Heating Units: Listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction, and marked for intended location and application.

C. Air-Filtration Units: Primary and secondary HEPA-filter-equipped portable units with four-stage filtration. Provide single switch for emergency shutoff. Configure to run continuously.

PART 3 - EXECUTION

3.1 TEMPORARY FACILITIES, GENERAL

A. Conservation: Coordinate construction and use of temporary facilities with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.

3.2 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

1. Locate facilities to limit site disturbance as specified in Section 011000 "Summary."

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

C. Electric Power Service: Connect to Owner's existing electric power service. Maintain equipment in a condition acceptable to Owner.

D. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.

1. Connect temporary service to Owner's existing power source, as directed by Owner.

E. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.

1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

3.3 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:

1. Temporary storage shall not be located within 30 feet (9 m) of building lines.
2. Provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet (9 m) of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241.
3. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

4. Protect existing site improvements to remain including curbs, pavement, and utilities.
5. Maintain access for fire-fighting equipment and access to fire hydrants.

B. Parking: Use designated areas of Owner's existing parking areas for construction personnel.

C. Waste Disposal Facilities: Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."

D. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.

1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.

1. Where access to adjacent properties is required in order to affect protection of existing facilities, obtain written permission from adjacent property owner to access property for that purpose.

B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

1. Comply with work restrictions specified in Section 011000 "Summary."

C. Site Enclosure Fence: Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent people from easily entering site except by entrance gates.

1. Extent of Fence: As required to enclose portion determined sufficient to accommodate construction operations.
2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Furnish one set of keys to Owner.

D. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.

E. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.

1. Where heating or cooling is needed and permanent enclosure is incomplete, insulate temporary enclosures.

F. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner from fumes and noise.

1. Construct dustproof partitions with two layers of 6-mil (0.14-mm) polyethylene sheet on each side. Cover floor with two layers of 6-mil (0.14-mm) polyethylene sheet, extending sheets 18 inches (460 mm) up the sidewalls. Overlap and tape full length of joints. Cover floor with fire-retardant-treated plywood.

    a. Construct vestibule and airlock at each entrance through temporary partition with not less than 48 inches (1219 mm) between doors. Maintain water-dampened foot mats in vestibule.
2. Seal joints and perimeter. Equip partitions with gasketed dustproof doors and security locks where openings are required.
3. Protect air-handling equipment.
4. Provide walk-off mats at each entrance through temporary partition.

G. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.

1. Prohibit smoking in construction areas. Comply with additional limits on smoking specified in other Sections.
2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.5 MOISTURE AND MOLD CONTROL

A. Contractor's Moisture-Protection Plan: Describe delivery, handling, storage, installation, and protection provisions for materials subject to water absorption or water damage.

1. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.
2. Indicate methods to be used to avoid trapping water in finished work.

B. Exposed Construction Period: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:

1. Protect porous materials from water damage.
2. Protect stored and installed material from flowing or standing water.
3. Keep porous and organic materials from coming into prolonged contact with concrete.

C. Partially Enclosed Construction Period: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:

1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
2. Keep interior spaces reasonably clean and protected from water damage.
3. Periodically collect and remove waste containing cellulose or other organic matter.
4. Discard or replace water-damaged material.
5. Do not install material that is wet.
6. Discard and replace stored or installed material that begins to grow mold.
7. Perform work in a sequence that allows wet materials adequate time to dry before enclosing the material in gypsum board or other interior finishes.

D. Controlled Construction Period: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:

1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
2. Use temporary or, if permitted permanent HVAC system to control humidity within ranges specified for installed and stored materials.
3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.

    a. Hygroscopic materials that may support mold growth, including wood and gypsum-based products, that become wet during the course of construction and remain wet for 48 hours are considered defective and require replacing.
    b. Measure moisture content of materials that have been exposed to moisture during construction operations or after installation. Record readings beginning at time of exposure and continuing daily for 48 hours. Identify materials containing moisture levels higher than allowed. Report findings in writing to Architect.
    c. Remove and replace materials that cannot be completely restored to their manufactured moisture level within 48 > hours.

3.6 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
2. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 "Closeout Procedures."

END OF SECTION 015000

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

B. Related Requirements:

1. Section 012100 "Allowances" for products selected under an allowance.
2. Section 012500 "Substitution Procedures" for requests for substitutions.

1.3 DEFINITIONS

A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
3. Comparable Product: Product that is demonstrated and approved by Architect through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Basis-of-Design Product Specification: A specification in which a single manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation. In addition to the basis-of-design product description, product attributes and characteristics may be listed to establish the significant qualities related to type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other special features and requirements for purposes of evaluating comparable products of additional manufacturers named in the specification.

C. Subject to Compliance with Requirements: Where the phrase "Subject to compliance with requirements" introduces a product selection procedure in an individual Specification Section, provide products qualified under the specified product procedure. In the event that a named product or product by a named manufacturer does not meet the other requirements of the specifications, select another named product or product from another named manufacturer that does meet the requirements of the specifications. Submit a comparable product request, if applicable.

1.4 ACTION SUBMITTALS

A. Comparable Product Request Submittal: Submit request for consideration of each comparable product. Identify basis-of-design product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.
2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

    a. Form of Architect's Approval of Submittal: As specified in Section 013300 "Submittal Procedures."
    b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.

B. Basis-of-Design Product Specification Submittal: Comply with requirements in Section 013300 "Submittal Procedures." Show compliance with requirements.

1.5 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

B. Identification of Products: Except for required labels and operating data, do not attach or imprint manufacturer or product names or trademarks on exposed surfaces of products or equipment that will be exposed to view in occupied spaces or on the exterior.

1. Labels: Locate required product labels and stamps on a concealed surface, or, where required for observation following installation, on a visually accessible surface that is not conspicuous.
2. Equipment Nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate on a visually accessible but inconspicuous surface. Include information essential for operation, including the following:

a. Name of product and manufacturer.
b. Model and serial number.
c. Capacity.
d. Speed.
e. Ratings.

3. See individual MEP specification sections on the drawings for additional identification requirements.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.

B. Delivery and Handling:

1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
6. Protect stored products from damage and liquids from freezing.

1.7 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner for not less than two years.
2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
3. See other Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Section 017700 "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. Owner reserves the right to limit selection to products with warranties meeting requirements of the Contract Documents.
4. Where products are accompanied by the term "as selected," Architect will make selection.
5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.

    a. Submit additional documentation required by Architect in order to establish equivalency of proposed products. Evaluation of "or equal" product status is by the Architect, whose determination is final.

B. Product Selection Procedures:

1. Limited List of Products: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.

    a. Limited list of products may be indicated by the phrase: "Subject to compliance with requirements, provide one of the following: …"

2. Non-Limited List of Products: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, which complies with requirements.

    a. Non-limited list of products is indicated by the phrase: "Subject to compliance with requirements, available products that may be incorporated in the Work include, but are not limited to, the following: …"

3. Limited List of Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.

    a. Limited list of manufacturers is indicated by the phrase: "Subject to compliance with requirements, provide products by one of the following: …"

4. Non-Limited List of Manufacturers: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, which complies with requirements.

    a. Non-limited list of manufacturers is indicated by the phrase: "Subject to compliance with requirements, available manufacturers whose products may be incorporated in the Work include, but are not limited to, the following: …"

5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.

    a. For approval of products by unnamed manufacturers, comply with requirements in Section 012500 "Substitution Procedures" for substitutions for convenience.

C. Visual Matching Specification: Where Specifications require "match existing or Architect's sample," provide a product that complies with requirements and matches existing conditions or Architect's sample. Architect's decision will be final on whether a proposed product matches.

1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 012500 "Substitution Procedures" for proposal of product.

D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

A. Conditions for Consideration of Comparable Products: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:

1. Evidence that proposed product does not require revisions to the Contract Documents, is consistent with the Contract Documents, will produce the indicated results, and is compatible with other portions of the Work. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant product qualities include attributes such as type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other specific features and requirements.
2. Evidence that proposed product provides specified warranty.
3. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
4. Samples, if requested.

B. Submittal Requirements: Approval by the Architect of Contractor's request for use of comparable product is not intended to satisfy other submittal requirements. Comply with specified submittal requirements.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:

1. Construction layout.
2. Installation of the Work.
3. Cutting and patching.
4. Coordination of Owner-installed products.
5. Progress cleaning.
6. Starting and adjusting.
7. Protection of installed construction.

B. Related Requirements:

1. Section 011000 "Summary" for limits on use of Project site.
2. Section 013300 "Submittal Procedures" for submitting surveys.
3. Section 017700 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, replacing defective work, and final cleaning.
4. Section 024119 "Selective Demolition" for demolition and removal of selected portions of the building.

1.3 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of subsequent work.

B. Patching: Fitting and repair work required to restore construction to original conditions after installation of subsequent work.

1.4 INFORMATIONAL SUBMITTALS

A. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

1.5 QUALITY ASSURANCE

A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.

B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.

1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operational elements include the following:

a. Primary operational systems and equipment.
b. Fire separation assemblies.
c. Air or smoke barriers.
d. Plumbing piping systems.
e. Mechanical systems piping and ducts.
f. Control systems.
g. Communication systems.
h. Fire-detection and -alarm systems.
i. Conveying systems.
j. Electrical wiring systems.
k. Operating systems of special construction.
l. Access control and CCTV systems.

3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Other construction elements include but are not limited to the following:

a. Water, moisture, or vapor barriers.
b. Membranes and flashings.
c. Exterior curtain-wall construction.
d. Fire barriers, partitions and walls.
e. Sprayed fire-resistive material.
f. Equipment supports.
g. Piping, ductwork, vessels, and equipment.
h. Noise- and vibration-control elements and systems.

4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner

that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

C. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

1. For projects requiring compliance with sustainable design and construction practices and procedures, use products for patching that comply with sustainable design requirements.

B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services; and other utilities.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.

2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:

1. Description of the Work.
2. List of detrimental conditions, including substrates.
3. List of unacceptable installation tolerances.
4. Recommended corrections.

D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

B. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

C. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Section 013100 "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

A. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

B. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

3.4 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.

F. Tools and Equipment: Where possible, select tools or equipment that minimize production of excessive noise levels.

G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other portions of the Work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
2. Allow for building movement, including thermal expansion and contraction.
3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

J. Repair or remove and replace damaged, defective, or nonconforming Work.

1. Comply with Section 017700 "Closeout Procedures" for repairing or removing and replacing defective Work.

3.5 CUTTING AND PATCHING

A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.

C. Temporary Support: Provide temporary support of work to be cut.

D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Section 011000 "Summary."

F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.

G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
6. Proceed with patching after construction operations requiring cutting are complete.

H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.

    a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    b. Restore damaged pipe covering to its original condition.

3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

    a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.

4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.

I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.6 OWNER-INSTALLED PRODUCTS

A. Site Access: Provide access to Project site for Owner's construction personnel.

B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel.

1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
2. Preinstallation Conferences: Include Owner's construction personnel at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend

preinstallation conferences conducted by Owner's construction personnel if portions of the Work depend on Owner's construction.

3.7 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F (27 deg C).
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

    a. Use containers intended for holding waste materials of type to be stored.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in [Section 017419 "Construction Waste Management and Disposal."

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.8 STARTING AND ADJUSTING

A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

B. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.

C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

D. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements."

3.9 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in condition that existed at commencement of the Work.

C. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION 017300

SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for the following:

1. Disposing of nonhazardous demolition and construction waste.

1.3 DEFINITIONS

A. Construction Waste: Building, structure, and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

B. Demolition Waste: Building, structure, and site improvement materials resulting from demolition operations.

C. Disposal: Removal of demolition or construction waste and subsequent salvage, sale, recycling, or deposit in landfill, incinerator acceptable to authorities having jurisdiction, or designated spoil areas on Owner’s property.

D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.4 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition and construction waste becomes property of Contractor.

B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.

1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.5 INFORMATIONAL SUBMITTALS

A. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

PART 2 - PRODUCTS (not used)

PART 3 - EXECUTION

A. Hazardous Waste: Remove, package, transport and dispose of all mercury thermostats, fluorescent light fixture ballasts containing polychlorinated biphenyls (PCBs), fluorescent light bulbs and all items containing lead cadmium batteries (such as exit signs and emergency lighting fixtures) and any other items classified as universal waste in accordance with the provisions of the regulations promulgated by the United States Environmental Protection Agency (40 CFR 273) and the New Jersey Department of Environmental Protection (N. J. A. C. 7:26A-7).

3.2 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged or recycled, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. General: Except for items or materials to be salvaged or recycled, remove waste materials and legally dispose of at designated spoil areas on Owner’s property.

C. Burning: Do not burn waste materials.

END OF SECTION 017419

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Submittals.
2. Substantial Completion procedures.
3. Final completion procedures.
4. Punch lists.
5. Warranties.
6. Final cleaning.
7. Repair of the Work.

B. Related Requirements:

1. Section 017823 "Operation and Maintenance Data" for additional operation and maintenance manual requirements.
2. Section 017839 "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
3. Section 017900 "Demonstration and Training" for requirements to train the Owner's maintenance personnel to adjust, operate, and maintain products, equipment, and systems.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of cleaning agent.

B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.

C. Certified List of Incomplete Items: Final submittal at final completion.

1.4 CLOSEOUT SUBMITTALS

A. Certificates of Release: From authorities having jurisdiction.

B. Certificate of Insurance: For continuing coverage.

C. Field Report: For pest control inspection.

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

1.6 SUBSTANTIAL COMPLETION PROCEDURES

A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.

B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect. Label with manufacturer's name and model number.

    a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Owner's signature for receipt of submittals.

5. Submit testing, adjusting, and balancing records.
6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.

C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Advise Owner of pending insurance changeover requirements.

2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
3. Complete startup and testing of systems and equipment.
4. Perform preventive maintenance on equipment used prior to Substantial Completion.
5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Section 017900 "Demonstration and Training."
6. Advise Owner of changeover in utility services.
7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
9. Complete final cleaning requirements.
10. Touch up paint and otherwise repair and restore marred exposed finishes to eliminate visual defects.

D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for final completion.
3. The Architect and their Consultants have in their Basic Scope of Services one punch list visit and one Final Completion inspection. If all outstanding work is not completed at the time of the Final Completion inspection, the Owner has the right to back charge the Contractor for their Professionals additional time.

1.7 FINAL COMPLETION PROCEDURES

A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:

1. Submit a final Application for Payment according to Section 012900 "Payment Procedures."
2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Submit pest-control final inspection report.
5. Submit final completion photographic documentation.

B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.8 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
2. Include the following information at the top of each page:

a. Project name.
b. Date.
c. Name of Architect.
d. Name of Contractor.
e. Page number.

3. Submit list of incomplete items in the following format:

a. PDF electronic file. Architect will return annotated file.

1.9 SUBMITTAL OF PROJECT WARRANTIES

A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where warranties are indicated to commence on dates other than date of Substantial Completion, or when delay in submittal of warranties might limit Owner's rights under warranty.

B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.

C. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.

D. Warranty Electronic File: Provide warranties and bonds in PDF format. Assemble complete warranty and bond submittal package into a single electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.

1. Submit by email to Architect.

E. Warranties in Paper Form:

1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (215-by-280-mm) paper.
2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

F. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:

a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
c. Rake grounds that are not planted, mulched, or paved to a smooth, even-textured surface.
d. Remove tools, construction equipment, machinery, and surplus material from Project site.
e. Remove snow and ice to provide safe access to building.
f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
h. Sweep concrete floors broom clean in unoccupied spaces.
i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
k. Remove labels that are not permanent.
l. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
m. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
n. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter on inspection.

o. Clean luminaires, lamps, globes, and reflectors to function with full efficiency.
p. Leave Project clean and ready for occupancy.

C. Construction Waste Disposal: Comply with waste disposal requirements in Section 017419 "Construction Waste Management and Disposal."

3.2 REPAIR OF THE WORK

A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.

B. Repair, or remove and replace, defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.

1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that that already show evidence of repair or restoration.

    a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.

3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION 017700

SECTION 017710 - PROJECT CLOSEOUT SUBMITTALS

Submit one copy of the following to the Architect prior to Project closeout. This form is an internal form used by REGAN YOUNG ENGLAND BUTERA and shall be used only as a guide for submissions by the Contractor. Additional items not included on this list may be required at the discretion of the Architect or as referenced in their individual sections.

CONTRACTOR: _____

ADDRESS: _____

_____

TELEPHONE NUMBER: _____

ITEM	DATE RECEIVED
1. **P** Cert. of Substantial Completion (G704)	
2. **O/P** Final App. For Payments (G702 & G703)	
3. **O/P** Affid. of Paymts. of Debts & Claims (G706)	
4. **O/P** Affid. of Release of Liens (G706A)	
5. **O/P** Consent of Surety to Final Payment (G707)	
6. **O/P** Maintenance Bond (Section 017721)	
7. **O/P** Subcontractor Guaranty (Section 017722). One for every sub-Contractor used on the Project	
8. **O/P** Statement on Business letterhead that all Monthly Workforce Tracking Reports and Weekly-Certified Payroll Records have been submitted to the Owner and the proper agencies	
9. **O/P** Certificate of Compliance on Business letterhead stating that materials and products meet specified standards or that work was done in compliance with approved construction documents	
10. **P** Operation & Maintenance Manuals. Manuals for each Trade, i.e. GC, Plumbing, HVAC, etc. shall have its own folder. Within that folder each Manual shall be titled w/ the "Item Name" and Manufacturer's Name. Also provide an O&M Index, listing the Trade folder and what is in it by spec Division No. & item name	
11. **P** Copies of All Manufacturer Warranties (Refer to spec sections). Warranties for each Trade, i.e. GC, Plumbing, HVAC, etc. shall have its own folder. Within that folder each Warranty shall be titled w/ the "Item Name" & Manufacturers Name. Also provide an	

O&M Index, listing the Trade folder & what is in it by spec Division No. and item name ..... _____

12. **P** Extra "Attic Stock" Provide copy of transmittal to Owner (see Project Manual Sections with ● adjacent to page #..... _____

13. **P** Certificate of Occupancy/Certificate of Approval..... _____

14. **P** Resolution of Punch List Items ..... _____

15. **O/P** Soil Conservation District Final Compliance Inspection..... _____

O – Original paper copy required: **These items shall be submitted together at one time**.

P – PDF copy required: **Submit one pdf copy of all closeout documentation as per the Section 017700 of the Project Manual on either a CD or thumb drive.** Each item listed above shall be a separate pdf using the titles above.

Provide separate folders for each of the following on the CD or thumb drive:

a. Close Out documents: 01 thru 09 of the attached Section 017710;
b. Architectural O&Ms, warranties & record documents;
c. HVAC O&Ms, warranties & record documents;
d. Plumbing O&Ms, warranties & record documents; and
e. Electrical O&Ms, warranties & record documents.

Final payment will not be made until all required closeout submittals have been received.

END OF SECTION 017710

SECTION 017721 - MAINTENANCE BOND

KNOW ALL MEN BY THESE PRESENTS, That we, the undersigned

_____

as principal, and a _____

Corporation organized and existing under the laws of the

State of _____and duly authorized to do business in the State of New Jersey, as Surety, are held and firmly bound unto the

_____

as Owner, in the penal sum of _____

_____
(10%) of the Final Contract Amount)

for payment of which, well and truly to be made, we hereby, jointly, and severally, bind ourselves, our heirs, executors, administrators, successors and assigns.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH, That whereas

the above named principal did on the_____day of,_____

20_____, enter into a Contract with the Owner for

_____

_____
(Project Name)

which said Contract is made a part of this bond the same as though set forth herein.

NOW, if the said principal shall remedy without cost to the Owner any defects which may develop during the TWO (2) year(s) guarantee period of the work performed under the said Contract, provided such defects, in the judgment of the Owner are caused by defective or inferior materials or workmanship, then this obligation shall be void, otherwise it shall be and remain in full force and effect.

IT IS FURTHER AGREED that any alterations which may be made in the terms of the Contract or in the work to be done or materials to be furnished or labor to be supplied or performed under it, or the giving by the Owner of any extension of time for the performance of the Contract, or any other forbearance on the part of either the Owner or the Principal to the other, shall not in any way release the Principal and the Surety or Sureties, or either or any of them, their heirs, executors, administrators, successors or assigns, from their liability hereunder, notice to the Surety or Sureties of any such alterations, extension or forbearance being hereby waived.

IN WITNESS WHEREOF, the said Principal and Surety have duly executed this bond under seal the day and year written below.

BOND NUMBER:_____

Signed and sealed this _____ day of _____, 20_____.

_____
(Principal) (Seal)

_____
(Witness)

_____
(Title)

_____
(Surety) (Seal)

_____
(Witness)

_____
(Title)

END OF SECTION 017721

SECTION 017722 – SUBCONTRACTOR GUARANTY

WHEREAS:
The Contractor, _____

has entered into a Contract with the Owner, _____

_____ for the construction of _____

_____ at _____

_____

_____,

the Work.

AND WHEREAS:
The Subcontractor, _____
has entered into an agreement with the Contractor for the performance of a portion of said work.

NOW THEREFORE:
Pursuant to the terms of the Contract, the Contractor and the Subcontractor, for their heirs, executors, administrators, successors and assigns, jointly and severally guaranty

_____, the Item, as

described in the Specifications, Page(s)_____through_____for TWO (2) year(s), the

period, starting from_____(date indicated in the Certificate of Substantial Completion).

FURTHERMORE:
In addition to the requirements of the Conditions of the Contract requiring correction of the work within a period of TWO (2) year(s) from Date of Substantial Completion, the Contractor and the Subcontractor do hereby guaranty and warrant that they will make good and replace, at their own cost and expense, all defects appearing in the Item during the Period and be responsible for all damage caused to the Owner by such defects or by the work required to remedy such defects. All corrections to defective work shall be made at the convenience of the Owner and shall be performed in a good workmanlike manner.

IT IS UNDERSTOOD THAT:
This Guaranty shall in no way be construed to affect, in any manner, any of the provisions of the Contract or to modify or limit any of the obligations, liabilities or duties of the Contractor or Subcontractor.

IT IS FURTHER UNDERSTOOD THAT:
This Guaranty shall remain binding and irrevocable during the Period and that the Contractor and the Subcontractor shall not contest the validity of, or in any way attempt to revoke or withdraw from this Guaranty for any cause whatsoever, whether arising before or after the execution of the Contract or this Guaranty.

IN WITNESS WHEREOF:
The undersigned Contractor and Subcontractor have caused this

Instrument to be signed and executed this _____day

Of _____,20_____.

_____
Subcontractor

WITNESS: BY:_____

TITLE:_____

_____
Contractor

WITNESS: BY:_____

TITLE:_____

END OF SECTION 017722

SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:

1. Operation and maintenance documentation directory manuals.
2. Emergency manuals.
3. Systems and equipment operation manuals.
4. Systems and equipment maintenance manuals.
5. Product maintenance manuals.

B. Related Requirements:

1. Section 013300 "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.

1.3 DEFINITIONS

A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.

B. Subsystem: A portion of a system with characteristics similar to a system.

1.4 CLOSEOUT SUBMITTALS

A. Submit operation and maintenance manuals indicated. Provide content for each manual as specified in individual Specification Sections, and as reviewed and approved at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.

1. Architect will comment on whether content of operation and maintenance submittals is acceptable.
2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.

B. Format: Submit operation and maintenance manuals in the following format:

1. Submit by email to Architect] Enable reviewer comments on draft submittals.
2. Submit three paper copies. Architect will return two copies.

C. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 15 days before commencing demonstration and training. Architect will return copy with comments.

D. Comply with Section 017700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

1.5 FORMAT OF OPERATION AND MAINTENANCE MANUALS

A. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.

1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
2. File Names and Bookmarks: Bookmark individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.

B. Manuals, Paper Copy: Submit manuals in the form of hard-copy, bound and labeled volumes.

1. Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch (215-by-280-mm) paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.

a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents, and indicate Specification Section number on bottom of spine. Indicate volume number for multiple-volume sets.

2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.

3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment. Enclose title pages and directories in clear plastic sleeves.
4. Supplementary Text: Prepared on 8-1/2-by-11-inch (215-by-280-mm) white bond paper.
5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.

    a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
    b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

1.6 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

A. Organization of Manuals: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:

1. Title page.
2. Table of contents.
3. Manual contents.

B. Title Page: Include the following information:

1. Subject matter included in manual.
2. Name and address of Project.
3. Name and address of Owner.
4. Date of submittal.
5. Name and contact information for Contractor.
6. Name and contact information for Construction Manager.
7. Name and contact information for Architect.
8. Name and contact information for Commissioning Authority.
9. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
10. Cross-reference to related systems in other operation and maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.

D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

1.7 EMERGENCY MANUALS

A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.

B. Content: Organize manual into a separate section for each of the following:

1. Type of emergency.
2. Emergency instructions.
3. Emergency procedures.

C. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:

1. Fire.
2. Flood.
3. Gas leak.
4. Water leak.
5. Power failure.
6. Water outage.
7. System, subsystem, or equipment failure.
8. Chemical release or spill.

D. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.

E. Emergency Procedures: Include the following, as applicable:

1. Instructions on stopping.
2. Shutdown instructions for each type of emergency.
3. Operating instructions for conditions outside normal operating limits.
4. Required sequences for electric or electronic systems.
5. Special operating instructions and procedures.

1.8 SYSTEMS AND EQUIPMENT OPERATION MANUALS

A. Systems and Equipment Operation Manual: Assemble a complete set of data indicating operation of each system, subsystem, and piece of equipment not part of a system. Include

information required for daily operation and management, operating standards, and routine and special operating procedures.

1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.

B. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:

1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
2. Performance and design criteria if Contractor has delegated design responsibility.
3. Operating standards.
4. Operating procedures.
5. Operating logs.
6. Wiring diagrams.
7. Control diagrams.
8. Piped system diagrams.
9. Precautions against improper use.
10. License requirements including inspection and renewal dates.

C. Descriptions: Include the following:

1. Product name and model number. Use designations for products indicated on Contract Documents.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

D. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Seasonal and weekend operating instructions.
8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

E. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

F. Piped Systems: Diagram piping as installed, and identify color coding where required for identification.

1.9 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

A. Systems and Equipment Maintenance Manuals: Assemble a complete set of data indicating maintenance of each system, subsystem, and piece of equipment not part of a system. Include manufacturers' maintenance documentation, preventive maintenance procedures and frequency, repair procedures, wiring and systems diagrams, lists of spare parts, and warranty information.

1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.

B. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranties and bonds as described below.

C. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

D. Manufacturers' Maintenance Documentation: Include the following information for each component part or piece of equipment:

1. Standard maintenance instructions and bulletins; include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

    a. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
3. Identification and nomenclature of parts and components.
4. List of items recommended to be stocked as spare parts.

E. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:

1. Test and inspection instructions.
2. Troubleshooting guide.
3. Precautions against improper maintenance.
4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
5. Aligning, adjusting, and checking instructions.
6. Demonstration and training video recording, if available.

F. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.

1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.

G. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.

H. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.

I. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

J. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.

1.10 PRODUCT MAINTENANCE MANUALS

A. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

B. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

C. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference

Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

D. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

E. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.
2. Types of cleaning agents to be used and methods of cleaning.
3. List of cleaning agents and methods of cleaning detrimental to product.
4. Schedule for routine cleaning and maintenance.
5. Repair instructions.

F. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

G. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 017823

SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for project record documents, including the following:

1. Record Drawings.
2. Record Specifications.
3. Record Product Data.
4. Miscellaneous record submittals.

B. Related Requirements:

1. Section 017700 "Closeout Procedures" for general closeout procedures.
2. Section 017823 "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.3 CLOSEOUT SUBMITTALS

A. Record Drawings: Comply with the following:

1. Number of Copies: Submit copies of record Drawings as follows:

a. Initial Submittal:

1) Submit PDF electronic files of scanned record prints and one of file prints.

b. Final Submittal:

1) Submit PDF electronic files of scanned record prints and three set(s) of prints.

B. Record Specifications: Submit one paper copy and annotated PDF electronic files of Project's Specifications, including addenda and contract modifications.

C. Record Product Data: Submit one paper copy and annotated PDF electronic files and directories of each submittal.

1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

D. Reports: Submit written report weekly indicating items incorporated into project record documents concurrent with progress of the Work, including revisions, concealed conditions, field changes, product selections, and other notations incorporated.

1.4 RECORD DRAWINGS

A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.

1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.

a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
b. Accurately record information in an acceptable drawing technique.
c. Record data as soon as possible after obtaining it.
d. Record and check the markup before enclosing concealed installations.
e. Cross-reference record prints to corresponding photographic documentation.

2. Content: Types of items requiring marking include, but are not limited to, the following:

a. Dimensional changes to Drawings.
b. Revisions to details shown on Drawings.
c. Depths of foundations.
d. Locations and depths of underground utilities.
e. Revisions to routing of piping and conduits.
f. Revisions to electrical circuitry.
g. Actual equipment locations.
h. Duct size and routing.
i. Locations of concealed internal utilities.
j. Changes made by Change Order or Construction Change Directive.
k. Changes made following Architect's written orders.
l. Details not on the original Contract Drawings.
m. Field records for variable and concealed conditions.
n. Record information on the Work that is shown only schematically.

3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.

4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with Architect. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:

1. Format: Same digital data software program, version, and operating system as the original Contract Drawings.
2. Format: Annotated PDF electronic file with comment function enabled.
3. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
4. Refer instances of uncertainty to Architect for resolution.
5. Architect will furnish Contractor with one set of digital data files of the Contract Drawings for use in recording information.

    a. See Section 013100 "Project Management and Coordination" for requirements related to use of Architect's digital data files.
    b. Architect will provide data file layer information. Record markups in separate layers.

C. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Record Prints: Organize record prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
2. Format: Annotated PDF electronic file with comment function enabled.
3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
4. Identification: As follows:

    a. Project name.
    b. Date.
    c. Designation "PROJECT RECORD DRAWINGS."
    d. Name of Architect.
    e. Name of Contractor.

1.5 RECORD SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
4. For each principal product, indicate whether record Product Data has been submitted in operation and maintenance manuals instead of submitted as record Product Data.
5. Note related Change Orders[, record Product Data,] and record Drawings where applicable.

B. Format: Submit record Specifications as scanned PDF electronic file(s) of marked-up paper copy of Specifications.

1.6 RECORD PRODUCT DATA

A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.

B. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders, record Specifications, and record Drawings where applicable.

C. Format: Submit record Product Data as scanned PDF electronic file(s) of marked-up paper copy of Product Data.

1. Include record Product Data directory organized by Specification Section number and title, electronically linked to each item of record Product Data.

1.7 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

B. Format: Submit miscellaneous record submittals as scanned PDF electronic file(s) of marked-up miscellaneous record submittals.

1. Include miscellaneous record submittals directory organized by Specification Section number and title, electronically linked to each item of miscellaneous record submittals.

1.8 MAINTENANCE OF RECORD DOCUMENTS

A. Maintenance of Record Documents: Store record documents in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect's reference during normal working hours.

PART 2 - PRODUCTS

PART 3 - EXECUTION

END OF SECTION 017839

SECTION 017900 - DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:

1. Instruction in operation and maintenance of systems, subsystems, and equipment.
2. Demonstration and training video recordings.

1.3 INFORMATIONAL SUBMITTALS

A. Instruction Program: Submit outline of instructional program for demonstration and training, including a list of training modules and a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.

1. Indicate proposed training modules using manufacturer-produced demonstration and training video recordings for systems, equipment, and products in lieu of video recording of live instructional module.

B. Attendance Record: For each training module, submit list of participants and length of instruction time.

C. Evaluations: For each participant and for each training module, submit results and documentation of performance-based test.

1.4 QUALITY ASSURANCE

A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.

B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Section 014000 "Quality Requirements," experienced in operation and maintenance procedures and training.

C. Preinstruction Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination." Review methods and procedures related to demonstration and training including, but not limited to, the following:

1. Inspect and discuss locations and other facilities required for instruction.
2. Review and finalize instruction schedule and verify availability of educational materials, instructors' personnel, audiovisual equipment, and facilities needed to avoid delays.
3. Review required content of instruction.
4. For instruction that must occur outside, review weather and forecasted weather conditions and procedures to follow if conditions are unfavorable.

1.5 COORDINATION

A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.

B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.

C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data have been reviewed and approved by Architect.

1.6 INSTRUCTION PROGRAM

A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.

B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:

1. Basis of System Design, Operational Requirements, and Criteria: Include the following:

a. System, subsystem, and equipment descriptions.
b. Performance and design criteria if Contractor is delegated design responsibility.
c. Operating standards.
d. Regulatory requirements.
e. Equipment function.
f. Operating characteristics.
g. Limiting conditions.
h. Performance curves.

2. Documentation: Review the following items in detail:

a. Emergency manuals.
b. Systems and equipment operation manuals.
c. Systems and equipment maintenance manuals.
d. Product maintenance manuals.
e. Project Record Documents.
f. Identification systems.
g. Warranties and bonds.
h. Maintenance service agreements and similar continuing commitments.

3. Emergencies: Include the following, as applicable:

a. Instructions on meaning of warnings, trouble indications, and error messages.
b. Instructions on stopping.
c. Shutdown instructions for each type of emergency.
d. Operating instructions for conditions outside of normal operating limits.
e. Sequences for electric or electronic systems.
f. Special operating instructions and procedures.

4. Operations: Include the following, as applicable:

a. Startup procedures.
b. Equipment or system break-in procedures.
c. Routine and normal operating instructions.
d. Regulation and control procedures.
e. Control sequences.
f. Safety procedures.
g. Instructions on stopping.
h. Normal shutdown instructions.
i. Operating procedures for emergencies.
j. Operating procedures for system, subsystem, or equipment failure.
k. Seasonal and weekend operating instructions.
l. Required sequences for electric or electronic systems.
m. Special operating instructions and procedures.

5. Adjustments: Include the following:

a. Alignments.
b. Checking adjustments.
c. Noise and vibration adjustments.
d. Economy and efficiency adjustments.

6. Troubleshooting: Include the following:

a. Diagnostic instructions.
b. Test and inspection procedures.

7. Maintenance: Include the following:

a. Inspection procedures.

b. Types of cleaning agents to be used and methods of cleaning.
c. List of cleaning agents and methods of cleaning detrimental to product.
d. Procedures for routine cleaning.
e. Procedures for preventive maintenance.
f. Procedures for routine maintenance.
g. Instruction on use of special tools.

8. Repairs: Include the following:

a. Diagnosis instructions.
b. Repair instructions.
c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
d. Instructions for identifying parts and components.
e. Review of spare parts needed for operation and maintenance.

1.7 PREPARATION

A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Section 017823 "Operation and Maintenance Data."

B. Set up instructional equipment at instruction location.

1.8 INSTRUCTION

A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.

B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

1. Architect will furnish an instructor to describe basis of system design, operational requirements, criteria, and regulatory requirements.
2. Owner will furnish Contractor with names and positions of participants.

C. Scheduling: Provide instruction at mutually agreed-on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.

1. Schedule training with Owner, through Architect, with at least seven days' advance notice.

D. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.

E. Cleanup: Collect used and leftover educational materials and give to Owner. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

PART 2 - PRODUCTS

PART 3 - EXECUTION

END OF SECTION 017900

SECTION 024119 - SELECTIVE DEMOLITION

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. Section Includes:

1. Demolition and removal of selected portions of building or structure.
2. Hazardous abatement at School #4, School #5 and the Middle School.

B. Related Requirements:

1. Section 011000 "Summary" for restrictions on use of the premises, Owner-occupancy requirements, and phasing requirements.
2. Section 017300 "Execution" for cutting and patching procedures.

1.3 DEFINITIONS

A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged or reinstalled.

B. Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage, prepare for reuse, and reinstall where indicated.

C. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.

1.4 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.

1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For refrigerant recovery technician.

B. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and , for noise control. Indicate proposed locations and construction of barriers.

C. Schedule of Selective Demolition Activities: Indicate the following:

1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
2. Interruption of utility services. Indicate how long utility services will be interrupted.
3. Coordination for shutoff, capping, and continuation of utility services.
4. Use of elevator and stairs.
5. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.

D. Predemolition Photographs or Video: Show existing conditions of adjoining construction, including finish surfaces, that might be misconstrued as damage caused by demolition operations. Comply with Section 013233 "Photographic Documentation." Submit before Work begins.

E. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

1.6 CLOSEOUT SUBMITTALS

A. Inventory: Submit a list of items that have been removed and salvaged.

1.7 FIELD CONDITIONS

A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.

B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

A. OSHA Respirable Crystalline Silica Standard for Construction: Contractor shall fully comply with OSHA Standard 29 CFR 1926.1153, which requires employer to limit worker exposure to respirable crystalline silica and to take other steps to protect workers.

B. Hazardous Materials: It is expected that hazardous materials will be encountered in the Work at the Lindenwold School #4, School #5, and Lindenwold Middle School. Follow the asbestos abatement requirements in the report found in the Appendix.

1. If additional suspected hazardous materials are encountered at any school, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

C. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

1. Maintain fire-protection facilities in service during selective demolition operations.

1.8 COORDINATION

A. Arrange selective demolition schedule so as not to interfere with Owner's operations.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting selective demolition operations.

B. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs or video.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.

1. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
2. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated on Drawings to be removed.

a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.
c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material and leave in place.

3.3 PROTECTION

A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
4. Cover and protect furniture, furnishings, and equipment that have not been removed.
5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 "Temporary Facilities and Controls."

B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

1. Strengthen or add new supports when required during progress of selective demolition.

C. Remove temporary barricades and protections where hazards no longer exist.

3.4 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
5. Maintain adequate ventilation when using cutting torches.
6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
7. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
9. Dispose of demolished items and materials promptly. Comply with requirements in Section 017419 "Construction Waste Management and Disposal."

B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

C. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Concrete: Demolish in small sections. Using power-driven saw, cut concrete to a depth of at least 3/4 inch (19 mm) at junctures with construction to remain. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete. Neatly trim openings to dimensions indicated.

B. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, and then remove masonry between saw cuts.

C. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, and then break up and remove.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

A. Remove demolition waste materials from Project site and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction.

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
3. Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."

B. Hazardous Waste: Remove, package, transport and dispose of all mercury thermostats, fluorescent light fixture ballasts containing polychlorinated biphenyls (PCBs), fluorescent light bulbs and all items containing lead cadmium batteries (such as exit signs and emergency lighting fixtures) and any other items classified as universal waste in accordance with the provisions of the regulations promulgated by the United States Environmental Protection Agency (40 CFR 273) and the New Jersey Department of Environmental Protection (N. J. A. C. 7:26A-7).

C. Burning: Do not burn demolished materials.

3.7 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

3.8 SELECTIVE DEMOLITION SCHEDULE

A. Prior to the commencement of the Work, the Contractor shall review with the Owner all materials & equipment to be removed. Should the Owner opt to keep any items, the Contractor shall salvage & deliver the items to the Owner on the site where so directed & properly dispose of all other demolition & construction materials.

END OF SECTION 024119

SECTION 035413 - GYPSUM CEMENT UNDERLAYMENT

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. Section Includes:

1. Self-leveling, gypsum cement underlayment for application below interior floor coverings.

1.3 ACTION SUBMITTALS

A. Product Data: For the following:

1. Gypsum cement underlayment.
2. Primer.
3. Moisture barrier.
4. Surface sealer.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Installer who is approved by manufacturer for application of underlayment products required for this Project.

1.6 FIELD CONDITIONS

A. Environmental Limitations: Comply with manufacturer's written instructions for substrate temperature, ventilation, ambient temperature and humidity, and other conditions affecting underlayment performance.

1. Place gypsum cement underlayments only when ambient temperature and temperature of substrates are between 50 and 80 deg F (10 and 27 deg C) or as recommended by the manufacturer in writing.

PART 2 - PRODUCTS

2.1 GYPSUM CEMENT UNDERLAYMENTS

A. Gypsum Cement Underlayment: Self-leveling, gypsum cement product that can be applied in minimum uniform thickness of 1/8 inch (3 mm) to match adjacent floor elevations.

1. Basis-of-Design Manufacturer: Ardex V1200; Ardex Americas.

2. Acceptable Alternative Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Allied Custom Gypsum Plasterworks, LLC.
b. Euclid Chemical Company (The); an RPM company.
c. Hacker Industries, Inc.
d. MAPEI Corporation.
e. USG Corporation.

3. Thickness Estimate: It is estimated the thickness of the existing parquet flooring to be removed is ¾-inch to 1-inch thickness. Contractor shall field verify final thickness.

4. Cement Binder: Gypsum or blended gypsum cement as defined by ASTM C219.
5. Compressive Strength: Not less than 4500 psi at 28 days when tested according to ASTM C472.
6. Underlayment Additive: Resilient-emulsion product of underlayment manufacturer, formulated for use with underlayment when applied to substrate and conditions indicated.

B. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch (3 to 6 mm); or coarse sand as recommended by underlayment manufacturer.

1. Provide aggregate when recommended in writing by underlayment manufacturer for underlayment thickness required.

C. Water: Potable and at a temperature of not more than 70 deg F (21 deg C).

D. Primer: Product of underlayment manufacturer recommended in writing for substrate, conditions, and application indicated.

E. Moisture Barrier: Moisture Control System product of underlayment manufacturer recommended in writing for conditions present, and application indicated.

F. Surface Sealer: Designed to reduce porosity as recommended by manufacturer for type of floor covering to be applied to underlayment.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for conditions affecting performance of the Work.

B. Proceed with application only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Prepare and clean substrate according to manufacturer's written instructions.

1. Treat nonmoving substrate cracks according to manufacturer's written instructions to prevent cracks from telegraphing (reflecting) through underlayment.
2. Fill substrate voids to prevent underlayment from leaking.

B. Concrete Substrates: Mechanically remove (shotblasting or other manufacturer-recommended methods), according to manufacturer's written instructions, laitance, glaze, efflorescence, existing adhesives, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants that might impair underlayment bond.

1. Moisture Testing: Perform tests so that each test area does not exceed 200 sq. ft. (18.6 sq. m), and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.

a. Anhydrous Calcium Chloride Test, ASTM F1869: Proceed with installation only after substrates do not exceed a maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. (1.36 kg of water/100 sq. m) in 24 hours.
b. Relative Humidity Test: Using in-situ probes, ASTM F2170. Proceed with installation only after substrates have a maximum 85 percent relative humidity level measurement, or as recommended by gypsum cement underlayment manufacturer.

C. Existing Concrete Cracks: Repair existing control joints, concrete slabs, etc. shall be repaired and prepared prior to installation of underlayment and floor finishes. All repairs must be in full accordance with the underlayment and flooring manufacturers written requirements.

D. Adhesion Tests: After substrate preparation, test substrate for adhesion with underlayment according to manufacturer's written instructions.

3.3 INSTALLATION

A. Mix and install underlayment components according to manufacturer's written instructions.

1. Close areas to traffic during underlayment installation and for time period after installation recommended in writing by manufacturer.

2. Coordinate installation of components to provide optimum adhesion to substrate and between coats.
3. At substrate expansion, isolation, and other moving joints, allow joint of same width to continue through underlayment.

B. Apply primer over prepared substrate at manufacturer's recommended spreading rate.

C. Install underlayment to produce uniform, level surface.

1. Install a final layer without aggregate to product surface.
2. Feather edges to match adjacent floor elevations.

D. Cure underlayment according to manufacturer's written instructions. Prevent contamination during installation and curing processes.

E. Do not install floor coverings over underlayment until after time period recommended in writing by underlayment manufacturer.

F. Apply surface sealer at rate recommended by manufacturer.

G. Install moisture barrier as recommended by the underlayment manufacturer and the flooring manufacturer’s requirements. Contractor shall coordinate carefully with the flooring manufacturer/contractor.

H. Remove and replace underlayment areas that evidence lack of bond with substrate, including areas that emit a "hollow" sound when tapped.

3.4 INSTALLATION TOLERANCES

A. Finish and measure surface, so gap at any point between gypsum cement underlayment surface and an unleveled, freestanding, 10-foot- (3.05-m-) long straightedge resting on two high spots and placed anywhere on the surface does not exceed 1/8 inch (3 mm).

3.5 PROTECTION

A. Protect underlayment from concentrated and rolling loads for remainder of construction period.

END OF SECTION 035413

SECTION 042000 - UNIT MASONRY ASSEMBLIES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes unit masonry assemblies consisting of the following:

1. Concrete masonry units.
2. Mortar and grout.
3. Reinforcing steel.
4. Masonry joint reinforcement.
5. Ties and anchors.

1.3 DEFINITIONS

A. Reinforced Masonry: Masonry containing reinforcing steel in grouted cells.

1.4 PERFORMANCE REQUIREMENTS

A. Provide unit masonry that develops the following net-area compressive strengths (f'm) at 28 days. Determine compressive strength of masonry from net-area compressive strengths of masonry units and mortar types according to Tables 1 and 2 in ACI 530.1/ASCE 6/TMS 602.

B. Provide unit masonry that develops the following net-area compressive strengths (f'm) at 28 days. Determine compressive strength of masonry by testing masonry prisms according to ASTM C 1314.

1. For Concrete Unit Masonry: f'm = 1500 psi (10.3 MPa).

1.5 SUBMITTALS

A. Product Data: For each different masonry unit, accessory, and other manufactured product specified.

B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

D. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.6 PROJECT CONDITIONS

A. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.

1. Protect base of walls from rain-splashed mud and from mortar splatter by coverings spread on ground and over wall surface.
2. Protect sills, ledges, and projections from mortar droppings.
3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.

PART 2 – PRODUCTS

2.1 CONCRETE MASONRY UNITS

A. General: Provide shapes indicated and as follows:

1. Provide special shapes for lintels, corners, jambs, sash, control joints, headers, bonding, and other special conditions.
2. Provide bullnose units for outside corners, unless otherwise indicated.
3. Provide square-edged units for outside corners, unless indicated as bullnose.

B. Concrete Masonry Units (CMU): ASTM C 90 and as follows:

1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 1900 psi (13.1 MPa).
2. Weight Classification: Normal weight unless otherwise indicated.
3. Size (Width): Manufactured to the following dimensions, where indicated on the drawings:

a. 4 inches nominal; 3-5/8 inches actual.

b. 6 inches nominal; 5-5/8 inches actual.
c. 8 inches nominal; 7-5/8 inches actual.

2.2 MORTAR AND GROUT MATERIALS

A. Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.

B. Mortar Cement: ASTM C 1329.

C. Aggregate for Mortar: ASTM C 144; except for joints less than 1/4 inch (6.5 mm) thick, use aggregate graded with 100 percent passing the No. 16 (1.18-mm) sieve.

D. Aggregate for Grout: ASTM C 404.

E. Water: Potable.

2.3 REINFORCING STEEL

A. Uncoated Steel Reinforcing Bars: ASTM A 615/A 615M; ASTM A 616/A 616M, including Supplement 1; or ASTM A 617/A 617M, Grade 60 (Grade 400).

2.4 MASONRY JOINT REINFORCEMENT

A. General: ASTM A 951 and as follows:

1. Hot-dip galvanized, carbon-steel wire.
2. Wire Size for Side Rods: 9 gage diameter.
3. Wire Size for Cross Rods: 9 gage diameter.
4. Provide in lengths of not less than 10 feet (3 m), with prefabricated corner and tee units where indicated.

B. For single-wythe masonry, provide either ladder or truss type with single pair of side rods and cross rods spaced not more than 16 inches (407 mm) o.c.

2.5 TIES AND ANCHORS, GENERAL

A. General: Provide ties and anchors, specified in subsequent articles, made from materials that comply with this Article, unless otherwise indicated.

B. Hot-Dip Galvanized Carbon-Steel Wire: ASTM A 82; with ASTM A 153, Class B-2 coating.

C. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.

2.6 BENT WIRE TIES

A. General: Rectangular units with closed ends and not less than 4 inches (100 mm) wide. Z-shaped ties with ends bent 90 degrees to provide hooks not less than 2 inches (50 mm) long may be used for masonry constructed from solid units or hollow units laid with cells horizontal.

1. Where coursing between wythes does not align, use adjustable ties composed of 2 parts; 1 with pintles, the other with eyes; with maximum misalignment of 1-1/4 inches (32 mm).
2. Where wythes are of different materials, use adjustable ties composed of 2 parts; 1 with pintles, the other with eyes; with maximum misalignment of 1-1/4 inches (32 mm).

B. Wire: Fabricate from 9 gage, hot-dip galvanized steel wire.

2.7 ADJUSTABLE ANCHORS FOR CONNECTING TO STEEL FRAME

A. General: Provide two-piece assemblies that allow vertical or horizontal adjustment but resist tension and compression forces perpendicular to plane of wall.

1. Anchor Section: Crimped 1/4-inch-diameter, hot-dip galvanized steel wire anchor section for welding to steel.
2. Tie Section: Triangular-shaped wire tie, sized to extend within 1-inch of masonry face, made from 3/16-inch diameter, hot-dip galvanized steel wire.

2.8 MISCELLANEOUS ANCHORS

A. Dovetail Slots: Furnish dovetail slots with filler strips, of slot size indicated, fabricated from 0.0336-inch (0.85-mm), galvanized steel sheet.

B. Anchor Bolts: Steel bolts complying with ASTM A 307, Grade A (ASTM F 568, Property Class 4.6); with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers; hot-dip galvanized to comply with ASTM A 153, Class C; of diameter and length indicated and in the following configurations:

1. Headed bolts.
2. Nonheaded bolts, bent in manner indicated.

C. Postinstalled Anchors: Anchors as described below, with capability to sustain, without failure, load imposed within factors of safety indicated, as determined by testing per ASTM E 488, conducted by a qualified independent testing agency.

1. Type: Reinforcing bars epoys installed into existing concrete.
2. Corrosion Protection: Stainless-steel components complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2 (ASTM F 738M and ASTM F 836M, Alloy Group 1 or 4) for bolts and nuts; ASTM A 666 or ASTM A 276, Type 304 or 316, for anchors.

3. For Postinstalled Anchors in Grouted Masonry Units: Capability to sustain, without failure, a load equal to six times the loads imposed.

2.9 MISCELLANEOUS MASONRY ACCESSORIES

A. Compressible Filler: Premolded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from neoprene or urethane.

B. Preformed Control-Joint Gaskets: Material as indicated below, designed to fit standard sash block and to maintain lateral stability in masonry wall; size and configuration as indicated.

1. Styrene-Butadiene-Rubber Compound: ASTM D 2000, Designation M2AA-805.

C. Reinforcing Bar Positioners: Wire units designed to fit into mortar bed joints spanning masonry unit cells with loops for holding reinforcing bars in center of cells. Units are formed from 0.187-inch (4.8-mm) steel wire, hot-dip galvanized after fabrication.

1. Provide units with either two loops or four loops as needed for number of bars indicated.

D. Products: Subject to compliance with requirements, provide one of the following:

1. Reinforcing Bar Positioners:

a. D/A 811; Dur-O-Wal, Inc.
b. D/A 816; Dur-O-Wal, Inc.
c. No. 376 Rebar Positioner; Heckman Building Products, Inc.
d. #RB Rebar Positioner; Hohmann & Barnard, Inc.
e. #RB-Twin Rebar Positioner; Hohmann & Barnard, Inc.
f. Double O-Ring Rebar Positioner; Masonry Reinforcing Corporation of America.
g. O-Ring Rebar Positioner; Masonry Reinforcing Corporation of America.
h. Architect-approved equal.

2.10 MORTAR AND GROUT MIXES

A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated.

1. Do not use calcium chloride in mortar or grout.
2. Add cold-weather admixture (if used) at the same rate for all mortar, regardless of weather conditions, to ensure that mortar color is consistent.

B. Mortar for Unit Masonry: Comply with ASTM C 270, Proportion Specification.

1. For interior load-bearing walls; for interior non-load-bearing partitions; and for other applications where another type is not indicated, use Type N.

C. Grout for Unit Masonry: Comply with ASTM C 476.

1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with Table 5 of ACI 530.1/ASCE 6/TMS 602 for dimensions of grout spaces and pour height.
2. Provide grout with a slump of 8 to 11 inches (200 to 280 mm) as measured according to ASTM C 143.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.

1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance.
2. Verify that foundations are within tolerances specified.
3. Verify that reinforcing dowels are properly placed.
4. Proceed with installation only after unsatisfactory conditions have been corrected.

B. Before installation, examine rough-in and built-in construction to verify actual locations of piping connections.

3.2 INSTALLATION, GENERAL

A. Thickness: Build cavity and composite walls and other masonry construction to the full thickness shown. Build single-wythe walls to the actual widths of masonry units, using units of widths indicated.

B. Build chases and recesses to accommodate items specified in this Section and in other Sections of the Specifications.

C. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match the construction immediately adjacent to the opening.

D. Cut masonry units with motor-driven saws to provide clean, sharp, unchipped edges. Cut units as required to provide a continuous pattern and to fit adjoining construction. Where possible, use full-size units without cutting. Allow units cut with water-cooled saws to dry

before placing, unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.

E. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures.

3.3 CONSTRUCTION TOLERANCES

A. Comply with tolerances in ACI 530.1/ASCE 6/TMS 602 and the following:

B. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/4 inch in 20 feet (6 mm in 6 m), nor 1/2 inch (12 mm) maximum.

C. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet (6 mm in 3 m), nor 1/2 inch (12 mm) maximum.

D. For conspicuous horizontal lines, such as exposed lintels, sills, parapets, and reveals, do not vary from level by more than 1/4 inch in 20 feet (6 mm in 6 m), nor 1/2 inch (12 mm) maximum.

E. For exposed bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch (3 mm), with a maximum thickness limited to 1/2 inch (12 mm). Do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch (3 mm).

F. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch (3 mm). Do not vary from adjacent bed-joint and head-joint thicknesses by more than 1/8 inch (3 mm).

3.4 LAYING MASONRY WALLS

A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.

B. Bond Pattern for Exposed Masonry: Lay exposed masonry in the following bond pattern; do not use units with less than nominal 4-inch (100-mm) horizontal face dimensions at corners or jambs.

1. One-half running bond with vertical joint in each course centered on units in courses above and below.

C. Lay concealed masonry with all units in a wythe in running bond or bonded by lapping not less than 2 inches (50 mm). Bond and interlock each course of each wythe at corners. Do not use units with less than nominal 4-inch (100-mm) horizontal face dimensions at corners or jambs.

D. Stopping and Resuming Work: In each course, rack back one-half-unit length for one-half running bond or one-third-unit length for one-third running bond; do not tooth. Clean exposed surfaces of set masonry, wet clay masonry units lightly if required, and remove loose masonry units and mortar before laying fresh masonry.

E. Built-in Work: As construction progresses, build in items specified under this and other Sections of the Specifications. Fill in solidly with masonry around built-in items.

F. Fill space between hollow-metal frames and masonry solidly with mortar, unless otherwise indicated.

G. Fill cores in hollow concrete masonry units with grout 24 inches (600 mm) under bearing plates, beams, lintels, posts, and similar items, unless otherwise indicated.

H. Build non-load-bearing interior partitions full height of story to underside of solid floor or roof structure above.

1. Install compressible filler in joint between top of partition and underside of structure above.
2. At fire-rated partitions, install firestopping in joint between top of partition and underside of structure above to comply with Division 7 Section "Joint Firestopping."

3.5 MORTAR BEDDING AND JOINTING

A. Lay hollow masonry units as follows:

1. With full mortar coverage on horizontal and vertical face shells.
2. Bed webs in mortar in starting course on footings and in all courses of piers, columns, and pilasters, and where adjacent to cells or cavities to be filled with grout.
3. For starting course on footings where cells are not grouted, spread out full mortar bed, including areas under cells.

B. Lay solid brick-size masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.

1. At cavity walls, bevel beds away from cavity, to minimize mortar protrusions into cavity. As work progresses, trowel mortar fins protruding into cavity flat against the cavity face of the brick.

C. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than the joint thickness, unless otherwise indicated.

3.6 MASONRY JOINT REINFORCEMENT

A. General: Provide continuous masonry joint reinforcement as indicated. Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch (16 mm) on exterior side of walls, 1/2 inch (13 mm) elsewhere. Lap reinforcement a minimum of 6 inches (150 mm).

1. Space reinforcement not more than 16 inches (406 mm) o.c.
2. Space reinforcement not more than 8 inches (203 mm) o.c. in foundation walls and parapet walls.
3. Provide reinforcement not more than 8 inches (203 mm) above and below wall openings and extending 12 inches (305 mm) beyond openings.

    a. Reinforcement above is in addition to continuous reinforcement.

B. Cut or interrupt joint reinforcement at control and expansion joints, unless otherwise indicated.

C. Provide continuity at corners and wall intersections by using prefabricated "L" and "T" sections. Cut and bend reinforcing units as directed by manufacturer for continuity at returns, offsets, column fireproofing, pipe enclosures, and other special conditions.

3.7 ANCHORING MASONRY TO STRUCTURAL MEMBERS

A. Anchor masonry to structural members where masonry abuts or faces structural members to comply with the following:

1. Provide an open space not less than 1 inch (25 mm) in width between masonry and structural member, unless otherwise indicated. Keep open space free of mortar or other rigid materials.
2. Anchor masonry to structural members with flexible anchors embedded in masonry joints and attached to structure.
3. Space anchors as indicated, but not more than 24 inches (610 mm) o.c. vertically and 36 inches (915 mm) o.c. horizontally.

3.8 CONTROL AND EXPANSION JOINTS

A. General: Install control and expansion joints in unit masonry where indicated or if not shown, in accordance with published industry standards. Build-in related items as masonry progresses. Do not form a continuous span through movement joints unless provisions are made to prevent in-plane restraint of wall or partition movement.

B. Form control joints in concrete masonry as follows:

1. Install preformed control-joint gaskets designed to fit standard sash block.

C. Build in horizontal, pressure-relieving joints where indicated; construct joints by either leaving an air space or inserting a compressible filler of width required for installing sealant and backer rod specified in Division 7 Section "Joint Sealants."

1. Locate horizontal, pressure-relieving joints beneath shelf angles supporting masonry veneer and attached to structure behind masonry veneer.

3.9 LINTELS

A. Install steel lintels where indicated.

B. Provide masonry lintels where shown and where openings of more than 12 inches (305 mm) for brick-size units and 24 inches (610 mm) for block-size units are shown without structural steel or other supporting lintels.

1. Provide precast lintels made from concrete matching concrete masonry units in color, texture, and compressive strength and with reinforcing bars indicated or required to support loads indicated. Cure precast lintels by the same method used for concrete masonry units.
2. Provide prefabricated or built-in-place masonry lintels. Use specially formed bond beam units with reinforcing bars placed as indicated and filled with coarse grout. Cure precast lintels before handling and installing. Temporarily support built-in-place lintels until cured.

C. Provide minimum bearing of 8 inches (200 mm) at each jamb, unless otherwise indicated.

3.10 REINFORCED UNIT MASONRY INSTALLATION

A. Temporary Formwork and Shores: Construct formwork and shores to support reinforced masonry elements during construction.

1. Construct formwork to conform to shape, line, and dimensions shown. Make it sufficiently tight to prevent leakage of mortar and grout. Brace, tie, and support forms to maintain position and shape during construction and curing of reinforced masonry.
2. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and other temporary loads that may be placed on them during construction.

B. Placing Reinforcement: Comply with requirements of ACI 530.1/ASCE 6/TMS 602.

C. Grouting: Do not place grout until entire height of masonry to be grouted has attained sufficient strength to resist grout pressure.

1. Comply with requirements of ACI 530.1/ASCE 6/TMS 602 for cleanouts and for grout placement, including minimum grout space and maximum pour height.

3.11 REPAIRING, POINTING, AND CLEANING

A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.

B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application.

C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.

D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:

1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
3. Protect adjacent stone and nonmasonry surfaces from contact with cleaner by covering them with liquid strippable masking agent, polyethylene film, or waterproof masking tape.
4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing the surfaces thoroughly with clear water.
5. Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2 applicable to type of stain on exposed surfaces.

3.12 MASONRY WASTE DISPOSAL

A. Recycling: Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.

B. Excess Masonry Waste: Remove excess, as described above, and other masonry waste, and legally dispose of off Owner's property.

END OF SECTION 04810

SECTION 055000 - METAL FABRICATIONS

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. Section Includes:

1. Steel pipe columns for supporting wood frame construction.
2. Loose bearing angles and leveling plates.

B. Related Requirements:

1. Section 042000 "Unit Masonry" for installing loose lintels, anchor bolts, and other items built into unit masonry.

1.3 COORDINATION

A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written instructions to ensure that shop primers and topcoats are compatible with one another.

B. Coordinate installation of metal fabrications that are anchored to or that receive other work. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

1.4 FIELD CONDITIONS

A. Field Measurements: Verify actual locations of walls, floor slabs, decks, and other construction contiguous with metal fabrications by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 METALS

A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

B. Steel Pipe: ASTM A53/A53M, Standard Weight (Schedule 40) unless otherwise indicated.

2.2 FASTENERS

A. Steel Bolts and Nuts: Regular hexagon-head bolts, ASTM A307, Grade A (ASTM F568M, Property Class 4.6); with hex nuts, ASTM A563 (ASTM A563M); and, where indicated, flat washers.

B. Cast-in-Place Anchors in Concrete: Either threaded or wedge type unless otherwise indicated; galvanized ferrous castings, either ASTM A47/A47M malleable iron or ASTM A27/A27M cast steel. Provide bolts, washers, and shims as needed, all hot-dip galvanized per ASTM F2329/F2329M.

C. Post-Installed Anchors: Torque-controlled expansion anchors or chemical anchors.

2.3 MISCELLANEOUS MATERIALS

A. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79 and compatible with topcoat.

1. Use primer containing pigments that make it easily distinguishable from zinc-rich primer.

B. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D1187/D1187M.

C. Shrinkage-Resistant Grout: Factory-packaged, nonmetallic, nonstaining, noncorrosive, nongaseous grout complying with ASTM C1107/C1107M. Provide grout specifically recommended by manufacturer for interior and exterior applications.

D. Concrete: Normal-weight, air-entrained concrete with a minimum 28-day compressive strength of 3000 psi (20 MPa).

2.4 FABRICATION, GENERAL

A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.

B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch (1 mm) unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

C. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

D. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.

2.5 MISCELLANEOUS FRAMING AND SUPPORTS

A. Fabricate steel pipe columns for supporting wood frame construction from steel pipe with steel baseplates and top plates as indicated. Drill or punch baseplates and top plates for anchor and connection bolts and weld to pipe with fillet welds all around. Make welds the same size as pipe wall thickness unless otherwise indicated.

1. Unless otherwise indicated, fabricate from Schedule 40 steel pipe.
2. Unless otherwise indicated, provide 1/2-inch (12.7-mm) baseplates with four 5/8-inch (16-mm) anchor bolts and 1/4-inch (6.4-mm) top plates.

B. Prime miscellaneous framing and supports with zinc-rich primer.

2.6 LOOSE STEEL LINTELS

A. Fabricate loose steel lintels from steel angles and shapes of size indicated for openings and recesses in masonry walls and partitions at locations indicated. Fabricate in single lengths for each opening unless otherwise indicated. Weld adjoining members together to form a single unit where indicated.

B. Size loose lintels to provide bearing length at each side of openings equal to 1/12 of clear span, but not less than 8 inches (200 mm) unless otherwise indicated.

C. Galvanize and prime loose steel lintels located in exterior walls.

D. Prime loose steel lintels located in exterior walls with zinc-rich primer.

2.7 GENERAL FINISH REQUIREMENTS

A. Finish metal fabrications after assembly.

B. Finish exposed surfaces to remove tool and die marks and stretch lines, and to blend into surrounding surface.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.

B. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.

C. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag screws, wood screws, and other connectors.

D. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.

E. Corrosion Protection: Coat concealed surfaces of aluminum that come into contact with grout, concrete, masonry, wood, or dissimilar metals with the following:

1. Cast Aluminum: Heavy coat of bituminous paint.

3.2 INSTALLATION OF MISCELLANEOUS FRAMING AND SUPPORTS

A. General: Install framing and supports to comply with requirements of items being supported, including manufacturers' written instructions and requirements indicated on Shop Drawings.

B. Support steel girders on solid grouted masonry, concrete, or steel pipe columns. Secure girders with anchor bolts embedded in grouted masonry or concrete or with bolts through top plates of pipe columns.

C. Install pipe columns on concrete footings with grouted baseplates. Position and grout column baseplates as specified in "Installation of Bearing and Leveling Plates" Article.

1. Grout baseplates of columns supporting steel girders after girders are installed and leveled.

END OF SECTION 055000

SECTION 061000 - ROUGH CARPENTRY

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. Section Includes:

1. Framing with engineered wood products.

1.3 INFORMATIONAL SUBMITTALS

A. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.

B. Evaluation Reports: For the following, from ICC-ES:

1. Engineered wood products.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Stack wood products flat with spacers beneath and between each bundle to provide air circulation. Protect wood products from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Engineered Wood Products: Acceptable to authorities having jurisdiction and for which current model code research or evaluation reports exist that show compliance with building code in effect for Project.

1. Allowable design stresses, as published by manufacturer, shall meet or exceed those indicated. Manufacturer's published values shall be determined from empirical data or by

rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.

2.2 ENGINEERED WOOD PRODUCTS

A. Source Limitations: Obtain each type of engineered wood product from single source from a single manufacturer.

B. Parallel-Strand Lumber: Structural composite lumber made from wood strand elements with grain primarily parallel to member lengths, evaluated and monitored according to ASTM D5456 and manufactured with an exterior-type adhesive complying with ASTM D2559.

1. Extreme Fiber Stress in Bending, Edgewise: 2900 psi (20 MPa) for 12-inch nominal-(286-mm actual-) depth members.
2. Modulus of Elasticity, Edgewise: 2,200,000 psi (15 100 MPa).

2.3 FASTENERS

A. General: Fasteners shall be of size and type indicated and shall comply with requirements specified in this article for material and manufacture.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.

B. Framing with Engineered Wood Products: Install engineered wood products to comply with manufacturer's written instructions.

C. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.

D. Do not splice structural members between supports unless otherwise indicated.

E. Sort and select lumber so that natural characteristics do not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

F. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.

1. Use inorganic boron for items that are continuously protected from liquid water.
2. Use copper naphthenate for items not continuously protected from liquid water.

3.2 INSTALLATION OF WOOD BLOCKING AND NAILERS

A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.

B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.

END OF SECTION 061000

SECTION 079200 - JOINT SEALANTS

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. Section Includes:

1. Silicone joint sealants.

1.3 ACTION SUBMITTALS

A. Product Data: For each joint-sealant product.

B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

C. Joint-Sealant Schedule: Include the following information:

1. Joint-sealant application, joint location, and designation.
2. Joint-sealant manufacturer and product name.
3. Joint-sealant formulation.
4. Joint-sealant color.

1.4 INFORMATIONAL SUBMITTALS

A. Product Test Reports: For each kind of joint sealant, for tests performed by manufacturer and witnessed by a qualified testing agency.

B. Preconstruction Laboratory Test Reports: From sealant manufacturer, indicating the following:

1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
2. Interpretation of test results and written recommendations for primers and substrate preparation are needed for adhesion.

C. Sample Warranties: For special warranties.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.

B. Product Testing: Test joint sealants using a qualified testing agency.

1. Testing Agency Qualifications: Qualified according to ASTM C 1021 to conduct the testing indicated.

C. Mockups: Install sealant in mockups of assemblies specified in other Sections that are indicated to receive joint sealants specified in this Section. Use materials and installation methods specified in this Section.

1.6 FIELD CONDITIONS

A. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F (5 deg C).
2. When joint substrates are wet.
3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.7 WARRANTY

A. Special Installer's Warranty: Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Two years from date of Substantial Completion.

B. Special Manufacturer's Warranty: Manufacturer agrees to furnish joint sealants to repair or replace those joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Twenty years from date of Substantial Completion.

C. Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:

1. Movement of the structure caused by stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
2. Disintegration of joint substrates from causes exceeding design specifications.
3. Mechanical damage caused by individuals, tools, or other outside agents.

4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - PRODUCTS

2.1 JOINT SEALANTS, GENERAL

A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

B. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.2 NONSTAINING SILICONE JOINT SEALANTS

A. Nonstaining Joint Sealants: No staining of substrates when tested according to ASTM C 1248.

B. Silicone, Nonstaining, S, NS, 100/50, NT: Nonstaining, single-component, nonsag, plus 100 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 100/50, Use NT.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. Pecora Corporation.
    b. Sika Corporation; Joint Sealants.
    c. The Dow Chemical Company.
    d. Architect-approved equivalent.

2.3 JOINT-SEALANT BACKING

A. Sealant Backing Material, General: Nonstaining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Cylindrical Sealant Backings: ASTM C 1330,[Type C (closed-cell material with a surface skin or any of the preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

2.4 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
2. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of sealant backings.
2. Do not stretch, twist, puncture, or tear sealant backings.
3. Remove absorbent sealant backings that have become wet before sealant application, and replace them with dry materials.

D. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.
2. Completely fill recesses in each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.

3.4 CLEANING

A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out, remove, and repair damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

3.6 JOINT-SEALANT SCHEDULE

A. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal nontraffic surfaces.

1. Joint Locations:

a. Perimeter joints between materials listed above and frames of doors and louvers.
b. Other joints as indicated on Drawings.

2. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

END OF SECTION 079200

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

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. Section Includes:

1. Standard and custom hollow metal doors and frames.
2. Steel sidelight, borrowed lite and transom frames.
3. Light frames and glazing installed in hollow metal doors.
4. Hollow metal framed glazed openings.

B. Related Sections:

1. Division 04 Section "Unit Masonry Assemblies" for embedding anchors for hollow metal work into masonry construction.
2. Division 08 Section "Door Hardware" and “Door Hardware Sets”.
3. Division 09 Sections "Exterior Painting" and "Interior Painting" for field painting hollow metal doors and frames.

C. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.

1. ANSI/SDI A250.8 - Recommended Specifications for Standard Steel Doors and Frames.
2. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames, Frames Anchors and Hardware Reinforcing.
3. ANSI/SDI A250.6 - Recommended Practice for Hardware Reinforcing on Standard Steel Doors and Frames.
4. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames.
5. ANSI/SDI A250.11 - Recommended Erection Instructions for Steel Frames.
6. ASTM A1008 - Standard Specification for Steel Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
7. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
8. ASTM A924 - Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
9. ASTM C 1363 - Standard Test Method for Thermal Performance of Building Assemblies by Means of a Hot Box Apparatus.
10. ANSI/BHMA A156.115 - Hardware Preparation in Steel Doors and Frames.

11. ANSI/SDI 122 - Installation and Troubleshooting Guide for Standard Steel Doors and Frames.
12. ANSI/NFPA 80 - Standard for Fire Doors and Fire Windows; National Fire Protection Association.
13. ANSI/NFPA 105: Standard for the Installation of Smoke Door Assemblies.
14. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; National Fire Protection Association.
15. UL 10C - Positive Pressure Fire Tests of Door Assemblies.
16. UL 1784 - Standard for Air Leakage Tests of Door Assemblies.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, core descriptions, hardware reinforcements, profiles, anchors, fire-resistance rating, and finishes.

B. Door hardware supplier is to furnish templates, template reference number and/or physical hardware to the steel door and frame supplier in order to prepare the doors and frames to receive the finish hardware items.

C. Shop Drawings: Include the following:

1. Elevations of each door design.
2. Details of doors, including vertical and horizontal edge details and metal thicknesses.
3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
4. Locations of reinforcement and preparations for hardware.
5. Details of anchorages, joints, field splices, and connections.
6. Details of accessories.
7. Details of moldings, removable stops, and glazing.
8. Details of conduit and preparations for power, signal, and control systems.

D. Samples for Verification:

1. Samples are only required by request of the architect and for manufacturers that are not current members of the Steel Door Institute.

1.4 QUALITY ASSURANCE

A. Source Limitations: Obtain hollow metal doors and frames through one source from a single manufacturer wherever possible.

B. Quality Standard: In addition to requirements specified, furnish SDI-Certified manufacturer products that comply with ANSI/SDI A250.8, latest edition, "Recommended Specifications for Standard Steel Doors and Frames".

C. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to UL10C (neutral pressure at 40” above sill) or UL 10C.

1. Oversize Fire-Rated Door Assemblies Construction: For units exceeding sizes of tested assemblies, attach construction label certifying doors are built to standard construction requirements for tested and labeled fire rated door assemblies except for size.
2. Temperature-Rise Limit: Where indicated and at vertical exit enclosures (stairwell openings) and exit passageways, provide doors that have a maximum transmitted temperature end point of not more than 450 deg F (250 deg C) above ambient after 30 minutes of standard fire-test exposure.
3. Smoke Control Door Assemblies: Comply with NFPA 105.

    a. Smoke "S" Label: Doors to bear “S” label, and include smoke and draft control gasketing applied to frame and on meeting stiles of pair doors.

D. Fire-Rated, Borrowed-Light Frame Assemblies: Assemblies complying with NFPA 80 that are listed and labeled, by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing according to NFPA 257. Provide labeled glazing material.

E. Pre-Submittal Conference: Conduct conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier, Installer, and Contractor to review proper methods and procedures for installing hollow metal doors and frames and to verify installation of electrical knockout boxes and conduit at frames with electrified or access control hardware.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver hollow metal work palletized, wrapped, or crated to provide protection during transit and Project site storage. Do not use non-vented plastic.

B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.

C. Store hollow metal work under cover at Project site. Place in stacks of five units maximum in a vertical position with heads up, spaced by blocking, on minimum 4-inch high wood blocking. Do not store in a manner that traps excess humidity.

1. Provide minimum 1/4-inch space between each stacked door to permit air circulation. Door and frames to be stacked in a vertical upright position.

1.6 PROJECT CONDITIONS

A. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

1.7 COORDINATION

A. Coordinate installation of anchorages for hollow metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

1.8 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period, but not less than 2 years..

B. Warranty includes installation and finishing that may be required due to repair or replacement of defective doors.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide steel doors and frames from a SDI Certified manufacturer:

1. CECO Door Products (C).
2. Curries Company (CU).
3. Pioneer Industries (PI).
4. Steelcraft (S).

2.2 MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.

B. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B; with minimum G60 (Z180) or A60 (ZF180) metallic coating.

C. Frame Anchors: ASTM A 653/A 653M, Commercial Steel (CS), Commercial Steel (CS), Type B; with minimum G60 (Z180) or A60 (ZF180) metallic coating.

2.3 HOLLOW METAL FRAMES

A. General: Comply with ANSI/SDI A250.8 and with details indicated for type and profile.

B. Thermal Break Frames: Subject to the same compliance standards and requirements as standard hollow metal frames. Tested for thermal performance in accordance with NFRC 102, and resistance to air infiltration in accordance with NFRC 400. Where indicated provide thermally broken frame profiles available for use in both masonry and drywall construction. Fabricate with 1/16” positive thermal break and integral vinyl weatherstripping.

C. Interior Frames: Fabricated from cold-rolled steel sheet that complies with ASTM A 1008/A 1008M.

1. Fabricate frames with mitered or coped corners. Profile as indicated on drawings.

2. Frames: Minimum 16 gauge (0.053-inch -1.3-mm) thick steel sheet.
3. Manufacturers Basis of Design:

    a. Curries Company (CU) - CM Series.
    b. Curries Company (CU) - M Series.
    c. Architect-approved equal.

D. Fire rated frames: Fabricate frames in accordance with NFPA 80, listed and labeled by a qualified testing agency, for fire-protection ratings indicated.

E. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 Table 4 with reinforcement plates from same material as frames.

2.4 FRAME ANCHORS

A. Jamb Anchors:

1. Masonry Type: Adjustable strap-and-stirrup or T-shaped anchors to suit frame size, formed from A60 metallic coated material, not less than 0.042 inch thick, with corrugated or perforated straps not less than 2 inches wide by 10 inches long; or wire anchors not less than 0.177 inch thick.
2. Stud Wall Type: Designed to engage stud and not less than 0.042 inch thick.
3. Compression Type for Drywall Slip-on (Knock-Down) Frames: Adjustable compression anchors.

B. Floor Anchors: Floor anchors to be provided at each jamb, formed from A60 metallic coated material, not less than 0.042 inches thick.

C. Mortar Guards: Formed from same material as frames, not less than 0.016 inches thick.

2.5 LIGHT OPENINGS AND GLAZING

A. Stops and Moldings: Provide stops and moldings around glazed lites where indicated. Form corners of stops and moldings with butted or mitered hairline joints at fabricator’s shop. Fixed and removable stops to allow multiple glazed lites each to be removed independently. Coordinate frame rabbet widths between fixed and removable stops with the type of glazing and installation indicated.

B. Moldings for Glazed Lites in Doors and Loose Stops for Glazed Lites in Frames: Minimum 20 gauge thick, fabricated from same material as door face sheet in which they are installed.

C. Fixed Frame Moldings: Formed integral with hollow metal frames, a minimum of 5/8 inch (16 mm) high unless otherwise indicated. Provide fixed frame moldings and stops on outside of exterior and on secure side of interior doors and frames.

D. Preformed Metal Frames for Light Openings: Manufacturer's standard frame formed of 0.048-inch-thick, cold rolled steel sheet; with baked enamel or powder coated finish; and approved for

use in doors of fire protection rating indicated. Match pre-finished door paint color where applicable.

2.6 ACCESSORIES

A. Mullions and Transom Bars: Join to adjacent members by welding or rigid mechanical anchors.

B. Grout Guards: Formed from same material as frames, not less than 0.016 inches thick.

2.7 FABRICATION

A. Fabricate hollow metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for thickness of metal. Where practical, fit and assemble units in manufacturer's plant. When shipping limitations so dictate, frames for large openings are to be fabricated in sections for splicing or splining in the field by others.

B. Tolerances: Fabricate hollow metal work to tolerances indicated in ANSI/SDI A250.8.

C. Hollow Metal Frames:

1. Shipping Limitations: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.
2. Welded Frames: Weld flush face joints continuously; grind, fill, dress, and make smooth, flush, and invisible.

    a. Welded frames are to be provided with two steel spreaders temporarily attached to the bottom of both jambs to serve as a brace during shipping and handling. Spreader bars are for bracing only and are not to be used to size the frame opening.

3. Sidelight and Transom Bar Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by butt welding.
4. High Frequency Hinge Reinforcement: Provide high frequency hinge reinforcements at door openings 48-inches and wider with mortise butt type hinges at top hinge locations.
5. Continuous Hinge Reinforcement: Provide welded continuous 12 gauge straps for continuous hinges specified in hardware sets in Division 08 Section "Door Hardware" or “Door Hardware Sets”.
6. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated for removable stops, provide security screws at exterior locations.
7. Mortar Guards: Provide guard boxes at back of hardware mortises in frames at all hinges and strike preps regardless of grouting requirements.
8. Floor Anchors: Weld anchors to bottom of jambs and mullions with at least four spot welds per anchor.
9. Jamb Anchors: Provide number and spacing of anchors as follows:

a. Masonry Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:

1) Two anchors per jamb up to 60 inches high.
2) Three anchors per jamb from 60 to 90 inches high.
3) Four anchors per jamb from 90 to 120 inches high.
4) Four anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 120 inches high.

b. Stud Wall Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:

1) Three anchors per jamb up to 60 inches high.
2) Four anchors per jamb from 60 to 90 inches high.
3) Five anchors per jamb from 90 to 96 inches high.
4) Five anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 96 inches high.
5) Two anchors per head for frames above 42 inches wide and mounted in metal stud partitions.

10. Door Silencers: Except on weatherstripped or gasketed doors, drill stops to receive door silencers. Silencers to be supplied by frame manufacturer regardless if specified in Division 08 Section "Door Hardware" or “Door Hardware Sets”.

D. Hardware Preparation: Factory prepare hollow metal work to receive template mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to the Door Hardware Schedule and templates furnished as specified in Division 08 Section "Door Hardware” or “Door Hardware Sets."

1. Locate hardware as indicated, or if not indicated, according to ANSI/SDI A250.8.
2. Reinforce doors and frames to receive non-template, mortised and surface mounted door hardware.
3. Comply with applicable requirements in ANSI/SDI A250.6 and ANSI/DHI A115 Series specifications for preparation of hollow metal work for hardware.
4. Coordinate locations of conduit and wiring boxes for electrical connections with Division 26 Sections.

2.8 STEEL FINISHES

A. Prime Finishes: Doors and frames to be cleaned, and chemically treated to insure maximum finish paint adhesion. Surfaces of the door and frame exposed to view to receive a factory applied coat of rust inhibiting shop primer.

1. Shop Primer: Manufacturer's standard, fast-curing, lead and chromate free primer complying with ANSI/SDI A250.10 acceptance criteria; recommended by primer manufacturer for substrate; and compatible with substrate and field-applied coatings.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. General Contractor to verify the accuracy of dimensions given to the steel door and frame manufacturer for existing openings or existing frames (strike height, hinge spacing, hinge back set, etc.).

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Remove welded in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces.

B. Prior to installation, adjust and securely brace welded hollow metal frames for square, level, twist, and plumb condition.

C. Tolerances shall comply with SDI-117 "Manufacturing Tolerances Standard Steel Doors and Frames."

D. Drill and tap doors and frames to receive non-template, mortised, and surface-mounted door hardware.

3.3 INSTALLATION

A. General: Install hollow metal work plumb, rigid, properly aligned, and securely fastened in place; comply with Drawings and manufacturer's written instructions.

B. Hollow Metal Frames: Install hollow metal frames of size and profile indicated. Comply with ANSI/SDI A250.11 and NFPA 80 at fire rated openings.

1. Set frames accurately in position, plumbed, leveled, aligned, and braced securely until permanent anchors are set. After wall construction is complete and frames properly set and secured, remove temporary braces, leaving surfaces smooth and undamaged. Shim as necessary to comply with installation tolerances.
2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with post-installed expansion anchors.
3. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with mortar.
4. Grout Requirements: Do not grout head of frames unless reinforcing has been installed in head of frame. Do not grout vertical or horizontal closed mullion members.

3.4 ADJUSTING AND CLEANING

A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow metal work that is warped, bowed, or otherwise unacceptable.

B. Remove grout and other bonding material from hollow metal work immediately after installation.

C. Prime-Coat and Painted Finish Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat, or painted finishes, and apply touchup of compatible air drying, rust-inhibitive primer, zinc rich primer (exterior and galvanized openings) or finish paint.

END OF SECTION 081113

SECTION 081416 - FLUSH WOOD DOORS

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. Section Includes:

1. Seven-ply flush wood veneer-faced doors for transparent finish.
2. Factory finishing flush wood doors.
3. Factory fitting flush wood doors to frames and factory machining for hardware.

B. Related Requirements:

1. Sections 08 for door hardware.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product, including the following:

1. Door core materials and construction.
2. Door edge construction
3. Door face type and characteristics.
4. Door trim for openings.
5. Door frame construction.
6. Factory-machining criteria.
7. Factory finishing specifications.

B. Shop Drawings: Indicate location, size, and hand of each door; elevation of each type of door; construction details not covered in Product Data; and the following:

1. Door schedule indicating door location, type, size, fire protection rating, and swing.
2. Door elevations, dimension and locations of hardware, lite and louver cutouts, and glazing thicknesses.
3. Details of frame for each frame type, including dimensions and profile.
4. Details of electrical raceway and preparation for electrified hardware, access control systems, and security systems.
5. Dimensions and locations of blocking for hardware attachment.
6. Dimensions and locations of mortises and holes for hardware.
7. Clearances and undercuts.

8. Requirements for veneer matching.
9. Doors to be factory finished and application requirements.
10. Apply AWI Quality Certification Program label to Shop Drawings.

C. Samples for Initial Selection: For factory-finished doors.

D. Samples for Verification:

1. Factory finishes applied to actual door face materials, approximately 8 by 10 inches (200 by 250 mm), for each material and finish. For each wood species and transparent finish, provide set of three Samples showing typical range of color and grain to be expected in finished Work.
2. Frames for light openings, 6 inches (150 mm) long, for each material, type, and finish required.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For door inspector.

1. Fire-Rated Door Inspector: Submit documentation of compliance with NFPA 80, Section 5.2.3.1.
2. Egress Door Inspector: Submit documentation of compliance with NFPA 101, Section 7.2.1.15.4.
3. Submit copy of DHI's Fire and Egress Door Assembly Inspector (FDAI) certificate.

B. Field quality-control reports.

C. Sample Warranty: For special warranty.

1.5 CLOSEOUT SUBMITTALS

A. Special warranties.

B. Quality Standard Compliance Certificates: AWI Quality Certification Program certificates.

C. Record Documents: For fire-rated doors, list of door numbers and applicable room name and number to which door accesses.

1.6 QUALITY ASSURANCE

A. Manufacturer's Certification: Licensed participant in AWI's Quality Certification Program.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Comply with requirements of referenced standard and manufacturer's written instructions.

B. Package doors individually in plastic bags or cardboard cartons.

C. Mark each door on bottom rail with opening number used on Shop Drawings.

1.8 FIELD CONDITIONS

A. Environmental Limitations: Do not deliver or install doors until spaces are enclosed and weathertight, wet-work in spaces is complete and dry, and HVAC system is operating and maintaining temperature and relative humidity at levels designed for building occupants for the remainder of construction period.

1.9 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Delamination of veneer.
b. Warping (bow, cup, or twist) more than 1/4 inch (6.4 mm) in a 42-by-84-inch (1067-by-2134-mm) section.
c. Telegraphing of core construction in face veneers exceeding 0.01 inch in a 3-inch (0.25 mm in a 76.2-mm) span.

2. Warranty Period for Solid-Core Interior Doors: Life of installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations: Obtain flush wood doors from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. Fire-Rated Wood Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated on Drawings, based on testing at positive pressure in accordance with UL 10C or NFPA 252.

2.3 FLUSH WOOD DOORS, GENERAL

A. Quality Standard: In addition to requirements specified, comply with AWI/AWMAC/WI's "Architectural Woodwork Standards”.

1. Provide labels and certificates from AWI certification program indicating that doors comply with requirements of grades specified.

2.4 SEVEN-PLY FLUSH WOOD VENEER-FACED DOORS FOR TRANSPARENT FINISH

A. Interior Doors.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. ABS-American Building Supply, Inc.
    b. General Veneer Manufacturing Co.
    c. Haley Brothers, Inc.
    d. Lambton Doors.
    e. Oregon Door.
    f. Vancouver Door Company.
    g. Architect-approved equal.

2. Performance Grade: ANSI/WDMA I.S. 1A Heavy Duty.

3. Architectural Woodwork Standards Grade: Premium.
4. Faces: Single-ply wood veneer not less than 1/50 inch (0.508 mm) thick or two-ply wood panel with wood veneer not less than 1/50 inch (0.508 mm) thick].

    a. Species: Red oak.
    b. Cut: Rotary cut.
    c. Match between Veneer Leaves: Book match.
    d. Assembly of Veneer Leaves on Door Faces: Center-balance match.
    e. Pair and Set Match: Provide for doors hung in same opening or separated only by mullions.

5. Exposed Vertical and Top Edges: Same species as faces or a compatible species - Architectural Woodwork Standards edge Type A.

    a. Fire-Rated Single Doors: Provide edge construction with intumescent seals concealed by outer stile. Comply with specified requirements for exposed vertical edges.

6. Core for Non-Fire-Rated Doors: ANSI A208.1, Grade LD-1 particleboard.

    a. Blocking: Provide wood blocking in particleboard-core doors as follows:

        1) 5-inch (125-mm) top-rail blocking, in doors indicated to have closers.
        2) 5-inch (125-mm) midrail blocking, in doors indicated to have exit devices.

b. Provide doors with glued-wood-stave or WDMA I.S. 10 structural-composite-lumber cores instead of particleboard cores for doors scheduled to receive exit devices in Section "Door Hardware or Door Hardware Sets".

7. Core for Non-Fire-Rated Doors: WDMA I.S. 10 structural composite lumber.

a. Screw Withdrawal, Door Face: 475 lbf (2110 N).
b. Screw Withdrawal, Vertical Door Edge: 475 lbf (2110 N).

8. Core for Non-Fire-Rated Doors: Either glued wood stave or WDMA I.S. 10 structural composite lumber.
9. Core for Fire-Rated Doors: As required to achieve fire-protection rating indicated on Drawings.

a. Blocking for Mineral-Core Doors: Provide composite blocking with improved screw-holding capability approved for use in doors of fire-protection ratings indicated on Drawings as follows:

1) 5-inch (125-mm) top-rail blocking.
2) 5-inch (125-mm) bottom-rail blocking, in doors indicated to have protection plates.
3) 5-inch (125-mm) midrail blocking, in doors indicated to have armor plates.
4) 4-1/2-by-10-inch (114-by-250-mm) lock blocks, 5-inch (125-mm) midrail blocking, in doors indicated to have exit devices.

10. Construction: Seven plies, hot-pressed or cold-pressed, bonded or unbonded.

2.5 LIGHT FRAMES AND LOUVERS

A. Wood Beads for Light Openings in Wood Doors: Provide manufacturer's standard wood beads unless otherwise indicated.

1. Wood Species: Same species as door faces.
2. Profile: Manufacturer's standard shape.

B. Wood-Veneered Beads for Light Openings in Fire-Rated Doors: Manufacturer's standard wood-veneered noncombustible beads matching veneer species of door faces and approved for use in doors of fire-protection rating indicated on Drawings. Include concealed metal glazing clips where required for opening size and fire-protection rating indicated.

C. Metal Frames for Light Openings in Fire-Rated Doors: Manufacturer's standard frame formed of 0.048-inch- (1.2-mm-) thick, cold-rolled steel sheet; factory primed for field-painting finish; and approved for use in doors of fire-protection rating indicated on Drawings.

2.6 FABRICATION

A. Factory fit doors to suit frame-opening sizes indicated.

1. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.
2. Comply with NFPA 80 requirements for fire-rated doors.

B. Factory machine doors for hardware that is not surface applied.

1. Locate hardware to comply with DHI-WDHS-3.
2. Comply with final hardware schedules, door frame Shop Drawings, ANSI/BHMA-156.115-W, and hardware templates.
3. Coordinate with hardware mortises in metal frames, to verify dimensions and alignment before factory machining.
4. For doors scheduled to receive electrified locksets, provide factory-installed raceway and wiring to accommodate specified hardware.

C. Openings: Factory cut and trim openings through doors.

1. Light Openings: Trim openings with moldings of material and profile indicated.
2. Glazing: Factory install glazing in doors indicated to be factory finished.

2.7 FACTORY FINISHING

A. Comply with referenced quality standard for factory finishing.

1. Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing.
2. Finish faces, all four edges, edges of cutouts, and mortises.
3. Stains and fillers may be omitted on top and bottom edges, edges of cutouts, and mortises.

B. Factory finish doors.

C. Transparent Finish:

1. Architectural Woodwork Standards Grade: Premium.
2. Finish: Architectural Woodwork Standards System-11, Polyurethane, Catalyzed.
3. Staining: As selected by Architect from manufacturer's full range.
4. Effect: Semifilled finish, produced by applying an additional finish coat to partially fill the wood pores.
5. Sheen: Satin.
6. Colors: Colors selected by Architect from Manufacturer’s full range to match adjacent construction. Each school may be a different color.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine doors and installed door frames, with Installer present, before hanging doors.

1. Verify that installed frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs.
2. Reject doors with defects.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Hardware: For installation, see Section "Door Hardware or Door Hardware Sets."

B. Install doors to comply with manufacturer's written instructions and referenced quality standard, and as indicated.

C. Install frames level, plumb, true, and straight.

1. Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches (3.2 mm in 2400 mm).
2. Anchor frames to anchors or blocking built in or directly attached to substrates.

a. Secure with countersunk, concealed fasteners and blind nailing.
b. Use fine finishing nails or finishing screws for exposed fastening, countersunk and filled flush with woodwork.

1) For factory-finished items, use filler matching finish of items being installed.

3. Install fire-rated doors and frames in accordance with NFPA 80.

D. Job-Fitted Doors:

1. Align and fit doors in frames with uniform clearances and bevels as indicated below.

a. Do not trim stiles and rails in excess of limits set by manufacturer or permitted for fire-rated doors.

2. Machine doors for hardware.
3. Seal edges of doors, edges of cutouts, and mortises after fitting and machining.
4. Clearances:

a. Provide 1/8 inch (3.2 mm) at heads, jambs, and between pairs of doors.
b. Provide 1/8 inch (3.2 mm) from bottom of door to top of decorative floor finish or covering unless otherwise indicated on Drawings.

c. Where threshold is shown or scheduled, provide1/4 inch (6.4 mm) from bottom of door to top of threshold unless otherwise indicated.
d. Comply with NFPA 80 for fire-rated doors.

5. Bevel non-fire-rated doors 1/8 inch in 2 inches (3-1/2 degrees) at lock and hinge edges.

E. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.

F. Factory-Finished Doors: Restore finish before installation if fitting or machining is required at Project site.

3.3 FIELD QUALITY CONTROL

A. Repair or remove and replace installations where inspections indicate that they do not comply with specified requirements.

B. Reinspect repaired or replaced installations to determine if replaced or repaired door assembly installations comply with specified requirements.

3.4 ADJUSTING

A. Operation: Rehang or replace doors that do not swing or operate freely.

B. Finished Doors: Replace doors that are damaged or that do not comply with requirements. Doors may be repaired or refinished if Work complies with requirements and shows no evidence of repair or refinishing.

END OF SECTION 081416

SECTION 084113 – ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

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. Section Includes:

1. Exterior aluminum storefront framing.
2. Aluminum manual-swing entrance doors and door-frame units.
3. Interior aluminum storefront framing.

B. Related Sections:

1. Division 07 Section “Joint Sealants” for sealants installed as part of aluminum entrance systems.

2. Division 08 Section “Door Hardware” for door hardware installed as part of aluminum entrance systems.

1.3 DEFINITIONS

A. ADA/ABA Accessibility Guidelines: U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disability Act (ADA) and Architectural Barriers Act (ABA) Accessibility Guidelines for Buildings and Facilities."

1.4 PERFORMANCE REQUIREMENTS

A. General Performance: Aluminum-framed systems shall withstand the effects of the following performance requirements without exceeding performance criteria or failure due to defective manufacture, fabrication, installation, or other defects in construction:

1. Movements of supporting structure indicated on Drawings including, but not limited to, story drift and deflection from uniformly distributed and concentrated live loads.
2. Dimensional tolerances of building frame and other adjacent construction.
3. Failure includes the following:

a. Deflection exceeding specified limits.
b. Thermal stresses transferring to building structure.

c. Framing members transferring stresses, including those caused by thermal and structural movements to glazing.
d. Noise or vibration created by wind and by thermal and structural movements.
e. Loosening or weakening of fasteners, attachments, and other components.
f. Sealant failure.
g. Failure of operating units.

B. Structural Loads:

1. Wind Loads: Provide entrance and storefront systems, including anchorage, capable of withstanding wind-load design pressures calculated according to requirements of authorities having jurisdiction or the American Society of Civil Engineers' ASCE 7 "Minimum Design Loads for Buildings and Other Structures," 6.4.2, "Analytical Procedure," whichever are more stringent.

C. Deflection of Framing Members:

1. Deflection Normal to Wall Plane: Limited to edge of glass in a direction perpendicular to glass plane shall not exceed L/175 of the glass edge length for each individual glazing lite or an amount that restricts edge deflection of individual glazing lites to 3/4 inch (19 mm), whichever is less.
2. Deflection Parallel to Glazing Plane: Limited to L/360 of clear span or 1/8 inch (3.2 mm), whichever is smaller.

D. Structural-Test Performance: Provide aluminum-framed systems tested according to ASTM E 330 as follows:

1. When tested at positive and negative wind-load design pressures, systems do not evidence deflection exceeding specified limits. The wind load design pressures for this project are 25 psf @ Non-Corner Zones and 33 psf @ Corner Zones.
2. When tested at 150 percent of positive and negative wind-load design pressures, systems, including anchorage, do not evidence material failures, structural distress, and permanent deformation of main framing members exceeding 0.2 percent of span.
3. Test Durations: As required by design wind velocity, but not fewer than 10 seconds.

E. Air Infiltration: Provide aluminum-framed systems with maximum air leakage through fixed glazing and framing areas of 0.06 cfm/sq. ft. (0.03 L/s per sq. m) of fixed wall area when tested according to ASTM E 283 at a minimum static-air-pressure difference of 6.24 lbf/sq. ft. (75 Pa).

F. Water Penetration under Static Pressure: Provide aluminum-framed systems that do not evidence water penetration through fixed glazing and framing areas when tested according to ASTM E 331 at a minimum static-air-pressure difference of 20 percent of positive wind-load design pressure, but not less than 6.24 lbf/sq. ft. (300 Pa). The storefront systems shall have a maximum no leakage water performance of 12 psf.

G. Thermal Movements: Provide aluminum-framed systems that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.
2. Interior Ambient-Air Temperature: 75 deg F (24 deg C).

H. Condensation Resistance: Provide exterior aluminum-framed systems with fixed glazing and framing areas having condensation-resistance factor (CRF) of not less than 56 for the framing when tested according to AAMA 1503.1-98.

I. Thermal Conductance: Provide exterior aluminum-framed systems with fixed glazing and framing areas having an average U-factor of not more than 0.44 Btu/sq. ft. x h x deg F (3.92 W/sq. m x K) when tested according to AAMA 1503.1-98.

1.5 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for aluminum-framed systems.

B. Shop Drawings: For aluminum-framed systems. Include plans, elevations, sections, details, and attachments to other work.

1. Include details of provisions for system expansion and contraction and for drainage of moisture in the system to the exterior.

C. Samples for Initial Selection: For units with factory-applied color finishes.

D. Samples for Verification: For each type of exposed finish required, in manufacturer's standard sizes.

E. Fabrication Sample: Of each vertical-to-horizontal intersection of aluminum-framed systems, made from 12-inch (300-mm) lengths of full-size components and showing details of the following:

1. Joinery, including concealed welds.
2. Anchorage.
3. Expansion provisions.
4. Glazing.
5. Flashing and drainage.

F. Other Action Submittals:

1. Entrance Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of entrance door hardware, as well as procedures and diagrams. Coordinate final entrance door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of entrance door hardware.

G. Qualification Data: For qualified Installer.

H. Welding certificates.

I. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for aluminum-framed systems, indicating compliance with performance requirements.

J. Source quality-control reports.

K. Maintenance Data: For aluminum-framed systems to include in maintenance manuals.

L. Warranties: Sample of special warranties.

M. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

N. Product Options: Information on Drawings and in Specifications establishes requirements for systems' aesthetic effects and performance characteristics. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction. Performance characteristics are indicated by criteria subject to verification by one or more methods including preconstruction testing, field testing, and in-service performance.

1. Do not revise intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If revisions or substitutions are proposed, submit comprehensive explanatory data to Architect for review 15 days prior to project’s bid date for architect’s review. The architect’s final product approval will be required in order to bid this project. Otherwise, no substitution products will be considered for the project.

2. No stock length materials will be allowed for this project. All materials are to be factory fabricated by the manufacturer at their facility in order to be utilized for this project

O. Accessible Entrances: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.

P. Source Limitations for Aluminum-Framed Systems: Obtain from single source from single manufacturer.

Q. Welding Qualifications: Qualify procedures and personnel according to AWS D1.2, "Structural Welding Code - Aluminum."

R. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.

1. Build mockup of typical wall area as shown on Drawings.
2. Field testing shall be performed on mockups according to requirements in "Field Quality Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.

3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 PROJECT CONDITIONS

A. Field Measurements: Verify actual locations of structural supports for aluminum-framed systems by field measurements before fabrication and indicate measurements on Shop Drawings.

1.7 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of aluminum-framed systems that do not comply with requirements or that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures including, but not limited to, excessive deflection.
b. Noise or vibration caused by thermal movements.
c. Deterioration of metals and other materials beyond normal weathering.
d. Water leakage through fixed glazing and framing areas.
e. Failure of operating components.

2. Warranty Period: Ten (10) years from date of Substantial Completion.

B. Special Finish Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components on which finishes do not comply with requirements or that fail in materials or workmanship within specified warranty period. Warranty does not include normal weathering.

1. Warranty Period: 10 years from date of Substantial Completion.

1.8 MAINTENANCE SERVICE

A. Entrance Door Hardware:

1. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of entrance door hardware.
2. Initial Maintenance Service: Beginning at Substantial Completion, provide six months' full maintenance by skilled employees of entrance door hardware Installer. Include quarterly preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper entrance door hardware operation at rated speed and capacity. Provide parts and supplies the same as those used in the manufacture and installation of original equipment.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Basis of Design: Efco Corporation, a Pella Company.
2. Wausau Window & Wall Systems.
3. Vistawall Architectural Products; The Vistawall Group; a Bluescope Steel company.
4. Kawneer; an Arconic Company.
5. Architect-approved equal.

B. Basis of Design Products: Subject to compliance with requirements, provide Efco products; series 526 exterior storefronts, series 525 interior storefronts, and series D500 entrance doors.

2.2 MATERIALS

A. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.

1. Sheet and Plate: ASTM B 209 (ASTM B 209M).
2. Extruded Bars, Rods, Profiles, and Tubes: ASTM B 221 (ASTM B 221M).
3. Extruded Structural Pipe and Tubes: ASTM B 429.
4. Structural Profiles: ASTM B 308/B 308M.
5. Welding Rods and Bare Electrodes: AWS A5.10/A5.10M.

2.3 FRAMING SYSTEMS

A. Framing Members: Manufacturer's standard extruded-aluminum framing members of thickness required and reinforced as required to support imposed loads.

1. Construction: storefront systems are screw spline construction.
2. Glazing System: Retained mechanically with gaskets on four sides.
3. Glazing Plane: As indicated on architectural drawings.

B. Framing Members, General:

1. All storefront members shall have a minimum wall thickness of .080”. The face dimension for the storefront system will be not less than 2 1/2” and the frame depth will not be less than 5”. All exposed work shall be carefully matched to produce continuity of line and design with all joints. System design will be such that raw edges will not be visible at joints.

2. Efco Models 525 & 526 Storefronts, or pre-approved equal. No stocklength materials will be allowed for this project. All materials are to be factory fabricated by the manufacturer at their facility in order to be utilized for this project

C. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.

D. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials.

1. Use self-locking devices where fasteners are subject to loosening or turning out from thermal and structural movements, wind loads, or vibration.
2. Reinforce members as required to receive fastener threads.

E. Concrete and Masonry Inserts: Hot-dip galvanized cast-iron, malleable-iron, or steel inserts, complying with ASTM A 123/A 123M or ASTM A 153/A 153M.

F. Concealed Flashing: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding flashing compatible with adjacent materials. Form exposed flashing from sheet aluminum finished to match framing and of sufficient thickness to maintain a flat appearance without visible deflection.

G. Framing System Gaskets and Sealants: Manufacturer's standard, recommended by manufacturer for joint type.

H. Insulated Spandrel Panels:

1. Laminated, metal-faced flat panels with no deviations in plane exceeding 0.8 percent of panel dimension in width or length.

a. Overall Panel Thickness: 1 inch (25.4 mm).
b. Exterior Skin: Porcelain on Steel.

1) Thickness: Manufacturer's standard for finish and texture indicated.
2) Finish: Match adjacent existing panels in aluminum windows.
3) Texture: Smooth.
4) Backing Sheet: 1/8-inch- (3.2-mm-) thick tempered hardboard.

c. Interior Skin: Porcelain on Steel.

1) Thickness: Manufacturer's standard for finish and texture indicated.
2) Finish: Low-gloss, white baked enamel.
3) Texture: Smooth.
4) Backing Sheet: 1/8-inch- (3.2-mm-) thick tempered hardboard.

d. Thermal Insulation Core: Manufacturer's standard rigid, closed-cell, polyisocyanurate board or extruded-polystyrene board.

e. Surface-Burning Characteristics: Comply with ASTM E84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1) Flame-Spread Index: 25 or less.
2) Smoke-Developed Index: 50 or less.

2.4 GLAZING SYSTEMS & GLASS

A. Glazing: As shown on the Contract drawings.

B. Glazing Gaskets: Manufacturer's standard compression types; replaceable, molded or extruded, of profile and hardness required to maintain watertight seal.

C. Spacers and Setting Blocks: Manufacturer's standard elastomeric type.

The storefront system is to be a dry glazed system.

2.5 ENTRANCE DOOR SYSTEMS

A. Entrance Doors: Manufacturer's standard glazed entrance doors for manual-swing operation. Basis of Design is Efco series D500 Wide Stile Doors.

1. Major portion of the door sections shall have a .125” (3 mm) wall thickness. Glazing stop sections shall have a .050” (1.2 mm) wall thickness.
2. Door stiles shall be no less than 5” (127 mm) wide stiles (not including glass stops). Coordinate the specified door hardware to ensure hardware fits the stile width of the doors.
3. Door stiles and rails shall have hairline joints at the corners. Heavy concealed reinforcement brackets shall be secured with screws and shall be installed in one stile of pairs of doors and in jamb stiles of center pivoted doors.
4. Doorstops shall include a bulb weather-stip that complies with ASTM E 2203 specification.
5. Glazing Stops and Gaskets: Manufacturer’s standard compression types, replaceable, that maintain uniform pressure and watertight seal, snap-on, extruded-aluminum stops and preformed gaskets.

B. Entrance Door Hardware: As specified in Division 08 Section "Door Hardware or “Door Hardware Sets."

2.6 ACCESSORY MATERIALS

A. Joint Sealants: For installation at perimeter of aluminum-framed systems, as specified in Division 07 Section "Joint Sealants."

B. Bituminous Paint: Cold-applied, asphalt-mastic paint complying with SSPC-Paint 12 requirements except containing no asbestos; formulated for 30-mil (0.762-mm) thickness per coat.

2.7 FABRICATION

A. Form or extrude aluminum shapes before finishing.

B. Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.

C. Framing Members, General: Fabricate components that, when assembled, have the following characteristics:

1. Profiles that are sharp, straight, and free of defects or deformations.
2. Accurately fitted joints with ends coped or mitered.
3. Means to drain water passing joints, condensation within framing members, and moisture migrating within the system to exterior.
4. Physical and thermal isolation of glazing from framing members.
5. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
6. Provisions for field replacement of glazing from interior for vision glass and exterior for spandrel glazing or metal panels.
7. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.

D. Mechanically Glazed Framing Members: Fabricate for flush glazing without projecting stops.

E. Entrance Door Frames: Reinforce as required to support loads imposed by door operation and for installing entrance door hardware.

1. At exterior doors, provide compression weather stripping at fixed stops.
2. At interior doors, provide silencers at stops to prevent metal-to-metal contact. Install three silencers on strike jamb of single-door frames and two silencers on head of frames for pairs of doors.

F. Entrance Doors: Reinforce doors as required for installing entrance door hardware.

1. At pairs of exterior doors, provide sliding-type weather stripping retained in adjustable strip and mortised into door edge.
2. At exterior doors, provide weather sweeps applied to door bottoms.

G. Entrance Door Hardware Installation: Factory install entrance door hardware to the greatest extent possible. Cut, drill, and tap for factory-installed entrance door hardware before applying finishes.

H. After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings.

2.8 ALUMINUM FINISHES

A. General: Comply with NAAMM "Metal Finishes Manual" for recommendations relative to application and designations of finishes.

B. Finish designations prefixed by "AA" conform to the system established by the Aluminum Association for designating aluminum finishes.

A. **Lindenwold School #4 and Lindenwold School #5**: High-Performance Organic Finish: Three-coat fluoropolymer finish complying with AAMA 2605 and containing not less than 70 percent PVDF or FEVE resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

1. Color and Gloss: As selected by Architect from manufacturer's full range.

B. **Lindenwold Middle School and Lindenwold High School**: Clear Anodic Finish: AAMA 611, AA-M12C22A41, Class I, 0.018 mm or thicker.

PART 3 EXECUTION

2.9 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

2.10 INSTALLATION

A. General:

1. Comply with manufacturer's written instructions.
2. Do not install damaged components.
3. Fit joints to produce hairline joints free of burrs and distortion.
4. Rigidly secure nonmovement joints.
5. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration.
6. Seal joints watertight unless otherwise indicated.

B. Metal Protection:

1. Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or applying sealant or tape, or by installing nonconductive spacers as recommended by manufacturer for this purpose.
2. Where aluminum will contact concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.

C. Install components to drain water passing joints, condensation occurring within framing members, and moisture migrating within the system to exterior.

D. Set continuous sill members and flashing in full sealant bed as specified in Division 07 Section "Joint Sealants" to produce weathertight installation.

E. Install components plumb and true in alignment with established lines and grades, and without warp or rack.

F. Entrance Doors: Install doors to produce smooth operation and tight fit at contact points.

1. Exterior Doors: Install to produce weathertight enclosure and tight fit at weather stripping.
2. Field-Installed Entrance Door Hardware: Install surface-mounted entrance door hardware according to entrance door hardware manufacturers' written instructions using concealed fasteners to greatest extent possible.

G. Install perimeter joint sealants as specified in Division 07 Section "Joint Sealants" to produce weathertight installation.

2.11 ERECTION TOLERANCES

A. Install aluminum-framed systems to comply with the following maximum erection tolerances:

1. Location and Plane: Limit variation from true location and plane to 1/8 inch in 12 feet (3 mm in 3.7 m); 1/4 inch (6 mm) over total length.
2. Alignment:

a. Where surfaces abut in line, limit offset from true alignment to 1/16 inch (1.5 mm).
b. Where surfaces meet at corners, limit offset from true alignment to 1/32 inch (0.8 mm).

B. Diagonal Measurements: Limit difference between diagonal measurements to 1/8 inch (3 mm).

2.12 FIELD QUALITY CONTROL

A. Testing Agency: Owner may engage a qualified independent testing and inspecting agency to perform field tests and inspections.

B. Testing Services: Testing and inspecting of representative areas to determine compliance of installed systems with specified requirements shall take place as follows. Do not proceed with installation of the next area until test results for previously completed areas show compliance with requirements.

1. Water Spray Test: Before installation of interior finishes has begun, areas designated by Architect shall be tested according to AAMA 501.2 and shall not evidence water penetration.

a. Test Area: A minimum area of 75 feet (23 m) by 1 story of aluminum-framed systems. Field Test to be in accordance with Test Method "A" under AAMA 501.2.

C. Repair or remove work if test results and inspections indicate that it does not comply with specified requirements.

D. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

E. Aluminum-framed assemblies will be considered defective if they do not pass tests and inspections.

F. Prepare test and inspection reports.

2.13 ADJUSTING

A. Adjust operating entrance door hardware to function smoothly as recommended by manufacturer.

1. For entrance doors accessible to people with disabilities, adjust closers to provide a 3-second closer sweep period for doors to move from a 70-degree open position to 3 inches (75 mm) from the latch, measured to the leading door edge.

2.14 CLEANING

A. Adjust doors and hardware to provide tight fit at contact points and weather stripping, smooth operation, and weather tight closure.

B. Remove excess sealant and glazing compounds, and dirt from surfaces.

2.15 PROTECTION

A. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer that ensure entrance and storefront systems are without damage or deterioration at the time of Substantial Completion.

END OF SECTION 08411

SECTION 085653 – TRANSACTION WINDOWS & SECURITY WINDOWS

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. Section Includes:

1. Fixed bullet-resistant hollow metal transaction window with deal tray.
2. Fixed bullet-resistant hollow metal security windows.

1.3 COORDINATION

A. Coordinate installation of anchorages for transaction and security windows. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, anchor bolts, and items with integral anchors, that are to be embedded in adjacent construction. Deliver such items to Project site in time for installation.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, weights and finishes for window units.

B. Shop Drawings: For transaction and security windows.

1. Include plans, elevations, sections, and attachment details.
2. Full-size section details of framing members, including internal armoring, reinforcement, and stiffeners.
3. Glazing details.
4. Details of deal tray, deal tray, weather flap and speaking aperture.

1.5 INFORMATIONAL SUBMITTALS

A. Product Test Reports: For each type of transaction window and accessory indicated as forced-entry resistant, for tests performed by a qualified testing agency.

B. Configuration Disclosure Drawing: For each type of forced-entry-resistant transaction window, complying with ASTM F 1233.

C. Examination reports documenting inspections of substrates, areas, and conditions.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer for installation of units required for this Project.

B. Welding Qualifications: Qualify procedures and personnel according to the following:

1. AWS D1.3/D1.3M, "Structural Welding Code – Steel Sheet.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Pack transaction and windows in wood crates for shipment. Crate glazing separate from frames unless factory glazed.

B. Label transaction window packaging with drawing designation.

C. Store crated security and transaction windows on raised blocks to prevent moisture damage.

1.8 FIELD CONDITIONS

A. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

1.9 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace transaction windows that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures including deflections exceeding 1/4 inch (6 mm).
b. Failure of welds.
c. Excessive air leakage.
d. Faulty operation of sliding window hardware.
e. Faulty operation of transaction drawers.
f. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.

2. Warranty Period: Manufacturer’s standard warranty, but not less than 2 years after substantial completion.

PART 2 - PRODUCTS

2.1 SECURITY & TRANSACTION WINDOWS

A. Provide vision transaction and security windows with framing on four sides.

1. Basis-of-Design Product: Provide Model WI-TW-HM-SP, manufactured by Armortex or subject to compliance with requirements, an equivalent product by one of the following manufacturers:

a. Creative Industries, Inc.

b. Laurence, C.R. Co., Inc.

c. Ready Access.

d. Architect-approved equal.

B. Framing: Fabricate perimeter framing, mullions, and glazing stops from hollow metal as follows:

1. Profile: Manufacturer's standard.

C. Glazing and Glazing Materials: Manufacturer’s bullet-resistant armor and glazing systems. Protection Level 5 per UL.

D. Size of Units: Follow the drawings for required unit dimensions.

E. Transaction Window Shelf: 12-inches wide, custom, high-presssure laminated shelf for the full length of the window.

F. Deal Tray: 16 gage stainless steel, 10 x 16 inches to outside edge of flanges, clear 1-5/8 inch open depth under glazing.

G. Speaking Port/Apertures: Fabricate from stainless steel or security glazing, designed to allow passage of speech at normal speaking volume without distortion.

H. Materials:

1. Steel Sheet: ASTM A 1008/1008M, cold rolled, free from scale, pitting, coil breaks and other surface defects.

2.2 FABRICATION

A. General: Fabricate transaction windows to provide a complete system for assembly of components and anchorage of window units.

1. Provide units that are re-glazable from the secure side without dismantling the attack side of framing.

B. Framing: Miter or cope corners the full depth of framing; weld and dress smooth.

1. Fabricate framing with manufacturer's standard, internal opaque armoring in thicknesses required for transaction windows.

C. Glazing Stops: Finish glazing stops to match security window framing.

1. Attack-Side (Exterior) Glazing Stops: Welded or integral to framing.
2. Secure-Side (Interior) Glazing Stops: Removable, coordinated with glazing indicated.

D. Welding: Weld components to comply with referenced standard. To greatest extent possible, weld before finishing and in concealed locations to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.

E. Metal Protection: Separate dissimilar metals to protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape recommended by manufacturer for this purpose.

F. Factory-cut openings in glazing for speaking apertures.

G. Preglazed Fabrication: Preglaze window units at factory, where required for applications indicated. Installation orientation of glazing to meet performance requirements.

2.3 GENERAL FINISH REQUIREMENTS

A. Comply with NAAMM/NOMMA 500 for recommendations for applying and designating finishes.

B. Finish: Manufacturer’s standard prime coating for field painting.

C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

D. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.4 ACCESSORIES

A. Concealed Bolts: ASTM A 307, Grade A unless otherwise indicated.

B. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

C. Miscellaneous Glazing Materials: Provide material, size, and shape complying with requirements of glass manufacturers and with a proven record of compatibility with surfaces contacted in installation.

1. Cleaners, Primers, and Sealers: Type recommended by sealant or gasket manufacturer.
2. Setting Blocks: Elastomeric material with a Shore A durometer hardness of 85, plus or minus 5.
3. Spacers: Elastomeric blocks or continuous extrusions with a Shore A durometer hardness required by glass manufacturer to maintain glass lites in place for installation indicated.
4. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side walking).

D. Anchors, Clips, and Window Accessories: Stainless steel; hot-dip, zinc-coated steel or iron, complying with ASTM B 633; provide sufficient strength to withstand design pressures indicated.

E. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187/D 1187M.

F. Sealants: For sealants required within fabricated security windows, provide type recommended by manufacturer for joint size and movement. Sealant shall remain permanently elastic, nonshrinking, and nonmigrating.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of transaction windows.

B. Examine roughing-in for embedded and built-in anchors to verify actual locations of security window connections before security window installation.

C. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of security windows.

D. Inspect built-in and cast-in anchor installations, before installing transaction windows, to verify that anchor installations comply with requirements. Prepare inspection reports.

1. Remove and replace anchors where inspections indicate that they do not comply with specified requirements. Reinspect after repairs or replacements are made.
2. Perform additional inspections to determine compliance of replaced or additional work. Prepare anchor inspection reports.

E. For factory-installed glazing materials whose orientation (secure or attack side) is critical for performance, verify installation orientation.

F. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Coordination: Furnish layouts for cast-in-place anchors, clips, and other security window anchors whose installation is specified in other Sections.

1. Furnish cast-in-place anchors and similar devices to other trades for installation well in advance of time needed for coordinating other work.

3.3 INSTALLATION

A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing security windows to in-place construction. Include threaded fasteners for inserts, security fasteners, and other connectors.

1. Install an attached or integral flange to secure side of transaction windows extending over rough-in opening gap so that gap has same forced-entry-resistance performance as security window.

B. Removable Glazing Stops and Trim: Fasten components with security fasteners.

C. Fasteners: Install security windows using fasteners recommended by manufacturer with head style appropriate for installation requirements, strength, and finish of adjacent materials. Provide stainless-steel fasteners in stainless-steel materials.

D. Sealants: Comply with requirements in Section 079200 "Joint Sealants" for installing sealants, fillers, and gaskets.

1. Set continuous sill members and flashing in a full sealant bed to provide weathertight construction unless otherwise indicated.
2. Seal frame perimeter with sealant to provide weathertight construction unless otherwise indicated.

E. Metal Protection: Where dissimilar metals will contact each other, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape recommended in writing by manufacturer for this purpose. Where aluminum will contact concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.

3.4 FIELD QUALITY CONTROL

A. Inspect installed products to verify compliance with requirements. Prepare inspection reports and indicate compliance with and deviations from the Contract Documents.

B. Perform additional inspections to determine compliance of replaced or additional work. Prepare inspection reports.

C. Prepare field quality-control certification that states installed products and their installation comply with requirements in the Contract Documents.

3.5 ADJUSTING

A. Adjust transaction security windows to provide a tight fit at contact points for smooth operation and a secure enclosure.

B. Remove and replace defective work, including security windows that are warped, bowed, or otherwise unacceptable.

3.6 CLEANING AND PROTECTION

A. Clean surfaces promptly after installation of transaction windows. Take care to avoid damaging the finish. Remove excess glazing and sealant compounds, dirt, and other substances.

B. Clean glass of pre-glazed transaction windows promptly after installation.

C. Provide temporary protection to ensure that transaction windows are without damage at time of Substantial Completion.

D. Touch-up minor scratches to the satisfaction of the architect, with finish to match the factory color.

3.7 DEMONSTRATION

A. Train Owner's maintenance personnel to adjust, operate, and maintain completed unit.

END OF SECTION 085653

SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes commercial door hardware for the following:

1. Swinging doors.

B. Door hardware includes, but is not necessarily limited to, the following:

1. Mechanical door hardware.
2. Electromechanical door hardware.
3. Cylinders specified for doors in other sections.

C. Related Sections:

1. Division 08 Section “Hollow Metal Doors and Frames”.
2. Division 08 Section “Flush Wood Doors”.
3. Division 08 Section “Aluminum-Framed Entrances and Storefronts”.

D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.

1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
2. ICC/IBC - International Building Code.
3. NFPA 70 - National Electrical Code.
4. NFPA 80 - Fire Doors and Windows.
5. NFPA 101 - Life Safety Code.
6. NFPA 105 - Installation of Smoke Door Assemblies.
7. State Building Codes, Local Amendments.

E. Standards: All hardware specified herein shall comply with the following industry standards as applicable. Any undated reference to a standard shall be interpreted as referring to the latest edition of that standard:

1. ANSI/BHMA Certified Product Standards - A156 Series.
2. UL10C - Positive Pressure Fire Tests of Door Assemblies.

3. ANSI/UL 294 - Access Control System Units.
4. UL 305 - Panic Hardware.
5. ANSI/UL 437- Key Locks.

1.3 SUBMITTALS

A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.

B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."

2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.

3. Content: Include the following information:

a. Type, style, function, size, label, hand, and finish of each door hardware item.
b. Manufacturer of each item.
c. Fastenings and other pertinent information.
d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
e. Explanation of abbreviations, symbols, and codes contained in schedule.
f. Mounting locations for door hardware.
g. Door and frame sizes and materials.
h. Warranty information for each product.

4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.

C. Shop Drawings: Details of electrified access control hardware indicating the following:

1. Wiring Diagrams: Upon receipt of approved schedules, submit detailed system wiring diagrams for power, signaling, monitoring, communication, and control of the access control system electrified hardware. Differentiate between manufacturer-installed and field-installed wiring. Include the following:

a. Elevation diagram of each unique access controlled opening showing location and interconnection of major system components with respect to their placement in the respective door openings.
b. Complete (risers, point-to-point) access control system block wiring diagrams.
c. Wiring instructions for each electronic component scheduled herein.

2. Electrical Coordination: Coordinate with related sections the voltages and wiring details required at electrically controlled and operated hardware openings.

D. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.

E. Informational Submittals:

1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.

F. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Procedures.

1.4 QUALITY ASSURANCE

A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.

B. Certified Products: Where specified, products must maintain a current listing in the Builders Hardware Manufacturers Association (BHMA) Certified Products Directory (CPD).

C. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

D. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.

E. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.

1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.

2. Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.

F. Each unit to bear third party permanent label demonstrating compliance with the referenced standards.

G. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:

1. Function of building, purpose of each area and degree of security required.
2. Plans for existing and future key system expansion.
3. Requirements for key control storage and software.
4. Installation of permanent keys, cylinder cores and software.
5. Address and requirements for delivery of keys.

H. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.

1. Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
3. Review sequence of operation narratives for each unique access controlled opening.
4. Review and finalize construction schedule and verify availability of materials.
5. Review the required inspecting, testing, commissioning, and demonstration procedures

I. At completion of installation, provide written documentation that components were applied to manufacturer's instructions and recommendations and according to approved schedule.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.

B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.

C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.6 COORDINATION

A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.

B. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.7 WARRANTY

A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:

1. Structural failures including excessive deflection, cracking, or breakage.
2. Faulty operation of the hardware.
3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
4. Electrical component defects and failures within the systems operation.

C. Standard Warranty Period: One year from date of Substantial Completion, unless otherwise indicated.

D. Special Warranty Periods:

1. Ten years for mortise locks and latches.
2. Five years for exit hardware.
3. Twenty five years for manual overhead door closer bodies.
4. Five years for motorized electric latch retraction exit devices.
5. Two years for electromechanical door hardware.

1.8 MAINTENANCE SERVICE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

A. General: Provide door hardware for each door to comply with requirements in Door Hardware Sets and each referenced section that products are to be supplied under.

B. Designations: Requirements for quantity, item, size, finish or color, grade, function, and other distinctive qualities of each type of door hardware are indicated in the Door Hardware Sets at the end of Part 3. Products are identified by using door hardware designations, as follows:

1. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing requirements. Manufacturers' names are abbreviated in the Door Hardware Schedule.

C. Substitutions: Requests for substitution and product approval for inclusive mechanical and electromechanical door hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.

2.2 HANGING DEVICES

A. Hinges: ANSI/BHMA A156.1 certified butt hinges with number of hinge knuckles and other options as specified in the Door Hardware Sets.

1. Quantity: Provide the following hinge quantity:

a. Two Hinges: For doors with heights up to 60 inches.
b. Three Hinges: For doors with heights 61 to 90 inches.
c. Four Hinges: For doors with heights 91 to 120 inches.
d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.

2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:

a. Widths up to 3’0”: 4-1/2” standard or heavy weight as specified.
b. Sizes from 3’1” to 4’0”: 5” standard or heavy weight as specified.

3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:

a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.

4. Hinge Options: Comply with the following:

a. Non-removable Pins: Provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for the all out-swinging lockable doors.

5. Manufacturers:

a. Hager Companies (HA).
b. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK).
c. Stanley Hardware (ST).

B. Continuous Geared Hinges: ANSI/BHMA A156.26 Grade 1-600 certified continuous geared hinge. with minimum 0.120-inch thick extruded 6060 T6 aluminum alloy hinge leaves and a minimum overall width of 4 inches. Hinges are non-handed, reversible and fabricated to template screw locations. Factory trim hinges to suit door height and prepare for electrical cut-outs.

1. Manufacturers:

a. Pemko Products; ASSA ABLOY Architectural Door Accessories (PE).

2.3 POWER TRANSFER DEVICES

A. Concealed Quick Connect Electric Power Transfers: Provide concealed wiring pathway housing mortised into the door and frame for low voltage electrified door hardware. Furnish with Molex™ standardized plug connectors and sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.

1. Manufacturers:

a. Pemko Products; ASSA ABLOY Architectural Door Accessories (PE) - EL-CEPT Series.
b. Securitron (SU) - EL-CEPT Series.

B. Electric Door Wire Harnesses: Provide electric/data transfer wiring harnesses with standardized plug connectors to accommodate up to twelve (12) wires. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Provide sufficient number and type of concealed wires to accommodate electric function of specified hardware. Provide a connector for through-door electronic locking devices and from hinge to junction box above the opening. Wire nut connections are not acceptable. Determine the length

required for each electrified hardware component for the door type, size and construction, minimum of two per electrified opening.

1. Provide one each of the following tools as part of the base bid contract:

    a. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK) - Electrical Connecting Kit: QC-R001.
    b. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK) - Connector Hand Tool: QC-R003.

2. Manufacturers:

    a. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK) - QC-C Series.

2.4 DOOR OPERATING TRIM

A. Door Push Plates and Pulls: ANSI/BHMA A156.6 certified door pushes and pulls of type and design specified in the Hardware Sets. Coordinate and provide proper width and height as required where conflicting hardware dictates.

1. Push/Pull Plates: Minimum .050 inch thick, size as indicated in hardware sets, with beveled edges, secured with exposed screws unless otherwise indicated.
2. Door Pull and Push Bar Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door unless otherwise indicated.
3. Offset Pull Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door and offset of 90 degrees unless otherwise indicated.
4. Fasteners: Provide manufacturer's designated fastener type as indicated in Hardware Sets.

5. Manufacturers:

    a. Hiawatha, Inc. (HI).
    b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
    c. Trimco (TC).

2.5 CYLINDERS AND KEYING

A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.
    1. Manufacturers:

        a. dormakaba Best (BE). Owner supplied cores.

B. Cylinder Types: Original manufacturer cylinders able to supply the following cylinder formats and types:

1. Threaded mortise cylinders with rings and cams to suit hardware application.

2. Rim cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
3. Bored or cylindrical lock cylinders with tailpieces as required to suit locks.
4. Tubular deadlocks and other auxiliary locks.
5. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
6. Keyway: Match Facility Standard.

2.6 MECHANICAL LOCKS AND LATCHING DEVICES

A. Mortise Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.13, Series 1000, Operational Grade 1 Certified Products Directory (CPD) listed. Locksets are to be manufactured with a corrosion resistant steel case and be field-reversible for handing without disassembly of the lock body.

1. Manufacturers:

a. Corbin Russwin Hardware (RU) - ML2000 Series.
b. Sargent Manufacturing (SA) - 8200 Series.

B. Cylindrical Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.2, Series 4000, Operational Grade 1 Certified Products Directory (CPD) listed.

1. Furnish with solid cast levers, standard 2 3/4” backset, and 1/2" (3/4" at rated paired openings) throw brass or stainless steel latchbolt.

2. Locks are to be non-handed and fully field reversible.

3. Manufacturers:

a. Corbin Russwin Hardware (RU) - CL3300 Series.
b. Sargent Manufacturing (SA) - 10 Line.

2.7 ELECTROMECHANICAL LOCKING DEVICES

A. Electromechanical Mortise Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.13, Series 1000, Operational Grade 1 Certified Products Directory (CPD) listed, subject to same compliance standards and requirements as mechanical mortise locksets, electrified locksets to be of type and design as specified below and in the hardware sets.

1. Electrified Lock Options: Where indicated in the Hardware Sets, provide electrified options including: outside door lock/unlock trim control, latchbolt and lock/unlock status monitoring, deadbolt monitoring, and request-to-exit signaling. Support end-of-line resistors contained within the lock case. Unless otherwise indicated, provide electrified locksets standard as fail secure.

2. Energy Efficient Design: Provide lock bodies which have a holding current draw of 15mA maximum, and can operate on either 12 or 24 volts. Locks are to be field configurable for fail safe or fail secure operation.

3. Manufacturers:

   a. Corbin Russwin Hardware (RU) - ML20900 Series.
   b. Sargent Manufacturing (SA) - 8200 Series.

B. Electromechanical Cylindrical Locksets, Grade 1 (Heavy Duty): Subject to same compliance standards and requirements as mechanical cylindrical locksets, electrified locksets to be of type and design as specified below.

1. Electrified Lock Options: Where indicated in the Hardware Sets, provide electrified options including: outside door lock/unlock trim control and request-to-exit signaling. Unless otherwise indicated, provide electrified locksets standard as fail secure.

2. Manufacturers:

   a. Corbin Russwin Hardware (RU) - CL33900 Series.
   b. Sargent Manufacturing (SA) - 10G70/71 Series.

2.8 LOCK AND LATCH STRIKES

A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:

1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
4. Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.

B. Standards: Comply with the following:

1. Strikes for Mortise Locks and Latches: BHMA A156.13.
2. Strikes for Bored Locks and Latches: BHMA A156.2.
3. Strikes for Auxiliary Deadlocks: BHMA A156.36.
4. Dustproof Strikes: BHMA A156.16.

2.9 CONVENTIONAL EXIT DEVICES

A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:

1. At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.

2. Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper fasteners for installation as tested and listed by UL. Consult manufacturer’s catalog and template book for specific requirements.

3. Except on fire rated doors, provide exit devices with hex key dogging device to hold the pushbar and latch in a retracted position. Provide optional keyed cylinder dogging on devices where specified in Hardware Sets.

4. Devices must fit flat against the door face with no gap that permits unauthorized dogging of the push bar. The addition of filler strips is required in any case where the door light extends behind the device as in a full glass configuration.

5. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty escutcheon trim with threaded studs for thru-bolts.

    a. Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets.
    b. Where function of exit device requires a cylinder, provide a cylinder (Rim or Mortise) as specified in Hardware Sets.

6. Vertical Rod Exit Devices: Where surface or concealed vertical rod exit devices are used at interior openings, provide as less bottom rod (LBR) unless otherwise indicated. Provide dust proof strikes where thermal pins are required to project into the floor.

7. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2” wide stiles.

8. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.

9. Rail Sizing: Provide exit device rails factory sized for proper door width application.

10. Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.

B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 Certified Products Directory (CPD) listed panic and fire exit hardware devices furnished in the functions specified in the Hardware Sets. Exit device latch to be stainless steel, pullman type, with deadlock feature.

    1. Manufacturers:

        a. Corbin Russwin Hardware (RU) - ED4000 / ED5000 Series.
        b. Sargent Manufacturing (SA) - 80 Series.

2.10 ELECTROMECHANICAL EXIT DEVICES

A. Electromechanical Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 Certified Products Directory (CPD) listed panic and fire exit hardware devices subject to same compliance standards and requirements as mechanical exit devices. Electrified exit devices to be of type and design as specified below and in the hardware sets.

1. Energy Efficient Design: Provide devices which have a holding current draw of 15mA maximum, and can operate on either 12 or 24 volts. Locks are to be field configurable for fail safe or fail secure operation.

2. Where conventional power supplies are not sufficient, include any specific controllers required to provide the proper inrush current.

3. Motorized Electric Latch Retraction: Devices with an electric latch retraction feature must use motors which have a maximum current draw of 600mA. Solenoid driven latch retraction is not acceptable.

4. Manufacturers:

   a. Corbin Russwin Hardware (RU) - ED5000 Series.
   b. Sargent Manufacturing (SA) - 80 Series.

2.11 DOOR CLOSERS

A. All door closers specified herein shall meet or exceed the following criteria:

1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers.

2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.

3. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the Americans with Disabilities Act, provide units complying with ANSI ICC/A117.1.

4. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.

5. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.

6. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.

B. Door Closers, Surface Mounted (Heavy Duty): ANSI/BHMA A156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control. Provide non-handed units standard.

1. Manufacturers:

a. Corbin Russwin Hardware (RU) - DC8000 Series.
b. Norton Door Controls (NO) - 7500 Series.
c. Sargent Manufacturing (SA) - 351 Series.

2.12 ARCHITECTURAL TRIM

A. Door Protective Trim

1. General: Door protective trim units to be of type and design as specified below or in the Hardware Sets.

2. Size: Fabricate protection plates (kick, armor, or mop) not more than 2" less than door width (LDW) on stop side of single doors and 1” LDW on stop side of pairs of doors, and not more than 1" less than door width on pull side. Coordinate and provide proper width and height as required where conflicting hardware dictates. Height to be as specified in the Hardware Sets.

3. Where plates are applied to fire rated doors with the top of the plate more than 16” above the bottom of the door, provide plates complying with NFPA 80. Consult manufacturer’s catalog and template book for specific requirements for size and applications.

4. Protection Plates: ANSI/BHMA A156.6 certified protection plates (kick, armor, or mop), fabricated from the following:

a. Stainless Steel: 300 grade, 050-inch thick.

5. Options and fasteners: Provide manufacturer's designated fastener type as specified in the Hardware Sets. Provide countersunk screw holes.

6. Manufacturers:

a. Hiawatha, Inc. (HI).
b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
c. Trimco (TC).

2.13 DOOR STOPS AND HOLDERS

A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.

B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 certified door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.

1. Manufacturers:

a. Hiawatha, Inc. (HI).
b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
c. Trimco (TC).

C. Overhead Door Stops and Holders: ANSI/BHMA A156.8, Grade 1 Certified Products Directory (CPD) listed overhead stops and holders to be surface or concealed types as indicated in Hardware Sets. Track, slide, arm and jamb bracket to be constructed of extruded bronze and shock absorber spring of heavy tempered steel. Provide non-handed design with mounting brackets as required for proper operation and function.

1. Manufacturers:

a. Rixson Door Controls (RF).
b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
c. Sargent Manufacturing (SA).

2.14 ARCHITECTURAL SEALS

A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.

B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.

1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.

C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.

1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and NPFA 252, Standard Methods of Fire Tests of Door Assemblies.

D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.

E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.

F. Manufacturers:

1. National Guard Products (NG).
2. Pemko Products; ASSA ABLOY Architectural Door Accessories (PE).
3. Reese Enterprises, Inc. (RE).

2.15 ELECTRONIC ACCESSORIES

A. Door Position Switches: Door position magnetic reed contact switches specifically designed for use in commercial door applications. On recessed models the contact and magnetic housing snap-lock into a 1" diameter hole. Surface mounted models include wide gap distance design complete with armored flex cabling. Provide SPDT, N/O switches with optional Rare Earth Magnet installation on steel doors with flush top channels.

1. Manufacturers:

a. Securitron (SU) - DPS Series.

B. Intelligent Switching Power Supplies: Provide power supplies with single, dual or multi-voltage configurations at 12 and/or 24VDC. Power Supply shall have battery backup function with an integrated battery charging circuit. The power supply shall have a standard, integrated Fire Alarm Interface (FAI). The power supply shall provide capability for secondary voltage, power distribution, direct lock control and network monitoring through add on modules. The power supply shall be expandable up to 16 individually protected outputs. Output modules shall provide individually protected, continuous outputs and/or individually protected, relay controlled outputs. Network modules shall provide remote monitoring functions such as status reporting, fault reporting and information logging.

1. Provide the least number of units, at the appropriate amperage level, sufficient to exceed the required total draw for the specified electrified hardware and access control equipment.

2. Manufacturers:

a. Securitron (SU) - AQL Series.

C. Energy Efficient Switching Power Supplies: Provide UL listed or recognized filtered and regulated power supplies. Provide single voltage units as shown in the hardware sets. Units must have one access control input and one fire alarm input. Standby power consumption of unit must be less than 10mW at 120VAC. Provide integral battery backup as standard for all units. Provide the least number of units, at the appropriate amperage level, sufficient to exceed the required total draw for the specified electrified hardware and access control equipment.

1. Manufacturers:

a. Securitron (SU) - EPS Series.

2.16 FABRICATION

A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.17 FINISHES

A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.

B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware

C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.

B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.2 PREPARATION

A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.

B. Wood Doors: Comply with ANSI/DHI A115-W series.

3.3 INSTALLATION

A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.

1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.

B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:

1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
2. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.

C. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.

D. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."

E. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.4 FIELD QUALITY CONTROL

A. Field Inspection (Punch Report): Reference Division 01 Sections “Closeout Procedures” and “Cash Allowances”. Produce project punch report for each installed door opening indicating compliance with approved submittals and verification hardware is properly installed, operating and adjusted. Include list of items to be completed and corrected, indicating the reasons or deficiencies causing the Work to be incomplete or rejected.

1. Organization of List: Include separate Door Opening and Deficiencies and Corrective Action Lists organized by Mark, Opening Remarks and Comments, and related Opening Images and Video Recordings.
2. Submit documentation of incomplete items in the following formats:

a. PDF electronic file.
b. Electronic formatted file integrated with the Openings Studio™ door opening management software platform.

3.5 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to

operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.6 CLEANING AND PROTECTION

A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.

B. Clean adjacent surfaces soiled by door hardware installation.

C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.7 DEMONSTRATION

A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

3.8 DOOR HARDWARE SETS

A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

1. Quantities listed are for each pair of doors, or for each single door.

2. The supplier is responsible for handing and sizing all products.

3. Where multiple options for a piece of hardware are given in a single line item, the supplier shall provide the appropriate application for the opening.

4. At existing openings with new hardware the supplier shall field inspect existing conditions prior to the submittal stage to verify the specified hardware will work as required. Provide alternate solutions and proposals as needed.

Hardware Sets

Set: 1.0

Doors: 4.1, 4A.1, 5.1

2	Continuous Hinge	CFM__HD1 PT X LAR		PE	
2	Electric Power Transfer	EL-CEPT		SU	⚡
1	Removable Mullion	L980S	PC	SA	
1	Rim Exit Device, Exit Only	55 56 8810 EO	US32D	SA	⚡
1	Rim Exit Device, Storeroom	55 56 70 8804 Less Pull	US32D	SA	⚡
1	Cylinder	70 980C1	US10B	SA	
2	Core	By Owner		BE	
2	Pull	RM201 Mtg-Type 12XHD	US32D-316	RO	
2	Surface Closer	CPS7500 (brackets and drop plate as required)	689	NO	
1	Threshold	273x3AFG MSES10SS		PE	
1	Gasketing	By Door Manufacturer		00	
2	Sweep	307APK		PE	
2	ElectroLynx Harness (frame)	QC-C1500P		MK	⚡
2	ElectroLynx Harness (door)	QC-C*** (Length / Type as Required)		MK	⚡
1	Wiring Diagram	WD-SYSPK (Elevations and Point to Point)		SA	
2	Position Switch	DPS2-M-BK		SU	⚡
1	Power Supply w/ Distribution Board	AQL4-R8E1		SU	⚡

Notes: CARD READER BY SECURITY VENDOR. PRESENTING AUTHORIZED CREDENTIAL TO CARD READER OR PUSH BUTTON BY SECURITY VENDOR WILL UNLOCK EXIT DEVICE ALLOWING ACCESS. EGRESS IS BY EXIT DEVICE. EMERGENCY ACCESS BY KEY.

Set: 2.0

Doors: MS.1

1	Continuous Hinge	CFM__HD1 PT X LAR		PE	
1	Electric Power Transfer	EL-CEPT		SU	⚡
1	Rim Exit Device, Storeroom	55 56 70 8804 Less Pull	US32D	SA	⚡
1	Core	By Owner		BE	
1	Pull	RM201 Mtg-Type 12XHD	US32D-316	RO	

1	Surface Closer	CPS7500 (brackets and drop plate as required)	689	NO	
1	Threshold	273x3AFG MSES10SS		PE	
1	Gasketing	By Door Manufacturer		00	
1	Sweep	307APK		PE	
1	ElectroLynx Harness (frame)	QC-C1500P		MK	⚡
1	ElectroLynx Harness (door)	QC-C*** (Length / Type as Required)		MK	⚡
1	Wiring Diagram	WD-SYSPK (Elevations and Point to Point)		SA	
1	Position Switch	DPS2-M-BK		SU	⚡
1	Power Supply w/ Distribution Board	AQL4-R8E1		SU	⚡

Notes: CARD READER BY SECURITY VENDOR. PRESENTING AUTHORIZED CREDENTIAL TO CARD READER OR PUSH BUTTON BY SECURITY VENDOR WILL UNLOCK EXIT DEVICE ALLOWING ACCESS. EGRESS IS BY EXIT DEVICE. EMERGENCY ACCESS BY KEY.

Set: 3.0

Doors: HS.2

2	Continuous Hinge	CFM__HD1 X LAR		PE
1	Removable Mullion	L980S	PC	SA
1	Rim Exit Device, Storeroom	16 70 8804 Less Pull	US32D	SA
1	Rim Exit Device, Exit Only	16 70 8810 EO	US32D	SA
1	Cylinder	70 980C1	US10B	SA
4	Core	By Owner		BE
2	Pull	RM201 Mtg-Type 12XHD	US32D-316	RO
2	Surface Closer	CPS7500 (brackets and drop plate as required)	689	NO
1	Gasketing	By Door Manufacturer		00
2	Sweep	307APK		PE

Set: 4.0

Doors: 4.2, 4A.2, 5.2, HS.1

2	Continuous Hinge	CFM__HD1 PT X LAR		PE	
2	Electric Power Transfer	EL-CEPT		SU	⚡
1	Removable Mullion	L980S	PC	SA	
1	Rim Exit Device, Exit Only	55 56 8810 EO	US32D	SA	⚡
1	Rim Exit Device, Storeroom	55 56 70 8804 Less Pull	US32D	SA	⚡

1	Cylinder	70 980C1	US10B	SA	
4	Core	By Owner		BE	
2	Pull	RM201 Mtg-Type 12XHD	US32D-316	RO	
2	Surface Closer	CPS7500 (brackets and drop plate as required)	689	NO	
1	Gasketing	By Door Manufacturer		00	
2	Sweep	307APK		PE	
2	ElectroLynx Harness (frame)	QC-C1500P		MK	⚡
2	ElectroLynx Harness (door)	QC-C*** (Length / Type as Required)		MK	⚡
1	Wiring Diagram	WD-SYSPK (Elevations and Point to Point)		SA	
2	Position Switch	DPS2-M-BK		SU	⚡
1	Power Supply w/ Distribution Board	AQL4-R8E1		SU	⚡

Notes: CARD READER BY SECURITY VENDOR. PRESENTING AUTHORIZED CREDENTIAL TO CARD READER OR PUSH BUTTON BY SECURITY VENDOR WILL UNLOCK EXIT DEVICE ALLOWING ACCESS. EGRESS IS BY EXIT DEVICE. EMERGENCY ACCESS BY KEY.

Set: 5.0

Doors: 5.4, 5.5

3	Hinge, Full Mortise	TA2714 FT	US26D	MK	
1	Storeroom/Closet Lock	28 70 10G04 LL	US26D	SA	
1	Core	By Owner		BE	
1	Surface Closer	(PR) 7500 (Reg or PA) (brackets and drop plate as required)	689	NO	
1	Kick Plate	K1050 10" high BEV CSK	US32D	RO	
1	Wall/ Floor Stop	RM861 / RM850	US32D	RO	
1	Gasketing	S88BL (Head & Jambs)		PE	

Set: 6.0

Doors: MS.2

3	Hinge (heavy weight)	T4A3786 FT	US26D	MK	
1	Electric Power Transfer	EL-CEPT		SU	⚡
1	Fail Secure Electric Lock	70 8271-24V LNL (modified inside trim rigid, outside trim electric fail secure)	US26D	SA	⚡
1	Core	By Owner		BE	

1	Electric Strike	1600-CS-LM 2004M 2005M	630	HS	⚡
1	Surface Closer	7500 (brackets and drop plate as required)	689	NO	
1	Kick Plate	K1050 10" high BEV CSK	US32D	RO	
1	Wall/ Floor Stop	RM861 / RM850	US32D	RO	
3	Silencer	608		RO	
2	ElectroLynx Harness (frame)	QC-C1500P		MK	⚡
1	ElectroLynx Harness (door)	QC-C*** (Length / Type as Required)		MK	⚡
1	Power Supply	EPS-05		SU	⚡

Notes: CARD READER BY OTHERS. DURING NORMAL SCHOOL HOURS CORRIDOR TRIM IS UNLOCKED ELECTRICALLY. RECEPTION TRIM IS ALWAYS LOCKED. ELECTRIC STRIKE IS OPERATED BY CARD READER OR PUSH BUTTON AT RECEPTION DESK. AFTER SCHOOL HOURS THE CORRIDOR TRIM IS LOCKED ELECTRICALLY AND ACCESS OR EGRESS IS BY CARD READER WHICH UNLOCKS ELECTRIC STRIKE. EMERGENCY ACCESS OR EGRESS IS BY KEY.

Set: 7.0

Doors: 4A.3

3	Hinge (heavy weight)	T4A3786 FT	US26D	MK	
1	Electric Power Transfer	EL-CEPT		SU	⚡
1	Fail Secure Lock	28 70 10G71-24V LL	US26D	SA	⚡
1	Core	By Owner		BE	
1	Conc Overhead Stop	1ADJ-X36	630	RF	
1	Surface Closer	7500 (brackets and drop plate as required)	689	NO	
1	Kick Plate	K1050 10" high BEV CSK	US32D	RO	
1	Gasketing	S88BL (Head & Jambs)		PE	
1	ElectroLynx Harness (frame)	QC-C1500P		MK	⚡
1	ElectroLynx Harness (door)	QC-C*** (Length / Type as Required)		MK	⚡
1	Wiring Diagram	WD-SYSPK (Elevations and Point to Point)		SA	
1	Position Switch	DPS2-M-BK		SU	⚡
1	Power Supply w/ Distribution Board	AQL4-R8E1		SU	⚡

Notes: CARD READER BY SECURITY VENDOR. PRESENTING AUTHORIZED CREDENTIAL TO CARD READER WILL UNLOCK EXTERIOR TRIM ALLOWING ACCESS. EGRESS IS BY INSIDE LEVER. EMERGENCY ACCESS BY KEY.

Set: 8.0

Doors: 4.3, 4A.4, 5.3

3	Hinge (heavy weight)	T4A3786 FT	US26D	MK	
1	Electric Power Transfer	EL-CEPT		SU	⚡
1	Fail Secure Lock	28 70 10G71-24V LL	US26D	SA	⚡
1	Core	By Owner		BE	
1	Surface Closer	CPS7500 (brackets and drop plate as required)	689	NO	
1	Kick Plate	K1050 10" high BEV CSK	US32D	RO	
1	Gasketing	S88BL (Head & Jambs)		PE	
1	ElectroLynx Harness (frame)	QC-C1500P		MK	⚡
1	ElectroLynx Harness (door)	QC-C*** (Length / Type as Required)		MK	⚡
1	Wiring Diagram	WD-SYSPK (Elevations and Point to Point)		SA	
1	Position Switch	DPS2-M-BK		SU	⚡
1	Power Supply w/ Distribution Board	AQL4-R8E1		SU	⚡

Notes: CARD READER BY SECURITY VENDOR. PRESENTING AUTHORIZED CREDENTIAL TO CARD READER WILL UNLOCK EXTERIOR TRIM ALLOWING ACCESS. EGRESS IS BY INSIDE LEVER. EMERGENCY ACCESS BY KEY.

END OF SECTION 087100

SECTION 090561.13 - MOISTURE VAPOR EMISSION CONTROL

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. Section includes fluid-applied, resin-based, membrane-forming systems that control the moisture-vapor-emission rate of high-moisture, interior concrete to prepare it for floor covering installation.

B. This specification section is applicable where the concrete slab moisture testing requirements exceed the flooring manufacturer's requirements to permit the installation of the flooring systems. This shall apply to all installed flooring finishes specified. The installation of any MVWC system shall be coordinated with, and comply with the flooring manufacturers installation requirements.

1.3 DEFINITIONS

A. MVE: Moisture vapor emission.

B. MVER: Moisture vapor emission rate.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For manufacturer.

B. Product Test Reports: For each MVE-control system, for tests performed by manufacturer and witnessed by a qualified testing agency.

C. Preinstallation testing reports.

D. Field quality-control reports.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Employs factory-trained personnel who are available for consultation and Project-site inspection.

B. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in original packages and containers, with seals unbroken, bearing manufacturer's labels indicating directions for storage and mixing with other components.

1.8 FIELD CONDITIONS

A. Environmental Limitations: Comply with MVE-control system manufacturer's written instructions for substrate and ambient temperatures, humidity, ventilation, and other conditions affecting system installation.

1. Store system components in a temperature-controlled environment and protected from weather and at ambient temperature of not less than 65 deg F (18 deg C) and not more than 85 deg F (29.4 deg C) at least 48 hours before use.
2. Maintain ambient temperature and relative humidity in installation areas within range recommended in writing by MVE-control system manufacturer, but not less than 65 deg F (18 deg C) or more than 85 deg F (29.4 deg C) and not less than 40 or more than 60 percent relative humidity, for 48 hours before installation, during installation, and for 48 hours after installation unless longer period is recommended in writing by manufacturer.
3. Install MVE-control systems where concrete surface temperatures will remain a minimum of 5 deg F (3 deg C) higher than the dew point for ambient temperature and relative humidity conditions in installation areas for 48 hours before installation, during installation, and for 48 hours after installation unless longer period is recommended in writing by manufacturer.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. MVE-Control System Capabilities: Capable of suppressing MVE without failure where installed on concrete that exhibits the following conditions:

1. MVER: Maximum 15 lb of water/1000 sq. ft. (6.80 kg of water/92.9 sq. m) when tested according to ASTM F 1869.
2. Relative Humidity: Maximum 90 percent when tested according to ASTM F 2170 using in situ probes.

B. Water-Vapor Transmission: Through MVE-control system, maximum 0.02 perm (1.15 ng/Pa x s x sq. m) when tested according to ASTM E 96/E 96M.

C. Tensile Bond Strength: For MVE-control system, greater than 200 psi (1.38 MPa) with failure in the concrete according to ASTM D 7234.

2.2 MVE-CONTROL SYSTEM

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. ARDEX Americas.
2. BASF Corporation.
3. Custom Building Products.
4. H.B. Fuller Construction Products Inc. / TEC.
5. LATICRETE SUPERCAP, LLC.
6. MAPEI Corporation.
7. USG Corporation.
8. Architect-approved equal.

B. MVE-Control System: ASTM F 3010-qualified, fluid-applied, two-component, epoxy-resin, membrane-forming system; formulated for application on concrete substrates to reduce MVER to level required for installation of floor coverings indicated and acceptable to manufacturers of floor covering products indicated, including adhesives.

1. Substrate Primer: Provide MVE-control system manufacturer's concrete-substrate primer if required for system indicated by substrate conditions.
2. Cementitious Underlayment Primer: If required for subsequent installation of cementitious underlayment products, provide MVE-control system manufacturer's primer to ensure adhesion of products to MVE-control system.

2.3 ACCESSORIES

A. Patching and Leveling Material: Moisture-, mildew-, and alkali-resistant product recommended in writing by MVE-control system manufacturer and with minimum of 3000-psi (20.68-MPa) compressive strength after 28 days when tested according to ASTM C 109/C 109M.

B. Crack-Filling Material: Resin-based material recommended in writing by MVE-control system manufacturer for sealing concrete substrate crack repair.

C. Cementitious Underlayment: If required to maintain manufacturer's warranty, provide MVE-control system manufacturer's gypsum or hydraulic cement-based underlayment.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Installer present, for compliance with requirements for maximum moisture content, installation tolerances, and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

1. Installation of system indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Preinstallation Testing:

1. Testing Agency: Engage a qualified testing agency to perform tests.
2. Alkalinity Testing: Perform pH testing according to ASTM F 710. Install MVE-control system in areas where pH readings are less than 7.0 and in areas where pH readings are greater than 8.5.
3. Moisture Testing: Perform tests so that each test area does not exceed 200 sq. ft. (18.6 sq. m, and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.

    a. Anhydrous Calcium Chloride Test: ASTM F 1869. Install MVE-control system in locations where concrete substrate MVER exceeds 3 lb. of water/1000 sq. ft. (1.36 kg of water/92.9 sq. m) in 24 hours.
    b. Internal Relative Humidity Test: Using in situ probes, ASTM F 2170. Install MVE-control system in locations where concrete substrates exhibit relative humidity level greater than 75 percent.

4. Tensile-Bond-Strength Testing: For typical locations indicated to receive installation of MVE-control system, install minimum 100-sq. ft. (9.29-sq. m) area of MVE-control system to prepared concrete substrate and test according to ASTM D 7234.

    a. Proceed with installation only where tensile bond strength is greater than 200 psi (1.38 MPa) with failure in the concrete.

B. Concrete Substrates: Prepare and clean substrates according to MVE-control system manufacturer's written instructions to ensure adhesion of system to concrete.

1. Remove coatings and other substances that are incompatible with MVE-control system and that contain soap, wax, oil, or silicone, using mechanical methods recommended in writing by MVE-control system manufacturer. Do not use solvents.
2. Provide concrete surface profile complying with ICRI 310.2R by shot blasting using apparatus that abrades the concrete surface with shot, contains the dispensed shot within the apparatus, and recirculates the shot by vacuum pickup.

3. After shot blasting, repair damaged and deteriorated concrete according to MVE-control system manufacturer's written instructions.
4. Protect substrate voids and joints to prevent resins from flowing into or leaking through them.
5. Fill surface depressions and irregularities with patching and leveling material.
6. Fill surface cracks, grooves, control joints, and other nonmoving joints with crack-filling material.
7. Allow concrete to dry, undisturbed, for period recommended in writing by MVE-control system manufacturer after surface preparation, but not less than 24 hours.
8. Before installing MVE-control systems, broom sweep and vacuum prepared concrete.

C. Protect walls, floor openings, electrical openings, door frames, and other obstructions during installation.

3.3 INSTALLATION

A. General: Install MVE-control system according to ASTM F 3010 and manufacturer's written instructions to produce a uniform, monolithic surface free of surface deficiencies such as pin holes, fish eyes, and voids.

1. Install primers as required to comply with manufacturer's written instructions.

B. Do not apply MVE-control system across substrate expansion, isolation, and other moving joints.

C. Apply system, including component coats if any, in thickness recommended in writing by MVE-control system manufacturer for MVER indicated by preinstallation testing.

D. Cure MVE-control system components according to manufacturer's written instructions. Prevent contamination or other damage during installation and curing processes.

E. After curing, examine MVE-control system for surface deficiencies. Repair surface deficiencies according to manufacturer's written instructions.

F. Install cementitious underlayment over cured membrane if required to maintain manufacturer's warranty and in thickness required to maintain the warranty.

3.4 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform installation inspections.

B. Installation Inspections: Inspect substrate preparation and installation of system components to ensure compliance with manufacturer's written instructions and to ensure that a complete MVE-control system is installed without deficiencies.

1. Verify that surface preparation meets requirements.

2. Verify that component coats and complete MVE-control-system film thicknesses comply with manufacturer's written instructions.
3. Verify that MVE-control-system components and installation areas that evidence deficiencies are repaired according to manufacturer's written instructions.

C. MVE-control system will be considered defective if it does not pass inspections.

3.5 PROTECTION

A. Protect MVE-control system from damage, wear, dirt, dust, and other contaminants before floor covering installation. Use protective methods and materials, including temporary coverings, recommended in writing by MVE-control system manufacturer.

B. Do not allow subsequent preinstallation examination and testing for floor covering installation to damage, puncture, or otherwise compromise the MVE-control system membrane.

END OF SECTION 090561.13

SECTION 092216 - NON-STRUCTURAL METAL FRAMING

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. Section Includes:

1. Non-load-bearing steel framing systems.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.4 INFORMATIONAL SUBMITTALS

A. Product Certificates: For each type of code-compliance certification for studs and tracks.

PART 2 - PRODUCTS

2.1 FRAMING SYSTEMS

A. Framing Members, General: Comply with ASTM C 754 for conditions indicated.

1. Steel Sheet Components: Comply with ASTM C 645 requirements for metal unless otherwise indicated.

B. Studs and Tracks: ASTM C 645. Use either steel studs and tracks or embossed steel studs and tracks.

1. Steel Studs and Tracks:

a. Minimum Base-Metal Thickness: As indicated on Drawings.
b. Depth: As indicated on Drawings.

2.2 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards.

1. Fasteners for Steel Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Suspended Assemblies: Coordinate installation of suspension systems with installation of overhead structure to ensure that inserts and other provisions for anchorages to building structure have been installed to receive hangers at spacing required to support the Work and that hangers will develop their full strength.

3.3 INSTALLATION, GENERAL

A. Installation Standard: ASTM C 754.

1. Gypsum Board Assemblies: Also comply with requirements in ASTM C 840 that apply to framing installation.

B. Install framing and accessories plumb, square, and true to line, with connections securely fastened.

C. Install bracing at terminations in assemblies.

D. Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

3.4 INSTALLING FRAMED ASSEMBLIES

A. Install framing system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.

B. Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall.

C. Install studs so flanges within framing system point in same direction.

D. Install tracks at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts that penetrate partitions above ceiling.

E. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch (3 mm) from the plane formed by faces of adjacent framing.

END OF SECTION 092216

SECTION 092900 - GYPSUM BOARD

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. Section Includes:

1. Gypsum board and accessories.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.4 DELIVERY, STORAGE AND HANDLING

A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

1.5 FIELD CONDITIONS

A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written instructions, whichever are more stringent.

B. Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.

C. Do not install panels that are wet, moisture damaged, and mold damaged.

1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

2.2 GYPSUM BOARD, GENERAL

A. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.3 INTERIOR GYPSUM BOARD

A. Mold-Resistant Gypsum Board: ASTM C 1396/C 1396M. With moisture- and mold-resistant core and paper surfaces.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

    a. American Gypsum.
    b. CertainTeed Corporation.
    c. Georgia-Pacific Gypsum LLC.
    d. National Gypsum Company.
    e. PABCO Gypsum.
    f. USG Corporation.

2. Core: As indicated.
3. Long Edges: Tapered.
4. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.

2.4 EXTERIOR GYPSUM BOARD

A. Glass-Mat Gypsum Sheathing Board: ASTM C 1177/C 1177M, with fiberglass mat laminated to both sides and with manufacturer's standard edges.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. American Gypsum.
    b. CertainTeed Corporation.
    c. Georgia-Pacific Gypsum LLC.
    d. National Gypsum Company.
    e. USG Corporation.

2. Core: As indicated.

2.5 TRIM ACCESSORIES

A. Interior Trim: ASTM C 1047.

1. Material: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized-steel sheet.
2. Shapes:

    a. Cornerbead.
    b. Bullnose bead.
    c. LC-Bead: J-shaped; exposed long flange receives joint compound.
    d. L-Bead: L-shaped; exposed long flange receives joint compound.
    e. U-Bead: J-shaped; exposed short flange does not receive joint compound.
    f. Expansion (control) joint.
    g. Curved-Edge Cornerbead: With notched or flexible flanges.

B. Exterior Trim: ASTM C 1047.

1. Material: Hot-dip galvanized-steel sheet, plastic, or rolled zinc.
2. Shapes:

    a. Cornerbead.
    b. LC-Bead: J-shaped; exposed long flange receives joint compound.
    c. Expansion (Control) Joint: One-piece, rolled zinc with V-shaped slot and removable strip covering slot opening.

2.6 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C 475/C 475M.

B. Joint Tape:

1. Interior Gypsum Board: Paper.
2. Exterior Gypsum Soffit Board: Paper.

C. Joint Compound for Interior Gypsum Board: For each coat, use formulation that is compatible with other compounds applied on previous or for successive coats.

1. Prefilling: At open joints, rounded or beveled panel edges, and damaged surface areas, use setting-type taping compound.
2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use drying-type, all-purpose compound.

    a. Use setting-type compound for installing paper-faced metal trim accessories.

3. Fill Coat: For second coat, use drying-type, all-purpose compound.
4. Finish Coat: For third coat, use drying-type, all-purpose compound.

D. Joint Compound for Exterior Applications:

1. Exterior Gypsum Soffit Board: Use setting-type taping compound and setting-type, sandable topping compound.
2. Glass-Mat Gypsum Sheathing Board: As recommended by sheathing board manufacturer.

2.7 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written instructions.

B. Steel Drill Screws: ASTM C 1002 unless otherwise indicated.

1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch (0.84 to 2.84 mm) thick.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and substrates including welded hollow-metal frames and support framing, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.

B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 APPLYING AND FINISHING PANELS, GENERAL

A. Comply with ASTM C 840.

B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.

C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch (1.5 mm) of open space between panels. Do not force into place.

D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.

E. Form control and expansion joints with space between edges of adjoining gypsum panels.

F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.

1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. (0.7 sq. m) in area.
2. Fit gypsum panels around ducts, pipes, and conduits.
3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch- (6.4- to 9.5-mm-) wide joints to install sealant.

G. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.

3.3 APPLYING INTERIOR GYPSUM BOARD

A. Single-Layer Application:

1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing unless otherwise indicated.
2. On partitions/walls, apply gypsum panels vertically (parallel to framing) unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.

    a. Stagger abutting end joints not less than one framing member in alternate courses of panels.

3. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

3.4 INSTALLING TRIM ACCESSORIES

A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.

B. Control Joints: Install control joints according to ASTM C 840 and in specific locations approved by Architect for visual effect.

C. Interior Trim: Install in the following locations:

1. Cornerbead: Use at outside corners unless otherwise indicated.

D. Exterior Trim: Install in the following locations:

1. Cornerbead: Use at outside corners.
2. LC-Bead: Use at exposed panel edges.

3.5 FINISHING GYPSUM BOARD

A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.

B. Prefill open joints, rounded or beveled edges, and damaged surface areas.

C. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.

D. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:

1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
2. Level 4: At panel surfaces that will be exposed to view unless otherwise indicated.

    a. Primer and its application to surfaces are specified in Section 099123 "Interior Painting."

E. Glass-Mat Gypsum Sheathing Board: Finish according to manufacturer's written instructions for use as exposed soffit board.

F. Glass-Mat Faced Panels: Finish according to manufacturer's written instructions.

G. Cementitious Backer Units: Finish according to manufacturer's written instructions.

3.6 PROTECTION

A. Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.

B. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.

C. Remove and replace panels that are wet, moisture damaged, and mold damaged.

1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 092900

SECTION 095113 - ACOUSTICAL PANEL CEILINGS

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. Section includes acoustical panels and exposed suspension systems for ceilings.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples for Verification: For each component indicated and for each exposed finish required, prepared on Samples of size indicated below.

1. Acoustical Panel: Set of 6-inch- square Samples of each type, color, pattern, and texture.
2. Exposed Suspension-System Members, Moldings, and Trim: Set of 6-inch- (150-mm-) long Samples of each type, finish, and color.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For testing agency.

B. Product Test Reports: For each acoustical panel ceiling, for tests performed by manufacturer and witnessed by a qualified testing agency.

C. Evaluation Reports: For each acoustical panel ceiling suspension system, from ICC-ES.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For finishes to include in maintenance manuals.

1.7 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Acoustical Ceiling Panels: Full-size panels equal to 2 percent of quantity installed.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver acoustical panels, suspension-system components, and accessories to Project site in original, unopened packages and store them in a fully enclosed, conditioned space where they will be protected against damage from moisture, humidity, temperature extremes, direct sunlight, surface contamination, and other causes.

B. Before installing acoustical panels, permit them to reach room temperature and a stabilized moisture content.

C. Handle acoustical panels carefully to avoid chipping edges or damaging units in any way.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Flame-Spread Index: Comply with ASTM E 1264 for Class A.
2. Smoke-Developed Index: 50 or less.

2.2 ACOUSTICAL PANELS, GENERAL

A. Low-Emitting Materials: Acoustical panel ceilings shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

B. Source Limitations: Obtain each type of acoustical ceiling panel and supporting suspension system from single source from single manufacturer.

C. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 24 percent.

2.3 ACOUSTICAL PANELS – APC-1

A. Basis-of-Design Product: Subject to compliance with requirements, provide Radar High-NRC Item number 22111 as manufactured by:

1. USG Interiors, Inc.; Subsidiary of USG Corporation.

2. Architect-approved equivalent.

B. Thickness: 3/4 inch.

C. Modular Size: 24 by 24 inches.

D. Type: Type III, Form 2, Pattern CE per ATM E1264 Classification.

E. Edge: Square.

F. NRC: 0.70.

G. CAC: 35 minimum.

H. Light Reflectance: 0.84.

I. VOC Emissions: Low Emitting.

J. Fire: Class A with Flame Spread of 25 or less and Smoke Developed of 50 or less.

K. Broad Spectrum Antimicrobial Fungicide and Bactericide Treatment: Provide acoustical panels treated with manufacturer's standard antimicrobial formulation that inhibits fungus, mold, mildew, and gram-positive and gram-negative bacteria and showing no mold, mildew, or bacterial growth when tested according to ASTM D 3273 and evaluated according to ASTM D 3274 or ASTM G 21. Provide manufacturer’s 30-year system warranty.

2.4 METAL SUSPENSION SYSTEMS, GENERAL

A. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 40 percent.

B. Metal Suspension-System Standard: Provide manufacturer's standard direct-hung metal suspension systems of types, structural classifications, and finishes indicated that comply with applicable requirements in ASTM C 635/C 635M.

C. Attachment Devices: Size for five times the design load indicated in ASTM C 635/C 635M, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.

D. Wire Hangers, Braces, and Ties: Provide wires complying with the following requirements:

1. Zinc-Coated, Carbon-Steel Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper.

2. Size: Select wire diameter so its stress at three times hanger design load (ASTM C 635/C 635M, Table 1, "Direct Hung") will be less than yield stress of wire, but provide not less than 0.106-inch- diameter wire.

E. Hanger Rods: Mild steel, zinc coated or protected with rust-inhibitive paint.

F. Seismic Stabilizer Bars: Manufacturer's standard perimeter stabilizers designed to accommodate seismic forces.

G. Seismic Clips: Manufacturer's standard seismic clips designed and spaced to secure acoustical panels in place.

2.5 METAL SUSPENSION SYSTEM

A. Manufacturers: Subject to compliance with requirements, provide products by the following:

1. USG Interiors, Inc.; Subsidiary of USG Corporation.

B. Wide-Face, Capped, Double-Web, Steel Suspension System: Main and cross runners roll formed from cold-rolled steel sheet; prepainted, electrolytically zinc coated, or hot-dip galvanized according to ASTM A 653/A 653M, not less than G30 (Z90) coating designation; with prefinished 15/16-inch- (24-mm-) wide metal caps on flanges.

1. Structural Classification: Intermediate -duty system.
2. Face Design: Flat, flush.
3. Cap Material: Steel cold-rolled sheet.
4. Cap Finish: Painted white.
5. Suspension System selected must be compatible with the specified anti-sag and other tile warrantees.

2.6 METAL EDGE MOLDINGS AND TRIM

A. Manufacturers: Subject to compliance with requirements, provide products by the following:

1. USG Interiors, Inc.; Subsidiary of USG Corporation.

B. Roll-Formed, Sheet-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.

1. Provide manufacturer's standard edge moldings that fit acoustical panel edge details and suspension systems indicated and that match width and configuration of exposed runners unless otherwise indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, including structural framing to which acoustical panel ceilings attach or abut, with Installer present, for compliance with requirements specified in this and other Sections that affect ceiling installation and anchorage and with requirements for installation tolerances and other conditions affecting performance of acoustical panel ceilings.

B. Examine acoustical panels before installation. Reject acoustical panels that are wet, moisture damaged, or mold damaged.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders, and comply with layout shown on reflected ceiling plans.

3.3 INSTALLATION

A. General: Install acoustical panel ceilings to comply with ASTM C 636/C 636M and seismic design requirements indicated, according to manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."

B. Suspend ceiling hangers from building's structural members and as follows:

1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or of ceiling suspension system.
2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers at spacings required to support standard suspension-system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices.
3. Secure wire hangers to ceiling-suspension members and to supports above with a minimum of three tight turns. Connect hangers directly either to structures or to inserts, eye screws, or other devices that are secure and appropriate for substrate and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
4. Secure flat, angle, channel, and rod hangers to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices that are secure and appropriate for both the structure to which hangers are attached and the type of hanger involved. Install hangers in a manner that will not cause them to deteriorate or fail due to age, corrosion, or elevated temperatures.
5. 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.

6. Do not attach hangers to steel roof deck. Attach hangers to structural members.
7. Space hangers not more than 48 inches (1200 mm) o.c. along each member supported directly from hangers unless otherwise indicated; provide hangers not more than 8 inches (200 mm) from ends of each member.
8. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards and publications.

C. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels.

1. 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.
2. Do not use exposed fasteners, including pop rivets, on moldings and trim.

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 panels with undamaged edges and fit accurately into suspension-system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide a neat, precise fit.

1. For square-edged panels, install panels with edges fully hidden from view by flanges of suspension-system runners and moldings.

3.4 CLEANING

A. Clean exposed surfaces of acoustical panel ceilings, including trim, edge moldings, and suspension-system members. Comply with manufacturer's written instructions for cleaning and touchup of minor finish damage. Remove and replace ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION 095113

SECTION 096513 - RESILIENT BASE AND ACCESSORIES

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. Section Includes:

1. Thermoplastic-rubber base.
2. Rubber molding accessories.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples: For each exposed product and for each color and texture specified, not less than 12 inches (300 mm) long.

C. Samples for Initial Selection: For each type of product indicated.

D. Samples for Verification: For each type of product indicated and for each color, texture, and pattern required in manufacturer's standard-size Samples, but not less than 12 inches (300 mm) long.

E. Product Schedule: For resilient base and accessory products. Use same designations indicated on Drawings.

1.4 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Furnish not less than 10 linear feet (3 linear m) for every 500 linear feet (150 linear m) or fraction thereof, of each type, color, pattern, and size of resilient product installed.

1.5 QUALITY ASSURANCE

A. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.

1. Coordinate mockups in this Section with mockups specified in other Sections.
2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F (10 deg C) or more than 90 deg F (32 deg C).

1.7 FIELD CONDITIONS

A. Maintain ambient temperatures within range recommended by manufacturer, but not less than 70 deg F (21 deg C) or more than 95 deg F (35 deg C), in spaces to receive resilient products during the following periods:

1. 48 hours before installation.
2. During installation.
3. 48 hours after installation.

B. After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 deg F (13 deg C)or more than 95 deg F (35 deg C).

C. Install resilient products after other finishing operations, including painting, have been completed.

PART 2 - PRODUCTS

2.1 THERMOPLASTIC-RUBBER BASE

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Allstate Rubber Corp.
2. Armstrong World Industries, Inc.
3. Burke Mercer Flooring Products; a division of Burke Industries Inc.

4. Flexco.
5. Johnsonite; a Tarkett company.
6. Nora Systems, Inc.
7. Roppe Corporation, USA.
8. VPI Corporation.
9. Architect-approved equal.

B. Product Standard: ASTM F 1861, Type TP (rubber, thermoplastic).

1. Group: I (solid, homogeneous).
2. Style and Location:

a. Style A, Straight: Provide in areas with carpet.
b. Style B, Cove: Provide in areas with resilient floor coverings.

C. Thickness: 0.125 inch (3.2 mm).

D. Height: 4 inches (102 mm).

E. Lengths: Coils in manufacturer's standard length.

F. Outside Corners: Preformed.

G. Inside Corners: Preformed.

H. Colors: As selected by Architect from manufacturer’s full range.

2.2 RUBBER MOLDING ACCESSORY

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Roppe Corporation, USA.
2. VPI Corporation.
3. Architect-approved equal.

B. Description: Rubber carpet edge for glue-down applications and reducer strip for resilient floor covering, joiner for tile and carpet.

C. Profile and Dimensions: As indicated.

D. Locations: Provide rubber molding accessories in areas indicated.

E. Colors and Patterns: As selected by Architect from manufacturer’s full range.

2.3 INSTALLATION MATERIALS

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

B. Adhesives: Water-resistant type recommended by resilient-product manufacturer for resilient products and substrate conditions indicated.

C. Floor Polish: Provide protective, liquid floor-polish products recommended by resilient stair-tread manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

1. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

1. Installation of resilient products indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.

B. Concrete Substrates for Resilient Stair Accessories: Prepare horizontal surfaces according to ASTM F 710.

1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
3. Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer. Proceed with installation only after substrate alkalinity falls within range on pH scale recommended by manufacturer in writing, but not less than 5 or more than 9 pH.

C. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.

D. Do not install resilient products until materials are the same temperature as space where they are to be installed.

1. At least 48 hours in advance of installation, move resilient products and installation materials into spaces where they will be installed.

E. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient products.

3.3 RESILIENT BASE INSTALLATION

A. Comply with manufacturer's written instructions for installing resilient base.

B. Apply resilient base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.

C. Install resilient base in lengths as long as practical without gaps at seams and with tops of adjacent pieces aligned.

D. Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.

E. Do not stretch resilient base during installation.

F. On masonry surfaces or other similar irregular substrates, fill voids along top edge of resilient base with manufacturer's recommended adhesive filler material.

G. Preformed Corners: Install preformed corners before installing straight pieces.

3.4 RESILIENT ACCESSORY INSTALLATION

A. Comply with manufacturer's written instructions for installing resilient accessories.

B. Resilient Molding Accessories: Butt to adjacent materials and tightly adhere to substrates throughout length of each piece. Install reducer strips at edges of floor covering that would otherwise be exposed.

3.5 CLEANING AND PROTECTION

A. Comply with manufacturer's written instructions for cleaning and protecting resilient products.

B. Perform the following operations immediately after completing resilient-product installation:

1. Remove adhesive and other blemishes from surfaces.
2. Sweep and vacuum horizontal surfaces thoroughly.
3. Damp-mop horizontal surfaces to remove marks and soil.

C. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.

D. Floor Polish: Remove soil, adhesive, and blemishes from resilient stair treads before applying liquid floor polish.

1. Apply two coat(s).

E. Cover resilient products subject to wear and foot traffic until Substantial Completion.

END OF SECTION 096513

SECTION 096519 – LUXURY VINYL COMPOSITION TILE FLOORING

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. Section Includes:

1. Commercial Luxury vinyl composition tile.

1.3 RELATED SECTIONS

A. Section 090561.13, “Moisture Vapor Emission Control”.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples: Full-size units of each color, texture, and pattern of floor tile required.

C. Samples for Initial Selection: For each type of floor tile indicated.

D. Samples for Verification: Full-size units of each color and pattern of floor tile required.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For each type of floor tile to include in maintenance manuals.

1.7 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Floor Tile: Furnish one box for every 50 boxes or fraction thereof, of each type, color, and pattern of floor tile installed.

1.8 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are competent in techniques required by manufacturer for floor tile installation and seaming method indicated.

1. Engage an installer who employs workers for this Project who are trained or certified by floor tile manufacturer for installation techniques required.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Store floor tile and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F (10 deg C) or more than 90 deg F (32 deg C). Store floor tiles on flat surfaces.

1.10 FIELD CONDITIONS

A. Maintain ambient temperatures within range recommended by manufacturer, but not less than 70 deg F (21 deg C) or more than 95 deg F (35 deg C), in spaces to receive floor tile during the following periods:

1. 48 hours before installation.
2. During installation.
3. 48 hours after installation.

B. After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 deg F (13 deg C) or more than 95 deg F (35 deg C).

C. Close spaces to traffic during floor tile installation.

D. Close spaces to traffic for 48 hours after floor tile installation.

E. Install floor tile after other finishing operations, including painting, have been completed.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Test-Response Characteristics: For resilient floor tile, as determined by testing identical products according to ASTM E648 or NFPA 253 by a qualified testing agency.

1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.

2.2 LUXURY VINYL TILES

A. Commercial Grade Luxury Vinyl Floor Tiles: Manufacturer's luxury vinyl tiles consisting of commercial UV-cured coating, performance wear layer, with printed visual layer, base layers, with smooth wearing surface and manufacturer's standard factory-applied, protective coating.

B. Basis-of-Design Manufacturer and Product: Natural Creations Collections, Armstrong Commercial Flooring Systems or a specification-compliant, comparable product from one of the following:

1. Burke Flooring.
2. Forbo Flooring Systems.
3. Shaw Floors.
4. Tarkett.
5. Architect-approved equal.

C. Thickness: 0.125-inch product, with a wear layer of 0.020-inch.

D. Size: 18-inches by 18-inches tiles.

E. Colors: As selected from manufacturer's full range of colors available.

F. Gloss: Low gloss.

G. Floating Underlayment: Manufacturer's best quality floating underlayment that serves as a moisture barrier, resists mold and mildew, and complies with Americans with Disabilities Act and other regulations related to use by the physically-challenged.

H. Patterns: Architect may select up to three different colors installed in a pattern to be determined by the Architect. Pattern may include squares, diagonals or checkerboard patterns.

I. Warranty: Manufacturer's standard 20-year commercial warranty.

J. Adhesives: As recommended by the manufacturer for high moisture, and high relative humidity concrete slab conditions. Adhesive must come from the same manufacturer as the floor tiles.

2.3 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.

C. Floor Polish: Provide protective, liquid floor-polish products recommended by floor tile manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

1. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of floor tile.

2. Pre-Installation Testing: Conduct pre-installation moisture testing at intervals recommended by the manufacturer. Perform bond tests and pH test, as recommended by the flooring manufacturer. Adhesive selection shall be based on the results of testing.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Prepare substrates according to floor tile manufacturer's written instructions to ensure adhesion of resilient products.

B. Concrete Substrates: Prepare according to ASTM F710.

1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by floor tile manufacturer. Do not use solvents.
3. Alkalinity and Adhesion Testing: Perform tests recommended by floor tile manufacturer. Proceed with installation only after substrate alkalinity falls within range on pH scale recommended by manufacturer in writing, but not less than 5 or more than 9 pH.
4. Moisture Testing: Unless the flooring manufacturer has more stringent requirements, perform tests so that each test area does not exceed 200 sq. ft. (18.6 sq. m), and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.

    a. Anhydrous Calcium Chloride Test: ASTM F1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate acceptable to the flooring manufacturer and compliance with the adhesive requirements.

    b. Relative Humidity Test: Using in-situ probes, ASTM F2170. Proceed with installation only after substrates have a rate acceptable to the flooring manufacturer and and compliance with the adhesive requirements.

c. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.

d. Selection of flooring adhesive must meet the requirements of the flooring manufacturer.

C. Do not install floor tiles until materials are the same temperature as space where they are to be installed.

1. At least 48 hours in advance of installation, move resilient floor tile and installation materials into spaces where they will be installed.

D. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient floor tile.

3.3 FLOOR TILE INSTALLATION

A. Comply with manufacturer's written instructions for installing floor tile.

B. Lay out floor tiles from center marks established with principal walls, discounting minor offsets, so tiles at opposite edges of room are of equal width. Adjust as necessary to avoid using cut widths that equal less than one-half tile at perimeter.

1. Lay tiles square with room axis in pattern as determined by the Architect.

C. Match floor tiles for color and pattern by selecting tiles from cartons in the same sequence as manufactured and packaged, if so numbered. Discard broken, cracked, chipped, or deformed tiles.

1. Lay tiles with grain direction alternating in adjacent tiles (basket-weave pattern).

D. Scribe, cut, and fit floor tiles to butt neatly and tightly to vertical surfaces and permanent fixtures including built-in furniture, cabinets, pipes, outlets, and door frames.

E. Extend floor tiles into toe spaces, door reveals, closets, and similar openings. Extend floor tiles to center of door openings.

F. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on floor tiles as marked on substrates. Use chalk or other nonpermanent marking device.

G. Adhere floor tiles to substrates using a full spread of adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

H. Accessories: Install according to manufacturer's written instructions.

3.4 CLEANING AND PROTECTION

A. Comply with manufacturer's written instructions for cleaning and protecting floor tile.

B. Perform the following operations immediately after completing floor tile installation:

1. Remove adhesive and other blemishes from surfaces.
2. Sweep and vacuum surfaces thoroughly.
3. Damp-mop surfaces to remove marks and soil.

C. Protect floor tile from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.

D. Sealers and Finish Coats: No finish coats per Owner’s request.

E. Cover floor tile until Substantial Completion.

END OF SECTION 096519

SECTION 096520 - RESILIENT TERRAZZO TILE FLOORING

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. Section Includes:

1. Resilient terrazzo floor tile.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples for Initial Selection: For each type of floor tile indicated.

C. Samples for Verification: Full-size units of each color and pattern of floor tile required.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: For each type of floor tile to include in maintenance manuals.

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Floor Tile: Furnish one box for every 50 boxes or fraction thereof, of each type, color, and pattern of floor tile installed.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are competent in techniques required by manufacturer for floor tile installation and seaming method indicated.

1. Engage an installer who employs workers for this Project who are trained or certified by floor tile manufacturer for installation techniques required.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Store floor tile and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F (10 deg C) or more than 90 deg F (32 deg C). Store floor tiles on flat surfaces.

1.9 FIELD CONDITIONS

A. Maintain ambient temperatures within range recommended by manufacturer, but not less than 70 deg F (21 deg C) or more than 95 deg F (35 deg C), in spaces to receive floor tile during the following periods:

1. 48 hours before installation.
2. During installation.
3. 48 hours after installation.

B. After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 deg F (13 deg C) or more than 95 deg F (35 deg C).

C. Close spaces to traffic during floor tile installation.

D. Close spaces to traffic for 48 hours after floor tile installation.

E. Install floor tile after other finishing operations, including painting, have been completed.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Test-Response Characteristics: For resilient floor tile, as determined by testing identical products according to ASTM E648 or NFPA 253 by a qualified testing agency.

1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.

2.2 RESILIENT TERRAZZO FLOOR TILE

A. Resilient Terrazzo Floor Tile: Marble or granite chips embedded in flexible, thermoset-polyester-resin matrix; electrically nonconductive and chemical, oil, and corrosion resistive, with smooth wearing surface and manufacturer's standard factory-applied, protective coating.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Mats Inc.

b. Floorazzo LLC.

c. Nurazzo.

d. Architect-approved equivalent.

B. Thickness: 3/16 inch (4.8 mm).

C. Size: 24 by 24 inches (610 by 610 mm).

D. Accessories:

1. Base: 3 inches (76 mm) tall.

a. Type: Sanitary, coved.

2. Divider strips.

E. Surface: Smooth.

F. Critical Radiant Flux: Class 1 in accordance with ASTM E648.

G. Smoke Density: less than 450 in accordance with ASTM E662.

H. Slip Resistance: 0.8 in accordance with ASTM D2047.

I. Slip Resistance: Dry 0.66 and Wet 0.70 in accordance with ASTM C1028.

J. Antistatic Behavior: less than 2 kV in accordance with EN 1815.

K. Shore Hardness: more than 100 in accordance with ASTM D2240.

L. Static Load: less than 0.005 under 1000 lbs. in accordance with ASTM F970.

M. Warranty: Manufacturer’s 20-year warranty.

N. Adhesive: Manufacturer’s recommended adhesive for high relative humidity.

O. Self-Leveling Underlayment: Manufacturer's recommended self-leveling underlayment.

P. Colors and Patterns: As selected by Architect from full range of manufacturer's available colors and patterns.

2.3 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.

C. Floor Polish: Provide protective, liquid floor-polish products recommended by floor tile manufacturer.

D. Joint Sealant for Resilient Terrazzo Floor Tile: Silicone sealant of type and grade recommended in writing by floor tile manufacturer to suit resilient terrazzo floor tile.

1. Joint-Sealant Color: Match floor tile.

E. Sealers and Finish Coats for Resilient Terrazzo Floor Tile: Products recommended by floor tile manufacturer for resilient terrazzo floor tile.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

1. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of floor tile.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Prepare substrates according to floor tile manufacturer's written instructions to ensure adhesion of resilient products.

B. Concrete Substrates: Prepare according to ASTM F710.

1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.

2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by floor tile manufacturer. Do not use solvents.
3. Alkalinity and Adhesion Testing: Perform tests recommended by floor tile manufacturer. Proceed with installation only after substrate alkalinity falls within range on pH scale recommended by manufacturer in writing, but not less than 5 or more than 9 pH.
4. Moisture Testing: Perform tests so that each test area does not exceed 200 sq. ft. (18.6 sq. m, and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.

    a. Anhydrous Calcium Chloride Test: ASTM F1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. (1.36 kg of water/92.9 sq. m) in 24 hours.
    b. Relative Humidity Test: Using in-situ probes, ASTM F2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level measurement.

C. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.

D. Do not install floor tiles until materials are the same temperature as space where they are to be installed.

1. At least 48 hours in advance of installation, move resilient floor tile and installation materials into spaces where they will be installed.

E. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient floor tile.

3.3 FLOOR TILE INSTALLATION

A. Comply with manufacturer's written instructions for installing floor tile.

B. Lay out floor tiles from center marks established with principal walls, discounting minor offsets, so tiles at opposite edges of room are of equal width. Adjust as necessary to avoid using cut widths that equal less than one-half tile at perimeter.

1. Lay tiles square with room axis.

C. Match floor tiles for color and pattern by selecting tiles from cartons in the same sequence as manufactured and packaged, if so numbered. Discard broken, cracked, chipped, or deformed tiles.

1. Lay tiles with grain direction alternating in adjacent tiles (basket-weave pattern.

D. Scribe, cut, and fit floor tiles to butt neatly and tightly to vertical surfaces and permanent fixtures including built-in furniture, cabinets, pipes, outlets, and door frames.

E. Extend floor tiles into toe spaces, door reveals, closets, and similar openings. Extend floor tiles to center of door openings.

F. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on floor tiles as marked on substrates. Use chalk or other nonpermanent marking device.

G. Adhere floor tiles to substrates using a full spread of adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

H. Resilient Terrazzo Accessories: Install according to manufacturer's written instructions.

3.4 CLEANING AND PROTECTION

A. Comply with manufacturer's written instructions for cleaning and protecting floor tile.

B. Perform the following operations immediately after completing floor tile installation:

1. Remove adhesive and other blemishes from surfaces.
2. Sweep and vacuum surfaces thoroughly.
3. Damp-mop surfaces to remove marks and soil.

C. Protect floor tile from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.

D. Floor Polish: Remove soil, adhesive, and blemishes from floor tile surfaces before applying liquid floor polish.

1. Apply two coat(s).

E. Joint Sealant: Apply sealant to resilient terrazzo floor tile perimeter and around columns, at door frames, and at other joints and penetrations.

F. Sealers and Finish Coats: Remove soil, visible adhesive, and surface blemishes from resilient terrazzo floor tile surfaces before applying liquid cleaners, sealers, and finish products.

1. Sealer: Apply two base coats of liquid sealer.
2. Finish: Apply two coats of liquid floor finish.

G. Cover floor tile until Substantial Completion.

END OF SECTION 096519

SECTION 099113 - EXTERIOR PAINTING

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. Section includes surface preparation and the application of paint systems on exterior substrates.

1. Steel and iron.

B. Related Requirements:

1. Section 055000 "Metal Fabrications" for shop priming metal fabrications.

1.3 DEFINITIONS

MPI Gloss Level 1: Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.

A. MPI Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

B. MPI Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.

C. MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.

D. MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.

E. MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.

1. Include printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
2. Indicate VOC content.

B. Samples for Initial Selection: For each type of topcoat product.

C. Product List: Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules. Include color designations.

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Paint: 5 percent, but not less than 1 gal. (3.8 L) of each material and color applied.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.

1.7 FIELD CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).

B. Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Benjamin Moore & Co.
2. Coronado Paint; Benjamin Moore & Co.
3. Kelly-Moore Paint Company Inc.
4. PPG Paints.
5. Pratt & Lambert.
6. Rust-Oleum Corporation; a subsidiary of RPM International, Inc.
7. Sherwin-Williams Company (The).
8. Valspar Corporation (The).
9. Architect-approved equal.

2.2 PAINT, GENERAL

A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists."

B. Material Compatibility:

1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.

C. Colors: As selected by Architect from manufacturer's full range.

1. Thirty percent of surface area will be painted with deep tones.

2.3 SOURCE QUALITY CONTROL

A. Testing of Paint Materials: Owner reserves the right to invoke the following procedure:

1. Owner will engage the services of a qualified testing agency to sample paint materials. Contractor will be notified in advance and may be present when samples are taken. If paint materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.
2. Testing agency will perform tests for compliance with product requirements.
3. Owner may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.

C. Proceed with coating application only after unsatisfactory conditions have been corrected.

1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.

B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.

C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

D. Steel Substrates: Remove rust, loose mill scale, and shop primer if any. Clean using methods recommended in writing by paint manufacturer, but not less than the following:

1. SSPC-SP 2.
2. SSPC-SP 3.

E. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and areas where shop paint is abraded. Paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.

F. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.

3.3 APPLICATION

A. Apply paints according to manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual."

1. Use applicators and techniques suited for paint and substrate indicated.
2. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.
3. Paint entire exposed surface of window frames and sashes.
4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
5. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.

B. Tint undercoats same color as topcoat, but tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Provide sufficient difference in shade of undercoats to distinguish each separate coat.

C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

3.4 CLEANING AND PROTECTION

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.5 EXTERIOR PAINTING SCHEDULE

A. Steel and Iron Substrates:

1. Water-Based Light Industrial Coating System:

   a. Prime Coat: Primer, rust inhibitive, water based MPI #107.
   b. Intermediate Coat: Light industrial coating, exterior, water based, matching topcoat.

   c. Topcoat: Light industrial coating, exterior, water based, semi-gloss (MPI Gloss Level 5), MPI #163.

B. Galvanized-Metal Substrates:

1. Water-Based Light Industrial Coating System MPI EXT 5.3k:

   a. Prime Coat: Primer, epoxy, anti-corrosive, MPI #101.

   b. Intermediate Coat: Light industrial coating, exterior, water based, matching topcoat.

c. Topcoat: Light industrial coating, exterior, water based (MPI Gloss Level 3), MPI #161.

END OF SECTION 099113

SECTION 099123 - INTERIOR PAINTING

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. Section includes surface preparation and the application of paint systems on interior substrates.

B. Related Requirements:

1. Section 051200 "Structural Steel Framing" for shop priming structural steel.
2. Section 055000 "Metal Fabrications" for shop priming metal fabrications.

1.3 DEFINITIONS

A. MPI Gloss Level 1: Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.

B. MPI Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

C. MPI Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

D. MPI Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.

E. MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.

F. MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.

G. MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.

1. Include Printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
2. Indicate VOC content.

B. Samples for Initial Selection: For each type of topcoat product.

C. Product List: Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules. Include color designations.

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Paint: 5 percent, but not less than 1 gal. (3.8 L) of each material and color applied.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.

1.7 FIELD CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).

B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 PAINT, GENERAL MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Benjamin Moore & Co.
2. Coronado Paint; Benjamin Moore & Co.
3. Kelly-Moore Paint Company Inc.
4. PPG Paints.
5. Pratt & Lambert.
6. Rust-Oleum Corporation; a subsidiary of RPM International, Inc.

7. Sherwin-Williams Company (The).
8. Valspar Corporation (The).
9. Architect-approved equal.

2.2 GENERAL REQUIREMENTS

A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists."

B. Material Compatibility:

1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.

C. Colors: As selected by Architect from manufacturer's full range.

1. Thirty percent of surface area will be painted with deep tones.

2.3 SOURCE QUALITY CONTROL

A. Testing of Paint Materials: Owner reserves the right to invoke the following procedure:

1. Owner will engage the services of a qualified testing agency to sample paint materials. Contractor will be notified in advance and may be present when samples are taken. If paint materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.
2. Testing agency will perform tests for compliance with product requirements.
3. Owner may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

1. Concrete: 12 percent.
2. Masonry (Clay and CMUs): 12 percent.
3. Wood: 15 percent.
4. Gypsum Board: 12 percent.
5. Plaster: 12 percent.

C. Gypsum Board Substrates: Verify that finishing compound is sanded smooth.

D. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.

E. Proceed with coating application only after unsatisfactory conditions have been corrected.

1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.

B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.

C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

D. Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceeds that permitted in manufacturer's written instructions.

E. Steel Substrates: Remove rust, loose mill scale, and shop primer, if any. Clean using methods recommended in writing by paint manufacturer.

F. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and areas where shop paint is abraded. Paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.

G. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.

H. Wood Substrates:

1. Scrape and clean knots, and apply coat of knot sealer before applying primer.
2. Sand surfaces that will be exposed to view, and dust off.
3. Prime edges, ends, faces, undersides, and backsides of wood.
4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

3.3 APPLICATION

A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."

1. Use applicators and techniques suited for paint and substrate indicated.
2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
5. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.

B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.

C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

E. Painting Fire Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:

1. Paint the following work where exposed in occupied spaces:

a. Equipment, including panelboards.
b. Uninsulated metal piping.
c. Uninsulated plastic piping.
d. Fire suppression piping and supports.

e. Pipe hangers and supports.
f. Metal conduit.
g. Plastic conduit.
h. Other items as directed by Architect.

2. Do not paint fire suppression heads.

3. Paint portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets that are visible from occupied spaces.

3.4 FIELD QUALITY CONTROL

A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.

1. Contractor shall touch up and restore painted surfaces damaged by testing.
2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

3.5 CLEANING AND PROTECTION

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 INTERIOR PAINTING SCHEDULE

A. CMU Substrates:

1. High-Performance Architectural Latex System:

a. Block Filler: Block filler, latex, interior/exterior, MPI #4.

b. Prime Coat: Primer, alkali resistant, water based, MPI #3.

c. Intermediate Coat: Latex, interior, high performance architectural, matching topcoat.

d. Topcoat: Latex, interior, high performance architectural, semi-gloss (MPI Gloss Level 5), MPI #141.

B. Steel Substrates:

1. High-Performance Architectural Latex System:

a. Prime Coat: Primer, alkyd, anti-corrosive, for metal, MPI #79.

b. Prime Coat: Shop primer specified in Section where substrate is specified.
c. Intermediate Coat: Latex, interior, high performance architectural, matching topcoat.

d. Topcoat: Latex, interior, high performance architectural, semi-gloss (MPI Gloss Level 5, MPI #141.

C. Galvanized-Metal Substrates:

1. High-Performance Architectural Latex System MPI INT 5.3M:

a. Prime Coat: Primer, galvanized, water based, MPI #134.

b. Intermediate Coat: Latex, interior, high performance architectural, matching topcoat.

c. Topcoat: Latex, interior, high performance architectural, semi-gloss (MPI Gloss Level 5), MPI #141.

D. Wood Substrates: Wood trim, Architectural woodwork, Windows and wood paneling.

1. High-Performance Architectural Latex System:

a. Prime Coat: Primer, latex, for interior wood, MPI #39.

b. Intermediate Coat: Latex, interior, high performance architectural, matching topcoat.

c. Topcoat: Latex, interior, high performance architectural, semi-gloss (MPI Gloss Level 5), MPI #141.

E. Gypsum Board and Plaster Substrates:

1. High-Performance Architectural Latex System:

a. Prime Coat: Primer sealer, latex, interior, MPI #50.

b. Intermediate Coat: Latex, interior, high performance architectural, matching topcoat.
c. Topcoat: Latex, interior, high performance architectural (MPI Gloss Level 2), MPI #138.

END OF SECTION 099123

SECTION 101419 – DIMENSIONAL LETTER SIGNAGE

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. Section Includes:

1. Cast dimensional characters.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For signs.

1. Include fabrication and installation details and attachments to other work.
2. Show sign mounting heights, locations of supplementary supports to be provided by other installers, and accessories.
3. Show typestyles, graphic elements, and layout for each sign at least half size.

C. Samples for Initial Selection: For each type of sign assembly, exposed component, and exposed finish.

1. Include representative Samples of available typestyles and graphic symbols.

D. Samples for Verification: For each type of sign assembly showing all components and with the required finish(es), in manufacturer's standard size unless otherwise indicated and as follows:

1. Dimensional Characters: Half-size Sample dimensional character.
2. Exposed Accessories: Half-size Sample of each accessory type.

E. Product Schedule: For dimensional letter signs. Use same designations indicated on Drawings or specified.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer and manufacturer.

B. Sample Warranty: For special warranty.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: For signs to include in maintenance manuals.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

1.7 FIELD CONDITIONS

1.8 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of signs that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Deterioration of finishes beyond normal weathering.
b. Separation or delamination of sheet materials and components.

2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Structural Performance: Signs and supporting elements shall withstand the effects of gravity and other loads within limits and under conditions indicated.

B. Thermal Movements: For exterior, allow for thermal movements from ambient and surface temperature changes.

1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

2.2 DIMENSIONAL CHARACTERS

A. Cast Characters: Characters with uniform faces, sharp corners, and precisely formed lines and profiles, and as follows:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

    a. A.R.K. Ramos.
    b. ACE Sign Systems, Inc.
    c. ASI Sign Systems, Inc.
    d. Gemini Incorporated.
    e. Matthews International Corporation; Bronze Division.
    f. Metal Arts.
    g. Metallic Arts.
    h. Southwell Company (The).
    i. Architect-approved equal.

2. Character Material: Cast aluminum.
3. Character Height: As indicated on Drawings.
4. Thickness: Manufacturer's standard for size of character.
5. Finishes:

    a. Integral Aluminum Finish: Anodized color as selected by Architect from full range of industry colors and color densities.
    b. Overcoat: Clear organic coating.
    c. Edges: Matte.

6. Mounting: Projecting studs.
7. Typeface: Arial Bold.

2.3 DIMENSIONAL CHARACTER MATERIALS

A. Aluminum Castings: ASTM B 26/B 26M, alloy and temper recommended by sign manufacturer for casting process used and for type of use and finish indicated.

B. Aluminum Extrusions: ASTM B 221 (ASTM B 221M), alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated.

2.4 ACCESSORIES

A. Fasteners and Anchors: Manufacturer's standard as required for secure anchorage of signs, noncorrosive and compatible with each material joined, and complying with the following:

1. Use concealed fasteners and anchors unless indicated to be exposed.
2. For exterior exposure, furnish stainless-steel devices unless otherwise indicated.
3. Exposed Metal-Fastener Components, General:

    a. Fabricated from same basic metal and finish of fastened metal unless otherwise indicated.

4. Sign Mounting Fasteners:

    a. Projecting Studs: Threaded studs with sleeve spacer, welded or brazed to back of sign material, screwed into back of sign assembly, or screwed into tapped lugs cast integrally into back of cast sign material, unless otherwise indicated.

B. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187/D 1187M.

2.5 FABRICATION

A. General: Provide manufacturer's standard sign assemblies according to requirements indicated.

1. Preassemble signs and assemblies in the shop to greatest extent possible. Disassemble signs and assemblies only as necessary for shipping and handling limitations. Clearly mark units for reassembly and installation; apply markings in locations concealed from view after final assembly.
2. Mill joints to a tight, hairline fit. Form assemblies and joints exposed to weather to resist water penetration and retention.
3. Comply with AWS for recommended practices in welding and brazing. Provide welds and brazes behind finished surfaces without distorting or discoloring exposed side. Clean exposed welded and brazed connections of flux, and dress exposed and contact surfaces.
4. Conceal connections if possible; otherwise, locate connections where they are inconspicuous.
5. Internally brace dimensional characters for stability, to meet structural performance loading without oil-canning or other surface deformation, and for securing fasteners.
6. Provide rabbets, lugs, and tabs necessary to assemble components and to attach to existing work. Drill and tap for required fasteners. Use concealed fasteners where possible; use exposed fasteners that match sign finish.
7. Castings: Fabricate castings free of warp, cracks, blowholes, pits, scale, sand holes, and other defects that impair appearance or strength. Grind, wire brush, sandblast, and buff castings to remove seams, gate marks, casting flash, and other casting marks before finishing.

2.6 GENERAL FINISH REQUIREMENTS

A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

C. Directional Finishes: Run grain with long dimension of each piece and perpendicular to long dimension of finished trim or border surface unless otherwise indicated.

2.7 ALUMINUM FINISHES

A. Clear Anodic Finish: AAMA 611, Class I, 0.018 mm or thicker.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.

B. Verify that sign-support surfaces are within tolerances to accommodate signs without gaps or irregularities between backs of signs and support surfaces unless otherwise indicated.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Install signs using mounting methods indicated and according to manufacturer's written instructions.

1. Install signs level, plumb, true to line, and at locations and heights indicated, with sign surfaces free of distortion and other defects in appearance.
2. Before installation, verify that sign surfaces are clean and free of materials or debris that would impair installation.
3. Corrosion Protection: Coat concealed surfaces of exterior aluminum in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.

B. Mounting Methods:

1. Projecting Studs: Using a template, drill holes in substrate aligning with studs on back of sign. Remove loose debris from hole and substrate surface.

    a. Masonry Substrates: Fill holes with adhesive. Leave recess space in hole for displaced adhesive. Place spacers on studs, place sign in position, and push until spacers are pinched between sign and substrate, embedding the stud ends in holes. Temporarily support sign in position until adhesive fully sets.
    b. Thin or Hollow Surfaces: Place spacers on studs, place sign in position with spacers pinched between sign and substrate, and install washers and nuts on stud ends projecting through opposite side of surface, and tighten.

3.3 ADJUSTING AND CLEANING

A. Remove and replace damaged or deformed characters and signs that do not comply with specified requirements. Replace characters with damaged or deteriorated finishes or components that cannot be successfully repaired by finish touchup or similar minor repair procedures.

B. Remove temporary protective coverings and strippable films as signs are installed.

C. On completion of installation, clean exposed surfaces of signs according to manufacturer's written instructions, and touch up minor nicks and abrasions in finish. Maintain signs in a clean condition during construction and protect from damage until acceptance by Owner.

END OF SECTION 101419

SECTION 101423 - PANEL SIGNAGE

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. Section Includes:

1. Field-applied, vinyl-character signs.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Product Schedule: For panel signs. Use same designations indicated on Drawings or specified.

PART 2 - PRODUCTS

2.1 FIELD-APPLIED, VINYL-CHARACTER SIGNS

A. Field-Applied, Vinyl-Character Sign: Pre-spaced characters die cut from 3- to 3.5-mil (0.076- to 0.089-mm) thick, weather-resistant vinyl film with release liner on the back and carrier film on the front for on-site alignment and application.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Allen Markings.
b. APCO Graphics, Inc.
c. Inpro Corporation.
d. Mohawk Sign Systems.
e. Seton Identification Products; a Brady Corporation company.
f. Architect-approved equivalent.

2. Size: As indicated on Drawings.
3. Substrate: As indicated on Drawings.
4. Text and Font: As selected by Architect from manufacturer’s standard fonts.

2.2 FABRICATION

A. Shop- and Subsurface-Applied Vinyl: Align vinyl film in final position and apply to surface. Firmly press film from the middle outward to obtain good bond without blisters or fishmouths.

2.3 GENERAL FINISH REQUIREMENTS

A. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Verify that sign-support surfaces are within tolerances to accommodate signs without gaps or irregularities between backs of signs and support surfaces unless otherwise indicated.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Install signs according to manufacturer's written instructions.

1. Install signs level, plumb, true to line, and at locations and heights indicated, with sign surfaces free of distortion and other defects in appearance.
2. Before installation, verify that sign surfaces are clean and free of materials or debris that would impair installation.

B. Field-Applied, Vinyl-Character Signs: Clean and dry substrate. Align sign characters in final position before removing release liner. Remove release liner in stages, and apply and firmly press characters into final position. Press from the middle outward to obtain good bond without blisters or fishmouths. Remove carrier film without disturbing applied vinyl film.

3.3 ADJUSTING AND CLEANING

A. Remove and replace damaged or deformed signs and signs that do not comply with specified requirements. Replace signs with damaged or deteriorated finishes or components that cannot be successfully repaired by finish touchup or similar minor repair procedures.

B. Remove temporary protective coverings and strippable films as signs are installed.

C. On completion of installation, clean exposed surfaces of signs according to manufacturer's written instructions, and touch up minor nicks and abrasions in finish. Maintain signs in a clean condition during construction and protect from damage until acceptance by Owner.

END OF SECTION 101423

SECTION 101423.16 - ROOM-IDENTIFICATION PANEL SIGNAGE

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. Section includes room-identification signs that are directly attached to the building.

1.3 DEFINITIONS

A. Accessible: In accordance with the accessibility standard.

1.4 COORDINATION

A. Furnish templates for placement of sign-anchorage devices embedded in permanent construction by other installers.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For room-identification signs.

1. Include fabrication and installation details and attachments to other work.
2. Show sign mounting heights, locations of supplementary supports to be provided by other installers, and accessories.
3. Show message list, typestyles, graphic elements, including raised characters and Braille, and layout for each sign at least half size.

C. Samples for Initial Selection: For each type of sign assembly, exposed component, and exposed finish.

1. Include representative Samples of available typestyles and graphic symbols.

D. Samples for Verification: For each type of sign assembly showing all components and with the required finish(es), in manufacturer's standard size unless otherwise indicated and as follows:

1. Room-Identification Signs: Full-size Sample.
2. Exposed Accessories: Full-size Sample of each accessory type.

3. Full-size Samples, if approved, will be returned to Contractor for use in Project.

E. Product Schedule: For room-identification signs. Use same designations indicated on Drawings or specified.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer and manufacturer.

B. Sample Warranty: For special warranty.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: For signs to include in maintenance manuals.

1.8 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

1.9 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of signs that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Deterioration of finishes beyond normal weathering.
b. Deterioration of embedded graphic image.
c. Separation or delamination of sheet materials and components.

2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Accessibility Standard: Comply with applicable provisions in IBC-2018 – N.J. Edition and ICC A117.1.

2.2 ROOM-IDENTIFICATION SIGNS

A. Room-Identification Sign: Sign with smooth, uniform surfaces; with message and characters having uniform faces, sharp corners, and precisely formed lines and profiles; and as follows:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. ACE Sign Systems, Inc.
    b. ASE, Inc.
    c. ASI Sign Systems, Inc.
    d. Best Sign Systems, Inc.
    e. Clarke Systems.
    f. Mohawk Sign Systems.
    g. Nelson-Harkins Industries.
    h. Signature Signs, Inc.
    i. Signs & Decal Corp.
    j. Architect-approved equal.

2. Laminated-Sheet Sign: Photopolymer face sheet with raised graphics laminated over subsurface graphics to acrylic backing sheet to produce composite sheet.

    a. Composite-Sheet Thickness: Manufacturer's standard for size of sign.
    b. Surface-Applied Graphics: Applied paint.
    c. Subsurface Graphics: Reverse halftone or dot-screen image or reverse etch image with Slide-in changeable insert where shown.
    d. Color(s): As selected by Architect from manufacturer's full range.

3. Mounting: Surface mounted to wall with two-face tape.
4. Text and Typeface: Accessible raised characters and Braille typeface as selected by Architect from manufacturer's full range. Finish raised characters to contrast with background color, and finish Braille to match background color.

2.3 SIGN MATERIALS

A. Acrylic Sheet: ASTM D 4802, category as standard with manufacturer for each sign, Type UVF (UV filtering).

B. Paints and Coatings for Sheet Materials: Inks, dyes, and paints that are recommended by manufacturer for optimum adherence to surface and are UV and water resistant for colors and exposure indicated.

2.4 ACCESSORIES

A. Two-Face Tape: Manufacturer's standard high-bond, foam-core tape, 0.045 inch (1.14 mm) thick, with adhesive on both sides.

2.5 FABRICATION

A. General: Provide manufacturer's standard sign assemblies according to requirements indicated.

1. Preassemble signs and assemblies in the shop to greatest extent possible. Disassemble signs and assemblies only as necessary for shipping and handling limitations. Clearly mark units for reassembly and installation; apply markings in locations concealed from view after final assembly.
2. Mill joints to a tight, hairline fit. Form assemblies and joints exposed to weather to resist water penetration and retention.
3. Conceal connections if possible; otherwise, locate connections where they are inconspicuous.
4. Provide rabbets, lugs, and tabs necessary to assemble components and to attach to existing work. Drill and tap for required fasteners. Use concealed fasteners where possible; use exposed fasteners that match sign finish.

B. Subsurface-Applied Graphics: Apply graphics to back face of clear face-sheet material to produce precisely formed image. Image shall be free of rough edges.

C. Signs with Changeable Message Capability: Fabricate signs to allow insertion of changeable messages as follows:

1. For slide-in changeable inserts, fabricate slot without burrs or constrictions that inhibit function. Furnish initial changeable insert. Furnish two blank inserts for each sign for Owner's use.

2.6 GENERAL FINISH REQUIREMENTS

A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Install signs using mounting methods indicated and according to manufacturer's written instructions.

1. Install signs level, plumb, true to line, and at locations and heights indicated, with sign surfaces free of distortion and other defects in appearance.
2. Install signs so they do not protrude or obstruct according to the accessibility standard.

3. Before installation, verify that sign surfaces are clean and free of materials or debris that would impair installation.

B. Accessibility: Install signs in locations on walls as indicated on Drawings and according to the accessibility standard.

C. Mounting Methods:

1. Two-Face Tape: Clean bond-breaking materials from substrate surface and remove loose debris. Apply tape strips symmetrically to back of sign and of suitable quantity to support weight of sign without slippage. Keep strips away from edges to prevent visibility at sign edges. Place sign in position, and push to engage tape adhesive.

3.2 ADJUSTING AND CLEANING

A. Remove and replace damaged or deformed signs and signs that do not comply with specified requirements. Replace signs with damaged or deteriorated finishes or components that cannot be successfully repaired by finish touchup or similar minor repair procedures.

B. Remove temporary protective coverings and strippable films as signs are installed.

C. On completion of installation, clean exposed surfaces of signs according to manufacturer's written instructions, and touch up minor nicks and abrasions in finish. Maintain signs in a clean condition during construction and protect from damage until acceptance by Owner.

END OF SECTION 101423.16

SECTION 105020 – CANOPIES

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. Section Includes:

1. Pre-engineered metal canopies including fascia channels, decking, columns, lighting, and attachment hardware.

1.3 REFERENCES

A. Aluminum Association (AA) DAF 45-Designation System for Aluminum Finishes.

B. American Architectural Manufacturers Association (AAMA): 2603-Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Architectural Extrusions and Panels.

C. ASTM International (ASTM): Standard Specification for Aluminum and Aluminum-Alloy Extruded bars, Rods, Wire, profiles and Tubes and ASTM B429-Standard Specification for Aluminum-Alloy Extruded Pipe and Tube.

1.4 DESIGN LOADS

A. Pre-Engineered metal canopy and components shall be engineered to meet or exceed the requirements set forth below and in full accordance with the IBC-2018, New Jersey Addition:

1. Uniformly Distributed Live Load: 20 psf.

2. Ground Snow Load: 25 psf.

3. Snow Drift: Per ASCE/SEI 7-16.

4. Wind Pressure: Per ASCE/SEI 7-16.

5. Exposure: 125 MPH , Exposure C.

6. Risk Category Category: Risk Category III, I=1.0.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include styles, material descriptions, construction details, fabrication details, dimensions of individual components and profiles, hardware, fittings, mounting accessories, features, and finishes for canopies.

B. Shop Drawings:

1. Include plans, elevations, sections, mounting heights, and attachment details.
2. Detail fabrication and assembly of canopies.
3. Show locations for blocking, reinforcement, and supplementary structural support.
4. Show methods of draining water from roof.

C. Samples: For each exposed product and for each color and texture specified.

D. Samples for Initial Selection: For each type of exposed finish.

E. Samples for Verification: For the following:

1. 3-inch x 3-inch coating color of specified color.
2. 6-inch long fascia extrusion sample showing profile and finish.
3. 6-inch long decking samples showing profile and standard finish.

F. Installer Qualifications: Installer must have a proven record of experience with the installation of pre-engineered, pre-manufactured canopies.

1.6 INFORMATIONAL SUBMITTALS

A. Sample Warranty: For special warranty.

1.7 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For canopies to include in operation and maintenance manuals.

1.8 QUALITY ASSURANCE

A. Fabricator Qualifications: Shop that employs skilled workers who custom fabricate products similar to those required for this Project and whose products have a record of successful in-service performance.

1.9 WARRANTY

A. Special Warranty: Manufacturer and fabricator agree to repair or replace components of awnings that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures including framework.
b. Deterioration of metals, metal finishes, and other materials beyond normal weathering.

2. Manufacturer’s Canopy Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.

1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

2.2 CANOPY AND ACCESSORY MATERIALS

A. Aluminum: Alloy and temper recommended by awning manufacturer for type of use and finish indicated and with not less than the strength and durability properties of alloy and temper required by structural loads.

1. Aluminum Extrusions: ASTM B221 & ASTM B429 6063-T5 alloy and temper.

B. Anchors, Fasteners, Fittings, Hardware, and Installation Accessories: Complying with performance requirements indicated and suitable for exposure conditions, supporting structure, anchoring substrates, and installation methods indicated. Corrosion-resistant or noncorrodible units; weather-resistant, compatible, non-staining materials. Provide as required for awning assembly, mounting, and secure attachment. Number as needed to comply with performance requirements and to maintain uniform appearance; evenly spaced. Where exposed to view, provide finish and color as selected by Architect from manufacturer's full range.

1. Zinc-Coated High-Strength Bolts, Nuts, and Washers: ASTM F3125/F3125M,Grade A325 (Grade A325M), Type 1, heavy-hex steel structural bolts; ASTM A563, Grade DH, (ASTM A563M, Class 10S) heavy-hex carbon-steel nuts; and ASTM F436/F436M, Type 1, hardened carbon-steel washers, zinc coated.
2. Expansion Anchors: Anchor bolt and sleeve assembly with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry

assemblies and equal to four times the load imposed when installed in concrete as determined by testing according to ASTM E488 conducted by a qualified independent testing and inspecting agency.

a. Material: Stainless steel with bolts and nuts complying with ASTM F593 and ASTM F594, Alloy Group 1 or 2 (ASTM F738M and ASTM F836M, Grade A1 or A4).

C. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D1187.

2.3 MANUFACTURERS

A. Basis of Design Manufacturer: MASA Architectural Canopies or architect-approved equivalent.

B. Other Manufacturers: Subject to compliance with the requirements, other manufacturers include:

1. Architectural Shade Products.

2. Mapes Canopies LLC; Mapes Industries Inc.

3. FenWall Fabrication & Manufacturing.

2.4 FIXED CANOPY FABRICATION

1. Frame Fabrication: Fabricate awning frames from aluminum. Preassemble in shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
2. Frame & Structure: Extruded Aluminum.
3. Decking: 3-inch x 6-inch x 0.90-inch interlocking extruded aluminum flat soffit decking.
4. Fascia Profiles: Triple Fascia B3.
5. Crown: Crown Variables BC-4.
6. Canopy Manufacturer's Integral Lighting: Recessed 4-inch square LED with welded light box, 5-inch x 5-inch x 1/8-inch extruded square tube.
7. Drainage: Drainage system to be 360-degree concealed type.
8. Downspout: 3-inch x 3-inch x .125 extruded aluminum finished to match canopy color.
9. Post Supports: 4-inch x 4-inch x .125-inch extruded aluminum posts to match canopy colors.
10. Obscurity Screen: None.
11. Form exposed work true to line and level with accurate angles and surfaces and straight edges.
12. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Fabricate slip-fit connections exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.

13. Weld corners and connections continuously. Obtain fusion without undercut or overlap. Remove welding flux immediately. At exposed corners and connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
14. Provide for anchorage of type indicated; coordinate with supporting structure. Space anchoring devices to secure awnings in place and to properly transfer loads.

B. Aluminum Finish: AAMA 2605 Fluoropolymer coating containing minimum 70% PVDF resins. Finish complying with finish manufacturer's written instructions for surface preparation including pretreatment, application, baking, and minimum dry film thickness.

1. Color: As selected by Architect from manufacturer's full range.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for supporting members, blocking, inserts, installation tolerances, lighting, and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Install canopy at locations and in position indicated, securely connected to supports, free of rack, and in proper relation to adjacent construction. Use mounting methods of types described and in compliance with Shop Drawings and fabricator's written instructions.

B. Slip fit frame connections accurately together to form hairline joints, and tighten to secure.

C. Weld frame connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations.

1. Field Welding: Comply with the following requirements:

a. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
b. Obtain fusion without undercut or overlap.
c. Remove welding flux immediately.
d. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

D. Anchoring to In-Place Construction: Use anchors, fasteners, fittings, hardware, and installation accessories where necessary for securing awnings to structural support and for properly transferring load to in-place construction.

E. Corrosion Protection: Coat concealed surfaces of aluminum that come in contact with grout, concrete, masonry, wood, or dissimilar metals with a heavy coat of bituminous paint.

F. Coordinate installation with flashing and joint-sealant installation so these materials are installed in sequence and in a manner that prevents exterior moisture from passing through completed exterior wall and roof assemblies.

3.3 CLEANING AND PROTECTION

A. Touch up factory-applied finishes to restore damaged or soiled areas.

END OF SECTION 107313

HORIZON ENVIRONMENTAL GROUP, INC.
P.O. Box 316
Thorofare, NJ 08086
Phone: 856-848-0800
Fax: 856-848-0838

LINDENWOLD BOARD OF EDUCATION - MAIN ENTRANCE SECURITY ENHANCEMENT PROJECT

ASBESTOS ABATEMENT WORK PLAN (FEBRUARY 2021)

SECTION 1.0 - GENERAL REQUIREMENTS

1.1 The work plan contained herein forms but a part of all sections and of the entire project specification. The Contractor shall become thoroughly familiar with all requirements and is bound by all terms and conditions contained in this document.

1.2 This section specifies the requirements for removal of asbestos-containing and/or asbestos-contaminated materials from **Lindenwold Middle School, Lindenwold School No. 4 and Lindenwold School No. 5.** Asbestos removal is an environmental decontamination project, not a normal demolition project. Failure to execute this work in an effective manner can greatly increase the health hazard to building occupants, citizens of the community and the Contractor's staff. It is generally accepted that an improper removal job can create a worse hazard than taking no action at all.

1.3 Any plans, reports, written instructions, or verbal instructions are for reference purposes only. **THE ASBESTOS ABATEMENT CONTRACTOR SHALL VERIFY FOR THEMSELVES THE TOTAL EXTENT OF THE PROJECT, INCLUDING FOOTAGES OF MATERIAL AND REMEDIATION AREAS.** It is the Contractor's responsibility to review the written specification in conjunction with any Contract Drawings provided by the Owner, their design professionals, the construction manager and/or the general contractor. No subsequent extras, change orders, or compensation shall be provided due to failure of the Contractor to evaluate the total extent of the project or for errors or omissions in this specification.

1.4 Should the Contractor find any discrepancies in, or omissions from, any of the documents, or be in any doubt as to their meaning, he shall notify the Owner and their design professionals, who shall issue all necessary clarifications by means of written correspondence or revised drawings. The Owner, their design professionals, the construction manager, the general contractor, the environmental consultants, the asbestos project design professionals or any other asbestos abatement consultants shall not be responsible for any reliance by the Contractor on any oral instructions.

1.5 It is a procedural requirement that the Contractor maintain and require prime subcontractors to maintain complete current information on jurisdictional matters, regulatory actions and pending actions as applicable to the work, discuss new developments at appropriate project meetings at the earliest feasible dates, and record information of relevance along with the action agreed upon. The manner in which Contract Documents have been organized and subdivided is not intended to be an indication of jurisdictional or trade union agreements. It is the Contractor's responsibility to assign and/or subcontract the work and employ tradesmen and laborers in a manner which shall not unduly risk jurisdictional disputes of a kind which could result in conflicts, delays, claims, or losses in the performance of work.

1.6 The work of this contract can be summarized by references to the contract, including general conditions, supplementary conditions, specification sections, addenda and modifications to the contract documents issued subsequent to the initial printing of this project manual and including, but not limited to, printed material referenced by any of these. It is recognized that the work of the contract is also unavoidably affected or influenced by governing regulations, natural phenomena including weather conditions and other forces outside the contract documents.

1.7 The school district and/or their representatives and consultants bear no responsibility in enforcing the provisions of any patents or licensing agreements regarding any methods, processes or products used in the course of this asbestos abatement project. It is the responsibility of the Contractor to ensure that they have all proper agreements in place regarding any patents or licensing agreements for the use of any methods, processes or products during this project.

1.8 The work practices contained in this specification shall serve as a guide in performing the work. No passages contained herein shall be construed as waiving or modifying any applicable requirements of NJAC 5:23-8 (New Jersey Asbestos Hazard Abatement Subcode). The Contractor shall be expected to be familiar with all aspects of NJAC 5:23-8 and all work on this project shall be performed in accordance with the provisions of NJAC 5:23-8, where applicable.

HORIZON ENVIRONMENTAL GROUP, INC.
P.O. Box 316
Thorofare, NJ 08086
Phone: 856-848-0800
Fax: 856-848-0838

SECTION 2.0 - SCOPE OF WORK

2.1 Lindenwold Middle School - CST Office B115/CST Conference Room

All work procedures, including final breakdown and cleanup, conducted at Lindenwold Middle School shall be completed within the time frames prescribed by the school district or their representatives. Where required, the school district or their representatives shall determine the sequence and scheduling for the work areas to coincide with the construction schedule. The work may be scheduled for after normal hours and/or on weekends.

a. Prior to commencement of any work, the Contractor shall make a complete inspection of all work areas and issue in writing a complete report of the existence of any damages to the school district or their representatives upon the date of the contract origin. The Contractor shall be held liable for rectifying all damages not contained in the initial report.

b. Prior to any work, the Contractor shall ensure that the building owner has disabled the HVAC systems or any other systems bringing air into or out of the work area(s) by lockable switch, or other positive means that shall prevent accidental restarting of equipment. All accessible air handling or ventilation equipment and fixtures shall be sealed with two (2) layers of six (6) mil polyethylene.

c. As per any applicable contract drawings and as part of the abatement work, the Contractor shall remove and dispose of as asbestos-containing materials the following:

LINDENWOLD MIDDLE SCHOOL

Material	Location(s)
All Parquet Floor Tile Mastic	CST Office B115 / CST Conference Room

d. The abatement of the parquet floor tile mastic materials shall be performed using non-friable methods which shall not contaminate the building environment with airborne asbestos fibers, as follows:

1. All HVAC equipment, windows and other openings found inside the work area shall be sealed with a silicone caulk, fire-rated expanding foam or two (2) layers of six mil polyethylene.

2. Air filtration units shall be in operation at all times inside the work areas and exhausted outside the building. One air change shall be provided every fifteen (15) minutes.

3. Workers shall wear proper respiratory protection and disposable clothing at all times.

4. The Contractor shall install airtight critical barriers of two (2) layers of six (6) mil polyethylene on all windows, doorways and other openings found in the regulated area.

5. In order to expose the asbestos-containing mastic, the parquet floor tiles shall be carefully removed from the substrate. Any tiles with mastic on the back shall be disposed of as asbestos-contaminated waste. All mastic shall be removed from concrete or leveler sub-flooring using low-odor or no-odor solvents.

6. The Contractor shall secure one (1) layer of six (6) mil polyethylene to the walls in the work areas, up to a height of at least three feet (3'). In floor tile mastic removal areas located above another floor or occupied space, the Contractor shall inspect the area below the work area prior to the application of the floor tile mastic remover. The Contractor shall employ any and all measures that are required to prevent the leakage of mastic remover into the area below. If any mastic remover leaks into the area below, it shall be the Contractor's responsibility to immediately clean up the mastic remover and any contaminated items. As the work is being performed, at the end of each shift and at the conclusion of the project, the Contractor shall inspect the areas below each work area and make sure that no mastic remover is found in the area. In floor tile mastic removal areas adjacent to carpeted floors, the Contractor shall protect the carpeting from being damaged by the mastic remover.

7. If the Contractor employs any method for the removal of the flooring materials that, in the opinion of the Building Owner, their representatives or state regulatory inspectors, causes (or could possibly cause) the building environment to be contaminated with airborne asbestos fibers, all work shall stop until the area is prepared under full containment.

8. Electrical power and water for the work areas shall be drawn from the facilities outside of the work areas. All electrical power serving the work area shall be locked out at the panel box and tagged by a certified electrician provided by the Contractor. Alternative sources of electrical power and water must be approved by the owner or their representatives.

9. All waste shall be packaged in two (2) six (6) mil polyethylene bags for removal from the site. All sharp-edged materials shall be packaged in fiber drums or burlap bags in addition to the polyethylene bags.

10. Any free-standing containment barriers or tunnels shall be constructed of three (3) layers of six (6) mil polyethylene mounted on 2" x 4" studs placed 16" o. c. apart. Furring strips shall be used as needed.

11. In order to properly remove the floor covering materials, the Contractor shall disassemble and/or remove any equipment, appurtenances or fixtures as needed.

12. The Contractor shall remove and dispose of all cove base molding materials found in the floor tile mastic removal areas.

2.2 <u>Lindenwold School No. 4 - Main Entrance Doors/Main Office Area/Repair Work</u>

All work procedures, including final breakdown and cleanup, conducted at Lindenwold School No. 4 shall be completed within the time frames prescribed by the school district or their representatives. Where required, the school district or their representatives shall determine the sequence and scheduling for the work areas to coincide with the construction schedule. The work may be scheduled for after normal hours and/or on weekends.

a. Prior to commencement of any work, the Contractor shall make a complete inspection of all work areas and issue in writing a complete report of the existence of any damages to the school district or their representatives upon the date of the contract origin. The Contractor shall be held liable for rectifying all damages not contained in the initial report.

b. Prior to any work, the Contractor shall ensure that the building owner has disabled the HVAC systems or any other systems bringing air into or out of the work area(s) by lockable switch, or other positive means that shall prevent accidental restarting of equipment. All accessible air handling or ventilation equipment and fixtures shall be sealed with two (2) layers of six (6) mil polyethylene.

c. As per any applicable contract drawings and as part of the abatement work, the Contractor shall remove and dispose of as asbestos-containing materials the following:

LINDENWOLD SCHOOL NO. 4

Material	Location(s)
All Caulk	Main Entrance - Inner Doors // Outer Doors
All Carpeting, Floor Tile and Floor Tile Mastic	Main Office Area - Main Office // Middle Office // Entrance Vestibule // Adjacent Hallway

d. The abatement of the caulk shall be performed using non-friable methods which shall not contaminate the building environment with airborne asbestos fibers, as follows:

1. Prior to the removal of the caulk, the Contractor shall wet wipe or vacuum any debris or dust from moveable items and remove the items from the work area.

2. Prior to the removal of the caulk, the Contractor shall install one (1) layer of six (6) mil polyethylene as a drop cloth in the areas where the work is being done.

3. Workers shall wear proper respiratory protection and disposable clothing at all times.

4. The Contractor shall remove **ALL** of the caulk from both sides of the inner set of doors and the outer set of doors. The caulk shall be kept wet at all times as it is being removed from the substrate, unless a heat method is employed to separate the caulk from the substrate. If authorized to do so, the Contractor shall apply sealant to the surfaces from which the caulk is removed. NO cutting or sawing which would disturb the caulk shall be permitted.

5. Unless otherwise noted, all waste shall be packaged in two (2) six (6) mil polyethylene bags for removal from the site. All sharp-edged materials shall be packaged in fiber drums or burlap bags in addition to the polyethylene bags.

6. Electrical power and water for the work areas shall be drawn from the facilities outside of the work areas. All electrical power serving the work area shall be locked out at the panel box and tagged by a certified electrician provided by the Building Owner. Alternative sources of electrical power and water must be approved by the Building Owner or their representatives.

7. Any free-standing containment barriers or tunnels shall be constructed of three (3) layers of six (6) mil polyethylene mounted on 2" x 4" studs placed 16" o.c. apart. Furring strips shall be used as needed.

8. In order to properly remove the caulk, the Contractor shall disassemble and/or remove any equipment, appurtenances or fixtures as needed.

9. As the caulk is being removed, the Contractor shall consult with the district, its representatives and the general contractor to inform them that the material has been removed and that each affected door may need to be sealed to prevent damage from the weather.

10. All HVAC equipment, windows and other openings found inside the work area shall be sealed with a silicone caulk, fire-rated expanding foam or two (2) layers of six mil polyethylene.

11. Air filtration units shall be in operation at all times inside the work areas and exhausted outside the building. One air change shall be provided every fifteen (15) minutes.

12. Workers shall wear proper respiratory protection and disposable clothing at all times.

13. The Contractor shall install an airtight critical barrier of two (2) layers of six (6) mil polyethylene in the hallway near the main entrance area.

e. The abatement of the floor tile and mastic materials shall be performed using non-friable methods which shall not contaminate the building environment with airborne asbestos fibers, as follows:

1. The Owner, their design professionals, the construction manager and/or the general contractor shall determine and communicate to the abatement contractor the exact locations for the removal of the floor covering materials in the hallway area adjacent to the main office area. The Owner's environmental consultants, their asbestos project design professionals or any other asbestos abatement consultants shall NOT be responsible for determining the exact locations for the removal of the floor covering materials in the hallway area adjacent to the main office area.

2. All HVAC equipment, windows and other openings found inside the work area shall be sealed with a silicone caulk, fire-rated expanding foam or two (2) layers of six mil polyethylene.

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P.O. Box 316
Thorofare, NJ 08086
Phone: 856-848-0800
Fax: 856-848-0838

3. Air filtration units shall be in operation at all times inside the work areas and exhausted outside the building. One air change shall be provided every fifteen (15) minutes.

4. Workers shall wear proper respiratory protection and disposable clothing at all times.

5. The Contractor shall install airtight critical barriers of two (2) layers of six (6) mil polyethylene on all windows, doorways and other openings found in the regulated area.

6. The tiles shall be removed by applying heat to the surface using an approved heating device. Each individual tile shall be pried from the surface using scrapers and placed in a disposal bag in an intact condition. No hatchets or hammers shall be permitted. In areas where the tiles have been installed on a layer of plywood, the Contractor may remove the wood layer with the tiles attached (without damaging them) and wrap the pieces in two (2) layers of six (6) mil polyethylene for disposal.

7. If the Contractor elects to perform the non-friable floor tile and mastic removal work in accordance with the New Jersey Department of Labor regulations, the following removal method shall be permitted: In areas where the tiles have been installed on a layer of plywood, the Contractor may remove the wood layer with the tiles attached (without damaging them) and wrap the pieces in two (2) layers of six (6) mil polyethylene for disposal. **IF THE CONTRACTOR ELECTS TO PERFORM THE NON-FRIABLE FLOOR TILE AND MASTIC REMOVAL WORK IN ACCORDANCE WITH THE NEW JERSEY DEPARTMENT OF HEALTH WAIVER GUIDELINES, THE REMOVAL OF THE TILE MUST BE PERFORMED USING HEAT METHODS AND THE REMOVAL OF THE MASTIC MUST BE PERFORMED USING CHEMICAL SOLVENTS.**

8. If the Contractor employs any method for the removal of the flooring materials that, in the opinion of the Building Owner, their representatives or state regulatory inspectors, causes (or could possibly cause) the building environment to be contaminated with airborne asbestos fibers, all work shall stop until the area is prepared under full containment.

9. Electrical power and water for the work areas shall be drawn from the facilities outside of the work areas. All electrical power serving the work area shall be locked out at the panel box and tagged by a certified electrician provided by the Contractor. Alternative sources of electrical power and water must be approved by the owner or their representatives.

10. If the floor covering materials are located beneath carpeting, the carpeting shall be peeled back from the wall to allow access to the tiles and mastic. If the tile adheres to the carpeting, the tiles may be peeled off of the carpeting and packaged for disposal or the carpeting may be cut and any carpeting with tiles stuck to it shall be packaged and disposed of asbestos-containing waste.

11. All waste shall be packaged in two (2) six (6) mil polyethylene bags for removal from the site. All sharp-edged materials shall be packaged in fiber drums or burlap bags in addition to the polyethylene bags.

12. All mastic shall be removed from concrete or leveler sub-flooring using low-odor or no-odor solvents.

13. Where mastic is to be removed using solvents, the Contractor shall secure one (1) layer of six (6) mil polyethylene to the walls in the work areas, up to a height of at least three feet (3'). In floor tile mastic removal areas located above another floor or occupied space, the Contractor shall inspect the area below the work area prior to the application of the floor tile mastic remover. The Contractor shall employ any and all measures that are required to prevent the leakage of mastic remover into the area below. If any mastic remover leaks into the area below, it shall be the Contractor's responsibility to immediately clean up the mastic remover and any contaminated items. As the work is being performed, at the end of each shift and at the conclusion of the project, the Contractor shall inspect the areas below each work area and make sure that no mastic remover is found in the area. In floor tile mastic removal areas adjacent to carpeted floors, the Contractor shall protect the carpeting from being damaged by the mastic remover. The Contractor shall protect any equipment or fixtures that cannot be removed from the area from being stained with mastic remover.

14. Any free-standing containment barriers or tunnels shall be constructed of three (3) layers of six (6) mil polyethylene mounted on 2" x 4" studs placed 16" o. c. apart. Furring strips shall be used as needed.

15. With the permission of the Owner, in order to properly remove the floor covering materials, the Contractor shall disassemble and/or remove any equipment, appurtenances or fixtures as needed.

16. The Contractor shall remove and dispose of all cove base molding materials found in the floor tile and mastic removal areas.

f. In the following areas, the Contractor shall repair the damaged asbestos-containing insulation on approximately five (5) linear feet of pipe insulation and two (2) fittings:

Basement Hallway near Room 100 - approx. one (1) linear foot
Basement Hallway near Room 101 - approx. one (1) linear foot
Room 101 (near the closet door) - approx. one (1) linear foot
Room 102 (near door/over light) - approx. two (2) linear feet with debris
Storage Room Outside Boiler Room - approx. one (1) fitting
Janitor Closet near Elevator Room - approx. one (1) fitting

1. The Contractor shall wet wipe or vacuum any debris or dust from moveable items and remove the items from the work area prior to commencing the wrapping of any materials.

2. Workers shall wear proper respiratory protection and disposable clothing at all times.

3. A drop cloth shall be secured to the area beneath the work and shall be constructed of one (1) layer of six (6) mil polyethylene.

4. The repairs to the pipe insulation and pipe fitting insulation shall be done by completely wrapping the insulation with wettable cloth. After the insulation is wrapped and the cloth is allowed to dry, the Contractor shall paint the wrapped insulation. The color of the paint shall be bright yellow.

2.3 Lindenwold School No. 5 - Main Office Area

All work procedures, including final breakdown and cleanup, conducted at Lindenwold School No. 5 shall be completed within the time frames prescribed by the school district or their representatives. Where required, the school district or their representatives shall determine the sequence and scheduling for the work areas to coincide with the construction schedule. The work may be scheduled for after normal hours and/or on weekends.

a. Prior to commencement of any work, the Contractor shall make a complete inspection of all work areas and issue in writing a complete report of the existence of any damages to the school district or their representatives upon the date of the contract origin. The Contractor shall be held liable for rectifying all damages not contained in the initial report.

b. Prior to any work, the Contractor shall ensure that the building owner has disabled the HVAC systems or any other systems bringing air into or out of the work area(s) by lockable switch, or other positive means that shall prevent accidental restarting of equipment. All accessible air handling or ventilation equipment and fixtures shall be sealed with two (2) layers of six (6) mil polyethylene.

c. As per any applicable contract drawings and as part of the abatement work, the Contractor shall remove and dispose of as asbestos-containing materials the following:

LINDENWOLD SCHOOL NO. 5

Material	Location(s)
All Carpeting, Floor Tile and Floor Tile Mastic	Main Office Area - Main Office // Middle Office // Adjacent Hallway

d. The abatement of the floor tile and mastic materials shall be performed using non-friable methods which shall not contaminate the building environment with airborne asbestos fibers, as follows:

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P.O. Box 316
Thorofare, NJ 08086
Phone: 856-848-0800
Fax: 856-848-0838

1. The Owner, their design professionals, the construction manager and/or the general contractor shall determine and communicate to the abatement contractor the exact locations for the removal of the floor covering materials in the hallway area adjacent to the main office area. The Owner's environmental consultants, their asbestos project design professionals or any other asbestos abatement consultants shall NOT be responsible for determining the exact locations for the removal of the floor covering materials in the hallway area adjacent to the main office area.

2. All HVAC equipment, windows and other openings found inside the work area shall be sealed with a silicone caulk, fire-rated expanding foam or two (2) layers of six mil polyethylene.

3. Air filtration units shall be in operation at all times inside the work areas and exhausted outside the building. One air change shall be provided every fifteen (15) minutes.

4. Workers shall wear proper respiratory protection and disposable clothing at all times.

5. The Contractor shall install airtight critical barriers of two (2) layers of six (6) mil polyethylene on all windows, doorways and other openings found in the regulated area.

6. The tiles shall be removed by applying heat to the surface using an approved heating device. Each individual tile shall be pried from the surface using scrapers and placed in a disposal bag in an intact condition. No hatchets or hammers shall be permitted. In areas where the tiles have been installed on a layer of plywood, the Contractor may remove the wood layer with the tiles attached (without damaging them) and wrap the pieces in two (2) layers of six (6) mil polyethylene for disposal.

7. If the Contractor elects to perform the non-friable floor tile and mastic removal work in accordance with the New Jersey Department of Labor regulations, the following removal method shall be permitted: In areas where the tiles have been installed on a layer of plywood, the Contractor may remove the wood layer with the tiles attached (without damaging them) and wrap the pieces in two (2) layers of six (6) mil polyethylene for disposal. **IF THE CONTRACTOR ELECTS TO PERFORM THE NON-FRIABLE FLOOR TILE AND MASTIC REMOVAL WORK IN ACCORDANCE WITH THE NEW JERSEY DEPARTMENT OF HEALTH WAIVER GUIDELINES, THE REMOVAL OF THE TILE MUST BE PERFORMED USING HEAT METHODS AND THE REMOVAL OF THE MASTIC MUST BE PERFORMED USING CHEMICAL SOLVENTS.**

8. If the Contractor employs any method for the removal of the flooring materials that, in the opinion of the Building Owner, their representatives or state regulatory inspectors, causes (or could possibly cause) the building environment to be contaminated with airborne asbestos fibers, all work shall stop until the area is prepared under full containment.

9. Electrical power and water for the work areas shall be drawn from the facilities outside of the work areas. All electrical power serving the work area shall be locked out at the panel box and tagged by a certified electrician provided by the Contractor. Alternative sources of electrical power and water must be approved by the owner or their representatives.

10. If the floor covering materials are located beneath carpeting, the carpeting shall be peeled back from the wall to allow access to the tiles and mastic. If the tile adheres to the carpeting, the tiles may be peeled off of the carpeting and packaged for disposal or the carpeting may be cut and any carpeting with tiles stuck to it shall be packaged and disposed of asbestos-containing waste.

11. All waste shall be packaged in two (2) six (6) mil polyethylene bags for removal from the site. All sharp-edged materials shall be packaged in fiber drums or burlap bags in addition to the polyethylene bags.

12. All mastic shall be removed from concrete or leveler sub-flooring using low-odor or no-odor solvents.

13. Where mastic is to be removed using solvents, the Contractor shall secure one (1) layer of six (6) mil polyethylene to the walls in the work areas, up to a height of at least three feet (3'). In floor tile mastic removal areas located above another floor or occupied space, the Contractor shall inspect the area below the work area prior to the application of the floor tile mastic remover. The Contractor shall employ any and all

measures that are required to prevent the leakage of mastic remover into the area below. If any mastic remover leaks into the area below, it shall be the Contractor's responsibility to immediately clean up the mastic remover and any contaminated items. As the work is being performed, at the end of each shift and at the conclusion of the project, the Contractor shall inspect the areas below each work area and make sure that no mastic remover is found in the area. In floor tile mastic removal areas adjacent to carpeted floors, the Contractor shall protect the carpeting from being damaged by the mastic remover. The Contractor shall protect any equipment or fixtures that cannot be removed from the area from being stained with mastic remover.

14. Any free-standing containment barriers or tunnels shall be constructed of three (3) layers of six (6) mil polyethylene mounted on 2" x 4" studs placed 16" o. c. apart. Furring strips shall be used as needed.

15. With the permission of the Owner, in order to properly remove the floor covering materials, the Contractor shall disassemble and/or remove any equipment, appurtenances or fixtures as needed.

16. The Contractor shall remove and dispose of all cove base molding materials found in the floor tile and mastic removal areas.

2.4 The Contractor shall keep all stairs, lobbies and lavatories free from the accumulation of waste material, rubbish or construction waste.

2.5 Except for lavatories designated by the Building Owner for the use by the Contractor's personnel, use of existing toilets within the building by the Contractor and his/her personnel shall not be permitted.

2.6 During all phases of the project, two (2) fire exits from any work area shall be maintained, where feasible. The exterior work area shall be demarcated using red asbestos caution tape.

2.7 Unless otherwise noted, all books, files, equipment and other removable objects shall be removed by the Building Owner prior to the commencement of the work.

2.8 The Contractor shall furnish all labor, supervision, materials, services, insurance, equipment and tools necessary for the complete and proper execution of the work.

2.9 All asbestos abatement shall be performed in accordance with the applicable regulations and guidelines of the United States Environmental Protection Agency, the Occupational Safety and Health Administration, the New Jersey Department of Health, the New Jersey Department of Labor, the New Jersey Department of Community Affairs and the New Jersey Department of Environmental Protection.

2.10 Applicable standards listed in these specifications include, but are not limited to, standards promulgated by the following agencies and organizations. In all cases, this specification shall take precedence where it meets or exceeds any Federal, State or Local regulations.

a. A.N.S.I.	American National Standards Institute 25 West 43rd Street, 4th Floor New York, NY 10036
b. A.S.T.M.	American Society for Testing & Materials 100 Barr Harbor Drive P. O. Box C700 West Conshohocken, PA 19428-2959
c. IBC 2000 New Jersey	International Code Council 900 Montclair Road Birmingham, AL 35213

d. U.L.	Underwriters Laboratories 36-42 Newark Street, Unit #502 Hoboken, NJ 07030
e. U.S.E.P.A.	U. S. Environmental Protection Agency – Region 2 Division of Enforcement and Compliance Assistance Air Compliance Branch 290 Broadway, 21st Floor New York, NY 10007-1866
f. N.I.O.S.H.	National Institute for Occupational Safety and Health Region 2, 26 Federal Plaza New York, NY 10007
g. N.F.P.A.	National Fire Protection Association 83 Creek Ridge Pittsford, NY 14534
h. N.I.S.T.	National Institute of Standards & Technology 100 Bureau Drive Gaithersburg, MD 20899
i. O.S.H.A.	Occupational Safety & Health Administration New York Regional Office 1515 Broadway (Astor Plaza), Room 3445 New York, NY 10036
j. D.O.H.	New Jersey Department of Health Consumer and Environmental Health Services P. O. Box 369 Trenton, NJ 08625-0369
k. D.E.P.	New Jersey Department of Environmental Protection Division of Solid and Hazardous Waste 401 East State Street, 2nd Floor P. O. Box 420 Trenton, NJ 08625-0420
l. D.O.L.	New Jersey Department of Labor & Workforce Development Asbestos Control & Licensing Section 1 John Fitch Plaza, 3rd Floor P. O. Box 392 Trenton, NJ 08625-0392

2.11 The Contractor shall assume full responsibility and liability for the compliance with all applicable Federal, State, and Local regulations pertaining to work practices, hauling, disposal and the protection of workers, visitors to the site and persons occupying areas adjacent to the site. The Contractor is responsible for providing medical examinations and maintaining medical records of personnel as required by applicable Federal, State and Local regulations. The Contractor shall indemnify and hold the Owner and the Owner's representative harmless for failure to comply with any applicable work, hauling, disposal, safety, health or other regulation on the part of themselves, their employees or their subcontractors.

2.12 Except to the extent that more stringent requirements are written directly into the contract documents, all applicable codes, regulations and standards have the same force and effect (and are made a part of the contract documents by reference) as if copied directly into the contract documents, or as if published copies are bound herewith.

2.13 The Contractor shall strictly adhere to all precautions necessary for the safety and health of the work person in accordance with provisions of OSHA Standards, 26 CFR 1926.58 (Construction Standards) and 26 CFR 1910.1001 (Industry Standards).

2.14 The Contractor shall limit the use of the premises to the work indicated.

2.15 The Contractor shall keep existing entrances serving the premises clear and available to the Owner and their employees at all times. Do not use these for parking or storage of materials.

2.16 The Contractor shall not unreasonably encumber the site with materials or equipment. The Contractor shall confine stockpiling of materials and location of storage sheds to areas approved by the Building Owner or their representatives.

2.17 The Contractor shall lock all vehicles and construction equipment, when parked and unattended so as to prevent unauthorized use. The Contractor shall not leave any vehicles or equipment unattended with the motor running or the ignition key in place.

2.18 The Contractor shall maintain the existing building in a safe and weather-tight condition throughout the work period, repair all damage caused by abatement/demolition operations and take all necessary precautions to protect the building.

2.19 The Contractor shall properly contain, transport and dispose of all contaminated wastes and materials at a site approved for asbestos disposal. No waste storage container shall be placed on the campus. All waste shall be removed from the site daily. If permitted by the Owner or their representatives, properly contained waste may be stored inside the work area only if the area can be secured during the time the Contractor is not on site.

2.20 Smoking shall not be permitted in the building or on the premises.

2.21 The Contractor shall furnish, install and maintain for the duration of the project all precautions necessary for the safety, health and welfare of the workers and building occupants.

2.22 The Contractor shall furnish, install and maintain for the duration of the project all methods and systems necessary to prevent the escape of airborne asbestos fibers to adjacent areas of the building.

2.23 The Contractor shall clean, dismantle, remove and replace all items and equipment which should be moved prior to asbestos cleanup, unless otherwise noted.

2.24 The Contractor shall dismount all fire, electrical and mechanical fixtures and appurtenances required for proper execution of this contract. A licensed electrician is required and shall be trained in the use of a respirator and handling asbestos materials.

2.25 The Contractor shall complete all aspects of the removal as rapidly as progress of the work shall permit. The work on each floor, including clearance air testing and final cleanup procedures, shall be completed within the time frames specified by the Owner. In addition, the Contractor shall be responsible for all labor costs incurred by the Owner for any monitoring work performed on or after the completion date specified by the Owner. The Contractor shall be responsible for all additional labor and sample analysis costs incurred by the Owner for any monitoring work which is performed after the final clearance air samples are collected, in the event that the results of the first set of final clearance are above the re-occupancy threshold.

2.26 The Contractor shall neither make nor assert a claim for damage against the Owner by reason of any delays herein mentioned, including without limitation, delays arising out of change orders and agrees that the sole claim in the event of such delays is limited to extension of time for completion of the work.

2.27 The Contractor's inability to secure sufficient personnel for the performance of the contract shall not constitute a basis for extension of time.

2.28 The Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the work or the incorporation in the work of any invention, design, process, product or device which is the subject of

patent rights or copyrights held by others including patent rights and copyrights held by the Owner or the Architect. The Contractor shall be solely responsible for all damages, losses and expenses arising out of any infringement of patent rights or copyrights incident to the use and the performance of the work or resulting from the incorporation in the work of any invention, design, process, product or device not specified in the Contract Documents and shall defend all such claims in connection with any alleged infringements of such rights.

SECTION 3.0 – DOCUMENTATION

3.1 The contractor shall submit any and all documents and forms as requested by the Owner or their representatives.

SECTION 4.0 - NOTIFICATIONS

4.1 Where applicable, the Contractor shall notify the following agencies in writing prior to the start of an asbestos abatement project as soon as possible prior to the start of work:

a. United States Environmental Protection Agency – Region II
Division of Enforcement and Compliance Assistance
Air Compliance Branch
290 Broadway, 21st Floor
New York, NY 10007-1866

b. New Jersey Department of Health
Consumer and Environmental Health Services
P. O. Box 369
Trenton, NJ 08625-0369

c. New Jersey Department of Environmental Protection
Division of Solid and Hazardous Waste
401 East State Street, 2nd Floor
P. O. Box 420
Trenton, NJ 08625-0420

d. New Jersey Department of Labor & Workforce Development
Asbestos Control & Licensing Section
1 John Fitch Plaza, 3rd Floor
P. O. Box 392
Trenton, NJ 08625-0392

4.2 This notification shall include the following:

a. Name and address of Contractor.

b. Address and description of the building, including size, age and prior use of the building or areas, the amount of friable asbestos material present, location within building (unless entire building is involved).

c. Scheduled starting and completion dates for removal.

d. Procedures and equipment (including ventilation systems) that shall be employed to comply with the C.F.R., Title 40, Part 61 of the USEPA.

e. The name and address of the carting company and of the waste disposal site where the asbestos waste shall be deposited.

f. The name and address of the testing laboratory who shall perform air monitoring on behalf of the Owner, and the name and address for the testing laboratory who shall perform OSHA compliance on behalf of the Contractor.

4.3 The Contractor shall notify the following agency in writing prior to the removal of asbestos abatement from the project site and the disposal of asbestos waste. All asbestos waste materials destined for shall be in accordance with 40 CFR 61.20-25 before it can be legally transported and disposed of.

New Jersey Department of Environmental Protection
Division of Solid and Hazardous Waste
401 East State Street, 2nd Floor
P. O. Box 420
Trenton, NJ 08625-0420

4.4 This notification shall include the following:

a. Name, address and telephone number of the removal project.

b. Quantity in cubic yards and nature of the waste to be disposed (I.D. #27 for Asbestos).

c. Name, address and NJDEP registration number of the collector/handler.

d. Name and address of the disposal site at which disposal will occur.

e. Date and time of disposal.

f. A copy of any written notification required by 40 CFR 61.22-61.25.

SECTION 5.0 - PRE-ABATEMENT STATE REQUIREMENTS

5.1 For projects involving the abatement (not including materials removed using the "wrap and cut" method or repair work) of more than ten linear feet and/or twenty-five square feet of **friable** interior asbestos-containing materials, it is unlawful to undertake an asbestos hazard abatement project unless the building Owner or their agent first files an application in writing with the Enforcing Agency and obtains the required permit. This permit shall serve as notice for public record in the office of the Enforcing Agency. All work shall be monitored by the Owner's consultant, who shall advise the Enforcing Agency of its findings.

5.2 The application for a construction permit shall include the following information:

a. The name and address of the Contractor.

b. The name and address of the private air monitoring firm hired by the Building Owner. The monitor shall be responsible for the continuous monitoring during the asbestos abatement project.

c. The name and address of the analytical testing laboratory which shall analyze bulk, dust and air samples as needed.

d. Documentation that the building will only be occupied if the work areas can be properly separated and sealed off from the occupied portion of the building.

e. The scheduled starting and completion dates for the abatement project.

f. Plans and specifications [not less than four (4) sets] indicating the scope of the proposed work and the provisions proposed to contain the asbestos-containing material during abatement work, showing, but not limited to, separation barriers, primary seal/critical barriers, route of travel of removing asbestos waste from the work site and a floor plan indicating exits.

g. The name and address of the waste hauler and the name and location of the landfill where the asbestos shall be deposited.

5.3 The issuance of the construction permit for asbestos abatement authorizes only the preparation of the job site.

HORIZON ENVIRONMENTAL GROUP, INC.
P.O. Box 316
Thorofare, NJ 08086
Phone: 856-848-0800
Fax: 856-848-0838

SECTION 6.0 - DOCUMENTATION REQUIRED AT WORK SITE

6.1 One copy each of the regulations cited in this work plan shall be available in the Contractor's business office and one copy of each shall be maintained at the job site.

6.2 Additional documentation to be available at the job site shall include the following:

a. A sign in black letters greater than four inches (4") in height stating the following:

"LICENSED BY THE STATE OF NEW JERSEY FOR ASBESTOS WORK"

b. The sign shall be displayed prominently outdoors at the worksite.

c. A list of emergency phone numbers to include: the monitoring firm employed by the Building Owner, USEPA, OSHA, DOE, local fire, police, hospital and emergency squad.

d. Work area emergency procedures posted in plain view inside and outside the work areas. Emergency procedures take precedence over decontamination procedures.

e. A list of personnel, including all new employees.

f. A daily log of all persons entering the work areas, including all visitors. Persons not employed by the Asbestos Contractor shall be required to sign an acceptable waiver form. The waiver form shall be approved by the Environmental Project Manager.

g. The daily log shall include a record of start and stop times, any work problems encountered, any corrective action and estimated amount of asbestos waste generated.

h. The Contractor shall be responsible for obtaining a copy of the daily monitoring logs from their air testing firms and maintaining them at the job site.

6.3 Work schedules and updated progress charts depicting all phases of the work and completion deadlines shall be maintained on site.

6.4 A copy of the Waste Hauler's Certificate and copies of all landfill receipts shall be maintained on site.

SECTION 7.0 - PROJECT REVIEW & INSPECTION

7.1 The Owner, Owner's Representative, Project Manager and the representatives of agencies having lawful jurisdiction shall at all times have access to the work areas whether the work is in preparation or progress.

7.2 The Owner reserves the right to stop all removal operations and cancel this contract if proper environmental, health and safety precautions are not being implemented and adhered to by the Contractor and his/her personnel. If work procedures are not in compliance with the specification, a "Stop Work Order" shall be issued to Contractor by the Owner or Project Manager. The Contractor shall not recommence work until authorized in writing to do so by the Owner or their representative. Further noncompliance of these specifications or safety regulations shall be cause for cancellation of the contract.

SECTION 8.0 - PROTECTIVE CLOTHING/EQUIPMENT FOR ABATEMENT

8.1 Listed below are materials, equipment and tools generally used in proper asbestos removal operations. It is not inferred, however, that all materials listed are necessarily required in every asbestos abatement project and, in some instances, materials required to complete the work may not be listed.

a. Protective clothing: Shall be fire retardant manufactured of "Tyvek" by DuPont (or approved equal) consist of disposable full body coveralls, headcovers and boots as required by the most stringent OSHA standards applicable to the work. Eye protection, hard hats and gloves shall be available.

b. Plastic Sheeting: Where needed, provide six (6) mil thick polyethylene sheeting. The polyethylene sheeting shall be taped securely in place, stapled, or fastened by spray-on adhesives, glue beads, horizontal wood battens or the equivalent.

c. Where work procedures are in view to the public, black or opaque six mil polyethylene shall be utilized on decontamination chambers, windows, etc.

d. Adhesives: Tape shall be high quality duct tape (or approved equivalent) in 2"-3" widths.

e. Glove Bags of six mil thickness fitted with long sleeve gloves, a tool pouch and a two inch (2") opening used for water application.

f. Support Structures shall be constructed of Polyvinyl Chloride Pipes (P.V.C.) and/or aluminum or wood studs.

g. Disposal bags shall be six (6) mil polyethylene bags of a sufficient size for the application. The bags shall be printed with letters of sufficient size and contrast to be readily visible and legible. The label shall state at a minimum:

DANGER
Contains Asbestos Fibers
May Cause Cancer
Causes Damage to Lungs
Do Not Breathe Dust
Avoid Creating Dust

h. Caution Signs shall be 14" x 20" in size with a red background and lettered in black. Signs shall be displayed at all routes of access and all visual and physical barriers.

LEGEND	NOTATION
Danger	1" Sans Serif Gothic or Block
Asbestos	1" Sans Serif Gothic or Block
May Cause Cancer	1/2" San Serif Gothic or Block
Causes Damage to Lungs	1/2" San Serif Gothic or Block
Wear Respiratory Protection and Protective Clothing in this Area	3/8" San Serif Gothic or Block
Authorized Personnel Only	3/8" San Serif Gothic or Block

All signs shall meet OSHA Standard 29 CFR 1926.58.

i. At all areas of direct access to the work areas (decontamination unit, etc.), display signs (10" x 14") with yellow background and black lettering as follows:

LEGEND	NOTATION
No Food Beverages or Tobacco Permitted	3/4" Block
All Persons Shall Wear Protective Clothing (Coverings) Before Entering the Work Area	3/4" Block
All Persons Shall Shower Immediately After Leaving Work Area and Before Entering the Changing Area	3/4" Block

j. Amended water or removal encapsulant shall be approved for the particular type and concentration of asbestos dealt with in each circumstance by the Project Manager. Amended Water is water to which a surfactant has been added. The Contractor shall use a mixture of surfactant and water which results in wetting of the material which equals or surpasses the wetting resulting from the use of one (1) ounce of a surfactant consisting of fifty percent (50%) polyoxyethylene ester and fifty percent (50%) polyoxyethylene ether mixed with five (5) gallons of water.

k. Removal Sealant: The Contractor shall provide a penetrating-type sealant designed specifically for the removal of asbestos-containing material. The Contractor shall use a material which results in the wetting of the asbestos-containing material and retardation of fiber release during disturbance of the material equal to or greater than that provided by amended water as described above. The sealant shall be tinted and meet all applicable fire and building codes.

l. Filters shall be of sufficient quantity and type (HEPA) for use in respirators and other equipment requiring filters.

m. The Contractor shall use cleaning materials needed to maintain the specified standard of cleanliness and compatible with the surface being cleaned.

n. Respiratory Protection shall be in accordance with OSHA Regulation 1926.58 and ANSI Z88.2-1980. There shall be NO EXCEPTIONS to these requirements.

o. Air Filtration Equipment shall be capable of filtering airborne asbestos fibers.

p. HEPA Vacuum: The Contractor shall use high efficiency vacuum cleaners with special HEPA filtration to retain asbestos fibers with a capillary tube if to be utilized with a glove bag.

q. The Decontamination System shall consist of lockers, showers with pump support, respirator storage, equipment storage, etc.

r. Shower Head and Controls: The Contractor shall provide a factory-made shower head producing a spray of water which can be adjusted for spray size and intensity. The shower shall be fed with water mixed from hot and cold water supply lines and be arranged so that the control of water temperature, flow rate and shut off is from inside shower without outside aid.

s. Shower Stall: The Contractor shall provide, for the Shower Area, a leaktight shower enclosure (with integrated drain pan) made of fiberglass or other durable waterproof material, approximately 3' x 3' square with minimum 6' high sides and back and shall be structurally supported as necessary for stability. The shower stall shall be equipped with a hose bib, as specified in this section, mounted at approximately 5' above the drain pan. The pan shall be connected to a reservoir, which shall be connected to a storage barrel. The water shall be disposed of with the asbestos-containing material or used for amended water.

t. Sump Pump: The Contractor shall install a totally submersible sump pump (with integral float switch) sized to pump two times the flow capacity of all showers or hoses supplying water to the sump through any filters. The pump shall be capable of pumping debris, sand, plaster or other materials washed off during decontamination procedures without damaging the pump and have an adjustable float switch so that a minimum of 3" remains between the top of the liquid and the top of the sump pan.

u. Lumber: The Contractor shall provide kiln-dried lumber of any grade or species.

v. Scaffold: The Contractor shall provide all scaffolding and/or staging as necessary.

w. Hand Tools: The Contractor shall provide all needed hand tools and ancillary materials to properly complete the work.

x. Spray Equipment: The Contractor shall provide spray equipment capable of mixing any wetting agent with water and capable of generating sufficient pressure, volume and having ample hose length to reach all areas of asbestos.

y. Communication: The Contractor may utilize "Walkie-Talkies" for communication between the work areas and outside areas.

8.2 The Contractor shall have available sufficient inventory of these materials and equipment to accomplish the job, protect the workers, and protect all authorized visitors to the job site.

8.3 In procuring all items in this work, it is the Contractor's responsibility to verify the detailed requirements of this guideline and all codes, standards and regulations to verify that the items procured for use on this project meet or exceed the specified requirements.

8.4 The Owner reserves the right to reject items incorporated into the work that fail to meet the requirements of this guideline or any applicable codes, standard or regulation.

8.5 The mention of any product or manufacturer's name or equipment name does not imply endorsement by the Owner, their representative or the project manager.

8.6 "Approved equal" or "equal" shall mean as approved by the Owner, their representative or Project Manager only. They shall be the sole judge as to whether or not a substitute item is equal, and any item specified shall be submitted for approval.

SECTION 9.0 - RESPIRATORY PROTECTION

9.1 Powered Air-Purifying Respirators

a. Powered air-purifying, positive pressure, full or half-face respirators shall be worn during all phases of the project. If air monitoring results show that fiber counts meet or exceed an action level defined as one-half (1/2) the respirator use limit concentration (50 f/cc), then Type "C" respirators shall be used.

b. The Contractor shall supply a sufficient quantity of high efficiency respirator filters approved for asbestos so that workers can change filters at any time that flow through the face piece decreases to the level at which the manufacturer recommends filter replacement. HEPA elements in filter cartridges shall be protected from wetting during showering. The entire exterior housing of the respirator including the blower unit, filter cartridges, hoses, battery pack, face mask, belt and cord is to be washed each time a worker leaves the work area. Caution should be taken to avoid shorting the battery pack during the washing. The Contractor shall provide an extra battery pack for each respirator so that one can be charging while one is in use.

c. Respirator Bodies: The Contractor shall provide full-face type respirators and equip full-face respirators with a nose cup or other anti-fogging device as would be appropriate for use in air temperatures less than 32° F.

d. Filter Cartridges: The Contractor shall provide, at a minimum, HEPA type filters labeled with NIOSH and MSHA Certifications for "Radionuclides, Radon Daughters, Dust, Fumes, Mists including Asbestos-Containing Dusts and Mists" and color coded in accordance with ANSI Z228.2 (1980). In addition, a chemical cartridge may be added, if required, for solvents, etc. in use. In this case, the Contractor shall provide cartridges that have each section of the combination canister labeled with the appropriate color code and NIOSH/MSHA Certification.

e. Do not use single, disposable or quarter-face respirators. Negative pressure half-face respirators may only be used in conjunction with proper eye protection.

9.2 Fit Testing

a. The Contractor shall provide initial fitting of respiratory protection during a respiratory protection course of training, set-up and administered by an Asbestos Safety Instructor, fit types of respirators to be actually worn by the individual and allow an individual to use only those respirators for which he/she has been trained and fitted.

b. The Contractor shall check the fit of each worker's respirator by having irritant smoke blown onto the respirator and into the intake port of the motor unit (with the filters in place) from a smoke tube.

c. The Contractor shall require that each time an air-purifying is put on, it is checked for fit with a positive pressure fit test in accordance with the manufacturer's instructions or ANSI Z88.2 (1980).

HORIZON ENVIRONMENTAL GROUP, INC.
P.O. Box 316
Thorofare, NJ 08086
Phone: 856-848-0800
Fax: 856-848-0838

SECTION 10.0 - CONSTRUCTION AIDS

10.1 The Contractor shall provide all scaffolding, ladders or staging equipment, etc. as necessary to accomplish the work of this contract. Scaffolding may be of suspension type, or standing type such as metal tube and coupler, tubular welded frame, pole or outrigger type or cantilever type. The type, erection and use of all scaffolding shall comply with all applicable OSHA provisions.

10.2 During the erection and/or moving of scaffolding, care shall be exercised to avoid damage to the polyethylene floor.

10.3 The rungs of all metal ladders, etc., shall be equipped with an abrasive non-skid surface.

10.4 All surfaces subject to foot traffic shall have a nonskid surface. Surfaces shall be cleaned as required to remove slippery materials.

10.5 At the completion of the removal work, all construction aids shall be cleaned within the work areas and wrapped in one (1) layer of six mil polyethylene sheet and sealed before the work areas.

SECTION 11.0 - AIR FILTRATION SYSTEM

11.1 The Contractor shall supply the required number of asbestos air filtration units to the site in accordance with this specification.

11.2 The Air Filtration Unit cabinet shall be constructed of steel or other durable materials able to withstand the damage from rough handling and transportation. The width of the cabinet should be less than thirty inches (30") to fit through standard doorways. The cabinet shall be factory sealed to prevent asbestos-containing dust from being released during use, transport or maintenance. Access to and replacement of all air filters shall be from the intake end. The unit shall be mounted on casters or wheels.

11.3 The Air Filtration Unit fans shall be rated according to usable air moving capacity under actual operating conditions and shall be centrifugal-type.

11.4 The final filter of the unit shall be a HEPA filter. The filter media (folded into closely pleated panels) shall be completely sealed on all edges with a structurally rigid frame.

a. A continuous rubber gasket shall be mounted between the filter and the filter housing to form a tight seal.

b. Each filter shall be individually tested and certified by the manufacturer to have an efficiency of not less than 99.97% when challenged with 0.03 micron dicytolphthalate (D.O.P.) particles. Testing shall be in accordance with Military Standard Number 282 and Army Instruction Manual 136-300-175A. Each filter shall bear a UL586 label to indicate ability to perform under a specified condition.

c. Each filter shall be marked with the name of the manufacturer, serial number, air flow rating, efficiency and resistance and the direction of the air flow.

11.5 Two stages of prefilters are required in order to protect the final filter by removing larger particles, thus prolonging the life the operating life of the HEPA filter. The first stage prefilter shall be a low efficiency filter [for particles ten (10) microns or larger]. The second stage filter shall have a medium efficiency [for particles as small as five (5) microns]. Prefilters and intermediate filters shall be installed either on or in the intake grid of the unit and beheld in place with special housing or clamps.

11.6 Each Air Filtration Unit shall be equipped with a Magnehelic gauge or manometer to measure the pressure drop across filters and indicate when filters have become loaded and need to be changed. A table indicating the usable air handling capacity for various static pressure readings on the Magnehelic gauge shall be affixed near the gauge for reference, or the Magnehelic reading indicating at what point the filters should be changed, noting cubic feet per minute (CFM) air delivery at that point. The units shall be equipped with an elapsed-time meter to show the total accumulated hours of operation.

11.7 Each unit shall have an electrical (or mechanical) lockout to prevent the fan from operating without a HEPA filter. Units shall be equipped with automatic-shutdown systems to stop the fan in the event of a major rupture in the HEPA filter or blocked air discharge. Warning lights are required to indicate normal operation, a high pressure drop across the filters (filter overloading) and a low pressure drop (major rupture in HEPA filter or obstructed discharge).

11.8 All units shall have electrical components which are approved by the National Electrical Manufacturers Association (NEMA) and Underwriters Laboratories (UL). Each unit shall be equipped with overload protection, sized specifically for the equipment. The motor, fan, fan housing and cabinet shall be grounded.

11.9 Fully operational air-filtration systems shall provide a minimum of four (4) air changes every one (1) hour. The volume in cubic feet shall be calculated by multiplying the floor area by the ceiling height. The total ventilation requirement in cubic feet per minute (CFM) shall be calculated by for the work area by dividing this volume by the air change rate.

$$\text{Ventilation Requirement (CFM)} = \frac{\text{volume of work area}}{\text{fifteen (15) minutes}}$$

11.10 The number of units needed to achieve a fifteen (15) minute-change rate shall be determined by dividing the ventilation requirement (CFM) above by the capacity of the exhaust units used.

$$\text{Number of units needed} = \frac{\text{ventilation requirement (CFM)}}{\text{capacity of unit (CFM)}}$$

One (1) additional unit shall be maintained on site as a backup in case of equipment failure or machine shutdown for filter changing.

11.11 The Contractor shall provide a sufficient number of air filtration devices in order to maintain an exhaust capacity sufficient to establish and maintain a pressure differential between the work area and all adjacent spaces greater than or equal to 0.03 inches w. c. for unoccupied buildings or 0.05 inches w. c. for occupied buildings.

11.12 Where required, pressure differential shall be constantly monitored using manometers. One or more separate pressure monitoring devices shall be installed near the entrances to the work area and any interior spaces from which make-up air is drawn. The Contractor shall be responsible for providing all needed manometers or other pressure monitoring devices. All manometers shall have electronic digital readouts and a continuous tape printout.

11.13 The air filtration units shall be located so that the makeup air enters the work area primarily through the decontamination facilities or controlled makeup air inlets (if allowed by regulation) and traverses the work areas as much as possible. The location of the units shall be at a maximum distance from the worker access opening or other makeup air sources

a. The end of the unit or its exhaust duct shall be placed through an opening in the plastic barrier or wall covering. The plastic around the unit or duct shall be sealed with duct tape and any exterior exhaust port shall be protected with a cage to prevent vandalism.

b. The unit shall always be exhausted to the outside of the building, unless authorized in writing by the Owner's representative or Environmental Project Manager. Do not vent into the nonwork areas of the building.

11.14 If allowed by regulation, controlled makeup air inlets shall be provided where required for proper air flow through the work areas in locations approved by the Owner's representative and the Environmental Project Manager. The Contractor shall make openings in the polyethylene sheeting that allows air from outside the building into the work area if applicable and locate the auxiliary makeup air inlets as far as possible from the exhaust unit(s), off the floor, and away from the barriers separating the work area from occupied, clean areas.

11.15 Each unit shall be serviced by a dedicated minimum 115V-20A circuit with overload device tied into an existing building electrical panel which has sufficient spare capacity to accommodate the load of all units connected.

11.16 The air filtration system shall be tested before any asbestos-containing material is wetted or removed. After the work area has been prepared, the decontamination facility set up and the exhaust units installed, the units shall be started one at a time. The test of the system shall include:

a. Plastic barriers and sheeting move slightly in towards the work area;

b. Curtains of the decontamination unit move slightly towards the work area;

c. There is a noticeable movement of air through the decontamination unit.

d. The use of smoke tubes shall demonstrate a positive motion of air across all areas in which work is to be performed.

11.17 The air filtration system shall be used as follows:

a. The units shall be started before beginning work. After removal has begun, the units shall be run continuously to maintain constant air flow until decontamination of the area is complete. The units shall not be turned off at the end of the work shift or when removal operations temporarily stop.

b. The system shall not be shut down during application of the sealant procedures, unless authorized by the Owner's representative or Environmental Project Manager in writing.

c. Removal shall start at a location farthest from the units and proceed toward them. If an electrical power failure occurs, removal shall stop immediately and not resume until power is restored and the units are operating again.

d. At the completion of the removal work, the units shall be allowed to run in order to remove airborne fibers that may have been generated during wet removal and cleanup and to purge the work area with clean makeup air. The units may be required to run for a longer time after decontamination, if dry or only partially wetted asbestos material was encountered during removal.

11.18 When a final visual inspection and the results of final air tests indicate that the area has been decontaminated, the exhaust units may be removed from the work areas. Before removal from the work areas, the unit shall have the pre-filter removed and disposed of properly, and the intake to the machine shall be sealed with six (6) mil polyethylene to prevent environmental contamination from the filters.

SECTION 12.0 - PROTECTION OF WORKERS AND SITE VISITORS

12.1 Respirators, disposable coveralls, head covers and footwear covers shall be provided by the Contractor for the Owner, their representative, the Project Manager and other authorized visitors who may inspect the jobsite. The Contractor shall provide two (2) respirators and six (6) complete coveralls and, where applicable, six (6) respirator cartridges per day. Sufficient HEPA cartridges for powered air-purifying respirators shall be provided for the workers to change during the work shift. No HEPA cartridges shall be used for longer than three (3) work shifts (one work shift equals eight hours). RESPIRATORS SHALL BE WORN AT ALL TIMES WHEN IN THE CONTAMINATED AREA. THERE WILL BE NO EXCEPTIONS.

12.2 In accordance with NIOSH, OSHA and ANSI regulations, the Contractor shall have a formal respirator-use program that, at a minimum, shall consist of the following:

a. Written standard operating procedures governing the selection and use of respirators;

b. Details on the selection of respirators on the basis of the hazards to which the worker is exposed;

c. Instruction and training procedures for the proper use respirators and their limitations;

d. Procedures for the assignment and fit testing of respirators to individual workers for their individual use;

e. Procedures for regularly cleaning and disinfecting respirators after each use;

f. Procedures for storage of respirators and filters in a convenient, clean and sanitary location;

g. Procedures for inspecting respirators during cleaning;

h. Procedures for maintaining appropriate surveillance (monitoring) of the work area and degree of employee exposure and stress;

i. Procedures for regular inspection and evaluation of the effectiveness of the program;

j. Workers shall not be assigned to tasks involving the use of respirators unless it has been determined that they are physically able to perform the work and use the equipment;

k. All respirators shall be approved, accepted and recommended.

12.3 The Contractor shall guarantee that all employees have participated and are currently participating in the respirator use program.

12.4 The Contractor shall provide full body protective clothing to workers and visitors, which shall be worn at all times when in the contaminated area.

12.5 All protective clothing shall be disposed of when leaving the contaminated area and a new set used upon return to the contaminated area.

12.6 There shall be no smoking, eating, drinking or removal of respirators for any reason in any contaminated areas (shower room, equipment room, contaminated change room and work area). Persons violating this specification shall be denied access to the work area for any reason.

SECTION 13.0 - EMERGENCY PRECAUTIONS

13.1 The Contractor shall prepare a contingency plan for emergencies including fire, accident, power failure, air filtration system failure, supplied air system failure or any other event that may require modification or abridgement of decontamination or work area isolation. No provision of this specification should impede safe exiting or provision of adequate medical attention in the event of an emergency.

13.2 The Contractor shall provide barricades and adequate protection to safely prevent passage of persons to the area of removal and prevent accidental entrance to the abatement area by any building occupants.

13.3 Before the Contractor starts actual abatement of asbestos material, the local fire department and ambulance crews shall be notified as to the dangers of entering the work area. The Contractor shall make every effort to assist these agencies and form plans of action should their personnel need to enter the contaminated area.

13.4 Local medical emergency personnel, both ambulance crews and hospital emergency room staff, shall be notified as to the possibility of having to handle injured workers who are contaminated with asbestos dust. They shall be advised on safe decontamination procedures.

13.5 First aid shall comply with the governing regulations and all recognized recommendations within the construction industry.

13.6 When an event of unusual and significant nature occurs at the site (i.e. failure of the air filtration system, rupture of temporary enclosures, etc.), the Contractor shall prepare and submit a special report listing the chain of events, persons participating, response by the work crew, results of their actions and other related information. When such events are known or predictable, the Contractor shall advise the Owner in advance at the earliest possible date.

13.7 The Contractor shall prepare and submit reports of significant accidents at the site and anywhere else work is in progress. For this purpose, a significant accident is defined to include events where personal injury is sustained, or property loss of substance is sustained, or where the event posed a significant threat of loss or personal injury.

HORIZON ENVIRONMENTAL GROUP, INC.
P.O. Box 316
Thorofare, NJ 08086
Phone: 856-848-0800
Fax: 856-848-0838

SECTION 14.0 - TEMPORARY SERVICES

14.1 The Contractor shall provide temporary connection to existing building facilities or provide temporary facilities as required herein or as necessary to carry out the work.

14.2 Water Service shall be utilized as follows:

a. All connections to the Owner's water system shall include backflow protection. Valves shall be temperature and pressure rated for operation of the temperatures and pressures encountered. After completion of use, connections and fittings shall be removed without damage or alteration to the existing water piping equipment. Leaking or dripping valves shall be piped to the nearest drain or located over an existing sink or grade where water shall not damage existing finishes or equipment.

b. The Contractor shall employ heavy-duty abrasion-resistant hoses with pressure rating greater than the maximum pressure of the water distribution system to provide water to each area and to each decontamination unit and provide fittings, as required, to allow for connection to existing wall hydrants or spouts as well as temporary heating equipment, branch piping, showers, shut-off nozzles and equipment.

c. Hot water may secured from the building's hot water system provided backflow protection is installed at the point of connections described in this section and if authorized by the Owner and their representative.

14.3 Temporary electrical service shall be utilized as follows:

a. The Contractor shall provide service to the decontamination unit sub-panel with a minimum sixty (60) amp, two (2) pole circuit breaker or fused disconnect connected to the building's main distribution panel. The sub-panel and disconnect shall be sized and equipped to accommodate all electrical equipment required for completion of the work.

b. The Contractor shall provide identification warning signs at power outlets which are other than 110-120 volt power and provide polarized outlets for plug-in type outlets to prevent insertion of 110-120 volt plugs into higher voltage outlets. Dry type transformers shall be provided, where required, to provide voltages necessary for work operations.

c. The Contractor shall provide receptacle outlets equipped with ground-fault circuit interrupters, reset button and pilot light for plug-in connection of power tools and equipment.

d. The Contractor shall use only grounded extension cords and use "hard-service" cords where exposed to abrasion and traffic. The Contractor shall only use single-length cords or waterproof connectors to connect separate lengths of electric cords, if single lengths shall not reach areas of work.

e. The Contractor provide incandescent lamps of wattage required for adequate illumination and protect the lamps with guard cages or tempered-glass enclosures where fixtures are exposed to breakage by construction operations. Exterior fixtures shall be provided where existing fixtures are exposed to moisture.

14.4 The Contractor shall provide type "A" fire extinguishers for temporary offices and similar spaces where there is any danger of electrical or grease-oil-flammable liquid fires. In other locations, type "ABC" extinguishers or a combination of several extinguishers of NFPA-recommended types for the exposure in each case shall be provided. The extinguishers shall also comply with the applicable recommendations of NFPA Standard 10 "Standard for Portable Fire Extinguishers." The Contractor shall provide not less than one extinguisher in each work area in the equipment room of the decontamination unit and one (1) outside the work area in the clean room. If there is to be any use of cutting torches, one worker shall maintain a fire watch in each area, constantly having immediate access to an extinguisher.

SECTION 15.0 - DECONTAMINATION PROCEDURES

15.1 Where required, the Contractor shall provide an adequate decontamination unit consisting of a serial arrangement of rooms or spaces adjoining the work area or a decontamination trailer. Each airlock shall be clearly identified and separated from the others by plastic crossover sheet doors designed to minimize fiber and air transfer as people pass

between areas. A minimum of two (2) layers of six (6) mil polyethylene shall be required for floors, walls and the ceiling for the on-site constructed decontamination units. Plastic cross-over sheet doors shall have at least three layers of six mil polyethylene sheets and be weighted so as to fall into place when people pass through the area. Decontamination chamber doors shall be of sufficient height and width to enable replacement of equipment that may fail and to safely stretcher or carry an injured worker from the site without the destruction of the chamber or unnecessary risk to the integrity of the work area. Such doorways must be at least four feet (4') wide and the distance between each set of flaps must be at least four feet (4') apart. Any alternative methods to the use of cross-over polyethylene sheet doors, including louvered or flapped swinging doors, must be approved by the Owner or its representative. Alternative doors shall swing in both directions.

15.2 The Personnel Decontamination Unit shall be constructed as follows:

a. A Changing Room shall be provided for the purpose of changing into protective clothing. It shall be constructed using polyethylene sheeting (minimum: six-mil in thickness) and located in a manner such that access shall to the work area shall be from the changing room through the shower room. If both males and females utilize the decontamination unit, black or opaque polyethylene shall be utilized. This room shall be separated from the building by three interlocking weighted flaps made of six-mil polyethylene.

b. In this room, the worker shall leave all street clothes and dress in clean disposable coveralls and put on respiratory protection. No asbestos-contaminated items shall be allowed to enter this room. Workers shall enter this room either from outside the structure dressed in street clothing or naked from the showers.

c. A suitable existing room may be used as the changing room if it is suitably located and a configuration whereby workpersons may enter the changing room directly from the shower room. Authorization for this shall be obtained from the Owner's representative in writing prior to the start of work.

d. The floor of the changing room shall be kept dry and clean at all times. Overflow water from shower shall not be allowed to wet the floor in the changing room.

e. All surfaces in the change room shall damp wiped twice after each shift with a disinfectant solution.

f. An adequate supply of bath towels shall be available at all times.

g. The Contractor shall post information for all emergency phone numbers and procedures and provide storage lockers for employees.

h. The Contractor shall construct a Shower Room used for transit by cleanly dressed workers entering the work area from the outside or by workers headed for the showers after undressing in the equipment room. This room shall be separated from the clean room and equipment room by three (3) interlocking weighted flaps made of six-mil polyethylene. The Contractor shall provide a fully operational portable shower and temporary extensions of existing hot and cold water and drainage, as necessary, to properly operate this shower. If males and females both use the shower, the shower room shall be constructed of black or opaque polyethylene.

i. An adequate supply of soap and shampoo shall be available at all times and the shower shall be maintained in a sanitary condition.

j. The shower shall be arranged in a manner as to prevent water from splashing into the clean room.

k. The water shut off and drain pump operation controls shall be arranged so a single person may shower without assistance from either inside or outside the work area. he shower shall have a stationary adjustable shower head with hot and cold water controls. A garden hose gun is NOT acceptable.

l. The shower stall shall be constructed of fiberglass or some other permanent material. The shower stall shall not be constructed of polyethylene. The stall shall be a step-through type with an opening at least four feet (4') to allow emergency access to the work area.

m. The shower must have a drainage basin with a pump to prevent overflow. The shower shall have a platform to stand on. No standing in water shall be permitted.

n. The Contractor shall construct an Equipment Room used for transit by cleanly dressed workers entering the work area from the outside or by workers headed for the showers after exiting from the work area. This room shall be separated from the work area and shower room by three (3) interlocking weighted flaps made of six-mil polyethylene. The Contractor shall leave work equipment, footwear and additional contaminated work clothing in this area. If males and females both use the decontamination unit, the equipment room shall be constructed of black or opaque polyethylene.

o. The work area shall be separated from the equipment room by three (3) interlocking weighted flaps made of six-mil polyethylene. The Contractor shall damp wipe clean all surfaces after each shift change to prevent the buildup of debris on the polyethylene.

p. Arrows shall be placed on all weighted flaps in the decontamination unit to indicate the direction of the overlap and travel.

q. If any decontamination unit is located within an area containing asbestos-containing material on overhead ceilings, ducts, piping, etc., the decontamination unit shall be constructed with a plywood ceiling (at least 1/4" thick) covered with at least one layer of six-mil thick polyethylene.

r. Where the decontamination area is immediately adjacent to and/or within view of occupied areas, a visual barrier of six-mil thick sheet of opaque polyethylene shall be constructed in order to maintain worker privacy and shield the work activities from view. If the area adjacent to the decontamination area is accessible to the public, the Contractor shall construct a solid barrier on the public side of the sheeting to protect it. This barrier shall be constructed of 1/2 inch thick plywood and wood or metal studs and covered with two layers of six-mil polyethylene on each side.

s. The Contractor shall provide a subpanel at the changing room or a location approved by the Environmental Project Manager to accommodate all needed equipment. The source of power shall come directly from a building electrical panel. All electrical branch circuits shall be connected to ground-fault circuit protection devices.

15.3 The decontamination sequence is as follows:

a. The workers shall enter the work area in the following manner:

1. The worker enters the change room and removes street clothing, puts on clean disposable coveralls and respirator and passes through the shower room into the equipment room.

2. Any additional clothing and equipment left in the equipment room and required by the worker is put on. These items shall be treated as asbestos-contaminated.

3. The worker then proceeds to the work area.

b. The workers shall exit the work area in the following manner:

1. Before leaving the work area, the worker shall remove all gross debris from coveralls and feet.

2. The worker then proceeds to the equipment room and removes all clothing except for respiratory protection equipment. Extra work clothing may be stored in the contaminated end of the equipment room. Disposable clothing shall be place in a bag for disposal with other contaminated material.

3. After showering, the worker proceeds to the change room and dresses in either new coveralls for another entry into the work area or street clothes if exiting the site.

15.4 All workers shall adhere to the following personal decontamination procedures when exiting the work area:

a. When exiting the area, the worker shall remove disposable coveralls, disposable head covers, disposable footwear in the equipment room. Still wearing a respirator, the worker MUST proceed to the shower and adhere to the following procedure:

1. The worker shall thoroughly wet the body including hair and face. If using a PAPR, the worker shall hold the blower unit away from the water to keep the unit dry.

2. With the respirator still in place, the worker shall thoroughly wash the body, hair, respirator facepiece and all parts of the respirator (except the blower unit and battery pack of a PAPR).

3. The worker shall take a deep breath and remove the respirator after completely wetting the hair, face and respirator. After removing the respirator, the worker shall wash the face piece inside and out.

4. The worker shall shut off the PAPR, cap the inlets to the cartridges, thoroughly wash the blower unit and hoses and wash the battery pack with a wet rag. Do not get water in the battery pack or it will short out and destroy the battery.

5. The worker shall shower completely with soap, shampoo and water and rinse thoroughly.

b. The worker shall rinse off the shower room walls and floor prior to exit and proceed from the shower to the change room.

15.5 A Waste or Equipment Decontamination Unit may be constructed if needed. This type of decontamination unit shall consist of one (1) chamber four feet by four feet in size (4' x 4'), constructed of two (2) layers of six-mil polyethylene mounted on wood or metal studs.

a. The first room shall be a Wash Room. This shall be for cleaning of bagged or packaged asbestos-containing waste materials passed from the work area. This room shall contain a hose to clean the material. This room shall be separated from the work area by a doorway with three (3) interlocking weighted flaps made of six-mil polyethylene.

b. Equipment or material shall be taken from the work area through the Equipment Decontamination Unit as follows:

1. In the wash room, the contaminated equipment or sealed polyethylene bags shall be cleaned and passed through the clean room. All sealed waste bags are placed in another clean bag and passed to workers on the exterior of the building for placement in the waste container. All clean equipment shall be placed in an area away from the work area.

2. AT NO TIME SHALL ANY WORKERS PASS THROUGH THE WASTE DECONTAMINATION UNIT WHILE ENTERING OR EXITING THE WORK AREA!

15.6 Debris and residue shall be cleaned from the inside of the decontamination units and from the shower pans on a daily basis. After each shift change, all surfaces shall be damp wiped or hosed down. If the change room of the personnel decontamination becomes contaminated with asbestos-contaminated debris, the entire decontamination unit shall be sealed off and abandoned and a new decontamination unit shall be erected with the former changing room used as the new equipment room.

SECTION 16.0 - WORK AREA PREPARATION

16.1 The "work area" is the area where the abatement of asbestos-containing materials is to occur. The work area is considered to be contaminated during the abatement work and shall be isolated from the rest of the building and decontaminated at the completion of the asbestos abatement work.

16.2 The Contractor shall completely isolate the work area from other parts of the building so as to prevent asbestos-containing dust or debris from passing beyond the work area(s). Should the area beyond the work area(s) become contaminated with asbestos-containing dust or debris as a consequence of the work, the Contractor shall clean those areas at no additional cost to the Building Owner.

16.3 The Contractor shall place all tools, scaffolding, staging, etc. necessary for the work in the area to be isolated prior to the erection of the plastic sheeting and temporary enclosure.

16.4 Employees of the Contractor permitted pursuant to N.J.A.C. 8:60 and N.J.A.C. 12:120 or persons employed by the Building Owner, who have successfully completed a maintenance/custodial/worker training course approved by the NJDOH, unless the room and objects within it are shown to be uncontaminated by asbestos in which case other employees of the Building Owner or Contractor may be used, shall clean with wet cloths and/or HEPA vacuums as appropriate all items that can be removed from the work area without disrupting the asbestos material, unless the room and objects within it are shown to be uncontaminated by asbestos in which case other employees of the Building Owner or Contractor may conduct the cleaning. This shall include furniture, equipment, drapes and curtains. The cloths used for cleaning shall be disposed of as asbestos-contaminated waste.

16.5 In accordance with applicable Federal or State regulations, the Building Owner shall clean and remove all uncontaminated removable merchandise, equipment and/or supplies from the work area before commencing work and completely cover them with two (2) layers of six-mil polyethylene securely held in place with duct tape. Such merchandise and equipment shall be considered outside the work area unless the covering plastic or the seal is breached.

16.6 The Contractor shall put warning signs at all physical and visual barriers.

16.7 Before continuing with any work in preparing temporary enclosures, the Contractor shall provide workers with respiratory protection.

16.8 Critical barriers shall be constructed as follows:

a. The Contractor shall separate the work area from other portions of the building and exterior with 2" wide caution tape and warning signs.

b. The entrance into a work area shall have three weighted interlocking flaps constructed of six mil polyethylene.

c. All ventilation openings, lighting fixtures, doorways, windows, skylights, convectors, floor drains and other openings shall be sealed with two (2) layers of six-mil polyethylene sheeting and/or duct tape. These seals shall be maintained until all work, including project decontamination, is completed. Care shall be taken in sealing lighting fixtures to avoid melting or burning of sheeting.

d. If needed, sheet plastic shall be mechanically supported independently of tape or spray cement seals so that the seals do not support the weight of the plastic, by mounting plywood squares (6" x 6" x 3/8") shall be mounted on the tape and plastic at each end corner at a maximum of four feet on centers and held in place with one 6d smooth masonry nail or electra galvanized common nail driven through the center of the plastic.

16.9 Where required, the Contractor shall construct a proper Decontamination Unit and install a proper Air Filtration System.

16.10 The Contractor shall clean housings and ducts of all dust/dirt materials prior to the erection of the primary seal/critical barrier polyethylene sheeting.

16.11 All electrical and mechanical items such as lighting fixtures, clocks, diffusers, registers, electric panels, escutcheon plates, etc. which cover any part of the surface to be worked on shall be removed or properly sealed with two (2) layers of fire-rated six (6) mil polyethylene.

16.12 If the enclosure barrier is breached in any manner that could allow the passage of asbestos debris or airborne fibers, the affected area shall be added to the work area and enclosed in a manner the same as the work area.

16.13 Any free-standing containment barriers or tunnels shall be constructed of three (3) layers of six (6) mil polyethylene mounted on 2" x 4" studs placed 16" o. c. apart. Furring strips shall be used as needed.

SECTION 17.0 - WET REMOVAL OF ASBESTOS-CONTAINING OR ASBESTOS-CONTAMINATED MATERIALS

17.1 Where applicable, wet removal of friable asbestos-containing and asbestos-contaminated materials shall be conducted as follows:

a. Any changes to this procedure shall be in writing from the Environmental Project Manager.

b. Prior to and during the abatement, all asbestos-containing and asbestos-contaminated materials shall be misted with amended water, which shall aid in minimizing fiber release during work. The material shall be wetted as necessary to ensure that the material is thoroughly wetted throughout.

c. A fine, low-pressure spray of amended water or removal sealant shall be applied to prevent fiber disturbances prior to removal. The use of high revolutions per minute (RPM) power equipment, pressure washers or hydro-blasters is prohibited.

d. Work shall start in areas nearest to the decontamination unit and work towards the air filtration units.

e. Removal of the asbestos material shall be done in small sections by two-person teams, on staging platforms, if needed. The wet material from each section shall be packed and sealed in six-mil plastic bags. When possible, one worker will remove and hand sections of the material to the other worker who will place the material in bags.

f. All water-soaked material shall be picked up and bagged before it dries to prevent water loss due to evaporation. The Contractor shall maintain good housekeeping practices throughout the duration of the project.

g. Contaminated material with sharp edged items shall be cut to size while adequately wet, placed in small cardboard boxes and double-bagged, or single-bagged and placed in fiber drums.

h. Bags and drums shall be marked with the label prescribed in Section 61.22(c) of the EPA regulations. The outside of all containers shall be wet cleaned or HEPA vacuumed before leaving the work area.

i. After removal, the underlying material shall be brushed with a stiff, nylon bristle brush. WIRE BRUSHES ARE NOT PERMITTED. After the substrate is brushed, it shall be wet wiped with amended water.

j. If at any time the airborne fiber level inside the isolated work area exceeds 0.1 f/cc (action level), the work shall stop immediately and air cleaning, wetting and surface cleaning procedures shall be implemented.

k. The first worker to enter the removal area at the beginning of each work day shall carefully wet the walls and floors with a fine mist of amended water in order to moisten and residues which may have dried from the previous day.

l. All free water (in contaminated areas) shall be retrieved and added to asbestos-contaminated waste and/or placed in plastic lined leak-tight drums and/or solidified with an acceptable polymer.

SECTION 18.0 - INTENTIONALLY OMITTED

SECTION 19.0 - APPLICATION OF SEALANT

19.1 Unless approved by contractor installing the new floor in the areas, sealant shall not be applied to the floor covering removal areas.

19.2 Unless approved by the district or their representatives, sealant shall not be applied to the door frame areas from which the caulk is removed.

19.3 All sealant used on this project shall be an asbestos-binding compound or approved equal.

19.4 Application of sealant shall proceed as follows:

a. After completion of the cleaning of all surfaces in the work area, the Contractor shall spray coat all dried exposed surfaces with a sealant. The color of this coat shall be separate and distinct from the underlying substrate. The surfaces to be coated shall include surfaces from which asbestos-containing materials have been removed and the polyethylene which has been used to cover walls, floors, non-removable fixtures and equipment.

b. Two (2) coats of the sealant shall be applied to the substrate after all asbestos-containing material has been removed. Application of the sealant shall be with an airless spray gun and shall be in strict accordance with the manufacturer's instructions.

SECTION 20.0 - CLEANUP PROCEDURES

20.1 At the completion of the asbestos abatement work, all gross debris generated by the asbestos abatement work will have been removed and disposed of.

20.2 At the commencement of the cleanup work, the primary protection barriers, the separation barriers between the work area and non-work areas, primary seals on fixtures, doorways, vents, etc., all decontamination units and the air filtration devices shall be in place and fully operational.

20.3 The first cleaning of all surfaces in the work area, including items of the remaining sheeting, tools, scaffolding and/or staging equipment shall be done by damp cleaning and mopping and/or vacuuming with a high efficiency particulate (HEPA) filtered vacuum. No dry dusting or sweeping shall be permitted and all cloths used in the cleaning shall be disposed of as asbestos-containing material. This cleaning shall be continued until there is no visible debris from removed materials or residue on plastic sheeting or other surfaces.

20.4 After cleaning, the Contractor shall wait a sufficient amount of time to allow the surfaces to dry and to allow the air filtration machines to clean the air. The air filtration machines shall remain in operation at all times.

20.5 After the sealant (where applicable) has been applied and allowed to dry, any polyethylene used to cover the ceilings, floors, walls, fixtures and equipment shall be carefully removed and rolled up with the contaminated portion inside. All equipment, machinery, scaffolding, tools, etc., within the isolated work area shall be cleaned with amended water, moved to the equipment room and properly removed from the work area.

20.6 After the removal of the polyethylene, a final cleaning of the area shall be done. All surfaces shall be cleaned, allowed to dry and cleaned again. Used cloths and sponges shall be disposed of as contaminated waste. Air filtration units shall remain in operation at all times and sufficient time shall be allotted to allow all surfaces in the area to dry.

20.7 If the area is found to visually clean, the air monitoring technician shall perform re-occupancy sampling. If the reoccupancy standard(s) [0.010 fibers per cubic centimeter for each of five (5) samples taken within the work area and/or an average of 70 structures per square millimeter for five samples taken within the work area] is/are not met, final cleaning and air testing procedures shall be repeated. If the re-occupancy standards are met, the Contractor shall remove the critical barriers separating the work area from the rest of the building, clean with amended water all areas where the barriers were attached and remove the air filtration system.

20.8 Where permitted, post-removal samples shall be taken and analyzed by Phase Contrast Microscopy (PCM), using the method outlined in the NIOSH Method 7400.

a. After the work area is clean, post-removal sampling shall be done in order to establish that conditions are safe for the removal of the critical barriers and the re-occupancy of the area. Sufficient time shall be allowed for the drying of the surfaces. All air filtration units shall be in operation during the monitoring.

b. During the monitoring, normal occupancy conditions shall simulated using propeller fans or leaf blowers. Fans shall be placed in all areas to be sampled so as to cause settled fibers to rise and enter the air. All fans shall have fan blades with a radius of at least one foot and shall be capable of creating a minimum air velocity of 500 feet per minute and may be of the oscillating type. Sampling pumps and media shall be placed 20-40 feet at a right angle from the line(s) of air flow created in front of the fan. The leaf blower and its use must meet the criteria set forth in EPA Document 560/5-85-024, Guidance for Controlling Asbestos-Containing Materials in Buildings, appendix section M.1.5., or any replacement criteria set forth by the USEPA. Their use should be restricted to general occupancy areas, and they should not be used in any space with an open dirt, sand or gravel floor.

c. If the re-occupancy standard (<0.010 fibers per cubic centimeter Phase Contrast) is not met, the Contractor shall repeat final cleaning and continue decontamination procedures from that point. The Contractor shall be

responsible for all costs incurred for additional air monitoring procedures, including labor and air sample analysis.

d. If the release criteria is met, the Contractor shall remove the critical barriers separating the work area from the rest of the building and clean with amended water all areas where the barriers were attached. The air filtration units shall be shut down and sealed with polyethylene sheeting and tape to form a tight seal at the intake.

20.9 Where required, post-removal samples shall be taken and analyzed by Transmission Electron Microscopy (TEM), using the method outlined in 40 CFR 763.

a. After the work area is clean, post-removal sampling shall be done in order to establish that conditions are safe for the removal of the critical barriers and the re-occupancy of the area. Sufficient time shall be allowed for the drying of the surfaces. All air filtration units shall be in operation during the monitoring.

b. During the monitoring, normal occupancy conditions shall simulated using propeller fans or leaf blowers. Fans shall be placed in all areas to be sampled so as to cause settled fibers to rise and enter the air. All fans shall have fan blades with a radius of at least one foot and shall be capable of creating a minimum air velocity of 500 feet per minute and may be of the oscillating type. Sampling pumps and media shall be placed 20-40 feet at a right angle from the line(s) of air flow created in front of the fan. The leaf blower and its use must meet the criteria set forth in EPA Document 560/5-85-024, Guidance for Controlling Asbestos-Containing Materials in Buildings, appendix section M.1.5., or any replacement criteria set forth by the USEPA. Their use should be restricted to general occupancy areas, and they should not be used in any space with an open dirt, sand or gravel floor.

c. If the re-occupancy standard is not met, the Contractor shall repeat final cleaning and continue decontamination procedures from that point. The Contractor shall be responsible for all costs incurred for additional air monitoring procedures, including labor and air sample analysis.

d. If the release criteria is met, the Contractor shall remove the critical barriers separating the work area from the rest of the building and clean with amended water all areas where the barriers were attached. The air filtration units shall be shut down and sealed with polyethylene sheeting and tape to form a tight seal at the intake.

SECTION 21.0 - DISPOSAL OF ASBESTOS-CONTAINING WASTE

21.1 The Contractor shall not allow asbestos materials to dry out or collect on the floors. Removed material shall be immediately placed in proper bags and sealed. All sharp-edged materials shall be packaged in fiber drums or burlap bags in addition to the polyethylene bags.

21.2 Each bag is to be sealed by twisting the open end and then tying an overhand knot in the twisted material or other approved technique which form a leak-tight seal. The bag shall then be placed in another bag, which is also sealed for transport to the disposal site. Broken or split bags shall be rebagged.

21.3 Warning labels, having waterproof print and permanent waterproof adhesive, shall be affixed to all bags, dumpsters, trucks and other containers used for asbestos. The labels shall be conspicuous and legible and shall contain the following warning (as a minimum):

DANGER
Contains Asbestos Fibers
May Cause Cancer
Causes Damage to Lungs
Do Not Breathe Dust
Avoid Creating Dust

21.4 All waste bags shall also be labeled with the name and address of the Contractor and the generator of the waste.

21.5 All waste shall be placed in a waste container located outside of the building. The waste shall be transported to the container when the building is least occupied. The waste container shall be completely enclosed and locked and is to be only opened to put in materials from the removal area. Warning signs shall be placed on the waste container.

21.6 The Contractor shall transport all sealed bags to an approved sanitary landfill disposal site. Disposal shall be in accordance with all applicable Environmental Protection Agency and Department of Environmental Protection regulations.

21.7 The Contractor shall be responsible for obtaining approval of an asbestos waste disposal site in compliance with Section 61.25 of the EPA regulations and all other Federal, State and Local regulations. All transportation shall be performed by a registered waste hauler. The Contractor shall arrange with the transporter to obtain copies of receipts from the disposal site, indicating that the waste has been disposed of properly. The Contractor shall forward copies of these receipts to the Building Owner and their representatives.

SECTION 22.0 - AIR MONITORING

22.1 Where required, air monitoring on this project (except OSHA compliance monitoring) shall be performed by the third-party air sampling firm employed by the school district. The Abatement Contractor shall be responsible for providing daily OSHA compliance monitoring as per 29 CFR 1926.58 at no cost to the Building Owner. The Contractor shall fully cooperate with the safety monitor and all others responsible for testing and inspecting the jobsite.

22.2 None of the air tests collected by the Owner or their representatives are being collected for the purpose of meeting the Contractor's responsibilities under OSHA regulations, nor are they being conducted for the purpose of assessing the respiratory protection for the workers. It is the responsibility of the Contractor and their personnel to cooperate fully with the efforts of the Owner and their representatives at all times and ensure the ease of access to and from the work area for the effective completion of the monitoring work.

22.3 Any tampering with any equipment involved with the air testing or the ability of the air monitoring technician to perform any required duties shall be considered an attempt at falsifying reports and records to Federal and State agencies, and each offense shall be prosecuted under applicable State and Federal laws to the fullest extent possible.

22.4 No abatement work shall be initiated unless the Owner's representatives have been notified.

22.5 All abatement procedures may be stopped by the Environmental Project Managers if proper environmental, health and safety precautions are not strictly adhered to by the Contractor and their personnel. The Owner and their representative reserve the right to stop abatement operations and cancel the contract if proper environmental, health and safety precautions are not being strictly implemented and adhered to by the Contractor and their personnel.

SECTION 23.0 - COMPLETION OF ABATEMENT/CONTRACTOR'S FINAL DOCUMENTATION

23.1 Upon completion of the work and meeting of the clearance criteria, the Contractor shall remove all equipment, materials and debris from the work site, dispose of all asbestos-containing waste material as specified and repair or replace all interior finishes damaged during the course of the asbestos abatement.

23.2 If any post-removal air tests or final inspections fail to meet the evaluation criteria, the Contractor shall be liable for the costs of additional air tests and technician labor.

23.3 The Contractor shall submit a report to the Owner upon completion of the removal project. The report shall contain all daily logs, operational data, a summary of all daily OSHA compliance test results, updated medical reports, proof that employees were notified if exposure levels exceeded current standards and documented proof that all asbestos materials have been disposed of in a legal, regulated landfill. No payments shall be made until all waste materials have been removed from the site and disposed of in a legal manner.

23.4 Request for payment may be withheld if all reports are not complete. The report shall be signed by an authorized representative of the Contractor.

HORIZON ENVIRONMENTAL GROUP, INC.
P.O. Box 316
Thorofare, NJ 08086
Phone: 856-848-0800
Fax: 856-848-0838

ASBESTOS BULK SAMPLING REPORT

for

LINDENWOLD BOARD OF EDUCATION
MAIN ENTRANCE SECURITY ENHANCEMENT PROJECT

LINDENWOLD HIGH SCHOOL
LINDENWOLD MIDDLE SCHOOL
LINDENWOLD SCHOOL NO. 4
LINDENWOLD SCHOOL NO. 5

Report No.: 92013-79

Date of Report: January 28, 2021

Prepared For: Lindenwold Board of Education
801 Egg Harbor Road
Lindenwold, NJ 08021

Prepared By: Horizon Environmental Group, Inc.
P. O. Box 316
Thorofare, NJ 08086

LINDENWOLD HIGH SCHOOL

LINDENWOLD HIGH SCHOOL

Introduction. In conjunction with the upcoming entry security enhancement project and pursuant to the authorization of officials from the Lindenwold Board of Education, bulk samples of suspected asbestos-containing materials were collected from the main entrance area of Lindenwold High School. The samples were collected by accredited personnel from HORIZON ENVIRONMENTAL GROUP, INC. of Thorofare, New Jersey on January 19, 2021, and submitted to EMSL Analytical, Inc. in Cinnaminson, New Jersey for analysis by Polarized Light Microscopy (PLM EPA Method 600/r-93/116). Please note that no sampling or inspection procedures were performed in areas that could not be safely accessed at the time of the inspection, including areas above fixed ceilings, behind walls or beneath floors and that no demolition of building materials was performed.

Notes.

1. The USEPA defines an asbestos-containing material as any material that contains greater than one percent (>1%) asbestos, by weight. The USEPA and other regulatory agencies recommend that samples of non-friable materials analyzed by Polarized Light Microscopy (PLM) which are reported as containing no asbestos should be re-analyzed using point counting or Transmission Electron Microscopy (TEM). The USEPA and other regulatory agencies recommend that samples analyzed by Polarized Light Microscopy which are reported as containing less than 1% asbestos, by weight, should be re-analyzed using point counting or Transmission Electron Microscopy.

2. State of New Jersey regulations require that all asbestos-containing materials be removed from any structure which is to be demolished. In addition, the regulations require that any asbestos-containing materials which may be disturbed or damaged during the course of renovation work be removed prior to the commencement of the renovations.

3. Using PLM analysis, each sample of the ceiling tiles and door caulk collected from the main entrance area at Lindenwold High School was reported by the analytical laboratory as none detected for asbestos.

4. The New Jersey Department of Labor and Workforce Development (DOL), relying on a 1994 USEPA guidance document regarding the sampling of non-friable materials (also referred to as NOBs, or Non-Friable Organically Bound materials) has adopted guidelines (N. J. A. C. 12:120 Appendix) that state that they are enforcing the USEPA recommendation that bulk samples of non-friable materials be analyzed using Transmission Electron Microscopy (TEM). While the DOL acknowledges that this requirement is not a regulation for building owners or their consultants, they have stated that, if they so desire, they will collect their own samples of these materials at a site and have the samples analyzed by TEM. If their results show that a material is positive, they state they will act accordingly if the material is not (or was not) removed prior to any renovation or demolition activities. Therefore, one sample of the door caulk found at the site was re-analyzed by TEM, in accordance with State of New Jersey regulations. The result of the reanalysis of the sample is as follows:

Sample Number	Location	Description	Asbestos Content
210119-B003	Main Entrance - Inner Doors	Caulk	None Detected

Sample Log and Results.

Sample Number	Location	Description	Asbestos Content
210119-B001	Main Entrance - Vestibule	2' x 4' White Small Hole Ceiling Tile	None Detected
210119-B002	Main Entrance - Vestibule	2' x 4' White Small Hole Ceiling Tile	None Detected
210119-B003	Main Entrance - Inner Doors	Caulk	None Detected
210119-B004	Main Entrance - Inner Doors	Caulk	None Detected

EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID:	042101395
Customer ID:	MDS50
Customer PO:	
Project ID:	

Attn: Steve Flanigan
Horizon Environmental Group, Inc.
PO Box 316
Thorofare, NJ 08086

Phone:	(856) 848-0800
Fax:	(856) 848-0838
Collected:	1/19/2021
Received:	1/19/2021
Analyzed:	1/26/2021

Proj: 92013-79 / Lindenwold Board of Education / Lindenwold HS

Summary Test Report for Asbestos Analysis in Accordance with N.J.A.C. 8:60 and 12:120 via EPA 600/R-93/116

Client Sample ID: 210119-B001 ***Lab Sample ID:*** **042101395-0001**

Sample Description: Main Entrance - Vestibule/2'x4' White Small hole CT

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Gray/White	80.0%	20.0%	None Detected	

Client Sample ID: 210119-B002 ***Lab Sample ID:*** **042101395-0002**

Sample Description: Main Entrance - Vestibule/2'x4' White Small hole CT

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Gray/White	80.0%	20.0%	None Detected	

Client Sample ID: 210119-B003 ***Lab Sample ID:*** **042101395-0003**

Sample Description: Main Entrance - Inner Doors/Caulk

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	White	0.0%	100.0%	None Detected	
TEM Grav. Reduction	1/26/2021	White	0.0%	100.0%	None Detected	

Client Sample ID: 210119-B004 ***Lab Sample ID:*** **042101395-0004**

Sample Description: Main Entrance - Inner Doors/Caulk

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	White	0.0%	100.0%	None Detected	

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID:	042101395
Customer ID:	MDS50
Customer PO:	
Project ID:	

Summary Test Report for Asbestos Analysis in Accordance with N.J.A.C. 8:60 and 12:120 via EPA 600/R-93/116

Analyst(s):

Debbie Little	TEM Grav. Reduction (1)
Quynh Vu	PLM (2)
Shelby Baker	PLM (2)

Reviewed and approved by:

Samantha Rundstrom, Laboratory Manager
or Other Approved Signatory

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NVLAP Lab Code 101048-0, AIHA-LAP, LLC-IHLAP Lab 100194, NYS ELAP 10872, NJ DEP 03036, PA ID# 68-00367, LA #04127

Initial report from: 01/22/202112:31:40

LINDENWOLD MIDDLE SCHOOL

LINDENWOLD MIDDLE SCHOOL

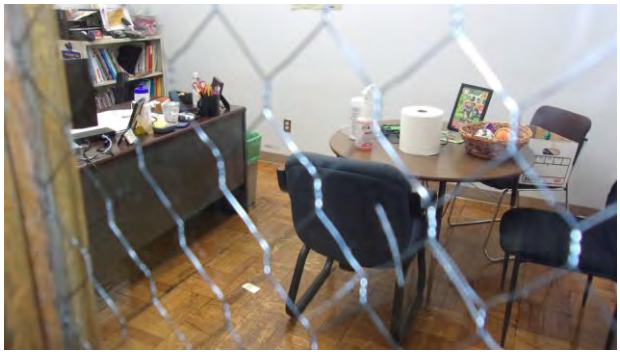
Introduction. In conjunction with the upcoming entry security enhancement project and pursuant to the authorization of officials from the Lindenwold Board of Education, bulk samples of suspected asbestos-containing materials were collected from the CST Office (B115), the CST Conference Room and the adjacent hallway area at Lindenwold Middle School. The samples were collected by accredited personnel from HORIZON ENVIRONMENTAL GROUP, INC. of Thorofare, New Jersey on January 19, 2021, and submitted to EMSL Analytical, Inc. in Cinnaminson, New Jersey for analysis by Polarized Light Microscopy (PLM EPA Method 600/r-93/116). Please note that no sampling or inspection procedures were performed in areas that could not be safely accessed at the time of the inspection, including areas above fixed ceilings, behind walls or beneath floors and that no demolition of building materials was performed.

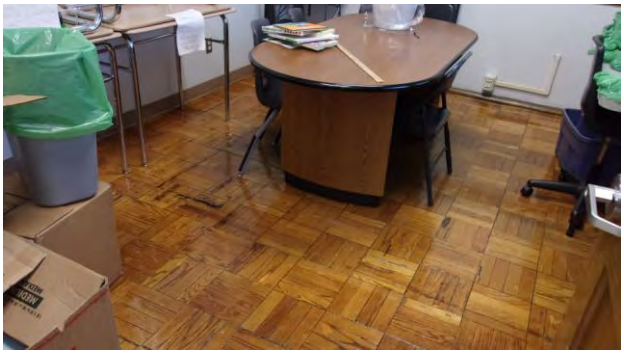
Notes.

1. The USEPA defines an asbestos-containing material as any material that contains greater than one percent (>1%) asbestos, by weight. The USEPA and other regulatory agencies recommend that samples of non-friable materials analyzed by Polarized Light Microscopy which are reported as containing no asbestos should be re-analyzed using point counting or Transmission Electron Microscopy. The USEPA and other regulatory agencies recommend that samples analyzed by Polarized Light Microscopy which are reported as containing less than 1% asbestos, by weight, should be re-analyzed using point counting or Transmission Electron Microscopy.

2. State of New Jersey regulations require that all asbestos-containing materials be removed from any structure which is to be demolished. In addition, the regulations require that any asbestos-containing materials which may be disturbed or damaged during the course of renovation work be removed prior to the commencement of the renovations.

3. Based on the results of prior sampling at the school, there are approximately 300 square feet of asbestos-containing mastic found beneath the parquet flooring materials found in the CST Office (B115) and the adjacent CST Conference Room.





4. Using PLM analysis, all of the bulk samples collected at Lindenwold Middle School on January 19, 2021, were reported by the analytical laboratory as none detected for asbestos.

5. The New Jersey Department of Labor and Workforce Development (DOL), relying on a 1994 USEPA guidance document regarding the sampling of non-friable materials (also referred to as NOBs, or Non-Friable Organically Bound materials) has adopted guidelines (N. J. A. C. 12:120 Appendix) that state that they are enforcing the USEPA recommendation that bulk samples of non-friable materials be analyzed using Transmission Electron Microscopy (TEM). While the DOL acknowledges that this requirement is not a regulation for building owners or their consultants, they have stated that, if they so desire, they will collect their own samples of these materials at a site and have the samples analyzed by TEM. If their results show that a material is positive, they state they will act accordingly if the material is not (or was not) removed prior to any renovation or demolition activities. Therefore, one sample of the spline ceiling tile glue and one sample of the window caulk found at the site was re-analyzed by TEM, in accordance with State of New Jersey regulations. The result of the reanalysis of the sample is as follows:

Sample Number	Location	Description	Asbestos Content
210119-B010	CST Conference Room	Spline Ceiling Tile Glue Dot	None Detected
210119-B016	CST Conference Room - Exterior Window	Caulk	None Detected

Sample Log and Results.

Sample Number	Location	Description	Asbestos Content
210119-B001	Hallway near CST Office/Conf Room (Wall)	Plaster (Skim Coat)	None Detected
	Hallway near CST Office/Conf Room (Wall)	Plaster (Base Coat)	None Detected
210119-B002	Hallway near CST Office/Conf Room (Wall)	Ceramic Wall Tile Mortar	None Detected
210119-B003	Hallway near CST Office/Conf Room (Wall)	Ceramic Wall Tile Mortar	None Detected
210119-B004	CST Office B115	Drywall	None Detected
210119-B005	CST Office B115	1' x 1' White Hole Spline Ceiling Tile	None Detected
210119-B006	CST Office B115 (Ceiling)	Plaster (Skim Coat)	None Detected
		Plaster (Base Coat)	None Detected
210119-B007	CST Conference Room	1' x 1' White Hole Spline Ceiling Tile	None Detected
210119-B008	CST Conference Room	Drywall	None Detected
210119-B009	CST Conference Room	2' x 2' White Pitted Ceiling Tile	None Detected
210119-B010	CST Conference Room	Spline Ceiling Tile Glue Dot	None Detected
210119-B011	CST Conference Room	Spline Ceiling Tile Glue Dot	None Detected
210119-B012	Hallway near CST Office/Conf Room (Wall)	2' x 2' White Pitted Ceiling Tile	None Detected
210119-B013	CST Conference Room	Beige Cove Base	None Detected
210119-B014	CST Conference Room	Cove Base Mastic	None Detected
210119-B015	CST Conference Room - Exterior Window	Caulk	None Detected
210119-B016	CST Conference Room - Exterior Window	Caulk	None Detected

EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

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Attn: Dave Flanigan
Horizon Environmental Group, Inc.
PO Box 316
Thorofare, NJ 08086

Phone:	(856) 848-0800
Fax:	(856) 848-0838
Collected:	1/19/2021
Received:	1/19/2021
Analyzed:	1/26/2021

Proj: 92013-79 / Lindenwold Board of Education / Lindenwold Middle School

Summary Test Report for Asbestos Analysis in Accordance with N.J.A.C. 8:60 and 12:120 via EPA 600/R-93/116

Client Sample ID: 210119-B001-Skim Coat — ***Lab Sample ID:*** 042101394-0001
Sample Description: Hallway near CST Office / Conference Room - Wall/Plaster

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	White	0.0%	100.0%	None Detected	

Client Sample ID: 210119-B001-Base Coat — ***Lab Sample ID:*** 042101394-0001A
Sample Description: Hallway near CST Office / Conference Room - Wall/Plaster

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 210119-B002 — ***Lab Sample ID:*** 042101394-0002
Sample Description: Hallway near CST Office / Conference Room/Ceramic Wall Tile Mortar

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 210119-B003 — ***Lab Sample ID:*** 042101394-0003
Sample Description: Hallway near CST Office / Conference Room/Ceramic Wall Tile Mortar

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 210119-B004 — ***Lab Sample ID:*** 042101394-0004
Sample Description: CST Office B115/Drywall

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Brown/White	20.0%	80.0%	None Detected	

Client Sample ID: 210119-B005 — ***Lab Sample ID:*** 042101394-0005
Sample Description: CST Office B115/1'x1' White Hole Spline Ceiling Tile

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Brown/Red	80.0%	20.0%	None Detected	

Client Sample ID: 210119-B006-Skim Coat — ***Lab Sample ID:*** 042101394-0006
Sample Description: CST Office B115 - Ceiling/Plaster

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	White	0.0%	100.0%	None Detected	

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
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Project ID:	

Summary Test Report for Asbestos Analysis in Accordance with N.J.A.C. 8:60 and 12:120 via EPA 600/R-93/116

Client Sample ID: 210119-B006-Base Coat ***Lab Sample ID:*** **042101394-0006A**
Sample Description: CST Office B115 - Ceiling/Plaster

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 210119-B007 ***Lab Sample ID:*** **042101394-0007**
Sample Description: CST Conference Room/1'x1' White Hole Spline Ceiling Tile

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Brown/White	80.0%	20.0%	None Detected	

Client Sample ID: 210119-B008 ***Lab Sample ID:*** **042101394-0008**
Sample Description: CST Conference Room/Drywall

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Brown/White	20.0%	80.0%	None Detected	

Client Sample ID: 210119-B009 ***Lab Sample ID:*** **042101394-0009**
Sample Description: CST Conference Room/2'x2' White Pitted Ceiling Tile

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	White	60.0%	40.0%	None Detected	

Client Sample ID: 210119-B010 ***Lab Sample ID:*** **042101394-0010**
Sample Description: CST Conference Room/Spline Ceiling Tile Glue Dot

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Brown	0.0%	100.0%	None Detected	
TEM Grav. Reduction	1/26/2021	Brown	0.0%	100.0%	None Detected	Contains inseparable debris

Client Sample ID: 210119-B011 ***Lab Sample ID:*** **042101394-0011**
Sample Description: CST Conference Room/Spline Ceiling Tile Glue Dot

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Brown	0.0%	100.0%	None Detected	

Client Sample ID: 210119-B012 ***Lab Sample ID:*** **042101394-0012**
Sample Description: Hallway near CST Office / Conference Room/2'x2' White Pitted Ceiling Tile

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	White	70.0%	30.0%	None Detected	

Client Sample ID: 210119-B013 ***Lab Sample ID:*** **042101394-0013**
Sample Description: CST Conference Room/Beige Cove Base

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Beige	0.0%	100.0%	None Detected	

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Project ID:	

Summary Test Report for Asbestos Analysis in Accordance with N.J.A.C. 8:60 and 12:120 via EPA 600/R-93/116

Client Sample ID: 210119-B014 ***Lab Sample ID:*** **042101394-0014**

Sample Description: CST Conference Room/Cove Base Mastic

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Yellow	0.0%	100.0%	None Detected	

Client Sample ID: 210119-B015 ***Lab Sample ID:*** **042101394-0015**

Sample Description: CST Conference Room - Window/Exterior Caulk

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 210119-B016 ***Lab Sample ID:*** **042101394-0016**

Sample Description: CST Conference Room - Window/Exterior Caulk

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Gray	0.0%	100.0%	None Detected	
TEM Grav. Reduction	1/26/2021	Gray	0.0%	100.0%	None Detected	

Analyst(s):

Debbie Little	TEM Grav. Reduction (2)
Laura Kantor	PLM (15)
Quynh Vu	PLM (3)

Reviewed and approved by:

Samantha Rundstrom, Laboratory Manager
or Other Approved Signatory

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NVLAP Lab Code 101048-0, AIHA-LAP, LLC-IHLAP Lab 100194, NYS ELAP 10872, NJ DEP 03036, PA ID# 68-00367, LA #04127

Initial report from: 01/22/202112:37:15

LINDENWOLD SCHOOL NO. 4

LINDENWOLD SCHOOL NO. 4

Introduction. In conjunction with the upcoming entry security enhancement project and pursuant to the authorization of officials from the Lindenwold Board of Education, bulk samples of suspected asbestos-containing materials were collected from the main entrance area and adjacent main office area at Lindenwold School No. 4. The samples were collected by accredited personnel from HORIZON ENVIRONMENTAL GROUP, INC. of Thorofare, New Jersey on January 19, 2021, and submitted to EMSL Analytical, Inc. in Cinnaminson, New Jersey for analysis by Polarized Light Microscopy (PLM EPA Method 600/r-93/116). Please note that no sampling or inspection procedures were performed in areas that could not be safely accessed at the time of the inspection, including areas above fixed ceilings, behind walls or beneath floors and that no demolition of building materials was performed.

Notes.

1. The USEPA defines an asbestos-containing material as any material that contains greater than one percent (>1%) asbestos, by weight. The USEPA and other regulatory agencies recommend that samples of non-friable materials analyzed by Polarized Light Microscopy which are reported as containing no asbestos should be re-analyzed using point counting or Transmission Electron Microscopy. The USEPA and other regulatory agencies recommend that samples analyzed by Polarized Light Microscopy which are reported as containing less than 1% asbestos, by weight, should be re-analyzed using point counting or Transmission Electron Microscopy.

2. State of New Jersey regulations require that all asbestos-containing materials be removed from any structure which is to be demolished. In addition, the regulations require that any asbestos-containing materials which may be disturbed or damaged during the course of renovation work be removed prior to the commencement of the renovations.

3. Asbestos-containing caulk is found around the door frames for both the inner and outer doors found at the main entrance to the school. For the inner doors, the caulk is found on both sides of the doorway, including each side edge and across the top of the doors. For the outer doors, the caulk is found on both sides of the doorway where the side of the door frame meets the brick wall.





Sample Log and Results.

Sample Number	Location	Description	Asbestos Content
210119-B001	Main Office Area - Outer Office	2' x 2' Smooth White Ceiling Tile	None Detected
210119-B002	Main Office Area - Middle Office	2' x 4' White Pitted Ceiling Tile	None Detected
210119-B003	Main Office Area - Outer Office	1' x 1' White Hole Spline Ceiling Tile	None Detected
210119-B004	Main Office Area - Middle Office	1' x 1' White Hole Spline Ceiling Tile	None Detected
210119-B005	Main Office Area - Middle Office	2' x 4' White Pitted Ceiling Tile	None Detected
210119-B006	Hallway Outside Main Office	2' x 2' Smooth White Ceiling Tile	None Detected
210119-B007	Main Entrance - Inner Blue Doors	Caulk	2% Chrysotile
210119-B008	Main Entrance - Inner Blue Doors	Caulk	None Detected
210119-B009	Hallway Outside Main Office	Cove Base	None Detected
	Hallway Outside Main Office	Cove Base (Adhesive)	None Detected
210119-B010	Main Entrance - Vestibule	Cove Base	None Detected
	Main Entrance - Vestibule	Cove Base (Adhesive)	None Detected
210119-B011	Main Entrance - Outer Blue Doors	Caulk	None Detected
210119-B012	Main Entrance - Outer Blue Doors	Caulk	None Detected

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200 Route 130 North Cinnaminson, NJ 08077
Tel/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnaslab@EMSL.com

EMSL Order:	042101400
Customer ID:	MDS50
Customer PO:	
Project ID:	

Attention: Steve Flanigan
Horizon Environmental Group, Inc.
PO Box 316
Thorofare, NJ 08086

Phone:	(856) 848-0800
Fax:	(856) 848-0838
Received Date:	01/19/2021 12:50 PM
Analysis Date:	01/22/2021
Collected Date:	01/19/2021

Project: 92013-79 / Lindenwold Board of Education / Lindenwold School 4

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
210119-B001 *042101400-0001*	Main Office Area - Outer Office - 2'x2' Smooth White CT	White Fibrous Homogeneous	60% Min. Wool	40% Non-fibrous (Other)	None Detected
210119-B002 *042101400-0002*	Main Office Area - Middle Office - 2'x4' White Pitted CT	Gray/White Fibrous Homogeneous	60% Cellulose 30% Min. Wool	10% Non-fibrous (Other)	None Detected
210119-B003 *042101400-0003*	Main Office Area - Outer Office - 1'x1' White Hole Spline CT	Brown/White Fibrous Homogeneous	80% Cellulose	20% Non-fibrous (Other)	None Detected
210119-B004 *042101400-0004*	Main Office Area - Middle Office - 1'x1' White Hole Spline CT	Brown/White Fibrous Homogeneous	90% Cellulose	10% Non-fibrous (Other)	None Detected
210119-B005 *042101400-0005*	Main Office Area - Middle Office - 2'x4' White Pitted CT	Gray/White Fibrous Homogeneous	60% Cellulose 30% Min. Wool	10% Non-fibrous (Other)	None Detected
210119-B006 *042101400-0006*	Hallway outside Main Office - 2'x2' Smooth White CT	White Fibrous Homogeneous	80% Min. Wool	20% Non-fibrous (Other)	None Detected
210119-B007 *042101400-0007*	Main Entrance - Inner Blue Doors - Caulk	White Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
210119-B008 *042101400-0008* *Recommend TEM*	Main Entrance - Inner Blue Doors - Caulk	White Non-Fibrous Homogeneous	3% Fibrous (Other)	97% Non-fibrous (Other)	None Detected
210119-B009-Cove Base *042101400-0009*	Hallway outside Main Office - Cove Base	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
210119-B009-Adhesive *042101400-0009A*	Hallway outside Main Office - Adhesive	Beige Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
210119-B010-Cove Base *042101400-0010*	Main Entrance - Vestibule - Cove Base	Black/Purple Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
210119-B010-Adhesive *042101400-0010A*	Main Entrance - Vestibule - Adhesive	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
210119-B011 *042101400-0011*	Main Entrance - Outer Red Doors - Caulk	Gray/Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
210119-B012 *042101400-0012*	Main Entrance - Outer Red Doors - Caulk	Red/Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Initial report from: 01/23/2021 07:16:30

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Tel/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order:	042101400
Customer ID:	MDS50
Customer PO:	
Project ID:	

Analyst(s)
John Witcraft (7)
Nicholas Montoya-Orozco (7)

Samantha Rundstrom, Laboratory Manager
or Other Approved Signatory

Initial report from: 01/23/2021 07:16:30

LINDENWOLD SCHOOL NO. 5

LINDENWOLD SCHOOL NO. 5

Introduction. In conjunction with the upcoming entry security enhancement project and pursuant to the authorization of officials from the Lindenwold Board of Education, bulk samples of suspected asbestos-containing materials were collected from the main entrance area and adjacent main office area at Lindenwold School No. 5. The samples were collected by accredited personnel from HORIZON ENVIRONMENTAL GROUP, INC. of Thorofare, New Jersey on January 19, 2021, and submitted to EMSL Analytical, Inc. in Cinnaminson, New Jersey for analysis by Polarized Light Microscopy (PLM EPA Method 600/r-93/116). Please note that no sampling or inspection procedures were performed in areas that could not be safely accessed at the time of the inspection, including areas above fixed ceilings, behind walls or beneath floors and that no demolition of building materials was performed.

Notes.

1. The USEPA defines an asbestos-containing material as any material that contains greater than one percent (>1%) asbestos, by weight. The USEPA and other regulatory agencies recommend that samples of non-friable materials analyzed by Polarized Light Microscopy (PLM) which are reported as containing no asbestos should be re-analyzed using point counting or Transmission Electron Microscopy (TEM). The USEPA and other regulatory agencies recommend that samples analyzed by Polarized Light Microscopy which are reported as containing less than 1% asbestos, by weight, should be re-analyzed using point counting or Transmission Electron Microscopy.

2. State of New Jersey regulations require that all asbestos-containing materials be removed from any structure which is to be demolished. In addition, the regulations require that any asbestos-containing materials which may be disturbed or damaged during the course of renovation work be removed prior to the commencement of the renovations.

3. Using PLM analysis, all of the bulk samples collected at Lindenwold School No. 5 on January 19, 2021, were reported by the analytical laboratory as containing less than one percent (<1%) asbestos.

4. The New Jersey Department of Labor and Workforce Development (DOL), relying on a 1994 USEPA guidance document regarding the sampling of non-friable materials (also referred to as NOBs, or Non-Friable Organically Bound materials) has adopted guidelines (N. J. A. C. 12:120 Appendix) that state that they are enforcing the USEPA recommendation that bulk samples of non-friable materials be analyzed using Transmission Electron Microscopy (TEM). While the DOL acknowledges that this requirement is not a regulation for building owners or their consultants, they have stated that, if they so desire, they will collect their own samples of these materials at a site and have the samples analyzed by TEM. If their results show that a material is positive, they state they will act accordingly if the material is not (or was not) removed prior to any renovation or demolition activities. Therefore, one sample of the door caulk found at the site was re-analyzed by TEM, in accordance with State of New Jersey regulations. The result of the reanalysis of the sample is as follows:

Sample Number	Location	Description	Asbestos Content
210119-B011	Main Entrance - Inner Doors	Caulk	None Detected
210119-B013	Main Entrance - Outer Doors	Caulk	None Detected

Sample Log and Results.

Sample Number	Location	Description	Asbestos Content
210119-B001	Main Office Area - Middle Office	2' x 4' White Wavy Pitted Ceiling Tile	<1% Chrysotile
210119-B002	Main Office Area - Middle Office	2' x 4' White Wavy Pitted Ceiling Tile	<1% Chrysotile
210119-B003	Main Office Area - Middle Office	Plaster Board (Skim Coat)	None Detected
	Main Office Area - Middle Office	Plaster Board (Base Coat)	None Detected
	Main Office Area - Middle Office	Plaster Board (Drywall)	None Detected
210119-B004	Main Office Area - Middle Office	Plaster Board (Base Coat)	None Detected
	Main Office Area - Middle Office	Plaster Board (Drywall)	None Detected
210119-B005	Main Office Area - Middle Office	Plaster Board (Skim Coat)	None Detected
	Main Office Area - Middle Office	Plaster Board (Base Coat)	None Detected
	Main Office Area - Middle Office	Plaster Board (Drywall)	None Detected
210119-B006	Main Office Area - Middle Office	Gray Cove Base	None Detected
	Main Office Area - Middle Office	Gray Cove Base (Adhesive)	None Detected
210119-B007	Main Office Area - Middle Office	Gray Cove Base	None Detected
	Main Office Area - Middle Office	Gray Cove Base (Adhesive)	None Detected
210119-B008	Lobby Outside Main Office	Blue Cove Base	None Detected
	Lobby Outside Main Office	Blue Cove Base (Adhesive)	None Detected
	Lobby Outside Main Office	Blue Cove Base (Leveler)	None Detected
210119-B009	Door to Main Office - Around Door	Plaster	None Detected
210119-B010	Lobby Outside Main Office	Pipe Fitting Insulation	None Detected
210119-B011	Main Entrance - Inner Doors	Caulk	None Detected
210119-B012	Main Entrance - Inner Doors	Caulk	None Detected
210119-B013	Main Entrance - Outer Doors	Caulk	None Detected
210119-B014	Main Entrance - Outer Doors	Caulk	None Detected

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EMSL Order ID:	042101402
Customer ID:	MDS50
Customer PO:	
Project ID:	

Attn: Steve Flanigan
Horizon Environmental Group, Inc.
PO Box 316
Thorofare, NJ 08086

Phone:	(856) 848-0800
Fax:	(856) 848-0838
Collected:	1/19/2021
Received:	1/19/2021
Analyzed:	1/27/2021

Proj: 92013-79 / Lindenwold Board of Education / Lindenwold School 5

Summary Test Report for Asbestos Analysis in Accordance with N.J.A.C. 8:60 and 12:120 via EPA 600/R-93/116

Client Sample ID: 210119-B001 ***Lab Sample ID:*** 042101402-0001
Sample Description: Main Office Area - Middle Office/2'x4' White Wavy Pitted CT

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Gray/Tan	50.0%	50.0%	<1% Chrysotile	

Client Sample ID: 210119-B002 ***Lab Sample ID:*** 042101402-0002
Sample Description: Main Office Area - Middle Office/2'x4' White Wavy Pitted CT

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Tan	40.0%	60.0%	<1% Chrysotile	

Client Sample ID: 210119-B003-Skim Coat ***Lab Sample ID:*** 042101402-0003
Sample Description: Main Office Area - Middle Office/Plaster Board

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	White	0.0%	100.0%	None Detected	

Client Sample ID: 210119-B003-Base Coat ***Lab Sample ID:*** 042101402-0003A
Sample Description: Main Office Area - Middle Office/Plaster Board

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 210119-B003-Drywall ***Lab Sample ID:*** 042101402-0003B
Sample Description: Main Office Area - Middle Office/Plaster Board

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Brown/White	20.0%	80.0%	None Detected	

Client Sample ID: 210119-B004-Base Coat ***Lab Sample ID:*** 042101402-0004
Sample Description: Main Office Area - Middle Office/Plaster Board

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Gray	0.0%	100.0%	None Detected	Skim coat not present.

Client Sample ID: 210119-B004-Drywall ***Lab Sample ID:*** 042101402-0004A
Sample Description: Main Office Area - Middle Office/Plaster Board

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Brown/White	20.0%	80.0%	None Detected	

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Summary Test Report for Asbestos Analysis in Accordance with N.J.A.C. 8:60 and 12:120 via EPA 600/R-93/116

Client Sample ID: 210119-B005-Skim Coat ***Lab Sample ID:*** **042101402-0005**
Sample Description: Main Office Area - Middle Office/Plaster Board

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	White	0.0%	100.0%	None Detected	

Client Sample ID: 210119-B005-Base Coat ***Lab Sample ID:*** **042101402-0005A**
Sample Description: Main Office Area - Middle Office/Plaster Board

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 210119-B005-Drywall ***Lab Sample ID:*** **042101402-0005B**
Sample Description: Main Office Area - Middle Office/Plaster Board

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Brown/White	15.0%	85.0%	None Detected	

Client Sample ID: 210119-B006-Cove Base ***Lab Sample ID:*** **042101402-0006**
Sample Description: Main Office Area - Middle Office/Gray Cove Base

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 210119-B006-Adhesive ***Lab Sample ID:*** **042101402-0006A**
Sample Description: Main Office Area - Middle Office/Adhesive

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Yellow	0.0%	100.0%	None Detected	

Client Sample ID: 210119-B007-Cove Base ***Lab Sample ID:*** **042101402-0007**
Sample Description: Main Office Area - Middle Office/Gray Cove Base

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 210119-B007-Adhesive ***Lab Sample ID:*** **042101402-0007A**
Sample Description: Main Office Area - Middle Office/Adhesive

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Yellow	0.0%	100.0%	None Detected	

Client Sample ID: 210119-B008-Cove Base ***Lab Sample ID:*** **042101402-0008**
Sample Description: Lobby outside Main Office/Blue Cove Base

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Blue	0.0%	100.0%	None Detected	

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200 Route 130 North Cinnaminson, NJ 08077
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EMSL Order ID: 042101402
Customer ID: MDS50
Customer PO:
Project ID:

Summary Test Report for Asbestos Analysis in Accordance with N.J.A.C. 8:60 and 12:120 via EPA 600/R-93/116

Client Sample ID: 210119-B008-Adhesive **Lab Sample ID:** 042101402-0008A
Sample Description: Lobby outside Main Office/Adhesive

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Yellow	0.0%	100.0%	None Detected	

Client Sample ID: 210119-B008-Leveler **Lab Sample ID:** 042101402-0008B
Sample Description: Lobby outside Main Office/Adhesive

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Gray/White	0.0%	100.0%	None Detected	

Client Sample ID: 210119-B009 **Lab Sample ID:** 042101402-0009
Sample Description: Door to Main Office - Around Door/Plaster

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Gray/White	0.0%	100.0%	None Detected	

Client Sample ID: 210119-B010 **Lab Sample ID:** 042101402-0010
Sample Description: Lobby outside Main Office/Pipe Fitting Insulation

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Gray	30.0%	70.0%	None Detected	

Client Sample ID: 210119-B011 **Lab Sample ID:** 042101402-0011
Sample Description: Main Entrance - Inner Doors/Caulk

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Gray	0.0%	100.0%	None Detected	
TEM Grav. Reduction	1/27/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 210119-B012 **Lab Sample ID:** 042101402-0012
Sample Description: Main Entrance - Inner Doors/Caulk

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 210119-B013 **Lab Sample ID:** 042101402-0013
Sample Description: Main Office - Outer Doors/Caulk

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Gray	0.0%	100.0%	None Detected	
TEM Grav. Reduction	1/27/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 210119-B014 **Lab Sample ID:** 042101402-0014
Sample Description: Main Office - Outer Doors/Caulk

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	1/22/2021	Gray	0.0%	100.0%	None Detected	

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Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID:	042101402
Customer ID:	MDS50
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Project ID:	

Summary Test Report for Asbestos Analysis in Accordance with N.J.A.C. 8:60 and 12:120 via EPA 600/R-93/116

Analyst(s):

Quynh Vu	PLM (15)
Sarah Kleinbrahm	PLM (8)
Sarah Richey	TEM Grav. Reduction (2)

Reviewed and approved by:

Samantha Rundstrom, Laboratory Manager
or Other Approved Signatory

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NVLAP Lab Code 101048-0, AIHA-LAP, LLC-IHLAP Lab 100194, NYS ELAP 10872, NJ DEP 03036, PA ID# 68-00367, LA #04127

Initial report from: 01/22/2021 14:15:09

Certificate of Completion

awarded to

Steven J. Flanigan

for successfully completing the prescribed course of study in

Pennsylvania Asbestos Building Inspector Refresher Course

under TSCA Title II

presented by

ACCESS TRAINING SERVICES, INC.
7921 River Road, Pennsauken, NJ 08110
(856) 665-3449

2/13/20	N/A	2/13/21
Course Date	*Exam Date*	*Expiration Date*
Not Provided	**ACC-0220-6-026**	*Mark K. Schläger*
Social Security Number	*Certificate Number*	*Training Director*