
PROJECT MANUAL

WILSON COUNTY SCHOOLS HUNT HS – ATHLETICS RENOVATION

4559 LAMM ROAD
WILSON, NC 27893

CPL PROJECT NO.: R22.16900.00

DOCUMENT DATE: SEPTEMBER 15, 2023



ARCHITECT/ENGINEER

CPL

1111 HAYNES ST., SUITE 100
RALEIGH, NC 27604
(919) 833 - 6064



OWNER

WILSON COUNTY SCHOOLS

117 Tarboro Street
WILSON, NC 27894
(252) 399-7700

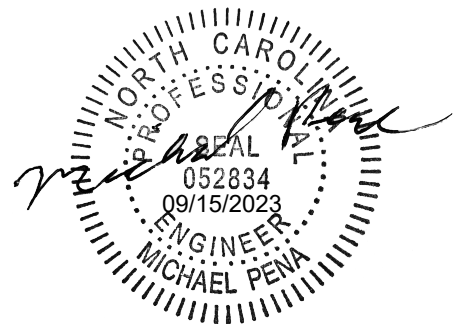
SECTION 00 01 07
SEALS PAGE

WILSON COUNTY SCHOOLS
HUNT HS - ATHLETICS RENOVATION
CPL PROJECT NUMBER: R22.16900.00
SEPTEMBER 15, 2023

ARCHITECTURAL
CPL ARCHITECTS & ENGINEERS



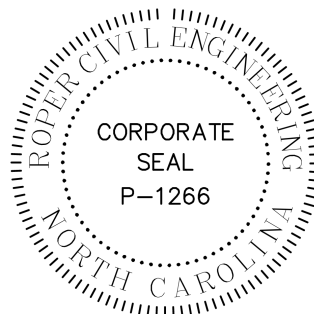
PLUMBING
CPL ARCHITECTS & ENGINEERS



ELECTRICAL
CPL ARCHITECTS & ENGINEERS



CIVIL | LANDSCAPE ARCHITECTURE
FITFIELDS



END OF SECTION

This page intentionally left blank

SECTION 00 01 10
TABLE OF CONTENTS

PROCUREMENT AND CONTRACTING REQUIREMENTS

DIVISION 00 -- PROCUREMENT AND CONTRACTING REQUIREMENTS

- 00 01 07 - Seals Page
- 00 01 10 - Table of Contents
- 00 11 13 - Advertisement for Bids
- 00 21 13 - Instructions to Bidders
- 00 41 00 - Bid Form
- 00 43 25 - Substitution Request Form - During Procurement
- 00 50 00 - Contracting Forms and Supplements
- 00 51 00 - Agreement Form & Exhibit A
- 00 60 00 - Project Forms & Related Documents
- 00 61 13 - Contractor's Affidavit and Partial Release of Lien - Progress Payment
- 00 61 16 - Contractor's General Warranty
- 00 61 19 - Asbestos Free Warranty
- 00 62 39 - MBE Participation Forms
- 00 72 00 - General Conditions
- 00 73 00 - Supplementary Conditions
- 00 90 00 - MBE Requirements
- 00 90 00.1 - Performance Bond
- 00 90 00.2 - Payment Bond
- 00 90 00.3 - Bid Bond
- 00 90 00.4 - Insurance Certificates
- 00 90 00.5 - Power of Attorney

SPECIFICATIONS

DIVISION 01 -- GENERAL REQUIREMENTS

- 01 10 00 - Summary
- 01 21 00 - Allowances
- 01 22 00 - Unit Prices
- 01 23 00 - Alternates
- 01 25 00 - Substitution Procedures
- 01 29 00 - Price and Payment Procedures
- 01 30 00 - Administrative Requirements
- 01 32 16 - Construction Progress Schedule
- 01 33 00 - Submittal Procedures
- 01 40 00 - Quality Requirements
- 01 45 33 - Code-Required Special Inspections
- 01 50 00 - Temporary Facilities and Controls
- 01 60 00 - Product Requirements
- 01 70 00 - Execution and Closeout Requirements

01 74 19 - Construction Waste Management and Disposal

01 78 00 - Closeout Submittals

DIVISION 02 -- EXISTING CONDITIONS

02 41 00 - Demolition

DIVISION 03 -- CONCRETE

03 30 00 - Cast-in-Place Concrete

03 35 11 - Concrete Floor Finishes

03 54 00 - Cast Underlayment

DIVISION 04 -- MASONRY

04 05 11 - Masonry Mortaring and Grouting

04 20 00 - Unit Masonry

DIVISION 05 -- METALS

05 50 00 - Metal Fabrications

DIVISION 06 -- WOOD, PLASTICS, AND COMPOSITES

06 41 00 - Architectural Wood Casework

06 83 16 - Fiberglass Reinforced Paneling

DIVISION 07 -- THERMAL AND MOISTURE PROTECTION

07 92 00 - Joint Sealants

DIVISION 08 -- OPENINGS

08 11 13 - Hollow Metal Doors and Frames

08 31 00 - Access Doors and Panels

08 33 13 - Coiling Counter Doors

08 60 00 - Retractable Attic Stairs

08 71 00 - Door Hardware

DIVISION 09 -- FINISHES

09 05 61 - Common Work Results for Flooring Preparation

09 65 00 - Resilient Flooring and Base

09 67 00 - Fluid-Applied Flooring

09 78 00 - Interior Wall Paneling

09 91 13 - Exterior Painting

09 91 23 - Interior Painting

DIVISION 10 -- SPECIALTIES

10 14 00 - Signage

10 21 13.17 - Phenolic Toilet Compartments

10 28 00 - Toilet Accessories

10 44 00 - Fire Protection Specialties

DIVISION 11 -- EQUIPMENT

11 68 33.43 - Track and Field Equipment

DIVISION 12 -- FURNISHINGS

12 36 00 - Countertops

DIVISION 13 -- SPECIAL CONSTRUCTION

DIVISION 14 -- CONVEYING EQUIPMENT

DIVISION 21 -- FIRE SUPPRESSION

DIVISION 22 -- PLUMBING

- 22 05 00 - Common Work Results for Plumbing
- 22 05 53 - Identification for Plumbing Piping and Equipment
- 22 07 19 - Plumbing Piping Insulation
- 22 10 05 - Plumbing Piping
- 22 10 06 - Plumbing Piping Specialties
- 22 30 00 - Plumbing Equipment
- 22 40 00 - Plumbing Fixtures

DIVISION 23 -- HEATING, VENTILATING, AND AIR-CONDITIONING (HVAC)

DIVISION 25 -- INTEGRATED AUTOMATION

DIVISION 26 -- ELECTRICAL

- 26 05 00 - Common Work Results for Electrical
- 26 05 19 - Low-Voltage Electrical Power Conductors and Cables
- 26 05 26 - Grounding and Bonding for Electrical Systems
- 26 05 29 - Hangers and Supports for Electrical Systems
- 26 05 33.13 - Conduit for Electrical Systems
- 26 05 33.16 - Boxes for Electrical Systems
- 26 05 53 - Identification for Electrical Systems
- 26 05 83 - Wiring Connections
- 26 24 16 - Panelboards
- 26 27 26 - Wiring Devices
- 26 28 13 - Fuses
- 26 28 16.16 - Enclosed Switches
- 26 51 00 - Interior Lighting
- 26 55 68 - Exterior Athletic Lighting

DIVISION 27 -- COMMUNICATIONS

DIVISION 28 -- ELECTRONIC SAFETY AND SECURITY

DIVISION 31 -- EARTHWORK

- 31 10 00 - Site Clearing
- 31 20 00 - Earth Moving
- 31 23 19 - Dewatering
- 31 25 00 - Erosion Control

DIVISION 32 -- EXTERIOR IMPROVEMENTS

- 32 12 16.36 - Athletic Track Asphalt Paving
- 32 12 18 - Stone Base Course
- 32 13 13 - Concrete Paving
- 32 13 73 - Pavement Joint Sealants

- 32 18 23.39 - Track and Field Quality Control
- 32 18 23.40 - Track and Field Synthetic Surface
- 32 18 23.41 - Track and Field Line Markings
- 32 18 23.42 - Track and Field Event Materials
- 32 31 13 - Chain Link Fences and Gates
- 32 92 00 - Sod and Grasses

DIVISION 33 -- UTILITIES

- 33 05 00 - Common Work Results for Utilities
- 33 41 00 - Storm Utility Drainage Piping

END OF SECTION

SECTION 00 11 13

ADVERTISEMENT FOR BIDS

PROJECT INFORMATION

- 1.01 NOTICE TO BIDDERS: QUALIFIED BIDDERS MAY SUBMIT BIDS FOR THE PROJECT AS DESCRIBED IN THIS DOCUMENT. SUBMIT BIDS ACCORDING TO THE INSTRUCTIONS TO BIDDERS.**
- A. Regulatory Requirements: shall govern submittal, opening, and award of bids. North Carolina General Statutes Section 143-129 shall govern submittal, opening, and award of bids.
- 1.02 PROJECT IDENTIFICATION**
- A. Project Location: 4559 Lamm Road, Wilson, NC 27893
- 1.03 OWNER: WILSON COUNTY SCHOOLS**
- A. Owner's Representative: Greg Woodard: Greg.Woodard@wilsonschooolsnc.net
- 1.04 ARCHITECT: CPL**
- A. Architect: Graham Boyd: gboyd@cplteam.com 919-645-9016
- 1.05 PROJECT DESCRIPTION:**
- A. Project consists of minor renovation to the existing concessions & restroom buildings, repair and thorough cleaning of existing bleachers, track replacement, and ADA modifications to site with an alternate for field lighting replacement at Hunt High School in Wilson, NC.
- 1.06 CONSTRUCTION CONTRACT: BIDS WILL BE RECEIVED FOR THE FOLLOWING WORK:**
- A. General Contract (all trades).

BID SUBMITTAL AND OPENING

- 201 OWNER WILL RECEIVE SEALED LUMP SUM BIDS UNTIL THE BID TIME AND DATE AT THE LOCATION GIVEN BELOW. OWNER WILL CONSIDER BIDS PREPARED IN COMPLIANCE WITH THE INSTRUCTIONS TO BIDDERS ISSUED BY OWNER, AND DELIVERED AS FOLLOWS:**
- A. Bid Date: October 26, 2023
- B. Bid Time: 3:00 pm, local time.
- C. Location: Via Hand Delivery and UPS/Fed Ex: Attn: Greg Woodard, WCS Facilities Department, 519 Ward Blvd- Building 1A, Wilson, NC 27893.
- 202 BIDS WILL BE THEREAFTER PUBLICLY OPENED AND READ ALOUD.**

BID SECURITY

- 301 BID SECURITY SHALL BE SUBMITTED WITH EACH BID IN THE AMOUNT OF FIVE (5) PERCENT OF THE BID AMOUNT. NO BIDS MAY BE WITHDRAWN FOR A PERIOD OF SIXTY (60) DAYS AFTER OPENING OF BIDS. OWNER RESERVES THE RIGHT TO REJECT ANY AND ALL BIDS AND TO WAIVE INFORMALITIES AND IRREGULARITIES.**

PREBID MEETING

- 4.01 PREBID MEETING: AN OPTIONAL PRE-BID CONFERENCE IS SCHEDULED FOR October 11th AT 10:30 AM AT HUNT HS LOCATED AT 4559 LAMM RD. WILSON, NC 27893.**

DOCUMENTS

- 5.01 PROCUREMENT AND CONTRACTING DOCUMENTS: OBTAIN AFTER SEPTEMBER 28, 2023, BY CONTACTING OWNER OR ARCHITECT. DOCUMENTS WILL BE PROVIDED TO PRIME BIDDERS ONLY; ONLY COMPLETE SETS OF DOCUMENTS WILL BE ISSUED.**

A. Deposit: No deposit is required. Only electronic bid documents will be provided.

- 5.02 ONLINE PROCUREMENT AND CONTRACTING DOCUMENTS: OBTAIN ACCESS AFTER SEPTEMBER 28, 2023, BY CONTACTING ONE OF THE LOCATION BELOW:**

- A. Office of the Architect: Email Ms. Lauren Beverly LBeverly@cplteam.com
- B. Owner: WCS – Documents may be viewed between the hours of 7:00 am and 4:30 pm at 519 Ward Blvd – Building 1A, Wilson, NC.
- C. Owner: Plans will be made available on Wilson County Schools website:
- www.wilsonschoolsnc.net
 - www.ncadmin.nc.gov/businesses/hub/events
 - www.ips.state.nc.us/IPS

TIME OF COMPLETION AND LIQUIDATED
DAMAGES

- 6.01 SUCCESSFUL BIDDER SHALL BEGIN THE WORK ON RECEIPT OF THE NOTICE TO PROCEED AND SHALL COMPLETE THE WORK WITHIN THE CONTRACT TIME. WORK IS SUBJECT TO LIQUIDATED DAMAGES OF \$250/DAY.**

BIDDER'S QUALIFICATIONS

- 7.01 BIDDERS MUST BE PROPERLY LICENSED UNDER THE LAWS GOVERNING THEIR RESPECTIVE TRADES AND BE ABLE TO OBTAIN INSURANCE AND BONDS REQUIRED FOR THE WORK. A PERFORMANCE BOND, SEPARATE LABOR AND MATERIAL PAYMENT BOND, AND INSURANCE IN A FORM ACCEPTABLE TO OWNER WILL BE REQUIRED OF THE SUCCESSFUL BIDDER.**

NOTIFICATION

- 8.01 THIS ADVERTISEMENT FOR BIDS DOCUMENT IS ISSUED BY CPL ARCHITECTS & ENGINEERS.**

END OF SECTION

SECTION 00 21 13
INSTRUCTIONS TO BIDDERS
INVITATION

1.01 BID SUBMISSION

- A. Bids signed and under seal, executed, and dated will be received at the office of Wilson County Schools Maintenance Department at 519 Ward Blvd - Building 1A, Wilson, NC 27893 before 3:00 p.m. local standard time on the 26th day of October. Attn: Greg Woodard, WCS Executive Director of Facility Services.
- B. Offers will be opened publicly immediately after the time for receipt of bids.
- C. Amendments to the submitted offer will be permitted if received in writing prior to bid closing and if endorsed by the same party or parties who signed and sealed the offer.

1.02 INTENT

- A. The intent of this Bid request is to obtain an offer to perform work to complete a minor renovation to the existing concessions & restroom buildings, repair and thorough cleaning of existing bleachers, track replacement, and ADA modifications to site with an alternate for field lighting replacement at Hunt High School located in Wilson County, North Carolina for a Stipulated Sum contract, in accordance with Contract Documents.

1.03 WORK IDENTIFIED IN THE CONTRACT DOCUMENTS

- A. Work of this proposed Contract comprises building construction and site development, including general construction Work.

1.04 CONTRACT TIME

- A. Perform the Work within the time stated in Document 00 73 00 - Supplementary General Conditions.
- B. The bidder, in submitting an offer, accepts the Contract Time period stated for performing the Work. The completion date in the Agreement shall be the Contract Time added to the commencement date. The bidder may suggest a revision to the Contract Time with a specific adjustment to the Bid Amount.

BID DOCUMENTS AND CONTRACT DOCUMENTS

2.01 DEFINITIONS

- A. Bid Documents: Contract Documents supplemented with Instructions to Bidders, Bid Form Bid securities identified.
- B. Contract Documents: Defined in AIA A201 Article 1 including issued Addenda.
- C. Bid, Offer, or Bidding: Act of submitting an offer under seal.
- D. Bid Amount: Monetary sum identified by the Bidder in the Bid Form.

2.02 CONTRACT DOCUMENTS IDENTIFICATION

- A. Contract Documents are identified as Project Number R22.16900.00, as prepared by CPL Architects and Engineers, P.C. who is located at 1111 Haynes St. Ste 100, Raleigh, NC, and with contents as identified in the Table of Contents.

2.03 AVAILABILITY

- A. Bid Documents may be viewed at the office of Wilson County Schools Maintenance Dept. which is located at 519 Ward Blvd. Wilson, NC - Building 1A between the hours of 7:30 a.m. and 4:00 p.m. Monday through Friday.
- B. Bid documents may be obtained electronically from CPL by contacting Ms. Lauren Beverly at LBevery@CPLteam.com. Documents will be distributed to bidders at no cost to the Contractor.
- C. Bid Documents are made available only for the purpose of obtaining offers for this project. Their use does not grant a license for other purposes.

2.04 EXAMINATION

- A. Upon receipt of Bid Documents verify that documents are complete. Notify CPL Architects should the documents be incomplete.
- B. Immediately notify CPL Architects upon finding discrepancies or omissions in the Bid Documents.

2.05 INQUIRIES/ADDENDA

- A. Direct questions to in writing to Ms. Lauren Beverly, email; LBeverly@CPLteam.com.
- B. After the Bid issue date, all communications between the Issuing Department and prospective Bidders shall be in writing. No oral questions will be accepted. All questions concerning this Formal Bid shall reference the section and page number. Questions and responses affecting the scope of the goods will be provided to all prospective bidders by issuance of an Addendum. All written questions will be received by CPL no later than 3:00 pm October 18th. NO EXCEPTIONS. This includes any requests for substitution and "or equal" items. All addenda pertaining to this Bid will be forwarded to known recipients, but it is the bidder's responsibility to check within 72 hours after the deadline for questions by emailing Ms. Lauren Beverly at LBeverly@cplteam.com.
- C. Verbal answers are not binding on any party.

SITE ASSESSMENT

3.01 PREBID CONFERENCE

- A. An optional pre-bid conference is scheduled for October 11, 2023 at 10:30 am at Hunt High School located at 4559 Lamm Rd, Wilson, NC 27893.
- B. Representatives of CPL Architects will be in attendance.

BID SUBMISSION

4.01 SUBMISSION PROCEDURE

- A. Bidders shall be solely responsible for the delivery of their bids in the manner and time prescribed.
- B. Submit one copy of the executed offer on the Bid Forms provided, signed and sealed with the required security in a closed opaque envelope, clearly identified with bidder's name, project name and Owner's name on the outside.

4.02 BID INELIGIBILITY

- A. Bids that are unsigned, improperly signed or sealed, conditional, illegible, obscure, contain arithmetical errors, erasures, alterations, or irregularities of any kind, may at the discretion of the Owner, be declared unacceptable.
- B. Bid Forms, Appendices, and enclosures that are improperly prepared may, at the discretion of Owner, be declared unacceptable.
- C. Failure to provide security deposit, bonding or insurance requirements may, at the discretion of Owner, be waived.

BID ENCLOSURES/REQUIREMENTS

5.01 PERFORMANCE ASSURANCE

- A. Accepted Bidder: Provide a Performance and Payment bond as described in 00 73 00 - Supplementary General Conditions.
- B. Include the cost of performance assurance bonds in the Bid Amount.

5.02 BID FORM REQUIREMENTS

- A. Complete all requested information in the Bid Form.

5.03 FEES FOR CHANGES IN THE WORK

- A. Include the fees for overhead and profit on own Work and Work by subcontractors, identified in Document 00 72 00 - General Conditions 00 73 00 - Supplementary General Conditions .

5.04 BID FORM SIGNATURE

- A. The Bid Form shall be signed by the bidder, as follows:
1. Sole Proprietorship: Signature of sole proprietor in the presence of a witness who will also sign. Insert the words "Sole Proprietor" under the signature. Affix seal.
 2. Partnership: Signature of all partners in the presence of a witness who will also sign. Insert the word "Partner" under each signature. Affix seal to each signature.
 3. Corporation: Signature of a duly authorized signing officer(s) in their normal signatures. Insert the officer's capacity in which the signing officer acts, under each signature. Affix the corporate seal. If the bid is signed by officials other than the president and secretary of the company, or the president/secretary/treasurer of the company, a copy of the by-law resolution of their board of directors authorizing them to do so, must also be submitted with the Bid Form in the bid envelope.

OFFER ACCEPTANCE/REJECTION

6.01 DURATION OF OFFER

- A. Bids shall remain open to acceptance and shall be irrevocable for a period of sixty (60) days after the bid closing date.

6.02 ACCEPTANCE OF OFFER

- A. Owner reserves the right to accept or reject any or all offers.
- B. Pursuant to North Carolina General Statutes Section 143-129, "award shall be made to the lowest responsible, responsive bid or bidders, taking into consideration quality, performance, and the time specified in the proposals for the performance of the contract."
- C. After acceptance by Owner, CPL Architects on behalf of Owner, will issue to the successful bidder, a written Notice To Proceed.

END OF SECTION

This page intentionally left blank

SECTION 00 41 00

BID FORM

General Contract Work

ON: HUNT HS – ATHLETICS RENOVATION

FOR: WILSON COUNTY SCHOOLS

AT: WILSON, NORTH CAROLINA

DATE: _____

CONTRACTOR'S NAME _____

LICENSE NO. _____

The Undersigned, as Bidder, hereby declares that the only person or persons interested in this proposal as principal or principals or are named herein and that no other person than herein mentioned has any interest in this proposal or in the contract to be entered into that this proposal is made without connection with any other person, company, or parties making a bid or proposal; and that it is in all respects fair and in good faith without collusion or fraud.

The Bidder further declares that he has carefully examined the site of the work and informed himself fully in regard to all conditions pertaining to the place where the work is to be done, that he has examined the specifications for the work and contract documents relative thereto, and has read all special provisions furnished prior to the opening of bids; and he has satisfied himself as to the nature and location of the work, the general and local conditions, and all matters which may in any way affect the work or its performance, and that as a result of such examination and investigation, he fully understands the intent and purpose of the documents and conditions of bidding. Claims for additional compensation and/or extensions of time because of the Contractor's failure to follow the forgoing procedure and to familiarize himself with the Contract Documents and all conditions which might affect the work will not be allowed.

The Bidder proposes and agrees if this proposal is accepted to contract with **Wilson County Schools** in the form of contract specified, to furnish all necessary materials, equipment, machinery, tools, apparatus, means of transportation, and labor necessary to complete the work of the **Hunt HS – Athletics Renovation** in full and complete accordance with the Contract Documents, to the full and entire satisfaction of the Owner and/or Architect-Engineer, with a definite understanding that no money will be allowed for extra work except as set forth in the Contract Documents for the sum of:

BASE BID

_____ Dollars (\$ _____)

ALTERNATES

Should any of the alternates, as described in the contract documents be accepted, the amount written below shall be the amount to be "added to" the total bid. If the alternate is left blank, then the Alternate would not change if the base bid is accepted. The bidder agrees to construct the Alternate as described in the Contract documents for the following price. Acceptance of the alternate does not increase the contract time.

Alternate No. 01: Replace Light Fixtures

State the amount to be added to the Base Bid to replace all Light Fixtures on and in the Restroom & Concessions buildings.

(Add) _____ Dollars (\$ _____)

Alternate No. 02: Replace Ceilings

State the amount to be added to the Base Bid to replace ceilings in Men's Toilet, Women's Toilet, Training Room and Concessions Kitchen and Storage Room and Toilet Room with Moisture Resistant Gypboard Ceilings.

(Add) _____ Dollars (\$ _____)

Alternate No. 03: Replace Training Room Casework

State the amount to be added to the Base Bid to replace casework in Training Room.

(Add) _____ Dollars (\$ _____)

Alternate No. 04 Plumbing Fixtures (Owner Preferred Alternates):

Alternate No. 04A (Owner Preferred Alternate):

State the amount to be added to the Base Bid to provide plumbing fixture faucets by Delta.

(Add)(Deduct) _____ Dollars (\$ _____)

Alternate No. 04B (Owner Preferred Alternate):

State the amount to be added to the Base Bid to provide plumbing fixture flush valves by Sloan.

(Add)(Deduct) _____ Dollars (\$ _____)

Alternate No. 04C (Owner Preferred Alternate):

State the amount to be added to the Base Bid to provide plumbing fixture urinals by Mansfield.

(Add)(Deduct) _____ Dollars (\$ _____)

Alternate No. 04D (Owner Preferred Alternate):

State the amount to be added to the Base Bid to provide plumbing fixture toilets by American Standard.

(Add)(Deduct) _____ Dollars (\$ _____)

Alternate No. 04E (Owner Preferred Alternate):

State the amount to be added to the Base Bid to provide plumbing fixture lavatories by American Standard (cast iron).

(Add)(Deduct) _____ Dollars (\$ _____)

Alternate No. 05: Add Track Perimeter Fencing

State the amount to be added to the Base Bid to provide new 4' high Black Vinyl chain-link fencing around Football Field and Track in lieu of re-using the existing chain-link fencing.

(Add) _____ Dollars (\$ _____)

Alternate No. 06: Add Site Perimeter Fencing

State the amount to be added to the Base Bid to provide new 6' high Black Vinyl chain-link fencing around Athletic Site in lieu of re-using the existing chain-link fencing.

(Add) _____ Dollars (\$ _____)

Alternate No. 07: Replace Football Field Lighting

State the amount to be added to the Base Bid to replace Football Field Lighting, to include removal of existing concrete light poles, design, engineering, and installation of new Lights and Poles, including all required wiring as a turn-key portion of the project.

(Add) _____ Dollars (\$ _____)

Alternate No. 08 (Owner Preferred Alternate): Replace Football Field Lighting – Musco Lighting

State the amount to be added to the Base Bid to use Owner preferred vendor, Musco Lighting to replace Football Field Lighting, to include removal of existing concrete light poles, design, engineering, and installation of new Lights and Poles, including all required wiring as a turn-key portion of the project.

(Add) _____ Dollars (\$ _____)

Alternate No. 09: New Sports Goalposts

State the amount to be added to the Base Bid to add two twin post Goalposts complying with High School Athletics in lieu of reusing existing.

(Add) _____ Dollars (\$ _____)

Alternate No. 10: New Flagpoles

State the amount to be added to the Base Bid to add two new flagpoles at North end of Field in lieu of moving the 1 existing flagpole.

(Add) _____ Dollars (\$ _____)

Alternate No. 11: EMS Concrete Pad

State the amount to be added to the Base Bid to add new 16' x 30' heavy duty concrete pad on south end of track.

(Add) _____ Dollars (\$ _____)

Alternate No. 12: Concrete Sidewalk to Visitor Bleachers

State the amount to be added to the Base Bid to add new concrete sidewalk around north end of track in lieu of gravel sidewalk.

(Add) _____ Dollars (\$ _____)

ALLOWANCES

Include the following Owner's Contingency Allowance in the Total Bid Amount

Allowance No. 1: Owner's Contingency Dollars (\$ 30,000)

UNIT PRICES

The following unit prices are submitted by the undersigned Bidder as a proposed basis for additive or deductive adjustment in the event contract changes in the Work are required involving items described. It is understood and agreed that unit prices are separately subject to acceptance by the Owner and that such prices are not part of the Contract except as accepted and entered in the Agreement. Unit prices shall include all fees, taxes, profit, overhead and similar items.

Unit prices are based on same standard of materials in contract documents.

UP-01	Black Vinyl Chain Link Fencing 4' in height, Installed	100	LF	@	\$____/LF	(\$_____)
UP-02	Black Vinyl Gate at Chain Link Fencing 4' in height, 4' wide, Installed	6	Unit	@	\$____/Unit	(\$_____)
UP-03	Black Vinyl Double Gate at Chain Link Fencing 4' in height, 12' wide, Installed	2	Unit	@	\$____/Unit	(\$_____)
UP-04	Black Vinyl Chain Link Fencing 6' in height, Installed	100	LF	@	\$____/LF	(\$_____)
UP-05	Black Vinyl Gate at Chain Link Fencing 6' in height, 4' wide, Installed	3	Unit	@	\$____/Unit	(\$_____)
UP-06	Black Vinyl Double Gate at Chain Link Fencing 6' in height, 12' wide, Installed	3	Unit	@	\$____/Unit	(\$_____)
UP-07	Earthwork, cut and fill onsite	50	CY	@	\$____/CY	(\$_____)
UP-08	Bermuda Sod	1,000	SF	@	\$____/SF	(\$_____)
UP-09	Final Seeding	1,000	SF	@	\$____/SF	(\$_____)
UP-10	Aggregate Base Course	5	TON	@	\$____/TN	(\$_____)
UP-11	Cast-in-place Concrete	100	SF	@	\$____/SF	(\$_____)

TOTAL BID AMOUNT

_____ Dollars (\$_____)

The total bid amount includes alternates and allowances, **does not** include unit prices. Do not include alternate 8 in total bid amount.

The Owner shall have the right to accept Alternates, Allowances, Unit Prices, and Contingencies listed on the bid form in any order or combination, and to determine the lowest responsive bidder unless otherwise specifically provided in the Bidding Documents, and to determine the low Bidder on the basis of the sum of the Base Bid, Alternates, Allowances, Unit Prices, and Contingencies accepted based on the Owner's budget at time of bid.

The Bidder shall substantially complete the Project in **186 consecutive calendar days** from the Date of the Notice to Proceed, on **May 31, 2024**.

PRINCIPAL SUB-BIDDERS: The undersigned further states that this bid is based on quotations received from the following subcontractors for the categories of work listed; he further agrees that if he is the successful Bidder, he will contract with the listed subcontractors for the performance of this work:

Track Surfacing Contractor & Manufacturer

Name: _____

Concrete Contractor

Name: _____

Plumbing Contractor

Name: _____

Electrical Contractor

Name: _____

Civil / Sitework Contractor

Name: _____

The Undersigned further agrees that in case of failure on his part to execute the said Contract and to furnish the bond within ten (10) consecutive calendar days after written notice being given of the award of the Contract, the check, cash, or bid bond accompanying this bid shall be paid into the funds of the Owner's account set aside for this project, as liquidated damages for such failure; otherwise the check, cash, or bid bond accompanying this proposal shall be returned to the Undersigned.

The Bidder acknowledges receipt of all Addenda as listed below and has taken them into account in preparation of his proposal.

Addendum No. _____ dated _____.

Addendum No. _____ dated _____.

Addendum No. _____ dated _____.

The following are included in this Bid:

- Bid Form
- Bid Bond
- HUB Forms
- Affidavit A or B
- Copy of NC General Contractor License

Post-Bid Checklist

- Affidavit C or D (within 72 hours)
- 100% Performance Bond
- 100% Payment Bond

- Certificate of Insurance
- Subcontractor Contract/Payment Information with each Invoice
- Sales Tax Certification with each Invoice

(Name of Firm or Corporation making bid)

By:

Printed Name and Title: (Owner, Partner, or Corp. Pres. or Vice-Pres. Only).

WITNESS:

(Proprietorship or Partnership)

ATTEST:

BY: _____

TITLE: _____
(Corp. Sec. or Assist. Sec. Only)

(CORPORATE SEAL)

SECTION 00 43 25
SUBSTITUTION FORM - DURING BID/PROCUREMENT
PART 1 GENERAL

1.01 PROJECT INFO:

PROJECT _____ PROJECT NUMBER _____
SUBSTITUTION REQUEST NO. _____ DATE _____
SPECIFICATION TITLE _____ DIV. NUMBER _____
SECTION ____ PARAGRAPH _____

1.02 PROPOSED SUBSTITUTION:

- A. Manufacturer: _____
- B. Address: _____ Phone: _____
- C. Trade Name: _____ Model Number: _____
- D. Attachments (list each):
- E. _____

THE UNDERSIGNED CERTIFIES:

1. Proposed Substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
2. Same warranty will be furnished for proposed substitution as for specified product.
3. Same maintenance service and source of replacement parts, as applicable, is available.
4. Proposed substitution will have no adverse affect on other trades and will not affect or delay progress schedule.
5. Proposed substitution does not affect dimensions and functional clearances.
6. Payment will be made for changes to the building design including A/E design, detailing, and construction costs caused by the substitution.

Submitted by: _____

Signed by: _____

Firm: _____

Address: _____

Phone: _____

A/E ACTION:

__ APPROVED __ APPROVED AS NOTED __ REJECTED __ REQUEST REC'D LATE

Signed _____

Date: _____

END OF SECTION

This page intentionally left blank

SECTION 00 50 00
CONTRACTING FORMS AND SUPPLEMENTS

PART 1 GENERAL

1.01 AGREEMENT AND CONDITIONS OF THE CONTRACT

- A. See Section 00 52 00 - Agreement Form for the Agreement form to be executed.
- B. See Section 00 72 00 - General Conditions for the General Conditions.
- C. The Agreement is based on AIA A101.
- D. The General Conditions are based on AIA A201.

1.02 FORMS

- A. Use the following forms for the specified purposes unless otherwise indicated elsewhere in Contract Documents.
- B. Bond Forms:
 - 1. Bid Bond Form: AIA A310.
 - 2. Performance and Payment Bond Form: AIA A312.
- C. Post-Award Certificates and Other Forms:
 - 1. Schedule of Values Form: AIA G703.
 - 2. Application for Payment Forms: AIA G702 with AIA G703 (for Contractors).
- D. Clarification and Modification Forms:
 - 1. Architect's Supplemental Instructions Form: AIA G710.
 - 2. Construction Change Directive Form: AIA G714.
 - 3. Change Order Form: AIA G701.
- E. Closeout Forms:
 - 1. Certificate of Substantial Completion Form: AIA G704.

1.03 REFERENCE STANDARDS

- A. AIA A101 - Standard Form of Agreement Between Owner and Contractor where the basis of Payment is a Stipulated Sum 2017.
- B. AIA A201 - General Conditions of the Contract for Construction 2017.
- C. AIA A310 - Bid Bond 2010.
- D. AIA A312 - Performance Bond and Payment Bond 2010.
- E. AIA G701 - Change Order 2017.
- F. AIA G702 - Application and Certificate for Payment 1992.
- G. AIA G703 - Continuation Sheet 1992.
- H. AIA G704 - Certificate of Substantial Completion 2017.
- I. AIA G710 - Architect's Supplemental Instructions 2017.
- J. AIA G714 - Construction Change Directive 2017.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

This page intentionally left blank



AIA® Document A101® – 2017

Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

AGREEMENT made as of the day of in the year
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

Wilson County Schools
117 NE Tarboro Street, #2048
Wilson County, NC

and the Contractor:
(Name, legal status, address and other information)

TBD

for the following Project:
(Name, location and detailed description)

WCS - Hunt HS – Athletics Renovation
4559 Lamm Road
Wilson, NC 27893

The Architect:
(Name, legal status, address and other information)

CPL Architects and Engineers, PC
1620 Hillsborough Street, Suite A
Raleigh, NC 27605

The Owner and Contractor agree as follows.

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.

The parties should complete A101®–2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement. AIA Document A201®–2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

TABLE OF ARTICLES

1	THE CONTRACT DOCUMENTS
2	THE WORK OF THIS CONTRACT
3	DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
4	CONTRACT SUM
5	PAYMENTS
6	DISPUTE RESOLUTION
7	TERMINATION OR SUSPENSION
8	MISCELLANEOUS PROVISIONS
9	ENUMERATION OF CONTRACT DOCUMENTS

EXHIBIT A INSURANCE AND BONDS

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be:

(Check one of the following boxes.)

- The date of this Agreement.
- A date set forth in a notice to proceed issued by the Owner.
- Established as follows:
(Insert a date or a means to determine the date of commencement of the Work.)

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

§ 3.2 The Contract Time shall be measured from the date of commencement of the Work.

§ 3.3 Substantial Completion

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:

(Check one of the following boxes and complete the necessary information.)

[] Not later than () calendar days from the date of commencement of the Work.

[] By the following date:

§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:

Portion of Work

Substantial Completion Date

§ 3.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be (\$), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 Alternates

§ 4.2.1 Alternates, if any, included in the Contract Sum:

Item

Price

§ 4.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement. *(Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)*

Item

Price

Conditions for Acceptance

§ 4.3 Allowances, if any, included in the Contract Sum: *(Identify each allowance.)*

Item

Price

§ 4.4 Unit prices, if any:

(Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)

Item

Units and Limitations

Price per Unit (\$0.00)

§ 4.5 Liquidated damages, if any:

(Insert terms and conditions for liquidated damages, if any.)

§ 4.6 Other:

(Insert provisions for bonus or other incentives, if any, that might result in a change to the Contract Sum.)

ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the day of the month. If an Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than () days after the Architect receives the Application for Payment. *(Federal, state or local laws may require payment within a certain period of time.)*

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 In accordance with AIA Document A201™–2017, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.1 The amount of each progress payment shall first include:

- .1 That portion of the Contract Sum properly allocable to completed Work;
- .2 That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and
- .3 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

§ 5.1.6.2 The amount of each progress payment shall then be reduced by:

- .1 The aggregate of any amounts previously paid by the Owner;
- .2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2017;
- .3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
- .4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2017; and
- .5 Retainage withheld pursuant to Section 5.1.7.

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due:

(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)

§ 5.1.7.1.1 The following items are not subject to retainage:
(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)

§ 5.1.7.2 Reduction or limitation of retainage, if any, shall be as follows:
(If the retainage established in Section 5.1.7.1 is to be modified prior to Substantial Completion of the entire Work, including modifications for Substantial Completion of portions of the Work as provided in Section 3.3.2, insert provisions for such modifications.)

§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:
(Insert any other conditions for release of retainage upon Substantial Completion.)

§ 5.1.8 If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A201–2017.

§ 5.1.9 Except with the Owner’s prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.2 Final Payment

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor’s responsibility to correct Work as provided in Article 12 of AIA Document A201–2017, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment has been issued by the Architect.

§ 5.2.2 The Owner’s final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect’s final Certificate for Payment, or as follows:

§ 5.3 Interest

Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

(Insert rate of interest agreed upon, if any.)

%

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201–2017, unless the parties appoint below another individual, not a party to this Agreement, to serve as the Initial Decision Maker.

(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

§ 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A201–2017, the method of binding dispute resolution shall be as follows:

(Check the appropriate box.)

- Arbitration pursuant to Section 15.4 of AIA Document A201–2017
- Litigation in a court of competent jurisdiction
- Other *(Specify)*

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2017.

§ 7.1.1 If the Contract is terminated for the Owner’s convenience in accordance with Article 14 of AIA Document A201–2017, then the Owner shall pay the Contractor a termination fee as follows:

(Insert the amount of, or method for determining, the fee, if any, payable to the Contractor following a termination for the Owner’s convenience.)

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2017.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2017 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 The Owner’s representative:

(Name, address, email address, and other information)

§ 8.3 The Contractor’s representative:

(Name, address, email address, and other information)

§ 8.4 Neither the Owner's nor the Contractor's representative shall be changed without ten days' prior notice to the other party.

§ 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, Exhibit A, Insurance and Bonds, and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in AIA Document A101™–2017 Exhibit A, and elsewhere in the Contract Documents.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A201–2017, may be given in accordance with AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:

(If other than in accordance with AIA Document E203–2013, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

§ 8.7 Other provisions:

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

- .1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor
- .2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds
- .3 AIA Document A201™–2017, General Conditions of the Contract for Construction
- .4 AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:
(Insert the date of the E203-2013 incorporated into this Agreement.)

.5 Drawings

Number	Title	Date
--------	-------	------

.6 Specifications

Section	Title	Date	Pages
---------	-------	------	-------

.7 Addenda, if any:

Number	Date	Pages
--------	------	-------

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are also enumerated in this Article 9.

.8 Other Exhibits:

(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

[] AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:
(Insert the date of the E204-2017 incorporated into this Agreement.)

[] The Sustainability Plan:

Title	Date	Pages
-------	------	-------

[] Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
----------	-------	------	-------

.9 Other documents, if any, listed below:
(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201™–2017 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor’s bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

This Agreement entered into as of the day and year first written above.

OWNER *(Signature)*

(Printed name and title)

CONTRACTOR *(Signature)*

(Printed name and title)

Additions and Deletions Report for **AIA® Document A101® – 2017**

This Additions and Deletions Report, as defined on page 1 of the associated document, reproduces below all text the author has added to the standard form AIA document in order to complete it, as well as any text the author may have added to or deleted from the original AIA text. Added text is shown underlined. Deleted text is indicated with a horizontal line through the original AIA text.

Note: This Additions and Deletions Report is provided for information purposes only and is not incorporated into or constitute any part of the associated AIA document. This Additions and Deletions Report and its associated document were generated simultaneously by AIA software at 07:54:47 ET on 09/19/2023.

PAGE 1

Wilson County Schools
117 NE Tarboro Street, #2048
Wilson County, NC

...

TBD

...

(Name, location and detailed description)

WCS - Hunt HS – Athletics Renovation
4559 Lamm Road
Wilson, NC 27893

...

(Name, legal status, address and other information)

CPL Architects and Engineers, PC
1620 Hillsborough Street, Suite A
Raleigh, NC 27605

Certification of Document's Authenticity

AIA® Document D401™ – 2003

I, _____, hereby certify, to the best of my knowledge, information and belief, that I created the attached final document simultaneously with its associated Additions and Deletions Report and this certification at 07:54:47 ET on 09/19/2023 under Order No. 3104237670 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A101™ – 2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, other than those additions and deletions shown in the associated Additions and Deletions Report.

(Signed)

(Title)

(Dated)



AIA® Document A101® – 2017 Exhibit A

Insurance and Bonds

This Insurance and Bonds Exhibit is part of the Agreement, between the Owner and the Contractor, dated the day of in the year
(In words, indicate day, month and year.)

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

WCS - Hunt HS – Athletics Renovation
4559 Lamm Road
Wilson, NC 27893

THE OWNER:
(Name, legal status and address)

Wilson County Schools
117 NE Tarboro Street, #2048
Wilson County, NC

THE CONTRACTOR:
(Name, legal status and address)

TBD

TABLE OF ARTICLES

- A.1 GENERAL
- A.2 OWNER’S INSURANCE
- A.3 CONTRACTOR’S INSURANCE AND BONDS
- A.4 SPECIAL TERMS AND CONDITIONS

ARTICLE A.1 GENERAL

The Owner and Contractor shall purchase and maintain insurance, and provide bonds, as set forth in this Exhibit. As used in this Exhibit, the term General Conditions refers to AIA Document A201™–2017, General Conditions of the Contract for Construction.

ARTICLE A.2 OWNER’S INSURANCE

§ A.2.1 General

Prior to commencement of the Work, the Owner shall secure the insurance, and provide evidence of the coverage, required under this Article A.2 and, upon the Contractor’s request, provide a copy of the property insurance policy or policies required by Section A.2.3. The copy of the policy or policies provided shall contain all applicable conditions, definitions, exclusions, and endorsements.

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.

This document is intended to be used in conjunction with AIA Document A201®–2017, General Conditions of the Contract for Construction. Article 11 of A201®–2017 contains additional insurance provisions.

§ A.2.2 Liability Insurance

The Owner shall be responsible for purchasing and maintaining the Owner’s usual general liability insurance.

§ A.2.3 Required Property Insurance

§ A.2.3.1 Unless this obligation is placed on the Contractor pursuant to Section A.3.3.2.1, the Owner shall purchase and maintain, from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located, property insurance written on a builder’s risk "all-risks" completed value or equivalent policy form and sufficient to cover the total value of the entire Project on a replacement cost basis. The Owner’s property insurance coverage shall be no less than the amount of the initial Contract Sum, plus the value of subsequent Modifications and labor performed and materials or equipment supplied by others. The property insurance shall be maintained until Substantial Completion and thereafter as provided in Section A.2.3.1.3, unless otherwise provided in the Contract Documents or otherwise agreed in writing by the parties to this Agreement. This insurance shall include the interests of the Owner, Contractor, Subcontractors, and Sub-subcontractors in the Project as insureds. This insurance shall include the interests of mortgagees as loss payees.

§ A.2.3.1.1 Causes of Loss. The insurance required by this Section A.2.3.1 shall provide coverage for direct physical loss or damage, and shall not exclude the risks of fire, explosion, theft, vandalism, malicious mischief, collapse, earthquake, flood, or windstorm. The insurance shall also provide coverage for ensuing loss or resulting damage from error, omission, or deficiency in construction methods, design, specifications, workmanship, or materials. Sub-limits, if any, are as follows:

(Indicate below the cause of loss and any applicable sub-limit.)

Causes of Loss	Sub-Limit
----------------	-----------

§ A.2.3.1.2 Specific Required Coverages. The insurance required by this Section A.2.3.1 shall provide coverage for loss or damage to falsework and other temporary structures, and to building systems from testing and startup. The insurance shall also cover debris removal, including demolition occasioned by enforcement of any applicable legal requirements, and reasonable compensation for the Architect’s and Contractor’s services and expenses required as a result of such insured loss, including claim preparation expenses. Sub-limits, if any, are as follows:

(Indicate below type of coverage and any applicable sub-limit for specific required coverages.)

Coverage	Sub-Limit
----------	-----------

§ A.2.3.1.3 Unless the parties agree otherwise, upon Substantial Completion, the Owner shall continue the insurance required by Section A.2.3.1 or, if necessary, replace the insurance policy required under Section A.2.3.1 with property insurance written for the total value of the Project that shall remain in effect until expiration of the period for correction of the Work set forth in Section 12.2.2 of the General Conditions.

§ A.2.3.1.4 Deductibles and Self-Insured Retentions. If the insurance required by this Section A.2.3 is subject to deductibles or self-insured retentions, the Owner shall be responsible for all loss not covered because of such deductibles or retentions.

§ A.2.3.2 Occupancy or Use Prior to Substantial Completion. The Owner’s occupancy or use of any completed or partially completed portion of the Work prior to Substantial Completion shall not commence until the insurance company or companies providing the insurance under Section A.2.3.1 have consented in writing to the continuance of coverage. The Owner and the Contractor shall take no action with respect to partial occupancy or use that would cause cancellation, lapse, or reduction of insurance, unless they agree otherwise in writing.

§ A.2.3.3 Insurance for Existing Structures

If the Work involves remodeling an existing structure or constructing an addition to an existing structure, the Owner shall purchase and maintain, until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, "all-risks" property insurance, on a replacement cost basis, protecting the existing structure against direct physical loss or damage from the causes of loss identified in Section A.2.3.1, notwithstanding the undertaking of the Work. The Owner shall be responsible for all co-insurance penalties.

§ A.2.4 Optional Extended Property Insurance.

The Owner shall purchase and maintain the insurance selected and described below.

(Select the types of insurance the Owner is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance. For each type of insurance selected, indicate applicable limits of coverage or other conditions in the fill point below the selected item.)

- § A.2.4.1 Loss of Use, Business Interruption, and Delay in Completion Insurance**, to reimburse the Owner for loss of use of the Owner's property, or the inability to conduct normal operations due to a covered cause of loss.

- § A.2.4.2 Ordinance or Law Insurance**, for the reasonable and necessary costs to satisfy the minimum requirements of the enforcement of any law or ordinance regulating the demolition, construction, repair, replacement or use of the Project.

- § A.2.4.3 Expediting Cost Insurance**, for the reasonable and necessary costs for the temporary repair of damage to insured property, and to expedite the permanent repair or replacement of the damaged property.

- § A.2.4.4 Extra Expense Insurance**, to provide reimbursement of the reasonable and necessary excess costs incurred during the period of restoration or repair of the damaged property that are over and above the total costs that would normally have been incurred during the same period of time had no loss or damage occurred.

- § A.2.4.5 Civil Authority Insurance**, for losses or costs arising from an order of a civil authority prohibiting access to the Project, provided such order is the direct result of physical damage covered under the required property insurance.

- § A.2.4.6 Ingress/Egress Insurance**, for loss due to the necessary interruption of the insured's business due to physical prevention of ingress to, or egress from, the Project as a direct result of physical damage.

- § A.2.4.7 Soft Costs Insurance**, to reimburse the Owner for costs due to the delay of completion of the Work, arising out of physical loss or damage covered by the required property insurance: including construction loan fees; leasing and marketing expenses; additional fees, including those of architects, engineers, consultants, attorneys and accountants, needed for the completion of the construction, repairs, or reconstruction; and carrying costs such as property taxes, building permits, additional interest on loans, realty taxes, and insurance premiums over and above normal expenses.

§ A.2.5 Other Optional Insurance.

The Owner shall purchase and maintain the insurance selected below.

(Select the types of insurance the Owner is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance.)

[] **§ A.2.5.1 Cyber Security Insurance** for loss to the Owner due to data security and privacy breach, including costs of investigating a potential or actual breach of confidential or private information. (Indicate applicable limits of coverage or other conditions in the fill point below.)

[] **§ A.2.5.2 Other Insurance**
(List below any other insurance coverage to be provided by the Owner and any applicable limits.)

Coverage

Limits

ARTICLE A.3 CONTRACTOR'S INSURANCE AND BONDS

§ A.3.1 General

§ A.3.1.1 Certificates of Insurance. The Contractor shall provide certificates of insurance acceptable to the Owner evidencing compliance with the requirements in this Article A.3 at the following times: (1) prior to commencement of the Work; (2) upon renewal or replacement of each required policy of insurance; and (3) upon the Owner's written request. An additional certificate evidencing continuation of commercial liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment and thereafter upon renewal or replacement of such coverage until the expiration of the periods required by Section A.3.2.1 and Section A.3.3.1. The certificates will show the Owner as an additional insured on the Contractor's Commercial General Liability and excess or umbrella liability policy or policies.

§ A.3.1.2 Deductibles and Self-Insured Retentions. The Contractor shall disclose to the Owner any deductible or self-insured retentions applicable to any insurance required to be provided by the Contractor.

§ A.3.1.3 Additional Insured Obligations. To the fullest extent permitted by law, the Contractor shall cause the commercial general liability coverage to include (1) the Owner, the Architect, and the Architect's consultants 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 as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions for which loss occurs during completed operations. The additional insured coverage shall be primary and non-contributory to any of the Owner's general liability insurance policies and shall apply to both ongoing and completed operations. To the extent commercially available, the additional insured coverage shall be no less than that provided by Insurance Services Office, Inc. (ISO) forms CG 20 10 07 04, CG 20 37 07 04, and, with respect to the Architect and the Architect's consultants, CG 20 32 07 04.

§ A.3.2 Contractor's Required Insurance Coverage

§ A.3.2.1 The Contractor shall purchase and maintain the following types and limits of insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, unless a different duration is stated below:
(If the Contractor is required to maintain insurance for a duration other than the expiration of the period for correction of Work, state the duration.)

§ A.3.2.2 Commercial General Liability

§ A.3.2.2.1 Commercial General Liability insurance for the Project written on an occurrence form with policy limits of not less than (\$) each occurrence, (\$) general aggregate, and (\$) aggregate for products-completed operations hazard, providing coverage for claims including

- .1 damages because of bodily injury, sickness or disease, including occupational sickness or disease, and death of any person;
- .2 personal injury and advertising injury;

- .3 damages because of physical damage to or destruction of tangible property, including the loss of use of such property;
- .4 bodily injury or property damage arising out of completed operations; and
- .5 the Contractor's indemnity obligations under Section 3.18 of the General Conditions.

§ A.3.2.2 The Contractor's Commercial General Liability policy under this Section A.3.2.2 shall not contain an exclusion or restriction of coverage for the following:

- .1 Claims by one insured against another insured, if the exclusion or restriction is based solely on the fact that the claimant is an insured, and there would otherwise be coverage for the claim.
- .2 Claims for property damage to the Contractor's Work arising out of the products-completed operations hazard where the damaged Work or the Work out of which the damage arises was performed by a Subcontractor.
- .3 Claims for bodily injury other than to employees of the insured.
- .4 Claims for indemnity under Section 3.18 of the General Conditions arising out of injury to employees of the insured.
- .5 Claims or loss excluded under a prior work endorsement or other similar exclusionary language.
- .6 Claims or loss due to physical damage under a prior injury endorsement or similar exclusionary language.
- .7 Claims related to residential, multi-family, or other habitational projects, if the Work is to be performed on such a project.
- .8 Claims related to roofing, if the Work involves roofing.
- .9 Claims related to exterior insulation finish systems (EIFS), synthetic stucco or similar exterior coatings or surfaces, if the Work involves such coatings or surfaces.
- .10 Claims related to earth subsidence or movement, where the Work involves such hazards.
- .11 Claims related to explosion, collapse and underground hazards, where the Work involves such hazards.

§ A.3.2.3 Automobile Liability covering vehicles owned, and non-owned vehicles used, by the Contractor, with policy limits of not less than (\$) per accident, for bodily injury, death of any person, and property damage arising out of the ownership, maintenance and use of those motor vehicles along with any other statutorily required automobile coverage.

§ A.3.2.4 The Contractor may achieve the required limits and coverage for Commercial General Liability and Automobile Liability through a combination of primary and excess or umbrella liability insurance, provided such primary and excess or umbrella insurance policies result in the same or greater coverage as the coverages required under Section A.3.2.2 and A.3.2.3, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The excess policy shall not require the exhaustion of the underlying limits only through the actual payment by the underlying insurers.

§ A.3.2.5 Workers' Compensation at statutory limits.

§ A.3.2.6 Employers' Liability with policy limits not less than (\$) each accident, (\$) each employee, and (\$) policy limit.

§ A.3.2.7 Jones Act, and the Longshore & Harbor Workers' Compensation Act, as required, if the Work involves hazards arising from work on or near navigable waterways, including vessels and docks

§ A.3.2.8 If the Contractor is required to furnish professional services as part of the Work, the Contractor shall procure Professional Liability insurance covering performance of the professional services, with policy limits of not less than (\$) per claim and (\$) in the aggregate.

§ A.3.2.9 If the Work involves the transport, dissemination, use, or release of pollutants, the Contractor shall procure Pollution Liability insurance, with policy limits of not less than (\$) per claim and (\$) in the aggregate.

§ A.3.2.10 Coverage under Sections A.3.2.8 and A.3.2.9 may be procured through a Combined Professional Liability and Pollution Liability insurance policy, with combined policy limits of not less than (\$) per claim and (\$) in the aggregate.

§ **A.3.2.11** Insurance for maritime liability risks associated with the operation of a vessel, if the Work requires such activities, with policy limits of not less than (\$) per claim and (\$) in the aggregate.

§ **A.3.2.12** Insurance for the use or operation of manned or unmanned aircraft, if the Work requires such activities, with policy limits of not less than (\$) per claim and (\$) in the aggregate.

§ **A.3.3 Contractor's Other Insurance Coverage**

§ **A.3.3.1** Insurance selected and described in this Section A.3.3 shall be purchased from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, unless a different duration is stated below:

(If the Contractor is required to maintain any of the types of insurance selected below for a duration other than the expiration of the period for correction of Work, state the duration.)

§ **A.3.3.2** The Contractor shall purchase and maintain the following types and limits of insurance in accordance with Section A.3.3.1.

(Select the types of insurance the Contractor is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance. Where policy limits are provided, include the policy limit in the appropriate fill point.)

[] § **A.3.3.2.1** Property insurance of the same type and scope satisfying the requirements identified in Section A.2.3, which, if selected in this section A.3.3.2.1, relieves the Owner of the responsibility to purchase and maintain such insurance except insurance required by Section A.2.3.1.3 and Section A.2.3.3. The Contractor shall comply with all obligations of the Owner under Section A.2.3 except to the extent provided below. The Contractor shall disclose to the Owner the amount of any deductible, and the Owner shall be responsible for losses within the deductible. Upon request, the Contractor shall provide the Owner with a copy of the property insurance policy or policies required. The Owner shall adjust and settle the loss with the insurer and be the trustee of the proceeds of the property insurance in accordance with Article 11 of the General Conditions unless otherwise set forth below:

(Where the Contractor's obligation to provide property insurance differs from the Owner's obligations as described under Section A.2.3, indicate such differences in the space below. Additionally, if a party other than the Owner will be responsible for adjusting and settling a loss with the insurer and acting as the trustee of the proceeds of property insurance in accordance with Article 11 of the General Conditions, indicate the responsible party below.)

[] § **A.3.3.2.2 Railroad Protective Liability Insurance**, with policy limits of not less than (\$) per claim and (\$) in the aggregate, for Work within fifty (50) feet of railroad property.

[] § **A.3.3.2.3 Asbestos Abatement Liability Insurance**, with policy limits of not less than (\$) per claim and (\$) in the aggregate, for liability arising from the encapsulation, removal, handling, storage, transportation, and disposal of asbestos-containing materials.

[] § **A.3.3.2.4** Insurance for physical damage to property while it is in storage and in transit to the construction site on an "all-risks" completed value form.

[] § **A.3.3.2.5** Property insurance on an "all-risks" completed value form, covering property owned by the Contractor and used on the Project, including scaffolding and other equipment.

[] § **A.3.3.2.6 Other Insurance**
(List below any other insurance coverage to be provided by the Contractor and any applicable limits.)

Coverage

Limits

§ A.3.4 Performance Bond and Payment Bond

The Contractor shall provide surety bonds, from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located, as follows:

(Specify type and penal sum of bonds.)

Type

Penal Sum (\$0.00)

Payment Bond

Performance Bond

Payment and Performance Bonds shall be AIA Document A312™, Payment Bond and Performance Bond, or contain provisions identical to AIA Document A312™, current as of the date of this Agreement.

ARTICLE A.4 SPECIAL TERMS AND CONDITIONS

Special terms and conditions that modify this Insurance and Bonds Exhibit, if any, are as follows:



Additions and Deletions Report for **AIA® Document A101® – 2017 Exhibit A**

This Additions and Deletions Report, as defined on page 1 of the associated document, reproduces below all text the author has added to the standard form AIA document in order to complete it, as well as any text the author may have added to or deleted from the original AIA text. Added text is shown underlined. Deleted text is indicated with a horizontal line through the original AIA text.

Note: This Additions and Deletions Report is provided for information purposes only and is not incorporated into or constitute any part of the associated AIA document. This Additions and Deletions Report and its associated document were generated simultaneously by AIA software at 07:55:24 ET on 09/19/2023.

PAGE 1

WCS - Hunt HS – Athletics Renovation
4559 Lamm Road
Wilson, NC 27893

...

Wilson County Schools
117 NE Tarboro Street, #2048
Wilson County, NC

...

TBD

SECTION 00 60 00
PROJECT FORMS AND RELATED DOCUMENTS
PART 1 GENERAL

1.01 SUMMARY

- A. This Section lists the project forms used for administration of the project as well as documents used for administration and logistics

1.02 FORMS

- A. The following forms are contained within the conditions of the contract section:
1. FRONT END SUBMISSION LOG
 2. PROJECT REQUEST FOR INFORMATION (RFI) FORM
 3. SUBCONTRACTOR LIST
 4. ALLOWANCE DISBURSEMENT FORM
 5. SUBSTITUTION REQUEST FORM
 6. SUBMITTAL COVER
 7. INFORMATION BULLETIN

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 PROCEDURES

- A. Front End Submission Log: This document is a checklist of the required submissions. Refer to Bidding Requirements, Section entitled "Instructions to Bidders" and Division 1, Specification Section entitled "SUBMITTAL PROCEDURES" for submission procedures.
- B. Project Request For Information (RFI) Form: This form is to be used for information requests. The forms are filled out by any party to the contract and sent to the Architect/Engineer. The Architect/Engineer shall number RFI before processing.
- C. Subcontractor List: This document is to be used identify subcontractors. The forms are filled out by each Prime Contractor for all proposed subcontractors and sent to the Architect/Engineer in accordance with. Division 1, section entitled "SUBMITTAL PROCEDURES"
- D. Allowance Disbursement Form: the Architect/Engineer shall issue this document after all parties have agreed to the conditions of change to be charged to the Allowance Amount in accordance with Division 1, section entitled "ALLOWANCES", if required.
- E. Substitution Request Form: This document is to be used for a Contractor to propose substitutions. The forms are filled out by each Prime Contractor and sent to the Architect/Engineer in accordance with. Division 1, section entitled "SUBMITTAL PROCEDURES" and "PRODUCT REQUIREMENTS".
- F. Submittal Cover: This document is to be used for submittal submissions. The forms are filled out by each Prime Contractor and sent to the Architect/Engineer in accordance with. Division 1, section entitled "SUBMITTAL PROCEDURES"
- G. Information Bulletin: The Architect/Engineer shall issue this document for 3 actions.
1. PROPOSAL REQUEST: A quotations for changes in the Contract Sum and / or proposed modifications to the Contract Documents
 2. SUPPLEMENTAL INSTRUCTIONS: Instructions for changes to the Contract Documents without additional cost or time
 3. CONSTRUCTION CHANGE DIRECTIVE: A directive to immediately proceed with changes to the work of the contract and to submit final cost for inclusion into a Change Order

END OF SECTION

This page intentionally left blank



FRONT END SUBMISSION LOG

WCS – HUNT HS – ATHLETICS RENOVATION | R22.16900.00

Contractor Name: _____

SUBMISSIONS

Submission	Date		Remarks
	Submitted	Approved	
Contract:			
Schedule of Values:			
Bonds:			
Insurance:			
Workers Comp:			
Auto Insurance:			
Safety Program:			
Schedule:			
Submittal Schedule:			
Emergency Contact:			
Substitution List:			
Subcontractor List:			
Project Manager:			
Superintendent:			

This log is to be used by the contractor to monitor and complete the required front-end submissions.

This page intentionally left blank

This page intentionally left blank



SUBCONTRACTOR LIST

WCS – HUNT HS – ATHLETICS RENOVATION | R22.16900.00

To: **CPL** From: _____
 1111 Haynes St. Suite 100 (Contractor) _____
 Raleigh, NC 27604 _____

Contractors
 No.: _____

Contract For: _____

List Subcontractors proposed for use on this Project as required by the Construction Documents. Attach supplemental sheets if necessary.

Section No.: _____ Section Title: _____
 Firm Name: _____ Contact: _____
 Address: _____

Section No.: _____ Section Title: _____
 Firm Name: _____ Contact: _____
 Address: _____

Section No.: _____ Section Title: _____
 Firm Name: _____ Contact: _____
 Address: _____

Section No.: _____ Section Title: _____
 Firm Name: _____ Contact: _____
 Address: _____

Section No.: _____ Section Title: _____

Attachment(s)

Signed by: _____ Date: _____

Copies: **Owner** **Consultants** File

This page intentionally left blank



ALLOWANCE DISBURSEMENT AUTHORIZATION

Owner _____
Architect/Engineer _____
Contractor _____
Field _____
Other _____
Other _____

WCS – HUNT HS – ATHLETICS RENOVATION | R22.16900.00

Allowance Disbursement
No. _____ Initiation Date: _____

Contract For: _____

To Contractor: _____

Contract Date: _____

Not valid until signed by Owner, Architect/Engineer, and Contractor.

The Original Contract Allowance _____

Net Allowance Disbursements previously authorized
Charges to Contract Allowance as a result of this authoriza-
tion _____

Current Contract Allowance Balance including this authori-
zation _____

Owner: _____

Architect/Engi-
neer: _____
(CPL)

Contractor: _____

This page intentionally left blank



SUBSTITUTION REQUEST FORM

WCS – HUNT HS – ATHLETICS RENOVATION | R22.16900.00

To: **CPL** From: _____
 1111 Haynes St. Suite 100 (Contractor)
 Raleigh, NC 27604

Re: _____ Substitution Request Number: _____
 Contract _____
 For: _____

Specification Title: _____ Description: _____
 Section Number: _____ Page: _____ Part: _____

Proposed Substitution: _____

MNFR: _____ Address: _____ Phone: _____
 Trade _____
 Name: _____ Model No.: _____

Installer: _____ Address: _____ Phone: _____
 History: New product 2-5 years old 5-10 years old More than 10 years old

Differences between proposed substitution and specified product _____

Point-by-point comparative data attached

Reason for not providing specified item: _____

Similar Installation:

Project: _____ Architect/Engineer: _____
 Contractor: _____ Owner: _____
 Date Installed: _____

Proposed substitution affects other parts of Work: No Yes, explain _____

Savings to Owner for accepting substitution: _____ (\$ _____)

Proposed substitution changes Contract Time: Yes; explain _____ No Yes [Add] [Deduct] _____ days

Supporting Data Attached: Drawings Product Data Samples 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.
- 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 _____

Phone: _____

Attachments: _____

REVIEW AND ACTION

- Substitution approved - Make submittals in accordance with Specification Section 01330.
- Substitution approved as noted - Make submittals in accordance with Specification Section 01330.
- Substitution rejected - Use specified materials.
- Substitution Request received too late - Use specified materials.

Signed By: _____ Date: _____

Additional

Comments: Contractor Subcontractor Supplier MNFRr Architect/Engineer



SUBMITTAL COVER

(Attach to each submittal)

Submittal No. Contractor only

Architect Project Number: _____
 Contractors Number: _____
 Project Name: _____

Contractor: _____
 Address: _____
 Phone / Fax: () _____

Date returned: _____

<p>TYPE OF SUBMITTAL (Check one)</p> <p><input type="checkbox"/> Product Data <input type="checkbox"/> Color Selection <input type="checkbox"/> O&M Manual</p> <p><input type="checkbox"/> Shop Drawings <input type="checkbox"/> Sample <input type="checkbox"/> Record Document</p> <p><input type="checkbox"/> Other</p> <p>SUBSTITUTION <input type="checkbox"/> YES <input type="checkbox"/> NO See General Conditions</p> <p>PRODUCT IDENTIFICATION Specification Section No.: _____ Contract Dwg. No.: _____ Product Name: _____ Part/Paragraph: _____ Detail Reference: _____ Manufacturer: _____</p>	<p>DATE OF SUBMITTAL: _____</p> <p>RESUBMITTED: _____</p> <p>NUMBER OF ATTACHED: _____</p> <p>CONTRACTOR APPROVAL Identify that this submittal has been reviewed and approved by the Contractor in accordance with the General Conditions By: _____ Date: _____</p>
--	--

Deviation from Contract Documents:

Contractor Comments:

FOR USE BY CPL SHOP DRAWING

No Exception Taken Revise & Resubmit
 Furnish as Corrected Rejected

Corrections or comments made on the shop drawings during this review do not relieve the Contractor from compliance with the requirements of the drawings and specifications. This check is only for review of general conformance with the design concept of the project and general compliance with the information given in the contract documents. The Contractor is responsible for: confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of all other trades; and performing his work in a safe satisfactory manner.

CPL
Date: _____ By: _____

Architect's Comments:

RECEIVED STAMP

This page intentionally left blank



SUPPLEMENTAL INSTRUCTION

PROJECT: _____ ASI NO.: _____

OWNER: _____ DATE: _____

CONTRACTOR: _____ ARCHITECT'S PROJECT NO.: _____

DESCRIPTION: _____ CONTRACT NO.: _____

CONTRACT DATE: _____

ATTACHMENT(S): _____

ACTION

- 1. *PROPOSAL REQUEST*: Submit an itemized quotation for changes in the Contract Sum and/or time required to implement the above proposed modifications to the Contract Documents. This is not authorization to proceed with the work.
- 2. *SUPPLEMENTAL INSTRUCTIONS*: Implement the above instructions without change to the Contract Sum and/or Time. Prior to proceeding, indicate acceptance below and return one copy to the Architect.
- 3. *CONSTRUCTION CHANGE DIRECTIVE*: Proceed with the above described changes to the Contract Documents immediately. Submit final costs and/or change in Contract Time for inclusion in a subsequent Change Order.

Methods: Lump Sum Unit Price Time & Material Not-to-Exceed

Change in Contract Sum of _____

Change in Contract Time of _____ days

ISSUED:

ACCEPTED:

AUTHORIZED:

BY: _____
Architect Date

BY: _____
Contractor Date

BY: _____
Owner Date

- | | | | |
|-------------------------------------|------------------------------------|--|--|
| <input type="checkbox"/> Owner | <input type="checkbox"/> Architect | <input type="checkbox"/> Structural | <input type="checkbox"/> Civil |
| <input type="checkbox"/> Contractor | <input type="checkbox"/> Field | <input type="checkbox"/> Mechanical/Electrical | <input type="checkbox"/> Other (Roofing) |

This page intentionally left blank

SECTION 00 61 13
CONTRACTOR'S AFFIDAVIT AND PARTIAL RELEASE OF
CLAIMS AND LIENS FOR PROGRESS PAYMENT

STATE OF _____

COUNTY OF _____

I, _____, being duly sworn, state on personal knowledge that I am
_____ (Title) of _____

(Contractor) and have authority to execute this Affidavit on behalf of the Contractor. I further state the following:

- A. All the laborers, persons, firms and corporations having furnished services or materials for the construction of the **WCS - Hunt HS - Athletics Renovation** have been paid in full for labor and materials furnished to date, except retention and unfounded change orders, and that upon completion of the work of each subcontractor or supplier, the Contractor will cause each such subcontractor and supplier to execute a Release and Waiver of Claim in the form required by the Contract Documents and shall further cause each such subcontractor and supplier to cancel any liens (if any) that may have been filed against the Project.
- B. The work covered by this payment has been completed in accordance with the Contract Documents.
- C. The Contractor hereby releases **Wilson County Schools** from all lien rights, claims, or demands of any kind whatsoever which it now has against the construction of the Project arising of or in any way related to the furnishing of labor and materials on or before the date of this Affidavit, except for retainage and unfunded change orders.
- D. To the best of the Contractor's knowledge and belief, no claims or claim of liens exist by or against any subcontractor or supplier who furnished materials or labor on the Project, and if any appear afterwards the Contractor shall hold **Wilson County Schools** harmless on the account thereof. Contractor agrees to provide a lien removal bond at no cost to the Owner or its representatives within 15 days from request by the Owner or the Owner's representatives.
- E. If any lien remains unsatisfied after all payments are made, the Contractor shall refund to the Owner all monies that the latter may be compelled to pay in discharging such lien, plus all lien bonds, costs, interests, both prejudgment at a legal rate.

(CONTRACTOR)

BY: _____

Sworn to and subscribed before me

This _____ Day of _____, 202__.

NOTARY PUBLIC

(Seal)

My Commission Expires: _____

END OF SECTION

This page intentionally left blank

SECTION 00 61 16
CONTRACTOR'S GENERAL WARRANTY

WILSON COUNTY SCHOOLS
WCS - HUNT HS - ATHLETICS RENOVATION
WILSON, NORTH CAROLINA

The undersigned Contractor hereby warrants, in accordance with the applicable provisions and terms set forth in the Contract Documents, all materials and workmanship incorporated in the **WCS - Hunt HS - Athletics Renovation, Wilson, North Carolina** against any and all defects due to faulty materials or workmanship or negligence for a period of 12 months, or such longer periods as set forth in the Contract Documents, from the effective date of this warranty. This Contractor further warrants all work incorporated in this project to remain leak-proof and watertight at all points for a period of 24 months from the effective date of this Warranty.

This Warranty shall be binding where defects occur due to normal usage conditions and does not cover willful or malicious damage, damages caused by acts of God or other casualty beyond the control of the Contractor.

This Warranty shall be in addition to other warranties and guarantees set forth in the Contract Documents and shall not act to constitute a waiver of additional protection of the Owner afforded, where applicable, by consumer protection and product liability provisions of law, and these stipulations shall not constitute waiver of any additional rights or remedies available to the Owner under the law.

Signed: _____

Name: _____

Title: _____

Date: _____

(Corporate Seal)

Subscribed and sworn before me

this ____ day of _____, 202__.

(Notary Public)

END OF SECTION

This page intentionally left blank

SECTION 00 61 19
ASBESTOS FREE WARRANTY

WILSON COUNTY SCHOOLS
HUNT HS - ATHLETICS RENOVATION

FOR: HUNT HS - ATHLETICS RENOVATION
4559 LAMM RD, WILSON, NC 27893
WILSON, NORTH CAROLINA

The undersigned Contractor hereby warrants that no asbestos-containing materials of any kind were used in the construction of the **WCS - Hunt HS - Athletics Renovation, for Wilson County Schools, Wilson, North Carolina.**

Signed: _____

Name: _____

Title: _____

Date: _____

(Corporate Seal)

Subscribed and sworn before me this

_____ day of _____, 202__.

(Notary Public)

END OF SECTION

This page intentionally left blank

State of North Carolina AFFIDAVIT A – Listing of Good Faith Efforts

County of _____

(Name of Bidder)

Affidavit of _____

I have made a good faith effort to comply under the following areas checked:

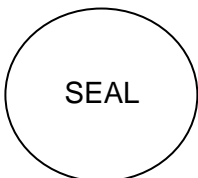
Bidders must earn at least 50 points from the good faith efforts listed for their bid to be considered responsive. (1 NC Administrative Code 30 I.0101)

- 1 – (10 pts)** Contacted minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor, or available on State or local government maintained lists, at least 10 days before the bid date and notified them of the nature and scope of the work to be performed.
- 2 --(10 pts)** Made the construction plans, specifications and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bids are due.
- 3 – (15 pts)** Broken down or combined elements of work into economically feasible units to facilitate minority participation.
- 4 – (10 pts)** Worked with minority trade, community, or contractor organizations identified by the Office of Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses.
- 5 – (10 pts)** Attended prebid meetings scheduled by the public owner.
- 6 – (20 pts)** Provided assistance in getting required bonding or insurance or provided alternatives to bonding or insurance for subcontractors.
- 7 – (15 pts)** Negotiated in good faith with interested minority businesses and did not reject them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing.
- 8 – (25 pts)** Provided assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisted minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit.
- 9 – (20 pts)** Negotiated joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible.
- 10 - (20 pts)** Provided quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands.

The undersigned, if apparent low bidder, will enter into a formal agreement with the firms listed in the Identification of Minority Business Participation schedule conditional upon scope of contract to be executed with the Owner. Substitution of contractors must be in accordance with GS143-128.2(d) Failure to abide by this statutory provision will constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of the minority business commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____ Name of Authorized Officer: _____
Signature: _____
Title: _____



State of _____, County of _____
Subscribed and sworn to before me this _____ day of _____ 20____
Notary Public _____
My commission expires _____

State of North Carolina --AFFIDAVIT B-- Intent to Perform Contract with Own Workforce.

County of _____

Affidavit of _____

(Name of Bidder)

I hereby certify that it is our intent to perform 100% of the work required for the _____ contract.

(Name of Project)

In making this certification, the Bidder states that the Bidder does not customarily subcontract elements of this type project, and normally performs and has the capability to perform and will perform all elements of the work on this project with his/her own current work forces; and

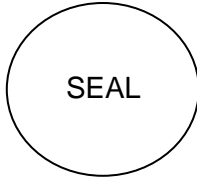
The Bidder agrees to provide any additional information or documentation requested by the owner in support of the above statement. The Bidder agrees to make a Good Faith Effort to utilize minority suppliers where possible.

The undersigned hereby certifies that he or she has read this certification and is authorized to bind the Bidder to the commitments herein contained.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of _____, County of _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Public _____

My commission expires _____

State of North Carolina - AFFIDAVIT C - Portion of the Work to be Performed by HUB Certified/Minority Businesses

County of _____

(Note this form is to be submitted only by the apparent lowest responsible, responsive bidder.)

If the portion of the work to be executed by HUB certified/minority businesses as defined in GS143-128.2(g) and 128.4(a),(b),(e) is equal to or greater than 10% of the bidders total contract price, then the bidder must complete this affidavit.
 This affidavit shall be provided by the apparent lowest responsible, responsive bidder within **72 hours** after notification of being low bidder.

Affidavit of _____ I do hereby certify that on the
 (Name of Bidder)

_____ (Project Name)
 Project ID# _____ Amount of Bid \$ _____

I will expend a minimum of _____% of the total dollar amount of the contract with minority business enterprises. Minority businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below. Attach additional sheets if required

Name and Phone Number	*Minority Category	**HUB Certified Y/N	Work Description	Dollar Value

*Minority categories: Black, African American (B), Hispanic (H), Asian American (A) American Indian (I), Female (F) Socially and Economically Disadvantaged (D)

**** HUB Certification with the state HUB Office required to be counted toward state participation goals.**

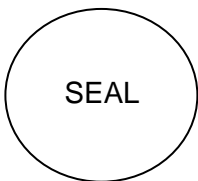
Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with Minority Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of _____, County of _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Public _____

My commission expires _____

State of North Carolina AFFIDAVIT D – Good Faith Efforts

County of _____

(Note this form is to be submitted only by the apparent lowest responsible, responsive bidder.)

If the goal of 10% participation by HUB Certified/ minority business **is not** achieved, the Bidder shall provide the following documentation to the Owner of his good faith efforts:

Affidavit of _____ I do hereby certify that on the _____
(Name of Bidder)

Project ID# _____ (Project Name) Amount of Bid \$ _____

I will expend a minimum of _____% of the total dollar amount of the contract with HUB certified/ minority business enterprises. Minority businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below. (Attach additional sheets if required)

Name and Phone Number	*Minority Category	**HUB Certified Y/N	Work Description	Dollar Value

*Minority categories: Black, African American (**B**), Hispanic (**H**), Asian American (**A**) American Indian (**I**), Female (**F**) Socially and Economically Disadvantaged (**D**)

**** HUB Certification with the state HUB Office required to be counted toward state participation goals.**

Examples of documentation that may be required to demonstrate the Bidder's good faith efforts to meet the goals set forth in these provisions include, but are not necessarily limited to, the following:

- A. Copies of solicitations for quotes to at least three (3) minority business firms from the source list provided by the State for each subcontract to be let under this contract (if 3 or more firms are shown on the source list). Each solicitation shall contain a specific description of the work to be subcontracted, location where bid documents can be reviewed, representative of the Prime Bidder to contact, and location, date and time when quotes must be received.
- B. Copies of quotes or responses received from each firm responding to the solicitation.
- C. A telephone log of follow-up calls to each firm sent a solicitation.
- D. For subcontracts where a minority business firm is not considered the lowest responsible sub-bidder, copies of quotes received from all firms submitting quotes for that particular subcontract.
- E. Documentation of any contacts or correspondence to minority business, community, or contractor organizations in an attempt to meet the goal.
- F. Copy of pre-bid roster
- G. Letter documenting efforts to provide assistance in obtaining required bonding or insurance for minority business.
- H. Letter detailing reasons for rejection of minority business due to lack of qualification.
- I. Letter documenting proposed assistance offered to minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letter of credit, including waiving credit that is ordinarily required.

Failure to provide the documentation as listed in these provisions may result in rejection of the bid and award to the next lowest responsible and responsive bidder.

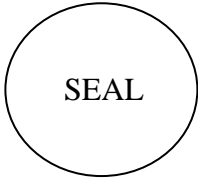
Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with Minority Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of _____, County of _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Public _____

My commission expires _____

APPENDIX E

MBE DOCUMENTATION FOR CONTRACT PAYMENTS

Prime Contractor/Architect: _____

Address & Phone: _____

Project Name: _____

Pay Application #: _____ Period: _____

The following is a list of payments made to Minority Business Enterprises on this project for the above-mentioned period.

MBE FIRM NAME	* INDICATE TYPE OF MBE	AMOUNT PAID THIS MONTH	TOTAL PAYMENTS TO DATE	TOTAL AMOUNT COMMITTED

*Minority categories: Black, African American (B), Hispanic (H), Asian American (A), American Indian (I), Female (F), Social and Economically Disadvantage (D)

Date: _____ Approved/Certified By: _____

Name

Title

Signature

SUBMIT WITH EACH PAY REQUEST & FINAL PAYMENT

This page intentionally left blank



AIA[®] Document A201[®] – 2017

General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)
WCS Hunt HS – Athletics Renovation
4559 Lamm Road
Wilson, NC 27893

THE OWNER:

(Name, legal status and address)

Wilson County Schools
117 NE Tarboro Street, #2048
Wilson County, NC

THE ARCHITECT:

(Name, legal status and address)

CPL Architects and Engineers, PC
1620 Hillsborough Street, Suite A
Raleigh, NC 27605

TABLE OF ARTICLES

- 1 GENERAL PROVISIONS
- 2 OWNER
- 3 CONTRACTOR
- 4 ARCHITECT
- 5 SUBCONTRACTORS
- 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS
- 7 CHANGES IN THE WORK
- 8 TIME
- 9 PAYMENTS AND COMPLETION
- 10 PROTECTION OF PERSONS AND PROPERTY
- 11 INSURANCE AND BONDS
- 12 UNCOVERING AND CORRECTION OF WORK
- 13 MISCELLANEOUS PROVISIONS
- 14 TERMINATION OR SUSPENSION OF THE CONTRACT

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.

AIA Document A201 – 2017. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997, 2007 and 2017. All rights reserved. "The American Institute of Architects," "American Institute of Architects," "AIA," the AIA Logo, and "AIA Contract Documents" are trademarks of The American Institute of Architects. This document was produced by AIA software at 07:54:03 ET on 09/19/2023 under Order No.3104237670 which expires on 12/10/2023, is not for resale, is licensed for one-time use only, and may only be used in accordance with the AIA Contract Documents[®] Terms of Service. To report copyright violations, e-mail docinfo@aicontracts.com.

User Notes:

(3B9ADA44)



Init.

/

AIA Document A201 – 2017. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997, 2007 and 2017. All rights reserved. “The American Institute of Architects,” “American Institute of Architects,” “AIA,” the AIA Logo, and “AIA Contract Documents” are trademarks of The American Institute of Architects. This document was produced at 07:54:03 ET on 09/19/2023 under Order No.3104237670 which expires on 12/10/2023, is not for resale, is licensed for one-time use only, and may only be used in accordance with the AIA Contract Documents® Terms of Service. To report copyright violations, e-mail docinfo@aiacontracts.com.
User Notes:

(3B9ADA44)

INDEX

(Topics and numbers in bold are Section headings.)

Acceptance of Nonconforming Work
9.6.6, 9.9.3, 12.3
Acceptance of Work
9.6.6, 9.8.2, 9.9.3, 9.10.1, 9.10.3, 12.3
Access to Work
3.16, 6.2.1, 12.1
Accident Prevention
10
Acts and Omissions
3.2, 3.3.2, 3.12.8, 3.18, 4.2.3, 8.3.1, 9.5.1, 10.2.5,
10.2.8, 13.3.2, 14.1, 15.1.2, 15.2
Addenda
1.1.1
Additional Costs, Claims for
3.7.4, 3.7.5, 10.3.2, 15.1.5
Additional Inspections and Testing
9.4.2, 9.8.3, 12.2.1, 13.4
Additional Time, Claims for
3.2.4, 3.7.4, 3.7.5, 3.10.2, 8.3.2, 15.1.6
Administration of the Contract
3.1.3, 4.2, 9.4, 9.5
Advertisement or Invitation to Bid
1.1.1
Aesthetic Effect
4.2.13
Allowances
3.8
Applications for Payment
4.2.5, 7.3.9, 9.2, 9.3, 9.4, 9.5.1, 9.5.4, 9.6.3, 9.7, 9.10
Approvals
2.1.1, 2.3.1, 2.5, 3.1.3, 3.10.2, 3.12.8, 3.12.9,
3.12.10.1, 4.2.7, 9.3.2, 13.4.1
Arbitration
8.3.1, 15.3.2, 15.4
ARCHITECT
4
Architect, Definition of
4.1.1
Architect, Extent of Authority
2.5, 3.12.7, 4.1.2, 4.2, 5.2, 6.3, 7.1.2, 7.3.4, 7.4, 9.2,
9.3.1, 9.4, 9.5, 9.6.3, 9.8, 9.10.1, 9.10.3, 12.1, 12.2.1,
13.4.1, 13.4.2, 14.2.2, 14.2.4, 15.1.4, 15.2.1
Architect, Limitations of Authority and
Responsibility
2.1.1, 3.12.4, 3.12.8, 3.12.10, 4.1.2, 4.2.1, 4.2.2,
4.2.3, 4.2.6, 4.2.7, 4.2.10, 4.2.12, 4.2.13, 5.2.1, 7.4,
9.4.2, 9.5.4, 9.6.4, 15.1.4, 15.2
Architect's Additional Services and Expenses
2.5, 12.2.1, 13.4.2, 13.4.3, 14.2.4
Architect's Administration of the Contract
3.1.3, 3.7.4, 15.2, 9.4.1, 9.5
Architect's Approvals

2.5, 3.1.3, 3.5, 3.10.2, 4.2.7
Architect's Authority to Reject Work
3.5, 4.2.6, 12.1.2, 12.2.1
Architect's Copyright
1.1.7, 1.5
Architect's Decisions
3.7.4, 4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 4.2.14, 6.3,
7.3.4, 7.3.9, 8.1.3, 8.3.1, 9.2, 9.4.1, 9.5, 9.8.4, 9.9.1,
13.4.2, 15.2
Architect's Inspections
3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.8.3, 9.9.2, 9.10.1, 13.4
Architect's Instructions
3.2.4, 3.3.1, 4.2.6, 4.2.7, 13.4.2
Architect's Interpretations
4.2.11, 4.2.12
Architect's Project Representative
4.2.10
Architect's Relationship with Contractor
1.1.2, 1.5, 2.3.3, 3.1.3, 3.2.2, 3.2.3, 3.2.4, 3.3.1, 3.4.2,
3.5, 3.7.4, 3.7.5, 3.9.2, 3.9.3, 3.10, 3.11, 3.12, 3.16,
3.18, 4.1.2, 4.2, 5.2, 6.2.2, 7, 8.3.1, 9.2, 9.3, 9.4, 9.5,
9.7, 9.8, 9.9, 10.2.6, 10.3, 11.3, 12, 13.3.2, 13.4, 15.2
Architect's Relationship with Subcontractors
1.1.2, 4.2.3, 4.2.4, 4.2.6, 9.6.3, 9.6.4, 11.3
Architect's Representations
9.4.2, 9.5.1, 9.10.1
Architect's Site Visits
3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.5.1, 9.9.2, 9.10.1, 13.4
Asbestos
10.3.1
Attorneys' Fees
3.18.1, 9.6.8, 9.10.2, 10.3.3
Award of Separate Contracts
6.1.1, 6.1.2
Award of Subcontracts and Other Contracts for
Portions of the Work
5.2
Basic Definitions
1.1
Bidding Requirements
1.1.1
Binding Dispute Resolution
8.3.1, 9.7, 11.5, 13.1, 15.1.2, 15.1.3, 15.2.1, 15.2.5,
15.2.6.1, 15.3.1, 15.3.2, 15.3.3, 15.4.1
Bonds, Lien
7.3.4.4, 9.6.8, 9.10.2, 9.10.3
Bonds, Performance, and Payment
7.3.4.4, 9.6.7, 9.10.3, 11.1.2, 11.1.3, 11.5
Building Information Models Use and Reliance
1.8
Building Permit
3.7.1
Capitalization
1.3
Certificate of Substantial Completion
9.8.3, 9.8.4, 9.8.5

Init.

/

AIA Document A201 – 2017. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997, 2007 and 2017. All rights reserved. "The American Institute of Architects," "American Institute of Architects," "AIA," the AIA Logo, and "AIA Contract Documents" are trademarks of The American Institute of Architects. This document was produced at 07:54:03 ET on 09/19/2023 under Order No.3104237670 which expires on 12/10/2023, is not for resale, is licensed for one-time use only, and may only be used in accordance with the AIA Contract Documents® Terms of Service. To report copyright violations, e-mail docinfo@aiacontracts.com.

User Notes:

(3B9ADA44)

Certificates for Payment
4.2.1, 4.2.5, 4.2.9, 9.3.3, 9.4, 9.5, 9.6.1, 9.6.6, 9.7,
9.10.1, 9.10.3, 14.1.1.3, 14.2.4, 15.1.4
Certificates of Inspection, Testing or Approval
13.4.4
Certificates of Insurance
9.10.2
Change Orders
1.1.1, 3.4.2, 3.7.4, 3.8.2.3, 3.11, 3.12.8, 4.2.8, 5.2.3,
7.1.2, 7.1.3, 7.2, 7.3.2, 7.3.7, 7.3.9, 7.3.10, 8.3.1,
9.3.1.1, 9.10.3, 10.3.2, 11.2, 11.5, 12.1.2
Change Orders, Definition of
7.2.1
CHANGES IN THE WORK
2.2.2, 3.11, 4.2.8, 7, 7.2.1, 7.3.1, 7.4, 8.3.1, 9.3.1.1,
11.5
Claims, Definition of
15.1.1
Claims, Notice of
1.6.2, 15.1.3
CLAIMS AND DISPUTES
3.2.4, 6.1.1, 6.3, 7.3.9, 9.3.3, 9.10.4, 10.3.3, 15, 15.4
Claims and Timely Assertion of Claims
15.4.1
Claims for Additional Cost
3.2.4, 3.3.1, 3.7.4, 7.3.9, 9.5.2, 10.2.5, 10.3.2, 15.1.5
Claims for Additional Time
3.2.4, 3.3.1, 3.7.4, 6.1.1, 8.3.2, 9.5.2, 10.3.2, 15.1.6
Concealed or Unknown Conditions, Claims for
3.7.4
Claims for Damages
3.2.4, 3.18, 8.3.3, 9.5.1, 9.6.7, 10.2.5, 10.3.3, 11.3,
11.3.2, 14.2.4, 15.1.7
Claims Subject to Arbitration
15.4.1
Cleaning Up
3.15, 6.3
Commencement of the Work, Conditions Relating to
2.2.1, 3.2.2, 3.4.1, 3.7.1, 3.10.1, 3.12.6, 5.2.1, 5.2.3,
6.2.2, 8.1.2, 8.2.2, 8.3.1, 11.1, 11.2, 15.1.5
Commencement of the Work, Definition of
8.1.2
Communications
3.9.1, 4.2.4
Completion, Conditions Relating to
3.4.1, 3.11, 3.15, 4.2.2, 4.2.9, 8.2, 9.4.2, 9.8, 9.9.1,
9.10, 12.2, 14.1.2, 15.1.2
COMPLETION, PAYMENTS AND
9
Completion, Substantial
3.10.1, 4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, 9.8, 9.9.1,
9.10.3, 12.2, 15.1.2
Compliance with Laws
2.3.2, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 9.6.4, 10.2.2,
13.1, 13.3, 13.4.1, 13.4.2, 13.5, 14.1.1, 14.2.1.3,
15.2.8, 15.4.2, 15.4.3
Concealed or Unknown Conditions

3.7.4, 4.2.8, 8.3.1, 10.3
Conditions of the Contract
1.1.1, 6.1.1, 6.1.4
Consent, Written
3.4.2, 3.14.2, 4.1.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3, 13.2,
15.4.4.2
Consolidation or Joinder
15.4.4
CONSTRUCTION BY OWNER OR BY
SEPARATE CONTRACTORS
1.1.4, 6
Construction Change Directive, Definition of
7.3.1
Construction Change Directives
1.1.1, 3.4.2, 3.11, 3.12.8, 4.2.8, 7.1.1, 7.1.2, 7.1.3,
7.3, 9.3.1.1
Construction Schedules, Contractor's
3.10, 3.11, 3.12.1, 3.12.2, 6.1.3, 15.1.6.2
Contingent Assignment of Subcontracts
5.4, 14.2.2.2
Continuing Contract Performance
15.1.4
Contract, Definition of
1.1.2
CONTRACT, TERMINATION OR SUSPENSION
OF THE
5.4.1.1, 5.4.2, 11.5, 14
Contract Administration
3.1.3, 4, 9.4, 9.5
Contract Award and Execution, Conditions Relating
to
3.7.1, 3.10, 5.2, 6.1
Contract Documents, Copies Furnished and Use of
1.5.2, 2.3.6, 5.3
Contract Documents, Definition of
1.1.1
Contract Sum
2.2.2, 2.2.4, 3.7.4, 3.7.5, 3.8, 3.10.2, 5.2.3, 7.3, 7.4,
9.1, 9.2, 9.4.2, 9.5.1.4, 9.6.7, 9.7, 10.3.2, 11.5, 12.1.2,
12.3, 14.2.4, 14.3.2, 15.1.4.2, 15.1.5, 15.2.5
Contract Sum, Definition of
9.1
Contract Time
1.1.4, 2.2.1, 2.2.2, 3.7.4, 3.7.5, 3.10.2, 5.2.3, 6.1.5,
7.2.1.3, 7.3.1, 7.3.5, 7.3.6, 7, 7, 7.3.10, 7.4, 8.1.1,
8.2.1, 8.2.3, 8.3.1, 9.5.1, 9.7, 10.3.2, 12.1.1, 12.1.2,
14.3.2, 15.1.4.2, 15.1.6.1, 15.2.5
Contract Time, Definition of
8.1.1
CONTRACTOR
3
Contractor, Definition of
3.1, 6.1.2
Contractor's Construction and Submittal Schedules
3.10, 3.12.1, 3.12.2, 4.2.3, 6.1.3, 15.1.6.2
Contractor's Employees

2.2.4, 3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6,
10.2, 10.3, 11.3, 14.1, 14.2.1.1

Contractor's Liability Insurance
11.1

Contractor's Relationship with Separate Contractors
and Owner's Forces
3.12.5, 3.14.2, 4.2.4, 6, 11.3, 12.2.4

Contractor's Relationship with Subcontractors
1.2.2, 2.2.4, 3.3.2, 3.18.1, 3.18.2, 4.2.4, 5, 9.6.2,
9.6.7, 9.10.2, 11.2, 11.3, 11.4

Contractor's Relationship with the Architect
1.1.2, 1.5, 2.3.3, 3.1.3, 3.2.2, 3.2.3, 3.2.4, 3.3.1, 3.4.2,
3.5.1, 3.7.4, 3.10, 3.11, 3.12, 3.16, 3.18, 4.2, 5.2,
6.2.2, 7, 8.3.1, 9.2, 9.3, 9.4, 9.5, 9.7, 9.8, 9.9, 10.2.6,
10.3, 11.3, 12, 13.4, 15.1.3, 15.2.1

Contractor's Representations
3.2.1, 3.2.2, 3.5, 3.12.6, 6.2.2, 8.2.1, 9.3.3, 9.8.2

Contractor's Responsibility for Those Performing the
Work
3.3.2, 3.18, 5.3, 6.1.3, 6.2, 9.5.1, 10.2.8

Contractor's Review of Contract Documents
3.2

Contractor's Right to Stop the Work
2.2.2, 9.7

Contractor's Right to Terminate the Contract
14.1

Contractor's Submittals
3.10, 3.11, 3.12, 4.2.7, 5.2.1, 5.2.3, 9.2, 9.3, 9.8.2,
9.8.3, 9.9.1, 9.10.2, 9.10.3

Contractor's Superintendent
3.9, 10.2.6

Contractor's Supervision and Construction
Procedures
1.2.2, 3.3, 3.4, 3.12.10, 4.2.2, 4.2.7, 6.1.3, 6.2.4,
7.1.3, 7.3.4, 7.3.6, 8.2, 10, 12, 14, 15.1.4

Coordination and Correlation
1.2, 3.2.1, 3.3.1, 3.10, 3.12.6, 6.1.3, 6.2.1

Copies Furnished of Drawings and Specifications
1.5, 2.3.6, 3.11

Copyrights
1.5, 3.17

Correction of Work
2.5, 3.7.3, 9.4.2, 9.8.2, 9.8.3, 9.9.1, 12.1.2, 12.2, 12.3,
15.1.3.1, 15.1.3.2, 15.2.1

Correlation and Intent of the Contract Documents
1.2

Cost, Definition of
7.3.4

Costs
2.5, 3.2.4, 3.7.3, 3.8.2, 3.15.2, 5.4.2, 6.1.1, 6.2.3,
7.3.3.3, 7.3.4, 7.3.8, 7.3.9, 9.10.2, 10.3.2, 10.3.6,
11.2, 12.1.2, 12.2.1, 12.2.4, 13.4, 14

Cutting and Patching
3.14, 6.2.5

Damage to Construction of Owner or Separate
Contractors
3.14.2, 6.2.4, 10.2.1.2, 10.2.5, 10.4, 12.2.4

Damage to the Work
3.14.2, 9.9.1, 10.2.1.2, 10.2.5, 10.4, 12.2.4

Damages, Claims for
3.2.4, 3.18, 6.1.1, 8.3.3, 9.5.1, 9.6.7, 10.3.3, 11.3.2,
11.3, 14.2.4, 15.1.7

Damages for Delay
6.2.3, 8.3.3, 9.5.1.6, 9.7, 10.3.2, 14.3.2

Date of Commencement of the Work, Definition of
8.1.2

Date of Substantial Completion, Definition of
8.1.3

Day, Definition of
8.1.4

Decisions of the Architect
3.7.4, 4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 6.3, 7.3.4,
7.3.9, 8.1.3, 8.3.1, 9.2, 9.4, 9.5.1, 9.8.4, 9.9.1, 13.4.2,
14.2.2, 14.2.4, 15.1, 15.2

Decisions to Withhold Certification
9.4.1, 9.5, 9.7, 14.1.1.3

Defective or Nonconforming Work, Acceptance,
Rejection and Correction of
2.5, 3.5, 4.2.6, 6.2.3, 9.5.1, 9.5.3, 9.6.6, 9.8.2, 9.9.3,
9.10.4, 12.2.1

Definitions
1.1, 2.1.1, 3.1.1, 3.5, 3.12.1, 3.12.2, 3.12.3, 4.1.1, 5.1,
6.1.2, 7.2.1, 7.3.1, 8.1, 9.1, 9.8.1, 15.1.1

Delays and Extensions of Time
3.2, 3.7.4, 5.2.3, 7.2.1, 7.3.1, 7.4, 8.3, 9.5.1, 9.7,
10.3.2, 10.4, 14.3.2, 15.1.6, 15.2.5

Digital Data Use and Transmission
1.7

Disputes
6.3, 7.3.9, 15.1, 15.2

Documents and Samples at the Site
3.11

Drawings, Definition of
1.1.5

Drawings and Specifications, Use and Ownership of
3.11

Effective Date of Insurance
8.2.2

Emergencies
10.4, 14.1.1.2, 15.1.5

Employees, Contractor's
3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6, 10.2,
10.3.3, 11.3, 14.1, 14.2.1.1

Equipment, Labor, or Materials
1.1.3, 1.1.6, 3.4, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1,
4.2.6, 4.2.7, 5.2.1, 6.2.1, 7.3.4, 9.3.2, 9.3.3, 9.5.1.3,
9.10.2, 10.2.1, 10.2.4, 14.2.1.1, 14.2.1.2

Execution and Progress of the Work
1.1.3, 1.2.1, 1.2.2, 2.3.4, 2.3.6, 3.1, 3.3.1, 3.4.1, 3.7.1,
3.10.1, 3.12, 3.14, 4.2, 6.2.2, 7.1.3, 7.3.6, 8.2, 9.5.1,
9.9.1, 10.2, 10.3, 12.1, 12.2, 14.2, 14.3.1, 15.1.4

Extensions of Time
3.2.4, 3.7.4, 5.2.3, 7.2.1, 7.3, 7.4, 9.5.1, 9.7, 10.3.2,
10.4, 14.3, 15.1.6, 15.2.5

Failure of Payment
 9.5.1.3, 9.7, 9.10.2, 13.5, 14.1.1.3, 14.2.1.2
 Faulty Work
 (See Defective or Nonconforming Work)
 Final Completion and Final Payment
 4.2.1, 4.2.9, 9.8.2, 9.10, 12.3, 14.2.4, 14.4.3
 Financial Arrangements, Owner's
 2.2.1, 13.2.2, 14.1.1.4
GENERAL PROVISIONS
 1
 Governing Law
 13.1
 Guarantees (See Warranty)
 Hazardous Materials and Substances
 10.2.4, 10.3
 Identification of Subcontractors and Suppliers
 5.2.1
 Indemnification
 3.17, 3.18, 9.6.8, 9.10.2, 10.3.3, 11.3
 Information and Services Required of the Owner
 2.1.2, 2.2, 2.3, 3.2.2, 3.12.10.1, 6.1.3, 6.1.4, 6.2.5,
 9.6.1, 9.9.2, 9.10.3, 10.3.3, 11.2, 13.4.1, 13.4.2,
 14.1.1.4, 14.1.4, 15.1.4
 Initial Decision
 15.2
 Initial Decision Maker, Definition of
 1.1.8
 Initial Decision Maker, Decisions
 14.2.4, 15.1.4.2, 15.2.1, 15.2.2, 15.2.3, 15.2.4, 15.2.5
 Initial Decision Maker, Extent of Authority
 14.2.4, 15.1.4.2, 15.2.1, 15.2.2, 15.2.3, 15.2.4, 15.2.5
 Injury or Damage to Person or Property
 10.2.8, 10.4
 Inspections
 3.1.3, 3.3.3, 3.7.1, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.3,
 9.9.2, 9.10.1, 12.2.1, 13.4
 Instructions to Bidders
 1.1.1
 Instructions to the Contractor
 3.2.4, 3.3.1, 3.8.1, 5.2.1, 7, 8.2.2, 12, 13.4.2
 Instruments of Service, Definition of
 1.1.7
 Insurance
 6.1.1, 7.3.4, 8.2.2, 9.3.2, 9.8.4, 9.9.1, 9.10.2, 10.2.5,
 11
 Insurance, Notice of Cancellation or Expiration
 11.1.4, 11.2.3
 Insurance, Contractor's Liability
 11.1
 Insurance, Effective Date of
 8.2.2, 14.4.2
 Insurance, Owner's Liability
 11.2
 Insurance, Property
 10.2.5, 11.2, 11.4, 11.5
 Insurance, Stored Materials
 9.3.2

INSURANCE AND BONDS
 11
 Insurance Companies, Consent to Partial Occupancy
 9.9.1
 Insured loss, Adjustment and Settlement of
 11.5
 Intent of the Contract Documents
 1.2.1, 4.2.7, 4.2.12, 4.2.13
 Interest
 13.5
 Interpretation
 1.1.8, 1.2.3, 1.4, 4.1.1, 5.1, 6.1.2, 15.1.1
 Interpretations, Written
 4.2.11, 4.2.12
 Judgment on Final Award
 15.4.2
 Labor and Materials, Equipment
 1.1.3, 1.1.6, 3.4, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1,
 5.2.1, 6.2.1, 7.3.4, 9.3.2, 9.3.3, 9.5.1.3, 9.10.2, 10.2.1,
 10.2.4, 14.2.1.1, 14.2.1.2
 Labor Disputes
 8.3.1
 Laws and Regulations
 1.5, 2.3.2, 3.2.3, 3.2.4, 3.6, 3.7, 3.12.10, 3.13, 9.6.4,
 9.9.1, 10.2.2, 13.1, 13.3.1, 13.4.2, 13.5, 14, 15.2.8,
 15.4
 Liens
 2.1.2, 9.3.1, 9.3.3, 9.6.8, 9.10.2, 9.10.4, 15.2.8
 Limitations, Statutes of
 12.2.5, 15.1.2, 15.4.1.1
 Limitations of Liability
 3.2.2, 3.5, 3.12.10, 3.12.10.1, 3.17, 3.18.1, 4.2.6,
 4.2.7, 6.2.2, 9.4.2, 9.6.4, 9.6.7, 9.6.8, 10.2.5, 10.3.3,
 11.3, 12.2.5, 13.3.1
 Limitations of Time
 2.1.2, 2.2, 2.5, 3.2.2, 3.10, 3.11, 3.12.5, 3.15.1, 4.2.7,
 5.2, 5.3, 5.4.1, 6.2.4, 7.3, 7.4, 8.2, 9.2, 9.3.1, 9.3.3,
 9.4.1, 9.5, 9.6, 9.7, 9.8, 9.9, 9.10, 12.2, 13.4, 14, 15,
 15.1.2, 15.1.3, 15.1.5
 Materials, Hazardous
 10.2.4, 10.3
 Materials, Labor, Equipment and
 1.1.3, 1.1.6, 3.4.1, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1,
 5.2.1, 6.2.1, 7.3.4, 9.3.2, 9.3.3, 9.5.1.3, 9.10.2,
 10.2.1.2, 10.2.4, 14.2.1.1, 14.2.1.2
 Means, Methods, Techniques, Sequences and
 Procedures of Construction
 3.3.1, 3.12.10, 4.2.2, 4.2.7, 9.4.2
 Mechanic's Lien
 2.1.2, 9.3.1, 9.3.3, 9.6.8, 9.10.2, 9.10.4, 15.2.8
 Mediation
 8.3.1, 15.1.3.2, 15.2.1, 15.2.5, 15.2.6, 15.3, 15.4.1,
 15.4.1.1
 Minor Changes in the Work
 1.1.1, 3.4.2, 3.12.8, 4.2.8, 7.1, 7.4
MISCELLANEOUS PROVISIONS
 13

Modifications, Definition of
1.1.1
Modifications to the Contract
1.1.1, 1.1.2, 2.5, 3.11, 4.1.2, 4.2.1, 5.2.3, 7, 8.3.1, 9.7,
10.3.2
Mutual Responsibility
6.2
Nonconforming Work, Acceptance of
9.6.6, 9.9.3, 12.3
Nonconforming Work, Rejection and Correction of
2.4, 2.5, 3.5, 4.2.6, 6.2.4, 9.5.1, 9.8.2, 9.9.3, 9.10.4,
12.2
Notice
1.6, 1.6.1, 1.6.2, 2.1.2, 2.2.2., 2.2.3, 2.2.4, 2.5, 3.2.4,
3.3.1, 3.7.4, 3.7.5, 3.9.2, 3.12.9, 3.12.10, 5.2.1, 7.4,
8.2.2, 9.6.8, 9.7, 9.10.1, 10.2.8, 10.3.2, 11.5, 12.2.2.1,
13.4.1, 13.4.2, 14.1, 14.2.2, 14.4.2, 15.1.3, 15.1.5,
15.1.6, 15.4.1
Notice of Cancellation or Expiration of Insurance
11.1.4, 11.2.3
Notice of Claims
1.6.2, 2.1.2, 3.7.4, 9.6.8, 10.2.8, 15.1.3, 15.1.5,
15.1.6, 15.2.8, 15.3.2, 15.4.1
Notice of Testing and Inspections
13.4.1, 13.4.2
Observations, Contractor's
3.2, 3.7.4
Occupancy
2.3.1, 9.6.6, 9.8
Orders, Written
1.1.1, 2.4, 3.9.2, 7, 8.2.2, 11.5, 12.1, 12.2.2.1, 13.4.2,
14.3.1
OWNER
2
Owner, Definition of
2.1.1
Owner, Evidence of Financial Arrangements
2.2, 13.2.2, 14.1.1.4
Owner, Information and Services Required of the
2.1.2, 2.2, 2.3, 3.2.2, 3.12.10, 6.1.3, 6.1.4, 6.2.5,
9.3.2, 9.6.1, 9.6.4, 9.9.2, 9.10.3, 10.3.3, 11.2, 13.4.1,
13.4.2, 14.1.1.4, 14.1.4, 15.1.4
Owner's Authority
1.5, 2.1.1, 2.3.32.4, 2.5, 3.4.2, 3.8.1, 3.12.10, 3.14.2,
4.1.2, 4.2.4, 4.2.9, 5.2.1, 5.2.4, 5.4.1, 6.1, 6.3, 7.2.1,
7.3.1, 8.2.2, 8.3.1, 9.3.2, 9.5.1, 9.6.4, 9.9.1, 9.10.2,
10.3.2, 11.4, 11.5, 12.2.2, 12.3, 13.2.2, 14.3, 14.4,
15.2.7
Owner's Insurance
11.2
Owner's Relationship with Subcontractors
1.1.2, 5.2, 5.3, 5.4, 9.6.4, 9.10.2, 14.2.2
Owner's Right to Carry Out the Work
2.5, 14.2.2
Owner's Right to Clean Up
6.3
Owner's Right to Perform Construction and to Award

Separate Contracts
6.1
Owner's Right to Stop the Work
2.4
Owner's Right to Suspend the Work
14.3
Owner's Right to Terminate the Contract
14.2, 14.4
Ownership and Use of Drawings, Specifications and
Other Instruments of Service
1.1.1, 1.1.6, 1.1.7, 1.5, 2.3.6, 3.2.2, 3.11, 3.17, 4.2.12,
5.3
Partial Occupancy or Use
9.6.6, 9.9
Patching, Cutting and
3.14, 6.2.5
Patents
3.17
Payment, Applications for
4.2.5, 7.3.9, 9.2, 9.3, 9.4, 9.5, 9.6.3, 9.7, 9.8.5, 9.10.1,
14.2.3, 14.2.4, 14.4.3
Payment, Certificates for
4.2.5, 4.2.9, 9.3.3, 9.4, 9.5, 9.6.1, 9.6.6, 9.7, 9.10.1,
9.10.3, 14.1.1.3, 14.2.4
Payment, Failure of
9.5.1.3, 9.7, 9.10.2, 13.5, 14.1.1.3, 14.2.1.2
Payment, Final
4.2.1, 4.2.9, 9.10, 12.3, 14.2.4, 14.4.3
Payment Bond, Performance Bond and
7.3.4.4, 9.6.7, 9.10.3, 11.1.2
Payments, Progress
9.3, 9.6, 9.8.5, 9.10.3, 14.2.3, 15.1.4
PAYMENTS AND COMPLETION
9
Payments to Subcontractors
5.4.2, 9.5.1.3, 9.6.2, 9.6.3, 9.6.4, 9.6.7, 14.2.1.2
PCB
10.3.1
Performance Bond and Payment Bond
7.3.4.4, 9.6.7, 9.10.3, 11.1.2
Permits, Fees, Notices and Compliance with Laws
2.3.1, 3.7, 3.13, 7.3.4.4, 10.2.2
PERSONS AND PROPERTY, PROTECTION OF
10
Polychlorinated Biphenyl
10.3.1
Product Data, Definition of
3.12.2
Product Data and Samples, Shop Drawings
3.11, 3.12, 4.2.7
Progress and Completion
4.2.2, 8.2, 9.8, 9.9.1, 14.1.4, 15.1.4
Progress Payments
9.3, 9.6, 9.8.5, 9.10.3, 14.2.3, 15.1.4
Project, Definition of
1.1.4
Project Representatives

4.2.10
 Property Insurance
 10.2.5, 11.2
 Proposal Requirements
 1.1.1
 PROTECTION OF PERSONS AND PROPERTY
 10
 Regulations and Laws
 1.5, 2.3.2, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 9.6.4, 9.9.1,
 10.2.2, 13.1, 13.3, 13.4.1, 13.4.2, 13.5, 14, 15.2.8,
 15.4
 Rejection of Work
 4.2.6, 12.2.1
 Releases and Waivers of Liens
 9.3.1, 9.10.2
 Representations
 3.2.1, 3.5, 3.12.6, 8.2.1, 9.3.3, 9.4.2, 9.5.1, 9.10.1
 Representatives
 2.1.1, 3.1.1, 3.9, 4.1.1, 4.2.10, 13.2.1
 Responsibility for Those Performing the Work
 3.3.2, 3.18, 4.2.2, 4.2.3, 5.3, 6.1.3, 6.2, 6.3, 9.5.1, 10
 Retainage
 9.3.1, 9.6.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3
 Review of Contract Documents and Field Conditions
 by Contractor
 3.2, 3.12.7, 6.1.3
 Review of Contractor's Submittals by Owner and
 Architect
 3.10.1, 3.10.2, 3.11, 3.12, 4.2, 5.2, 6.1.3, 9.2, 9.8.2
 Review of Shop Drawings, Product Data and
 Samples by Contractor
 3.12
 Rights and Remedies
 1.1.2, 2.4, 2.5, 3.5, 3.7.4, 3.15.2, 4.2.6, 5.3, 5.4, 6.1,
 6.3, 7.3.1, 8.3, 9.5.1, 9.7, 10.2.5, 10.3, 12.2.1, 12.2.2,
 12.2.4, 13.3, 14, 15.4
 Royalties, Patents and Copyrights
 3.17
 Rules and Notices for Arbitration
 15.4.1
 Safety of Persons and Property
 10.2, 10.4
 Safety Precautions and Programs
 3.3.1, 4.2.2, 4.2.7, 5.3, 10.1, 10.2, 10.4
 Samples, Definition of
 3.12.3
 Samples, Shop Drawings, Product Data and
 3.11, 3.12, 4.2.7
 Samples at the Site, Documents and
 3.11
 Schedule of Values
 9.2, 9.3.1
 Schedules, Construction
 3.10, 3.12.1, 3.12.2, 6.1.3, 15.1.6.2
 Separate Contracts and Contractors
 1.1.4, 3.12.5, 3.14.2, 4.2.4, 4.2.7, 6, 8.3.1, 12.1.2
 Separate Contractors, Definition of

6.1.1
 Shop Drawings, Definition of
 3.12.1
 Shop Drawings, Product Data and Samples
 3.11, 3.12, 4.2.7
 Site, Use of
 3.13, 6.1.1, 6.2.1
 Site Inspections
 3.2.2, 3.3.3, 3.7.1, 3.7.4, 4.2, 9.9.2, 9.4.2, 9.10.1, 13.4
 Site Visits, Architect's
 3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.5.1, 9.9.2, 9.10.1, 13.4
 Special Inspections and Testing
 4.2.6, 12.2.1, 13.4
 Specifications, Definition of
 1.1.6
 Specifications
 1.1.1, 1.1.6, 1.2.2, 1.5, 3.12.10, 3.17, 4.2.14
 Statute of Limitations
 15.1.2, 15.4.1.1
 Stopping the Work
 2.2.2, 2.4, 9.7, 10.3, 14.1
 Stored Materials
 6.2.1, 9.3.2, 10.2.1.2, 10.2.4
 Subcontractor, Definition of
 5.1.1
 SUBCONTRACTORS
 5
 Subcontractors, Work by
 1.2.2, 3.3.2, 3.12.1, 3.18, 4.2.3, 5.2.3, 5.3, 5.4,
 9.3.1.2, 9.6.7
 Subcontractual Relations
 5.3, 5.4, 9.3.1.2, 9.6, 9.10, 10.2.1, 14.1, 14.2.1
 Submittals
 3.10, 3.11, 3.12, 4.2.7, 5.2.1, 5.2.3, 7.3.4, 9.2, 9.3,
 9.8, 9.9.1, 9.10.2, 9.10.3
 Submittal Schedule
 3.10.2, 3.12.5, 4.2.7
 Subrogation, Waivers of
 6.1.1, 11.3
 Substances, Hazardous
 10.3
 Substantial Completion
 4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, 9.8, 9.9.1, 9.10.3,
 12.2, 15.1.2
 Substantial Completion, Definition of
 9.8.1
 Substitution of Subcontractors
 5.2.3, 5.2.4
 Substitution of Architect
 2.3.3
 Substitutions of Materials
 3.4.2, 3.5, 7.3.8
 Sub-subcontractor, Definition of
 5.1.2
 Subsurface Conditions
 3.7.4
 Successors and Assigns

13.2
Superintendent
3.9, 10.2.6
Supervision and Construction Procedures
1.2.2, 3.3, 3.4, 3.12.10, 4.2.2, 4.2.7, 6.1.3, 6.2.4,
7.1.3, 7.3.4, 8.2, 8.3.1, 9.4.2, 10, 12, 14, 15.1.4
Suppliers
1.5, 3.12.1, 4.2.4, 4.2.6, 5.2.1, 9.3, 9.4.2, 9.5.4, 9.6,
9.10.5, 14.2.1
Surety
5.4.1.2, 9.6.8, 9.8.5, 9.10.2, 9.10.3, 11.1.2, 14.2.2,
15.2.7
Surety, Consent of
9.8.5, 9.10.2, 9.10.3
Surveys
1.1.7, 2.3.4
Suspension by the Owner for Convenience
14.3
Suspension of the Work
3.7.5, 5.4.2, 14.3
Suspension or Termination of the Contract
5.4.1.1, 14
Taxes
3.6, 3.8.2.1, 7.3.4.4
Termination by the Contractor
14.1, 15.1.7
Termination by the Owner for Cause
5.4.1.1, 14.2, 15.1.7
Termination by the Owner for Convenience
14.4
Termination of the Architect
2.3.3
Termination of the Contractor Employment
14.2.2

TERMINATION OR SUSPENSION OF THE CONTRACT

14
Tests and Inspections
3.1.3, 3.3.3, 3.7.1, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.3,
9.9.2, 9.10.1, 10.3.2, 12.2.1, 13.4
TIME
8
Time, Delays and Extensions of
3.2.4, 3.7.4, 5.2.3, 7.2.1, 7.3.1, 7.4, 8.3, 9.5.1, 9.7,
10.3.2, 10.4, 14.3.2, 15.1.6, 15.2.5
Time Limits

2.1.2, 2.2, 2.5, 3.2.2, 3.10, 3.11, 3.12.5, 3.15.1, 4.2,
5.2, 5.3, 5.4, 6.2.4, 7.3, 7.4, 8.2, 9.2, 9.3.1, 9.3.3,
9.4.1, 9.5, 9.6, 9.7, 9.8, 9.9, 9.10, 12.2, 13.4, 14,
15.1.2, 15.1.3, 15.4
Time Limits on Claims
3.7.4, 10.2.8, 15.1.2, 15.1.3
Title to Work
9.3.2, 9.3.3
UNCOVERING AND CORRECTION OF WORK
12
Uncovering of Work
12.1
Unforeseen Conditions, Concealed or Unknown
3.7.4, 8.3.1, 10.3
Unit Prices
7.3.3.2, 9.1.2
Use of Documents
1.1.1, 1.5, 2.3.6, 3.12.6, 5.3
Use of Site
3.13, 6.1.1, 6.2.1
Values, Schedule of
9.2, 9.3.1
Waiver of Claims by the Architect
13.3.2
Waiver of Claims by the Contractor
9.10.5, 13.3.2, 15.1.7
Waiver of Claims by the Owner
9.9.3, 9.10.3, 9.10.4, 12.2.2.1, 13.3.2, 14.2.4, 15.1.7
Waiver of Consequential Damages
14.2.4, 15.1.7
Waiver of Liens
9.3, 9.10.2, 9.10.4
Waivers of Subrogation
6.1.1, 11.3
Warranty
3.5, 4.2.9, 9.3.3, 9.8.4, 9.9.1, 9.10.2, 9.10.4, 12.2.2,
15.1.2
Weather Delays
8.3, 15.1.6.2
Work, Definition of
1.1.3
Written Consent
1.5.2, 3.4.2, 3.7.4, 3.12.8, 3.14.2, 4.1.2, 9.3.2, 9.10.3,
13.2, 13.3.2, 15.4.4.2
Written Interpretations
4.2.11, 4.2.12
Written Orders
1.1.1, 2.4, 3.9, 7, 8.2.2, 12.1, 12.2, 13.4.2, 14.3.1

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. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding or proposal requirements.

§ 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.

§ 1.1.3 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.

§ 1.1.4 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.

§ 1.1.6 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.

The Specifications may describe (or the Drawings may show) the general placement required of materials or equipment, but the actual required placement may vary depending on the specific material or equipment used by the Contractor or the existing field conditions. The Contractor shall bear all direct and indirect costs associated with such variances.

Some Specifications may be written in a condensed outline form and omitted words shall be included by inference. If the Specifications identify a task, it shall mean the "Contractor shall furnish, install and complete" the identified task unless otherwise stated.

Reference to standard specifications, manuals or codes shall mean reference to the latest standard specification, manual or code in effect at the time of the execution of the Owner-Contractor Agreement, unless otherwise stated.

When reference is made to a manufacturer, trade association, reference standard or similar source (such as ASTM, ASA, AISC, ACI, etc.) the standards or requirements of such entity shall be incorporated into the Specifications and have the force and effect as though they were set forth expressly. Upon entering into the Owner-Contractor Agreement, the Contractor acknowledges its familiarity with those references, codes, etc. The date of the referenced

standard shall be the latest edition in effect at the time of the execution of the Owner-Contractor Agreement unless otherwise stated.

§ 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. In the event of inconsistencies within or between parts of the Contract Documents, the Contractor shall (1) provide the better quality of Work or (2) comply with the more stringent requirement; either or both in accordance with the Architect's interpretation. The terms and conditions of the Subparagraph 1.2.1, however shall not relieve the Contractor of any of the obligations set forth elsewhere in this Agreement. All work shall conform to the Contract Documents. No significant change therefrom shall be made without prior written authorization by the Owner. Where only part of the Work is indicated, similar parts shall be considered repetition. When any detail is shown and the components therefore are fully described, similar details shall be construed to require the same materials and construction. Items required by either the Drawings or the Specifications and not mentioned in the other shall be of like effect as if shown or mentioned in both. Should the Specifications and Drawings fail to particularly describe a product or material shown to be used in any place, the Contractor shall furnish the product that would normally be used in that place.

§ 1.2.1.1 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 nor to limit the scope of work performed by any trade or by any Subcontractor or supplier. Such separations shall not operate to make the Architect an arbiter to establish limits of work between Subcontractors or between Contractor and Subcontractor.

§ 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.

§ 1.2.4 Reference to "match existing" in Contract Documents refer to existing finishes, materials, details, and qualities which have been used in adjacent portions of existing facilities. Material designations or details not specifically shown shall either match existing or be similar in finish, material or quality to similar adjacent conditions.

§ 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.

§ 1.5 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 Owner, 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 Owner, 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 AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party’s sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

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.

§ 2.1.2 The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of, or enforce mechanic’s lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner’s interest therein.

§ 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, 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 in the Contract Documents.

§ 2.2.3

Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 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 as necessary to complete the Project.

§ 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.

§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor 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.

§ 2.3.5 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.6 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 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, 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, except to the extent required by Section 6.1.3. Such order or stoppage by the Owner shall not constitute grounds for contract termination by the Contractor under Article 14 and shall not be the basis of Time Extensions by the Contractor under Article 8.3.

§ 2.5 Owner's Right to Carry Out the Work

§ 2.5.1 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 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.

§ 2.5.2 The rights stated in this Article 2 and elsewhere in the Contract Documents are cumulative and not in limitation of any rights of the Owner or Contractor (1) granted in the Contract Documents; (2) law; or (3) in equity.

§ 2.5.3 In no event shall the Owner have control over, charge of, or any responsibility for construction means, methods, techniques, sequences, or procedures or for safety precautions and programs in connection with the Work. The owner assumes no responsibility for liability for the safety of the Project site. The Contractor shall be solely responsible for providing a safe place for the performance of the Work; provided that the Owner shall be responsible for, and the Contractor shall upon discovery notify the Owner of, any unsafe condition created by the Owner.

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 Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's 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.

§ 3.2 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.

The Contractor shall rely on its own knowledge and its review and interpretation of the Contract Documents and data provided in entering into the Contract and not the representations of the Owner or other persons. The Contractor acknowledges that quantities provided in the Contract Documents are estimates only and Contractor shall not seek additional compensation or adjustment in price based on a variation in actual quantities.

Prior to execution of the Contract, the Contractor and each Subcontractor shall evaluate and satisfy themselves as to the conditions and limitations under which the Work is to be performed, including, without limitation, (i) the

Init.

location, condition, layout, and nature of the Project site and surrounding areas, (ii) generally prevailing climatic conditions, (iii) anticipated labor supply and costs, and (iv) availability and cost of materials, tools, and equipment.

The location of existing features shown on plans is intended for general information only. The Contractor, alone, is responsible for accurate determination of the location of all structures, and shall not be entitled to any extra payment for discrepancies between the Work as shown in the Contract Documents and existing conditions.

The locations, depths and data as to underground conditions have been obtained from records, surface indications and data furnished by others. Information furnished is solely for the convenience of the Contractor without any warranty, expressed or implied as to its accuracy or completeness. The Contractor shall verify all existing conditions prior to commencing the Work. The Contractor shall make no claim against the Owner or Architect with respect to the accuracy or completeness of such information if the conditions found after commencement of the Work are different from those as indicated.

The Contractor shall be solely responsible for the conditions which develop during construction and in the event any structure is dislocated, or over strained, or damaged so as to affect its usefulness, the Contractor shall correct or repair any dislocations, over strains or damages caused.

The Contractor is responsible for restoration and/or repair of utilities, private property, buildings, pavement, walkways, roads, etc. damaged by its activities during the performance of its Work.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. 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.

The Contractor shall assume full responsibility for accuracy of measurements obtained at the site. No extra compensation will be allowed because of differences between actual measurements and dimensions indicated on the Drawings, nor for Contractor's failure to coordinate work with actual field measurements.

§ 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 shall pay such costs and damages to the Owner, subject to Section 15.1.7, 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.

§ 3.2.5 The Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and shall make no changes or relocations without the prior written approval of the Owner. The Contractor shall report to the Architect whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points by professionally qualified personnel.

§ 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 shall employ a licensed surveyor to locate and stake out the Work and establish necessary reference and bench marks. The contractor shall work from established bench marks and reference points, layout and correctly establish all lines, levels, grades and locations of all parts of their own Work and be responsible for their accuracy and proper correlation with Work and established data.

§ 3.3.5 Prohibitions: There shall be no use of tobacco products, alcohol or illegal drugs at the construction site. No weapons are permitted at the construction site. Contractor and its agents shall refrain from the use of profanity or dressing in any way that is disrespectful or harassing to legally protected groups, including but not limited to race, color, sex, age, disability, religion, national orientation or sexual orientation.

§ 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.

- .1 All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable manufacturer, fabricator, supplier or distributor, except as otherwise provided in the Contract Documents.
- .2 Contractor shall confine construction equipment, the storage of materials and equipment and the operations of all workers to areas permitted by law, ordinances, permits or the Contract Documents, and shall not disturb the premises more than required for the proper performance of the Work and/or permitted by the Owner.
- .3 Contractors and Subcontractors warrant that they have good title to all materials used in performing Work on this Contract.

§ 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.

After the Contract has been executed, the Owner and Architect will consider requests for the substitution of products in place of those specified only if the Contractor satisfies the procedural requirements set forth in the General Requirements (Division 01) of the Specifications. By making requests for substitutions, the Contractor:

- .1 Represents that it has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified;
- .2 Represents that it will provide the same warranty for the substitution as it would have provided for the product specified;

Init.

- .3 Certifies that the cost data presented is complete and includes all related costs for the substituted product and for Work that must be changed as a result of the substitution, except for the Architect's redesign costs, and waives all claims for additional costs related to the substitution that may subsequently be incurred by the Contractor; and
- .4 Shall coordinate the installation of the accepted substitute, making such changes as may be required for the Work to be complete in all respects.

§ 3.4.2.1 The Owner shall be entitled to reimbursement from the Contractor for amounts paid to the Architect for reviewing the Contractor's proposed substitutions and making agreed upon changes in the Drawings and Specifications resulting from such substitutions. The Owner may seek reimbursement pursuant to the procedures set forth in **§ 9.5.1**.

§ 3.4.2.2 The Contractor shall bear all expenses resulting from substitutions including the cost General Conditions as well as any structural, plumbing, mechanical and electrical trade costs made necessary by the substitution.

§ 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 Owner shall have the right, but not the obligation, to require the Contractor to remove and replace, with a person acceptable to Owner, promptly after notice from Owner, any employee of Contractor or Subcontractor who:
(1) has engaged in conduct on Owner's property that is contrary to the requirements of any applicable law, the Contract Documents, or any rule or directive of Owner relating to conduct on Owner's property; or (2) is incapable of fulfilling its responsibilities in connection with the Project.

§ 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 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.6 Taxes

§ 3.6.1 The Contractor shall provide the Owner with two (2) notarized invoices with an itemized listing and supporting data for all such taxes paid, and the Owner shall reimburse the Contractor or such payments. Supporting documentation shall be in conformance with requirements of the State in which the Project is located.

§ 3.7 Permits, Fees, Notices and Compliance with Laws

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

- .1 The Contractor shall promptly deliver copies of such documents to the Owner.
- .2 If in connection with the Project, the Owner has obtained certain permits, licenses or agreements for the Project, the Owner will furnish copies of these documents to the Contractor. It is the Contractor's responsibility to comply with any conditions or limitations placed on the Project by these permits. The Contractor shall fully cooperate with the Owner in meeting the permit requirements and accommodations of regulatory inspections / directives.

§ 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. If the Contractor fails to give such notices as applicable to the performance of the Work, the Contractor shall be liable for and shall indemnify and hold harmless the Owner against any and all resulting fines, penalties, judgments or damages, including reasonable attorney fees, imposed on or incurred by the parties indemnified, as a result of such failure by the Contractor

§ 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 correction.

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that 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 that 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, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 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. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

§ 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. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. 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.

§ 3.7.6 Upon completion of the Work, the Contractor shall deliver to the Architect original copies of all required final certificates of inspection, the Certificate of Occupancy, the other documents evidencing that inspections required by authorities having jurisdiction over the Work have been performed

§ 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;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 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 (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 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 superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

The Contractor's superintendent shall not be removed from this Project until the Project punch list has been completed and the Project has been accepted by the Owner. Unless approved otherwise by the Owner in advance, the Contractor's superintendent shall be assigned solely to this Project and shall not perform any duties or superintendence on any other Project until completion of this Project.

§ 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.

§ 3.10 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.

§ 3.10.1.1 The Construction Schedule shall be a Critical Path Method (CPM) type of schedule, consisting of: (1) a single critical path delineation and other sequencing, and early and late start, float, and completion dates for each activity; and (2) milestones, interrelationships, and restraints for all activities, including Owner-awarded contracts through the date of Project completion. The Construction Schedule must show all activities necessary for Substantial and Final Completion as defined in Section 9.8, Section 9.10, and elsewhere in the Contract Documents.

§ 3.10.1.2 When the Construction Schedule is complete, the Contractor, after consultation with all Subcontractors and material suppliers, shall confirm in writing to the Architect that the Construction Schedule is reasonable and achievable by the Contractor, subject to any extensions of time as provided for elsewhere in the Contract Documents. The Contractor shall thereafter give prompt specific notice to the Owner and the Architect of any change in the logic of the Construction Schedule or any part thereof, the removal of any restraints, or the reduction of any durations.

§ 3.10.1.3 Periodic meetings will be held at least monthly or at more frequent times, as required by the Work, to assess the state of the completion of the Project and to update the Construction Schedule as necessary. In advance of each such meeting, Contractor shall provide Owner a written status report identifying whether the Work is on schedule in accordance with the Construction Schedule or whether there are anticipated or potential delays to any critical path elements in the construction of the Work (in which event Contractor shall provide notice and an analysis as reasonably requested by Owner)

§ 3.10.1.4 The Construction Schedule shall be revised at least monthly or at more frequent times as required by conditions of the Work, and shall provide for expeditious and practicable execution of the Work consistent with the Contract Time. The Architect and Owner shall be provided copies of the Construction Schedule as periodically updated and in electronic format, as maintained by the Contractor.

§ 3.10.1.5 In the event that any updated Construction Schedule indicates a projected Substantial Completion date that is more than thirty (30) days after the required Substantial Completion date (as the same may be extended by Change Order for Excusable Delay), the Owner shall have the right to direct the Contractor to take corrective

measures necessary to expedite the progress of construction, including, without limitation, (1) working additional shifts or overtime, (2) supplying additional manpower, equipment, facilities, (3) rescheduling activities, and (4) other similar measures (hereinafter referred to collectively as “Recovery Measures”). Such Recovery Measures shall continue until the progress of the Work complies with the state of completion required by the Construction Schedule. The Owner’s right to require Recovery Measures is solely for the purpose of ensuring the Contractor’s compliance with the Construction Schedule.

- .1 The Contractor shall not be entitled to seek and adjustment in the Contract Sum in connection with Recovery Measures required by the Owner, unless they are incurred by Contractor as directed in writing by Owner to mitigate or offset Excusable Delay.**
- .2 The Owner may exercise the rights furnished to the Owner under or pursuant to this Subparagraph 3.10.1.5 as frequently as is reasonably necessary to ensure that the Contractor’s performance of the Work will comply with any milestone date or completion date set forth in the Construction Schedule.**

§ 3.10.1.6 The Contractor is solely responsible for the timing, sequencing coordination, and supervision of the work in accordance with the approved Construction Schedule. Review or approval of the initial Construction Schedule and subsequent reviews of the Construction Schedule by the Architect and Owner do not operate to imply agreement by the Architect or Owner that the means and methods of planning of the Work utilized by the Contractor are adequate or will accomplish the Work in the time shown on the Construction Schedule. The Contractor shall take all actions necessary to ensure the Work’s successful planning and execution within the stipulated Contract Time. Additionally, review or approval of the Construction Schedule by the Owner or its consultants shall not make the Owner or its consultants responsible for Contractor’s scheduling obligations or the accuracy of the Construction Schedule prepared by the Contractor.

§ 3.10.1.7 The Contractor represents to the Owner that the initial Construction Schedule and all subsequent Construction Schedules (including updates and amendments) have been prepared in good faith and are accurate to the best of the Contractor’s knowledge.

§ 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 review. The Architect’s review 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 be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a contract with the Contractor.

§ 3.10.4 The Owner shall have the reasonable right to direct postponement or rescheduling of any date or time for the performance of any part of the Work that may interfere with the operation of the Owner’s premises or any tenants or invitees, thereof. The Contractor shall, upon the Owner’s reasonable request, reschedule any portion of the Work affecting operation of the premises during hours when the premises are not in operation. Any postponement, rescheduling, or performance of the Work under this Subparagraph 3.10.5 may be grounds for an extension of the Contract Time, if permitted under Subparagraph 8.3.1, and an equitable adjustment in the Contract Sum if (1) the performance of the Work was properly scheduled by the Contractor in compliance with the requirements of the Contract Documents, and (2) such rescheduling or postponement is required by the Owner.

§ 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 Architect’s reviewed 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. Contractor shall submit samples requiring color or finish selection in a single, coordinated submittal. The Architect will issue no color or finish schedule until all samples and other data necessary for making complete color selections for the project are received.

§ 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 reviewed by the Architect. The Architect shall have no responsibility to review any Shop Drawings, Product Data, Samples or similar submittals unless and until the Contractor has submitted and received back from the Architect approved reviewed submittal schedule as required under Section 3.10.2. In addition, it is not the Architect's responsibility to ensure that all required Shop Drawings, Product Data, Samples or similar submittals that are required to be submitted and reviewed under the Contract Documents are submitted by the Contractor. Submissions of Shop Drawings, Product Data, Samples or similar submittals is solely the Contractor's responsibility.

§ 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 reviewed and commented on by the Architect.

§ 3.12.8 The Work shall be in accordance with reviewed submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's review 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 indicted in writing that there is no exception 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 review 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 action on 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.

Init.

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 cause such services or certifications to be provided by a properly 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, accuracy and completeness of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, and 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. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

§ 3.12.10.1 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 The Architect's review of the Contractor's submittals will be limited to examination of an initial submittal and one (1) resubmittal. The Owner is entitled to obtain reimbursement from the Contractor for amounts paid to the Architect for evaluation of additional resubmittals.

§ 3.13 Use of Site

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.

- .1 Due to the site constraints, only materials and equipment that are to be used in the Work shall be brought to and stored on the Project site by the Contractor. After materials and equipment are no longer required for the Work, they shall be promptly removed from the Project site. Protection of materials and equipment stored at the Project site from weather, theft, damage, and all other adversity is solely the responsibility of the Contractor. The Contractor shall ensure that the Work, at all times, is performed in a manner that affords reasonable access, both vehicular and pedestrian, to the site of the Work and adjacent areas.
- .2 The Contractor shall not permit any workers to use existing facilities at the Project site, including, without limitation, lavatories, entrances and parking areas other than those designated and approved by the Owner.
- .3 The Contractor shall comply with all rules and regulations promulgated by the Owner in connection with the use and occupancy of the Project site and the Building, as amended from time to time. The Contractor shall immediately notify the Owner in writing if during the performance of the Work, the Contractor finds compliance with any portion of such rules and regulations to be impracticable, setting forth the problems of such compliance and suggesting alternatives through which the same results intended by such portions of the rules and regulations can be achieved. The Owner may, in the Owner's sole discretion, adopt such suggestions, develop new alternatives, or require compliance with the existing requirements of the rules and regulations.

§ 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 without 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.

§ 3.14.3 All cutting and patching work shall be done by the Contractor (or through the appropriate Subcontractor). Patches in finish surfaces shall match the adjacent surfaces in material, finish, detail, and quality. Patches in fire rated construction or construction required to be smoke tight shall be made in conformance with assemblies designed and tested by agencies recognized by governing codes. Any UL rated fire safing materials, flanges, or other materials required by Code, the Contract Documents, or manufacturers installation instructions for devices penetrating the work affected shall be applied an installed by an approved firestop subcontractor or qualified personnel from the applicable trade.

§ 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 lawfully remove and dispose of 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, or if not specified in the Contract Documents, then within 48 hours of an Owner request, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 Access to Work

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

§ 3.17 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, 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 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.

§ 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.

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.

§ 4.1.2 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 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. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 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.

§ 4.2.2.1 The Owner is entitled to reimbursement from the Contractor for amounts paid to the Architect for site visits made necessary by the fault of the Contractor to maintain the Project Schedule or for defects and deficiencies in the Work. The Owner may seek reimbursement pursuant to the procedures set forth in **§ 9.5.1**.

§ 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. All costs made necessary by such failure, including those of repeated procedures shall be at Contractor's sole expense, including reasonable compensation for Architect's services and expenses.

§ 4.2.7 The Architect will review 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 with the most recently reviewed submittal schedule or, in the absence of a 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

Init.

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 review 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.

§ 4.2.9 The Architect will conduct site visits 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 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.

.1 The Contractor's request for information shall be prepared and submitted in accordance with the General Requirements (Division 01 of the Specifications) on the form included therein or as otherwise approved in advance. The Architect will return requests for information that do not conform to requirements of the Contract Documents.

.2 The Architect's response to a request for information (RFI), or issuance of a clarification or interpretation shall be considered an interpretation, clarification, supplemental information or an order for a minor change in the Work not involving an adjustment in Contract Sum or extension of Contract Time and not inconsistent with the intent of the Contract Documents, and shall be binding, unless indicated otherwise in the Architect's response to the RFI.

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, but prior to the first Application for Payment, 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.

The listing required by this Section shall be submitted to the Architect no later than 30 days from the date of the Agreement. This list shall include the names of manufacturers, suppliers, and installers proposed for each of the products, equipment, and materials to be incorporated into the project.

The Contractor shall furnish upon request adequate data on any named entity on the list in order to permit the Architect and the Owner to conduct a proper evaluation. Failure to object to a manufacturer shall not constitute a waiver of any of the requirements of the Contract Documents and all products furnished by the listed manufacturer must conform to such requirements.

§ 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.

§ 5.2.3 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.

§ 5.2.4 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.

§ 5.3 Subcontractual Relations

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 The division of the Specifications into sections is not intended to control the Contractor in dividing the work among subcontractors nor to limit the scope of work performed by any trade under a given section. The Architect will not undertake to settle any differences between the Contractor and its Subcontractors as to the responsibility for completing all Work in the Specifications. It shall be entirely the Contractor's responsibility to properly coordinate and complete all the Work described in the Specifications whether performed by the Contractor or its Subcontractors.

§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract, provided that the Owner shall not be under any obligation to compensate the Subcontractor with respect to amounts that the Owner has already paid to the Contractor for such Subcontractor's work.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity.

§ 5.4.4 Nothing in the Contract Documents shall be deemed to create any contractual relationship between any Subcontractor of any tier and the Owner, or between the General Contractor or Subcontractor of any tier and the Architect.

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 Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

§ 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.

§ 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.

§ 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.

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.

§ 7.1.2 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.

§ 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 Unless otherwise agreed to in writing by the Owner and the Contractor, the combined overhead and profit that shall be included in the total cost (or credit) to the Owner for a Change in the Work shall be based on the following schedule:

- .1** For the Contractor, for Work performed by the Contractor's own forces:
 1. 15% on the first \$25,000 of the change order direct cost of self-performed work,
 2. 10% on the portion of the change order direct cost of self-performed work between \$25,000 and \$50,000 and
 3. 7.5% on the portion of the change order direct cost of self-performed work between \$50,000 and \$200,000 and
 4. 5% on the portion of the change order direct cost of self-performed work greater than \$200,000.
- .2** For the Contractor, for Work performed by the Contractor's Subcontractor five percent (5%) of the amount due the Subcontractor.
- .3** For each Subcontractor involved, for Work performed by that Subcontractor's own forces, fifteen percent (15%) of the cost.
- .4** For each Subcontractor involved, for Work performed by the Subcontractor's Sub-subcontractors, five percent (5%) of the amount due the Sub-subcontractor.
- .5** Cost to which overhead and profit is to be applied shall be determined in accordance with Section 7.3.7 and shall be itemized (including labor costs).

§ 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 A Change Order, when issued, shall be full compensation, or credit, for the extra Work performed, omitted, or substituted. It shall show on its face, any adjustment in time for completion of the Project as a result of the Change in the Work. Each Change Order shall include all costs related thereto, including all overhead, miscellaneous expenses, and incidentals.

§ 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.
- .5 **Calculation of overhead and profit shall be consistent with Section 7.1.4.**

§ 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 Section 7.1.4. 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, and other employee costs approved by the Architect;
- .2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
- .5 Costs of supervision and field office personnel directly attributable to the change.

§ 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 and/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/or 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 in accordance with Section 7.1.4.

§ 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.

§ 8.3 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 (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay

authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

In the event that the Owner, the Contractor or the Architect is delayed or hindered in or prevented from the performance of any act required by the Contract Documents by reason of a labor dispute, fire, failure of power, unusual delay in deliveries, adverse weather conditions not reasonably anticipatable, unavoidable casualties or other causes of a like nature beyond the Owner's, the Contractor's or the Architect's control, the Contractor (or its Subcontractors) shall not be entitled to any additional compensation.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15; however, The Contractor's Claims, if any, for any increase in Contract Time must be made in accordance with the time requirements of this Section. Claims for an increase in Contract Time must be made in writing to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker.

Claims must be initiated within seven (7) days after the Contractor has notice of the delay (initial notice). Thereafter, the Contractor must provide full details and support documentation with regard to the cause of the delay within twenty-one (21) days of the initial notice of the delay. If either the initial notice or the supporting documentation is not submitted to the Initial Decision Maker with a copy to the Architect, if the Architect is not the Initial Decision maker, in writing within the time periods prescribed in this Section, the Claim for an increase in Contract Time shall be waived. If the cause for the delay is a continuing one then only one Claim is necessary. The Contractor's supporting documentation to the Initial Decision Maker and/or Architect shall include an estimate of cost, if any, and of the probable effect of the delay on the progress of the Work and the Project Schedule.

§ 8.3.3 Unless expressly provided otherwise in the Contract Documents, an extension of the Contract Time, to the extent permitted under Subparagraph 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 Subparagraph 8.3.3 as "Delays") whether or not such Delays are foreseeable unless a Delay is caused by acts of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner (an "Owner-Caused Delay"), in which case the Contractor shall also be entitled to an equitable adjustment of the Contract Sum provided that the Contractor provides to the Owner written notice of such Owner-Caused Delay within ten (10) days of the occurrence of the event giving rise to such Owner-Caused Delay or within ten (10) days after the Contractor first recognizes the condition giving rise to such Owner-Caused Delay, whichever is later.

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.

(Paragraph Deleted)

§ 9.2 Schedule of Values

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. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

§ 9.2.1 The Contractor and each Subcontractor shall prepare a trade payment breakdown for the work for which it is responsible, such breakdown being submitted on a uniform standardized form reasonably approved by the Architect and Owner (AIA G703). The form shall be divided in detail sufficient to exhibit area, floors, and/or sections of the Work, and/or by convenient units and shall be updated as required by either the Owner or the Architect as necessary to reflect (1) description of Work (listing labor and material separately), (2) total value, (3) percent of the work completed to date, (4) value of the work completed to date, (5) percent of previous amount billed, (6) previous amount billed, (7) current percent completed, and (8) value of Work completed to date. Any trade breakdown that unreasonably fails to include sufficient funds shall be withheld from future Applications for Payment to ensure an adequate reserve (including of normal retainage) to complete the Work.

§ 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, if required under Section 9.2, for completed portions of the Work. The application shall be notarized and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

The form Application for Payment, duly notarized, shall be the most recent authorized edition of AIA Document G702, Application and Certificate for Payment, supported by the most recent authorized edition of AIA Document G703, Continuation Sheet.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 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.

§ 9.3.1.3 Each Application for Payment shall be submitted electronically and in four (4) hard copies and shall be accompanied by the following, in all form and substance reasonably satisfactory to the Owner; (1) a current conditional Contractor's waiver of claims and liens, and duly executed an acknowledged sworn statement showing all Subcontractors and material suppliers 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 suppliers; (2) duly executed unconditional waivers of claims and liens from all Subcontractors and, when appropriate, from material suppliers and lower tier Subcontractors establishing payment or satisfaction of payment of all amounts requested by the Contractor on behalf of such entities or information and materials required to comply with the requirements Contract Documents or reasonably requested by the Owner or the Architect or required by the Owner's title insurer.

§ 9.3.1.4 Until Substantial Completion, the Owner shall pay the Contractor ninety percent (90%) of the amount due the Contractor.

§ 9.3.2 Unless otherwise provided in the Contract Documents, 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 procedures 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. Such payment by the Owner for materials, equipment, fixtures and supplies stored on or off the Site shall not relieve the Contractor of its responsibility to provide reasonable protection of said materials, equipment, fixtures and supplies until their incorporation into the Work.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

§ 9.3.3.1 The Contractor further expressly undertakes to defend the Owner, against any actions, lawsuits, or proceedings brought against the Owner as a result of liens related to the Work unless the reason for the lien is the nonpayment by the Owner to the Contractor in accordance with the Contract Documents (referred to as "liens" in this Subparagraph). The Contractor hereby agrees to indemnify and hold the Owner harmless against any such liens or claims of liens and agrees to pay any final judgment or lien if the reason for the judgment or lien is the nonpayment by the Owner to Contractor in accordance with the Contract Documents.

§ 9.3.3.2 The Owner shall release any payments withheld due to a lien or claim of lien if the Contractor obtains security acceptable to the Owner or a lien discharge bond that is (1) issued by a surety acceptable to the Owner; (2) in form and substance satisfactory to the Owner, and (3) in an amount required by law to release such lien claim. By posting a lien discharge bond or other acceptable security, however, the Contractor shall not be relieved of any responsibilities or obligations under Subparagraph 9.3.3.1 including without limitation, the duty to defend and indemnify the Owner. The cost of any premiums incurred in connection with such bonds and security shall be the responsibility of the Contractor and shall not be part of, or cause any adjustment to, the Contract Sum.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, 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; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

§ 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; or
- .8 any other reasonable grounds for objection or withholding as provided in the agreement or as permitted by law.

§ 9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld. The Owner shall not be deemed in default by reason of withholding payment while any conditions described in 9.5.1 remain.

§ 9.5.3 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its option, issue joint checks to the Contractor and to any Subcontractor for material and/or equipment suppliers 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 Architect will reflect such payment on the next Certificate for Payment.

§ 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.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven 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 in a similar manner.

§ 9.6.2.1 The Contractor shall indemnify and hold the Owner harmless from laborers, mechanics and materialmen liens upon the Owner's properties or the premises upon which the work is located, arising out of the work performed or materials furnished by the Contractor or any of its Subcontractors or any material suppliers under the Contract.

§ 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 material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4. The Owner shall have no obligation to pay or reimburse a Contractor for payments to material and equipment suppliers until materials and supplies have been delivered on site or to an offsite storage facility which is bonded and secured.

§ 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.

§ 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not 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.

§ 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 is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use, and shall require that: (1) the Work is operational and usable for the purposes intended; and (2) all required governmental permits, approvals and temporary or permanent certificates of occupancy have been properly and validly issued. Substantial completion shall not be withheld due to Owner's failure to occupy or use based on any reason that is not the responsibility of the Contractor under the Contract Documents or is caused by circumstances beyond Contractor's control

§ 9.8.2 When 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 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.

§ 9.8.3 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 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.

- .1 The Architect will perform no more than two (2) inspections to determine whether the Work or a designated portion thereof has attained Substantial Completion in accordance with the Contract Documents. The Owner is entitled to reimbursement from the Contractor for amounts paid to the Architect for any additional inspections pursuant to Section 9.5.1.

§ 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. The Certificate of Substantial Completion will not be issued until after the Architect and Owner have determined that: (1) the Work and all systems are operational and otherwise complete and ready for unobstructed, lawful use and occupancy by the Owner; (2) the governmental agency that issued the building permit has issued a certificate of occupancy; (3) all testing (including but not limited to TAB, Envelope, Commissioning, etc.) are completed and required corrections revealed by these tests are completed; (4) the Project has been accepted by each regulatory body

having jurisdiction, and (5) the only items of Work remaining to be completed are of a minor nature such as touch-up, adjustments, testing, corrections, and omissions to be remedied, as may appear on the final list made during inspection by the Architect and Owner.

§ 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. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 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, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 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 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 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.

§ 9.10.1.1 The Architect will perform no more than two (2) inspections to determine whether the Work or a designated portion thereof has attained Final Completion in accordance with the Contract Documents. The Owner is entitled to reimbursement from the Contractor for amounts paid to the Architect for any additional inspections. The Owner may seek reimbursement pursuant to Section 9.5.1.

§ 9.10.1.2 The final payment of retained amount due the Contractor on account of the Contract shall not become due until the Contractor has furnished to the Owner, through the Architect, completion documents as enumerated below, or as otherwise required in the Contract Documents.

- .1 One (1) hard copy and one electronic Record Set of Drawings showing actual construction of all portions of the Work and incorporating all changes and amendments thereto, as redlined against the 100% Construction Drawings.
- .2 **Guarantees and Warranties required by specific Sections of the Specifications.**
- .3 **Release and Waiver of Claims, conditioned upon Final Payment, by the General Contractor, Subcontractors, Sub-subcontractors and materials suppliers.**
- .4 **All mechanical and electrical installation, operating and maintenance manuals called for under the Specifications.**
- .5 **All test reports and certifications required under the mechanical and electrical specifications.**

Init.

.6 All forms required to be completed by the Contractor by regulatory governmental agencies with two copies delivered to the Architect.

.7 Shop Drawing submittals in accordance with Article 3.

.8 A copy of the unconditional Occupancy Permit or Certificate of Compliance issued by the local Building Inspection Department have Jurisdiction, unless such is not issued for any reason that is not the responsibility of the Contractor under the Contract Documents or is caused by circumstances beyond Contractor's control.

.9 Manufacturer's current detailed installation instructions for fire dampers, ceiling radiation dampers, smoke dampers, and duct smoke detectors as applicable to the Project

.10 One (1) copy of the equipment operational and maintenance manuals.

§ 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. 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, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance 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, claim, security interest, or encumbrance, 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.

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.

§ 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.

§ 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.

§ 10.2.2.1 In the event that review, inspection or other action by regulatory agencies or other parties results in the imposition of fines, fees, or other costs due to the failure of the Contractor to comply with said applicable laws, ordinance, rules, regulations and lawful orders, the Contractor shall hold harmless the Owner, owner's Consultants, the Architect, and Owner's separate contractors, if any, from all consequences arising from the Contractor's non-compliance.

§ 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 of the safeguards.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods 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.

§ 10.3 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.

§ 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.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

§ 10.4 Emergencies

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.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below (and such insurance shall be from a company that is A rated or better by A.M Best Company) which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- .1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed.
- .2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- .3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- .4 Claims for damages insured by usual personal injury liability coverage;
- .5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;

Init.

- .6 Claims for damages because of bodily injury, death or a person or property damage arising out of ownership, maintenance or use of a motor vehicle.
- .7 Claims for bodily injury or property damage arising out of completed operations; and .8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

§ 11.1.2 The insurance required by Section 11.1.1 or as described in the Agreement or other corresponding Exhibit setting forth the specific insurance requirements shall be written for not less than limits of liability specified by the Owner or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

§ 11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

§ 11.1.4 **Notice of Cancellation or Expiration of Contractor's Required Insurance.** Within not less than twenty (20) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.1.5 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect and the Architect's consultants 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 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.

§ 11.1.6 INSURANCE REQUIREMENTS

Reference Owner-Contractor Agreement.

§ 11.1.7 PERFORMANCE BOND AND PAYMENT BOND

§ 11.1.7.1 The Contractor shall furnish a Performance Bond and Labor and Material Payment Bond meeting all statutory requirements of the jurisdiction where the Project is located, 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 Bonds shall be executed by a responsible surety licensed in the jurisdiction where the Project is located, with a Best's rating of no less than A/XII, and shall remain in effect for a period not less than two (2) years following the date of Substantial Completion or the time required to resolve any items of incomplete 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 and all subsequent increases.
- .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.

Init.

- .5 Every Bond under this Subparagraph 11.4.1 must display the Surety's Bond Number. A rider including the following provisions shall be attached to each Bond:
- (i) The Surety hereby agrees that it consents to and waives notice of any addition, alteration, omission, change, or other modification of the Contract Documents. Any addition, alteration, 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 the Surety of such matters is hereby waived.
 - (ii) The Surety agrees that it is obligated under the bonds to any successor, grantee, or assignee of the Owner.
1. .6 Bonds shall be written on AIA Document 312.
2. .7 If the surety on any Bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of paragraph 11.4.1 Contractor shall within ten days thereafter substitute another Bond and surety, both of which must be acceptable to Owner.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

§ 11.2.2 Failure to Purchase Required Property Insurance. If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance. Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of

subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

(Paragraphs Deleted)

§11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

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.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year 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 one-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.

§ 12.2.2.2 The one-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 one-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 one-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

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 effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.1.1 In all operations under the Contract, the Contractor agrees that it will comply with provisions of all State and Federal Laws (including OSHA) and all local ordinances which may affect such operations.

§ 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.

§ 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.

(Paragraphs Deleted)

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 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;

(Paragraphs Deleted)

§ 14.1.2 The Contractor may terminate the Contract if, 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,

repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed and costs incurred by reason of such termination.

§ 14.1.4 If the Work is stopped for a period of 60 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;
- .2 fails to make 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; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.
- .5 fails to implement measures that will bring the work into conformity with the approved Project Schedule.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When 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.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 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.

§ 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 for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

§ 14.4.4 The Contractor shall include in each of its subcontracts a clause, similar in effect to the provisions in Paragraph 14.4, allowing the Contractor to terminate the subcontract for its sole convenience, subject only to the payment obligations set forth in Paragraph 14.4.3.

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

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 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 21 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.

§ 15.1.4 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.

Init.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. 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 in Section 15.1.3 shall be given. 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. The Contractor shall accompany the Claim with a written analysis with a proposed revision to the Schedule illustrating the claimed influence of the basis for delay on the critical path of the Work and the applicable deadlines that may be impacted.

Contractor will exercise reasonable efforts to mitigate the potential impact of any delay but shall be compensated for any costs associated therewith.

§ 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. The time for performance of this Contract, as set forth in the Construction Schedule, shall include an allowance for delays due to reasonably anticipated adverse weather for the area where the Work is located. For the purpose of establishing that abnormal adverse weather conditions have caused a delay, and determining the extent of delay attributed to such weather conditions, the Contractor shall furnish with its claim, National Oceanic and Atmospheric Administration (NOAA) National Weather Service records of climatic conditions during the same time interval for the previous five (5) years for the locality of the Work; the Contractor's daily job site logs/daily construction reports showing weather, job activities, and the effect of weather on the progress of the Work; and an impact schedule showing the effects of the weather event on the critical path of the Contractor's Construction Schedule. Time extensions for weather delays and related impact do not entitle the Contractor to extended overhead recovery or to any other monetary compensation associated with that claim unless approved in writing by the Owner.

§ 15.1.6.3 The Contractor shall not be entitled to a separate increase in the Contract Time for each one of the number of causes of delay which have concurrent or interrelated effects on the progress of the Work.

§ 15.1.7 Waiver of Claims for Consequential Damages

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 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.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 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.

§ 15.2.8 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.

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

§ 15.3.4 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.



Additions and Deletions Report for **AIA® Document A201® – 2017**

This Additions and Deletions Report, as defined on page 1 of the associated document, reproduces below all text the author has added to the standard form AIA document in order to complete it, as well as any text the author may have added to or deleted from the original AIA text. Added text is shown underlined. Deleted text is indicated with a horizontal line through the original AIA text.

Note: This Additions and Deletions Report is provided for information purposes only and is not incorporated into or constitute any part of the associated AIA document. This Additions and Deletions Report and its associated document were generated simultaneously by AIA software at 07:54:03 ET on 09/19/2023.

PAGE 1

WCS Hunt HS – Athletics Renovation
4559 Lamm Road
Wilson, NC 27893

...

Wilson County Schools
117 NE Tarboro Street, #2048
Wilson County, NC

...

CPL Architects and Engineers, PC
1620 Hillsborough Street, Suite A
Raleigh, NC 27605

PAGE 10

ARTICLE 1 GENERAL PROVISIONS

...

The Specifications may describe (or the Drawings may show) the general placement required of materials or equipment, but the actual required placement may vary depending on the specific material or equipment used by the Contractor or the existing field conditions. The Contractor shall bear all direct and indirect costs associated with such variances.

...

Some Specifications may be written in a condensed outline form and omitted words shall be included by interference. If the Specifications identify a task, it shall mean the “Contractor shall furnish, install and complete” the identified task unless otherwise stated.

PAGE 11

Reference to standard specifications, manuals or codes shall mean reference to the latest standard specification, manual or code in effect at the time of the execution of the Owner-Contractor Agreement, unless otherwise stated. When reference is made to a manufacturer, trade association, reference standard or similar source (such as ASTM,

ASA, AISC, ACI, etc.) the standards or requirements of such entity shall be incorporated into the Specifications and have the force and effect as though they were set forth expressly. Upon entering into the Owner-Contractor Agreement, the Contractor acknowledges its familiarity with those references, codes, etc. The date of the referenced standard shall be the latest edition in effect at the time of the execution of the Owner-Contractor Agreement unless otherwise stated.

...

§ 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. In the event of inconsistencies within or between parts of the Contract Documents, the Contractor shall (1) provide the better quality of Work or (2) comply with the more stringent requirement; either or both in accordance with the Architect's interpretation. The terms and conditions of the Subparagraph 1.2.1, however shall not relieve the Contractor of any of the obligations set forth elsewhere in this Agreement. All work shall conform to the Contract Documents. No significant change there from shall be made without prior written authorization by the Owner. Where only part of the Work is indicated, similar parts shall be considered repetition. When any detail is shown and the components therefore are fully described, similar details shall be construed to require the same materials and construction. Items required by either the Drawings or the Specifications and not mentioned in the other shall be of like effect as if shown or mentioned in both. Should the Specifications and Drawings fail to particularly describe a product or material shown to be used in any place, the Contractor shall furnish the product that would normally be used in that place.

...

§ 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, performed nor to limit the scope of work performed by any trade or by any Subcontractor or supplier. Such separations shall not operate to make the Architect an arbiter to establish limits of work between Subcontractors or between Contractor and Subcontractor.

...

§ 1.2.4 Reference to "match existing" in Contract Documents refer to existing finishes, materials, details, and qualities which have been used in adjacent portions of existing facilities. Material designations or details not specifically shown shall either match existing or be similar in finish, material or quality to similar adjacent conditions.

PAGE 12

§ 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 Owner, 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 Owner, 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.

PAGE 13

~~§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.~~

...

~~§ 2.2.4~~ Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

...

~~§ 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~~ facilities as necessary to complete the Project.

...

~~§ 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.

PAGE 14

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, 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, except to the extent required by Section 6.1.3. Such order or stoppage by the Owner shall not constitute grounds for contract termination by the Contractor under Article 14 and shall not be the basis of Time Extensions by the Contractor under Article 8.3.

...

~~§ 2.5.1~~ 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 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.

...

§ 2.5.2 The rights stated in this Article 2 and elsewhere in the Contract Documents are cumulative and not in limitation of any rights of the Owner or Contractor (1) granted in the Contract Documents; (2) law; or (3) in equity.

...

§ 2.5.3 In no event shall the Owner have control over, charge of, or any responsibility for construction means, methods, techniques, sequences, or procedures or for safety precautions and programs in connection with the Work. The owner assumes no responsibility for liability for the safety of the Project site. The Contractor shall be solely responsible for providing a safe place for the performance of the Work; provided that the Owner shall be responsible for, and the Contractor shall upon discovery notify the Owner of, any unsafe condition created by the Owner.

...

§ 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 Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term “Contractor” means the Contractor or the Contractor’s authorized representative.

...

The Contractor shall rely on its own knowledge and its review and interpretation of the Contract Documents and data provided in entering into the Contract and not the representations of the Owner or other persons. The Contractor acknowledges that quantities provided in the Contract Documents are estimates only and Contractor shall not seek additional compensation or adjustment in price based on a variation in actual quantities.

PAGE 15

Prior to execution of the Contract, the Contractor and each Subcontractor shall evaluate and satisfy themselves as to the conditions and limitations under which the Work is to be performed, including, without limitation, (i) the location, condition, layout, and nature of the Project site and surrounding areas, (ii) generally prevailing climatic conditions, (iii) anticipated labor supply and costs, and (iv) availability and cost of materials, tools, and equipment.

...

The location of existing features shown on plans is intended for general information only. The Contractor, alone, is responsible for accurate determination of the location of all structures, and shall not be entitled to any extra payment for discrepancies between the Work as shown in the Contract Documents and existing conditions.

...

The locations, depths and data as to underground conditions have been obtained from records, surface indications and data furnished by others. Information furnished is solely for the convenience of the Contractor without any warranty, expressed or implied as to its accuracy or completeness. The Contractor shall verify all existing conditions prior to commencing the Work. The Contractor shall make no claim against the Owner or Architect with respect to the accuracy or completeness of such information if the conditions found after commencement of the Work are different from those as indicated.

...

The Contractor shall be solely responsible for the conditions which develop during construction and in the event any structure is dislocated, or over strained, or damaged so as to affect its usefulness, the Contractor shall correct or repair any dislocations, over strains or damages caused.

...

The Contractor is responsible for restoration and/or repair of utilities, private property, buildings, pavement, walkways, roads, etc. damaged by its activities during the performance of its Work.

...

The Contractor shall assume full responsibility for accuracy of measurements obtained at the site. No extra compensation will be allowed because of differences between actual measurements and dimensions indicated on the Drawings, nor for Contractor's failure to coordinate work with actual field measurements.

...

§ 3.2.5 The Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and shall make no changes or relocations without the prior written approval of the Owner. The Contractor shall report to the Architect whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points by professionally qualified personnel.

PAGE 16

§ 3.3.4 The Contractor shall employ a licensed surveyor to locate and stake out the Work and establish necessary reference and bench marks. The contractor shall work from established bench marks and reference points, layout and correctly establish all lines, levels, grades and locations of all parts of their own Work and be responsible for their accuracy and proper correlation with Work and established data.

...

§ 3.3.5 Prohibitions: There shall be no use of tobacco products, alcohol or illegal drugs at the construction site. No weapons are permitted at the construction site. Contractor and its agents shall refrain from the use of profanity or dressing in any way that is disrespectful or harassing to legally protected groups, including but not limited to race, color, sex, age, disability, religion, national orientation or sexual orientation.

...

.1 All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable manufacturer, fabricator, supplier or distributor, except as otherwise provided in the Contract Documents.

...

.2 Contractor shall confine construction equipment, the storage of materials and equipment and the operations of all workers to areas permitted by law, ordinances, permits or the Contract Documents, and shall not disturb the premises more than required for the proper performance of the Work and/or permitted by the Owner.

...

.3 Contractors and Subcontractors warrant that they have good title to all materials used in performing Work on this Contract.

...

After the Contract has been executed, the Owner and Architect will consider requests for the substitution of products in place of those specified only if the Contractor satisfies the procedural requirements set forth in the General Requirements (Division 01) of the Specifications. By making requests for substitutions, the Contractor:

...

.1 Represents that is has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified;

...

.2 Represents that it will provide the same warranty for the substitution as it would have provided for the product specified;

PAGE 17

.3 Certifies that the cost data presented is complete and includes all related costs for the substituted product and for Work that must be changed as a result of the substitution, except for the Architect's redesign costs, and waives all claims for additional costs related to the substitution that may subsequently be incurred by the Contractor; and

...

.4 Shall coordinate the installation of the accepted substitute, making such changes as may be required for the Work to be complete in all respects.

...

§ 3.4.2.1 The Owner shall be entitled to reimbursement from the Contractor for amounts paid to the Architect for reviewing the Contractor's proposed substitutions and making agreed upon changes in the Drawings and Specifications resulting from such substitutions. The Owner may seek reimbursement pursuant to the procedures set forth in § 9.5.1.

...

§ 3.4.2.2 The Contractor shall bear all expenses resulting from substitutions including the cost General Conditions as well as any structural, plumbing, mechanical and electrical trade costs made necessary by the substitution.

...

§ 3.4.4 The Owner shall have the right, but not the obligation, to require the Contractor to remove and replace, with a person acceptable to Owner, promptly after notice from Owner, any employee of Contractor or Subcontractor who: (1) has engaged in conduct on Owner's property that is contrary to the requirements of any applicable law, the Contract Documents, or any rule or directive of Owner relating to conduct on Owner's property; or (2) is incapable of fulfilling its responsibilities in connection with the Project.

...

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 Contractor shall provide the Owner with two (2) notarized invoices with an itemized listing and supporting data for all such taxes paid, and the Owner shall reimburse the Contractor or such payments. Supporting documentation shall be in conformance with requirements of the State in which the Project is located.

...

.1 The Contractor shall promptly deliver copies of such documents to the Owner.

...

.2 If in connection with the Project, the Owner has obtained certain permits, licenses or agreements for the Project, the Owner will furnish copies of these documents to the Contractor. It is the Contractor's responsibility to comply with any conditions or limitations placed on the Project by these permits. The Contractor shall fully cooperate with the Owner in meeting the permit requirements and accommodations of regulatory inspections / directives.

PAGE 18

§ 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. If the Contractor fails to give such notices as applicable to the performance of the Work, the Contractor shall be liable for and shall indemnify and hold harmless the Owner against any and all resulting fines, penalties, judgments or damages, including reasonable attorney fees, imposed on or incurred by the parties indemnified, as a result of such failure by the Contractor

...

§ 3.7.5 § 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. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. 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.

...

§ 3.7.6 Upon completion of the Work, the Contractor shall deliver to the Architect original copies of all required final certificates of inspection, the Certificate of Occupancy, the other documents evidencing that inspections required by authorities having jurisdiction over the Work have been performed

PAGE 19

The Contractor's superintendent shall not be removed from this Project until the Project punch list has been completed and the Project has been accepted by the Owner. Unless approved otherwise by the Owner in advance, the Contractor's superintendent shall be assigned solely to this Project and shall not perform any duties or superintendence on any other Project until completion of this Project.

...

~~§ 3.10.1~~ The Contractor, promptly ~~§ 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.

...

§ 3.10.1.1 The Construction Schedule shall be a Critical Path Method (CPM) type of schedule, consisting of: (1) a single critical path delineation and other sequencing, and early and late start, float, and completion dates for each activity; and (2) milestones, interrelationships, and restraints for all activities, including Owner-awarded contracts through the date of Project completion. The Construction Schedule must show all activities necessary for Substantial and Final Completion as defined in Section 9.8, Section 9.10, and elsewhere in the Contract Documents.

...

§ 3.10.1.2 When the Construction Schedule is complete, the Contractor, after consultation with all Subcontractors and material suppliers, shall confirm in writing to the Architect that the Construction Schedule is reasonable and achievable by the Contractor, subject to any extensions of time as provided for elsewhere in the Contract Documents. The Contractor shall thereafter give prompt specific notice to the Owner and the Architect of any change in the logic of the Construction Schedule or any part thereof, the removal of any restraints, or the reduction of any durations.

...

§ 3.10.1.3 Periodic meetings will be held at least monthly or at more frequent times, as required by the Work, to assess the state of the completion of the Project and to update the Construction Schedule as necessary. In advance of each such meeting, Contractor shall provide Owner a written status report identifying whether the Work is on schedule in accordance with the Construction Schedule or whether there are anticipated or potential delays to any critical path elements in the construction of the Work (in which event Contractor shall provide notice and an analysis as reasonably requested by Owner)

...

§ 3.10.1.4 The Construction Schedule shall be revised at least monthly or at more frequent times as required by conditions of the Work, and shall provide for expeditious and practicable execution of the Work consistent with the Contract Time. The Architect and Owner shall be provided copies of the Construction Schedule as periodically updated and in electronic format, as maintained by the Contractor.

PAGE 20

§ 3.10.1.5 In the event that any updated Construction Schedule indicates a projected Substantial Completion date that is more than thirty (30) days after the required Substantial Completion date (as the same may be extended by Change Order for Excusable Delay), the Owner shall have the right to direct the Contractor to take corrective measures necessary to expedite the progress of construction, including, without limitation, (1) working additional shifts or overtime, (2) supplying additional manpower, equipment, facilities, (3) rescheduling activities, and (4) other similar measures (hereinafter referred to collectively as "Recovery Measures"). Such Recovery Measures shall continue until the progress of the Work complies with the state of completion required by the Construction

Schedule. The Owner's right to require Recovery Measures is solely for the purpose of ensuring the Contractor's compliance with the Construction Schedule.

...

.1 The Contractor shall not be entitled to seek and adjustment in the Contract Sum in connection with

...

Recovery Measures required by the Owner, unless they are incurred by Contractor as directed in

...

writing by Owner to mitigate or offset Excusable Delay.

...

.2 The Owner may exercise the rights furnished to the Owner under or pursuant to this Subparagraph

...

3.10.1.5 as frequently as is reasonably necessary to ensure that the Contractor's performance of the

...

Work will comply with any milestone date or completion date set forth in the Construction Schedule.

...

§ 3.10.1.6 The Contractor is solely responsible for the timing, sequencing coordination, and supervision of the work in accordance with the approved Construction Schedule. Review or approval of the initial Construction Schedule and subsequent reviews of the Construction Schedule by the Architect and Owner do not operate to imply agreement by the Architect or Owner that the means and methods of planning of the Work utilized by the Contractor are adequate or will accomplish the Work in the time shown on the Construction Schedule. The Contractor shall take all actions necessary to ensure the Work's successful planning and execution within the stipulated Contract Time. Additionally, review or approval of the Construction Schedule by the Owner or its consultants shall not make the Owner or its consultants responsible for Contractor's scheduling obligations or the accuracy of the Construction Schedule prepared by the Contractor.

...

§ 3.10.1.7 The Contractor represents to the Owner that the initial Construction Schedule and all subsequent Construction Schedules (including updates and amendments) have been prepared in good faith and are accurate to the best of the Contractor's knowledge.

...

§ 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 review. The Architect's review 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 be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a contract with the Contractor.

...

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.3.10.4 The Owner shall have the reasonable right to direct postponement or rescheduling of any date or time for the performance of any part of the Work that may interfere with the operation of the Owner's premises or any tenants or invitees, thereof. The Contractor shall, upon the Owner's reasonable request, reschedule any portion of the Work affecting operation of the premises during hours when the premises are not in operation. Any postponement, rescheduling, or performance of the Work under this Subparagraph 3.10.5 may be grounds for an extension of the Contract Time, if permitted under Subparagraph 8.3.1, and an equitable adjustment in the Contract Sum if (1) the performance of the Work was properly scheduled by the Contractor in compliance with the requirements of the Contract Documents, and (2) such rescheduling or postponement is required by the Owner.

...

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 Architect's reviewed~~ 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.

PAGE 21

§ 3.12.3 Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged. Contractor shall submit samples requiring color or finish selection in a single, coordinated submittal. The Architect will issue no color or finish schedule until all samples and other data necessary for making complete color selections for the project are received.

...

§ 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 reviewed by the Architect.~~ The Architect shall have no responsibility to review any Shop Drawings, Product Data, Samples or similar submittals unless and until the Contractor has submitted and received back from the Architect approved reviewed submittal schedule as required under Section 3.10.2. In addition, it is not the Architect's responsibility to ensure that all required Shop Drawings, Product Data, Samples or similar submittals that are required to be submitted and reviewed under the Contract Documents are submitted by the Contractor. Submissions of Shop Drawings, Product Data, Samples or similar submittals is solely the Contractor's responsibility.

...

§ 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 reviewed and commented on~~ by the Architect.

§ 3.12.8 The Work shall be in accordance with ~~approved-reviewed~~ 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-review~~ 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~~ indicted in writing that there is no exception 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-review~~ 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 action on~~ a resubmission shall not apply to such revisions.

PAGE 22

§ 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 a~~ properly 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~~ adequacy, accuracy and completeness of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor ~~the~~ all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will ~~review and approve or review, and~~ 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. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

...

§ 3.12.10.2 ~~3.12.10.1~~ 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 The Architect's review of the Contractor's submittals will be limited to examination of an initial submittal and one (1) resubmittal. The Owner is entitled to obtain reimbursement from the Contractor for amounts paid to the Architect for evaluation of additional resubmittals.

...

- .1 Due to the site constraints, only materials and equipment that are to be used in the Work shall be brought to and stored on the Project site by the Contractor. After materials and equipment are no longer required for the Work, they shall be promptly removed from the Project site. Protection of materials and equipment stored at the Project site from weather, theft, damage, and all other adversity is solely the responsibility of the Contractor. The Contractor shall ensure that the Work, at all times, is performed in a manner that affords reasonable access, both vehicular and pedestrian, to the site of the Work and adjacent areas.

...

.2 The Contractor shall not permit any workers to use existing facilities at the Project site, including, without limitation, lavatories, entrances and parking areas other than those designated and approved by the Owner.

...

.3 The Contractor shall comply with all rules and regulations promulgated by the Owner in connection with the use and occupancy of the Project site and the Building, as amended from time to time. The Contractor shall immediately notify the Owner in writing if during the performance of the Work, the Contractor finds compliance with any portion of such rules and regulations to be impracticable, setting forth the problems of such compliance and suggesting alternatives through which the same results intended by such portions of the rules and regulations can be achieved. The Owner may, in the Owner's sole discretion, adopt such suggestions, develop new alternatives, or require compliance with the existing requirements of the rules and regulations.

...

~~§ 3.14.2 The Contractor~~ § 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.

PAGE 23

§ 3.14.3 All cutting and patching work shall be done by the Contractor (or through the appropriate Subcontractor). Patches in finish surfaces shall match the adjacent surfaces in material, finish, detail, and quality. Patches in fire rated construction or construction required to be smoke tight shall be made in conformance with assemblies designed and tested by agencies recognized by governing codes. Any UL rated fire safing materials, flanges, or other materials required by Code, the Contract Documents, or manufacturers installation instructions for devices penetrating the work affected shall be applied an installed by an approved firestop subcontractor or qualified personnel from the applicable trade.

...

§ 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 lawfully remove and dispose of 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, or if not specified in the Contract Documents, then within 48 hours of an Owner request, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

PAGE 24

§ 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,~~ Owner and Architect. Consent shall not be unreasonably withheld.

...

§ 4.2.2.1 The Owner is entitled to reimbursement from the Contractor for amounts paid to the Architect for site visits made necessary by the fault of the Contractor to maintain the Project Schedule or for defects and deficiencies in the Work. The Owner may seek reimbursement pursuant to the procedures set forth in § 9.5.1.

...

§ 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. All costs made necessary by such failure, including those of repeated procedures shall be at Contractor's sole expense, including reasonable compensation for Architect's services and expenses.

PAGE 25

§ 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 most recently reviewed submittal schedule approved by the Architect or,~~ in the absence of ~~an approved a~~ 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 review~~ of a specific item shall not indicate approval of an assembly of which the item is a component.

...

§ 4.2.9 The Architect will conduct ~~inspections~~ site visits 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.

...

.1 The Contractor's request for information shall be prepared and submitted in accordance with the General Requirements (Division 01 of the Specifications) on the form included therein or as otherwise approved in advance. The Architect will return requests for information that do not conform to requirements of the Contract Documents.

...

.2 The Architect's response to a request for information (RFI), or issuance of a clarification or interpretation shall be considered an interpretation, clarification, supplemental information or an order for a minor change in the Work not involving an adjustment in Contract Sum or extension of Contract Time and not inconsistent with the intent of the Contract Documents, and shall be binding, unless indicated otherwise in the Architect's response to the RFI.

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, but prior to the first Application for Payment, 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.

...

The listing required by this Section shall be submitted to the Architect no later than 30 days from the date of the Agreement. This list shall include the names of manufacturers, suppliers, and installers proposed for each of the products, equipment, and materials to be incorporated into the project.

...

The Contractor shall furnish upon request adequate data on any named entity on the list in order to permit the Architect and the Owner to conduct a proper evaluation. Failure to object to a manufacturer shall not constitute a waiver of any of the requirements of the Contract Documents and all products furnished by the listed manufacturer must conform to such requirements.

...

§ 5.3.1 The division of the Specifications into sections is not intended to control the Contractor in dividing the work among subcontractors nor to limit the scope of work performed by any trade under a given section. The Architect will not undertake to settle any differences between the Contractor and its Subcontractors as to the responsibility for completing all Work in the Specifications. It shall be entirely the Contractor's responsibility to properly coordinate and complete all the Work described in the Specifications whether performed by the Contractor or its Subcontractors.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the ~~subcontract~~-subcontract, provided that the Owner shall not be under any obligation to compensate the Subcontractor with respect to amounts that the Owner has already paid to the Contractor for such Subcontractor's work.

...

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity.~~It~~

...

~~the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.~~ **§ 5.4.4** Nothing in the Contract Documents shall be deemed to create any contractual relationship between any Subcontractor of any tier and the Owner, or between the General Contractor or Subcontractor of any tier and the Architect.

§ 7.1.4 Unless otherwise agreed to in writing by the Owner and the Contractor, the combined overhead and profit that shall be included in the total cost (or credit) to the Owner for a Change in the Work shall be based on the following schedule:

...

.1 For the Contractor, for Work performed by the Contractor's own forces:

1. 15% on the first \$25,000 of the change order direct cost of self-performed work,
2. 10% on the portion of the change order direct cost of self-performed work between \$25,000 and \$50,000 and
3. 7.5% on the portion of the change order direct cost of self-performed work between \$50,000 and \$200,000 and
4. 5% on the portion of the change order direct cost of self-performed work greater than \$200,000.

...

.2 For the Contractor, for Work performed by the Contractor's Subcontractor five percent (5%) of the amount due the Subcontractor.

...

.3 For each Subcontractor involved, for Work performed by that Subcontractor's own forces, fifteen percent (15%) of the cost.

...

.4 For each Subcontractor involved, for Work performed by the Subcontractor's Sub-subcontractors, five percent (5%) of the amount due the Sub-subcontractor.

...

.5 Cost to which overhead and profit is to be applied shall be determined in accordance with Section 7.3.7 and shall be itemized (including labor costs).

§ 7.2.2 A Change Order, when issued, shall be full compensation, or credit, for the extra Work performed, omitted, or substituted. It shall show on its face, any adjustment in time for completion of the Project as a result of the Change in the Work. Each Change Order shall include all costs related thereto, including all overhead, miscellaneous expenses, and incidentals.

...

.5 Calculation of overhead and profit shall be consistent with Section 7.1.4.

...

§ 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. Section 7.1.4. 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:

...

§ 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~~ and/or Contract Time.

PAGE 30

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum ~~and~~ and/or 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.~~ in accordance with Section 7.1.4.

PAGE 31

In the event that the Owner, the Contractor or the Architect is delayed or hindered in or prevented from the performance of any act required by the Contract Documents by reason of a labor dispute, fire, failure of power, unusual delay in deliveries, adverse weather conditions not reasonably anticipatable, unavoidable casualties or other causes of a like nature beyond the Owner's, the Contractor's or the Architect's control, the Contractor (or its Subcontractors) shall not be entitled to any additional compensation.

...

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15-15; however, The Contractor's Claims, if any, for any increase in Contract Time must be made in accordance with the time requirements of this Section. Claims for an increase in Contract Time must be made in writing to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims must be initiated within seven (7) days after the Contractor has notice of the delay (initial notice). Thereafter, the Contractor must provide full details and support documentation with regard to the cause of the delay within twenty-one (21) days of the initial notice of the delay. If either the initial notice or the supporting documentation is not submitted to the Initial Decision Maker with a copy to the Architect, if the Architect is not the Initial Decision maker, in writing within the time periods prescribed in this Section, the Claim for an increase in Contract Time shall be waived. If the cause for the delay is a continuing one then only one Claim is necessary. The Contractor's supporting documentation to the Initial Decision Maker and/or Architect shall include an estimate of cost, if any, and of the probable effect of the delay on the progress of the Work and the Project Schedule.

...

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents. Unless expressly provided otherwise in the Contract Documents, an extension of the Contract Time, to the extent permitted under Subparagraph 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 Subparagraph 8.3.3 as "Delays") whether or not such Delays are foreseeable unless a Delay is caused by acts of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner (an "Owner-Caused Delay"), in which case the Contractor shall also be entitled to an equitable adjustment of the Contract Sum

provided that the Contractor provides to the Owner written notice of such Owner-Caused Delay within ten (10) days of the occurrence of the event giving rise to such Owner-Caused Delay or within ten (10) days after the Contractor first recognizes the condition giving rise to such Owner-Caused Delay, whichever is later.

...

§ 9.2 Schedule of Values

...

§ 9.2 Schedule of Values

...

~~Where the Contract~~ 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. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

PAGE 32

§ 9.2.1 The Contractor and each Subcontractor shall prepare a trade payment breakdown for the work for which it is responsible, such breakdown being submitted on a uniform standardized form reasonably approved by the Architect and Owner (AIA G703). The form shall be divided in detail sufficient to exhibit area, floors, and/or sections of the Work, and/or by convenient units and shall be updated as required by either the Owner or the Architect as necessary to reflect (1) description of Work (listing labor and material separately), (2) total value, (3) percent of the work completed to date, (4) value of the work completed to date, (5) percent of previous amount billed, (6) previous amount billed, (7) current percent completed, and (8) value of Work completed to date. Any trade breakdown that unreasonably fails to include sufficient funds shall be withheld from future Applications for Payment to ensure an adequate reserve (including of normal retainage) to complete the Work.

...

§ 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, if required under Section 9.2, for completed portions of the Work. The application shall be ~~notarized, if required, notarized~~ and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

...

The form Application for Payment, duly notarized, shall be the most recent authorized edition of AIA Document G702, Application and Certificate for Payment, supported by the most recent authorized edition of AIA Document G703, Continuation Sheet.

...

~~§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend~~ **§ 9.3.1.2 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.

...

§ 9.3.1.3 Each Application for Payment shall be submitted electronically and in four (4) hard copies and shall be accompanied by the following, in all form and substance reasonably satisfactory to the Owner: (1) a current conditional Contractor's waiver of claims and liens, and duly executed an acknowledged sworn statement showing all Subcontractors and material suppliers 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 suppliers; (2) duly executed unconditional waivers of claims and liens from all Subcontractors and, when appropriate, from material suppliers and lower tier Subcontractors establishing payment or satisfaction of payment of all amounts requested by the Contractor on behalf of such entities or information and materials required to comply with the requirements Contract Documents or reasonably requested by the Owner or the Architect or required by the Owner's title insurer.

...

§ 9.3.1.4 Until Substantial Completion, the Owner shall pay the Contractor ninety percent (90%) of the amount due the Contractor.

...

§ 9.3.2 Unless otherwise provided in the Contract Documents, 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 procedures 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. Such payment by the Owner for materials, equipment, fixtures and supplies stored on or off the Site shall not relieve the Contractor of its responsibility to provide reasonable protection of said materials, equipment, fixtures and supplies until their incorporation into the Work.

PAGE 33

~~§ 9.3.3 The Contractor warrants~~ § 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

...

§ 9.3.3.1 The Contractor further expressly undertakes to defend the Owner, against any actions, lawsuits, or proceedings brought against the Owner as a result of liens related to the Work unless the reason for the lien is the nonpayment by the Owner to the Contractor in accordance with the Contract Documents (referred to as "liens" in this Subparagraph). The Contractor hereby agrees to indemnify and hold the Owner harmless against any such liens or claims of liens and agrees to pay any final judgment or lien if the reason for the judgment or lien is the nonpayment by the Owner to Contractor in accordance with the Contract Documents.

...

§ 9.3.3.2 The Owner shall release any payments withheld due to a lien or claim of lien if the Contractor obtains security acceptable to the Owner or a lien discharge bond that is (1) issued by a surety acceptable to the Owner; (2) in form and substance satisfactory to the Owner, and (3) in an amount required by law to release such lien claim. By posting a lien discharge bond or other acceptable security, however, the Contractor shall not be relieved of any responsibilities or obligations under Subparagraph 9.3.3.1 including without limitation, the duty to defend and indemnify the Owner. The cost of any premiums incurred in connection with such bonds and security shall be the responsibility of the Contractor and shall not be part of, or cause any adjustment to, the Contract Sum.

PAGE 34

.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; or

...

.7 repeated failure to carry out the Work in accordance with the Contract Documents. Documents; or

...

§ 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 15.8 any other reasonable grounds for objection or withholding as provided in the agreement or as permitted by law.

...

§ 9.5.3 ~~When the 9.5.2~~ When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld. The Owner shall not be deemed in default by reason of withholding payment while any conditions described in 9.5.1 remain.

...

§ 9.5.4 ~~9.5.3~~ 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 for material and/or equipment suppliers~~ 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 ~~Architect will reflect such payment on its next Application~~ the next Certificate for Payment.

...

§ 9.6.2.1 The Contractor shall indemnify and hold the Owner harmless from laborers, mechanics and materialmen liens upon the Owner's properties or the premises upon which the work is located, arising out of the work performed or materials furnished by the Contractor or any of its Subcontractors or any material suppliers under the Contract.

...

§ 9.6.5 The Contractor's payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4. The Owner shall have no obligation to pay or reimburse a Contractor for payments to material and equipment suppliers until materials and supplies have been delivered on site or to an offsite storage facility which is bonded and secured.

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not 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~~ 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.~~ start-up.

...

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended ~~use~~ use, and shall require that: (1) the Work is operational and usable for the purposes intended; and (2) all required governmental permits, approvals and temporary or permanent certificates of occupancy have been properly and validly issued. Substantial completion shall not be withheld due to Owner's failure to occupy or use based on any reason that is not the responsibility of the Contractor under the Contract Documents or is caused by circumstances beyond Contractor's control

...

.1 The Architect will perform no more than two (2) inspections to determine whether the Work or a designated portion thereof has attained Substantial Completion in accordance with the Contract Documents. The Owner is entitled to reimbursement from the Contractor for amounts paid to the Architect for any additional inspections pursuant to Section 9.5.1.

§ 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. The Certificate of Substantial Completion will not be issued until after the Architect and Owner have determined that: (1) the Work and all systems are operational and otherwise complete and ready for unobstructed, lawful use and occupancy by the Owner; (2) the governmental agency that issued the building permit has issued a certificate of occupancy; (3) all testing (including but not limited to TAB, Envelope, Commissioning, etc.) are completed and required corrections revealed by these tests are completed; (4) the Project has been accepted by each regulatory body having jurisdiction, and (5) the only items of Work remaining to be completed are of a minor nature such as touch-up, adjustments, testing, corrections, and omissions to be remedied, as may appear on the final list made during inspection by the Architect and Owner.

...

§ 9.10.1.1 The Architect will perform no more than two (2) inspections to determine whether the Work or a designated portion thereof has attained Final Completion in accordance with the Contract Documents. The Owner is entitled to reimbursement from the Contractor for amounts paid to the Architect for any additional inspections. The Owner may seek reimbursement pursuant to Section 9.5.1.

...

§ 9.10.1.2 The final payment of retained amount due the Contractor on account of the Contract shall not become due until the Contractor has furnished to the Owner, through the Architect, completion documents as enumerated below, or as otherwise required in the Contract Documents.

...

.1 One (1) hard copy and one electronic Record Set of Drawings showing actual construction of all

...

portions of the Work and incorporating all changes and amendments thereto, as redlined against

...

the 100% Construction Drawings.

...

.2 Guarantees and Warranties required by specific Sections of the Specifications.

...

.3 Release and Waiver of Claims, conditioned upon Final Payment, by the General Contractor,

...

Subcontractors, Sub-subcontractors and materials suppliers.

...

.4 All mechanical and electrical installation, operating and maintenance manuals called for under the

...

Specifications.

...

.5 All test reports and certifications required under the mechanical and electrical specifications.

PAGE 37

.6 All forms required to be completed by the Contractor by regulatory governmental agencies with two

...

copies delivered to the Architect.

...

.7 Shop Drawing submittals in accordance with Article 3.

...

.8 A copy of the unconditional Occupancy Permit or Certificate of Compliance issued by the local

...

Building Inspection Department have Jurisdiction, unless such is not issued for any reason that is

...

not the responsibility of the Contractor under the Contract Documents or is caused by

...

circumstances beyond Contractor's control.

...

.9 Manufacturer's current detailed installation instructions for fire dampers, ceiling radiation dampers,

...

smoke dampers, and duct smoke detectors as applicable to the Project

...

.10 One (1) copy of the equipment operational and maintenance manuals.

PAGE 38

~~§ 10.2.2~~ **§ 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.

...

§ 10.2.2.1 In the event that review, inspection or other action by regulatory agencies or other parties results in the imposition of fines, fees, or other costs due to the failure of the Contractor to comply with said applicable laws, ordinance, rules, regulations and lawful orders, the Contractor shall hold harmless the Owner, owner's Consultants, the Architect, and Owner's separate contractors, if any, from all consequences arising from the Contractor's

...

non-compliance.

PAGE 39

§ 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.

...

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below (and such insurance shall be from a company that is A rated or better by A.M Best Company) which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

...

and limits .1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed.

...

.2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;

...

of liability, containing .3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;

...

.4 Claims for damages insured by usual personal injury liability coverage;

...

the endorsements, .5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;

PAGE 40

.6 Claims for damages because of bodily injury, death or a person or property damage arising out of ownership, maintenance or use of a motor vehicle.

...

and subject to the terms and conditions, .7 Claims for bodily injury or property damage arising out of completed operations; and .8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

...

§ 11.1.2 The insurance required by Section 11.1.1 or as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described other corresponding Exhibit setting forth the specific insurance requirements shall be written for not less than limits of liability specified by the Owner or required by law,

whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

...

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.
11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the

...

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.
final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

...

§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance. Within ~~three (3)~~ not less than twenty (20) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

...

§ 11.1.5 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect and the Architect's consultants 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 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.

...

§ 11.1.6 INSURANCE REQUIREMENTS

...

Reference Owner-Contractor Agreement.

...

§ 11.1.7 PERFORMANCE BOND AND PAYMENT BOND

...

§ 11.1.7.1 The Contractor shall furnish a Performance Bond and Labor and Material Payment Bond meeting all statutory requirements of the jurisdiction where the Project is located, 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 Bonds shall be executed by a responsible surety licensed in the jurisdiction where the Project is located, with a Best’s rating of no less than A/XII, and shall remain in effect for a period not less than two (2) years following the date of Substantial Completion or the time required to resolve any items of incomplete 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 and all subsequent increases.

...

.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.

PAGE 41

.5 Every Bond under this Subparagraph 11.4.1 must display the Surety’s Bond Number. A rider including the following provisions shall be attached to each Bond:

...

(i) The Surety hereby agrees that it consents to and waives notice of any addition, alteration, omission, change, or other modification of the Contract Documents. Any addition, alteration, 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 the Surety of such matters is hereby waived.

...

(ii) The Surety agrees that it is obligated under the bonds to any successor, grantee, or assignee of the Owner.

1. .6 Bonds shall be written on AIA Document 312.
2. .7 If the surety on any Bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of paragraph 11.4.1 Contractor shall within ten days thereafter substitute another Bond

and surety, both of which must be acceptable to Owner.

PAGE 42

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

...

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

PAGE 43

§ 13.1 Governing Law

...

§ 13.1.1 In all operations under the Contract, the Contractor agrees that it will comply with provisions of all State and Federal Laws (including OSHA) and all local ordinances which may affect such operations.

PAGE 44

§ 13.5 Interest

...

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate the parties agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

...

~~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; or~~

...

~~4 The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.~~

PAGE 45

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work ~~executed, as well as reasonable overhead and profit on Work not executed, executed~~ and costs incurred by reason of such termination.

...

3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; orders of a public authority; or

...

.5 fails to implement measures that will bring the work into conformity with the approved Project

...

Schedule.

PAGE 46

~~§ 14.4.3~~ § 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

...

§ 14.4.4 The Contractor shall include in each of its subcontracts a clause, similar in effect to the provisions in Paragraph 14.4, allowing the Contractor to terminate the subcontract for its sole convenience, subject only to the payment obligations set forth in Paragraph 14.4.3.

PAGE 47

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. 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. The Contractor shall accompany the Claim with a written analysis with a proposed revision to the Schedule illustrating the claimed influence of the basis for delay on the critical path of the Work and the applicable deadlines that may be impacted. Contractor will exercise reasonable efforts to mitigate the potential impact of any delay but shall be compensated for any costs associated therewith.

...

~~§ 15.1.6.2~~ § 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. The time for performance of this Contract, as set forth in the Construction Schedule, shall include an allowance for delays due to reasonably anticipated adverse weather for the area where the Work is located. For the purpose of establishing that abnormal adverse weather conditions have caused a delay, and determining the extent of delay attributed to such weather conditions, the Contractor shall furnish with its claim, National Oceanic and Atmospheric Administration (NOAA) National Weather Service records of climatic conditions during the same time interval for the previous five (5) years for the locality of the Work; the Contractor's daily job site logs/daily construction reports showing weather, job activities, and the effect of weather on the progress of the Work; and an impact schedule showing the effects of the weather event on the critical path of the Contractor's Construction Schedule. Time extensions for weather delays and related impact do not entitle the Contractor to extended overhead recovery or to any other monetary compensation associated with that claim unless approved in writing by the Owner.

...

§ 15.1.6.3 The Contractor shall not be entitled to a separate increase in the Contract Time for each one of the number of causes of delay which have concurrent or interrelated effects on the progress of the Work.

PAGE Error! Bookmark not defined.

§ 15.4 Arbitration

...

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

...

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

...

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

...

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

...

§ 15.4.4 Consolidation or Joinder

...

§ 15.4.4.1 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

...

§ 15.4.4.2 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

...

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement.



Certification of Document's Authenticity

AIA® Document D401™ – 2003

I, , hereby certify, to the best of my knowledge, information and belief, that I created the attached final document simultaneously with its associated Additions and Deletions Report and this certification at 07:54:03 ET on 09/19/2023 under Order No. 3104237670 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A201™ - 2017, General Conditions of the Contract for Construction, other than those additions and deletions shown in the associated Additions and Deletions Report.

(Signed)

(Title)

(Dated)

This page intentionally left blank

SECTION 00 73 00
SUPPLEMENTARY GENERAL CONDITIONS
PART 1 GENERAL

1.01 SUMMARY

- A. These Supplementary Conditions amend and supplement the General Conditions defined in Document 00 72 00 - General Conditions and other provisions of Contract Documents as indicated below. Provisions that are not so amended or supplemented remain in full force and effect.
- B. The terms used in these Supplementary Conditions that are defined in the General Conditions have the meanings assigned to them in the General Conditions.

1.02 MODIFICATIONS TO GENERAL CONDITIONS

A. TIME OF COMPLETION

- 1. The Contractor shall commence work to be performed under this Contract on a date to be specified in written order from the Designer/Owner and shall fully complete all work hereunder within one hundred eighty six (186) consecutive calendar days from the Notice to Proceed (expected to be November 27, 2023) with Substantial Completion by May 31, 2024 and Final Completion on July 1, 2024 (substantial completion date is based on 186 calendar days after NTP, final completion date is based on 217 calendar days after NTP, dates are subject to change dependent on issue date of the NTP). For each day in excess of the above number of days, the Contractor shall pay the Owner the amount of two hundred and fifty Dollars (\$250) as liquidated damages reasonably estimated in advance to cover the losses to be incurred by the Owner should the Contractor fail to complete the Work within the time specified.
- 2. If the Contractor is delayed at any time in the progress of his work by any act or negligence of the Owner, his employees or his separate contractor, by changes ordered in the work; by abnormal weather conditions; by any causes beyond the Contractor's control or by other causes deemed justifiable by Owner, then the contract time may be reasonably extended in a written order from the Owner upon written request from the contractor within ten days following the cause for delay. Time extensions for weather delays, acts of God, labor disputes, fire, delays in transportation, unavoidable casualties or other delays which are beyond the control of the Owner do not entitle the Contractor to compensable damages for delays. Any contractor claim for compensable damages for delays is limited to delays caused solely by the owner or its agents.

B. MAJOR SUBCONTRACTOR USE

- 1. Due to the nature of this project, highly skilled and experienced subcontractors will be required to perform the track replacement. Subcontractors for the Concrete (track curb work), Asphalt (track base work), and Track Surfacing are required to be indicated on the Bid Form. The General Contractor shall contract with the listed subcontractors for the performance of the work. If there is a need to change subcontractors that have been listed on the bid form, written approval is required from the Architect/Owner prior to switching subcontractors.

C. PRE-BID CONFERENCE

- 1. Meeting: On October 11, 2023, a non-mandatory pre-bid meeting will be held at Hunt High School, at 4559 Lamm Rd, Wilson, NC 27577 at 10:30 am for all interested parties.

D. PAYMENTS

- 1. Refer to Section 01 29 00 for Payment Procedures.

E. UTILITIES & FACILITIES

- 1. Refer to Section 01 50 00 for Utilities and required Facilities.

F. USE OF SITE

- 1. Refer to Section 01 10 00 Subsection 1.06 for Contractor Use of Site and Premises.

G. NO SMOKING POLICY

1. The building is a smoke free facility. The use of tobacco products on school property is strictly forbidden.

H. BID BOND

1. Contractor shall furnish a Bid Bond. Each proposal shall be accompanied by a cash deposit or a certified check drawn on some bank or trust company insured by the Federal Deposit Insurance Corporation, or a bid bond in an amount equal to not less than five percent (5%) of the proposal, said deposit to be retained by the owner as liquidated damages in event of failure of the successful bidder to execute the contract within ten (10) days after the award or to give satisfactory surety as required by law (G.S. 143-129).
2. Bid bond shall be conditioned that the surety will, upon demand, forthwith make payment to the obligee upon said bond if the bidder fails to execute the contract. The owner may retain bid securities of any bidder(s) who may have a reasonable chance of award of contract for the full duration of time stated in the Notice to Bidders. Other bid securities may be released sooner, at the discretion of the owner. All bid securities (cash or certified checks) shall be returned to the bidders promptly after award of contracts, and no later than seven (7) days after expiration of the holding period stated in the Notice to Bidders.

I. PERFORMANCE AND PAYMENT BONDS

1. Contractor shall furnish a Performance Bond and Payment Bond executed by a surety company authorized to do business in North Carolina. The bonds shall be in the full contract amount. Bonds shall be executed in the form bound with these specifications (Forms 307 & 308). An authorized agent of the bonding company who is licensed to do business in North Carolina shall countersign all bonds.

J. MINORITY BUSINESS PARTICIPATION

1. Refer to attached Minority Business Requirements

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

GUIDELINES FOR RECRUITMENT AND SELECTION OF MINORITY BUSINESSES FOR PARTICIPATION IN STATE CONSTRUCTION CONTRACTS

In accordance with G.S. 143-128.2 (effective January 1, 2002) these guidelines establish goals for minority participation in single-prime bidding, separate-prime bidding, construction manager at risk, and alternative contracting methods, on State construction projects in the amount of \$300,000 or more. The legislation provides that the State shall have a verifiable ten percent (10%) goal for participation by minority businesses in the total value of work for each project for which a contract or contracts are awarded. These requirements are published to accomplish that end.

SECTION A: INTENT

It is the intent of these guidelines that the State of North Carolina, as awarding authority for construction projects, and the contractors and subcontractors performing the construction contracts awarded shall cooperate and in good faith do all things legal, proper and reasonable to achieve the statutory goal of ten percent (10%) for participation by minority businesses in each construction project as mandated by GS 143-128.2. Nothing in these guidelines shall be construed to require contractors or awarding authorities to award contracts or subcontracts to or to make purchases of materials or equipment from minority-business contractors or minority-business subcontractors who do not submit the lowest responsible, responsive bid or bids.

SECTION B: DEFINITIONS

1. Minority - a person who is a citizen or lawful permanent resident of the United States and who is:
 - a. Black, that is, a person having origins in any of the black racial groups in Africa;
 - b. Hispanic, that is, a person of Spanish or Portuguese culture with origins in Mexico, South or Central America, or the Caribbean Islands, regardless of race;
 - c. Asian American, that is, a person having origins in any of the original peoples of the Far East, Southeast Asia and Asia, the Indian subcontinent, the Pacific Islands;
 - d. American Indian, that is, a person having origins in any of the original peoples of North America; or
 - e. Female
2. Minority Business - means a business:
 - a. In which at least fifty-one percent (51%) is owned by one or more minority persons, or in the case of a corporation, in which at least fifty-one percent (51%) of the stock is owned by one or more minority persons or socially and economically disadvantaged individuals; and
 - b. Of which the management and daily business operations are controlled by one or more of the minority persons or socially and economically disadvantaged individuals who own it.
3. Socially and economically disadvantaged individual - means the same as defined in 15 U.S.C. 637. "Socially disadvantaged individuals are those who have been subjected to racial or ethnic prejudice or cultural bias because of their identity as a member of a group without regard to their individual qualities". "Economically disadvantaged individuals are those socially disadvantaged individuals whose ability to compete in the free enterprise system has been impaired due to diminished capital and credit opportunities as compared to others in the same business area who are not socially disadvantaged".
4. Public Entity - means State and all public subdivisions and local governmental units.
5. Owner - The State of North Carolina, through the Agency/Institution named in the contract.
6. Designer – Any person, firm, partnership, or corporation, which has contracted with the State of North Carolina to perform architectural or engineering, work.
7. Bidder - Any person, firm, partnership, corporation, association, or joint venture seeking to be awarded a public contract or subcontract.

8. Contract - A mutually binding legal relationship or any modification thereof obligating the seller to furnish equipment, materials or services, including construction, and obligating the buyer to pay for them.
9. Contractor - Any person, firm, partnership, corporation, association, or joint venture which has contracted with the State of North Carolina to perform construction work or repair.
10. Subcontractor - A firm under contract with the prime contractor or construction manager at risk for supplying materials or labor and materials and/or installation. The subcontractor may or may not provide materials in his subcontract.

SECTION C: RESPONSIBILITIES

1. Office for Historically Underutilized Businesses, Department of Administration (hereinafter referred to as HUB Office).

The HUB Office has established a program, which allows interested persons or businesses qualifying as a minority business under G.S. 143-128.2, to obtain certification in the State of North Carolina procurement system. The information provided by the minority businesses will be used by the HUB Office to:

- a. Identify those areas of work for which there are minority businesses, as requested.
- b. Make available to interested parties a list of prospective minority business contractors and subcontractors.
- c. Assist in the determination of technical assistance needed by minority business contractors.

In addition to being responsible for the certification/verification of minority businesses that want to participate in the State construction program, the HUB Office will:

- (1) Maintain a current list of minority businesses. The list shall include the areas of work in which each minority business is interested.
- (2) Inform minority businesses on how to identify and obtain contracting and subcontracting opportunities through the State Construction Office and other public entities.
- (3) Inform minority businesses of the contracting and subcontracting process for public construction building projects.
- (4) Work with the North Carolina trade and professional organizations to improve the ability of minority businesses to compete in the State construction projects.
- (5) The HUB Office also oversees the minority business program by:
 - a. Monitoring compliance with the program requirements.
 - b. Assisting in the implementation of training and technical assistance programs.
 - c. Identifying and implementing outreach efforts to increase the utilization of minority businesses.
 - d. Reporting the results of minority business utilization to the Secretary of the Department of Administration, the Governor, and the General Assembly.

2. State Construction Office

The State Construction Office will be responsible for the following:

- a. Furnish to the HUB Office a minimum of twenty-one days prior to the bid opening the following:
 - (1) Project description and location;
 - (2) Locations where bidding documents may be reviewed;
 - (3) Name of a representative of the owner who can be contacted during the advertising period to advise who the prospective bidders are;
 - (4) Date, time and location of the bid opening.
 - (5) Date, time and location of prebid conference, if scheduled.
- b. Attending scheduled prebid conference, if necessary, to clarify requirements of the general statutes regarding minority-business participation, including the bidders' responsibilities.

- c. Reviewing the apparent low bidders' statutory compliance with the requirements listed in the proposal, that must be complied with, if the bid is to be considered as responsive, prior to award of contracts. The State reserves the right to reject any or all bids and to waive informalities.
- d. Reviewing of minority business requirements at Preconstruction conference.
- e. Monitoring of contractors' compliance with minority business requirements in the contract documents during construction.
- f. Provide statistical data and required reports to the HUB Office.
- g. Resolve any protest and disputes arising after implementation of the plan, in conjunction with the HUB Office.

3. Owner

Before awarding a contract, owner shall do the following:

- a. Develop and implement a minority business participation outreach plan to identify minority businesses that can perform public building projects and to implement outreach efforts to encourage minority business participation in these projects to include education, recruitment, and interaction between minority businesses and non-minority businesses.
- b. Attend the scheduled prebid conference.
- c. At least 10 days prior to the scheduled day of bid opening, notify minority businesses that have requested notices from the public entity for public construction or repair work and minority businesses that otherwise indicated to the Office for Historically Underutilized Businesses an interest in the type of work being bid or the potential contracting opportunities listed in the proposal. The notification shall include the following:
 - 1. A description of the work for which the bid is being solicited.
 - 2. The date, time, and location where bids are to be submitted.
 - 3. The name of the individual within the owner's organization who will be available to answer questions about the project.
 - 4. Where bid documents may be reviewed.
 - 5. Any special requirements that may exist.
- d. Utilize other media, as appropriate, likely to inform potential minority businesses of the bid being sought.
- e. Maintain documentation of any contacts, correspondence, or conversation with minority business firms made in an attempt to meet the goals.
- f. Review, jointly with the designer, all requirements of G.S. 143-128.2(c) and G.S. 143-128.2(f) – (i.e. bidders' proposals for identification of the minority businesses that will be utilized with corresponding total dollar value of the bid and affidavit listing good faith efforts, or affidavit of self-performance of work, if the contractor will perform work under contract by its own workforce) - prior to recommendation of award to the State Construction Office.
- g. Evaluate documentation to determine good faith effort has been achieved for minority business utilization prior to recommendation of award to State Construction Office.
- h. Review prime contractors' pay applications for compliance with minority business utilization commitments prior to payment.
- i. Make documentation showing evidence of implementation of Owner's responsibilities available for review by State Construction Office and HUB Office, upon request

4. Designer

Under the single-prime bidding, separate prime bidding, construction manager at risk, or alternative contracting method, the designer will:

- a. Attend the scheduled prebid conference to explain minority business requirements to the prospective bidders.
- b. Assist the owner to identify and notify prospective minority business prime and subcontractors of potential contracting opportunities.
- c. Maintain documentation of any contacts, correspondence, or conversation with minority business firms made in an attempt to meet the goals.
- d. Review jointly with the owner, all requirements of G.S. 143-128.2(c) and G.S.143-128.2(f) – (i.e. bidders' proposals for identification of the minority businesses that will be utilized with

corresponding total dollar value of the bid and affidavit listing Good Faith Efforts, or affidavit of self-performance of work, if the contractor will perform work under contract by its own workforce) - prior to recommendation of award.

- e. During construction phase of the project, review “MBE Documentation for Contract Payment” – (Appendix E) for compliance with minority business utilization commitments. Submit Appendix E form with monthly pay applications to the owner and forward copies to the State Construction Office.
- f. Make documentation showing evidence of implementation of Designer’s responsibilities available for review by State Construction Office and HUB Office, upon request.

5. Prime Contractor(s), CM at Risk, and Its First-Tier Subcontractors

Under the single-prime bidding, the separate-prime bidding, construction manager at risk and alternative contracting methods, contractor(s) will:

- a. Attend the scheduled prebid conference.
- b. Identify or determine those work areas of a subcontract where minority businesses may have an interest in performing subcontract work.
- c. At least ten (10) days prior to the scheduled day of bid opening, notify minority businesses of potential subcontracting opportunities listed in the proposal. The notification will include the following:
 - (1) A description of the work for which the subbid is being solicited.
 - (2) The date, time and location where subbids are to be submitted.
 - (3) The name of the individual within the company who will be available to answer questions about the project.
 - (4) Where bid documents may be reviewed.
 - (5) Any special requirements that may exist, such as insurance, licenses, bonds and financial arrangements.

If there are more than three (3) minority businesses in the general locality of the project who offer similar contracting or subcontracting services in the specific trade, the contractor(s) shall notify three (3), but may contact more, if the contractor(s) so desires.

- d. During the bidding process, comply with the contractor(s) requirements listed in the proposal for minority participation.
- e. Identify on the bid, the minority businesses that will be utilized on the project with corresponding total dollar value of the bid and affidavit listing good faith efforts as required by G.S. 143-128.2(c) and G.S. 143-128.2(f).
- f. Make documentation showing evidence of implementation of PM, CM-at-Risk and First-Tier Subcontractor responsibilities available for review by State Construction Office and HUB Office, upon request.
- g. Upon being named the apparent low bidder, the Bidder shall provide one of the following: (1) an affidavit (Affidavit C) that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, which is equal to or more than the applicable goal; (2) if the percentage is not equal to the applicable goal, then documentation of all good faith efforts taken to meet the goal. Failure to comply with these requirements is grounds for rejection of the bid and award to the next lowest responsible and responsive bidder.
- h. The contractor(s) shall identify the name(s) of minority business subcontractor(s) and corresponding dollar amount of work on the schedule of values. The schedule of values shall be provided as required in Article 31 of the General Conditions of the Contract to facilitate payments to the subcontractors.
- i. The contractor(s) shall submit with each monthly pay request(s) and final payment(s), “MBE Documentation for Contract Payment” – (Appendix E), for designer’s review.
- j. During the construction of a project, at any time, if it becomes necessary to replace a minority business subcontractor, immediately advise the owner, State Construction Office, and the Director of the HUB Office in writing, of the circumstances involved. The prime contractor shall make a good faith effort to replace a minority business subcontractor with another minority business subcontractor.

- k. If during the construction of a project additional subcontracting opportunities become available, make a good faith effort to solicit subbids from minority businesses.
- l. It is the intent of these requirements apply to all contractors performing as prime contractor and first tier subcontractor under construction manager at risk on state projects.

6. Minority Business Responsibilities

While minority businesses are not required to become certified in order to participate in the State construction projects, it is recommended that they become certified and should take advantage of the appropriate technical assistance that is made available. In addition, minority businesses who are contacted by owners or bidders must respond promptly whether or not they wish to submit a bid.

SECTION 4: DISPUTE PROCEDURES

It is the policy of this state that disputes that involves a person's rights, duties or privileges, should be settled through informal procedures. To that end, minority business disputes arising under these guidelines should be resolved as governed under G.S. 143-128(g).

SECTION 5: These guidelines shall apply upon promulgation on state construction projects. Copies of these guidelines may be obtained from the Department of Administration, State Construction Office, (physical address) 301 North Wilmington Street, Suite 450, NC Education Building, Raleigh, North Carolina, 27601-2827, (mail address) 1307 Mail Service Center, Raleigh, North Carolina, 27699-1307, phone (919) 807-4100, Website: www.nc-sco.com

SECTION 6: In addition to these guidelines, there will be issued with each construction bid package provisions for contractual compliance providing minority business participation in the state construction program.

MINORITY BUSINESS CONTRACT PROVISIONS (CONSTRUCTION)

APPLICATION:

The **Guidelines for Recruitment and Selection of Minority Businesses for Participation in State Construction Contracts** are hereby made a part of these contract documents. These guidelines shall apply to all contractors regardless of ownership. Copies of these guidelines may be obtained from the Department of Administration, State Construction Office, (physical address) 301 North Wilmington Street, Suite 450, NC Education Building, Raleigh, North Carolina, 27601-2827, (mail address) 1307 Mail Service Center, Raleigh, North Carolina, 27699-1307, phone (919) 807-4100, Website: <http://www.nc-sco.com>

MINORITY BUSINESS SUBCONTRACT GOALS:

The goals for participation by minority firms as subcontractors on this project have been set at 10%.

The bidder must identify on its bid, the minority businesses that will be utilized on the project with corresponding total dollar value of the bid and affidavit (Affidavit A) listing good faith efforts **or** affidavit (Affidavit B) of self-performance of work, if the bidder will perform work under contract by its own workforce, as required by G.S. 143-128.2(c) and G.S. 143-128.2(f).

The lowest responsible, responsive bidder must provide Affidavit C, that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, which is equal to or more than the applicable goal.

OR

Provide Affidavit D, that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, **with documentation of Good Faith Effort, if the percentage is not equal to the applicable goal.**

OR

Provide Affidavit B, which includes sufficient information for the State to determine that the bidder does not customarily subcontract work on this type project.

The above information must be provided as required. Failure to submit these documents is grounds for rejection of the bid.

MINIMUM COMPLIANCE REQUIREMENTS:

All written statements, affidavits or intentions made by the Bidder shall become a part of the agreement between the Contractor and the State for performance of this contract. Failure to comply with any of these statements, affidavits or intentions, or with the minority business Guidelines shall constitute a breach of the contract. A finding by the State that any information submitted either prior to award of the contract or during the performance of the contract is inaccurate, false or incomplete, shall also constitute a breach of the contract. Any such breach may result in termination of the contract in accordance with the termination provisions contained in the contract. It shall be solely at the option of the State whether to terminate the contract for breach.

In determining whether a contractor has made Good Faith Efforts, the State will evaluate all efforts made by the Contractor and will determine compliance in regard to quantity, intensity, and results of these efforts. Good Faith Efforts include:

- (1) Contacting minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor or available on State or local government maintained lists at least 10 days before the bid or proposal date and notifying them of the nature and scope of the work to be performed.
- (2) Making the construction plans, specifications and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bid or proposals are due.
- (3) Breaking down or combining elements of work into economically feasible units to facilitate minority participation.
- (4) Working with minority trade, community, or contractor organizations identified by the Office for Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses.
- (5) Attending any prebid meetings scheduled by the public owner.
- (6) Providing assistance in getting required bonding or insurance or providing alternatives to bonding or insurance for subcontractors.
- (7) Negotiating in good faith with interested minority businesses and not rejecting them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing.
- (8) Providing assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisting minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit.
- (9) Negotiating joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible.
- (10) Providing quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands.

This page intentionally left blank

PERFORMANCE BOND

IT IS HEREBY AGREED that

(Insert full name and address of Contractor)

as Principal, hereinafter called Contractor, and,

(Insert full name and address of Surety)

as Surety, hereinafter called Surety, are held and firmly bound unto the

as Obligee, hereinafter called Owner, in the amount of _____ Dollars (\$ _____), for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these obligations.

WHEREAS, Contractor has by written agreement dated _____, 20____, entered into a contract with Owner for the construction of WCS - Hunt HS - Athletics Renovation Project

in accordance with Drawings and Specifications prepared by CPL Architects & Engineers
1111 Haynes St. Ste 100
Raleigh, NC 27604

which contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Contractor shall promptly and faithfully perform said Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect. The Surety hereby waives notice of any alteration or extension of time made by the Owner.

Whenever Contractor shall be, and declared by Owner to be in default, under the Contract, the Owner having performed Owner's obligations thereunder, the Surety may promptly remedy the default, or shall promptly:

- 1) Complete the Contract in accordance with its terms and conditions, or
- 2) Obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible bidder, or, if the Owner elects, upon determination by the Owner and the Surety jointly of the lowest responsible bidder, arrange for a contract between such bidder and Owner, and make available as Work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph)

sufficient funds to pay the cost of completion less the balance of the contract price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term “balance of the contract price,” as used in this paragraph, shall mean the total amount payable by Owner to Contractor under the Contract and any amendments thereto, less the amount properly paid by Owner to Contractor.

Any suit under this bond must be instituted before the expiration of any applicable statute of limitations under the Contract.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the Owner named herein or the heirs, executors, administrators or successors of the Owner.

Signed and sealed this ____ day of _____ 20____.

PRINCIPAL

[Affix corporate seal]

(Name) _____
(Title) _____

(Witness)

SURETY

[Affix corporate seal]

(Name) _____
(Title) _____

(Witness)

LABOR AND MATERIAL PAYMENT BOND

THIS BOND IS ISSUED SIMULTANEOUSLY WITH PERFORMANCE BOND IN FAVOR OF THE OWNER CONDITIONED ON THE FULL AND FAITHFUL PERFORMANCE OF THE CONTRACT

IT IS HEREBY AGREED that (Insert full name and address of Contractor)

as Principal, hereinafter called "Principal," and, (Insert full name and address of Surety)

as Surety, hereinafter called "Surety," are held and firmly bound unto the

as Obligee, hereinafter called Owner, for the use and benefit of claimants as hereinbelow defined, in the amount of _____ for the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these obligations.

WHEREAS, Principal has by written agreement dated _____, 20_____, entered into a contract with Owner for the construction of (Insert the name of the Project)

in accordance with Drawings and Specifications prepared by
CPL Architects & Engineers
1111 Haynes St. Ste 100
Raleigh, NC 27604

which contract is by reference made a part hereof, and is hereinafter referred to as the "Contract."

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Principal shall promptly make payment to all claimants as hereinafter defined, for all labor and material used or reasonably required for use in the performance of the Contract, then this obligation shall be void; otherwise it shall remain in full force and effect, subject, however, to the following conditions:

1. A claimant is defined as one having a direct contract with the principal or with a Subcontractor of the Principal for labor, material, or both, used or reasonably required for use in the performance of the Contract, labor and material being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental of equipment directly applicable to the Contract.
2. The above named Principal and Surety hereby jointly and severally agree with the Owner that every claimant as herein defined, who has not been paid in full before the expiration of a period of ninety (90) days after the date on which the last of such claimant's work or labor was done or performed, or materials were furnished by such claimant, may sue on this bond for the use of such claimant, prosecute the suit to final judgment for such sum or sums as may be justly due claimant, and have execution thereon. The Owner shall not be liable for the payment of any costs or expenses of any such suit.
3. No suit or action shall be commenced hereunder by any claimant:
 - a) Unless claimant, other than one having a direct contract with the Principal, shall have given written notice to any two of the following: the Principal, the Owner, or the Surety above named, within ninety (90) days, after such claimant did or performed the last of the work or labor, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the work or labor was done or performed. Such notice shall be served by mailing the same by registered mail or certified mail; postage prepaid, in an envelope addressed to the Principal, Owner or Surety, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which

legal process may be served in the state in which the aforesaid project is located, save that such service need not be made by a public officer.

b) After the expiration of one (1) year following the date on which Principal ceased Work on said Contract, it being understood, however, that if any limitation embodied in this bond is prohibited by any law controlling the construction hereof such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.

c) Other than in a state court of competent jurisdiction in and for the county or other political subdivision of the state in which the Project, or any part thereof, is situated, or in the United States District Court for the district in which the Project, or any part thereof, is situated, and not elsewhere.

4. The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of mechanics' liens which may be filed of record against said improvement, whether or not claim for the amount of such lien be presented under and against this bond.

Signed and sealed this ____ day of _____ 20 ____.

PRINCIPAL

[Affix corporate seal]

(Name) _____
(Title) _____

(Witness)

SURETY

[Affix corporate seal]

(Name) _____
(Title) _____

(Witness)

Bid Bond

_____, as Principal, and _____

_____, as Surety, who is

duly licensed to act as Surety in North Carolina through the _____,

as Obligee, in the penal sum of _____

DOLLARS, lawful money of the United States of America, for the payment of which, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

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

WHEREAS, the said Principal is herewith submitting Proposal for:

and the Principal desires to file this Bid Bond in lieu of making the cash deposit as required by G. S. 143-129:

NOW, THEREFORE, THE CONDITION OF THE ABOVE OBLIGATION is such, that if the Principal shall be awarded the Contract for which the bid is submitted and shall execute the Contract and give bond for the faithful performance thereof within ten days after the award of same to the Principal, then this obligation shall be null and void; but if the Principal fails to so execute such Contract and give Performance Bond as required by G. S. 143-129, the Surety shall upon demand, forthwith pay to the Obligee the amount set forth in the first paragraph hereof; and provided further, that the bid may be withdrawn as provided by G. S. 143-129.1.

_____(SEAL)

_____(SEAL)

_____(SEAL)

_____(SEAL)

END OF SECTION

This page intentionally left blank

SECTION 00 90 00.04
INSURANCE CERTIFICATES (BLANK)

PLACE HOLDER FOR ATTACHING SHEET

END OF SECTION

This page intentionally left blank

SECTION 00 90 00.05
POWER OF ATTORNEY (BLANK)

PLACE HOLDER FOR ATTACHING SHEET

END OF SECTION

This page intentionally left blank

SECTION 01 10 00
SUMMARY
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Project information.
- B. Work covered by Contract Documents.
- C. Access to site.
- D. Specification and Drawing Conventions.

1.02 PROJECT INFORMATION

- A. Project Name: WCS - Hunt HS - Athletics Renovation
- B. Project Address: 4559 Lamm Rd, Wilson, NC 27893
- C. Owner's Name: Wilson County Schools
- D. Owner Contact: One person has been designated by WCS.
- E. CPL Architects's Name: CPL Architects and Engineers, P.C.
- F. Architect's Project Number: R22.16900.00
- G. The scope of work consists of minor renovation of the existing concessions & restroom buildings, repair and thorough cleaning of existing bleachers, track replacement, and ADA modifications to site with an alternate for field lighting replacement.

1.03 CONTRACT DESCRIPTION

- A. Contract Type: General Contractor based on a Stipulated Price as described in Document 00 51 00 - Agreement Form.

1.04 DESCRIPTION OF ALTERATIONS WORK

- A. Scope of demolition and removal work is indicated on drawings and specified in Section 02 41 00.
- B. Scope of alterations work is indicated on drawings.

1.05 OWNER OCCUPANCY

- A. Owner intends to continue to occupy adjacent portions of the existing site during the entire construction period.
- B. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.
- C. Schedule the Work to accommodate Owner occupancy.

1.06 CONTRACTOR USE OF SITE AND PREMISES

- A. Construction Operations: Limited to areas noted on Drawings.
- B. Provide access to and from site as required by law and by Owner:
 - 1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
 - 2. Do not obstruct roadways, sidewalks, or other public ways without permit.
- C. Utility Outages and Shutdown:
 - 1. Limit disruption of utility services to hours the building is unoccupied.
 - 2. Prevent accidental disruption of utility services to other facilities.

1.07 WORK SEQUENCE

- A. Project will be completed in a single phase.

1.08 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.
 3. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
 4. Drawing Coordination: Requirements for materials and products identified on the Drawings are described in detail in the Specifications. One or more of the following are used on the Drawings to identify materials and products:
- B. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
1. Abbreviations: Materials and products are identified by abbreviations (published as part of the U.S. National CAD Standard) (and) scheduled on Drawings.
 2. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 21 00
ALLOWANCES
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Contingency allowance.

1.02 RELATED REQUIREMENTS

- A. Section 01 20 00 - Price and Payment Procedures: Additional payment and modification procedures.

1.03 CONTINGENCY ALLOWANCE

- A. Contractor's costs for products, delivery, installation, labor, insurance, payroll, taxes, bonding, equipment rental, overhead and profit will be included in Change Orders authorizing expenditure of funds from this Contingency Allowance.
- B. Funds will be drawn from the Contingency Allowance only by Change Order.
- C. At closeout of Contract, funds remaining in Contingency Allowance will be credited to Owner by Change Order.

1.04 ALLOWANCES SCHEDULE

- A. Allowance No. 1: General Contingency Allowance - \$30,000 for use upon Owner's instructions.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

This page intentionally left blank

SECTION 01 22 00
UNIT PRICES
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. List of unit prices, for use in preparing Bids.
- B. Measurement and payment criteria applicable to Work performed under a unit price payment method.
- C. Defect assessment and non-payment for rejected work.

1.02 COSTS INCLUDED

- A. Unit Prices included on the Bid Form shall include full compensation for all required labor, products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.

1.03 UNIT QUANTITIES SPECIFIED

- A. Quantities indicated in the Bid Form are for bidding and contract purposes only. Quantities and measurements of actual Work will determine the payment amount.

1.04 MEASUREMENT OF QUANTITIES

- A. Measurement methods delineated in the individual specification sections complement the criteria of this section. In the event of conflict, the requirements of the individual specification section govern.
- B. Take all measurements and compute quantities. Measurements and quantities will be verified by CPL Architects.
- C. Assist by providing necessary equipment, workers, and survey personnel as required.
- D. Linear Measurement: Measured by linear dimension, at the item centerline or mean chord.

1.05 PAYMENT

- A. Payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities of Work that is incorporated in or made necessary by the Work and accepted by the CPL Architects, multiplied by the unit price.
- B. Payment will not be made for any of the following:
 - 1. Products wasted or disposed of in a manner that is not acceptable.
 - 2. Products determined as unacceptable before or after placement.
 - 3. Products not completely unloaded from the transporting vehicle.
 - 4. Products placed beyond the lines and levels of the required Work.
 - 5. Products remaining on hand after completion of the Work.
 - 6. Loading, hauling, and disposing of rejected Products.

1.06 DEFECT ASSESSMENT

- A. Replace Work, or portions of the Work, not complying with specified requirements.
- B. If, in the opinion of CPL Architects, it is not practical to remove and replace the Work, CPL Architects will direct an appropriate remedy which may result in an adjustment of payment.
- C. The authority of CPL Architects to assess the defect and identify payment adjustment is final.

1.07 SCHEDULE OF UNIT PRICES

- A. Unit Price No. 01: Black Vinyl Chain Link Fencing
 - 1. 4' in height, installed. Unit of Measurement: Linear Foot.
- B. Unit Price No. 02: Black Vinyl Gate at Chain Link Fencing
 - 1. 4' in height, 4' wide single gate, installed.
- C. Unit Price No. 03: Black Vinyl Double Gate at Chain Link Fencing
 - 1. 4' in height, 12' wide double gate, installed.

- D. Unit Price No. 04: Black Vinyl Chain Link Fencing
 - 1. 6' in height, installed. Unit of Measurement: Linear Foot.
- E. Unit Price No. 05: Black Vinyl Gate at Chain Link Fencing
 - 1. 6' in height, 4' wide single gate, installed.
- F. Unit Price No. 06: Black Vinyl Double Gate at Chain Link Fencing
 - 1. 6' in height, 12' wide double gate, installed.
- G. Unit Price No. 07: 1" Earthwork, cut and fill onsite
 - 1. Includes excavation, placement, and compaction or satisfactory disposal of all materials encountered within the limites of the work necessary for the construction of the project in conformity with the lines, grades, and typical sections shown on the plans or established by the Engineer and in accordance with Division 31 - Earthwork. Unit of Measurement: Cubic Yard.
- H. Unit Price No. 08: Bermuda Sod
 - 1. Includes all materials and labor for installation of sod in accordance with the drawings and Division 32, Section 32 92 00 - Sodds and Grasses. Unit of Measurement: Square Feet.
- I. Unit Price No. 09: Final Seeding
 - 1. Includes final site seeding, and associated stabilization. Unit of Measurement: Square Foot.
- J. Unit Price No. 10: Aggregate Base Course (ABC)
 - 1. Installation of ABC in accordance with Division 32, Section 32 12 18 - Stone Base Course. Unit of Measurement: Ton.
- K. Unit Price No. 11: Cast in place Concrete.
 - 1. Includes all formwork, materials and labor for installation of cast in place concrete in accordance with the drawings. Unit of Measurement: Square Feet.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 23 00
ALTERNATES
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Description of Alternates.
- B. Submission procedures.

1.02 RELATED REQUIREMENTS

- A. Document 00 41 00 - Bid Form: List of alternates on the Bid Form.
- B. Document 00 52 00 - Agreement Form: Incorporating monetary value of accepted Alternates.

1.03 ACCEPTANCE OF ALTERNATES

- A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Accepted Alternates will be identified in the Owner-Contractor Agreement.
- B. Coordinate related work and modify surrounding work to integrate the Work of each Alternate.

1.04 SCHEDULE OF ALTERNATES

- A. Alternate No. 01 - Replace Light Fixtures on/in Restroom & Concessions Buildings:
 - 1. Provide the cost to replace all Light Fixtures with new fixtures in place. See specifications for Light Fixture Schedule.
- B. Alternate No. 02 - Replace Ceilings:
 - 1. Provide the cost to replace ceilings in Men's Toilet, Women's Toilet, Training Room and Concessions Kitchen and Storage Room and Toilet Room with Moisture Resistant Gypboard Ceilings.
- C. Alternate No. 03 – Replace Training Room Casework:
 - 1. Provide the cost to replace casework in Training room with new casework as shown in interior elevations in lieu of re-using existing.
- D. Alternate No. 04 (Owner Preferred) - Plumbing Fixtures:
 - 1. Provide Plumbing Fixture Faucets: Delta Faucets, no substitutions.
 - 2. Provide Plumbing Fixture Flush Valves: Sloan Flush Valves, no substitutions.
 - 3. Provide Plumbing Fixture Urinals: Mansfield Urinals, no substitutions.
 - 4. Provide Plumbing Fixture Toilets: American Standard Toilets, no substitutions.
 - 5. Provide Plumbing Fixture Lavatories: American Standard Cast Iron, no substitutions.
- E. Alternate No. 05 - Add Track Perimeter Fencing:
 - 1. Provide new 4' h Black Vinyl chain-link fencing around Football Field and Track in lieu of re-using existing.
- F. Alternate No. 06 - Add Site Perimeter Fencing:
 - 1. Provide new 6' h Black Vinyl chain-link fencing around Athletic Site in lieu of re-using existing.
- G. Alternate No. 07 - Replace Football Field Lighting:
 - 1. Replace Football Field Lighting, to include removal of existing concrete light poles, design, engineering, and installation of new Lights and Poles, including all required wiring as a turn-key portion of the project.
- H. Alternate No. 08 (Owner Preferred) - Replace Football Field Lighting - Musco Lighting:
 - 1. Owner Preferred Vendor - Musco Lighting to replace Football Field Lighting, to include removal of existing concrete light poles, design, engineering, and installation of new Lights and Poles, including all required wiring as a turn-key portion of the project.
- I. Alternate No. 9 – New Sports Goal Posts:

1. Provide cost to replace existing twin post Goalposts with new Twin Post Goalposts complying with High School Athletics requirements.
- J. Alternate No. 10 – New Flagpoles:
 1. Provide cost to provide two new flagpoles at North end of Field in lieu of moving the 1 existing flagpole.
- K. Alternate No. 11 – EMS Concrete parking pad:
 1. Provide new 16'-0" x 30'-0" heavy duty concrete pad on south end of track.
- L. Alternate No. 12 – Concrete sidewalk to Visitor Bleachers:
 1. Provide new concrete sidewalk around north end of track to visitor bleachers in lieu of gravel walkway.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 25 00
SUBSTITUTION PROCEDURES
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Procedural requirements for proposed substitutions.
1. Should the Contractor desire to substitute other materials, apparatus, products or processes than those specified or approved as equivalent, the Contractor shall apply to the Architect in writing for approval of such substitution. It should be noted that the bid shall not be based on a substituted material, apparatus, product or process. With the application shall be furnished such information as required by the Architect to demonstrate that the article, material, apparatus, product or process he wishes to use is the equivalent of that specified in quality, finish, design, efficiency and durability and has been elsewhere demonstrated to be equally serviceable for the purpose for which it is intended. The Contractor shall set forth the reasons for desiring to make the proposed substitution and shall further state what difference, if any, will be made in the construction schedule and the contract price for such substitution should it be accepted; it being the intent hereunder that any savings shall accrue to the benefit of the Owner.
 2. The Architect shall reject any such proposed substitution as not being specifically named in the contract, or if he shall determine that the adjustment in price in favor of the Owner is insufficient, the Contractor shall immediately proceed to furnish the specified or basis of design, material, apparatus, product or process.
 3. Request for substitutes shall conform to the requirements of this Article.
 4. Requests for substitutions shall, include full information relating to any impact that the proposed substitution may have upon other associated devices or systems to be provided by other contractors or vendors.
 5. Requests for utilization of substitutes will be reviewed during the course of the project. The impact on the project and the timeliness of submission will be of key consideration.
 6. The approval of utilization of a substitute is subject to the sole and final discretion of the Architect.

1.02 RELATED REQUIREMENTS

- A. Section 00 43 25 - Substitution Request Form - During Procurement / For Convenience: Required form for substitution requests made prior to award of contract (During procurement).
- B. Section 00 63 25 - Substitution Request Form - During Construction / For Cause: Required form for substitution requests made after award of contract (During construction).
- C. Section 01 60 00 - Product Requirements: Fundamental product requirements, product options, delivery, storage, and handling.

1.03 DEFINITIONS

- A. Substitutions: Changes from Contract Documents requirements proposed by Contractor to materials, products, assemblies, and equipment.
1. Substitutions for Cause: Proposed due to changed Project circumstances beyond Contractor's control. This may include but not limited to unforeseen 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 Owner and Contractor.
 - a. Substitution requests offering advantages solely to the Contractor will not be considered.
- B. Substitute Items (Or Equivalent): If in Architect/Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item it will not be considered as an acceptable or equivalent.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

- A. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:
 - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product, equipment, assembly, or system.
 - 2. Agrees to provide the same warranty for the substitution as for the specified product.
 - 3. Agrees to provide same or equivalent maintenance service and source of replacement parts, as applicable.
 - 4. Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
 - 5. Waives claims for additional costs or time extension that may subsequently become apparent.
 - 6. Agrees to reimburse Owner and CPL Architects for review or redesign services associated with re-approval by authorities.
- B. A Substitution Request for specified installer constitutes a representation that the submitter:
 - 1. Has acted in good faith to obtain services of specified installer, but was unable to come to commercial, or other terms.
- C. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.
- D. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.
 - 1. No specific form is required. Contractor's Substitution Request documentation must include the following:
 - a. Project Information:
 - 1) Official project name and number, and any additional required identifiers established in Contract Documents.
 - 2) Owner's, CPL Architects's, and Contractor's names.
 - b. Substitution Request Information:
 - 1) Discrete and consecutive Substitution Request number, and descriptive subject/title.
 - 2) Indication of whether the substitution is for CAUSE or CONVENIENCE.
 - 3) Issue date.
 - 4) Reference to particular Contract Document(s) specification section number, title, and article/paragraph(s).
 - 5) Description of Substitution.
 - 6) Reason why the specified item cannot be provided.
 - 7) Differences between proposed substitution and specified item.
 - 8) Description of how proposed substitution affects other parts of work.
 - c. Attached Comparative Data: Provide point-by-point, side-by-side comparison addressing essential attributes specified, as appropriate and relevant for the item:
 - 1) Physical characteristics.
 - 2) In-service performance.
 - 3) Expected durability.
 - 4) Visual effect.
 - 5) Sustainable design features.
 - 6) Warranties.
 - 7) Other salient features and requirements.
 - 8) Include, as appropriate or requested, the following types of documentation:
 - (a) Product Data:

- (b) Samples.
 - (c) Certificates, test, reports or similar qualification data.
 - (d) Drawings, when required to show impact on adjacent construction elements.
 - d. Impact of Substitution:
 - 1) Savings to Owner for accepting substitution.
 - 2) Change to Contract Time due to accepting substitution.
- E. Limit each request to a single proposed substitution item.
 - 1. Submit an electronic document, combining the request form with supporting data into single document.

3.02 SUBSTITUTION PROCEDURES DURING PROCUREMENT

- A. Submittal Time Restrictions:
 - 1. Instructions to Bidders specifies time restrictions and the documents required for submitting substitution requests during the bidding period.
- B. Submit request for Substitution for Convenience immediately upon discovery of its potential advantage to the project, but not later than 7 days prior to time required for review and approval by CPL Architects, in order to stay on approved project schedule.
 - 1. In addition to meeting general documentation requirements, document how the requested substitution benefits the Owner through cost savings, time savings, greater energy conservation, or in other specific ways.
 - 2. Document means of coordinating of substitution item with other portions of the work, including work by affected subcontractors.
 - 3. Bear the costs engendered by proposed substitution of:
 - a. Owner's compensation to the CPL Architects for any required redesign, time spent processing and evaluating the request.
 - b. Other construction by Owner.
 - c. Other unanticipated project considerations.

3.03 SUBSTITUTION PROCEDURES DURING CONSTRUCTION

- A. CPL Architects will consider requests for substitutions only within 30 days after date of Agreement.
- B. Submit request for Substitution for Cause immediately upon discovery of need for substitution, but not later than 7 days prior to time required for review and approval by CPL Architects, in order to stay on approved project schedule.
- C. Submit request for Substitution for Convenience immediately upon discovery of its potential advantage to the project, but not later than 14 days prior to time required for review and approval by CPL Architects, in order to stay on approved project schedule.
 - 1. In addition to meeting general documentation requirements, document how the requested substitution benefits the Owner through cost savings, time savings, greater energy conservation, or in other specific ways.
 - 2. Document means of coordinating of substitution item with other portions of the work, including work by affected subcontractors.
 - 3. Bear the costs engendered by proposed substitution of:
 - a. Owner's compensation to the CPL Architects for any required redesign, time spent processing and evaluating the request.
- D. Substitutions will not be considered under one or more of the following circumstances:
 - 1. When they are indicated or implied on shop drawing or product data submittals, without having received prior approval.
 - 2. Without a separate written request.
 - 3. When acceptance will require revisions to Contract Documents.

3.04 RESOLUTION

- A. CPL Architects may request additional information and documentation prior to rendering a decision. Provide this data in an expeditious manner.
- B. CPL Architects will notify Contractor in writing of decision to accept or reject request.
 - 1. CPL Architects's decision following review of proposed substitution will be noted on the submitted form.

3.05 ACCEPTANCE

- A. Accepted substitutions change the work of the Project. They will be documented and incorporated into work of the project by Change Order, Construction Change Directive, Architectural Supplementary Instructions, or similar instruments provided for in the Conditions of the Contract.

3.06 CLOSEOUT ACTIVITIES

- A. See Section 01 78 00 - Closeout Submittals, for closeout submittals.
- B. Include completed Substitution Request Forms as part of the Project record. Include both approved and rejected Requests.

END OF SECTION

SECTION 01 29 00
PAYMENT PROCEDURES
PART 1 GENERAL

1.01 SUMMARY

- A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.

1.02 SCHEDULE OF VALUES

- A. Schedule of Values: 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.
- B. Coordination: Correlate line items in the schedule of values with other required administrative forms and schedules, including the following:
1. Application for Payment forms with continuation sheets. (AIA G702 and G703)
 2. Submittal schedule.
 3. 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.
- C. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the schedule of values. Forms filled out by hand will not be accepted.
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 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. Change Orders (numbers) that affect value.
 - d. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
 - 1) Labor.
 - 2) Materials.
 - 3) Equipment.
 3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports.
 4. The following line items must be included on the continuation sheet.
 - a. Project Bonds and Insurances
 - b. Mobilization
 - c. Shop Drawings
 - d. Project Meetings
 - e. Temporary Heat (where applicable)
 - f. Progress Cleaning
 - g. Lawn and Tree Watering (where applicable to establish new lawns and trees)
 - h. Punch List
 - i. Final Cleaning
 - j. Close Out documents and Warranties
 5. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
 6. Submit draft of AIA Document G703 Continuation Sheets.
 7. Each item in the schedule of values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.

- a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the schedule of values or distributed as general overhead expense, at Contractor's option.
8. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.03 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
 1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- 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 **five** days prior to due date for review by Architect. (Work to be projected out to the end of the pay period).
- C. Application for Payment Forms: Use **[AIA Document G702 and AIA Document G703]** **[AIA Document G702/CMa 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. The OWNER shall retain five percent (5%) of the amount due on each Application for both the work completed and materials stored, unless stated otherwise in Owner Contractor Agreement. The OWNER reserves the right to retain a greater percentage in the event the CONTRACTOR fails to make satisfactory progress or in the event there is other specific cause for greater withholding.
- 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.
- F. Transmittal: **Email** signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt. If required, include waivers of lien and similar attachments.
- G. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's liens from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.
 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: Submit waivers of lien on forms, executed in a manner acceptable to Owner.
- H. Initial Application for Payment: Administrative actions and submittals that must precede submittal of first Application for Payment include the following:
1. List of Substitutions
 2. Contractor or Notice to Proceed.
 3. Performance and Payment bonds.
 4. Liability, Auto, and Umbrella Insurance.
 5. Worker Compensation certificates.
 6. Proposed schedule of values for approval.
- I. Initial Application for Payment: Administrative actions and submittals that must coincide with submittal of first Application for Payment include the following:
1. Approved Schedule of values.
 2. List of subcontractors.
 3. Contractors Safety Program.
 4. Contractor's construction schedule (preliminary if not final).
 5. Products list (preliminary if not final).
 6. Submittal schedule (preliminary if not final).
 - a. First Payment WILL NOT be processed without a Submittal Schedule.
 7. Emergency Contacts List.
 8. Certified Payroll.
 9. Schedule of unit prices.
 10. List of Contractor's staff assignments.
 11. List of Contractor's principal consultants.
 12. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
- J. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Administrative actions and submittals that shall precede or coincide with this application include:
 - a. Occupancy permits and similar approvals
 - b. List of incomplete Work, recognized as exceptions to Architect's Certificate of Substantial Completion
 - c. Record Drawings and Specifications
 - d. Operations and Maintenance Manuals
 - e. Maintenance Instructions and Training
 - f. Start-up performance reports
 - g. Test/adjust/balance records
 - h. Warranties (guarantees) and maintenance agreements
 - i. Final cleaning
 - j. Change-over information related to Owner's occupancy, use, operation and maintenance
 - k. Application for reduction of retainage and consent of surety
 - l. Advice on shifting insurance coverages
 2. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 3. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- K. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Ensure that incomplete Work is not accepted and will be completed without undue delay.
2. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
3. Evidence of completion of all Project closeout requirements as specified in 01 70 00.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION

SECTION 01 30 00
ADMINISTRATIVE REQUIREMENTS
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Preconstruction meeting.
- B. Progress meetings.
- C. Publicity.
- D. Submittals for review, information, and project closeout.
- E. Number of copies of submittals.
- F. Requests for Information (RFI) procedures.
- G. Submittal procedures.

1.02 RELATED REQUIREMENTS

- A. Section 01 32 16 - Construction Progress Schedule: Form, content, and administration of schedules.
- B. Section 01 70 00 - Execution and Closeout Requirements: Additional coordination requirements.
- C. Section 01 78 00 - Closeout Submittals: Project record documents; operation and maintenance data; warranties and bonds.

1.03 PROJECT COORDINATION

- A. General Contractor
- B. Cooperate with the General Contractor in allocation of mobilization areas of site; for field offices and sheds, for access, traffic, and parking facilities.
- C. The General Contractor shall appoint a single representative (i.e. Project Manager) to be the single contact person with the Owner and/or Architect. The Project Manager shall have experience on at least two projects of similar scope, size and complexity.
- D. The General Contractor shall be responsible for supervising and expediting the project work with a full time on-site job superintendent. Said individual shall be on-site at all times when work is in progress. Said individual shall be a full time employee of the Project Manager not a subcontract consultant, consultant nor contract employee.
- E. In addition to the Project superintendent, the General Contractor shall give his superintendent enough support staff that his ongoing presence can be maintained on site so that errands to secure materials etc. will be carried out by others and deliveries to site will be received by others.
- F. During construction, coordinate use of site and facilities through the General Contractor.
- G. Comply with General Contractor procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.
- H. Comply with instructions of the General Contractor for use of temporary utilities and construction facilities. Responsibility for providing temporary utilities and construction facilities is identified in Section 01 10 00 - Summary.
- I. Coordinate field engineering and layout work under instructions of the General Contractor.
- J. Make the following types of submittals to CPL Architects through the General Contractor:
 - 1. Requests for Information.
 - 2. Requests for substitution.
 - 3. Shop drawings, product data, and samples.
 - 4. Test and inspection reports.

5. Design data.
6. Manufacturer's instructions and field reports.
7. Applications for payment and change order requests.
8. Progress schedules.
9. Coordination drawings.
10. Correction Punch List and Final Correction Punch List for Substantial Completion.
11. Closeout submittals.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PRECONSTRUCTION MEETING

- A. CPL Architects will schedule a meeting after Notice to Proceed with construction services.
- B. Attendance Required:
 1. Owner.
 2. CPL Architects.
 3. General Contractor.
 4. Prime Subcontractors.
 5. Others deemed necessary by the architect and General Contractor.
- C. Agenda:
 1. Discuss items of significance that could affect progress including such topics as:
 - a. Tentative construction schedule.
 - b. Designation of responsible personnel.
 - c. Procedures for processing RFI's and Change orders.
 - d. Procedures for processing Applications for Payment.
 - e. Submittal of Shop Drawings, Product Data and Samples.
 - f. Preparation of record documents.
 - g. Use of the premises.
 - h. Staging areas.
 - i. Safety procedures.
 - j. Security.
 - k. Housekeeping.
- D. The General Contractor shall record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.02 PROGRESS MEETINGS

- A. The General Contractor shall schedule and administer meetings throughout progress of the work at maximum monthly intervals.
- B. Attendance Required:
 1. General Contractor
 2. Owner / Owner Representative.
 3. CPL Architects.
 4. Contractor's Project Manager.
 5. General Contractor's superintendent.
 6. Major subcontractors.
- C. Agenda:
 1. Review minutes of previous meetings.
 2. Review of work progress.
 3. Field observations, problems, and decisions.
 4. Identification of problems that impede, or will impede, planned progress.
 5. Review of submittals schedule and status of submittals.
 6. Review of RFIs log and status of responses.

7. Review of off-site fabrication and delivery schedules.
 8. Maintenance of progress schedule.
 9. Corrective measures to regain projected schedules.
 10. Planned progress during succeeding work period.
 11. Coordination of projected progress.
 12. Maintenance of quality and work standards.
 13. Effect of proposed changes on progress schedule and coordination.
 14. Other business relating to work.
- D. Record minutes and distribute copies within two days after meeting to participants, with two copies to CPL Architects, Owner, participants, and those affected by decisions made.

3.03 CONSTRUCTION PROGRESS SCHEDULE - SEE SECTION 01 32 16

3.04 PUBLICITY

- A. Publicity: Without exception, NO publicity or publicity releases (newspapers, radio, television, advertisements, publications, signs, etc.) shall be used or issued without the Owner's prior review and written approval.

3.05 CONSTRUCTION DOCUMENTS

- A. The Architect will provide electronic Drawings and Specifications to the General Contractor free of charge for construction purposes. Additional Drawings and/or Specifications will be furnished on request at Architect's usual charge for reproduction.

3.06 SUBMITTALS FOR REVIEW

- A. When the following are specified in individual sections, submit them for review:
1. Product data.
 2. Shop drawings.
 3. Samples for selection.
 4. Samples for verification.
- B. Samples will be reviewed for aesthetic, color, or finish selection.
- C. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01 78 00 - Closeout Submittals.

3.07 SUBMITTALS FOR INFORMATION

- A. When the following are specified in individual sections, submit them for information:
1. Design data.
 2. Certificates.
 3. Test reports.
 4. Inspection reports.
 5. Manufacturer's instructions.
 6. Manufacturer's field reports.
 7. Other types indicated.
- B. Submit for CPL Architects's knowledge as contract administrator or for Owner. No action will be taken.

3.08 SUBMITTALS FOR PROJECT CLOSEOUT

- A. Submit Correction Punch List for Substantial Completion.
- B. When the following are specified in individual sections, submit them at project closeout in compliance with requirements of Section 01 78 00 - Closeout Submittals:
1. Project record documents.
 2. Operation and maintenance data.
 3. Warranties.
 4. Bonds.

5. Other types as indicated.

C. Submit for Owner's benefit during and after project completion.

3.09 SUBMITTAL PROCEDURES - SEE SECTION 01 33 00

3.10 REQUESTS FOR INFORMATION (RFI)

A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI in the form specified.

1. RFIs shall originate with the General Contractor. RFIs submitted by entities other than General Contractor will be returned with no response.
2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in work of subcontractors.
3. All RFI's shall be submitted to the Architect electronically via email. The General Contractor and the Architect shall keep individual RFI logs to be reconciled on a regular basis. The Architect's log shall be recognized as the official Project log.

B. Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:

C.

1. Date.
2. Name of CM.
3. Name of Architect.
4. RFI number, numbered sequentially.
5. RFI's answered by the GC without input from the Architect or Owner shall not be included in the Project RFI logs.
6. Specification Section number and title and related paragraphs, as appropriate.
7. Drawing number and detail references, as appropriate.
8. Field dimensions and conditions, as appropriate.
9. Suggested solution(s). If solution(s) impact the Contract Time or the Contract Sum, GC shall state impact in the RFI.
10. Signature.
11. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.
12. Supplementary drawings prepared by subcontractor shall include dimensions, thickness, structural grid references, and details of affected materials, assemblies, and attachments.

D. Software-Generated RFIs: Software-generated form with substantially the same content as indicated above.

1. Attachments shall be electronic files in Adobe Acrobat PDF format or Bluebeam format.

E. Architect's Action: Architect will review each RFI, determine action required, and return it. The Architect will respond to RFI's in an average of seven (7) working days. It is acknowledged and understood that some RFI's will require longer response time than others. RFIs received after 4:00 p.m. will be considered as received the following working day.

1. The following RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for coordination information already indicated in the Contract Documents.
 - d. Requests for adjustments in the Contract Time or the Contract Sum.
 - e. Requests for interpretation of Architect's actions on submittals.
 - f. Incomplete RFIs or RFIs with numerous errors.
 - g. RFI's requesting confirmation of written direction by other means from the Owner or Architect.
2. Architect's action may include a request for additional information, in which case Architect's time for response will start again.

3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for CM to submit Change Proposal.
 - a. If General Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 10 days of receipt of the RFI response.
- 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 General Contractor disagrees with response.
- G. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Software log with not less than the following:
 1. Project name.
 2. Name and address of CM.
 3. Name and address of Architect.
 4. RFI number including RFIs that were dropped and not submitted.
 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.

END OF SECTION

This page intentionally left blank

SECTION 01 32 16
CONSTRUCTION PROGRESS SCHEDULE
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Preliminary schedule.
- B. Construction progress schedule, bar chart type.
- C. Construction progress schedule, with network analysis diagrams and reports.

1.02 REFERENCE STANDARDS

- A. AGC (CPSM) - Construction Planning and Scheduling Manual 2004.

1.03 SUBMITTALS

- A. Within 10 days after date established in Notice to Proceed, submit preliminary schedule.
- B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.
- C. Within 10 days after review of preliminary schedule, submit draft of proposed complete schedule for review.
 - 1. Include written certification that major contractors have reviewed and accepted proposed schedule.
- D. Submit updated schedule with each Application for Payment.
- E. Submit under transmittal letter form specified in Section 01 30 00 - Administrative Requirements.

1.04 QUALITY ASSURANCE

- A. Scheduler: Contractor's personnel or specialist Consultant specializing in Gantt scheduling with two years minimum experience in scheduling construction work of a complexity comparable to this Project, and having use of computer facilities capable of delivering a detailed graphic printout within 48 hours of request.

1.05 SCHEDULE FORMAT

- A. Listings: In chronological order according to the start date for each activity. Identify each activity with the applicable specification section number.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PRELIMINARY SCHEDULE

- A. Prepare preliminary schedule in the form of a horizontal bar chart.

3.02 CONTRACTOR'S CONSTRUCTION SCHEDULE (GANTT CHART)

- A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal Gantt-chart-type, Construction Manager's Construction Schedule within 30 days of date established for commencement of the Work. Base schedule on the Preliminary Construction Schedule and whatever updating and feedback was 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 3 months or longer to complete, indicate an estimated completion percentage in 10 percent increments within time bar.

3.03 BAR CHARTS

- A. Include a separate bar for each major portion of Work or operation.
- B. Identify the first work day of each week.

3.04 NETWORK ANALYSIS

- A. Prepare network analysis diagrams and supporting mathematical analyses using the Critical Path Method.
- B. Illustrate order and interdependence of activities and sequence of work; how start of a given activity depends on completion of preceding activities, and how completion of the activity may restrain start of subsequent activities.
- C. Mathematical Analysis: Tabulate each activity of detailed network diagrams, using calendar dates, and identify for each activity:
 - 1. Preceding and following event numbers.
 - 2. Activity description.
 - 3. Estimated duration of activity, in maximum 15 day intervals.
 - 4. Earliest start date.
 - 5. Earliest finish date.
 - 6. Actual start date.
 - 7. Actual finish date.
 - 8. Latest start date.
 - 9. Latest finish date.
 - 10. Total and free float; float time shall accrue to Owner and to Owner's benefit.
 - 11. Monetary value of activity, keyed to Schedule of Values.
 - 12. Percentage of activity completed.
 - 13. Responsibility.
- D. Analysis Program: Capable of compiling monetary value of completed and partially completed activities, accepting revised completion dates, and recomputation of all dates and float.
- E. Required Reports: List activities in sorts or groups:
 - 1. By preceding work item or event number from lowest to highest.
 - 2. By amount of float, then in order of early start.

3.05 REVIEW AND EVALUATION OF SCHEDULE

- A. Participate in joint review and evaluation of schedule with CPL Architects at each submittal.
- B. Evaluate project status to determine work behind schedule and work ahead of schedule.
- C. After review, revise as necessary as result of review, and resubmit within 10 days.

3.06 UPDATING SCHEDULE

- A. Maintain schedules to record actual start and finish dates of completed activities.
- B. Indicate progress of each activity to date of revision, with projected completion date of each activity.
- C. Annotate diagrams to graphically depict current status of Work.
- D. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.
- E. Indicate changes required to maintain Date of Substantial Completion.
- F. Submit reports required to support recommended changes.

3.07 DISTRIBUTION OF SCHEDULE

- A. Distribute copies of updated schedules to Contractor's project site file, to subcontractors, suppliers, CPL Architects, Owner, and other concerned parties.
- B. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in schedules.

END OF SECTION

SECTION 01 33 00
SUBMITTAL PROCEDURES
PART 1 GENERAL

1.01 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
- B. This specification describes the procedures for submission of submittals and shop drawings using Newforma Info Exchange.
 - 1. The Contractor will be required to use the Newforma Info Exchange for the transfer of Submittals, Shop Drawings and RFI's. There will be **no exceptions** to this requirement. The contractor will be given a login and password free of charge. For more information follow the procedure below.
 - a. Information and instructions for use are available for review by the contractor by contacting CPL. The Contractor is to provide an email address for the file to be sent. A PDF file will be emailed to the requesting contractor.
- C. Related Requirements:
 - 1. Section 01 29 00 "Payment Procedures" for submitting Applications for Payment and the schedule of values.
 - 2. Section 01 30 00 "Administrative Requirements" for submitting coordination drawings and subcontract list and for requirements for web-based Project software.
 - 3. Section 01 32 16 "Construction Progress Schedule" for submitting schedules and reports, including Contractor's construction schedule.
 - 4. Section 01 40 00 "Quality Requirements" for submitting test and inspection reports, and schedule of tests and inspections.
 - 5. Section 01 78 00 "Closeout Submittals" for submitting closeout submittals and maintenance material submittals.

1.02 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."
- C. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

1.03 SUBMITTAL GENERAL ADMINISTRATIVE REQUIREMENTS

- A. The Contractor shall prepare a Submittal Log containing the information required to be submitted under the Submittal article from each respective Specification Section. With each item listed the Contractor shall provide anticipated dates for submission to the Architect. The Architect will review and accept or request that corrections be made for subsequent acceptance. This acceptance will constitute an approval for the submittal, shop drawings and sample submissions to commence. **No Submittals or Shop Drawings will be reviewed by the Architect until an approved Submittal Schedule is in place.**
- B. The contractor shall prepare expected submittals in Newforma that correspond to all submittals listed on the submittal schedule at the time of submission of the submittal log. These expected submittals are to follow the naming conventions laid out in section "1.5 Submittal Schedule" and "1.6 Submittal Identification"

- C. The Contractor is responsible for all costs for creating electronic files for the submittal process. The Architect will not provide this service.
1. The Submittal Cover Sheet located in Specification Section 006000 Project Forms shall be used for all Submittals.
 - a. An electronic form of the submittal cover is available from the Architect.
 2. The Submittal Cover sheet when scanned to a .PDF shall be the first page viewed in the individual file.
 - a. Each product submitted within a specification section shall have a Submittal Cover sheet attached. Combined submittals with one cover page will not be accepted
 - b. Each Submittal Cover sheet shall be filled in completely. **Files that are sent with the Submittal Cover Sheet missing or not filled in correctly will not be reviewed.** The Architect will send a notice that the submittal is missing information. If the Contractor fails to correct or provide the proper submittal within 15 days, notice will be provided, and the submittal will be REJECTED.
 3. The Contractor(s) will be provided with a link to upload files to the Newforma Info Exchange. The site address and a "log in" will be provided to the Contractor(s) free of charge.
 4. A read only Record Submittal Log and RFI Log will be available from the Newforma Info Exchange for the Contractors reference in checking the status of the submittals and shop drawings.
- D. 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 transmittals of different types of submittals from related section for parts of the work 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 all related submittals are received. Delays associated with the above are the not the Architects responsibility and rests solely with the Contractor.
- E. Architect's Digital Data Files: For Projects where Project Building Information Modeling Protocol is NOT executed. Provide digital PDF's only.
1. Document Transfer Agreement - For Projects where Architect's work files are not a deliverable: The Contractor shall execute an Electronic Document Transfer Agreement for all electronic transfers of files, other than PDFs. The contractor must provide acknowledgement, accept the information regarding drawings, ownership and Limitations of Liability. Agreement is found with Project Forms.
 - a. The following plot files will by furnished for each appropriate discipline:
 - 1) Floor plans.
 - 2) Reflected ceiling plans.

1.04 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. Submit a preliminary if not final Submittal Schedule for approval a minimum of 15 days after award of contract. Failure to submit a submittal schedule within the required time frame will result in the refusal by the Architect to review any submittals. Delays associated with failure to receive the Submittal Schedule are the not the Architects responsibly and rest solely with the Contractor.
- B. The information is required to be submitted under the Submittal article from each respective Specification Section. With each item listed the Contractor shall provide anticipated dates for submission to the Architect. The Architect will review and accept or request that corrections be made for subsequent acceptance. This acceptance will constitute a review for the submittal, shop drawings and sample submissions may commence. No Submittals or Shop Drawings will be reviewed by the Architect until an approved Submittal Schedule is in place.
 1. The Submittal Schedule shall be coordinated with the overall Project Schedule to ensure that submittals are submitted and reviewed so as not to delay the Project Schedule.
 2. The Architect will not be responsible for ensuring that all required Shop Drawings, Product Data, Samples or similar submittals that are required to be submitted and reviewed under the Contract Documents are submitted by the Contractor. Submissions of Shop Drawings, Product Data, Samples or similar submittals are the Contractor's sole responsibility. Delays associated with the contractor's failure to provide the required submittals are the Contractors responsibility.
 3. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
 4. Initial Submittal Schedule: Submit concurrently with startup construction schedule. Include submittals required during the first 30 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.
 5. Final Submittal Schedule: Submit concurrently with the first complete submittal of Contractor's construction schedule.
 - a. Submit revised submittal schedule as required to reflect changes in current status and timing for submittals.
 6. 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.

1.05 SUBMITTAL IDENTIFICATION

- A. Submittal Cover Sheet: Attach one cover sheet for each product, shop drawing or sample. DO NOT combine submittals together with one cover sheet for multiple items. They will not be reviewed.
- B. Submittal Information: Include the following information in each submittal. Use the submittal cover form found in specification section 060000 Project Forms. An electronic form can be sent to the contractor upon request
 1. Contractor, Address, Phone/fax and or Email
 2. Contractors Submittal Number.
 3. Architects Project Number.
 4. Project Name (if not filled in by the Architect)
 5. Type of submittal being sent (select box)
 6. Product Identification including the following: Provide one submittal cover sheet for each product within a specification section
 - a. Specification Section Number
 - b. Contract Drawing Number
 - c. Product Name

- d. Specification Reference: Part/Paragraph
- e. Detail Reference
- f. Manufacturer
- 7. Contractors Approval: The contractor must acknowledge that they have reviewed the submittal for conformance with the Contract Documents and must sign and date the approval.
- 8. Deviation from the Contract Documents: Where the submittal may not meet all of the requirements of the specified item. The contractor must indicate how the submitted item differs from the specified item.
- 9. Contractor Comments: Any additional comments by the contractor should be indicated in this space. (Provide an attachment sheet for any other information required that will not fit on the cover sheet.)
- C. Deviations and Additional Information: On each individual submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information, revisions, line by line comparison and other information requested by Architect [and Construction Manager]. Indicate by highlighting on each submittal or noting on attached separate sheet. Identify options requiring selection by Architect.
- D. File Naming (for uploading): Each submittal or shop drawing file uploaded to the project on the Newforma Info Exchange, shall have in the file name, the specification section number followed by the submittal number, the submittal abbreviation and the specification section name. For re-submissions an R1 would be added following submittal number. The file name must include the following information:

Example:

081416	001	PD	Flush Wood Door
Spec Section	Submittal No.	Submittal Abbrv	Specification Name

File to Read: 081416-001 PD - Flush Wood Doors

Re-submission to Read:081416-001-R1-Flush Wood Doors

Submittal Abbr. required to be used in the file name on submittals are as follows:

CD	Coordination Drawings
CERT	Certifications
CLC	Calculations
DD	Design Data
EJ	Engineer's Judgement
LEED	LEED or PD/LEED
O&M	Operation and Maintenance Manuals
PD	Product Data
PHOTO	Photo
QD	Qualification Data
RPT	Report
SAMP	Sample
SCH	Schedule
SEL	Make a Selection
SD	Shop Drawing(s)
STDY	Study
TR	Test Results
WAR	Warranty

- E. When uploading submittals or RFI's to the Newforma Info Exchange, complete the online transmittal. The information required is derived from the contractor's submittal cover sheet or RFI. Instructions using the Newforma Info Exchange are available from CPL. These instructions can be emailed to the contractor.

1.06 SUBMITTAL DATA AND TESTING REQUIREMENTS

- A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment. Each product within a specification section shall have a separate submittal cover.
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. Send full submittals for each product. Partial submittals will not be reviewed until all required submittal information is received. The architect will not be responsible for project delays due to the contractor's failure to submit the required submittal information in a complete package.
 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 concurrently with Samples.
- B. Shop Drawings: Prepare project-specific information for each shop drawing. 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. Description any conflicts with other trades.
 - h. Seal and signature of professional engineer if specified.
- C. Samples: Submit Samples for review of type, 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. If samples are delivered with product data, only the samples will be reviewed. The Product Data must be uploaded to the Newforma Info Exchange. A duplicate submittal cover sheet is to be uploaded to the Newforma Info exchange as a record of sample delivery.

- a. The Product Data is to be loaded concurrent with the delivery of samples. Samples may be delivered/given to the Architect. In the remarks column of the transmittal place "given to the Architect"
 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.
 - g. In addition to all hard copy and physical samples submitted, duplicate digital submittal is to be produced for review, record and tracking purposes through Newforma Info Exchange. Include same information as above as well as a high resolution, color, digital image of all samples with labeled information clearly visible for each physical sample.
 3. 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.
 4. 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] or Insert number full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect [, through Construction Manager,] will return submittal with options selected.
 5. 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] or Insert number sets of Samples. Architect [and Construction Manager] will retain [two] or Insert number 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] or Insert number sets of paired units that show approximate limits of variations.
- D. Information requirements for each submittal: Where submittal is requiring Schedules, Product Data, Qualification Data, Design Data, Certificates and Tests use the following protocol.
1. Schedules: 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:

2. Product Data. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
 - a. Manufacturer and product name, and model number if applicable.
 - b. Number and name of room or space.
 - c. Location within room or space.
3. 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.
4. 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.
5. Certificates:
 - a. 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.
 - b. Insert definition of Contractor certificates here if required by individual Specification Sections. See the Evaluations.
 - c. 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.
 - d. 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.
 - e. Material Certificates: Submit written statements on manufacturer's letterhead, certifying that material complies with requirements in the Contract Documents.
 - f. Product Certificates: Submit written statements on manufacturer's letterhead, certifying that product complies with requirements in the Contract Documents.
 - g. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of AWS B2.1/B2.1M on AWS forms. Include names of firms and personnel certified.
 - h. 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.
 - i. 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.
 - j. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
 - k. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
6. Test and Research Reports:
 - a. 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 substrate preparation and primers required.
 - b. 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.
 - c. 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.

- d. 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.
 - e. 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.
 - f. 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:
 - 1) Name of evaluation organization.
 - 2) Date of evaluation.
 - 3) Time period when report is in effect.
 - 4) Product and manufacturers' names.
 - 5) Description of product.
 - 6) Test procedures and results.
 - 7) Limitations of use.
- E. Submit the following submittals: Within 15 days of contract award.
- 1. Submittal Schedule including dates of anticipated review and approval.
 - a. No submittals will be reviewed without an approved Submittal Schedule in place.
 - 2. Subcontractor 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:
 - a. Name, address, telephone number and email address of entities performing subcontract or supplying products.
 - b. Number and title of related Specification Section(s) covered by subcontract.
 - 3. Contractor's Construction Schedule: Comply with requirements specified in Section 013200 "Construction Progress Documentation."
 - 4. Schedule of Values: Comply with requirements specified in Section 012900 "Payment Procedures."
- F. Submit within the first 30 days after Contract Award
- 1. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Section 014329 "Special Inspections."
 - 2. 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.
 - 3. 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.
- G. Submit Field Test Reports during construction within 15 days of the testing date and as follows:
- 1. 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.
- H. Submit a minimum 30 days prior to Project Closeout:
- 1. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 017700 "Closeout Procedures."
 - 2. Maintenance Data: Comply with requirements specified in Division 01 Section 017823 "Operation and Maintenance Data."

1.07 SUBMITTAL PROCESSING

- A. Processing Time: Allow time for submittal review, including time for re-submittals, 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 re-submittals.
- B. The architect will not be responsible for project delays due to the contractor's failure to submit the required submittal information in time to allow for review based on the stipulated review time and to meet the project schedule.
- C. Initial Review: Allow 10 Calendar 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.
- D. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
- E. Re-submittal Review: Allow 10 Calendar days for review of each re-submittal.
- F. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 21 Calendar days for initial review of each submittal.
- G. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Architect and to Architect's consultants, allow 15 Calendar days for review of each submittal. Submittal will be returned to Architect before being returned to Contractor.
- H. Where submittal are required to be approved that are part of an assembly or for items such as finishes where color selections are required. The submittal will be retained until all of the information related to these systems and color selections is provided and accepted.
- I. Products with multiple submittals may be held until all necessary information has been submitted for architect to make a complete review. Submittals dependent on coordinating information from related or dependent products; or products with critical interface with other products may be held until all information is submitted for architect to make a complete review and coordinate all required information. (example door frames will not be reviewed without door hardware)
- J. 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 reviewed notation from Architect's [and Construction Manager's] action stamp.
- K. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.

1.08 SUBMITTAL PROCEDURES

- A. 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.
- B. 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.

- C. 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.
- D. 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.
- E. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- F. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- G. 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.
- H. 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.
- I. 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:
 - 1. Name of evaluation organization.
 - 2. Date of evaluation.
 - 3. Time period when report is in effect.
 - 4. Product and manufacturers' names.
 - 5. Description of product.
 - 6. Test procedures and results.
 - 7. Limitations of use.
- J. Schedule of Tests and Inspections: Comply with requirements specified in Division 01 Section "Quality Requirements."
- K. 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.
- L. 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.
- M. 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.
- N. Maintenance Data: Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."
- O. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

1.09 CONTRACTOR'S REVIEW

- A. Action 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. Contractors Approval: Provide Contractor's approval signature and date on the Submittal Cover sheet certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

1.10 ARCHITECT'S ACTION

- A. Submittals: Architect will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect will respond to each submittal indicating one of the following actions required:
 - 1. **No Exceptions Taken:** Architect takes no exception to the submittal. This part of the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance.
 - 2. **Furnish as Corrected:** No exceptions taken except what is identified by the Architect. The part of the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance. Furnish any additional related information as requested.
 - 3. **Revise and Re-Submit:** Revise the submittal based on the Architects comments and resubmit the submittal. Do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in accordance with the notations; resubmit without delay. Repeat if necessary to obtain a different action mark.
 - a. Do not permit submittals marked "Revise and Resubmit" to be used at the Project Site, or elsewhere where Work is in progress.
 - 4. **Rejected:** The submittal is rejected. See Architects comments on why submittal was rejected.
 - a. Submittal has not been reviewed by the Contractor and so noted.
 - b. Submittal has been prepared without due regard for information called for or logically implied by the Contract Documents.
 - c. Information is not sufficiently complete or accurate to verify that work represented is in accordance with the Contract Documents.
 - d. Do not permit submittals marked "Rejected" to be used at the Project Site, or elsewhere where Work is in progress.
 - 5. **No Action Taken:** The submittal is not required and will not be reviewed.
- B. Submittals by Newforma Info Exchange: Architect [and Construction Manager] will indicate, on Newforma Info Exchange, the appropriate action.
- C. Informational Submittals: Architect will review each submittal and will not return it or will return it if it does not comply with requirements. The Architects action will be noted in the Newforma Info Exchange.
- D. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect. The Architects action will be noted in the Newforma Info Exchange and noted as a partial review until a full submittal can be received.
- E. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for re-submittal without review.
- F. Submittals not required by the Contract Documents will not be reviewed and will receive no action.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

This page intentionally left blank

SECTION 01 40 00
QUALITY REQUIREMENTS
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Submittals.
- B. References and standards.
- C. Testing and inspection agencies and services.
- D. Control of installation.
- E. Tolerances.
- F. Defect Assessment.

1.02 RELATED REQUIREMENTS

- A. Section 01 30 00 - Administrative Requirements: Submittal procedures.
- B. Section 01 60 00 - Product Requirements: Requirements for material and product quality.

1.03 REFERENCE STANDARDS

- A. ASTM C1077 - Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation 2017.
- B. ASTM D3740 - Standard Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction 2019.

1.04 DEFINITIONS

- A. 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.
- B. 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. Services do not include contract enforcement activities performed by Architect or Construction Manager.
- C. Preconstruction Testing: Tests and inspections performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.
- D. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- E. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- F. 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, and similar operations.
- G. 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 or trades.
- H. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of **five** similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.05 CONFLICTING REQUIREMENTS

- A. Referenced Standards: If compliance with two or more standards is specified and the standards 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 a decision 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.

1.06 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Reports and Documents
 - 1. Test/Inspection Reports: After each test/inspection, promptly submit two copies of report to CPL Architects and to Contractor.
 - a. Include:
 - 1) Date issued.
 - 2) Project title and number.
 - 3) Name of inspector.
 - 4) Date and time of sampling or inspection.
 - 5) Identification of product and specifications section.
 - 6) Location in the Project.
 - 7) Type of test/inspection.
 - 8) Date of test/inspection.
 - 9) Results of test/inspection.
 - 10) Compliance with Contract Documents.
 - 11) When requested by CPL Architects, provide interpretation of results.
- C. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to CPL Architects, in quantities specified for Product Data.
 - 1. Indicate material or product complies with or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
 - 2. Certificates may be recent or previous test results on material or product, but must be acceptable to CPL Architects.
- D. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.07 QUALITY CONTROL

- A.
 - 1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
 - 2. Costs for retesting and re-inspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.
- B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.

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. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
 3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
 6. Notify testing agencies at least (24) hours in advance of time when Work that requires testing or inspecting will be performed.
- C. Retesting/Re-inspecting: Regardless of whether original tests or inspections were Contractor's responsibility, the Contractor shall provide quality-control services, including retesting and re-inspecting, 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 Construction Manager promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. Determine the location 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 any duties of Contractor.
- E. Associated Services: Cooperate with agencies 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 inspecting. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Security and protection for samples and for testing and inspecting equipment at Project site.
 6. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
- F. Schedule times for tests, inspections, obtaining samples, and similar activities.

1.08 REFERENCES AND STANDARDS

- A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Comply with reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.

- C. Obtain copies of standards where required by product specification sections.
- D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.
- E. Should specified reference standards conflict with Contract Documents, request clarification from CPL Architects before proceeding.
- F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of CPL Architects shall be altered from Contract Documents by mention or inference otherwise in any reference document.

1.09 TESTING AND INSPECTION AGENCIES AND SERVICES

- A. Owner will employ services of an independent testing agency to perform specified testing and inspection unless otherwise noted.
- B. See individual specification sections for testing and inspection required.
- C. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from CPL Architects before proceeding.
- D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from CPL Architects before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

3.03 TESTING AND INSPECTION

- A. See individual specification sections for testing and inspection required.
- B. Testing Agency Duties:
 - 1. Provide qualified personnel at site. Cooperate with CPL Architects and Contractor in performance of services.
 - 2. Perform specified sampling and testing of products in accordance with specified standards, maintain test log of results as follows:
 - 3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
 - 4. Promptly notify CPL Architects and Contractor of observed irregularities or non-compliance of Work or products.

5. Perform additional tests and inspections required by CPL Architects.
 6. Submit reports of all tests/inspections specified.
- C. Limits on Testing/Inspection Agency Authority:
1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
 2. Agency may not approve or accept any portion of the Work.
 3. Agency may not assume any duties of Contractor.
 4. Agency has no authority to stop the Work.
- D. General Contractor Responsibilities:
1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
 2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
 3. Provide incidental labor and facilities:
 - a. To provide access to Work to be tested/inspected.
 - b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
 - c. To facilitate tests/inspections.
 - d. To provide storage and curing of test samples.
 4. Notify CPL Architects and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
 5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
 6. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
- E. Re-testing required because of non-compliance with specified requirements shall be performed by the same agency on instructions by CPL Architects.
- F. Re-testing required because of non-compliance with specified requirements shall be paid for by Contractor.

3.04 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, 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 Division 01 Section "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.

3.05 DEFECT ASSESSMENT

- A. Replace Work or portions of the Work not complying with specified requirements.
- B. If, in the opinion of CPL Architects, it is not practical to remove and replace the work, CPL Architects will direct an appropriate remedy or adjust payment.

END OF SECTION

This page intentionally left blank

SECTION 01 45 33
CODE-REQUIRED SPECIAL INSPECTIONS AND PROCEDURES
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Code-required special inspections.
- B. Submittals.

1.02 RELATED REQUIREMENTS

- A. Section 01 40 00 - Quality Requirements.

1.03 REFERENCE STANDARDS

- A. ACI 318 - Building Code Requirements for Structural Concrete 2019 (Reapproved 2022).
- B. ASTM C31/C31M - Standard Practice for Making and Curing Concrete Test Specimens in the Field 2023.
- C. ASTM C172/C172M - Standard Practice for Sampling Freshly Mixed Concrete 2017.
- D. ASTM D3740 - Standard Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction 2019.
- E. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection 2021.
- F. ASTM E543 - Standard Specification for Agencies Performing Nondestructive Testing 2021.
- G. AWS D1.4/D1.4M - Structural Welding Code - Steel Reinforcing Bars 2018, with Amendment (2020).
- H. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures 2022, with Errata.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Special Inspection Agency Qualifications: Prior to the start of work, the Special Inspection Agency is required to:
 - 1. Submit agency name, address, and telephone number, names of full time registered Engineer and responsible officer.
 - 2. Submit copy of report of laboratory facilities inspection made by NIST Construction Materials Reference Laboratory during most recent inspection, with memorandum of remedies of any deficiencies reported by the inspection.
 - 3. Submit certification that Special Inspection Agency is acceptable to AHJ.
- C. Testing Agency Qualifications: Prior to the start of work, the Testing Agency is required to:
 - 1. Submit agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.
 - 2. Submit copy of report of laboratory facilities inspection made by NIST Construction Materials Reference Laboratory during most recent inspection, with memorandum of remedies of any deficiencies reported by the inspection.
 - 3. Submit certification that Testing Agency is acceptable to AHJ.
- D. Special Inspection Reports: After each special inspection, Special Inspector is required to promptly submit at least two copies of report; one to CPL Architects and one to the AHJ.
 - 1. Include:
 - a. Date issued.
 - b. Project title and number.
 - c. Name of Special Inspector.
 - d. Date and time of special inspection.
 - e. Identification of product and specifications section.

- f. Location in the Project.
 - g. Type of special inspection.
 - h. Date of special inspection.
 - i. Results of special inspection.
 - j. Compliance with Contract Documents.
2. Final Special Inspection Report: Document special inspections and correction of discrepancies prior to the start of the work.
- E. With the application for building permit, each Contractor responsible for the construction of a seismic-force-resisting system shall submit a Statement of Special Inspections. A copy of the Statement of Special Inspections shall be submitted to the Architect and Owner.
- F. Submit progress inspection reports to State and local authorities, the Architect and Owner.
- G. Submit final inspection report to State and local authorities, the Architect and Owner.

1.05 SPECIAL INSPECTION AGENCY

- A. Owner will employ services of a Special Inspection Agency to perform inspections and associated testing and sampling in accordance with ASTM E329 and required by the building code.
- B. The Special Inspection Agency may employ and pay for services of an independent testing agency to perform testing and sampling associated with special inspections and required by the building code.
- C. Employment of agency in no way relieves Contractor of obligation to perform work in accordance with requirements of Contract Documents.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 SCHEDULE OF SPECIAL INSPECTIONS, GENERAL

- A. Frequency of Special Inspections: Special Inspections are indicated as continuous or periodic.
 - 1. Continuous Special Inspection: Special Inspection Agency is required to be present in the area where the work is being performed and observe the work at all times the work is in progress.
 - 2. Periodic Special Inspection: Special Inspection Agency is required to be present in the area where work is being performed and observe the work part-time or intermittently and at the completion of the work.

3.02 SPECIAL INSPECTIONS FOR CONCRETE CONSTRUCTION

- A. Reinforcing Steel, Including Prestressing of Tendons and Placement: Verify compliance with approved Contract Documents and ACI 318, Sections 3.5 and 7.1 through 7.7; periodic.
- B. Anchors Cast in Concrete: Verify compliance with ACI 318, 17.8.2; periodic.
- C. Anchors Installed in Hardened Concrete: Verify compliance with ACI 318, Sections 3.8.6, 8.1.3, and 21.2.8; periodic.
- D. Design Mix: Verify plastic concrete complies with the design mix in approved Contract Documents and with ACI 318, Chapter 4 and 5.2; periodic.
- E. Concrete Sampling Concurrent with Strength Test Sampling: Each time fresh concrete is sampled for strength tests, verify compliance with ASTM C172/C172M, ASTM C31/C31M and ACI 318, Sections 5.6 and 5.8 and record the following, continuous:
 - 1. Slump.
 - 2. Air content.
 - 3. Temperature of concrete.
- F. Specified Curing Temperature and Techniques: Verify compliance with approved Contract Documents and ACI 318, Sections 5.11 through 5.13; periodic.

- G. Formwork Shape, Location and Dimensions: Verify compliance with approved Contract Documents and ACI 318, Section 6.1.1; periodic.

3.03 SPECIAL INSPECTIONS FOR MASONRY CONSTRUCTION

- A. Masonry Structures Subject to Special Inspection:
1. Masonry construction when required by the quality assurance program of TMS 402/602.
- B. Verify each item below complies with approved Contract Documents and the applicable articles of TMS 402/602.
1. Inspections and Approvals:
 - a. Verify compliance with the required inspection provisions of the approved Contract Documents; periodic.
 - b. Verify approval of submittals required by Contract Documents; periodic.
 2. Compressive Strength of Masonry: Verify compressive strength of masonry units prior to start of construction unless specifically exempted by code; periodic.
 3. Slump Flow and Visual Stability Index (VSI): Verify compliance as self consolidating grout arrives on site; continuous.
 4. Joints and Accessories: When masonry construction begins, verify:
 - a. Proportions of site prepared mortar; periodic.
 - b. Construction of mortar joints; periodic.
 - c. Location of reinforcement, connectors, anchorages, etc; periodic.
 5. Structural Elements, Joints, Anchors, Protection: During masonry construction, verify:
 - a. Size and location of structural elements; periodic.
 - b. Type, size and location of anchors, including anchorage of masonry to structural members, frames or other construction; periodic.
 - c. Size, grade and type of reinforcement, anchor bolts; periodic.
 6. Grouting Preparation: Prior to grouting, verify:
 - a. Grout space is clean; periodic.
 - b. Correct placement of reinforcing, connectors; periodic.
 - c. Correctly proportioned site prepared grouts; periodic.
 - d. Correctly constructed mortar joints; periodic.
 7. Preparation of Grout Specimens, Mortar Specimens and Prisms: Observe preparation of specimens; periodic.

3.04 SPECIAL INSPECTIONS FOR SOILS

- A. Materials and Placement: Verify each item below complies with approved construction documents and approved geotechnical report.
1. Design bearing capacity of material below shallow foundations; periodic.
 2. Design depth of excavations and suitability of material at bottom of excavations; periodic.
 3. Materials, densities, lift thicknesses; placement and compaction of backfill: continuous.
 4. Subgrade, prior to placement of compacted fill verify proper preparation; periodic.
- B. Testing: Classify and test excavated material; periodic.

END OF SECTION

This page intentionally left blank

SECTION 01 50 00
TEMPORARY FACILITIES AND CONTROLS
PART 1 GENERAL

1.01 SUMMARY

- A. This Section includes requirements for temporary facilities and controls, including temporary utilities, support facilities, and security and protection.
- B. Temporary utilities include, but are not limited to, the following:
 - 1. Water service and distribution.
 - 2. Temporary electric power and light.
 - 3. Sanitary facilities, including drinking water.
- C. Support facilities include, but are not limited to, the following:
 - 1. Field offices and storage containers.
 - 2. Temporary roads and paving.
 - 3. Temporary project identification sign and project signage.
 - 4. Waste disposal services and dumpsters.
 - 5. Construction aids and miscellaneous services and facilities.
- D. Security and protection facilities include, but are not limited to, the following:
 - 1. Barricades, warning signs, and lights.
 - 2. Security enclosure and lockup.
 - 3. Enclosure fence for the work site.
- E. Related Sections:
 - 1. Division 01 Section "Summary" for work restrictions and limitations on utility interruptions.

1.02 INFORMATIONAL SUBMITTALS

- A. Temporary Utilities: The contractor shall submit reports of tests, inspections, meter readings, and similar procedures performed on temporary utilities.
- B. Implementation and Termination Schedule: Within 15 days of the date established for submittal of the Contractor's Construction Schedule, the contractor shall submit a schedule indicating implementation and termination of each temporary utility for which the Contractor is responsible.
- C. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.
- D. Erosion and Sedimentation-Control Plan: Show compliance with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent

1.03 DEFINITIONS

- A. Temporary Facilities: Construction, fixtures, fittings, and other built items required to accomplish the work but which are not incorporated into the finished work.
- B. Temporary Utilities: A type of temporary facility, primary sources of electric power, water, natural gas supply, etc., obtained from public utilities, other main distribution systems, or temporary sources constructed for the project, but not including the fixtures and equipment served.
- C. Temporary Services: Activities required during construction, which do not directly accomplish the work.

1.04 QUALITY ASSURANCE

- A. Regulations: The contractor shall comply with industry standards and with applicable laws and regulations of authorities having jurisdiction including, but not limited to, the following:
 - 1. Building code requirements.
 - 2. Health and safety regulations.
 - 3. Utility company regulations.

4. Police, fire department and rescue squad rules.
5. Environmental protection regulations.
- B. Standards: The Contractor shall comply with NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations," ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition," and NECA Electrical Design Library "Temporary Electrical Facilities."
- C. Trade Jurisdictions: Assigned responsibilities for installation and operation of temporary utilities are not intended to interfere with the normal application of trade regulations and union jurisdictions.
- D. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.
- E. Accessible Temporary Egress: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.

1.05 USE CHARGES

- A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Architect, testing agencies, and authorities having jurisdiction.
 1. **Water and Sewer Service: 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.**
 2. **Electric Power Service: 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.**
- B. Cost or use charges for temporary facilities are not chargeable to the Owner or the Architect. The Architect will not accept a prime contractor's cost or use charges for temporary services or facilities as a basis of claim for an adjustment in the Contract Sum or the Contract Time.
- C. Other entities using temporary services and facilities include, but are not limited to, the following:
 1. Other nonprime contractors.
 2. The Owner's work forces.
 3. Occupants of the Project.
 4. The Architect.
 5. Testing agencies.
 6. Personnel of government agencies.

1.06 PROJECT CONDITIONS

- A. Temporary Utilities: The contractor shall prepare a schedule indicating dates for implementation and termination of each temporary utility for which the Contractor is responsible. At the earliest feasible time, when acceptable to the Owner, change over from use of temporary service to use of permanent service.
- B. Conditions of Use: Keep temporary services and facilities clean. Operate in a safe and efficient manner. Relocate temporary services and facilities as the Work progresses. Do not overload facilities or permit them to interfere with progress. Take necessary fire-prevention measures. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on-site.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Portable Chain-Link Fencing: Minimum 2-inch, 0.148-inch- thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet high with galvanized-steel pipe posts; minimum 2-3/8-inch- OD line posts and 2-7/8-inch- OD corner and pull posts, with 1-5/8-inch- OD top and bottom rails. Provide **[concrete]** **[galvanized-steel]** bases for supporting posts.
- B. General: The contractor shall provide new materials. If acceptable to the Architect, undamaged, previously used materials in serviceable condition may be used. Provide materials suitable for use intended.
- C. Lumber and Plywood: Comply with requirements in Division 6 Section "Rough Carpentry."
 - 1. For signs and directory boards, provide exterior-type, Grade B-B high-density concrete form overlay plywood of sizes and thicknesses indicated.
 - 2. For fences and vision barriers, provide minimum 3/8-inch- thick exterior plywood.
 - 3. For safety barriers, sidewalk bridges, and similar uses, provide minimum 5/8-inch thick exterior plywood.
- D. Water: Provide potable water approved by local health authorities.

2.02 TEMPORARY FACILITIES

- A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.
- B. Common-Use Field Office: (if needed for the Owner, Architect or Const Mgr.) Of sufficient size to accommodate needs of Owner, Architect **[Construction Manager]**, and construction personnel office activities and to accommodate project meetings specified in other Division 01 Sections. Keep office clean and orderly. Furnish and equip offices as follows:
 - 1. Furniture required for Project-site documents including file cabinets, plan tables, plan racks, and bookcases.
 - 2. Conference room of sufficient size to accommodate meetings of 15 individuals. Provide electrical power service and 120-V ac duplex receptacles, with not less than 1 receptacle on each wall. Furnish room with conference table, chairs, and 4-foot- square tack and marker boards.
 - 3. Drinking water and private toilet.
 - 4. Coffee machine and supplies.
 - 5. Heating and cooling equipment necessary to maintain a uniform indoor temperature of 68 to 72 deg F.
 - 6. Lighting fixtures capable of maintaining average illumination of 20 fc at desk height.

2.03 EQUIPMENT

- A. Temporary Toilet Units: Provide self-contained, single-occupant toilet units of the chemical, aerated recirculation, or combustion type. Provide units properly vented and fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.
- B. Fire Extinguishers: Provide hand-carried, portable, UL-rated, Class A fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable, UL-rated, Class ABC, dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for the exposures.
 - 1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

PART 3 EXECUTION

3.01 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.

- 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.

3.02 TEMPORARY UTILITY INSTALLATION

- A. General: Engage the appropriate local utility company to install temporary service or connect to existing service. Where the company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with company recommendations.
 - 1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
 - 2. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.
 - 3. Obtain easements to bring temporary utilities to the site where the Owner's easements cannot be used for that purpose.
- B. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
- C. The contractor shall provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.
- D. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
- E. Sewers and Drainage: If sewers are available, provide temporary connections to remove effluent that can be discharged.
 - 1. Filter out excessive amounts of soil, construction debris, chemicals, oils, and similar contaminants that might clog sewers or pollute waterways before discharge.
 - 2. Connect temporary sewers to the municipal system as directed by sewer department officials.
 - 3. Maintain temporary sewers and drainage facilities in a clean, sanitary condition. Following heavy use, restore normal conditions promptly.
- F. Sanitary Facilities: The General Contractor will provide temporary toilets for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
 - 1. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy. Use of pit-type privies will not be permitted.
 - 2. Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Provide covered waste containers for used material.
- G. Water Service: Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
- H. Electric Power Service: Connect to Owner's existing electric power service. Maintain equipment in a condition acceptable to Owner.
 - 1. Connect temporary service to Owner's existing power source, as directed by Owner.

3.03 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
 - 1. Provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241.
 - 2. 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.
 - 3. Locate field offices, storage trailers, sanitary facilities, and other temporary construction and support facilities for easy access.

4. Maintain support facilities until near Substantial Completion. Remove prior to Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to the Owner.
- B. Traffic Controls: Comply with requirements of authorities having jurisdiction.
 1. Protect existing site improvements to remain including curbs, pavement, and utilities.
 2. Maintain access for fire-fighting equipment and access to fire hydrants.
- C. Temporary Parking: Parking at most sites is limited to the staging areas and the areas adjacent to the work area. Parking on the street or in owners designated lots is prohibited unless approved by Owner.
- D. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with Division 01 Section "Execution" for progress cleaning requirements.
- E. 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.
- F. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.
 1. Identification Signs: Provide Project identification signs as indicated on Drawings.
 - a. See example project Identification sign following this section.
 2. Warning and regulatory signage provide as required to protect from hazards and as required by authorities having jurisdiction.
 3. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.
 - a. Provide temporary, directional signs for construction personnel and visitors.
 4. Maintain and touch up signs, so they are legible.

3.04 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.
- B. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to **requirements of EPA Construction General Permit** authorities having jurisdiction whichever is more stringent.
 1. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross tree- or plant- protection zones.
 2. Inspect, repair, and maintain erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
 3. Clean, repair, and restore adjoining properties and roads affected by erosion and sedimentation from the project site during the course of the project.
 4. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.
- C. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.
- D. Enclosure Fence: When excavation begins the contractor will install an enclosure fence with lockable entrance gates. Install in a manner that will prevent the public and animals from easily entering the site, except by the entrance gates.
 1. Provide open-mesh, 6' high chain link fence with posts.
 2. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.
 3. Provide min. 2 double swing access gates and man gates. Each gate is to have a chain and padlock.

4. Provide (2) keys for each lock to the Owner.
5. Remove fence upon completion of all exterior activities or sooner if directed by Architect.
- E. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- F. Temporary Signs: Prepare signs to provide directional information to construction personnel and visitors for each site. Unauthorized signs are not permitted.
 1. For construction traffic control/flow at entrances/exits, as designated by the Owner.
 2. For warning signs as required
 3. Per OSHA standards as necessary
 4. For trailer identification
 5. For "No Smoking" safe work site at multiple locations.
- G. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.
- H. Security Enclosure and Lockup: Install substantial temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, theft and similar violations of security.
 1. Storage: Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Coordinate with the installation and release of material to minimize the opportunity for theft and vandalism.

3.05 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.
- 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. 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.
- D. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 01 Section "Closeout Procedures."

END OF SECTION

SECTION 01 60 00
PRODUCT REQUIREMENTS
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. General product requirements.
- B. Transportation, handling, storage and protection.
- C. Product option requirements.
- D. Substitution limitations.
- E. Procedures for Owner-supplied products.
- F. Maintenance materials, including extra materials, spare parts, tools, and software.

1.02 RELATED REQUIREMENTS

- A. Section 01 10 00 - Summary: Identification of Owner-supplied products.
- B. Section 01 25 00 - Substitution Procedures: Substitutions made during procurement and/or construction phases.
- C. Section 01 40 00 - Quality Requirements: Product quality monitoring.

1.03 SUBMITTALS

- A. Proposed Products List: Submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.
 - 1. Submit within 30 days after date of Agreement.
 - 2. For products specified only by reference standards, list applicable reference standards.
- B. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- C. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- D. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
 - 1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.
- E. Indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

PART 2 PRODUCTS

2.01 NEW PRODUCTS

- A. Provide new products unless specifically required or permitted by Contract Documents.
- B. Use of products having any of the following characteristics is not permitted:
 - 1. Made using or containing CFC's or HCFC's.

2.02 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

2.03 MAINTENANCE MATERIALS

- A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.
- B. Deliver to Project site; obtain receipt prior to final payment.

PART 3 EXECUTION

3.01 SUBSTITUTION LIMITATIONS

- A. See Section 01 25 00 - Substitution Procedures.

3.02 OWNER-SUPPLIED PRODUCTS

- A. See Section 01 10 00 - Summary for identification of Owner-supplied products.
- B. Owner's Responsibilities:
 - 1. Arrange for and deliver Owner reviewed shop drawings, product data, and samples, to Contractor.
 - 2. Arrange and pay for product delivery to site.
 - 3. On delivery, inspect products jointly with Contractor.
 - 4. Submit claims for transportation damage and replace damaged, defective, or deficient items.
 - 5. Arrange for manufacturers' warranties, inspections, and service.
- C. Contractor's Responsibilities:
 - 1. Review Owner reviewed shop drawings, product data, and samples.
 - 2. Receive and unload products at site; inspect for completeness or damage jointly with Owner.
 - 3. Handle, store, install and finish products.
 - 4. Repair or replace items damaged after receipt.

3.03 TRANSPORTATION AND HANDLING

- A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.
- B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.
- C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- D. Transport and handle products in accordance with manufacturer's instructions.
- E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.
- H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.04 STORAGE AND PROTECTION

- A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication. See Section 01 74 19.
- B. Store and protect products in accordance with manufacturers' instructions.
- C. Store with seals and labels intact and legible.
- D. Store sensitive products in weathertight, climate-controlled enclosures in an environment favorable to product.

- E. For exterior storage of fabricated products, place on sloped supports above ground.
- F. Provide off-site storage and protection when site does not permit on-site storage or protection.
- G. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.
- H. Comply with manufacturer's warranty conditions, if any.
- I. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- J. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- K. Prevent contact with material that may cause corrosion, discoloration, or staining.
- L. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- M. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

This page intentionally left blank

SECTION 01 70 00
EXECUTION AND CLOSEOUT REQUIREMENTS
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Examination, preparation, and general installation procedures.
- B. Cutting and patching.
- C. Surveying for laying out the work.
- D. Cleaning and protection.
- E. Starting of systems and equipment.
- F. Demonstration and instruction of Owner personnel.
- G. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.
- H. General requirements for maintenance service.

1.02 RELATED REQUIREMENTS

- A. Section 01 30 00 - Administrative Requirements: Submittals procedures, Electronic document submittal service.
- B. Section 01 40 00 - Quality Requirements: Testing and inspection procedures.
- C. Section 01 51 00 - Temporary Utilities: Temporary heating, cooling, and ventilating facilities.
- D. Section 01 74 19 - Construction Waste Management and Disposal: Additional procedures for trash/waste removal, recycling, salvage, and reuse.
- E. Section 01 78 00 - Closeout Submittals: Project record documents, operation and maintenance data, warranties, and bonds.
- F. Section 07 84 00 - Firestopping.
- G. Individual Product Specification Sections:
 - 1. Advance notification to other sections of openings required in work of those sections.
 - 2. Limitations on cutting structural members.

1.03 REFERENCE STANDARDS

- A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations 2022, with Errata (2021).

1.04 QUALIFICATIONS

- A. For surveying work, employ a land surveyor registered in the State in which the Project is located and acceptable to CPL Architects. Submit evidence of surveyor's Errors and Omissions insurance coverage in the form of an Insurance Certificate. Employ only individual(s) trained and experienced in collecting and recording accurate data relevant to ongoing construction activities,
- B. Demolition: Comply with requirements for and limitations for demolition operations.
 - 1. Structural Elements: When removing structural elements, shore, brace, and support structural elements if required for safety. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.

1.05 PROJECT CONDITIONS

- A. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

1.06 COORDINATION

- A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements.

- B. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- C. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on drawings. Follow routing indicated for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- D. Maintain equipment manufacturer's recommended service clearances.
- E. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- F. Coordinate completion and clean-up of work of separate sections.
- G. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
- C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 60 00 - Product Requirements.

PART 3 EXECUTION

3.01 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, 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. 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. Recommended corrections.
- C. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- D. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- E. Examine and verify specific conditions described in individual specification sections.
- F. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.
- G. Verify that utility services are available, of the correct characteristics, and in the correct locations.

- H. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

- A. Existing Utility Information: Furnish information to both the local utility and Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. 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.
- C. Clean substrate surfaces prior to applying next material or substance.
- D. Seal cracks or openings of substrate prior to applying next material or substance.
- E. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 PREINSTALLATION MEETINGS

- A. When required in individual specification sections, convene a preinstallation meeting at the site prior to commencing work of the section.
- B. Require attendance of parties directly affecting, or affected by, work of the specific section.
- C. Notify CPL Architects four days in advance of meeting date.
- D. Prepare agenda and preside at meeting:
 - 1. Review conditions of examination, preparation and installation procedures.
 - 2. Review coordination with related work.
- E. Record minutes and distribute copies within two days after meeting to participants, with two copies to CPL Architects, Owner, participants, and those affected by decisions made.

3.04 LAYING OUT THE WORK

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect and Construction Manager promptly.
- B. Verify locations of survey control points prior to starting work.
- C. Establish limits on use of Project site.
- D. Promptly notify CPL Architects of any discrepancies discovered.
- E. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
- F. Promptly report to CPL Architects the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
- G. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to CPL Architects.
- H. Utilize recognized engineering survey practices.
- I. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
 - 1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations; and _____.
 - 2. Grid or axis for structures.

- 3. Building foundation, column locations, ground floor elevations, and _____.
- J. Periodically verify layouts by same means.
- K. Maintain a complete and accurate log of control and survey work as it progresses.
- L. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.

3.05 GENERAL INSTALLATION REQUIREMENTS

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
- B. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- C. 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.
- D. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- E. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- F. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- G. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- H. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- I. Make neat transitions between different surfaces, maintaining texture and appearance.
- J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.06 CUTTING AND PATCHING

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. Perform whatever cutting and patching is necessary to:
 - 1. Complete the work.
 - 2. Fit products together to integrate with other work.
 - 3. Provide openings for penetration of mechanical, electrical, and other services.
 - 4. Match work that has been cut to adjacent work.
 - 5. Repair areas adjacent to cuts to required condition.
 - 6. Repair new work damaged by subsequent work.
 - 7. Remove samples of installed work for testing when requested.
 - 8. Remove and replace defective and non-complying work.
- C. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
- D. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
- E. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- F. Restore work with new products in accordance with requirements of Contract Documents.
- G. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- H. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07 84 00, to full thickness of the penetrated element.

- I. Patching:
 - 1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
 - 2. Match color, texture, and appearance.
 - 3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

3.07 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.08 PROTECTION OF INSTALLED WORK

- 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. 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.
 - 3. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
- B. Protect installed work from damage by construction operations.
- C. Provide special protection where specified in individual specification sections.
- D. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- E. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- F. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- G. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- H. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.
- I. Site: Maintain Project site free of waste materials and debris.
- J. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways.
- K. Limiting Exposures: Supervise demolition operations to assure that no part of the demolition, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the demolition period.

3.09 ADJUSTING

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.

3.10 FINAL CLEANING

- A. Use cleaning materials that are nonhazardous.
- B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- C. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.
- D. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- E. Clean filters of operating equipment.
- F. Clean debris from roofs, gutters, downspouts, scuppers, overflow drains, area drains, drainage systems, and all other areas affected by construction, construction debris and travel paths used during construction process..
- G. Clean site; sweep paved areas, rake clean landscaped surfaces.
- H. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.11 CLOSEOUT PROCEDURES

- A. Make submittals that are required by governing or other authorities.
 - 1. Provide copies to CPL Architects and Owner.
- B. Accompany Project Coordinator on preliminary inspection to determine items to be listed for completion or correction in the Contractor's Correction Punch List for Contractor's Notice of Substantial Completion.
- C. Notify CPL Architects when work is considered ready for CPL Architects's Substantial Completion inspection.
- D. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for CPL Architects's Substantial Completion inspection.
- E. Conduct Substantial Completion inspection and create Final Correction Punch List containing CPL Architects's and Contractor's comprehensive list of items identified to be completed or corrected and submit to CPL Architects.
- F. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.
- G. Notify CPL Architects when work is considered finally complete and ready for CPL Architects's Substantial Completion final inspection.
- H. Complete items of work determined by CPL Architects listed in executed Certificate of Substantial Completion.

3.12 MAINTENANCE

- A. Provide service and maintenance of components indicated in specification sections.
- B. Maintenance Period: As indicated in specification sections or, if not indicated, not less than one year from the Date of Substantial Completion or the length of the specified warranty, whichever is longer.
- C. Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.
- D. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.

- E. Maintenance service shall not be assigned or transferred to any agent or subcontractor without prior written consent of the Owner.

END OF SECTION

This page intentionally left blank

SECTION 01 74 19
CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL
PART 1 GENERAL

1.01 WASTE MANAGEMENT REQUIREMENTS

- A. Owner requires that this project generate the least amount of trash and waste possible.
- B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.
- C. Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.
- D. Contractor shall submit periodic Waste Disposal Reports; all landfill disposal, incineration, recycling, salvage, and reuse must be reported regardless of to whom the cost or savings accrues; use the same units of measure on all reports.
- E. Methods of trash/waste disposal that are not acceptable are:
 - 1. Burning on the project site.
 - 2. Burying on the project site.
 - 3. Dumping or burying on other property, public or private.
 - 4. Other illegal dumping or burying.
- F. Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, state and local requirements, pertaining to legal disposal of all construction and demolition waste materials.

1.02 DEFINITIONS

- A. Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk, or the like.
- B. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, remodeling, repair and demolition operations.
- C. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity or reactivity.
- D. Nonhazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity, or reactivity.
- E. Nontoxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.
- F. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.
- G. Recycle: To remove a waste material from the project site to another site for remanufacture into a new product for reuse by others.
- H. Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- I. Return: To give back reusable items or unused products to vendors for credit.
- J. Reuse: To reuse a construction waste material in some manner on the project site.
- K. Salvage: To remove a waste material from the project site to another site for resale or reuse by others.
- L. Sediment: Soil and other debris that has been eroded and transported by storm or well production run-off water.
- M. Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.
- N. Toxic: Poisonous to humans either immediately or after a long period of exposure.

- O. Trash: Any product or material unable to be reused, returned, recycled, or salvaged.
- P. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

1.03 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Waste Disposal Reports: Submit at specified intervals, with details of quantities of trash and waste, means of disposal or reuse, and costs; show both totals to date and since last report.
 - 1. Submit updated Report with each Application for Progress Payment; failure to submit Report will delay payment.
 - 2. Submit Report on a form acceptable to Owner.
 - 3. Landfill Disposal: Include the following information:
 - a. Identification of material.
 - b. Amount, in tons or cubic yards, of trash/waste material from the project disposed of in landfills.
 - c. State the identity of landfills, total amount of tipping fees paid to landfill, and total disposal cost.
 - d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
 - 4. Incinerator Disposal: Include the following information:
 - a. Identification of material.
 - b. Amount, in tons or cubic yards, of trash/waste material from the project delivered to incinerators.
 - c. State the identity of incinerators, total amount of fees paid to incinerator, and total disposal cost.
 - d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
 - 5. Recycled and Salvaged Materials: Include the following information for each:
 - a. Identification of material, including those retrieved by installer for use on other projects.
 - b. Amount, in tons or cubic yards, date removed from the project site, and receiving party.
 - c. Transportation cost, amount paid or received for the material, and the net total cost or savings of salvage or recycling each material.
 - d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
 - e. Certification by receiving party that materials will not be disposed of in landfills or by incineration.
 - 6. Material Reused on Project: Include the following information for each:
 - a. Identification of material and how it was used in the project.
 - b. Amount, in tons or cubic yards.
 - c. Include weight tickets as evidence of quantity.
 - 7. Other Disposal Methods: Include information similar to that described above, as appropriate to disposal method.

PART 3 EXECUTION

2.01 WASTE MANAGEMENT PROCEDURES

- A. See Section 01 30 00 for additional requirements for project meetings, reports, submittal procedures, and project documentation.
- B. See Section 01 50 00 for additional requirements related to trash/waste collection and removal facilities and services.
- C. See Section 01 60 00 for waste prevention requirements related to delivery, storage, and handling.

- D. See Section 01 70 00 for trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

2.02 WASTE MANAGEMENT PLAN IMPLEMENTATION

- A. Manager: Designate an on-site person or persons responsible for instructing workers and overseeing and documenting results of the Waste Management Plan.
- B. Communication: Distribute copies of the Waste Management Plan to job site foreman, each subcontractor, Owner, and CPL Architects.
- C. Instruction: Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the project.
- D. Meetings: Discuss trash/waste management goals and issues at project meetings.
 - 1. Prebid meeting.
 - 2. Preconstruction meeting.
 - 3. Regular job-site meetings.
- E. Facilities: Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return, and trash disposal, for use by all contractors and installers.
 - 1. Provide containers as required.
 - 2. Provide adequate space for pick-up and delivery and convenience to subcontractors.
 - 3. Keep recycling and trash/waste bin areas neat and clean and clearly marked in order to avoid contamination of materials.
- F. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.
- G. Recycling: Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.
- H. Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.
- I. Salvage: Set aside, sort, and protect products to be salvaged for reuse off-site.

END OF SECTION

This page intentionally left blank

SECTION 01 78 00
CLOSEOUT SUBMITTALS
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Project record documents.
- B. Operation and maintenance data.
- C. Warranties and bonds.

1.02 RELATED REQUIREMENTS

- A. Section 00 72 00 - General Conditions: Performance bond and labor and material payment bonds, warranty, and correction of work.
- B. Section 01 30 00 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- C. Section 01 70 00 - Execution and Closeout Requirements: Contract closeout procedures.
- D. Individual Product Sections: Specific requirements for operation and maintenance data.
- E. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBMITTALS

- A. Project Record Documents: Submit documents to CPL Architects with claim for final Application for Payment.
- B. Documents will be organized in the following Sections:
 - 1. Warranty Information
 - 2. Operation and Maintenance
 - 3. Record Specifications
 - 4. Record Drawings
 - 5. Certifications
 - 6. Orientation and Training
- C. Operation and Maintenance Data:
 - 1. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. CPL Architects will review draft and return one copy with comments.
 - 2. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
 - 3. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with CPL Architects comments. Revise content of all document sets as required prior to final submission.
 - 4. Submit two sets of revised final documents in final form within 10 days after final inspection.
- D. Warranties and Bonds:
 - 1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
 - 2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
 - 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:

1. Drawings.
 2. Specifications.
 3. Addenda.
 4. Change Orders and other modifications to the Contract.
 5. Reviewed shop drawings, product data, and samples.
 6. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
1. Manufacturer's name and product model and number.
 2. Product substitutions or alternates utilized.
 3. Changes made by Addenda and modifications.
- F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
1. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 2. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 3. Field changes of dimension and detail.
 4. Details not on original Contract drawings.
 5. Where new lines cross existing installed lines the location, size and type of line crossed shall be accurately recorded.
 6. Where tie-ins to existing under floor lines are indicated the elevation of the tie-in point and dimensioned location shall be recorded.
 7. Do not use record documents for construction purposes; protect from deterioration and loss in a secure, fire-resistive location; provide access to record documents for the Architect's reference during normal working hours.
 8. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown.
 9. Mark whichever drawing is most capable of showing conditions fully and accurately; where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.
 10. Mark new information that is important to the Owner, but was not shown on Contract Drawings or Shop Drawings.
 11. Provide one copy of marked-up Record Drawings to Owner at Orientation and Training Session. The Record Drawings Index of Drawings shall be part of the Record Document Manual and the Original marked-up Record Drawings shall be a separate attachment to the Manual.

3.02 OPERATION AND MAINTENANCE DATA

- A. Source Data: For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
- B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
- D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.03 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

- A. For Each Product, Applied Material, and Finish:
 - 1. Product data, with catalog number, size, composition, and color and texture designations.
- B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.
- C. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

3.04 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

- A. For Each Item of Equipment and Each System:
 - 1. Description of unit or system, and component parts.
 - 2. Identify function, normal operating characteristics, and limiting conditions.
 - 3. Include performance curves and equipment capacities (input and output), with engineering data and tests.
 - 4. Complete nomenclature and model number of replaceable parts.
- B. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.
- C. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.
- D. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
- E. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- F. Provide servicing and lubrication schedule, and list of lubricants required.
- G. Include manufacturer's printed operation and maintenance instructions.
- H. Include sequence of operation by controls manufacturer.
- I. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- J. Provide control diagrams by controls manufacturer as installed.
- K. Provide Contractor's coordination drawings, with color coded piping diagrams as installed.
- L. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- M. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- N. Include test and balancing reports.
- O. Additional Requirements: As specified in individual product specification sections.

3.05 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

- A. For Each Item of Equipment and Each System:
 - 1. Description of unit or system, and component parts.
 - 2. Identify function, normal operating characteristics, and limiting conditions.
 - 3. Include performance curves and equipment capacities (input and output), with engineering data and tests.
 - 4. Complete nomenclature and model number of replaceable parts.

- B. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.
- C. Operating Procedures: Include start-up, break-in, and routine normal operating instructions, set points and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
- D. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and troubleshooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- E. Provide servicing and lubrication schedule, and list of lubricants required.
- F. Include manufacturer's printed operation and maintenance instructions.
- G. Include sequence of operation by controls manufacturer.
- H. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- I. Provide control diagrams by controls manufacturer as installed.
- J. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- K. Include test and balancing reports.
- L. Additional Requirements: As specified in individual product specification sections.

3.06 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS

- A. Assemble operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.
- B. Where systems involve more than one specification section, provide separate tabbed divider for each system.
- C. Binders: Commercial quality, 8-1/2 by 11 inch three D side ring binders with durable plastic covers; 2 inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
- D. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
- E. Project Directory: Title and address of Project; names, addresses, and telephone numbers of CPL Architects, Consultants, Contractor and subcontractors, with names of responsible parties.
- F. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.
- G. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.
- H. Text: Manufacturer's printed data, or typewritten data on 20 pound paper.
- I. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- J. Arrangement of Contents: Organize each volume in parts as follows:
 - 1. Project Directory.
 - 2. Table of Contents, of all volumes, and of this volume.
 - 3. Operation and Maintenance Data: Arranged by system, then by product category.
 - a. Source data.
 - b. Product data, shop drawings, and other submittals.
 - c. Operation and maintenance data.
 - d. Field quality control data.

- e. Photocopies of warranties and bonds.
- K. Contractor shall deliver to the Owner at least two (2) days prior to training, one three-ring bound copy of Operations and Maintenance Information for Owner's use during Orientation and Training. One additional copy of Operations and Maintenance Information will be incorporated in the Record Document Manual. Index all data as per the Table of Contents.
- L. Where manufacturer's standard product data is included in the manuals, include only sheets that are pertinent to the part or product installed. Mark each sheet to identify each part or product included in the installation. Where more than one item in a tabular format is included, identify each item, using appropriate references from the Contract Documents. Identify data that is applicable to the installation and delete references to information that is not applicable.

3.07 WARRANTIES AND BONDS

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.
- E. Manual: Bind in commercial quality 8-1/2 by 11 inch three D side ring binders with durable plastic covers.
- F. Cover: Identify each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible company principal.
- G. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification section in which specified, and the name of product or work item.
- H. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

END OF SECTION

This page intentionally left blank

SECTION 02 41 00
DEMOLITION
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Selective demolition of site elements for alteration purposes.

1.02 RELATED REQUIREMENTS

- A. Section 01 10 00 - Summary: Limitations on Contractor's use of site and premises.
- B. Section 01 10 00 - Summary: Description of items to be salvaged or removed for re-use by Contractor.
- C. Section 01 50 00 - Temporary Facilities and Controls: Site fences, security, protective barriers, and waste removal.
- D. Section 01 60 00 - Product Requirements: Handling and storage of items removed for salvage and relocation.
- E. Section 01 70 00 - Execution and Closeout Requirements: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products; temporary bracing and shoring.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 SCOPE

- A. Remove site elements as shown on construction documents.
- B. Remove other items indicated, for salvage, relocation, and recycling.
- C. Fill excavations, open pits, and holes in ground areas generated as result of removals, using specified fill as required..
- D. Chain Link Fence around football field to be salvaged to be re-used as shown on construction documents.

3.02 GENERAL PROCEDURES AND PROJECT CONDITIONS

- A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
 - 1. Obtain required permits.
 - 2. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
 - 3. Provide, erect, and maintain temporary barriers and security devices.
 - 4. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
 - 5. Do not close or obstruct roadways or sidewalks without permit.
 - 6. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
 - 7. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon or limit access to their property.
- B. Do not begin removal until receipt of notification to proceed from Owner.
- C. Protect existing structures and other elements that are not to be removed.
 - 1. Provide bracing and shoring.
 - 2. Prevent movement or settlement of adjacent structures.
 - 3. Stop work immediately if adjacent structures appear to be in danger.

3.03 SELECTIVE DEMOLITION FOR ALTERATIONS

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
 - 1. Verify that construction and utility arrangements are as indicated.
 - 2. Report discrepancies to CPL Architects before disturbing existing installation.
 - 3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.
- B. Separate areas in which demolition is being conducted from other areas that are still occupied.
 - 1. Provide, erect, and maintain temporary dustproof partitions of construction specified in Section 01 50 00 in locations indicated on drawings.
- C. Remove existing work as indicated and as required to accomplish new work.
 - 1. Remove items indicated on drawings.
- D. Services (Including but not limited to Electrical and Telecommunications): Remove existing systems and equipment as indicated.
 - 1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components.
 - 2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
 - 3. Verify that abandoned services serve only abandoned facilities before removal.
 - 4. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification.
- E. Protect existing work to remain.
 - 1. Prevent movement of structure; provide shoring and bracing if necessary.
 - 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
 - 3. Repair adjacent construction and finishes damaged during removal work.
 - 4. Patch as specified for patching new work.

3.04 DEBRIS AND WASTE REMOVAL

- A. Remove debris, junk, and trash from site.
- B. Leave site in clean condition, ready for subsequent work.
- C. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

SECTION 03 30 00
CAST-IN-PLACE CONCRETE
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Concrete formwork.
- B. Elevated concrete slabs.
- C. Floors and slabs on grade.
- D. Concrete shear walls, elevator shaft walls, and foundation walls.
- E. Concrete reinforcement.
- F. Joint devices associated with concrete work.
- G. Concrete curing.

1.02 RELATED REQUIREMENTS

- A. Section 07 92 00 - Joint Sealants: Products and installation for sealants and joint fillers for saw cut joints and isolation joints in slabs.

1.03 REFERENCE STANDARDS

- A. ACI 117 - Specification for Tolerances for Concrete Construction and Materials 2010 (Reapproved 2015).
- B. ACI 211.1 - Selecting Proportions for Normal-Density and High Density-Concrete - Guide 2022.
- C. ACI 301 - Specifications for Concrete Construction 2020.
- D. ACI 302.1R - Guide to Concrete Floor and Slab Construction 2015.
- E. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete 2000 (Reapproved 2009).
- F. ACI 305R - Guide to Hot Weather Concreting 2020.
- G. ACI 306R - Guide to Cold Weather Concreting 2016.
- H. ACI 308R - Guide to External Curing of Concrete 2016.
- I. ACI 318 - Building Code Requirements for Structural Concrete 2019 (Reapproved 2022).
- J. ACI 347R - Guide to Formwork for Concrete 2014 (Reapproved 2021).
- K. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement 2022.
- L. ASTM C33/C33M - Standard Specification for Concrete Aggregates 2023.
- M. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens 2021.
- N. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete 2020.
- O. ASTM C171 - Standard Specification for Sheet Materials for Curing Concrete 2020.
- P. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete 2019, with Editorial Revision (2022).
- Q. ASTM C618 - Standard Specification for Coal Ash and Raw or Calcined Natural Pozzolan for Use in Concrete 2023, with Editorial Revision.
- R. ASTM C881/C881M - Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete 2020a.
- S. ASTM C1059/C1059M - Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete 2021.
- T. ASTM C1240 - Standard Specification for Silica Fume Used in Cementitious Mixtures 2020.

- U. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete 2018.
- V. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types) 2018.
- W. ASTM E1643 - Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs 2018a.
- X. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs 2017 (Reapproved 2023).
- Y. ICRI 310.2R - Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair 2013.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions.
- C. Mix Design: Submit proposed concrete mix design.
 - 1. Indicate proposed mix design complies with requirements of ACI 301, Section 4 - Concrete Mixtures.
 - 2. Indicate proposed mix design complies with requirements of ACI 318, Chapter 5 - Concrete Quality, Mixing and Placing.
- D. Samples: Submit samples of underslab vapor retarder to be used.
- E. Test Reports: Submit report for each test or series of tests specified.

1.05 QUALITY ASSURANCE

- A. Perform work of this section in accordance with ACI 301 and ACI 318.
- B. Follow recommendations of ACI 305R when concreting during hot weather.
- C. Follow recommendations of ACI 306R when concreting during cold weather.

PART 2 PRODUCTS

2.01 FORMWORK

- A. Formwork Design and Construction: Comply with guidelines of ACI 347R to provide formwork that will produce concrete complying with tolerances of ACI 117.
- B. Form Materials: Contractor's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances.
 - 1. Form Facing for Exposed Finish Concrete: Steel.
 - 2. Earth Cuts: Do not use earth cuts as forms for vertical surfaces. Natural rock formations that maintain a stable vertical edge may be used as side forms.
 - 3. Form Coating: Release agent that will not adversely affect concrete or interfere with application of coatings.
 - 4. Form Ties: Cone snap type that will leave no metal within 1-1/2 inches of concrete surface.

2.02 REINFORCEMENT MATERIALS

- A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi).
 - 1. Type: Deformed billet-steel bars.
 - 2. Finish: Unfinished, unless otherwise indicated.
- B. Steel Welded Wire Reinforcement (WWR): Plain type, ASTM A1064/A1064M.
 - 1. Form: Flat Sheets.
- C. Reinforcement Accessories:
 - 1. Tie Wire: Annealed, minimum 16 gauge, 0.0508 inch.

2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.

2.03 CONCRETE MATERIALS

- A. Cement: ASTM C150/C150M, Type I - Normal Portland type.
 1. Acquire cement for entire project from same source.
- B. Fine and Coarse Aggregates shall be plastic: ASTM C33/C33M.
 1. Acquire aggregates for entire project from same source.
- C. Fly Ash: ASTM C618, Class C or F.
- D. Calcined Pozzolan: ASTM C618, Class N.
- E. Silica Fume: ASTM C1240, proportioned in accordance with ACI 211.1.
- F. Water: ASTM C1602/C1602M; clean, potable, and not detrimental to concrete.

2.04 ADMIXTURES

- A. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.
- B. High Range Water Reducing and Retarding Admixture: ASTM C494/C494M Type G.
- C. High Range Water Reducing Admixture: ASTM C494/C494M Type F.
- D. Water Reducing and Accelerating Admixture: ASTM C494/C494M Type E.
- E. Water Reducing and Retarding Admixture: ASTM C494/C494M Type D.
- F. Accelerating Admixture: ASTM C494/C494M Type C.

2.05 ACCESSORY MATERIALS

- A. Underslab Vapor Retarder: Sheet material complying with ASTM E1745, Class A; stated by manufacturer as suitable for installation in contact with soil or granular fill under concrete slabs. The use of single ply polyethylene is prohibited.
 1. Installation: Comply with ASTM E1643.
 2. Accessory Products: Vapor retarder manufacturer's recommended tape, adhesive, mastic, prefabricated boots, etc., for sealing seams and penetrations.
 3. Manufacturers:
 - a. Fortifiber Building Systems Group ; Moistop Ultra 10: www.fortifiber.com/#sle.
 - b. ISI Building Products; Viper VaporCheck II 10-mil (Class A): www.isibp.com/#sle.
 - c. Stego Industries, LLC; 10-mil: www.stegoindustries.com/#sle.
 - d. W. R. Meadows, Inc; PERMINATOR Class A - 10 mils (0.25 mm): www.wrmeadows.com/#sle.

2.06 BONDING AND JOINTING PRODUCTS

- A. Latex Bonding Agent: Non-redispersable acrylic latex, complying with ASTM C1059/C1059M, Type II.
- B. Epoxy Bonding System:
- C. Slab Isolation Joint Filler: 1/2 inch thick, height equal to slab thickness, with removable top section that will form 1/2 inch deep sealant pocket after removal.
 1. Material: ASTM D1751, cellulose fiber.

2.07 CURING MATERIALS

- A. Evaporation Reducer: Liquid thin-film-forming compound that reduces rapid moisture loss caused by high temperature, low humidity, and high winds; intended for application immediately after concrete placement.
- B. Curing Agent, Water-Cure Equivalent Type: Clear, water-based, non-film-forming, liquid-water cure replacement agent.

1. Compressive Strength of Treated Concrete: Equal to or greater than strength after 28-day water cure when tested according to ASTM C39/C39M.
- C. Curing and Sealing Compound, Low Gloss: Liquid, membrane-forming, clear, non-yellowing acrylic; complying with ASTM C1315 Type 1 Class A.
 1. Vehicle: Water-based.
 2. Solids by Mass: 25 percent, minimum.
 3. VOC Content: OTC compliant.
 4. Manufacturers:
 - a. Clemons Concrete Coatings; Super Seal B-25: www.clemonsconcretecoatings.com/#sle.
 - b. Dayton Superior Corporation; _____: www.daytonsuperior.com/#sle.
 - c. Euclid Chemical Company; DIAMOND CLEAR VOX: www.euclidchemical.com/#sle.
- D. Moisture-Retaining Sheet: ASTM C171.
 1. Polyethylene film, white opaque, minimum nominal thickness of 4 mil, 0.004 inch.
- E. Water: Potable, not detrimental to concrete.

2.08 CONCRETE MIX DESIGN

- A. Proportioning Normal Weight Concrete: Comply with ACI 211.1 recommendations.
- B. Concrete Strength: Establish required average strength for each type of concrete on the basis of field experience or trial mixtures, as specified in ACI 301.
- C. Admixtures: Add acceptable admixtures as recommended in ACI 211.1 and at rates recommended or required by manufacturer.
- D. Normal Weight Concrete: Footings and Buried Foundations.
 1. Compressive Strength, when tested in accordance with ASTM C39/C39M at 28 days: 3,500 pounds per square inch.
 2. Fly Ash Content: Maximum 15 percent of cementitious materials by weight.
 3. Cement Content: Minimum 475 pound sper cubic foot.
 4. Water-Cement Ratio: Maximum 50 percent by weight.
 5. Maximum Slump: 3 1/2 inches. (+/- 1")
 6. Maximum Aggregate Size: 1 inch.
- E. Normal Weight Concrete: Slab-on -Grade (interior).
 1. Compressive Strength, when tested in accordance with ASTM C39/C39M at 28 days: 3,500 pounds per square inch.
 2. Fly Ash Content: Maximum 15 percent of cementitious materials by weight.
 3. Cement Content: Minimum 540 pounds per .
 4. Water-Cement Ratio: Maximum 45 percent by weight.
 5. Maximum Slump: 3 1/2 inches. (+/-1")
 6. Maximum Aggregate Size: 3/4 inch.
- F. Normal Weight Concrete: Exterior Slabs.
 1. See Section 32 13 13.
- G. Heavy Duty Concrete: Exterior Slabs.
 1. See Section 32 13 13.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify lines, levels, and dimensions before proceeding with work of this section.

3.02 PREPARATION

- A. Formwork: Comply with requirements of ACI 301. Design and fabricate forms to support all applied loads until concrete is cured, and for easy removal without damage to concrete.

- B. Verify that forms are clean and free of rust before applying release agent. Coat contact surfaces of forms with form-release agent before placing reinforcement.
- C. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
- D. Construct forms tight enough to prevent loss of concrete mortar.
- E. Coordinate placement of embedded items with erection of concrete formwork and placement of form accessories.
- F. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:
 - 1. Class A, 1/8 inch for smooth-formed finished surfaces.
 - 2. Class C, 1/2 inch for rough-formed finished surfaces.
- G. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
 - 1. Install keyways, reglets, recesses, and the like, for easy removal.
 - 2. Do not use rust-stained steel form-facing material.
- H. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.
- I. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.
- J. Chamfer exterior corners and edges of permanently exposed concrete.
- K. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.
- L. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
- M. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
- N. Prepare existing concrete surfaces to be repaired according to ICRI 310.2R.
- O. Where new concrete is to be bonded to previously placed concrete, prepare existing surface by cleaning and applying bonding agent in according to bonding agent manufacturer's instructions.
 - 1. Use epoxy bonding system for bonding to damp surfaces, for structural load-bearing applications, and where curing under humid conditions is required.
 - 2. Use latex bonding agent only for non-load-bearing applications.
- P. Interior Slabs on Grade: Install vapor retarder under interior slabs on grade. Lap joints minimum 6 inches. Seal joints, seams and penetrations watertight with manufacturer's recommended products and follow manufacturer's written instructions. Repair damaged vapor retarder before covering.

3.03 INSTALLING REINFORCEMENT, ANCHOR RODS, AND OTHER EMBEDDED ITEMS

- A. Comply with requirements of ACI 301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve not less than minimum concrete coverage required for protection.
 - 1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.
 - 2. Allow six hours between completion of reinforcement installation and placement of concrete for special inspection.
- B. Bend steel reinforcement in accordance with ACI 318.
 - 1. Do not heat steel reinforcement for bending. Bend or straighten bars cold.

2. Do not bend partially embedded steel reinforcement, except as approved.
- C. Clean reinforcement of dirt, grease, scale, loose rust, oil, paint and other foreign matter prior to installation.
- D. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.
- E. Splicing of Reinforcement: Conform to ACI 318 Chapter 12 for wired lap splices and embedment lengths.
- F. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.
- G. Install welded wire reinforcement in maximum possible lengths, and offset end laps in both directions. Splice laps with tie wire.
- H. Maintain required concrete cover dimensions indicated. Coordinate placement of conduit and inserts with reinforcement. Protect installed reinforcement from damage or displacement prior to and during concrete placement.
- I. Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not interfere with concrete placement.
- J. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

3.04 REMOVING AND REUSING FORMS

- A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F for 24 hours after placing concrete, if concrete is hard enough to not be damaged by form-removal operations and curing and protection operations are maintained.
- B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.
- C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Architect.

3.05 PLACING CONCRETE

- A. Place concrete in accordance with ACI 304R. Verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed and corrections made.
- B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Architect.
- C. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
 1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
 2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
 - a. Supplement mechanical consolidation by hand, spading, rodding, or tamping.
 3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

- D. Place concrete for floor slabs in accordance with ACI 302.1R. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
 - 1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
 - 2. Maintain reinforcement in position on chairs during concrete placement.
 - 3. Screed slab surfaces with a straightedge and strike off to correct elevations.
 - 4. Slope surfaces uniformly to drains where required.
 - 5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.
- E. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.
- F. Place concrete continuously without construction (cold) joints wherever possible; where construction joints are necessary, before next placement prepare joint surface by removing laitance and exposing the sand and sound surface mortar, by sandblasting or high-pressure water jetting.
- G. Finish floors level and flat, unless otherwise indicated, within the tolerances specified below.

3.06 SLAB JOINTING

- A. Locate joints as indicated on drawings.
- B. Anchor joint fillers and devices to prevent movement during concrete placement.
- C. Isolation Joints: Use preformed joint filler with removable top section for joint sealant, total height equal to thickness of slab, set flush with top of slab.
- D. Saw Cut Contraction Joints: Saw cut joints before concrete begins to cool, within 4 to 12 hours after placing; use 3/16 inch thick blade and cut at least 1 inch deep but not less than one quarter (1/4) the depth of the slab.

3.07 FLOOR FLATNESS AND LEVELNESS TOLERANCES

- A. Maximum Variation of Surface Flatness:
 - 1. Exposed Concrete Floors: 1/4 inch in 10 feet.
- B. Correct the slab surface if tolerances are less than specified.
- C. Correct defects by grinding or by removal and replacement of the defective work. Areas requiring corrective work will be identified. Re-measure corrected areas by the same process.

3.08 CONCRETE FINISHING

- A. Repair surface defects, including tie holes, immediately after removing formwork.
- B. Unexposed Form Finish: Rub down or chip off fins or other raised areas 1/4 inch or more in height.
- C. Exposed Form Finish: Rub down or chip off and smooth fins or other raised areas 1/4 inch or more in height. Provide finish as follows:
 - 1. Smooth Rubbed Finish: Wet concrete and rub with carborundum brick or other abrasive, not more than 24 hours after form removal.
- D. Concrete Slabs: Finish to requirements of ACI 302.1R, and as follows:
 - 1. Other Surfaces to Be Left Exposed: Trowel as described in ACI 302.1R, minimizing burnish marks and other appearance defects.
- E. In areas with floor drains, maintain floor elevation at walls; pitch surfaces uniformly to drains at 1:50 nominal.

3.09 CURING AND PROTECTION

- A. Comply with requirements of ACI 308R. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

- B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
- C. Surfaces Not in Contact with Forms:
 - 1. Slabs and Floors To Receive Adhesive-Applied Flooring: Curing compounds and other surface coatings are usually considered unacceptable by flooring and adhesive manufacturers. If such materials must be used, either obtain the approval of the flooring and adhesive manufacturers prior to use or remove the surface coating after curing to flooring manufacturer's satisfaction.
 - 2. Initial Curing: Start as soon as free water has disappeared and before surface is dry. Keep continuously moist for not less than three days by water-fog spray or saturated burlap.
 - a. Spraying: Spray water over floor slab areas and maintain wet.
 - b. Saturated Burlap: Saturate burlap-polyethylene and place burlap-side down over floor slab areas, lapping ends and sides; maintain in place.
 - 3. Final Curing: Begin after initial curing but before surface is dry.
 - a. Curing Compound: Apply in two coats at right angles, using application rate recommended by manufacturer.

3.10 FIELD QUALITY CONTROL

- A. An independent testing agency will perform field quality control tests, as specified in Section 01 40 00 - Quality Requirements.
- B. Provide free access to concrete operations at project site and cooperate with appointed firm.
- C. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of concrete operations.
- D. Compressive Strength Tests: ASTM C39/C39M, for each test, mold and cure three concrete test cylinders. Obtain test samples for every 100 cubic yards or less of each class of concrete placed.
- E. Take one additional test cylinder during cold weather concreting, cured on job site under same conditions as concrete it represents.
- F. Perform one slump test for each set of test cylinders taken, following procedures of ASTM C143/C143M.

3.11 DEFECTIVE CONCRETE

- A. Test Results: The testing agency shall report test results in writing to CPL Architects and Contractor within 24 hours of test.
- B. Defective Concrete: Concrete not complying with required lines, details, dimensions, tolerances or specified requirements.
- C. Repair or replacement of defective concrete will be determined by the CPL Architects. The cost of additional testing shall be borne by Contractor when defective concrete is identified.

3.12 PROTECTION

- A. Do not permit traffic over unprotected concrete floor surface until fully cured.

END OF SECTION

SECTION 03 35 11
CONCRETE FLOOR FINISHES
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Liquid densifiers and hardeners.

1.02 RELATED REQUIREMENTS

- A. Section 03 30 00 - Cast-in-Place Concrete: Finishing of concrete surface to tolerance; floating, troweling, and similar operations; curing.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate the work with concrete floor placement and concrete floor curing.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's published data on each finishing product, including information on compatibility of different products and limitations.
- C. Maintenance Data: Provide data on maintenance and renewal of applied finishes.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in manufacturer's sealed packaging, including application instructions.

1.06 FIELD CONDITIONS

- A. Maintain light level equivalent to a minimum 200 W light source at 8 feet above the floor surface over each 20 foot square area of floor being finished.
- B. Maintain ambient temperature of 50 degrees F minimum.

1.07 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.
- B. Correct defective work within a two-year period commencing on the Date of Substantial Completion.
- C. Manufacturer Warranty: Provide two-year manufacturer warranty for Owner commencing on the Date of Substantial Completion.
- D. Installer Warranty: Provide two-year manufacturer warranty for Owner commencing on the Date of Substantial Completion.

PART 2 PRODUCTS

2.01 CONCRETE FLOOR FINISH APPLICATIONS

- A. Basis of Design:
 - 1. Euclid Chemical CO.; Diamond Hard Sealer and Densifier
- B. Other Acceptable manufacturers
 - 1. ARDEX Engineered Cements; www.ardexamericas.com
 - 2. Tremco; www.tremcosealants.com
 - 3. W. R. Meadows;

2.02 LIQUID FLOOR TREATMENT

- A. High performance, deep penetrating concrete densifier; odorless, colorless, VOC - compliant, non-yellowing silicate and silicate based solution designed to harden, dustproof and protect concrete floors and to resist black rubber tire marks.
- B. The compound must contain a minimum solids content of 20% of which 50% is silicate
- C. For trowel finish surfaces only.

- D. Unless otherwise indicated, all concrete exposed floors are to be finished using liquid densifier/hardener.

2.03 DENSIFIERS AND HARDENERS

- A. Liquid Densifier and Hardener: Penetrating chemical compound that reacts with concrete, filling the pores and dustproofing; for application to concrete after set.
 - 1. Composition: Lithium silicate.
 - 2. Products:
 - a. ARDEX Engineered Cements; www.ardexamericas.com/#sle.
 - b. Euclid Chemical Company; www.euclidchemical.com/#sle.
 - c. Tremco Sealants Corp.; www.tremcosealants.com
 - d. W. R. Meadows, Inc; www.wrmeadows.com/#sle.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that floor surfaces are acceptable to receive the work of this section.
- B. Verify that flaws in concrete have been patched and joints filled with methods and materials suitable for further finishes.

3.02 GENERAL

- A. Apply materials in accordance with manufacturer's instructions.

3.03 COATING APPLICATION

- A. Verify that surface is free of previous coatings, sealers, curing compounds, water repellents, laitance, efflorescence, fats, oils, grease, wax, soluble salts, residues from cleaning agents, and other impediments to adhesion.
- B. Verify that water vapor emission from concrete and relative humidity in concrete are within limits established by coating manufacturer.
- C. Protect adjacent non-coated areas from drips, overflow, and overspray; immediately remove excess material.
- D. Apply coatings in accordance with manufacturer's instructions, matching approved mock-ups for color, special effects, sealing and workmanship.

END OF SECTION

SECTION 03 54 00
CAST UNDERLAYMENT
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Liquid-applied self-leveling floor underlayment.
 - 1. Use cementitious type.

1.02 RELATED REQUIREMENTS

- A. Section 01 70 00 - Execution and Closeout Requirements: Alteration project procedures; selective demolition for remodeling.

1.03 REFERENCE STANDARDS

- A. ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50 mm] Cube Specimens) 2021.
- B. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete 2018.
- C. ASTM C348 - Standard Test Method for Flexural Strength of Hydraulic-Cement Mortars 2021.
- D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2023b.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's data sheets documenting physical characteristics and product limitations of underlayment materials. Include information on surface preparation, environmental limitations, and installation instructions.
- C. Certificate: Certify that products meet or exceed specified requirements.
- D. Manufacturer's Instructions.

1.05 QUALITY ASSURANCE

- A. Applicator Qualifications: Company specializing in performing the work of this section, and approved by manufacturer.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Keep dry and protect from direct sun exposure, freezing, and ambient temperature greater than 105 degrees F.

1.07 FIELD CONDITIONS

- A. Do not install underlayment until floor penetrations and peripheral work are complete.
- B. Maintain minimum ambient temperatures of 50 degrees F 24 hours before, during and 72 hours after installation of underlayment.
- C. During the curing process, ventilate spaces to remove excess moisture.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Cementitious Underlayment:
 - 1. ARDEX Engineered Cements: www.ardexamericas.com/#sle.
 - 2. LATICRETE International, Inc: www.laticrete.com/#sle.
 - 3. W. R. Meadows, Inc: www.wrmeadows.com/#sle.

2.02 MATERIALS

- A. Cast Underlayments, General:

1. Comply with applicable code for combustibility or flame spread requirements.
 2. Provide certificate of compliance from authority having jurisdiction indicating approval of underlayment materials in the required fire rated assembly.
- B. Cementitious Underlayment: Blended cement mix, that when mixed with water in accordance with manufacturer's directions will produce self-leveling underlayment with the following properties:
1. Compressive Strength: Minimum 5000 pounds per square inch after 28 days, tested per ASTM C109/C109M.
 2. Flexural Strength: Minimum 1000 psi after 28 days, tested per ASTM C348.
 3. Density: 125 pounds per cubic foot, nominal.
 4. Final Set Time: 1-1/2 to 2 hours, maximum.
 5. Thickness: Capable of thicknesses from feather edge to maximum 3-1/2 inch.
 6. Surface Burning Characteristics: Flame spread/Smoke developed index of 0/0 in accordance with ASTM E84.
- C. Water: ASTM C1602/C1602M; clean, potable, and not detrimental to underlayment mix materials.
- D. Primer: Manufacturer's recommended type.
- E. Joint and Crack Filler: Latex based filler, as recommended by manufacturer.

2.03 MIXING

- A. Site mix materials in accordance with manufacturer's instructions.
- B. Mix to self-leveling consistency without over-watering.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate surfaces are clean, dry, unfrozen, do not contain petroleum byproducts, or other compounds detrimental to underlayment material bond to substrate.

3.02 PREPARATION

- A. Concrete: Mechanically prepare steel troweled concrete to create a textured surface necessary to achieve the best bond; acceptable methods include bead blasting and scarifying. Do not use acid etching.
- B. Remove substrate surface irregularities. Fill voids and deck joints with filler. Finish smooth.
- C. Vacuum clean surfaces.
- D. Prime substrate in accordance with manufacturer's instructions. Allow to dry.
- E. Close floor openings.

3.03 APPLICATION

- A. Install underlayment in accordance with manufacturer's instructions.
- B. Place to indicated thickness, with top surface level to 1/8 inch in 10 ft.

3.04 CURING

- A. Once underlayment starts to set, prohibit foot traffic until final set has been reached.
- B. Air cure in accordance with manufacturer's instructions.

3.05 PROTECTION

- A. Protect against direct sunlight, heat, and wind; prevent rapid drying to avoid shrinkage and cracking.
- B. Do not permit traffic over unprotected floor underlayment surfaces.

END OF SECTION

SECTION 04 05 11
MASONRY MORTARING AND GROUTING
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Mortar for masonry.
- B. Grout for masonry.

1.02 RELATED REQUIREMENTS

- A. Section 04 20 00 - Unit Masonry: Installation of mortar.

1.03 REFERENCE STANDARDS

- A. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures 2022, with Errata.
- B. ASTM C91/C91M - Standard Specification for Masonry Cement 2023.
- C. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete 2023.
- D. ASTM C270 - Standard Specification for Mortar for Unit Masonry 2019a, with Editorial Revision.
- E. ASTM C387/C387M - Standard Specification for Packaged, Dry, Combined Materials for Concrete and High Strength Mortar 2023.
- F. ASTM C476 - Standard Specification for Grout for Masonry 2023.
- G. ASTM C979/C979M - Standard Specification for Pigments for Integrally Colored Concrete 2016.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Include design mix and indicate whether the Proportion or Property specification of ASTM C270 is to be used.
- C. Product Data: Submit full range of manufacturer color for Architect's selection.
- D. Manufacturer's Installation Instructions: Submit packaged dry mortar manufacturer's installation instructions.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Maintain packaged materials clean, dry, and protected against dampness, freezing, and foreign matter.

1.06 FIELD CONDITIONS

- A. Cold and Hot Weather Requirements: Comply with requirements of TMS 402/602 or applicable building code, whichever is more stringent.

PART 2 PRODUCTS

2.01 MORTAR AND GROUT APPLICATIONS

- A. Use only factory premixed packaged dry materials for mortar and grout, with addition of water only at project site.
- B. Mortar Color: Above Grade: As selected by Architect
- C. Below Grade: Natural gray
- D. Mortar Mix Designs: ASTM C270, Property Specification.
 - 1. Masonry below grade and in contact with earth: Type S.
 - 2. Exterior Masonry Veneer: Type S.

2.02 MATERIALS

- A. Packaged Dry Material for Mortar for Unit Masonry: Premixed Portland cement, hydrated lime, and sand; complying with ASTM C387/C387M and capable of producing mortar of the specified strength in accordance with ASTM C270 with the addition of water only.
 - 1. Type: Type S.
 - 2. Color: As selected by Architect.
 - 3. Manufacturers:
 - a. Amerimix; www.amerimix.com.
 - b. Paragon Building Products; www.paragonbp.us.
 - c. Sika USA; www.sikausa.com.
 - d. Substitutions: See Section 01 60 00 - Product Requirements.
- B. Packaged Dry Material for Grout for Masonry: Premixed cementitious materials and dried aggregates; capable of producing grout of the specified strength in accordance with ASTM C476 with the addition of water only.
 - 1. Type: Fine.
 - 2. Manufacturers:
 - a. Amerimix; www.amerimix.com.
 - b. Paragon Building Products; www.paragonbp.us.
 - c. Sika USA; www.sikausa.com.
 - d. Substitutions: See Section 01 60 00 - Product Requirements.
- C. Pigments for Colored Mortar: Pure, concentrated mineral pigments specifically intended for mixing into mortar and complying with ASTM C979/C979M.
 - 1. Color(s): As selected by CPL Architects from manufacturer's full range.
 - 2. Manufacturers: Per mortar manufacturer approved list.
- D. Water: Clean and potable.

2.03 MORTAR MIXING

- A. Thoroughly mix mortar ingredients using mechanical batch mixer, in accordance with ASTM C270 and in quantities needed for immediate use.
- B. Maintain sand uniformly damp immediately before the mixing process.
- C. Colored Mortar: Proportion selected pigments and other ingredients to match CPL Architects's sample, without exceeding manufacturer's recommended pigment-to-cement ratio; mix in accordance with manufacturer's instructions, uniform in coloration.
- D. Do not use anti-freeze compounds to lower the freezing point of mortar.
- E. If water is lost by evaporation, re-temper only within two hours of mixing.

2.04 GROUT MIXING

- A. Mix grout in accordance with ASTM C94/C94M.
- B. Thoroughly mix grout ingredients in quantities needed for immediate use in accordance with ASTM C476 for fine and coarse grout.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install mortar to requirements of section(s) in which masonry is specified.
- B. Do not displace reinforcement while placing grout.

3.02 GROUTING

- A. Use either high-lift or low-lift grouting techniques, at Contractor's option, subject to other limitations of Contract Documents.
- B. Low-Lift Grouting:
 - 1. Limit height of pours to 12 inches.

2. Limit height of masonry to 16 inches above each pour.
 3. Pour grout only after vertical reinforcing is in place; place horizontal reinforcing as grout is poured. Prevent displacement of bars as grout is poured.
 4. Place grout for each pour continuously and consolidate immediately; do not interrupt pours for more than 1-1/2 hours.
- C. High-Lift Grouting:
1. Verify that horizontal and vertical reinforcement is in proper position and adequately secured before beginning pours.
 2. Place grout for spanning elements in single, continuous pour.

3.03 FIELD QUALITY CONTROL

- A. An independent testing agency will perform field tests, in accordance with provisions of Section 01 40 00 - Quality Requirements.

END OF SECTION

This page intentionally left blank

SECTION 04 20 00
UNIT MASONRY
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Concrete block.
- B. Reinforcement and anchorage.
- C. Flashings.
- D. Accessories.

1.02 RELATED REQUIREMENTS

- A. Section 03 20 00 - Concrete Reinforcing: Reinforcing steel for grouted masonry.
- B. Section 04 05 11 - Masonry Mortaring and Grouting.
- C. Section 05 50 00 - Metal Fabrications: Loose steel lintels.
- D. Section 06 10 00 - Rough Carpentry: Nailing strips built into masonry.
- E. Section 07 25 00 - Weather Barriers: Water-resistive barriers or air barriers applied to the exterior face of the backing sheathing or masonry.
- F. Section 07 92 00 - Joint Sealants: Sealing control and expansion joints.

1.03 REFERENCE STANDARDS

- A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2023.
- B. ASTM A240/A240M - Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications 2023.
- C. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units 2022.
- D. ASTM D226/D226M - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing 2017 (Reapproved 2023).
- E. BIA Technical Notes No. 7 - Water Penetration Resistance – Design and Detailing 2017.
- F. BIA Technical Notes No. 13 - Ceramic Glazed Brick Exterior Walls 2017.
- G. BIA Technical Notes No. 28B - Brick Veneer/Steel Stud Walls 2005.
- H. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures 2022, with Errata.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by all relevant installers.

1.05 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data for masonry units, fabricated wire reinforcement, mortar, and masonry accessories.
- C. Shop Drawings: Indicate pertinent dimensions, materials, anchorage, size and type of fasteners, and accessories for brickwork support system.
- D. Samples: Submit four samples of facing brick units to illustrate color, texture, and extremes of color range.
- E. Manufacturer's Certificate: Certify that masonry units meet or exceed specified requirements.

1.06 QUALITY ASSURANCE

- A. Comply with provisions of TMS 402/602, except where exceeded by requirements of Contract Documents.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.

PART 2 PRODUCTS

2.01 CONCRETE MASONRY UNITS

- A. Concrete Block: Comply with referenced standards and as follows:
 - 1. Size: Standard units with nominal face dimensions of 16 by 8 inches and nominal depths as indicated on drawings for specific locations.
 - 2. Special Shapes: Provide non-standard blocks configured for corners.
 - 3. Load-Bearing Units: ASTM C90, normal weight.
 - a. Solid block: Locate below grade for brick ledge.
 - b. Exposed Faces: Manufacturer's standard color and texture.

2.02 MORTAR MATERIALS

- A. Mortar: As specified in Section 04 05 11.

2.03 REINFORCEMENT AND ANCHORAGE

- A. Manufacturers:
 - 1. Blok-Lok Limited: www.blok-lok.com/#sle.
 - 2. Hohmann & Barnard, Inc: www.h-b.com/#sle.
 - 3. WIRE-BOND www.wirebond.com/#sle.
 - 4. Substitutions: See Section 01 60 00 - Product Requirements.
 - 5. See structural for necessary product performance.
- B. Reinforcing Steel: size as indicated on structural drawings; galvanized finish.
- C. Joint Reinforcement: Use ladder type joint reinforcement where vertical reinforcement is involved and truss type elsewhere, unless otherwise indicated.
- D. Masonry Veneer Anchors: 2-piece anchors that permit differential movement between masonry veneer and structural backup, hot dip galvanized to ASTM A 153/A 153M, Class B.
 - 1. Anchor plates: Not less than 0.075 inch thick, designed for fastening to structural backup through sheathing by two fasteners; provide design with legs that penetrate sheathing and insulation to provide positive anchorage.
 - 2. Wire ties: Manufacturer's standard shape, 0.1875 inch thick.
 - 3. Vertical adjustment: Not less than 3-1/2 inches.

2.04 FLASHINGS

- A. Combination Non-Asphaltic Flashing Materials - Stainless Steel:
 - 1. Stainless Steel/Polymer Fabric Flashing: ASTM A240/A240M; 2 mil type 304 stainless steel sheet bonded on one side to one sheet of polymer fabric.
 - a. Manufacturers:
 - 1) Hohmann & Barnard, Inc: www.h-b.com/#sle.
 - 2) WIRE-BOND: www.wirebond.com/#sle.
 - 3) York Manufacturing, Inc; Multi-Flash SS: www.yorkmfg.com/#sle.
- B. Factory-Fabricated Flashing Corners and End Dams: Stainless steel.
 - 1. Manufacturers:
 - a. Hohmann & Barnard, Inc: www.h-b.com/#sle.
 - b. Mortar Net Solutions: www.mortarnet.com/#sle.
 - c. York Manufacturing, Inc: www.yorkmfg.com/#sle.
- C. Termination Bars: Stainless steel; compatible with membrane and adhesives.

1. Manufacturers:
 - a. Hohmann & Barnard, Inc: www.h-b.com/#sle.
 - b. Mortar Net Solutions: www.mortarnet.com/#sle.
 - c. York Manufacturing, Inc; Termination Bar: www.yorkmfg.com/#sle.
 - d. Substitutions: See Section 01 60 00 - Product Requirements.
- D. Drip Edge: Stainless steel; angled drip with hemmed edge; compatible with membrane and adhesives.
 1. Manufacturers:
 - a. Hohmann & Barnard, Inc: www.h-b.com/#sle.
 - b. Mortar Net Solutions: www.mortarnet.com/#sle.
 - c. York Manufacturing, Inc: www.yorkmfg.com/#sle.
 - d. Substitutions: See Section 01 60 00 - Product Requirements.
- E. Lap Sealants and Tapes: As recommended by flashing manufacturer; compatible with membrane and adhesives.

2.05 ACCESSORIES

- A. Preformed Control Joints: Rubber material. Provide with corner and tee accessories, fused joints.
 1. Manufacturers:
 - a. Blok-Lok Limited: www.blok-lok.com/#sle.
 - b. Hohmann & Barnard, Inc: www.h-b.com/#sle.
 - c. WIRE-BOND: www.wirebond.com/#sle.
 - d. Substitutions: See Section 01 60 00 - Product Requirements.
- B. Joint Filler: Closed cell polyvinyl chloride; oversized 50 percent to joint width; self expanding; in maximum lengths available.
 1. Manufacturers:
 - a. Hohmann & Barnard, Inc: www.h-b.com/#sle.
 - b. WIRE-BOND: www.wirebond.com/#sle.
 - c. York Manufacturing, Inc: www.yorkmfg.com/#sle.
 - d. Substitutions: See Section 01 60 00 - Product Requirements.
- C. Cavity Mortar Control: Semi-rigid polyethylene or polyester mesh panels, sized to thickness of wall cavity, and designed to prevent mortar droppings from clogging weeps and cavity vents and allow proper cavity drainage.
 1. Mortar Diverter: Semi-rigid mesh designed for installation at flashing locations.
 - a. Manufacturers:
 - 1) Advanced Building Products Inc: www.advancedbuildingproducts.com/#sle.
 - 2) Mortar Net Solutions: www.mortarnet.com/#sle.
 - 3) York Manufacturing, Inc: www.yorkmfg.com/#sle.
- D. Building Paper: ASTM D226/D226M, Type I ("No.15") asphalt felt.
- E. Weeps:
 1. Type: Extruded propylene with honeycomb design.
 2. Color(s): As selected by CPL Architects from manufacturer's full range.
 3. Manufacturers:
 - a. Advanced Building Products, Inc: www.advancedbuildingproducts.com/#sle.
 - b. Blok-Lok Limited: www.blok-lok.com/#sle.
 - c. CavClear/Archovations, Inc: www.cavclear.com/#sle.
 - d. Hohmann & Barnard, Inc: www.h-b.com/#sle.
 - e. Mortar Net Solutions: www.mortarnet.com/#sle.
 - f. WIRE-BOND: www.wirebond.com/#sle.
- F. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.

PART 3 EXECUTION

3.01 EXAMINATION

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

3.02 PREPARATION

- A. Direct and coordinate placement of metal anchors supplied for installation under other sections.
- B. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

3.03 COLD AND HOT WEATHER REQUIREMENTS

- A. Maintain materials and surrounding air temperature to minimum 40 degrees F prior to, during, and 48 hours after completion of masonry work.
- B. Maintain materials and surrounding air temperature to maximum 90 degrees F prior to, during, and 48 hours after completion of masonry work.

3.04 COURSING

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

3.05 PLACING AND BONDING

- A. Lay hollow masonry units with face shell bedding on head and bed joints.
- B. Buttering corners of joints or excessive furrowing of mortar joints is not permitted.
- C. Remove excess mortar and mortar smears as work progresses.
- D. Interlock intersections and external corners, except for units laid in stack bond.
- E. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.

3.06 WEEPS/CAVITY VENTS

- A. Install weeps in veneer and cavity walls at 32 inches on center horizontally on top of through-wall flashing above shelf angles and lintels and at bottom of walls.
- B. Install cavity vents in veneer and cavity walls at 32 inches on center horizontally near top of walls.

3.07 CAVITY MORTAR CONTROL

- A. Do not permit mortar to drop or accumulate into cavity air space or to plug weep/cavity vents.
- B. Install cavity mortar diverter at base of cavity and at other flashing locations as recommended by manufacturer to prevent mortar droppings from blocking weep/cavity vents.

3.08 REINFORCEMENT AND ANCHORAGE - GENERAL

- A. Unless otherwise indicated on drawings or specified under specific wall type, install horizontal joint reinforcement 16 inches on center.
- B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
- C. Place continuous joint reinforcement in first and second joint below top of walls.

- D. Embed longitudinal wires of joint reinforcement in mortar joint with at least 5/8 inch mortar cover on each side.
- E. Lap joint reinforcement ends minimum 6 inches.
- F. Embed ties and anchors in mortar joint and extend into masonry unit a minimum of 1-1/2 inches with at least 5/8 inch mortar cover to the outside face of the anchor.

3.09 REINFORCEMENT AND ANCHORAGE - MASONRY VENEER

- A. Masonry Back-Up: Embed anchors in masonry back-up to bond veneer at maximum 1.77 sq ft of wall surface per anchor. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches on center.

3.10 REINFORCEMENT AND ANCHORAGES - MULTIPLE WYTHE UNIT MASONRY

- A. Use individual metal ties installed in horizontal joints to bond wythes together. Provide ties spaced as indicated on drawings.

3.11 MASONRY FLASHINGS

- A. Whether or not specifically indicated, install masonry flashing to divert water to exterior at all locations where downward flow of water will be interrupted.
 - 1. Extend flashings full width at such interruptions and at least 6 inches, minimum, into adjacent masonry or turn up flashing ends at least 1 inch minimum or install manufactured end dam to form watertight pan at non-masonry construction.
 - 2. Seal lapped ends and penetrations of flashing before covering with mortar.
- B. Terminate flashing up 8 inches minimum on vertical surface of backing:
 - 1. Install vertical leg of flashing behind water-resistive barrier sheet over backing.
 - 2. Install vertical leg of flashing over fluid-applied or self-adhered air/vapor barriers over backing or per manufacturer's directions.
 - 3. Terminate vertical leg of flashing into bed joint in masonry or reglet in concrete.
 - 4. Anchor vertical leg of flashing into backing with a termination bar and sealant.
 - 5. Apply cap bead of sealant on top edge of self-adhered flashing.
- C. Extend metal flashings to within 1/2 inch of exterior face of masonry and adhere to top of stainless steel angled drip with hemmed edge.

3.12 LINTELS

- A. Install loose steel lintels over openings as indicated on A401.

3.13 CONTROL AND EXPANSION JOINTS

- A. Do not continue horizontal joint reinforcement through control or expansion joints.
- B. Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.

3.14 BUILT-IN WORK

- A. As work progresses, install built-in metal door frames and glazed frames and other items to be built into the work and furnished under other sections.
- B. Install built-in items plumb, level, and true to line.
- C. Bed anchors of metal door and glazed frames in adjacent mortar joints. Fill frame voids solid with grout.
 - 1. Fill adjacent masonry cores with grout minimum 12 inches from framed openings.

3.15 TOLERANCES

- A. Install masonry within the site tolerances found in TMS 402/602.
- B. Maximum Variation From Unit to Adjacent Unit: 1/16 inch.
- C. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft and 1/2 inch in 20 ft or more.

- D. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.
- E. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft; 1/2 inch in 30 ft.
- F. Maximum Variation of Mortar Joint Thickness: Head joint, minus 1/4 inch, plus 3/8 inch.
- G. Maximum Variation from Cross Sectional Thickness of Walls: 1/4 inch.

3.16 CUTTING AND FITTING

- A. Cut and fit for chases. Coordinate with other sections of work to provide correct size, shape, and location.

3.17 PARGING

- A. Dampen masonry walls prior to parging.
- B. Scarify each parging coat to ensure full bond to subsequent coat.
- C. Parge masonry walls in two uniform coats of mortar to a total thickness of 3/4 inch.
- D. Steel trowel surface smooth and flat with a maximum surface variation of 1/8 inch per foot.
- E. Strike top edge of parging at 45 degrees.

3.18 CLEANING

- A. Remove excess mortar and mortar droppings.
- B. Replace defective mortar. Match adjacent work.
- C. Clean soiled surfaces with cleaning solution.
- D. Use non-metallic tools in cleaning operations.

3.19 PROTECTION

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

END OF SECTION

SECTION 05 50 00
METAL FABRICATIONS
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Shop fabricated steel and aluminum items.

1.02 RELATED REQUIREMENTS

1.03 REFERENCE STANDARDS

- A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel 2019.
- B. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products 2017.
- C. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar 2023.
- D. ASTM F3125/F3125M - Standard Specification for High Strength Structural Bolts and Assemblies, Steel and Alloy Steel, Heat Treated, Inch Dimensions 120 ksi and 150 ksi Minimum Tensile Strength, and Metric Dimensions 830 MPa and 1040 MPa Minimum Tensile Strength 2022.
- E. AWS D1.1/D1.1M - Structural Welding Code - Steel 2020, with Errata (2023).
- F. AWS D1.2/D1.2M - Structural Welding Code - Aluminum 2014, with Errata (2020).
- G. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer 2004.
- H. SSPC-Paint 20 - Zinc-Rich Coating (Type I - Inorganic, and Type II - Organic) 2019.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.

1.05 QUALITY ASSURANCE

- A. Design all required items under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed in the State in which the Project is located.
- B. Welder Qualifications: Welding processes and welding operators qualified in accordance with AWS D1.1/D1.1M and AWS D1.2/D1.2M and dated no more than 12 months before start of scheduled welding work.

PART 2 PRODUCTS

2.01 MATERIALS - STEEL

- A. Steel Sections: ASTM A36/A36M.
- B. Plates: ASTM A283/A283M.
- C. Pipe: ASTM A53/A53M, Grade B Schedule 40, black finish.
- D. Stainless Steel, General: ASTM A666, Type 304.
- E. Mechanical Fasteners: Same material as or compatible with materials being fastened; type consistent with design and specified quality level.
- F. Bolts, Nuts, and Washers: ASTM F3125/F3125M, Type 1, plain.
- G. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.
- H. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.

- I. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.

2.02 FABRICATION

- A. Fit and shop assemble items in largest practical sections, for delivery to site.
- B. Fabricate items with joints tightly fitted and secured.
- C. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
- D. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.03 FABRICATED ITEMS

- A. Bollards: Steel pipe, concrete filled, crowned cap, as detailed; prime paint finish.
- B. Lintels: As detailed; galvanized finish.
- C. Door Frames for Overhead Door Openings and Wall Openings: Channel sections; prime paint finish.

2.04 FINISHES - STEEL

- A. Prime paint steel items.
 - 1. Exceptions: Galvanize items to be embedded in concrete and items to be embedded in masonry.
 - 2. Exceptions: Do not prime surfaces in direct contact with concrete, where field welding is required, and items to be covered with sprayed fireproofing.
- B. Prepare surfaces to be primed in accordance with SSPC-SP2.
- C. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.
- D. Prime Painting: One coat.
- E. Galvanizing of Structural Steel Members: Galvanize after fabrication to ASTM A123/A123M requirements. Provide minimum 1.7 oz/sq ft galvanized coating.
- F. Galvanizing of Non-structural Items: Galvanize after fabrication to ASTM A123/A123M requirements.
- G. Stainless Steel Finish: No. 4 Bright Polished finish.

2.05 FABRICATION TOLERANCES

- A. Squareness: 1/8 inch maximum difference in diagonal measurements.
- B. Maximum Offset Between Faces: 1/16 inch.
- C. Maximum Misalignment of Adjacent Members: 1/16 inch.
- D. Maximum Bow: 1/8 inch in 48 inches.
- E. Maximum Deviation From Plane: 1/16 inch in 48 inches.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive work.

3.02 PREPARATION

- A. Clean and strip primed steel items to bare metal where site welding is required.
- B. Supply setting templates to the appropriate entities for steel items required to be cast into concrete or embedded in masonry.

3.03 INSTALLATION

- A. Install items plumb and level, accurately fitted, free from distortion or defects.

- B. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
- C. Field weld components as indicated on drawings.
- D. Perform field welding in accordance with AWS D1.1/D1.1M.
- E. Obtain approval prior to site cutting or making adjustments not scheduled.
- F. After erection, prime welds, abrasions, and surfaces not shop primed , except surfaces to be in contact with concrete.

3.04 TOLERANCES

- A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.
- B. Maximum Offset From True Alignment: 1/4 inch.
- C. Maximum Out-of-Position: 1/4 inch.

END OF SECTION

This page intentionally left blank

SECTION 06 41 00
ARCHITECTURAL WOOD CASEWORK
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Specially fabricated cabinet units.
- B. Hardware.
- C. Preparation for installing utilities.

1.02 RELATED REQUIREMENTS

- A. Section 06 10 00 - Rough Carpentry: Support framing, grounds, and concealed blocking.
- B. Section 09 91 23 - Interior Painting
- C. Section 12 36 00 - Countertops.

1.03 REFERENCE STANDARDS

- A. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards 2021, with Errata.
- B. BHMA A156.9 - Cabinet Hardware 2020.
- C. NEMA LD 3 - High-Pressure Decorative Laminates 2005.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene a preinstallation meeting not less than one week before starting work of this section; require attendance by all affected installers.

1.05 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.
 - 1. Scale of Drawings: 1-1/2 inch to 1 foot, minimum.
 - 2. Provide the information required by AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS).
- C. Product Data: Provide data for hardware accessories.
- D. Samples: Submit actual sample items of proposed pulls, hinges, shelf standards, and locksets, demonstrating hardware design, quality, and finish.

1.06 QUALITY ASSURANCE

- A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.
 - 1. Company with at least one project in the past 5 years with value of woodwork within 20 percent of cost of woodwork for this Project.
 - 2. Single Source Responsibility: Provide and install this work from single fabricator.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Protect units from moisture damage.

1.08 FIELD CONDITIONS

- A. During and after installation of custom cabinets, maintain temperature and humidity conditions in building spaces at same levels planned for occupancy.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Single Source Responsibility: Provide and install this work from single fabricator.

2.02 CABINETS

- A. Quality Standard: Custom Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.

- B. Plastic Laminate Faced Cabinets: Custom grade.
 - 1. All locations.
- C. Cabinets:
 - 1. Finish - Exposed Exterior Surfaces: Decorative laminate.
 - 2. Door and Drawer Front Edge Profiles: Square edge with thick applied band. (3 mm thick pvc)
 - 3. Door and Drawer Front Retention Profiles: Fixed panel.
 - 4. Casework Construction Type: Type A - Frameless.
 - 5. Cabinet Design Series: As indicated on drawings.
 - 6. Adjustable Shelf Loading: 50 lbs. per sq. ft.
 - 7. Cabinet Style: Flush overlay.

2.03 WOOD-BASED COMPONENTS

- A. Wood fabricated from old growth timber is not permitted.

2.04 PANEL MATERIALS

- A. Low Pressure Laminate: Thermofused melamine products shall meet the performance standards of a "Permalam" certified product and meet or exceed standards for NEMA LD-3 for GP-28. Manufacturer supplied documentation confirming these standards shall be submitted with shop drawings. The edges of all melamine surfaced panels shall be clean and straight without noticeable chipping. Any and all panels with chipped or rough cut edges shall be refabricated at the Contractor's expense. Thermofused melamine products manufactured by Panval, Masonite, Funder or Domtar only will be accepted.
- B. Medium Density Fiberboard (MDF): ANSI A208.2; type as specified in AWI/AWMAAC Architectural Woodwork Quality Standards Illustrated; composed of wood fibers pressure bonded with moisture resistant adhesive to suit application; sanded faces; thickness as required.

2.05 LAMINATE MATERIALS

- A. Manufacturers: Provide Basis-of-Design Product as listed in Finish Schedule or comparable product by one of the following:
 - 1. Formica Corporation: www.formica.com/#sle.
 - 2. Panolam Industries International, Inc: www.panolam.com/#sle.
 - 3. Wilsonart LLC: www.wilsonart.com/#sle.
 - 4. Substitutions: See Section 01 60 00 - Product Requirements.
- B. High Pressure Decorative Laminate (HPDL): NEMA LD 3, types as recommended for specific applications.
- C. Provide specific types as indicated.
 - 1. Horizontal Surfaces: HGS, 0.048 inch nominal thickness, through color, color as selected, finish as indicated.
 - 2. Vertical Surfaces: VGS, 0.028 inch nominal thickness, through color, color as selected, finish as indicated.
 - 3. Laminate Backer: BKL, 0.020 inch nominal thickness, undecorated; for application to concealed backside of panels faced with high pressure decorative laminate.

2.06 COUNTERTOPS

- A. Countertops are specified in Section 12 36 00.

2.07 ACCESSORIES

- A. Adhesive: Type recommended by fabricator to suit application.
- B. Plastic Edge Banding: Extruded PVC, flat shaped; smooth finish; self locking serrated tongue; of width to match component thickness.
 - 1. Color: As selected by CPL Architects from manufacturer's standard range.
 - 2. Use at all exposed plywood edges.

- C. Fasteners: Size and type to suit application.
- D. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; galvanized or chrome-plated finish in concealed locations and stainless steel or chrome-plated finish in exposed locations.
- E. Concealed Joint Fasteners: Threaded steel.

2.08 HARDWARE

- A. Hardware: BHMA A156.9, types as recommended by fabricator for quality grade specified.
- B. Hardware Finish: US26 (Bright Chrome) for plastic laminate finish unless otherwise indicated.
 - 1. Manufacturers:
 - a. BA - Baldwin Hardware Mfg. Corp.
 - b. BL - Julius Blum Mfg.
 - c. BO - Bommer Spring Hinge Co., Inc.
 - d. GA - Garcy Corporation
 - e. GRA - Grass America
 - f. HA - Hager Hinge Co.
 - g. HE - Hettich
 - h. HF - Hafele
 - i. IV - The H. B. Ives Co.
 - j. KV - Knappe and Vogt
 - k. McK - McKinney Sales Co.
 - l. NCL - National Cabinet Locks
 - m. ST - Stanley Hardware
 - C. Hinges and Baseplates:
 - 1. For 3/4 inch thick doors: Julius Blum 170 degree opening hinge, Product Number 71.6550 used in conjunction with baseplate 175H9100, zinc die cast, two-piece, wing type. Mount baseplate with two 5mm system screws and one #7 wood screw (3 screws total each baseplate) or approved equals by Grass America, Salice or approved equal.
 - 2. Number of hinges per door shall depend on weight and size of door. Following information is only a guideline and it is the responsibility of the contractor to ensure that a sufficient number of hinges are installed to prevent sagging or binding.
 - 3. Number of Hinges Door Height Door Weight
 - a. 2 Less than 36 inches Less than 15 lbs.
 - b. 3 Less than 66 inches Less than 30 lbs.
 - c. 4 Less than 84 inches Less than 45 lbs.
 - d. 5 Less than 96 inches Less than 60 lbs.
 - D. Pulls:
 - 1. For typical doors and drawers:
 - a. No. 346120 as manufactured by ST satin chrome plated wire pull unless otherwise noted on drawings.
 - b. Equal as manufactured by BA.
 - E. Drawer Slides (Light/Medium Duty Drawers - 24 inches wide or less):
 - 1. No. 8405 as manufactured by KV full extension 1 inch over travel.
 - 2. No. KA5632 as manufactured by HE 100# ball bearing full extension.
 - 3. No. 422.93 as manufactured by HF.
 - 4. No. 7434 Ball Bearing manufactured by Accuride 100#/L HD full extension 1 inch over travel.
 - F. Drawer Slides (Heavy Duty Drawers - 42 inches wide or less and File Drawers):
 - 1. No. 8525 as manufactured by KV 175# full extension 1-1/2 inch over travel.
 - 2. No. 422.05 as manufactured by HF.
 - 3. No. 3640 Ball Bearing manufactured by Accuride 100# 1 inch over travel.

- G. Drawer Locks: No. 987 as manufactured by KV or equal provided by NCL.
- H. Adjustable Shelf Supports: Standard side-mounted system using recessed metal shelf standards or multiple holes for pin supports and coordinated self rests, polished chrome finish, for nominal 1 inch spacing adjustments.

2.09 FABRICATION

- A. Assembly: Shop assemble cabinets for delivery to site in units easily handled and to permit passage through building openings.
- B. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.
- C. Fitting: When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide matching trim for scribing and site cutting.
- D. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel arises. Locate counter butt joints minimum 2 feet from sink cut-outs.
 - 1. Apply laminate backing sheet to reverse side of plastic laminate finished surfaces.
- E. Provide cutouts for plumbing fixtures, outlet boxes, and fixtures and fittings. Verify locations of cutouts from on-site dimensions. Seal cut edges.
- F. Plastic Laminate:
 - 1. Install plastic laminate in accordance with printed instructions of manufacturer of plastic laminate. Install plastic balancing sheet on concealed face to prevent warping.
 - 2. Install plastic laminate on cabinet surfaces as follows:
 - 3. Cabinet Doors: NEMA General Purpose Type, nominal .028 inch thickness applied to all interior and exterior vertical surfaces. Provide 3 mm PVC edge banding matching plastic laminate on vertical surfaces of doors.
 - 4. Cabinet Shelves: MCP II finish on all horizontal surfaces. Provide 3 mm PVC edge banding matching plastic laminate on shelf edges.
 - 5. Drawer Sides, Backs, Subfronts: 1/2 inch thick white "Permalam" thermofused melamine overlay.
 - 6. Drawer Bottoms: 1/4 inch thick white hardboard.
 - 7. Semi-Exposed Adjustable Shelves: 3/4 inch thick white "Permalam" thermofused melamine overlay up to 24 inch span; 1 inch thick white "Permalam" thermofused melamine overlay over 24 inch span.
 - 8. Exposed Adjustable Shelves: 3/4 inch thick panel product or MDF core with NEMA
 - 9. 0.028 inch thick plastic laminate as indicated and detailed.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify adequacy of backing and support framing.
- B. Verify location and sizes of utility rough-in associated with work of this section.

3.02 INSTALLATION

- A. Set and secure custom cabinets in place, assuring that they are rigid, plumb, and level.
- B. Use fixture attachments in concealed locations for wall mounted components.
- C. Use concealed joint fasteners to align and secure adjoining cabinet units.
- D. Carefully scribe casework abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim for this purpose.
- E. Secure cabinets to floor using appropriate angles and anchorages.
- F. Countersink anchorage devices at exposed locations. Conceal with solid wood plugs of species to match surrounding wood; finish flush with surrounding surfaces.

3.03 ADJUSTING

- A. Adjust installed work.
- B. Adjust moving or operating parts to function smoothly and correctly.

3.04 CLEANING

- A. Clean casework, counters, shelves, hardware, fittings, and fixtures.

END OF SECTION

This page intentionally left blank

SECTION 06 83 16
FIBERGLASS REINFORCED PANELING
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fiberglass reinforced plastic panels.
- B. Trim.

1.02 RELATED REQUIREMENTS

- A. Section 01 61 16 - Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 09 51 00 - Acoustical Ceilings: Ceiling suspension system.

1.03 REFERENCE STANDARDS

- A. 9 CFR 416.2 - Regulatory Requirements Under the Federal Meat Inspection Act and the Poultry Products Inspection Act, Part 416-Sanitation current edition.
- B. ASTM D256 - Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics 2023, with Editorial Revision.
- C. ASTM D2583 - Standard Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor 2013a.
- D. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber 2021.
- E. ASTM D5319 - Standard Specification for Glass-Fiber Reinforced Polyester Wall and Ceiling Panels 2022.
- F. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2023b.
- G. FDA Food Code - Chapter 6 - Physical Facilities Current Edition.
- H. FM 4880 - Evaluating the Fire Performance of Insulated Building Panel Assemblies and Interior Finish Materials 2017.
- I. ISO 846 - Plastics - Evaluation of the Action of Microorganisms 2019.
- J. ISO 2812-1 - Paints and Varnishes -- Determination of Resistance to Liquids -- Part 1: Immersion in Liquids Other than Water 2017.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
- C. Samples: Submit two samples 3 by 4 inch in size illustrating material and surface design of panels.
- D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 60 00 - Product Requirements, for additional provisions.
 - 2. Extra Panels: Quantity equal to 5 percent of total installed, but not less than two (2) full size panels.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Store panels flat, indoors, on a clean, dry surface. Remove packaging and allow panels to acclimate to room temperature for 48 hours prior to installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Fiberglass Reinforced Plastic Panels:
 - 1. Crane Composites, Inc; _____: www.cranecomposites.com/#sle.

2. Marlite, Inc; _____: www.marlite.com/#sle.
 3. Nudo Products, Inc; _____: www.nudo.com/#sle.
 4. Panolam Industries International, Inc; Panolam FRP: www.panolam.com/#sle.
 5. Substitutions: See Section 01 6000 - Product Requirements.
- B. Fiberglass Reinforced Plastic Ceiling Suspension System:
1. Crane Composites, Inc; _____: www.cranecomposites.com/#sle.
 2. Keel Manufacturing Inc; _____: www.keelmfg.com/#sle.
 3. Marlite, Inc; www.marlite.com/#sle
 4. Substitutions: See Section 01 6000 - Product Requirements.

2.02 PANEL SYSTEMS

- A. Wall Panels:
1. Panel Size: 4 by 8 feet.
 2. Panel Thickness: 0.10 inch.
 3. Surface Design: Embossed.
 4. Color: White.
 5. Attachment Method: Adhesive only, sealant joints, no trim.

2.03 MATERIALS

- A. Panels: Fiberglass reinforced plastic (FRP), complying with ASTM D5319.
1. Surface Burning Characteristics: Maximum flame spread index of 25 and smoke developed index of 450; when system tested in accordance with ASTM E84.
 2. Class 1 fire rated when tested in accordance with FM 4880.
 3. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
 4. Scratch Resistance: Barcol hardness score greater than 35, when tested in accordance with ASTM D2583.
 5. Impact Strength: Greater than 6 ft lb force per inch, when tested in accordance with ASTM D256.
 6. Sanitation and Cleanability: Comply with 9 CFR 416.2.
 7. Chemical Cleanability: Excellent chemical resistance to common cleaners and detergents when tested in accordance with ISO 2812-1.
 8. Biological Resistance: Rating of 0, when tested in accordance with ISO 846.
- B. Trim: Vinyl; color coordinating with panel.
- C. Adhesive: Type recommended by panel manufacturer.
- D. Sealant: Type recommended by panel manufacturer; white.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions and substrate flatness before starting work.
- B. Verify that substrate conditions are ready to receive the work of this section.

3.02 INSTALLATION - WALLS

- A. Install panels in accordance with manufacturer's instructions.
- B. Cut and drill panels with carbide tipped saw blades, drill bits, or snips.
- C. Apply adhesive to the back side of the panel using trowel as recommended by adhesive manufacturer.
- D. Apply panels to wall with seams plumb and pattern aligned with adjoining panels.
- E. Install panels with manufacturer's recommended gap for panel field and corner joints.
- F. Place trim on panel before fastening edges, as required.
- G. Fill channels in trim with sealant before attaching to panel.
- H. Install trim with adhesive and screws or nails, as required.

- I. Seal gaps at floor, ceiling, and between panels with applicable sealant to prevent moisture intrusion.
- J. Remove excess sealant after paneling is installed and prior to curing.

END OF SECTION

This page intentionally left blank

SECTION 07 92 00
JOINT SEALANTS
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Nonsag gunnable joint sealants.
- B. Joint backings and accessories.

1.02 RELATED REQUIREMENTS

- A. Section 07 27 26- Fluid Applied Membrane Air Barrier: sealants required in conjunction with Air barriers.
- B. Section 07 84 00 - Firestopping: Firestopping sealants.
- C. Section 08 80 00 - Glazing: Glazing sealants and accessories.

1.03 REFERENCE STANDARDS

- A. ASTM C661 - Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer 2015 (Reapproved 2022).
- B. ASTM C794 - Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants 2018 (Reapproved 2022).
- C. ASTM C834 - Standard Specification for Latex Sealants 2017 (Reapproved 2023).
- D. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications 2022.
- E. ASTM C920 - Standard Specification for Elastomeric Joint Sealants 2018.
- F. ASTM C1087 - Standard Test Method for Determining Compatibility of Liquid-Applied Sealants with Accessories Used in Structural Glazing Systems 2023.
- G. ASTM C1193 - Standard Guide for Use of Joint Sealants 2016 (Reapproved 2023).
- H. ASTM C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants 2022.
- I. ASTM C1521 - Standard Practice for Evaluating Adhesion of Installed Weatherproofing Sealant Joints 2019 (Reapproved 2020).

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data for Sealants: Submit manufacturer's technical data sheets for each product to be used, that includes the following.
 - 1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
 - 2. List of backing materials approved for use with the specific product.
 - 3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
 - 4. Substrates the product should not be used on.
 - 5. Substrates for which use of primer is required.
- C. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.
- D. Samples for Verification: Where custom sealant color is specified, obtain directions from CPL Architects and submit at least two physical samples for verification of color of each required sealant.
- E. Preconstruction Laboratory Test Reports: Submit at least four weeks prior to start of installation.

1.05 QUALITY ASSURANCE

- A. Preconstruction Laboratory Testing: Arrange for sealant manufacturer(s) to test each combination of sealant, substrate, backing, and accessories.

1. Adhesion Testing: In accordance with ASTM C794.
 2. Compatibility Testing: In accordance with ASTM C1087.
 3. Allow sufficient time for testing to avoid delaying the work.
 4. Deliver to manufacturer sufficient samples for testing.
 5. Report manufacturer's recommended corrective measures, if any, including primers or techniques not indicated in product data submittals.
 6. Testing is not required if sealant manufacturer provides data showing previous testing, not older than 24 months, that shows satisfactory adhesion, lack of staining, and compatibility.
- B. Non-Destructive Field Adhesion Test: Test for adhesion in accordance with ASTM C1521, using Nondestructive Spot Method.
1. Repair failed portions of joints.

1.06 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective work within a five year period after Date of Substantial Completion.
- C. Warranty: Include coverage for installed sealants and accessories that fail to achieve watertight seal, exhibit loss of adhesion or cohesion, or do not cure.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Non-Sag Sealants: Permits application in joints on vertical surfaces without sagging or slumping.
 1. Momentive Performance Materials, Inc (formerly GE Silicones): www.momentive.com/#sle.
 2. Pecora Corporation: www.pecora.com/#sle.
 3. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com/#sle.
 4. W.R. Meadows, Inc: www.wrmeadows.com/#sle.

2.02 JOINT SEALANT APPLICATIONS

- A. Scope:
 1. Exterior Joints: Seal open joints, whether or not the joint is indicated on drawings, unless specifically indicated not to be sealed. Exterior joints to be sealed include, but are not limited to, the following items.
 - a. Wall expansion and control joints.
 - b. Joints between door, window, and other frames and adjacent construction.
 - c. Joints between different exposed materials.
 - d. Openings below ledge angles in masonry.
 - e. Other joints indicated below.
 2. Interior Joints: Do not seal interior joints unless specifically indicated to be sealed. Interior joints to be sealed include, but are not limited to, the following items.
 - a. Joints between door, window, and other frames and adjacent construction.
 - b. In sound-rated wall and ceiling assemblies, gaps at electrical outlets, wiring devices, piping, and other openings; between wall/ceiling and other construction; and other flanking sound paths.
 - c. Other joints indicated below.
 3. Do not seal the following types of joints.
 - a. Intentional weepholes in masonry.
 - b. Joints indicated to be treated with manufactured expansion joint cover or some other type of sealing device.
 - c. Joints where installation of sealant is specified in another section.
- B. Exterior Joints: Use non-sag non-staining silicone sealant, unless otherwise indicated.
- C. Interior Joints: Use non-sag polyurethane sealant, unless otherwise indicated.
 1. Wall and Ceiling Joints in Non-Wet Areas: Acrylic emulsion latex sealant.

- D. Sound-Rated Assemblies: Walls and ceilings identified as "STC-rated", "sound-rated", or "acoustical".

2.03 JOINT SEALANTS - GENERAL

- A. Sealants and Primers: Provide products with levels of volatile organic compound (VOC) content as indicated in Section 01 61 16.
- B. Colors: match adjacent color .

2.04 NONSAG JOINT SEALANTS

- A. Non-Staining Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.
1. Movement Capability: Plus and minus 50 percent, minimum.
 2. Non-Staining To Porous Stone: Non-staining to light-colored natural stone when tested in accordance with ASTM C1248.
 3. Dirt Pick-Up: Reduced dirt pick-up compared to other silicone sealants.
 4. Hardness Range: 15 to 35, Shore A, when tested in accordance with ASTM C661.
 5. Color: To be selected by CPL Architects from manufacturer's full range.
 6. Cure Type: Single component, neutral moisture curing..
 7. Manufacturers:
 - a. Momentive Performance Materials, Inc/GE Silicones: www.siliconeforbuilding.com/#sle.
 - b. Pecora Corporation:
 - c. Sika Corporation: www.usa-sika.com/#sle.
 - d. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com/#sle.
 - e. Substitutions: See Section 01 60 00 - Product Requirements.
- B. Mildew-Resistant Silicone Sealant: ASTM C920, Grade NS, Uses M and A; single component, mildew resistant; not expected to withstand continuous water immersion or traffic.
1. Color: As selected by Architect from Manufacturer's range.
 2. Manufacturers:
 - a. Momentive Performance Materials, Inc/GE Silicones: www.siliconeforbuilding.com/#sle.
 - b. Pecora Corporation: www.pecora.com/#sle.
 - c. Sika Corporation: www.usa-sika.com/#sle.
 - d. Tremco Sealants; www.tremcosealants.com
 - e. Substitutions: See Section 01 60 00 - Product Requirements.
- C. Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single-component; not expected to withstand continuous water immersion or traffic.
1. Movement Capability: Plus and minus 20-35 percent, minimum.
 2. Hardness Range: 20 to 35, Shore A, when tested in accordance with ASTM C661.
 3. Color: To be selected by Architect from manufacturer full range.
 4. Manufacturers:
 - a. Pecora Corporation: www.pecora.com/#sle.
 - b. Sika Corporation: www.usa-sika.com/#sle.
 - c. Tremco Commercial Sealants & Waterproofing; Dymeric 240 FC: www.tremcosealants.com/#sle.
 - d. Substitutions: See Section 01 60 00 - Product Requirements.
- D. Acrylic Emulsion Latex: Water-based; ASTM C834, single component, non-staining, non-bleeding, non-sagging; not intended for exterior use.
1. Color: To be selected by CPL Architects from manufacturer's standard range.
 2. Manufacturers:
 - a. Pecora Corporation: www.pecora.com/#sle.
 - b. Sherwin-Williams Company: www.sherwin-williams.com/#sle.
 - c. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com/#sle.

- d. Substitutions: See Section 01 60 00 - Product Requirements.

2.05 ACCESSORIES

- A. Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.
1. Closed Cell and Bi-Cellular: 25 to 33 percent larger in diameter than joint width.
 2. Manufacturers:
 - a. Nomaco, Inc: www.nomaco.com/#sle.
 - b. Tremco Sealants; www.tremcosealants.com
 - c. Substitutions: See Section 01 60 00 - Product Requirements.
- B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.
- C. Masking Tape: Self-adhesive, nonabsorbent, non-staining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.
- D. Joint Cleaner: Non-corrosive and non-staining type, type recommended by sealant manufacturer; compatible with joint forming materials.
- E. Primers: Type recommended by sealant manufacturer to suit application; non-staining.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that joints are ready to receive work.
- B. Verify that backing materials are compatible with sealants.
- C. Verify that backer rods are of the correct size.

3.02 PREPARATION

- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

3.03 INSTALLATION

- A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Perform installation in accordance with ASTM C1193.
- C. Perform acoustical sealant application work in accordance with ASTM C919.
- D. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.
- E. Install bond breaker backing tape where backer rod cannot be used.
- F. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.
- G. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.
- H. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

3.04 FIELD QUALITY CONTROL

- A. Perform field quality control inspection/testing as specified in PART 1 under QUALITY ASSURANCE article.
- B. Non-Destructive Adhesion Testing: If there are any failures in first 100 linear feet, notify CPL Architects immediately.
- C. Remove and replace failed portions of sealants using same materials and procedures as indicated for original installation.

3.05 POST-OCCUPANCY

- A. Post-Occupancy Inspection: Perform visual inspection of entire length of project sealant joints at a time that joints have opened to their greatest width; i.e. at low temperature in thermal cycle. Report failures immediately and repair.

END OF SECTION

This page intentionally left blank

SECTION 08 11 13
HOLLOW METAL DOORS AND FRAMES
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Non-fire-rated hollow metal doors and frames.
- B. Thermally insulated hollow metal doors with frames.
- C. Accessories, including glazing, louvers, and matching panels.

1.02 RELATED REQUIREMENTS

- A. Section 08 71 00 - Door Hardware.
- B. Section 09 91 13 - Exterior Painting: Field painting.

1.03 REFERENCE STANDARDS

- A. ADA Standards - 2010 ADA Standards for Accessible Design 2010.
- B. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors 2022.
- C. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100) 2023.
- D. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames 2020.
- E. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2023.
- F. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Required Hardness, Solution Hardened, and Bake Hardenable 2021a.
- G. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength 2023.
- H. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete 2020.
- I. ASTM C476 - Standard Specification for Grout for Masonry 2023.
- J. BHMA A156.115 - Hardware Preparation in Steel Doors and Frames 2016.
- K. ICC A117.1 - Accessible and Usable Buildings and Facilities 2017.
- L. NAAMM HMMA 830 - Hardware Selection for Hollow Metal Doors and Frames 2002.
- M. NAAMM HMMA 831 - Hardware Locations for Hollow Metal Doors and Frames 2011.
- N. NAAMM HMMA 840 - Guide Specifications For Receipt, Storage and Installation of Hollow Metal Doors and Frames 2017.
- O. NAAMM HMMA 861 - Guide Specifications for Commercial Hollow Metal Doors and Frames 2014.
- P. NFPA 80 - Standard for Fire Doors and Other Opening Protectives 2022.
- Q. SDI 117 - Manufacturing Tolerances for Standard Steel Doors and Frames 2023.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes; and one copy of referenced standards/guidelines.
- C. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and any indicated finish requirements.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years documented experience.
- B. Maintain at project site copies of reference standards relating to installation of products specified.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Comply with NAAMM HMMA 840 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
- B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion and adverse effects on factory applied painted finish.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Hollow Metal Doors and Frames:
 - 1. Ceco Door, an Assa Abloy Group company: www.assaabloydss.com/#sle.
 - 2. Curries, an Assa Abloy Group company: www.assaabloydss.com/#sle.
 - 3. Fleming Door Products, an Assa Abloy Group company: www.assaabloydss.com/#sle.
 - 4. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 PERFORMANCE REQUIREMENTS

- A. Requirements for Hollow Metal Doors and Frames:
 - 1. Steel Sheet: Comply with one or more of the following requirements; galvanized steel complying with ASTM A653/A653M, cold-rolled steel complying with ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel complying with ASTM A1011/A1011M, commercial steel (CS) Type B, for each.
 - 2. Accessibility: Comply with ICC A117.1 and ADA Standards.
 - 3. Exterior Door Top Closures: Flush end closure channel, with top and door faces aligned.
 - 4. Door Edge Profile: Manufacturers standard for application indicated.
 - 5. Typical Door Face Sheets: Flush.
 - 6. Hardware Preparations, Selections and Locations: Comply with NAAMM HMMA 830 and NAAMM HMMA 831 or BHMA A156.115 and ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
 - 7. Zinc Coating for Typical Interior and/or Exterior Locations: Provide metal components zinc-coated (galvanized) and/or zinc-iron alloy-coated (galvanized) by the hot-dip process in accordance with ASTM A653/A653M, with manufacturer's standard coating thickness, unless noted otherwise for specific hollow metal doors and frames.
- B. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with the specified requirements for each type; for instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

2.03 HOLLOW METAL DOORS

- A. Door Finish: Factory primed and field finished.
- B. Exterior Doors: Thermally insulated.
 - 1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
 - a. Level 2 - Heavy-duty.
 - b. Physical Performance Level B, 500,000 cycles; in accordance with ANSI/SDI A250.4.
 - c. Model 1 - Full Flush.
 - d. Door Face Metal Thickness: 16 gauge, 0.053 inch, minimum.
 - 2. Door Thickness: 1-3/4 inches, nominal.
 - 3. Weatherstripping: Refer to Section 08 71 00.

- C. Interior Doors, Non-Fire-Rated:
 - 1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
 - a. Level 2 - Heavy-duty.
 - b. Physical Performance Level B, 500,000 cycles; in accordance with ANSI/SDI A250.4.
 - c. Model 1 - Full Flush.
 - d. Door Face Metal Thickness: 18 gauge, 0.042 inch, minimum.
 - 2. Door Thickness: 1-3/4 inches, nominal.

2.04 HOLLOW METAL FRAMES

- A. Comply with standards and/or custom guidelines as indicated for corresponding door in accordance with applicable door frame requirements.
- B. Frame Finish: Factory primed and field finished.
- C. Exterior Door Frames: Full profile/continuously welded type.
 - 1. Weatherstripping: Separate, see Section 08 71 00.
- D. Interior Door Frames, Non-Fire Rated: Full profile/continuously welded type.

2.05 FINISHES

- A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.

2.06 ACCESSORIES

- A. Louvers: Roll formed steel with overlapping frame; finish same as door components ; factory-installed.
 - 1. Style: Standard straight slat blade.
 - 2. Size: See Construction Drawings.
 - 3. Louver Free Area: 50 percent.
 - 4. Fasteners: Exposed, tamper proof fasteners.
 - 5. Manufacturers:
 - a. Per door manufacturer approved vendor list.
- B. Glazing: As specified in Section 08 80 00, factory installed.
- C. Grout for Frames: Mortar grout complying with ASTM C476 with maximum slump of 4 inches as measured in accordance with ASTM C143/C143M for hand troweling in place; plaster grout and thinner pumpable grout are prohibited.
- D. Silencers: Resilient rubber, fitted into drilled hole; provide three on strike side of single door, three on center mullion of pairs, and two on head of pairs without center mullions.
- E. Temporary Frame Spreaders: Provide for factory- or shop-assembled frames.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.
- C. Verify that finished walls are in plane to ensure proper door alignment.

3.02 PREPARATION

- A. Coat inside of frames to be installed in masonry or to be grouted, with bituminous coating, prior to installation.

3.03 INSTALLATION

- A. Install doors and frames in accordance with manufacturer's instructions and related requirements of specified door and frame standards or custom guidelines indicated.
- B. Install fire rated units in accordance with NFPA 80.
- C. Coordinate frame anchor placement with wall construction.

- D. Grout frames in masonry construction, using hand trowel methods; brace frames so that pressure of grout before setting will not deform frames.
- E. Install door hardware as specified in Section 08 71 00.
- F. Coordinate installation of electrical connections to electrical hardware items.

3.04 TOLERANCES

- A. Clearances Between Door and Frame: Comply with related requirements of specified frame standards or custom guidelines indicated in accordance with SDI 117 or NAAMM HMMA 861.
- B. Maximum Diagonal Distortion: 1/16 inch measured with straight edge, corner to corner.

3.05 ADJUSTING

- A. Adjust for smooth and balanced door movement.
- B. Adjust sound control doors so that seals are fully engaged when door is closed.
- C. Test sound control doors for force to close, latch, and unlatch; adjust as necessary in compliance with requirements.

END OF SECTION

SECTION 08 31 00
ACCESS DOORS AND PANELS
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Ceiling mounted access units.
- B. Wall and ceiling mounted access units.

1.02 RELATED REQUIREMENTS

- A. Section 09 91 23 - Interior Painting: Field paint finish.

1.03 REFERENCE STANDARDS

- A. ADA Standards - 2010 ADA Standards for Accessible Design 2010.
- B. FM (AG) - FM Approval Guide Current Edition.
- C. ITS (DIR) - Directory of Listed Products Current Edition.
- D. UL (FRD) - Fire Resistance Directory Current Edition.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide sizes, types, finishes, hardware, scheduled locations, and details of adjoining work.
- C. Shop Drawings: Indicate exact position of each access door and/or panel unit.

PART 2 PRODUCTS

2.01 ACCESS DOORS AND PANELS ASSEMBLIES

- A. Ceiling-Mounted Units:
 - 1. Location: As indicated on drawings.
 - 2. Panel Material: Steel.
 - 3. Size - Other Ceilings: As indicated on drawings..
 - 4. Door/Panel: Hinged, standard duty, with tool-operated spring or cam lock and no handle.

2.02 CEILING MOUNTED ACCESS UNITS

- A. Manufacturers:
 - 1. ACUDOR Products Inc: www.acudor.com/#sle.
 - 2. Babcock-Davis: www.babcockdavis.com/#sle.
 - 3. Cendrex, Inc: www.cendrex.com/#sle.
 - 4. Karp Associates, Inc: www.karpinc.com/#sle.
 - 5. Milcor, Inc: www.milcorinc.com/#sle.
 - 6. Substitutions: See Section 01 60 00 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that rough openings are correctly sized and located.
- B. Begin installation only after substrates have been properly prepared, and if the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

- A. Clean surfaces thoroughly prior to proceeding with this work.
- B. Prepare surfaces using methods recommended by manufacturer for applicable substrates in accordance with project conditions.

3.03 INSTALLATION

- A. Install units in accordance with manufacturer's instructions.

- B. Install frames plumb and level in openings, and secure units rigidly in place.
- C. Position units to provide convenient access to concealed equipment when necessary.

END OF SECTION

SECTION 08 33 13
COILING COUNTER SHUTTERS
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Non-fire-rated coiling counter shutters and operating hardware.

1.02 RELATED REQUIREMENTS

1.03 REFERENCE STANDARDS

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Submit manufacturer's standard literature showing materials and details of construction and finish. Include data on electrical operation.
- C. Shop Drawings: Indicate rough and actual opening dimensions, anchorage methods, hardware locations, and installation details.
- D. Manufacturer's Instructions: Indicate installation sequence and installation, adjustment, and alignment procedures.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing work of type specified and with at least three years documented experience.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Coiling Counter Shutters:
 - 1. Alpine Overhead Doors, Inc; _____: www.alpinedoors.com/#sle.
 - 2. Cookson Doors; www.cooksondoor.com/#sle
 - 3. C.H.I. Overhead Doors; _____: www.chiohd.com/#sle.
 - 4. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 COILING COUNTER SHUTTERS

- A. Coiling Counter Doors, Non-Fire-Rated: Galvanized steel slat curtain.
 - 1. Mounting: Interior face mounted.
 - 2. Nominal Slat Size: 1-1/2 inches wide.
 - 3. Slat Profile: Flat.
 - 4. Finish, Galvanized Steel: Factory baked enamel.
 - 5. Color: As selected by CPL Architects from manufacturer's standard range.
 - 6. Guides: Formed track; same material and finish unless otherwise indicated.
 - 7. Hood Enclosure: Manufacturer's standard; same material and finish..
 - 8. Manual push up operation.
 - 9. Locking Devices: Slide bolt on inside.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that opening sizes, tolerances and conditions are acceptable.

3.02 INSTALLATION

- A. Install units in accordance with manufacturer's instructions.
- B. Use anchorage devices to securely fasten assembly to wall construction and building framing without distortion or stress.
- C. Securely and rigidly brace components suspended from structure. Secure guides to structural members only.

- D. Fit and align assembly including hardware; level and plumb, to provide smooth operation.
- E. Install perimeter trim as indicated.

3.03 ADJUSTING

- A. Adjust operating assemblies for smooth and noiseless operation.

3.04 CLEANING

- A. Clean installed components.
- B. Remove labels and visible markings.

END OF SECTION

SECTION 08 60 00
ROOF WINDOWS AND SKYLIGHTS AND RETRACTABLE ATTIC STAIRS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Attic Ladder and Doors:
 - 1. Basic attic ladders.

1.2 REFERENCES

- A. ASTM International (ASTM):
 - 1. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials

1.3 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data:
 - 1. Manufacturer's data sheets on each product to be used.
 - 2. Preparation instructions and recommendations.
 - 3. Storage and handling requirements and recommendations.
 - 4. Typical installation methods.
- C. Shop Drawings: Include details of materials, construction and finish. Include relationship with adjacent construction.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum three years documented experience.
- B. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store and handle in strict compliance with manufacturer's written instructions and recommendations.
- B. Protect from damage due to weather, excessive temperature, and construction operations.

1.6 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.7 WARRANTY

- A. Manufacturer's standard limited warranty unless indicated otherwise.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Attic Ladders and Doors:
1. FAKRO AMERICA: <http://www.fakrousa.com>
- B. Substitutions: See Section 01 60 00 – Product Requirements.

2.2 ATTIC LADDERS AND DOORS

- A. Basic Attic Doors:
1. Model: LMB: Wooden and Folding. 3-section.
 - a. Loading: 300 lbs (136 kg).
 - b. Hatch: Sandwich type, insulated. Color: Beige. Paintable
 - 1) Hatch Thickness: 1 inch (25 mm).
 - 2) Unloading Mechanism: Automatically presses hatch to box, opening with use of control rod.
 - c. R-Value: 3.7.
 - d. Frame: Material: Pinewood. Height: 4-3/8 inch (111 mm).
 - e. Ladder: Material: Pinewood. Width: 15 inch (381 mm). Stringer height: 3-1/8 inch (79 mm). Distance Between Steps: 9-7/8 inch (251 mm).
 - f. Steps: Material: Pinewood. Anti-slip profile. Step Width: 3-1/8 inch (79 mm). Thickness: 7/8 inch (22 mm). Length: 13-1/4 inch (336 mm).
 - g. Ceiling Height: 7 ft 10 inch to 10 ft 1 inch (2388 to to 3073 mm).
 - 1) Rough Opening: 22-1/2 x 54 inches (571 x 1372 mm).
 - 2) Rough Opening: 25 x 54 inches (635 x 1372 mm).
 - 3) Rough Opening: 30 x 54 inches (762 x 1372 mm).
 - h. Accessories:
 - 1) Plastic ends.
 - 2) Ladder Balustrade: 30 x 54 inches (762 x 1372 mm) for all attic ladders.
 - 3) Metal handrail. Mounts to either left or right side of ladder.
 - 4) Installation Brackets: Maximum ceiling 12-1/2 inch (317 mm).
 - 5) Trim: 30 x 54 inches (762 x 1372 mm). Smaller sizes have to be cut.
 - a) Material: Wood.
 - b) Material: PCV.
 - 6) Box Extension: 4 inches (102 mm).
 - 7) Upper Hatch: Height: 7-3/4 inch (197 mm).
 2. Model: LMB: Metal and Folding. 3-section.
 - a. Loading: 350 lbs (160 kg)
 - b. Hatch Sandwich type, insulated. Color: Beige. Paintable.
 - 1) Hatch Thickness: 1 inch (25 mm).
 - 2) Equipped with recessed hook.
 - c. Frame: Material: Pinewood. Height: 4-1/2 inch (114 mm).
 - d. Ladder: Metal. Width: 15 inch (381 mm). Distance Between Treads: 9-7/8 inch (251 mm).
 - e. Steps: Metal. Anti-slip profile. Tread Width: 3-1/8 inch (79 mm). Length: 13-1/4 inch (337 mm).
 - f. Control Rod for opening hatch.
 - g. Ceiling Height: 7 ft 8 inch to 10 ft 3 inch (2413 to 3073 mm).
 - 1) Rough Opening: 22-1/2 x 54 inches (571 x 1372 mm).
 - 2) Rough Opening: 25 x 54 inches (635 x 1372 mm).
 - 3) Rough Opening: 30 x 54 inches (762 x 1372 mm).
 - h. Accessories:
 - 1) Plastic ends.

- 2) Control rod for opening the hatch.
- 3) Ladder Balustrade: 30 x 54 inches (762 x 1372 mm) for all attic ladders.
- 4) Metal handrail. Mounts to either left or right side of ladder.
- 5) Installation Brackets: Maximum ceiling 12-1/2 inch (317 mm).
- 6) Trim: Wood. 30 x 54 inches (762 x 1372 mm). Cut for smaller sizes.
- 7) Box Extension: 4 inches (102 mm).
- 8) Upper Hatch: Height: 7-3/4 inch (197 mm).

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly constructed and prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect in writing of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions, approved submittals, and in proper relationship with adjacent construction.

3.4 FIELD QUALITY CONTROL

- A. Field Inspection: Coordinate field inspection in accordance with appropriate sections in Division 01.
- B. Manufacturer's Services: Coordinate manufacturer's services in accordance with appropriate sections in Division 01.

3.5 CLEANING AND PROTECTION

- A. Clean products in accordance with the manufacturers recommendations.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

This page intentionally left blank

SECTION 08 71 00
DOOR HARDWARE

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Mechanical door hardware
- B. Section excludes:
 - 1. Windows
 - 2. Cabinets (casework), including locks in cabinets
 - 3. Signage
 - 4. Toilet accessories
 - 5. Overhead doors
- C. Related Sections:
 - 1. Division 01 Section "Alternates" for alternates affecting this section.
 - 2. Division 06 Section "Rough Carpentry"
 - 3. Division 06 Section "Finish Carpentry"
 - 4. Division 07 Section "Joint Sealants" for sealant requirements applicable to threshold installation specified in this section.
 - 5. Division 08 Sections:
 - a. "Metal Doors and Frames"
 - b. "Flush Wood Doors"
 - 6. Division 09 sections for touchup, finishing or refinishing of existing openings modified by this section.

1.02 REFERENCES

- A. DHI - Door and Hardware Institute
 - 1. Sequence and Format for the Hardware Schedule
 - 2. Recommended Locations for Builders Hardware
 - 3. Keying Systems and Nomenclature
 - 4. Installation Guide for Doors and Hardware
- B. NFPA – National Fire Protection Association
 - 1. NFPA 101 – Life Safety Code
- C. ANSI - American National Standards Institute
 - 1. ANSI A117.1 – 2017 Edition – Accessible and Usable Buildings and Facilities
 - 2. ANSI/BHMA A156.1 - A156.29, and ANSI/BHMA A156.31 - Standards for Hardware and Specialties

3. ANSI/BHMA A156.28 - Recommended Practices for Keying Systems
4. ANSI/WDMA I.S. 1A - Interior Architectural Wood Flush Doors
5. ANSI/SDI A250.8 - Standard Steel Doors and Frames

1.03 SUBMITTALS

A. General:

1. Submit in accordance with Conditions of Contract and Division 01 Submittal Procedures.
2. Prior to forwarding submittal:
 - a. Comply with procedures for verifying existing door and frame compatibility for new hardware, as specified in PART 3, "EXAMINATION" article, herein.
 - b. Review drawings and Sections from related trades to verify compatibility with specified hardware.
 - c. Highlight, encircle, or otherwise specifically identify on submittals: deviations from Contract Documents, issues of incompatibility or other issues which may detrimentally affect the Work.

B. Action Submittals:

1. Product Data: Submit technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.
2. Samples for Verification: If requested by Architect, submit production sample of requested door hardware unit in finish indicated and tagged with full description for coordination with schedule.
 - a. Samples will be returned to supplier. Units that are acceptable to Architect may, after final check of operations, be incorporated into Work, within limitations of key coordination requirements.
3. Door Hardware Schedule:
 - a. Submit concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate fabrication of other work critical in Project construction schedule.
 - b. Submit under direct supervision of a Door Hardware Institute (DHI) certified Architectural Hardware Consultant (AHC) or Door Hardware Consultant (DHC) with hardware sets in vertical format as illustrated by Sequence of Format for the Hardware Schedule published by DHI.
 - c. Indicate complete designations of each item required for each opening, include:
 - 1) Door Index: door number, heading number, and Architect's hardware set number.
 - 2) Quantity, type, style, function, size, and finish of each hardware item.
 - 3) Name and manufacturer of each item.
 - 4) Fastenings and other pertinent information.
 - 5) Location of each hardware set cross-referenced to indications on Drawings.
 - 6) Explanation of all abbreviations, symbols, and codes contained in schedule.
 - 7) Mounting locations for hardware.
 - 8) Door and frame sizes and materials.
 - 9) Degree of door swing and handing.

4. Key Schedule:

- a. After Keying Conference, provide keying schedule that includes levels of keying, explanations of key system's function, key symbols used, and door numbers controlled.
- b. Use ANSI/BHMA A156.28 "Recommended Practices for Keying Systems" as guideline for nomenclature, definitions, and approach for selecting optimal keying system.
- c. Provide 3 copies of keying schedule for review prepared and detailed in accordance with referenced DHI publication. Include schematic keying diagram and index each key to unique door designations.
- d. Index keying schedule by door number, keyset, hardware heading number, cross keying instructions, and special key stamping instructions.
- e. Provide one complete bitting list of key cuts and one key system schematic illustrating system usage and expansion. Forward bitting list, key cuts and key system schematic directly to Owner, by means as directed by Owner.
- f. Prepare key schedule by or under supervision of supplier, detailing Owner's final keying instructions for locks.

C. Informational Submittals:

1. Provide Qualification Data for Supplier, Installer and Architectural Hardware Consultant.
2. Provide Product Data:
 - a. Include warranties for specified door hardware.

D. Closeout Submittals:

1. Operations and Maintenance Data: Provide in accordance with Division 01 and include:
 - a. Complete information on care, maintenance, and adjustment; data on repair and replacement parts, and information on preservation of finishes.
 - b. Catalog pages for each product.
 - c. Final approved hardware schedule edited to reflect conditions as installed.
 - d. Final keying schedule
 - e. Copy of warranties including appropriate reference numbers for manufacturers to identify project.

E. Inspection and Testing:

1. Submit written reports to the Owner and Authority Having Jurisdiction (AHJ) of the results of functional testing and inspection for:
 - a. required egress door assemblies, in compliance with NFPA 101.

1.04 QUALITY ASSURANCE

A. Qualifications and Responsibilities:

1. Supplier: Recognized architectural hardware supplier with a minimum of 5 years documented experience supplying both mechanical and electromechanical door hardware similar in quantity, type, and quality to that indicated for this Project. Supplier to be recognized as a factory direct distributor by the manufacturer of the primary materials with a warehousing facility in the Project's vicinity. Supplier to have on staff, a certified Architectural Hardware Consultant (AHC) or Door Hardware Consultant (DHC) available to Owner, Architect, and Contractor, at reasonable times during the Work for consultation.

2. Installer: Qualified tradesperson skilled in the application of commercial grade hardware with experience installing door hardware similar in quantity, type, and quality as indicated for this Project.
 3. Architectural Hardware Consultant: Person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and meets these requirements:
 - a. For door hardware: DHI certified AHC or DHC.
 - b. Can provide installation and technical data to Architect and other related subcontractors.
 - c. Can inspect and verify components are in working order upon completion of installation.
 4. Single Source Responsibility: Obtain each type of door hardware from single manufacturer.
- B. Certifications:
1. Accessibility Requirements:
 - a. Comply with governing accessibility regulations cited in "REFERENCES" article 087100, 1.02.D3 herein for door hardware on doors in an accessible route. This project must comply with all Federal Americans with Disability Act regulations and all Local Accessibility Regulations.
- C. Pre-Installation Meetings
1. Keying Conference
 - a. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including:
 - 1) Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
 - 2) Preliminary key system schematic diagram.
 - 3) Address for delivery of keys.
 2. Pre-installation Conference
 - a. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - b. Inspect and discuss preparatory work performed by other trades.
 - c. Review required testing, inspecting, and certifying procedures.
 - d. Review questions or concerns related to proper installation and adjustment of door hardware.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up for hardware delivered to Project site. Promptly replace products damaged during shipping.
- B. Tag each item or package separately with identification coordinated with final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package. Deliver each article of hardware in manufacturer's original packaging.

- C. Maintain manufacturer-recommended environmental conditions throughout storage and installation periods.
- D. Provide secure lock-up for door hardware delivered to Project. Control handling and installation of hardware items so that completion of Work will not be delayed by hardware losses both before and after installation.
- E. Handle hardware in manner to avoid damage, marring, or scratching. Correct, replace or repair products damaged during Work. Protect products against malfunction due to paint, solvent, cleanser, or any chemical agent.

1.06 COORDINATION

- A. Installation Templates: Distribute for doors, frames, and other work specified to be factory or shop prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.
- B. Security: Coordinate installation of door hardware and keying with Owner's security consultant.

1.07 WARRANTY

- A. Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within published warranty period.
 - 1. Warranty does not cover damage or faulty operation due to improper installation, improper use or abuse.
 - 2. Warranty Period: Beginning from date of Substantial Completion, for durations indicated in manufacturer's published listings.
 - a. Mechanical Warranty
 - 1) Locks
 - a) 3 years
 - 2) Closers
 - a) 30 years

1.08 MAINTENANCE

- A. Furnish complete set of special tools required for maintenance and adjustment of hardware, including changing of cylinders.
- B. Turn over unused materials to Owner for maintenance purposes.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Approval of manufacturers and/or products other than those listed as “Scheduled Manufacturer” or “Acceptable Manufacturers” in the individual article for the product category shall be in accordance with QUALITY ASSURANCE article, herein.
- B. Approval of products from manufacturers indicated in “Acceptable Manufacturers” is contingent upon those products providing all functions and features and meeting all requirements of scheduled manufacturer’s product.
- C. Where specified hardware is not adaptable to finished shape or size of members requiring hardware, furnish suitable types having same operation and quality as type specified, subject to Architect’s approval.

2.02 MATERIALS

- A. Fabrication
 - 1. Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. provide screws according to manufacturer’s recognized installation standards for application intended.
 - 2. Finish exposed screws to match hardware finish, or, if exposed in surfaces of other work, to match finish of this other work including prepared for paint surfaces to receive painted finish.
 - 3. Provide concealed fasteners wherever possible for hardware units exposed when door is closed. Coordinate with “Metal Doors and Frames”, “Flush Wood Doors”, “Stile and Rail Wood Doors” to ensure proper reinforcements. Advise the Architect where visible fasteners, such as thru bolts, are required.
- B. Provide screws, bolts, expansion shields, drop plates and other devices necessary for hardware installation.
 - 1. Where fasteners are exposed to view: Finish to match adjacent door hardware material.

2.03 HINGES

- A. Manufacturers and Products:
 - 1. Scheduled Manufacturer and Product:
 - a. Ives 5BB series
 - 2. Acceptable Manufacturers and Products:
 - a. Hager BB1191/1279 series
 - b. Stanley FBB series
- B. Requirements:
 - 1. Provide hinges conforming to ANSI/BHMA A156.1.

2. Provide five knuckle, ball bearing hinges.
3. Provide hinge weights and sizes as specified in hardware sets.
4. Adjust hinge width for door, frame, and wall conditions to allow proper degree of opening.
5. Provide three hinges per door leaf for doors 90 inches (2286 mm) or less in height, and one additional hinge for each 30 inches (762 mm) of additional door height.
6. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:
 - a. Steel Hinges: Steel pins
 - b. Non-Ferrous Hinges: Stainless steel pins
 - c. Out-Swinging Exterior Doors: Non-removable pins
 - d. Out-Swinging Interior Lockable Doors: Non-removable pins
 - e. Interior Non-lockable Doors: Non-rising pins

2.04 CONTINUOUS HINGES

A. Manufacturers:

1. Scheduled Manufacturer and Product:
 - a. Ives 700 series
2. Acceptable Manufacturers:
 - a. ABH
 - b. Select

B. Requirements:

1. Provide pin and barrel continuous hinges conforming to ANSI/BHMA A156.26., Grade 1.
2. Provide pin and barrel continuous hinges fabricated from 14-gauge, type 304 stainless steel.
3. Provide twin self-lubricated nylon bearings at each hinge knuckle, with 0.25-inch (6 mm) diameter stainless steel pin.
4. Provide hinges capable of supporting door weights up to 600 pounds, and successfully tested for 1,500,000 cycles.
5. On fire-rated doors, provide pin and barrel continuous hinges classified for use on rated doors by testing agency acceptable to authority having jurisdiction.
6. Provide pin and barrel continuous hinges with electrified options as scheduled in the hardware sets. Provide with number and gage of wires enough to accommodate electric function of specified hardware.
7. Provide hinges 1 inch (25 mm) shorter in length than nominal height of door, unless otherwise noted or door details require shorter length and with symmetrical hole pattern.

2.05 FLUSH BOLTS

A. Manufacturers:

1. Scheduled Manufacturer:
 - a. Ives
2. Acceptable Manufacturers:
 - a. Burns

b. DCI

B. Requirements:

1. Provide automatic, constant latching, and manual flush bolts with forged bronze or stainless-steel face plates, extruded brass levers, and with wrought brass guides and strikes. Provide 12 inch (305 mm) steel or brass rods at doors up to 90 inches (2286 mm) in height. For doors over 90 inches (2286 mm) in height increase top rods by 6 inches (152 mm) for each additional 6 inches (152 mm) of door height. Provide dust-proof strikes at each bottom flush bolt.

2.06 COORDINATORS

A. Manufacturers:

1. Scheduled Manufacturer:
 - a. Ives
2. Acceptable Manufacturers:
 - a. Burns
 - b. DCI

B. Requirements:

1. Where pairs of doors are equipped with automatic flush bolts, an astragal, or other hardware that requires synchronized closing of the doors, provide bar-type coordinating device, surface applied to underside of stop at frame head.
2. Provide filler bar of correct length for unit to span entire width of opening, and appropriate brackets for parallel arm door closers, surface vertical rod exit device strikes, or other stop mounted hardware. Factory-prepared coordinators for vertical rod devices as specified.

2.07 MORTISE LOCKS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
 - a. Schlage L9000 series

B. Requirements:

1. Provide mortise locks conforming to ANSI/BHMA A156.13 Series 1000, Grade 1, and UL Listed for 3-hour fire doors.
2. Indicators: Where specified, provide indicator window measuring a minimum 2-inch x 1/2 inch with 180-degree visibility. Provide messages color-coded with full text and/or symbols, as scheduled, for easy visibility.
3. Provide locks manufactured from heavy gauge steel, containing components of steel with a zinc dichromate plating for corrosion resistance.
4. Provide lock case that is multi-function and field reversible for handing without opening case. Cylinders: Refer to "KEYING" article, herein.

5. Provide locks with standard 2-3/4 inches (70 mm) backset with full 3/4 inch (19 mm) throw stainless steel mechanical anti-friction latchbolt. Provide deadbolt with full 1-inch (25 mm) throw, constructed of stainless steel.
6. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.
7. Lever Trim: Solid brass, bronze, or stainless steel, cast or forged in design specified, with wrought roses and external lever spring cages. Provide thru-bolted levers with 2-piece spindles.
 - a. Lever Design: 06B.

2.08 DEADLOCKS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
 - a. Schlage L400 series

B. Requirements:

1. Provide mortise deadlock series conforming to ANSI/BHMA A156.
2. Cylinders: Refer to "KEYING" article, herein.
3. Provide deadlocks with standard 2-3/4 inches (70 mm) backset. Provide deadbolt with full 1-inch (25 mm) throw, constructed of stainless steel.
4. Provide manufacturer's standard strike.

2.09 CYLINDERS

A. Manufacturers:

1. Scheduled Manufacturer and Product:
 - a. Match Owner's existing cylinders.
2. Acceptable Manufacturers and Products:
 - a. No Substitute

B. Requirements:

1. Provide cylinders/cores to match Owner's existing key system, compliant with ANSI/BHMA A156.5; latest revision; cylinder face finished to match lockset, manufacturer's series as indicated. Refer to "KEYING" article, herein.

2.10 KEYING

A. Scheduled System:

1. Existing factory registered system:

- a. Provide cylinders/cores keyed into Owner's existing factory registered keying system. Comply with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference.

B. Requirements:

1. Permanent Keying:

- a. Provide permanent cylinders/cores keyed by the manufacturer according to the following key system.
 - 1) Master Keying system as directed by the Owner.
- b. Forward biting list and keys separately from cylinders, by means as directed by Owner. Failure to comply with forwarding requirements will be cause for replacement of cylinders/cores involved at no additional cost to Owner.
- c. Provide keys with the following features:
 - 1) Material: Nickel silver; minimum thickness of .107-inch (2.3mm)
 - 2) Patent Protection: Keys and blanks protected by one or more utility patent(s).
- d. Identification:
 - 1) Mark permanent cylinders/cores and keys with applicable blind code for identification. Do not provide blind code marks with actual key cuts.
 - 2) Identification stamping provisions must be approved by the Architect and Owner.
 - 3) Stamp cylinders/cores and keys with Owner's unique key system facility code as established by the manufacturer; key symbol and embossed or stamped with "DO NOT DUPLICATE" along with the "PATENTED" or patent number to enforce the patent protection.
 - 4) Failure to comply with stamping requirements will be cause for replacement of keys involved at no additional cost to Owner.
 - 5) Forward permanent cylinders/cores to Owner, separately from keys, by means as directed by Owner.
- e. Quantity: Furnish in the following quantities.
 - 1) Change (Day) Keys: 3 per cylinder/core.
 - 2) Permanent Control Keys: 3.
 - 3) Master Keys: 6.

2.11 DOOR CLOSERS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:

- a. LCN 4040XP series

B. Requirements:

1. Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory. ISO 9000 certify closers. Stamp units with date of manufacture code.
2. Provide door closers with fully hydraulic, full rack and pinion action with high strength cast iron cylinder, and full complement bearings at shaft.
3. Cylinder Body: 1-1/2 inch (38 mm) diameter piston with 5/8-inch (16 mm) diameter double heat-treated pinion journal. QR code with a direct link to maintenance instructions.

4. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
5. Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards. Provide snap-on cover clip, with plastic covers, that secures cover to spring tube.
6. Hydraulic Regulation: By tamper-proof, non-critical valves, with separate adjustment for latch speed, general speed, and backcheck. Provide graphically labelled instructions on the closer body adjacent to each adjustment valve. Provide positive stop on reg valve that prevents reg screw from being backed out.
7. Provide closers with solid forged steel main arms and factory assembled heavy-duty forged forearms for parallel arm closers.
8. Pressure Relief Valve (PRV) Technology: Not permitted.
9. Finish for Closer Cylinders, Arms, Adapter Plates, and Metal Covers: Powder coating finish which has been certified to exceed 100 hours salt spray testing as described in ANSI Standard A156.4 and ASTM B117, or has special rust inhibitor (SRI).
10. Provide special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.

2.12 DOOR TRIM

A. Manufacturers:

1. Scheduled Manufacturer:
 - a. Ives
2. Acceptable Manufacturers:
 - a. Trimco
 - b. Burns

B. Requirements:

1. Provide push plates, push bars, pull plates, pulls, and hands-free reversible door pulls with diameter and length as scheduled.

2.13 PROTECTION PLATES

A. Manufacturers:

1. Scheduled Manufacturer:
 - a. Ives
2. Acceptable Manufacturers:
 - a. Burns
 - b. Trimco

B. Requirements:

1. Provide protection plates with a minimum of 0.050 inch (1 mm) thick, beveled four edges as scheduled. Furnish with sheet metal or wood screws, finished to match plates.

2. Provide protection plates with countersunk screw holes.
3. Size plates 2 inches (51 mm) less width of door on single doors, pairs of doors with a mullion, and doors with edge guards. Size plates 1 inch (25 mm) less width of door on pairs without a mullion or edge guards.
4. At fire rated doors, provide protection plates over 16 inches high with UL label.

2.14 OVERHEAD STOPS AND OVERHEAD STOP/HOLDERS

A. Manufacturers:

1. Scheduled Manufacturers:
 - a. Glynn-Johnson
2. Acceptable Manufacturers:
 - a. Rixson
 - b. ABH

B. Requirements:

1. Provide overhead stop at any door where conditions do not allow for a wall stop or floor stop presents tripping hazard.
2. Provide friction type at doors without closer and positive type at doors with closer.

2.15 DOOR STOPS AND HOLDERS

A. Manufacturers:

1. Scheduled Manufacturer:
 - a. Ives
2. Acceptable Manufacturers:
 - a. Trimco
 - b. Burns

B. Provide door stops at each door leaf:

1. Provide wall stops wherever possible. Provide concave type where lockset has a push button or thumbturn.
2. Where a wall stop cannot be used, provide overhead stop.
3. Where wall or overhead stop cannot be used, provide floor stop.
4. Provide roller bumper where doors open into each other and overhead stop cannot be used.

2.16 THRESHOLDS, SEALS, DOOR SWEEPS, AUTOMATIC DOOR BOTTOMS, AND GASKETING

A. Manufacturers:

1. Scheduled Manufacturer:

- a. Zero International
- 2. Acceptable Manufacturers:
 - a. National Guard
 - b. Reese
- B. Requirements:
 - 1. Provide thresholds, weather-stripping, and gasketing systems as specified and per architectural details. Match finish of other items.
 - 2. Provide door sweeps, seals, astragals, and auto door bottoms only of type where resilient or flexible seal strip is easily replaceable and readily available.
 - 3. Size thresholds 1/2 inch (13 mm) high by 5 inches (127 mm) wide by door width unless otherwise specified in the hardware sets or detailed in the drawings.

2.17 SILENCERS

- A. Manufacturers:
 - 1. Scheduled Manufacturer:
 - a. Ives
 - 2. Acceptable Manufacturers:
 - a. Steelcraft
 - b. Republic
- B. Requirements:
 - 1. Provide "push-in" type silencers for hollow metal or wood frames.
 - 2. Provide one silencer per 30 inches (762 mm) of height on each single frame, and two for each pair frame.
 - 3. Omit where gasketing is specified.

2.18 LATCH PROTECTORS

- A. Manufacturers:
 - 1. Scheduled Manufacturer:
 - a. Ives
 - 2. Acceptable Manufacturers:
 - a. Burns
 - b. Trimco
- B. Provide stainless steel latch protectors of type required to function with specified lock.

2.19 COAT HOOKS

- A. Manufacturers:
 - 1. Scheduled Manufacturer:
 - a. Ives
 - 2. Acceptable Manufacturers:
 - a. Burns
 - b. Trimco
- B. Provide coat hooks as specified.

2.20 FINISHES

- A. Finish: 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.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Prior to installation of hardware, examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance. Verify doors, frames, and walls have been properly reinforced for hardware installation.
- B. Submit a list of deficiencies in writing and proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. Mount door hardware units at heights to comply with the following, unless otherwise indicated or required to comply with governing regulations.
 - 1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
 - 2. Custom Steel Doors and Frames: HMMA 831.
 - 3. Interior Architectural Wood Flush Doors: ANSI/WDMA I.S. 1A
 - 4. Installation Guide for Doors and Hardware: DHI TDH-007-20
- B. Install door hardware in accordance with NFPA 80, NFPA 101 and provide post-install inspection, testing as specified in section 1.03.E unless otherwise required to comply with governing regulations.

- C. Install each hardware item in compliance with manufacturer's instructions and recommendations, using only fasteners provided by manufacturer.
- D. Do not install surface mounted items until finishes have been completed on substrate. Protect all installed hardware during painting.
- E. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.
- F. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
- G. Install operating parts so they move freely and smoothly without binding, sticking, or excessive clearance.
- H. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than quantity recommended by manufacturer for application indicated.
- I. Door Closers: Mount closers on room side of corridor doors, inside of exterior doors, and stair side of stairway doors from corridors. Mount closers so they are not visible in corridors, lobbies and other public spaces unless approved by Architect.
- J. Thresholds: Set thresholds in full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants."
- K. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they may impede traffic or present tripping hazard.
- L. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.
- M. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.
- N. Door Bottoms and Sweeps: Apply to bottom of door, forming seal with threshold when door is closed.

3.03 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.
 - 1. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.
- B. Occupancy Adjustment: Approximately three to six months after date of Substantial Completion, examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors and door hardware.

3.04 CLEANING AND PROTECTION

- A. Clean adjacent surfaces soiled by door hardware installation.
- B. Clean operating items per manufacturer's instructions to restore proper function and finish.
- C. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

3.05 DOOR HARDWARE SCHEDULE

- A. The intent of the hardware specification is to specify the hardware for interior and exterior doors, and to establish a type, continuity, and standard of quality. However, it is the door hardware supplier's responsibility to thoroughly review existing conditions, schedules, specifications, drawings, and other Contract Documents to verify the suitability of the hardware specified.
- B. Discrepancies, conflicting hardware, and missing items are to 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.
- C. Hardware items are referenced in the following hardware schedule. Refer to the above specifications for special features, options, cylinders/keying, and other requirements.
- D. Hardware Sets:

HARDWARE GROUP NO. 1

Provide each SGL door(s) with the following:

<u>QTY</u>		<u>DESCRIPTION</u>	<u>CATALOG NUMBER</u>	<u>FINISH</u>	<u>MFR</u>
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	PASSAGE SET	L9010 06B	626	SCH
1	EA	WALL STOP	WS406/407CVX	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP NO. 2

Provide each SGL door(s) with the following:

<u>QTY</u>		<u>DESCRIPTION</u>	<u>CATALOG NUMBER</u>	<u>FINISH</u>	<u>MFR</u>
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	PRIVACY LOCK	L9040 06B 09-544 L283-722	626	SCH
1	EA	WALL STOP	WS406/407CVX	630	IVE
1	EA	SINGLE HOOK	507B	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP NO. 3

Provide each SGL door(s) with the following:

<u>QTY</u>		<u>DESCRIPTION</u>	<u>CATALOG NUMBER</u>	<u>FINISH</u>	<u>MFR</u>
3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	STOREROOM LOCK	L9080L 06B	626	SCH
1	EA	MORTISE CYLINDER	VERIFY TYPE REQD.	626	
1	EA	OH STOP	450S	630	GLY
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP NO. 4

Provide each PR door(s) with the following:

<u>QTY</u>		<u>DESCRIPTION</u>	<u>CATALOG NUMBER</u>	<u>FINISH</u>	<u>MFR</u>
6	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
2	EA	MANUAL FLUSH BOLT	FB457 12"	626	IVE
1	EA	DUST PROOF STRIKE	DP1	626	IVE
1	EA	STOREROOM LOCK	L9080L 06B	626	SCH
1	EA	MORTISE CYLINDER	VERIFY TYPE REQD.	626	
2	EA	WALL STOP	WS406/407CVX	630	IVE
1	EA	MEETING STILE	383AA	AA	ZER
2	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP NO. 5

Provide each SGL door(s) with the following:

<u>QTY</u>		<u>DESCRIPTION</u>	<u>CATALOG NUMBER</u>	<u>FINISH</u>	<u>MFR</u>
1	EA	CONT. HINGE	705	630	IVE
1	EA	STOREROOM LOCK	L9080L 06B	626	SCH
1	EA	MORTISE CYLINDER	VERIFY TYPE REQD.	626	
1	EA	LOCK GUARD	LG1	630	IVE
1	EA	SURFACE CLOSER	4040XP SHCUSH	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	RAIN DRIP	142AA	AA	ZER
1	SET	GASKETING	429AA-S	AA	ZER
1	EA	DOOR SWEEP	39A	A	ZER
1	EA	THRESHOLD	655A-223	A	ZER

HARDWARE GROUP NO. 6

Provide each PR door(s) with the following:

<u>QTY</u>		<u>DESCRIPTION</u>	<u>CATALOG NUMBER</u>	<u>FINISH</u>	<u>MFR</u>
2	EA	CONT. HINGE	705	630	IVE
1	EA	CONST LATCHING BOLT	FB51P	630	IVE
1	EA	DUST PROOF STRIKE	DP1	626	IVE
1	EA	STOREROOM LOCK	L9080L 06B	626	SCH
1	EA	MORTISE CYLINDER	VERIFY TYPE REQD.	626	
1	EA	COORDINATOR	COR X FL	US26D	IVE
2	EA	SURFACE CLOSER	4040XP SHCUSH WMS	689	LCN
2	EA	KICK PLATE	8400 10" X 1" LDW B-CS	630	IVE
1	EA	RAIN DRIP	142AA	AA	ZER
1	SET	GASKETING	429AA-S	AA	ZER
1	EA	MEETING STILE	383AA	AA	ZER
2	EA	DOOR SWEEP	39A	A	ZER
1	EA	THRESHOLD	655A-223	A	ZER

HARDWARE GROUP NO. 7

Provide each SGL door(s) with the following:

<u>QTY</u>		<u>DESCRIPTION</u>	<u>CATALOG NUMBER</u>	<u>FINISH</u>	<u>MFR</u>
1	EA	CONT. HINGE	705	630	IVE
1	EA	CLASSROOM DEAD LOCK	L463L	626	SCH
1	EA	MORTISE CYLINDER	VERIFY TYPE REQD.	626	
1	EA	PUSH PLATE	8200 6" X 16"	630	IVE
1	EA	PULL PLATE	8303 10" 4" X 16"	630	IVE
1	EA	SURFACE CLOSER	4040XP REG OR PA AS REQ	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CVX	630	IVE
1	SET	GASKETING	429AA-S	AA	ZER
1	EA	DOOR SWEEP	39A	A	ZER
1	EA	THRESHOLD	545A	A	ZER

END OF SECTION

SECTION 09 05 61
COMMON WORK RESULTS FOR FLOORING PREPARATION
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. This section applies to floors identified in Contract Documents that are receiving the following types of floor coverings:
 - 1. Epoxy Flooring.
- B. Preparation of new concrete floor slabs for installation of floor coverings.
- C. Testing of concrete floor slabs for moisture and alkalinity (pH).
- D. Remediation of concrete floor slabs due to unsatisfactory moisture or alkalinity (pH) conditions.
 - 1. Contractor shall perform all specified remediation of concrete floor slabs. If such remediation is indicated by testing agency's report and is due to a condition not under Contractor's control or could not have been predicted by examination prior to entering into the contract, a contract modification will be issued.
- E. Patching compound.
- F. Remedial floor coatings.

1.02 REFERENCE STANDARDS

- A. ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50 mm] Cube Specimens) 2021.
- B. ASTM C472 - Standard Test Methods for Physical Testing of Gypsum, Gypsum Plasters, and Gypsum Concrete 2020.
- C. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride 2022.
- D. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes 2019a.

1.03 SUBMITTALS

- A. Floor Covering and Adhesive Manufacturers' Product Literature: For each specific combination of substrate, floor covering, and adhesive to be used; showing:
 - 1. Moisture and alkalinity (pH) limits and test methods.
 - 2. Manufacturer's required bond/compatibility test procedure.
- B. Remedial Materials Product Data: Manufacturer's published data on each product to be used for remediation.
 - 1. Manufacturer's statement of compatibility with types of flooring applied over remedial product.
 - 2. Manufacturer's installation instructions.
 - 3. Specimen Warranty: Copy of warranty to be issued by coating manufacturer and certificate of underwriter's coverage of warranty.
- C. Testing Agency's Report:
 - 1. Description of areas tested; include floor plans and photographs if helpful.
 - 2. Summary of conditions encountered.
 - 3. Moisture and alkalinity (pH) test reports.
 - 4. Copies of specified test methods.
 - 5. Recommendations for remediation of unsatisfactory surfaces.
 - 6. Submit report to CPL Architects.
 - 7. Submit report not more than two business days after conclusion of testing.
- D. Adhesive Bond and Compatibility Test Report.

1.04 QUALITY ASSURANCE

- A. Moisture and alkalinity (pH) testing shall be performed by an independent testing agency employed and paid by Contractor.
- B. Testing Agency Qualifications: Independent testing agency experienced in the types of testing specified.
 - 1. Submit evidence of experience consisting of at least 3 test reports of the type required, with project Owner's project contact information.
- C. Contractor's Responsibility Relating to Independent Agency Testing:
 - 1. Provide access for and cooperate with testing agency.
 - 2. Confirm date of start of testing at least 10 days prior to actual start.
 - 3. Allow at least 4 business days on site for testing agency activities.
 - 4. Achieve and maintain specified ambient conditions.
 - 5. Notify CPL Architects when specified ambient conditions have been achieved and when testing will start.
- D. Remedial Coating Installer Qualifications: Company specializing in performing work of the type specified in this section, trained by or employed by coating manufacturer, and able to provide at least 3 project references showing at least 3 years' experience installing moisture emission coatings.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, handle, and protect products in accordance with manufacturer's instructions and recommendations.
- B. Deliver materials in manufacturer's packaging; include installation instructions.
- C. Keep materials from freezing.

1.06 FIELD CONDITIONS

- A. Maintain ambient temperature in spaces where concrete testing is being performed, and for at least 48 hours prior to testing, at not less than 65 degrees F or more than 85 degrees F.
- B. Maintain relative humidity in spaces where concrete testing is being performed, and for at least 48 hours prior to testing, at not less than 40 percent and not more than 60 percent.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Patching Compound: Floor covering manufacturer's recommended product, suitable for conditions, and compatible with adhesive and floor covering. In the absence of any recommendation from flooring manufacturer, provide a product with the following characteristics:
 - 1. Cementitious moisture-, mildew-, and alkali-resistant compound, compatible with floor, floor covering, and floor covering adhesive, and capable of being feathered to nothing at edges.
 - 2. Compressive Strength: 3000 psi, minimum, after 28 days, when tested in accordance with ASTM C109/C109M or ASTM C472, whichever is appropriate.
 - 3. Products:
 - a. TEC, an H.B. Fuller Construction Products Brand; TEC Feather Edge Skim Coat
 - b. USG Corporation; Durock Brand Advanced Skim Coat Floor Patch
 - c. Other pre-approved equal.
- B. Remedial Floor Coating: Single- or multi-layer coating or coating/overlay combination intended by its manufacturer to resist water vapor transmission to degree sufficient to meet flooring manufacturer's emission limits, resistant to the level of alkalinity (pH) found, and suitable for adhesion of flooring without further treatment.
 - 1. Thickness: As required for application and in accordance with manufacturer's installation instructions.

2. Products:
 - a. ARDEX Engineered Cements; ARDEX MC RAPID
 - b. Custom Building Products; TechMVC Moisture Vapor and Alkalinity Barrier
 - c. TEC, an H.B. Fuller Construction Products Brand; TEC LiquiDam with TEC Level Set 200 SLU
 - d. Other pre-approved equal.

PART 3 EXECUTION

3.01 CONCRETE SLAB PREPARATION

- A. Perform following operations in the order indicated:
 1. Preliminary cleaning.
 2. Moisture vapor emission tests; 3 tests in the first 1000 square feet and one test in each additional 1000 square feet, unless otherwise indicated or required by flooring manufacturer.
 3. Internal relative humidity tests; in same locations as moisture vapor emission tests, unless otherwise indicated.
 4. Alkalinity (pH) tests; in same locations as moisture vapor emission tests, unless otherwise indicated.
 5. Specified remediation, if required.
 6. Patching, smoothing, and leveling, as required.
 7. Other preparation specified.
 8. Adhesive bond and compatibility test.
 9. Protection.
- B. Remediations:
 1. Active Water Leaks or Continuing Moisture Migration to Surface of Slab: Correct this condition before doing any other remediation; re-test after correction.
 2. Excessive Moisture Emission or Relative Humidity: If an adhesive that is resistant to the level of moisture present is available and acceptable to flooring manufacturer, use that adhesive for installation of the flooring; if not, apply remedial floor coating or remedial sheet membrane over entire suspect floor area.
 3. Excessive Alkalinity (pH): If remedial floor coating is necessary to address excessive moisture, no additional remediation is required; if not, if an adhesive that is resistant to the level present is available and acceptable to the flooring manufacturer, use that adhesive for installation of the flooring; otherwise, apply a skim coat of specified patching compound over entire suspect floor area.

3.02 MOISTURE VAPOR EMISSION TESTING

- A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.
- B. Where this specification conflicts with the referenced test method, comply with the requirements of this section.
- C. Test in accordance with ASTM F1869 and as follows.
- D. Plastic sheet test and mat bond test may not be substituted for the specified ASTM test method, as those methods do not quantify the moisture content sufficiently.
- E. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if test values exceed 3 pounds per 1000 square feet per 24 hours.
- F. Report: Report the information required by the test method.

3.03 INTERNAL RELATIVE HUMIDITY TESTING

- A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.

- B. Where this specification conflicts with the referenced test method, comply with the requirements of this section.
- C. Test in accordance with ASTM F2170 Procedure A and as follows.
- D. Testing with electrical impedance or resistance apparatus may not be substituted for the specified ASTM test method, as the values determined are not comparable to the ASTM test values and do not quantify the moisture content sufficiently.
- E. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if any test value exceeds 75 percent relative humidity.
- F. Report: Report the information required by the test method.

3.04 ALKALINITY TESTING

- A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.
- B. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if alkalinity (pH) test value is over 10.

3.05 PREPARATION

- A. See individual floor covering section(s) for additional requirements.
- B. Comply with requirements and recommendations of floor covering manufacturer.
- C. Fill and smooth surface cracks, grooves, depressions, control joints and other non-moving joints, and other irregularities with patching compound.
- D. Do not fill expansion joints, isolation joints, or other moving joints.

3.06 ADHESIVE BOND AND COMPATIBILITY TESTING

- A. Comply with requirements and recommendations of floor covering manufacturer.

3.07 APPLICATION OF REMEDIAL FLOOR COATING

- A. Comply with requirements and recommendations of coating manufacturer.

3.08 PROTECTION

- A. Cover prepared floors with building paper or other durable covering.

END OF SECTION

SECTION 09 65 00
RESILIENT FLOORING AND BASE
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Resilient base.
- B. Installation accessories.

1.02 RELATED REQUIREMENTS

- A. Section 09 05 61 - Common Work Results for Flooring Preparation: Removal of existing floor coverings, cleaning, and preparation.
- B. Section 09 05 61 - Common Work Results for Flooring Preparation: Concrete slab moisture and alkalinity testing and remediation procedures.

1.03 REFERENCE STANDARDS

- A. ASTM F1861 - Standard Specification for Resilient Wall Base 2021.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
- C. Shop Drawings: Indicate seaming plans.
- D. Verification Samples: Submit two samples, 4 by 6 inches in size illustrating color and pattern for each resilient flooring product specified.
- E. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.
- F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 60 00 - Product Requirements, for additional provisions.
 - 2. Extra Wall Base: 20 linear feet for every 500 linear feet or fraction thereof, of each type and color.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in installing specified flooring with minimum three years documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Upon receipt, immediately remove any shrink-wrap and check materials for damage and the correct style, color, quantity and run numbers.
- B. Store all materials off of the floor in an acclimatized, weather-tight space.
- C. Maintain temperature in storage area between 55 degrees F and 90 degrees F.
- D. Protect roll materials from damage by storing on end.
- E. Do not double stack pallets.

1.07 FIELD CONDITIONS

- A. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F.

PART 2 PRODUCTS

2.01 RESILIENT BASE

- A. Resilient Base RB-1:

1. Manufacturers: Provide Basis-of-Design Product as listed in Finish Schedule or comparable product by one of the following:
 - a. Burke Flooring.
 - b. Roppe Corporation.
2. Height: Refer to Finish Schedule
3. Length: Roll not less than 120 feet, or 8 foot sections for millwork wall base.
4. Color: Refer to Finish Schedule.
5. Accessories: Premolded external corners.

2.02 ACCESSORIES

- A. Primers, Adhesives, and Seam Sealer: Waterproof; types recommended by flooring manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.
- B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive resilient base.
- C. Cementitious Subfloor Surfaces: Verify that substrates are ready for resilient flooring installation by testing for moisture and alkalinity (pH).
 1. Test in accordance with Section 09 05 61.
 2. Obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.
 3. Follow moisture and alkalinity remediation procedures in Section 09 05 61.

3.02 PREPARATION

- A. Prepare floor substrates as recommended by flooring and adhesive manufacturers.
- B. Remove subfloor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with subfloor filler to achieve smooth, flat, hard surface.
- C. Prohibit traffic until filler is fully cured.
- D. Clean substrate.
- E. Apply primer as required to prevent "bleed-through" or interference with adhesion by substances that cannot be removed.

3.03 INSTALLATION - GENERAL

- A. Starting installation constitutes acceptance of subfloor conditions.
- B. Install in accordance with manufacturer's written instructions.
- C. Where type of floor finish, pattern, or color are different on opposite sides of door, terminate flooring under centerline of door.
- D. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.
- E. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.
- F. Install flooring in recessed floor access covers, maintaining floor pattern.
- G. At movable partitions, install flooring under partitions without interrupting floor pattern.

3.04 INSTALLATION - RESILIENT BASE

- A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches between joints.

- B. Internal corners shall be job-formed. At external corners, use premolded units from same lot as coils. For millwork wallbase, miter all corners.
- C. Install base on solid backing. Bond tightly to wall and floor surfaces.
- D. Scribe and fit to door frames and other interruptions.

3.05 CLEANING

- A. Remove excess adhesive from floor, base, and wall surfaces without damage.
- B. Clean in accordance with manufacturer's written instructions.

3.06 PROTECTION

- A. Prohibit traffic on resilient flooring for 48 hours after installation.

END OF SECTION

This page intentionally left blank

SECTION 09 67 00
FLUID-APPLIED FLOORING
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fluid-applied flooring and base.

1.02 RELATED REQUIREMENTS

- A. Section 09 05 61 - Common Work Results for Flooring Preparation: Concrete slab moisture and alkalinity testing and remediation procedures.

1.03 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns and colors available.
- C. Samples: Submit two samples, 8 by 8 inches in size illustrating color and pattern for each floor material for each color specified.
- D. Concrete Subfloor Test Report: Submit a copy of the moisture and alkalinity (pH) test reports.
- E. Manufacturer's Installation Instructions: Indicate special procedures.
- F. Maintenance Data: Include maintenance procedures, recommended maintenance materials, procedures for stain removal, repairing surface, and suggested schedule for cleaning.
- G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. Extra Top Coat Materials: 2 gallons.

1.04 QUALITY ASSURANCE

- A. Applicator Qualifications: Company specializing in performing the work of this section.
 - 1. Minimum 5 years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Store resin materials in a dry, secure area.
- B. Store materials for three days prior to installation in area of installation to achieve temperature stability.

1.06 FIELD CONDITIONS

- A. Maintain minimum temperature in storage area of 55 degrees F.
- B. Store materials in area of installation for minimum period of 24 hours prior to installation.
- C. Maintain ambient temperature required by manufacturer 72 hours prior to, during, and 24 hours after installation of materials.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Basis of Design: Duraltex by Euclid; www.euclidchemical.com
- B. Fluid-Applied Flooring: Provide Basis-of-Design Product as listed above or comparable product by one of the following:
 - 1. Pre-approved equal.
 - 2. Stonhard Decorative Flake Finish Flooring System.
 - 3. Sherwin-Williams Company: www.protective.sherwin-williams.com/#sle.

2.02 FLUID-APPLIED FLOORING SYSTEMS

- A. Fluid-Applied Flooring ERF-1: 100% Solids Epoxy, with aggregate.
 - 1. Aggregate: as selected by architect.
 - 2. System Thickness: 3/16 inch.

3. Finish/Texture: Anti-Skid Finish.
4. Sheen: As selected by architect.
5. Color: Refer to Finish Schedule.
6. System (Basis-of-Design noted for reference):
 - a. Base: A two-component, integral troweled base and cove consisting of Euclid/Durotex resin and hardener, silica and aggregates as used in the floor, and finely graded silicia aggregate, 4 inches high for base.
 - b. Provide 1 coat of Euclid/Durotex Glaze/Sealcoat with medium anti-skid broadcast into mixture during application.
 - c. System shall comply with the USDA guidelines for use in federally inspected facilities.

2.03 ACCESSORIES

- A. Subfloor Filler: Type recommended by fluid-applied flooring manufacturer.
- B. Primer: Type recommended by fluid-applied flooring manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that subfloor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive flooring.
- B. Verify that subfloor surfaces are dust-free and free of substances that could impair bonding of materials to subfloor surfaces.
- C. Cementitious Subfloor Surfaces: Verify that substrates are ready for fluid-applied flooring installation by testing for moisture and alkalinity (pH).
 1. Test in accordance with Section 09 05 61.
 2. Obtain instructions if test results are not within limits recommended by fluid-applied flooring manufacturer.

3.02 PREPARATION

- A. Remove subfloor ridges and bumps. Fill low spots, cracks, joints, holes, and other defects with subfloor filler.
- B. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Grind irregularities above the surface level. Prohibit traffic until filler is cured.
- C. Vacuum clean substrate.
- D. Apply primer to surfaces required by flooring manufacturer.

3.03 INSTALLATION - FLOORING

- A. Apply in accordance with manufacturer's instructions.
- B. Apply each coat to minimum thickness indicated.
- C. Finish to smooth level surface.

3.04 FIELD QUALITY CONTROL

- A. See Section 01 40 00 - Quality Requirements, for additional requirements.

3.05 PROTECTION

- A. Prohibit traffic on floor finish for 48 hours after installation.
- B. Barricade area to protect flooring until fully cured.

END OF SECTION

SECTION 09 78 00
INTERIOR WALL PANELING
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Stainless Steel wall Panels.
- B. Accessories.

1.02 SUBMITTALS

- A. Product Data: Submit manufacturer's descriptive literature for each specified product. Include anchorage devices specific to project substrate types.
- B. Manufacturer's Instructions: Provide manufacturer's installation instructions.

1.03 QUALITY ASSURANCE

- A. Single source responsibility: Provide all components of the wall protection system manufactured by the same company to ensure compatibility of color, texture and physical properties.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to project site in manufacturer's original packaging, marked with manufacturer's product identification.
- B. Store panels flat, indoors in a climate controlled location, on a clean, dry surface away from direct sunlight.

1.05 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.
- B. Standard Lifetime Warranty against material and manufacturing defects.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Stainless Steel Wall Paneling:
 - 1. InPro Corporation; _____: www.inprocorp.com/#sle.
 - 2. Construction Specialties, Inc; _____: www.c-sgroup.com/#sle.
 - 3. Substitutions: See Section 01 6000 - Product Requirements.

2.02 STAINLESS STEEL WALL PANELING

- A. Type: Provide stainless steel wall panel systems that include panels, top cap, divider trim, inside and outside corner trim.
 - 1. Panel Size: 4 by 8 feet or 4 by 10 feet.
 - 2. Panel Thickness: 18 gauge Stainless Steel - Type 304 (type 304 conforms to NSF Standard 51) with #4 Satin Finish.
- B. Accessories:
 - 1. Stainless Steel Inside and Outside Corner Trim
 - a. 1" x 1", 24 gauge. 120" Height. Receives edge of adjacent panel.
 - 1) Stainless Steel - Type 304 (type 304 conforms to NSF Standard 51)
 - 2) Attachment: Adhesive mount
 - 2. Stainless Steel Top Caps
 - a. 1" sightline, 24 gauge. 120" Length. Receives top edge of panels.
 - 1) Stainless Steel - Type 304 (type 304 conforms to NSF Standard 51)
 - 2) Attachment: Adhesive mount
 - 3. Stainless Steel Divider Trim
 - a. 1" sightline, 24 gauge. 120" Height. Receives edge of adjacent panel.
 - 1) Stainless Steel - Type 304 (type 304 conforms to NSF Standard 51)
 - 2) Attachment: Adhesive mount

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate surfaces for adhered items are clean and smooth, free from dirt, grease, and loose paint.
 - 1. Complete all finishing operations, including painting and installation of FRP paneling, before beginning installation of stainless steel wall paneling.
- B. Start of installation constitutes acceptance of project conditions.

3.02 INSTALLATION

- A. Install the work of this section in strict accordance with the manufacturer's recommendations using only approved hardware and locating all components firmly into position, level and plumb.

3.03 CLEANING

- A. General: Immediately upon completion of installation, clean wall protection products and accessories in accordance with manufacturer's recommended cleaning method.
- B. Remove surplus materials, rubbish and debris resulting from installation as work progresses and upon completion of work.

3.04 PROTECTION

- A. Protect installed materials to prevent damage by other trades. Use materials that may be easily removed without leaving residue or permanent stains.

END OF SECTION

SECTION 09 91 13
EXTERIOR PAINTING
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Field application of paints.
- C. Scope: Finish exterior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:
- D. Do Not Paint or Finish the Following Items:
 - 1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
 - 2. Items indicated to receive other finishes.
 - 3. Items indicated to remain unfinished.
 - 4. Floors, unless specifically indicated.
 - 5. Glass.
 - 6. Concealed pipes, ducts, and conduits.

1.02 RELATED REQUIREMENTS

- A. Section 09 91 23 - Interior Painting.

1.03 REFERENCE STANDARDS

- A. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual Current Edition.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide complete list of products to be used, with the following information for each:
 - 1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
 - 2. MPI product number (e.g. MPI #47).
 - 3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum three years documented experience.
- B. Applicator Qualifications: Company specializing in performing the type of work specified with minimum three years experience and approved by manufacturer.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.07 FIELD CONDITIONS

- A. Do not apply materials when surface and ambient temperatures are outside the paint product manufacturer's temperature ranges.

- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
- C. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Paints:
 - 1. Basis of Design; Sherwin Williams.
 - 2. Dow Chemical Company: consumer.dow.com/en-us/industry/ind-building-construction.html/#sle.
 - 3. PPG Paints: www.ppgpaints.com/#sle.
 - 4. Sherwin-Williams Company: www.sherwin-williams.com/#sle.
- B. Primer Sealers: Same manufacturer as top coats.

2.02 PAINTS AND FINISHES - GENERAL

- A. Paints and Finishes: Ready-mixed, unless required to be a field-catalyzed paint.
 - 1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
 - 2. Supply each paint material in quantity required to complete entire project's work from a single production run.
 - 3. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is described explicitly in manufacturer's product instructions.
- B. Flammability: Comply with applicable code for surface burning characteristics.
- C. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by CPL Architects from the manufacturer's full line.
- D. Colors: As indicated in Color Schedule.

2.03 PAINT SYSTEMS - EXTERIOR

- A. Paint E-OP - Exterior Surfaces to be Painted, Unless Otherwise Indicated: Including concrete and primed metal.
 - 1. Top Coats: Shop primed (doors and frames, concrete fiber board)
 - a. Waterbased Alkyd Urethane Semi-Gloss

2.04 PRIMERS / FILLERS

- A. Block Filler: Provide the following unless other primer/block filler is required or recommended by manufacturer of top coats.
 - 1. Sherwin-Williams; Prep-Rite Interior/Exterior Latex Block Filler; B25W25 - Basis of Design.

2.05 ACCESSORY MATERIALS

- A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.
- B. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.
- C. Test shop-applied primer for compatibility with subsequent cover materials.

- D. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are within limits of manufacturer's install requirements.

3.02 PREPARATION

- A. Clean surfaces thoroughly and correct defects prior to application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces for finishing.
- D. Seal surfaces that might cause bleed through or staining of topcoat.
- E. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

3.03 APPLICATION

- A. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".
- B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- C. Apply each coat to uniform appearance.
- D. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- E. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 FIELD QUALITY CONTROL

- A. See Section 01 40 00 - Quality Requirements, for general requirements for field inspection.

3.05 CLEANING

- A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.06 PROTECTION

- A. Protect finishes until completion of project.
- B. Touch-up damaged finishes after Substantial Completion.

END OF SECTION

This page intentionally left blank

SECTION 09 91 23
INTERIOR PAINTING
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Field application of paints.
- C. Scope: Finish interior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.
 - 1. Both sides and edges of plywood backboards for electrical and telecom equipment before installing equipment.
 - 2. Prime surfaces to receive wall coverings.
 - 3. Mechanical and Electrical:
 - a. In finished areas, paint insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, mechanical equipment, and electrical equipment, unless otherwise indicated.
- D. Do Not Paint or Finish the Following Items:
 - 1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
 - 2. Items indicated to receive other finishes.
 - 3. Items indicated to remain unfinished.
 - 4. Fire rating labels, equipment serial number and capacity labels, bar code labels, and operating parts of equipment.
 - 5. Floors, unless specifically indicated.
 - 6. Glass.
 - 7. Concealed pipes, ducts, and conduits.

1.02 RELATED REQUIREMENTS

- A. Section 09 91 13 - Exterior Painting.

1.03 REFERENCE STANDARDS

- A. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Based Materials 2020.
- B. MPI (APL) - Master Painters Institute Approved Products List; Master Painters and Decorators Association Current Edition.
- C. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual Current Edition.
- D. SSPC-SP 1 - Solvent Cleaning 2015, with Editorial Revision (2016).
- E. SSPC-SP 6 - Commercial Blast Cleaning 2007.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide complete list of products to be used, with the following information for each:
 - 1. Cross-reference to specified paint system(s) product is to be used in; include description of each system.
- C. Samples: Submit two paper "draw down" samples, 8-1/2 by 11 inches in size, illustrating range of colors available for each finishing product specified.
 - 1. Where sheen is specified, submit samples in only that sheen.
- D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 60 00 - Product Requirements, for additional provisions.

2. Extra Paint and Finish Materials: 1 gallon of each color; from the same product run, store where directed.
3. Label each container with color in addition to the manufacturer's label.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.06 FIELD CONDITIONS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
- C. Do not apply materials when relative humidity exceeds 85 percent; at temperatures less than 5 degrees F above the dew point; or to damp or wet surfaces.
- D. Minimum Application Temperatures for Paints: 50 degrees F for interiors unless required otherwise by manufacturer's instructions.
- E. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Provide paints and finishes used in any individual system from the same manufacturer; no exceptions.
- B. Paints: Provide Basis-of-Design Product as listed in Finish Schedule or comparable product by one of the following:
 1. Diamond Vogel Paints: www.diamondvogel.com/#sle.
 2. PPG Paints.
 3. Sherwin-Williams Company: www.sherwin-williams.com/#sle.
- C. Primer Sealers: Same manufacturer as top coats.

2.02 PAINTS AND FINISHES - GENERAL

- A. Paints and Finishes: Ready mixed, unless intended to be a field-catalyzed paint.
 1. Where MPI paint numbers are specified, provide products listed in Master Painters Institute Approved Product List, current edition available at www.paintinfo.com, for specified MPI categories, except as otherwise indicated.
 2. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
 3. Supply each paint material in quantity required to complete entire project's work from a single production run.
 4. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.
- B. Flammability: Comply with applicable code for surface burning characteristics.
- C. Colors: Refer to Finish Schedule.

2.03 PAINT SYSTEMS - INTERIOR

- A. Interior Surfaces to be Painted, Unless Otherwise Indicated: Including gypsum board, concrete, concrete masonry units, brick, wood, plaster, uncoated steel, shop primed steel, galvanized steel, aluminum, and acoustical ceilings.
 - 1. Two top coats and one coat primer.
 - 2. Top Coat(s): Interior Latex; MPI #43, 44, 52, 53, 54, or 114.
 - a. Basis-of-Design Products:
 - 1) Sherwin-Williams Pro Industrial Waterbased Catalyzed Epoxy Semigloss.

2.04 PRIMERS / FILLERS

- A. Block Filler:
 - 1. Sherwin-Williams; Prep-Rite Interior/Exterior Latex Block Filler, B25W25 - Basis of Design.
- B. Other Approved Fillers:
 - 1. Provided by top coat manufacturer.

2.05 ACCESSORY MATERIALS

- A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.
- B. Patching Material: Latex filler.
- C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.
- C. If substrate preparation is the responsibility of another installer, notify CPL Architects of unsatisfactory preparation before proceeding.
- D. Test shop-applied primer for compatibility with subsequent cover materials.
- E. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
 - 1. Masonry, Concrete, and Concrete Masonry Units: 12 percent.
 - 2. Interior Wood: 15 percent, measured in accordance with ASTM D4442.

3.02 PREPARATION

- A. Clean surfaces thoroughly and correct defects prior to application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
- D. Seal surfaces that might cause bleed through or staining of topcoat.
- E. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.
- F. Aluminum: Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.
- G. Galvanized Surfaces:
- H. Ferrous Metal:
 - 1. Solvent clean according to SSPC-SP 1.
 - 2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.

3. Remove rust, loose mill scale, and other foreign substances using using methods recommended in writing by paint manufacturer and blast cleaning according to SSPC-SP 6 "Commercial Blast Cleaning". Protect from corrosion until coated.
- I. Wood Surfaces to Receive Opaque Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats. Back prime concealed surfaces before installation.

3.03 APPLICATION

- A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
- B. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".
- C. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- D. Apply each coat to uniform appearance in thicknesses specified by manufacturer.
- E. Sand wood and metal surfaces lightly between coats to achieve required finish.
- F. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- G. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 CLEANING

- A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.05 PROTECTION

- A. Protect finishes until completion of project.
- B. Touch-up damaged finishes after Substantial Completion.

END OF SECTION

SECTION 10 14 00
SIGNAGE
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Room and door signs.

1.02 REFERENCE STANDARDS

- A. 36 CFR 1191 - Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines current edition.
- B. ADA Standards - 2010 ADA Standards for Accessible Design 2010.
- C. ICC A117.1 - Accessible and Usable Buildings and Facilities 2017.

1.03 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's printed product literature for each type of sign, indicating sign styles, font, foreground and background colors, locations, overall dimensions of each sign.
- C. Samples: Submit two samples of each type of sign, of size similar to that required for project, illustrating sign style, font, and method of attachment.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Package signs as required to prevent damage before installation.
- B. Package room and door signs in sequential order of installation, labeled by floor or building.
- C. Store tape adhesive at normal room temperature.

1.06 FIELD CONDITIONS

- A. Do not install tape adhesive when ambient temperature is lower than recommended by manufacturer.
- B. Maintain this minimum temperature during and after installation of signs.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Flat Signs:
 - 1. Best Sign Systems, Inc: www.bestsigns.com/#sle.
 - 2. Cosco Industries (ADA signs): www.coscoarchitecturalsigns.com/#sle.
 - 3. Inpro: www.inprocorp.com/#sle.
 - 4. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 SIGNAGE APPLICATIONS

- A. Accessibility Compliance: Signs are required to comply with ADA Standards and ICC A117.1 2019, unless otherwise indicated; in the event of conflicting requirements, comply with the most comprehensive and specific requirements.
- B. Room and Door Signs: Provide a sign for every doorway, as located on Construction drawings'
 - 1. Sign Type: Flat signs with engraved panel media as specified.
 - 2. Provide "tactile" signage, with letters raised minimum 1/32 inch and Grade II braille.
 - 3. Character Height: See Construction Drawings
 - 4. Sign Height: See Construction Drawings.
 - 5. Service Rooms: Identify with room names and numbers to be determined later, not those indicated on drawings.

6. Rest Rooms: Identify with pictograms, the names "MEN" and "WOMEN", room numbers to be determined later, and braille.

2.03 SIGN TYPES

1. Wall Mounting of One-Sided Signs: mounting appropriate to substrate.

2.04 TACTILE SIGNAGE MEDIA

- A. Injection Molded Panels: One-piece acrylic plastic, with raised letters and braille.
 1. Total Thickness: 1/8 inch.

2.05 ACCESSORIES

- A. Tape Adhesive: Double sided tape, permanent adhesive.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate surfaces are ready to receive work.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install neatly, with horizontal edges level.
- C. Protect from damage until Date of Substantial Completion; repair or replace damaged items.

END OF SECTION

SECTION 10 21 13.17
PHENOLIC TOILET COMPARTMENTS
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Phenolic toilet compartments.
- B. Urinal screens.

1.02 RELATED REQUIREMENTS

- A. Section 06 10 00 - Rough Carpentry: Blocking and supports.
- B. Section 10 28 00 - Toilet, Bath, and Laundry Accessories.

1.03 REFERENCE STANDARDS

- A. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar 2023.
- B. NFPA 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth 2019.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on panel construction, hardware, and accessories.
- C. Shop Drawings: Indicate partition plan, elevation views, dimensions, details of wall supports, door swings.
- D. Samples: Submit two samples of partition panels, 12 by 12 inch in size illustrating panel finish, color, and sheen.
- E. Manufacturer's Installation Instructions: Indicate special procedures.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Solid Phenolic Toilet Compartments:
 - 1. Ampco Products, Inc.; www.ampco.com
 - 2. Bobrick Washroom Equipment, Inc.
 - 3. Bradley Corporation; www.bradleycorp.com
 - 4. Partition Systems Inc.: www.partitionsystems.com
 - 5. Substitutions: Section 01 60 00 - Product Requirements.

2.02 COMPARTMENTS AND SCREENS

- A. Toilet Compartments: Solid phenolic.
 - 1. Floor Anchored (Floor-Mounted) Overhead Braced.
- B. Urinal Screens: Solid phenolic, Floor-Mounted.

2.03 SOLID PHENOLIC MATERIALS

- A. Panels: Solid phenolic core material, compression molded, single piece construction with integral melamine surface and uniformly machined edges; no two-piece construction.
 - 1. Color: As selected by the Architect from manufacturer's standard colors.
 - 2. Panel Size: Nominal 1/2 inch thick by 58 inches high, of required depth.
- B. Doors: Same design and construction as specified for panels; nominal 3/4 inch thick by 58 inches high.
- C. Pilasters: Same design and construction as specified for panels and doors; nominal 3/4 inch thick.
- D. Urinal Screens: Same design and construction as specified for panels; nominal 1/2 inch thick.
 - 1. Height: 48 inches.

2. Depth: 18 inches.
- E. Panel Anchors: Type 304 stainless steel, brush finish.
 1. Panels to Pilasters: Continuous U-bracket (panel height).
 2. Panels to Wall: Continuous double ear bracket (panel height).
 3. Pilasters to Wall: Continuous single ear bracket (panel height).
- F. Floor Anchored: 70 inch high pilasters.
 1. Pilasters anchored to 3/8 inch by 3/4 inch wide by full length stainless steel bar, with two 5/16 inch bolts into cross dowels and to floor with two 3/8 inch threaded rods with nuts and lock washers and lead double expansion shields.
 2. Conceal anchors with 4 inch high one-piece 20 gage Type 304 stainless steel shoes.
- G. Urinal Screen Anchors:
 1. To Wall: One full length double ear bracket, fastened with 8 wall fasteners.

2.04 HARDWARE

- A. Hardware: Provide all hardware and fasteners for a complete installation.
- B. Door Hinges: Surface-mounted continuous piano hinge, made of 14 gage Type 304 stainless steel.
 1. Guide Pin: 1/4 inch stainless steel.
 2. Fasteners: Six one-way head stainless steel machine screws per leaf on both door and pilaster, into threaded brass inserts or thru-bolted; inserts independent laboratory-tested to pull-out of 5,000 lb.
 3. Gravity Cam: On out-swing doors return door to closed; on in-swing doors return to 20 degrees open.
- C. Strike-Keeper and Throw Latch: 16 gage formed Type 304 stainless steel strike-keeper with rubber stop and cast stainless steel slide bar and knob that does not require gripping or turning, brushed finish.
- D. Coat Hook and Wall Bumper: Heavy chrome-plated Zamac fastened with 5/8 inch stainless steel tamper-proof screws.
- E. Head Rails: Hollow anodized aluminum, 1 inch by 1-1/2 inch size, with anti-grip profile and cast socket wall brackets.
- F. Fasteners:
 1. Tamper-Proof.
 2. Floor and wall fasteners: No. 14 by 1-3/4 inch tamper-proof screws with conical plastic anchors.
 3. All other fasteners: 5/8 inch stainless steel tamper-proof screws or chrome plated brass tamper-proof brass thru-bolts.

2.05 ACCESSORIES

- A. Pilaster Shoes: Formed ASTM A666 Type 304 stainless steel with No. 4 finish, 3 inch high, concealing floor fastenings.
 1. Provide adjustment for floor variations with screw jack through steel saddles integral with pilaster.
- B. Head Rails: Hollow anodized aluminum, 1 inch by 1-1/2 inch size, with anti-grip profile and cast socket wall brackets.
- C. Wall and Pilaster Brackets: Satin stainless steel; manufacturer's standard type for conditions indicated on drawings.
- D. Attachments, Screws, and Bolts: Stainless steel, tamper proof type.
- E. Hardware: Polished stainless steel:
 1. Pivot hinges, gravity type, adjustable for door close positioning; two per door.
 2. Door Latch: Slide type with exterior emergency access feature.

3. Door strike and keeper with rubber bumper; mounted on pilaster in alignment with door latch.
4. Coat hook with rubber bumper; one per compartment, mounted on door.
5. Provide door pull for outswinging doors.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify correct spacing of and between plumbing fixtures.
- C. Verify correct location of built-in framing, anchorage, and bracing.

3.02 INSTALLATION

- A. Install partitions secure, rigid, plumb, and level in accordance with manufacturer's instructions.
- B. Maintain 3/8 inch to 1/2 inch space between wall and panels and between wall and end pilasters.
- C. Attach panel brackets securely to walls using anchor devices.
- D. Attach panels and pilasters to brackets. Locate head rail joints at pilaster center lines.

3.03 TOLERANCES

- A. Maximum Variation From True Position: 1/4 inch.
- B. Maximum Variation From Plumb: 1/8 inch.

3.04 ADJUSTING

- A. Adjust and align hardware to uniform clearance at vertical edge of doors, not exceeding 3/16 inch.
- B. Adjust hinges to position doors in partial opening position when unlatched. Return out-swinging doors to closed position.
- C. Adjust adjacent components for consistency of line or plane.
- D. Remove protective plastic coating.

END OF SECTION

This page intentionally left blank

SECTION 10 28 00
TOILET ACCESSORIES
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Commercial toilet accessories.
- B. Under-lavatory pipe supply covers.
- C. Diaper changing stations.
- D. Utility room accessories.

1.02 RELATED REQUIREMENTS

- A. Section 10 21 13.17 - Solid Phenolic Toilet Compartments.
- B. Section 22 40 00 - Plumbing Fixtures: Under-lavatory pipe and supply covers.

1.03 REFERENCE STANDARDS

- A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design 2010.
- B. ASME A112.18.9 - Protectors/Insulators for Exposed Waste and Supplies on Accessible Fixtures 2011 (Reaffirmed 2017).
- C. ASTM A269/A269M - Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service 2015a (Reapproved 2019).
- D. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2020.
- E. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar 2015.
- F. ASTM C1036 - Standard Specification for Flat Glass 2016.
- G. ASTM C1503 - Standard Specification for Silvered Flat Glass Mirror 2018.
- H. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021.
- I. ASTM F2285 - Standard Consumer Safety Performance Specification for Diaper Changing Tables for Commercial Use 2004, with Editorial Revision (2016).

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate the work with the placement of internal wall reinforcement, concealed ceiling supports, and reinforcement of toilet partitions to receive anchor attachments.

1.05 SUBMITTALS

- A. Product Data: Submit data on accessories describing size, finish, details of function, and attachment methods.
- B. Manufacturer's Installation Instructions: Indicate special procedures and conditions requiring special attention.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Commercial Toilet Accessories: All items of each type to be manufactured by same manufacturer.
 - 1. See Toilet Accessory Schedule on construction drawings.
- B. Under-Lavatory Pipe Supply Covers:
 - 1. Grainger Co.; www.grainger.com
 - 2. Plumberex Specialty Products, Inc; _____: www.plumberex.com/#sle.
 - 3. Substitutions: Section 01 60 00 - Product Requirements.

2.02 MATERIALS

- A. Accessories - General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.
 - 1. Grind welded joints smooth.
 - 2. Fabricate units made of metal sheet of seamless sheets with flat surfaces.
- B. Stainless Steel Sheet: ASTM A666, Type 304.
- C. Stainless Steel Tubing: ASTM A269/A269M, Grade TP304 or TP316.
- D. Galvanized Sheet Steel: Hot-dipped galvanized steel sheet, ASTM A653/A653M, with G90/Z275 coating.
- E. Mirror Glass: Annealed float glass, ASTM C1036 Type I, Class 1, Quality Q2, with silvering, protective and physical characteristics complying with ASTM C1503.
- F. Fasteners, Screws, and Bolts: Hot dip galvanized; tamper-proof; security type.

2.03 FINISHES

- A. Stainless Steel: No. 4 brushed finish unless otherwise noted.

2.04 COMMERCIAL TOILET ACCESSORIES

- A. See construction documents for accessory type and placement.
- B. Toilet Paper Dispenser: Double roll, surface mounted, for coreless type rolls.
- C. Paper Towel Dispenser: Folded paper type, stainless steel, surface-mounted, with viewing slots on sides as refill indicator and tumbler lock.
 - 1. Capacity: 300 C-fold minimum.
- D. Waste Receptacle: Stainless steel, freestanding style ____.
- E. Automated Soap Dispenser: Liquid soap dispenser, wall-mounted, with stainless steel cover and window to gauge soap level, tumbler lock.
- F. Mirrors: Stainless steel framed, 1/4 inch thick annealed float glass; ASTM C1036.
- G. Grab Bars: Stainless steel, smooth surface.
 - 1. Standard Duty Grab Bars:
 - a. Push/Pull Point Load: 250 pound-force, minimum.
 - b. Dimensions: 1-1/4 inch outside diameter, minimum 0.05 inch wall thickness, exposed flange mounting, 1-1/2 inch clearance between wall and inside of grab bar.
 - c. Length and Configuration: As indicated on drawings.
 - 2. Heavy Duty Grab Bars: Floor supports are acceptable if necessary to achieve load rating.
 - a. Push/Pull Point Load: Minimum 1000 pound-force, minimum.
 - b. Dimensions: 1-1/2 inch outside diameter, minimum 0.125 inch wall thickness, exposed flange mounting, 1-1/2 inch clearance between wall and inside of grab bar.
 - c. Length and Configuration: As indicated on drawings.
- H. Sanitary Napkin Disposal Unit: Stainless steel, surface-mounted, self-closing door, locking bottom panel with full-length stainless steel piano-type hinge, removable receptacle.

2.05 UNDER-LAVATORY PIPE AND SUPPLY COVERS

- A. Specified in 22 40 00 - Plumbing Fixtures.

2.06 DIAPER CHANGING STATIONS

- A. Diaper Changing Station: Wall-mounted folding diaper changing station for use in commercial toilet facilities, meeting or exceeding ASTM F2285.
 - 1. Material: Polyethylene.
 - 2. Mounting: Surface.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify exact location of accessories for installation.

3.02 PREPARATION

- A. Deliver inserts and rough-in frames to site for timely installation.
- B. Provide templates and rough-in measurements as required.

3.03 INSTALLATION

- A. Install accessories in accordance with manufacturers' instructions in locations indicated on drawings.
- B. Install plumb and level, securely and rigidly anchored to substrate.
- C. Mounting Heights: As required by accessibility regulations, unless otherwise indicated.

3.04 PROTECTION

- A. Protect installed accessories from damage due to subsequent construction operations.

END OF SECTION

This page intentionally left blank

SECTION 10 44 00
FIRE PROTECTION SPECIALTIES
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fire extinguishers.
- B. Fire extinguisher cabinets.
- C. Accessories.

1.02 RELATED REQUIREMENTS

- A. Section 06 10 00 - Rough Carpentry: Wood blocking product and execution requirements.
- B. Section 09 91 23 - Interior Painting: Field paint finish.

1.03 REFERENCE STANDARDS

- A. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems 2023a.
- B. NFPA 10 - Standard for Portable Fire Extinguishers 2022.

1.04 SUBMITTALS

- A. Product Data: Provide extinguisher operational features.
- B. Shop Drawings: Indicate locations of cabinets and cabinet physical dimensions.
- C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- D. Maintenance Data: Include test, refill or recharge schedules and re-certification requirements.

1.05 FIELD CONDITIONS

- A. Do not install extinguishers when ambient temperature may cause freezing of extinguisher ingredients.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Fire Extinguishers:
 - 1. Ansul, a Tyco Business: www.ansul.com/#sle.
 - 2. Kidde, a unit of United Technologies Corp: www.kidde.com/#sle.
 - 3. Potter-Roemer: www.potterroemer.com/#sle.
 - 4. Substitutions: See Section 01 60 00 - Product Requirements.
- B. Fire Extinguisher Cabinets and Accessories:
 - 1. Kidde, a unit of United Technologies Corp : www.kidde.com/#sle.
 - 2. Larsen's Manufacturing Co: www.larsensmfg.com/#sle.
 - 3. Potter-Roemer: www.potterroemer.com/#sle.
 - 4. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 FIRE EXTINGUISHERS

- A. Fire Extinguishers - General: Comply with product requirements of NFPA 10 and applicable codes, whichever is more stringent.
 - 1. Provide extinguishers labeled by UL (DIR) or FM (AG) for purpose specified and as indicated.
- B. Multipurpose Dry Chemical Type Fire Extinguishers: Carbon steel tank, with pressure gauge.
 - 1. Class: A:B:C type.
 - 2. Size: 5 pound.
 - 3. Finish: Baked polyester powder coat, color as selected.
 - 4. Temperature range: Minus 40 degrees F to 120 degrees F.

2.03 COMMON AREA FIRE EXTINGUISHER CABINETS

- A. Fire Rating: Listed and labeled in accordance with ASTM E814 requirements for fire resistance rating of walls where being installed.
- B. Fire Rated Cabinet Construction: One-hour fire rated.
 - 1. Steel; double wall or outer and inner boxes with 5/8 inch thick fire barrier material.
- C. Cabinet Configuration: Semi-recessed type: Model 2409-6R manufactured by Larsem (Basis of design).
 - 1. Size to accommodate accessories.
 - 2. Projected Trim: Returned to wall surface, with 2 1/2 inch projection, and 1 1/2 inch wide face.
- D. Door: 0.036 inch metal thickness, reinforced for flatness and rigidity with nylon catch. Hinge doors for 180 degree opening with continuous piano hinge.
- E. Door Glazing: Float glass, clear, 1/8 inch thick, and set in resilient channel glazing gasket.
- F. Fabrication: Weld, fill, and grind components smooth.
- G. Finish of Cabinet Exterior Trim and Door: Baked enamel, color as selected.
- H. Finish of Cabinet Interior: Baked enamel, color as selected, match exterior finish.

2.04 ACCESSORIES

- A. Lettering: FIRE EXTINGUISHER decal, or vinyl self-adhering, pre-spaced black lettering in accordance with authorities having jurisdiction (AHJ).

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify rough openings for cabinet are correctly sized and located.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install cabinets plumb and level in wall openings, see construction documents for placement above finish floor.
- C. Identify cabinet extinguishers with the words "FIRE EXTINGUISHER" in red letter decals applied as required.
- D. Secure rigidly in place.
- E. Place extinguishers on wall brackets.
- F. Verify that the extinguisher operating instructions face outward.

END OF SECTION

SECTION 11 68 33.43
TRACK & FIELD EQUIPMENT
PART 1 GENERAL

1.01 SUMMARY

- A. This section covers all labor and materials required to install a first-class track & field equipment.
- B. The SSC is responsible for the purchase & installation of all track & field equipment. The SSC is responsible for installation of synthetic surface in, around and on top of the specified equipment.

1.02 CODES AND STANDARDS

- A. Codes and standards follow the current guidelines set forth by the World Athletics, the National Collegiate Athletic Association and National Federation of State High School Associations. Where discrepancies are noted between these various governing bodies, the rules of the NFHS shall be enforced.

1.03 ABBREVIATIONS

- A. WA = World Athletics (formerly IAAF)
- B. IAAF = International Association of Athletics Federations
- C. NCAA = National Collegiate Athletic Association
- D. NFHS = National Federation of State High School Associations
- E. T&F = Track & Field
- F. SS = Synthetic Surface
- G. SSC = Synthetic Surfacing Contractor
- H. GC = General Contractor
- I. TBD = To Be Determined

1.04 RELATED WORK

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section. The following Sections are specifically related to this Section:
 - 1. 116833.43 Track and Field Equipment
 - 2. 321823.39 Track and Field Quality Control
 - 3. 321823.40 Track & Field Synthetic Surface
 - 4. 321823.41 Track and Field Line Markings
 - 5. 321823.42 Track and Field Event Materials

1.05 SUBMITTALS

- A. The following information must be submitted by the GC prior to installation.
 - 1. Standard printed specifications and diagrams or drawings depicting installation directions and dimensions for all in-ground sports equipment.
 - 2. Installation process and requirements for subbase (concrete or stone and asphalt) and any conditions that may limit the installation or affect quality of installation.
 - 3. Material safety data sheets on all products, as necessary.

1.06 QUALITY ASSURANCE

- A. The GC shall only accept bids from those vendors or manufacturers that have been pre-approved or identified as approved equal.

PART 2 PRODUCTS

2.01 SPORTS EQUIPMENT

- A. The following vendors/manufacturers are approved for bidding:
 - 1. Sportsfield Specialties:
 - a. Brian Jaeger at Cell 607-267-3621 or bjaeger@SportsfieldSpecialties.com
 - 2. UCS:
 - a. Kyle Wolfe at Cell 518-573-4007 or kylew@ucsspirit.com
 - 3. Gill Athletics:
 - a. Ryver Morrow at cell 706-362-4015 or rmorrow@gillathletics.com
- B. Basis of Design: the manufacturer's product number listed in this specification establishes the minimum quality for each product. All items must come from the same manufacturer or vendor, mix & match is not allowed.
- C. T&F Inground Equipment:
 - 1. Sportsfield Specialties products are the basis of design.
 - 2. One cast aluminum, white, pole vault box, Model # PVBCA.
 - 3. One shot put toe board for flat concrete pad, Model # V364.
 - 4. One aluminum shot put circle, L shape attached to flat concrete pad, Model V 372.
 - 5. One aluminum discus circle, L shape attached to flat concrete pad, Model # V370.
 - 6. One discus cage with sleeves, Model # DCHS8.
- D. Communication & Power Junction Boxes:
 - 1. Two aluminum ComBoxes, Model CBTS1830.
- E. Ball Stopping System – not included in this project.
- F. T&F Loose Equipment – not included in the project.

PART 3 EXECUTION

3.01 INSTALLATION REQUIREMENTS

- A. The installation of the in-ground sports equipment shall follow the directions/instructions of the manufacturer and/or vendor. Shop drawings must be submitted and approved prior to ordering and installation of equipment.
- B. Standard concrete with a minimum of 3000psi or as per the vendor's recommendation.

END OF SECTION

SECTION 12 36 00
COUNTERTOPS
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Countertops for architectural cabinet work.
- B. Stainless Steel Countertops

1.02 RELATED REQUIREMENTS

- A. Section 06 41 00 - Architectural Wood Casework.

1.03 REFERENCE STANDARDS

- A. ANSI A208.2 - Medium Density Fiberboard (MDF) for Interior Applications 2022.
- B. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar 2023.
- C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2023b.
- D. ISFA 2-01 - Classification and Standards for Solid Surfacing Material 2013.
- E. NEMA LD 3 - High-Pressure Decorative Laminates 2005.
- F. PS 1 - Structural Plywood 2019.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Specimen warranty.
- C. Shop Drawings: Complete details of materials and installation ; combine with shop drawings of cabinets and casework specified in other sections.
- D. Verification Samples: For each finish product specified, minimum size 6 inches square, representing actual product, color, and patterns.
- E. Test Reports: Chemical resistance testing, showing compliance with specified requirements.
- F. Installation Instructions: Manufacturer's installation instructions and recommendations.
- G. Maintenance Data: Manufacturer's instructions and recommendations for maintenance and repair of countertop surfaces.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing work of the type specified in this section, with not less than three years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.07 FIELD CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

PART 2 PRODUCTS

2.01 COUNTERTOPS

- A. Solid Surfacing Countertops: Solid surfacing sheet or plastic resin casting over continuous substrate.
 - 1. Flat Sheet Thickness: 1/2 inch, minimum.
 - 2. Solid Surfacing Sheet and Plastic Resin Castings: Complying with ISFA 2-01 and NEMA LD 3; acrylic or polyester resin, mineral filler, and pigments; homogenous, non-porous and capable of being worked and repaired using standard woodworking tools; no surface coating; color and pattern consistent throughout thickness.
 - a. Manufacturers: Provide Basis-of-Design Products as listed in Finish Schedule or comparable product by one of the following:
 - 1) Formica Corporation.
 - 2) Wilsonart.
 - 3) Substitutions: See Section 01 60 00 - Product Requirements.
 - b. Surface Burning Characteristics: Flame spread index of 25, maximum; smoke developed index of 450, maximum; when tested in accordance with ASTM E84.
 - c. NSF approved for food contact.
 - d. Finish on Exposed Surfaces: Matte, gloss rating of 5 to 20.
 - e. Color and Pattern: As indicated on drawings.
 - 3. Other Components Thickness: 1/2 inch, minimum.
 - 4. Back and End Splashes: Same sheet material, square top; minimum 4 inches high.
- B. Stainless Steel Countertops: May be integrated into service window sill. Type 304, stainless steel sheet; 16 gauge, 0.0625 inch nominal sheet thickness.
 - 1. Provide front and end overhang of 1 inch over the base cabinets.
 - 2. Finish: 4B satin brushed finish.
 - 3. Joints: Fabricate countertops without field-made joints.
 - 4. Weld shop-made joints.
 - 5. Sound deaden the undersurface with heavy-build mastic coating.
 - 6. Exposed Edge Shape: Bullnose with return; 5/8 inch radius, return to face of case 1/2 inch..

2.02 MATERIALS

- A. Plywood for Supporting Substrate: PS 1 Exterior Grade, A-C veneer grade, minimum 5-ply; minimum 3/4 inch thick; join lengths using metal splines.
- B. Medium Density Fiberboard for Supporting Substrate: ANSI A208.2.
- C. Adhesives: Chemical resistant waterproof adhesive as recommended by manufacturer of materials being joined.

2.03 FABRICATION

- A. Fabricate tops and splashes in the largest sections practicable, with top surface of joints flush.
 - 1. Join lengths of tops using best method recommended by manufacturer.
 - 2. Fabricate to overhang fronts and ends of cabinets 1 inch except where top butts against cabinet or wall.
 - 3. Prepare all cutouts accurately to size; replace tops having improperly dimensioned or unnecessary cutouts or fixture holes.
- B. Provide back/end splash wherever counter edge abuts vertical surface unless otherwise indicated.
 - 1. Secure to countertop with concealed fasteners and with contact surfaces set in waterproof glue.
 - 2. Height: 4 inches, unless otherwise indicated.
- C. Solid Surfacing: Fabricate tops and wall panels up to 144 inches long in one piece; join pieces with adhesive sealant in accordance with manufacturer's recommendations and instructions.

- D. Stainless Steel: Fabricate tops up to 144 inches long in one piece including nosings and back and end splashes; accurately fitted mechanical field joints in lengths over that dimension are permitted.
 - 1. Weld joints; grind smooth and polish to match.
 - 2. Provide stainless steel hat channel stiffeners, welded or soldered to underside, where indicated on drawings.
 - 3. Provide wall clips for support of back/end splash turndowns.
 - 4. Sound Deadening: Apply water resistant, fire resistant sound deadening mastic to entire bottom surface.
- E. Finish:

2.04 ACCESSORIES:

- A. Grommets:
 - 1. Mockett, 2" diameter- color by architect from manufacturer standard range of colors.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify CPL Architects of unsatisfactory preparation before proceeding.
- C. Verify that wall surfaces have been finished and mechanical and electrical services and outlets are installed in proper locations.

3.02 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.03 INSTALLATION

- A. Securely attach countertops to cabinets using concealed fasteners. Make flat surfaces level; shim where required.
- B. Attach stainless steel countertops using stainless steel fasteners and clips.
- C. Seal joint between back/end splashes and vertical surfaces.

3.04 TOLERANCES

- A. Variation From Horizontal: 1/8 inch in 10 feet, maximum.
- B. Offset From Wall, Countertops: 1/8 inch maximum; 1/16 inch minimum.
- C. Field Joints: 1/8 inch wide, maximum.

3.05 CLEANING

- A. Clean countertops surfaces thoroughly.

3.06 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

END OF SECTION

This page intentionally left blank

SECTION 22 05 00
COMMON WORK RESULTS FOR PLUMBING
PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

- A. This Section includes the following:
 1. Piping materials and installation instructions common to most piping systems.
 2. Transition fittings.
 3. Dielectric fittings.
 4. Painting and finishing.
 5. Concrete bases.
 6. Supports and anchorages.

1.03 DEFINITIONS

- A. Concealed, Interior Installations: Concealed from view and protected from physical contact by building occupants. Examples include above ceilings and in chases.

1.04 SUBMITTALS

- A. Product Data: For the following:
 1. Transition fittings.
 2. Dielectric fittings.

1.05 QUALITY ASSURANCE

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver pipes and tubes with factory-applied end caps. Maintain end caps through shipping, storage, and handling to prevent pipe end damage and to prevent entrance of dirt, debris, and moisture.

1.07 COORDINATION

- A. Arrange for pipe spaces, chases, slots, and openings in building structure during progress of construction, to allow for plumbing installations.
- B. Coordinate installation of required supporting devices and set sleeves in poured-in-place concrete and other structural components as they are constructed.

PART 1 PRODUCTS

2.01 MANUFACTURERS

2.02 PIPE, TUBE, AND FITTINGS (SEE PLANS FOR PIPING MATERIAL REQUIREMENTS.)

- A. Refer to individual Division 22 piping Sections for pipe, tube, and fitting materials and joining methods.
- B. Pipe Threads: ASME B1.20.1 for factory-threaded pipe and pipe fittings.

2.03 JOINING MATERIALS

- A. Refer to individual Division 22 piping Sections for special joining materials not listed below.
- B. Solder Filler Metals: ASTM B 32, lead-free alloys. Include water-flushable flux according to ASTM B 813.

2.04 DIELECTRIC FITTINGS

- A. Description: Combination fitting of copper alloy and ferrous materials with threaded, solder-joint, plain, or weld-neck end connections that match piping system materials.
- B. Insulating Material: Suitable for system fluid, pressure, and temperature.

- C. Dielectric Unions: Factory-fabricated, union assembly, for 250-psig (1725-kPa) minimum working pressure at 180 deg F (82 deg C).
 - 1. Manufacturers:
 - a. Capitol Manufacturing Co.
 - b. Central Plastics Company.
 - c. Eclipse, Inc.
 - d. Epco Sales, Inc.
 - e. Hart Industries, International, Inc.
 - f. Watts Industries, Inc.; Water Products Div.
 - g. Zurn Industries, Inc.; Wilkins Div.

2.05 GROUT

- A. Description: ASTM C 1107, Grade B, nonshrink and nonmetallic, dry hydraulic-cement grout.
 - 1. Characteristics: Post-hardening, volume-adjusting, nonstaining, noncorrosive, nongaseous, and recommended for interior and exterior applications.
 - 2. Design Mix: 5000-psi (34.5-MPa), 28-day compressive strength.
 - 3. Packaging: Premixed and factory packaged.

PART 1 EXECUTION

3.01 PIPING SYSTEMS - COMMON REQUIREMENTS

- A. Install piping according to the following requirements and Division 22 Sections specifying piping systems.
- B. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems. Indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations. Install piping as indicated unless deviations to layout are approved on Coordination Drawings.
- C. Install piping in concealed locations, unless otherwise indicated and except in equipment rooms and service areas.
- D. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.
- E. Install piping to permit valve servicing.
- F. Install piping at indicated slopes.
- G. Install piping free of sags and bends.
- H. Install fittings for changes in direction and branch connections.
- I. Install piping to allow application of insulation.
- J. Select system components with pressure rating equal to or greater than system operating pressure.
- K. Install escutcheons for penetrations of walls, ceilings, and floors according to the following:
 - 1. New Piping:
 - a. Piping with Fitting or Sleeve Protruding from Wall: One-piece, deep-pattern type.
 - b. Chrome-Plated Piping: One-piece, cast-brass type with polished chrome-plated finish.
 - c. Insulated Piping: One-piece, stamped-steel type with spring clips.
- L. Sleeves are not required for core-drilled holes.
- M. Verify final equipment locations for roughing-in.

3.02 PIPING JOINT CONSTRUCTION

- A. Join pipe and fittings according to the following requirements and Division 22 Sections specifying piping systems.

- B. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.
- C. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.
- D. Soldered Joints: Apply ASTM B 813, water-flushable flux, unless otherwise indicated, to tube end. Construct joints according to ASTM B 828 or CDA's "Copper Tube Handbook," using lead-free solder alloy complying with ASTM B 32.
- E. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:
 - 1. Apply appropriate tape or thread compound to external pipe threads unless dry seal threading is specified.
 - 2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged. Do not use pipe sections that have cracked or open welds.
- F. Plastic Piping Solvent-Cement Joints: Clean and dry joining surfaces. Join pipe and fittings according to the following:
 - 1. Comply with ASTM F 402 for safe-handling practice of cleaners, primers, and solvent cements.
 - 2. PVC Nonpressure Piping: Join according to ASTM D 2855.

3.03 PIPING CONNECTIONS

- A. Make connections according to the following, unless otherwise indicated:
 - 1. Install unions, in piping NPS 2 (DN 50) and smaller, adjacent to each valve and at final connection to each piece of equipment.

3.04 ERECTION OF METAL SUPPORTS AND ANCHORAGES

- A. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor plumbing materials and equipment.

END OF SECTION

This page intentionally left blank

SECTION 22 05 53
IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT
PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SECTION INCLUDES

- A. Nameplates.
- B. Tags.
- C. Stencils.
- D. Pipe markers.

1.03 RELATED REQUIREMENTS

- A. Section 09 91 23 - Interior Painting: Identification painting.

1.04 REFERENCE STANDARDS

- A. ASME A13.1 - Scheme for the Identification of Piping Systems 2020.
- B. ASTM D709 - Standard Specification for Laminated Thermosetting Materials 2017.

1.05 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Chart and Schedule: Submit valve chart and schedule, including valve tag number, location, function, and valve manufacturer's name and model number.
- C. Product Data: Provide manufacturers catalog literature for each product required.

PART 2 PRODUCTS

2.01 IDENTIFICATION APPLICATIONS

- A. Piping: Tags.
- B. Water Heater: Nameplates.

2.02 NAMEPLATES

- A. Manufacturers:
 - 1. Brimar Industries, Inc: www.pipemarker.com/#sle.
 - 2. Kolbi Pipe Marker Co: www.kolbipipemarkers.com/#sle.
 - 3. Seton Identification Products: www.seton.com/#sle.
- B. Description: Laminated three-layer plastic with engraved letters.
 - 1. Letter Color: White.
 - 2. Letter Height: 1/4 inch.
 - 3. Background Color: Black.
 - 4. Plastic: Comply with ASTM D709.

2.03 TAGS

- A. Manufacturers:
 - 1. Brimar Industries, Inc: www.pipemarker.com/#sle.
 - 2. Kolbi Pipe Marker Co: www.kolbipipemarkers.com/#sle.
 - 3. Seton Identification Products: www.seton.com/#sle.
 - 4. Substitutions: See Section 01 60 00 - Product Requirements.
- B. Plastic Tags: Laminated three-layer plastic with engraved black letters on light contrasting background color. Tag size minimum 1-1/2 inch diameter.
- C. Valve Tag Chart: Typewritten letter size list in anodized aluminum frame.

2.04 STENCILS

- A. Manufacturers:
 - 1. Brady Corporation: www.bradycorp.com/#sle.
 - 2. Kolbi Pipe Marker Co.: www.kolbipipemarkers.com/#sle.
 - 3. Seton Identification Products: www.seton.com/#sle.
 - 4. Substitutions: See Section 01 60 00 - Product Requirements.
- B. Stencils: With clean cut symbols and letters of following size:
 - 1. 1-1/2 to 2 inch Outside Diameter of Insulation or Pipe: 8 inch long color field, 3/4 inch high letters.
- C. Stencil Paint: As specified in Section 09 91 23, semi-gloss enamel, colors complying with ASME A13.1.

2.05 PIPE MARKERS

- A. Manufacturers:
 - 1. Brimar Industries, Inc: www.pipemarker.com/#sle.
 - 2. Kolbi Pipe Marker Co: www.kolbipipemarkers.com/#sle.
 - 3. Seton Identification Products: www.seton.com/#sle.
 - 4. Substitutions: See Section 01 60 00 - Product Requirements.
- B. Comply with ASME A13.1.
- C. Plastic Pipe Markers: Factory fabricated, flexible, semi- rigid plastic, preformed to fit around pipe or pipe covering; minimum information indicating flow direction arrow and identification of fluid being conveyed.
- D. Color code as follows:
 - 1. Domestic Water, Waste & Vent: Green with white letters.

PART 3 EXECUTION

3.01 PREPARATION

- A. Degrease and clean surfaces to receive adhesive for identification materials.
- B. Prepare surfaces in accordance with Section 09 91 23 for stencil painting.

3.02 INSTALLATION

- A. Install plastic nameplates with corrosive-resistant mechanical fasteners, or adhesive. Apply with sufficient adhesive to ensure permanent adhesion and seal with clear lacquer.
- B. Install tags with corrosion resistant chain.
- C. Apply stencil painting in accordance with Section 09 91 23.
- D. Install plastic pipe markers in accordance with manufacturer's instructions.
- E. Install plastic tape pipe markers complete around pipe in accordance with manufacturer's instructions.
- F. Install underground plastic pipe markers 6 to 8 inches below finished grade, directly above buried pipe.
- G. Use tags on piping 3/4 inch diameter and smaller.
 - 1. Identify service, flow direction, and pressure.
 - 2. Install in clear view and align with axis of piping.
 - 3. Locate identification not to exceed 20 feet on straight runs including risers and drops, adjacent to each valve and Tee, at each side of penetration of structure or enclosure, and at each obstruction.

END OF SECTION

SECTION 22 07 19
PLUMBING PIPING INSULATION
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Piping insulation.
- B. Section includes insulating the following pipe systems
 - 1. Domestic Cold Water Piping
 - 2. Domestic Hot Water Piping

1.02 RELATED REQUIREMENTS

- A. Section 09 91 23 - Interior Painting: Painting insulation jacket.
- B. Section 22 10 05 - Plumbing Piping: Placement of hangers and hanger inserts.

1.03 REFERENCE STANDARDS

- A. ASME A112.18.1 - Plumbing Supply Fittings 2018, with Errata.
- B. ASTM C177 - Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus 2019, with Editorial Revision (2023).
- C. ASTM C195 - Standard Specification for Mineral Fiber Thermal Insulating Cement 2007 (Reapproved 2019).
- D. ASTM C534/C534M - Standard Specification for Preformed Flexible Elastomeric Cellular Thermal Insulation in Sheet and Tubular Form 2023.
- E. ASTM C547 - Standard Specification for Mineral Fiber Pipe Insulation 2022a.
- F. ASTM C552 - Standard Specification for Cellular Glass Thermal Insulation 2022.
- G. ASTM C585 - Standard Practice for Inner and Outer Diameters of Thermal Insulation for Nominal Sizes of Pipe and Tubing 2022.
- H. ASTM C795 - Standard Specification for Thermal Insulation for Use in Contact with Austenitic Stainless Steel 2008 (Reapproved 2023).
- I. ASTM D2842 - Standard Test Method for Water Absorption of Rigid Cellular Plastics 2019.
- J. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2023b.
- K. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials 2022a, with Editorial Revision (2023).
- L. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials Current Edition, Including All Revisions.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with not less than three years of documented experience.
- B. Applicator Qualifications: Company specializing in performing the type of work specified in this section with minimum _____ years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Accept materials on site, labeled with manufacturer's identification, product density, and thickness.

- B. Packaging: Insulation material containers shall be marked by manufacturer with appropriate ASTM standard designation, type and grade, and maximum use temperature.
- C. Maintain ambient conditions required by manufacturers of each product.
- D. Maintain temperature before, during, and after installation for minimum of 24 hours.

1.07 COORDINATION

- A. Coordinate sizes and locations of supports, hangers, and insulation shields specified in Section 220529 "Hangers and Supports for Plumbing Piping and Equipment."
- B. Coordinate clearance requirements with piping Installer for piping insulation application. Before preparing piping Shop Drawings, establish and maintain clearance requirements for installation of insulation and field-applied jackets and finishes and for space required for maintenance.
- C. Coordinate installation and testing of heat tracing.

1.08 FIELD CONDITIONS

- A. Maintain ambient conditions required by manufacturers of each product.
- B. Maintain temperature before, during, and after installation for minimum of 24 hours.

PART 2 PRODUCTS

2.01 REGULATORY REQUIREMENTS

- A. Surface Burning Characteristics: Flame spread index/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84 or UL 723.

2.02 GLASS FIBER

- A. Manufacturers:
 - 1. Johns Manville Corporation; _____: www.jm.com/#sle.
 - 2. Knauf Insulation; Earthwool 1000 Degree Pipe Insulation: www.knaufinsulation.com/#sle.
 - 3. Owens Corning Corporation; Fiberglas Pipe Insulation ASJ: www.ocbuildingspec.com/#sle.
- B. Insulation: ASTM C547 and ASTM C795; semi-rigid, noncombustible, end grain adhered to jacket.
 - 1. K Value: ASTM C177, 0.24 at 75 degrees F.
 - 2. Maximum Service Temperature: 650 degrees F.
 - 3. Maximum Moisture Absorption: 0.2 percent by volume.
- C. Vapor Barrier Jacket: White Kraft paper with glass fiber yarn, bonded to aluminized film; moisture vapor transmission when tested in accordance with ASTM E96/E96M of 0.02 perm-inches.
- D. Vapor Barrier Lap Adhesive: Compatible with insulation.

2.03 JACKETS

- A. PVC Plastic.
 - 1. Jacket: One piece molded type fitting covers and sheet material, off-white color.
 - a. Minimum Service Temperature: 0 degrees F.
 - b. Maximum Service Temperature: 150 degrees F.
 - c. Moisture Vapor Permeability: 0.002 perm inch, maximum, when tested in accordance with ASTM E96/E96M.
 - d. Thickness: 10 mil.
 - e. Connections: Brush on welding adhesive.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that piping has been tested before applying insulation materials.
- B. Verify that surfaces are clean and dry, with foreign material removed.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install in accordance with North American Insulation Manufacturers Association (NAIMA) National Insulation Standards.
- C. Exposed Piping: Locate insulation and cover seams in least visible locations.
- D. Insulated pipes conveying fluids below ambient temperature: Insulate entire system including fittings, valves, unions, flanges, strainers, flexible connections, pump bodies, and expansion joints.
- E. Glass fiber insulated pipes conveying fluids below ambient temperature:
 - 1. Provide vapor barrier jackets, factory-applied or field-applied. Secure with self-sealing longitudinal laps and butt strips with pressure sensitive adhesive. Secure with outward clinch expanding staples and vapor barrier mastic.
 - 2. Insulate fittings, joints, and valves with molded insulation of like material and thickness as adjacent pipe. Finish with glass cloth and vapor barrier adhesive or PVC fitting covers.
- F. For hot piping conveying fluids 140 degrees F or less, do not insulate flanges and unions at equipment, but bevel and seal ends of insulation.
- G. Glass fiber insulated pipes conveying fluids above ambient temperature:
 - 1. Provide standard jackets, with or without vapor barrier, factory-applied or field-applied. Secure with self-sealing longitudinal laps and butt strips with pressure sensitive adhesive. Secure with outward clinch expanding staples.
 - 2. Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe. Finish with glass cloth and adhesive or PVC fitting covers.
- H. Inserts and Shields:
 - 1. Application: Piping 1-1/2 inches diameter or larger.
 - 2. Shields: Galvanized steel between pipe hangers or pipe hanger rolls and inserts.
 - 3. Insert Location: Between support shield and piping and under the finish jacket.
 - 4. Insert Configuration: Minimum 6 inches long, of same thickness and contour as adjoining insulation; may be factory fabricated.
- I. Continue insulation through walls, sleeves, pipe hangers, and other pipe penetrations. Finish at supports, protrusions, and interruptions. At fire separations, refer to Section 07 84 00.

3.03 INDOOR PIPING INSULATION SCHEDULE

- A. **Domestic Cold Water:**
 - 1. NPS 1 and Smaller: Insulation shall be one of the following:
 - a. Mineral-Fiber, Preformed Pipe Insulation, Type I: 1/2 inch thick.
- B. **Domestic Hot Water (105-140 F):**
 - 1. NPS 1-1/4 and Smaller: Insulation shall be one of the following:
 - a. Mineral-Fiber, Preformed Pipe Insulation, Type I: 1-1/2 inch thick.

END OF SECTION

This page intentionally left blank

SECTION 22 10 05
PLUMBING PIPING
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Pipe, pipe fittings, specialties, and connections for piping systems.
 - 1. Sanitary waste and vent.
 - 2. Domestic water.
 - 3. LP Gas piping
 - 4. Flanges, unions, and couplings.
 - 5. Pipe hangers and supports.
 - 6. Ball valves.

1.02 RELATED REQUIREMENTS

- A. Section 22 05 53 - Identification for Plumbing Piping and Equipment.
- B. Section 22 07 19 - Plumbing Piping Insulation.

1.03 REFERENCE STANDARDS

- A. ANSI Z223.1 - National Fuel Gas Code 2021.
- B. ASME B16.3 - Malleable Iron Threaded Fittings: Classes 150 and 300 2021.
- C. ASME B16.18 - Cast Copper Alloy Solder Joint Pressure Fittings 2021.
- D. ASME B16.22 - Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings 2021.
- E. ASME B16.26 - Cast Copper Alloy Fittings for Flared Copper Tubes 2018.
- F. ASME B31.1 - Power Piping 2022.
- G. ASME B31.9 - Building Services Piping 2020.
- H. ASME BPVC-IV - Boiler and Pressure Vessel Code, Section IV - Rules for Construction of Heating Boilers 2023.
- I. ASSE 1003 - Water Pressure Reducing Valves for Potable Water Distribution Systems 2023.
- J. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless 2022.
- K. ASTM A234/A234M - Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service 2023a.
- L. ASTM B32 - Standard Specification for Solder Metal 2020.
- M. ASTM B42 - Standard Specification for Seamless Copper Pipe, Standard Sizes 2020.
- N. ASTM B88 - Standard Specification for Seamless Copper Water Tube 2022.
- O. ASTM B88M - Standard Specification for Seamless Copper Water Tube (Metric) 2020.
- P. ASTM B813 - Standard Specification for Liquid and Paste Fluxes for Soldering of Copper and Copper Alloy Tube 2016.
- Q. ASTM B828 - Standard Practice for Making Capillary Joints by Soldering of Copper and Copper Alloy Tube and Fittings 2016.
- R. AWWA C105/A21.5 - Polyethylene Encasement for Ductile-Iron Pipe Systems 2018.
- S. CISPI 301 - Standard Specification for Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications 2021.
- T. CISPI 310 - Specification for Coupling for Use in Connection with Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications 2020.
- U. MSS SP-58 - Pipe Hangers and Supports - Materials, Design, Manufacture, Selection, Application, and Installation 2018, with Amendment (2019).

- V. MSS SP-110 - Ball Valves Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends 2010, with Errata .
- W. NSF 61 - Drinking Water System Components - Health Effects 2022, with Errata.
- X. NSF 372 - Drinking Water System Components - Lead Content 2022.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on pipe materials, pipe fittings, valves, and accessories. Provide manufacturers catalog information. Indicate valve data and ratings.

1.05 QUALITY ASSURANCE

- A. Perform work in accordance with applicable codes.
- B. Valves: Manufacturer's name and pressure rating marked on valve body.
- C. Identify pipe with marking including size, ASTM material classification, ASTM specification, potable water certification, water pressure rating.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.
- B. Protect piping systems from entry of foreign materials by temporary covers, completing sections of the work, and isolating parts of completed system.

1.07 FIELD CONDITIONS

- A. Do not install underground piping when bedding is wet or frozen.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Potable Water Supply Systems: Provide piping, pipe fittings, and solder and flux (if used), that comply with NSF 61 and NSF 372 for maximum lead content; label pipe and fittings.

2.02 SANITARY SEWER PIPING, BURIED WITHIN 5 FEET OF BUILDING

- A. PVC Pipe: ASTM D2665 or ASTM D3034.
 - 1. Fittings: PVC.
 - 2. Joints: Solvent welded, with ASTM D2564 solvent cement.

2.03 SANITARY SEWER AND VENT PIPING, ABOVE GRADE

- A. Cast Iron Pipe: CISPI 301, hubless, service weight.
 - 1. Fittings: Cast iron.
 - 2. Joints: CISPI 310, neoprene gaskets and stainless steel clamp-and-shield assemblies.

2.04 DOMESTIC WATER PIPING, BURIED WITHIN 5 FEET OF BUILDING

- A. Copper Tube: Soft copper tube, ASTM B88, Type L, annealed tempered; wrought-copper, soldered-joint fittings.

2.05 DOMESTIC WATER PIPING, ABOVE GRADE

- A. Copper Tube: Hard copper tube, ASTM B88, Type L, drawn tempered; cast- or wrought-copper, soldered-joint fittings; and soldered joints.
 - 1. Mechanical Press Sealed Fittings: Double-pressed type, NSF 61 and NSF 372 approved or certified, utilizing EPDM, nontoxic, synthetic rubber sealing elements.
 - a. Manufacturers:
 - 1) Apollo Valves; _____: www.apollovalves.com/#sle.
 - 2) Grinnell Products; _____: www.grinnell.com/#sle.
 - 3) Viega LLC; _____: www.viega.us/#sle.
 - 4) Substitutions: See Section 01 60 00 - Product Requirements.

2.06 LP GAS PIPING, BURIED BEYOND 5 FEET OF BUILDING

- A. Steel Pipe: ASTM A53/A53M Schedule 40 black.
 - 1. Fittings: ASTM A234/A234M, wrought steel welding type, with AWWA C105/A21.5 polyethylene jacket or double layer, half-lapped 10 mil polyethylene tape.
 - 2. Joints: ASME B31.1, welded.

2.07 LP GAS PIPING, BURIED WITHIN 5 FEET OF BUILDING

- A. Steel Pipe: ASTM A53/A53M Schedule 40 black.
 - 1. Fittings: ASTM A234/A234M, wrought steel welding type.
 - 2. Joints: ASME B31.1, welded.
 - 3. Jacket: AWWA C105/A21.5 polyethylene jacket or double layer, half-lapped 10 mil polyethylene tape.

2.08 LP GAS PIPING, ABOVE GRADE

- A. Steel Pipe: ASTM A53/A53M Schedule 40 black.
 - 1. Fittings: ASME B16.3, malleable iron, or ASTM A234/A234M, wrought steel welding type.
 - 2. Joints: Threaded or welded to ASME B31.1.
- B. Flexible Gas pipe: Flexible Corrugated Stainless Steel CSST Polymer jacketed gas tubing

2.09 FLANGES, UNIONS, AND COUPLINGS

- A. Unions for Pipe Sizes 3 Inches and Under:
 - 1. Ferrous Pipe: Class 150 malleable iron threaded unions.
 - 2. Copper Tube and Pipe: Class 150 bronze unions with soldered joints.
- B. No-Hub Couplings:
 - 1. Gasket Material: Neoprene complying with ASTM C564.
 - 2. Band Material: Stainless steel.
 - 3. Eyelet Material: Stainless steel.
 - 4. Manufacturers:
 - a. MIFAB, Inc; _____: www.mifab.com/#sle.
 - b. Substitutions: See Section 01 60 00 - Product Requirements.
- C. Dielectric Connections: Union with galvanized or plated steel threaded end, copper solder end, water impervious isolation barrier.

2.10 PIPE HANGERS AND SUPPORTS

- A. Provide hangers and supports that comply with MSS SP-58.
 - 1. If type of hanger or support for a particular situation is not indicated, select appropriate type using MSS SP-58 recommendations.
 - 2. Overhead Supports: Individual steel rod hangers attached to structure or to trapeze hangers.
 - 3. Trapeze Hangers: Welded steel channel frames attached to structure.

2.11 BALL VALVES

- A. Manufacturers:
 - 1. Apollo Valves; _____: www.apollovalves.com/#sle.
 - 2. Nibco, Inc; _____: www.nibco.com/#sle.
 - 3. Viega LLC; _____: www.viega.us/#sle.
 - 4. Substitutions: See Section 01 60 00 - Product Requirements.
- B. Construction, 4 Inches and Smaller: MSS SP-110, Class 150, 400 psi CWP, bronze or ductile iron body, 304 stainless steel or chrome plated brass ball, regular port, teflon seats and stuffing box ring, blow-out proof stem, lever handle with balancing stops, threaded or grooved ends with union.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that excavations are to required grade, dry, and not over-excavated.

3.02 PREPARATION

- A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
- B. Remove scale and dirt, on inside and outside, before assembly.
- C. Prepare piping connections to equipment with flanges or unions.

3.03 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Provide non-conducting dielectric connections wherever jointing dissimilar metals.
- C. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.
- D. Install piping to maintain headroom, conserve space, and not interfere with use of space.
- E. Group piping whenever practical at common elevations.
- F. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings.
- G. Provide access where valves and fittings are not exposed.
- H. Establish elevations of buried piping outside the building to ensure not less than 3 ft of cover.
- I. Install vent piping penetrating roofed areas to maintain integrity of roof assembly.
- J. Excavate in accordance with Section 31 23 16.
- K. Backfill in accordance with Section 31 23 23.
- L. Install water piping to ASME B31.9.
- M. Copper Pipe and Tube: Make soldered joints in accordance with ASTM B828, using specified solder, and flux meeting ASTM B813; in potable water systems use flux also complying with NSF 61 and NSF 372.
- N. PVC Pipe: Make solvent-welded joints in accordance with ASTM D2855.
- O. Sleeve pipes passing through partitions, walls, and floors.
- P. Inserts:
 - 1. Provide inserts for placement in concrete formwork.
 - 2. Where concrete slabs form finished ceiling, locate inserts flush with slab surface.
 - 3. Where inserts are omitted, drill through concrete slab from below and provide through-bolt with recessed square steel plate and nut above slab.
- Q. Pipe Hangers and Supports:
 - 1. Install in accordance with ASME B31.9.
 - 2. Support horizontal piping as indicated.

END OF SECTION

SECTION 22 10 06
PLUMBING PIPING SPECIALTIES
PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SECTION INCLUDES

- A. Water hammer arrestors.
- B. Vacuum Breakers
- C. Hose Bibbs
- D. Escutcheons
- E. Exterior penetration accessories.

1.03 RELATED REQUIREMENTS

- A. Section 22 10 05 - Plumbing Piping.
- B. Section 22 30 00 - Plumbing Equipment.
- C. Section 22 40 00 - Plumbing Fixtures.

1.04 REFERENCE STANDARDS

- A. ADA Standards - 2010 ADA Standards for Accessible Design 2010.
- B. ASSE 1011 - Performance Requirements for Hose Connection Vacuum Breakers 2023.
- C. ASSE 1019 - Performance Requirements for Wall Hydrant with Backflow Protection and Freeze Resistance 2011 (Reaffirmed 2016).
- D. NSF 61 - Drinking Water System Components - Health Effects 2022, with Errata.
- E. NSF 372 - Drinking Water System Components - Lead Content 2022.
- F. PDI-WH 201 - Water Hammer Arresters 2017.

1.05 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide component sizes, rough-in requirements, service sizes, and finishes.
- C. Shop Drawings: Indicate dimensions, weights, and placement of openings and holes.
- D. Manufacturer's Instructions: Indicate Manufacturer's Installation Instructions: Indicate assembly and support requirements.
- E. Maintenance Data: Include installation instructions, spare parts lists, exploded assembly views.
- F. Project Record Documents: Record actual locations of equipment, cleanouts, backflow preventers, water hammer arrestors, _____.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with not less than three years documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Accept specialties on site in original factory packaging. Inspect for damage.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Specialties in Potable Water Supply Systems: Provide products that comply with NSF 61 and NSF 372 for maximum lead content.

2.02 ESCUTCHEONS

- A. One-piece, Cast-brass Type: With polished, chrome-plated finish and setscrew fastener.
- B. One-piece, Deep-Pattern Type: Deep-drawn, box-shaped with chrome-plated finish and spring-clip fasteners.
- C. One-piece, Stamped-Steel Type: With chrome-plated finish and spring-clip fasteners.

2.03 HOSE BIBBS (SEE SCHEDULES ON PLANS)

- A. Manufacturers: Subject to compliance with requirements, available manufacturers product offering that maybe incorporated into the work include, but are not limited to, the following:
 - 1. Jay R. Smith Manufacturing Company; _____: www.jayrsmith.com/#sle.
 - 2. Watts Regulator Company, a part of Watts Water Technologies;[_____]: www.wattsregulator.com/#sle.
 - 3. Zurn Industries, LLC; _____: www.zurn.com/#sle.
 - 4. Mifab.
 - 5. Substitutions: See Section 01 60 00 - Product Requirements.

2.04 WATER HAMMER ARRESTORS

- A. Water Hammer Arrestors:
 - 1. Stainless steel construction, piston type sized in accordance with PDI-WH 201, precharged suitable for operation in temperature range minus 100 to 300 degrees F and maximum 250 psi working pressure.

2.05 EXTERIOR PENETRATION ACCESSORIES

- A. Flashing Panels for Exterior Wall Penetrations: Premanufactured components and accessories as required to preserve integrity of building envelope; suitable for conduits and facade materials to be installed.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install escutcheons for piping penetration of walls, ceilings, and finished floors.
- C. Install escutcheons with ID to closely fit around the pipe, tube, and insulation and with OD that completely covers the opening.
 - 1. Escutcheons for New Piping:
 - a. Piping with Fittings or Sleeve Protruding from Wall: One-piece, deep-pattern type.
 - b. Chrome-Plating Piping: One-piece, cast-brass type with polished, chrome-plated finish.
 - c. Insulated Piping: One-piece, stamped-steel type.
 - d. Bare Piping at Wall and Floor Penetrations in Finished Spaces: One-piece, cast-brass type with polished, chrome-plated finish.
 - e. Bare Piping at Ceiling Penetrations in Finished Spaces: One-piece, cast-brass type with polished, chrome-plated finish.
 - f. Bare Piping in Unfinished Service Spaces: One-piece, cast-brass, cast-brass type with polished, chrome-plated finish.
 - g. Bare Piping in Equipment Rooms: One-piece, cast-brass type with polished, chrome-plated finish.
- D. Install water hammer arrestors complete with accessible isolation valve on hot and cold water supply piping to lavatory sinks.

END OF SECTION

SECTION 22 30 00
PLUMBING EQUIPMENT
PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SECTION INCLUDES

- A. Water Heaters:
- B. Diaphragm-type compression tanks.

1.03 REFERENCE STANDARDS

- A. ASME BPVC-VIII-1 - Boiler and Pressure Vessel Code, Section VIII, Division 1: Rules for Construction of Pressure Vessels 2023.
- B. ICC (IPC) - International Plumbing Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- C. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- D. UL 174 - Standard for Household Electric Storage Tank Water Heaters Current Edition, Including All Revisions.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittals procedures.
- B. Product Data:
 - 1. Provide dimension drawings of water heaters indicating components and connections to other equipment and piping.
 - 2. Provide electrical characteristics and connection requirements.
- C. Shop Drawings:
- D. Operation and Maintenance Data: Include operation, maintenance, and inspection data, replacement part numbers and availability, and service depot location and telephone number.
- E. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience.
- B. Certifications:
 - 1. Water Heaters: NSF approved.
 - 2. Electric Water Heaters: UL listed and labeled to UL 174.
 - 3. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc., as suitable for the purpose specified and indicated.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Provide temporary inlet and outlet caps. Maintain caps in place until installation.

1.07 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.
- B. Provide five year manufacturer warranty for domestic water heaters.

PART 2 PRODUCTS

2.01 WATER HEATERS (WH-1) (SEE SCHEDULES ON PLANS)

- A. Water Heater:

- B. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the work include, but not limited to, the following:
 - 1. A.O. Smith Water Products Co: www.hotwater.com/#sle.
 - 2. Bradford White.
 - 3. Rheem Manufacturing Company: www.rheem.com/#sle.
 - 4. Substitutions: See Section 01 60 00 - Product Requirements.
- C. Residential Electric:
 - 1. Type: Automatic, electric, vertical storage.
 - 2. Performance:
 - 3. Tank: Glass lined welded steel, thermally insulated with one inch thick glass fiber; encased in corrosion-resistant steel jacket; baked-on enamel finish.
 - 4. Controls: Automatic water thermostat with externally adjustable temperature range from 120 to 170 degrees F, flanged or screw-in nichrome elements, enclosed controls and electrical junction box and operating light. Wire double element units so elements do not operate simultaneously.
 - 5. Accessories:
 - a. Water Connections: Brass.
 - b. Dip Tube: Brass.
 - c. Drain valve.
 - d. Anode: Magnesium.
 - e. Temperature and Pressure Relief Valve: ASME labeled.

2.02 DIAPHRAGM-TYPE COMPRESSION TANKS (ET1 & ET2)(SEE SCHEDULES ON PLANS)

- A. Manufacturers: Subject to compliance requirements, available manufacturers offering products that may be incorporated into the work include, but are not limited to, the following:
 - 1. Amtrol Inc; _____: www.amtrol.com/#sle.
 - 2. Bell & Gossett, a xylem brand; _____: www.bellgossett.com/#sle.
 - 3. Taco, Inc; _____: www.taco-hvac.com/#sle.
 - 4. Substitutions: See Section 01 60 00 - Product Requirements.
- B. Construction: Welded steel, tested and stamped in accordance with ASME BPVC-VIII-1; supplied with National Board Form U-1, rated for working pressure of 150 psig, with flexible EPDM diaphragm sealed into tank, and steel legs or saddles.
- C. Accessories: Pressure gauge and air-charging fitting, tank drain; precharge to 12 psig.

2.03 ELECTRICAL WORK

- A. Provide electrical motor driven equipment specified complete with motors, motor starters, controls, and wiring.
- B. Electrical characteristics to be as specified or indicated.
- C. Furnish motor starters complete with thermal overload protection and other appurtenances necessary for the motor control specified.
- D. Supply manual or automatic control and protective or signal devices required for the operation specified, and any control wiring required for controls and devices not shown.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install plumbing equipment in accordance with manufacturer's instructions, as required by code, and complying with conditions of certification, if any.
- B. Coordinate with plumbing piping and related gas venting and electrical work to achieve operating system.

END OF SECTION

SECTION 22 40 00
PLUMBING FIXTURES
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Flush valve water closets.
- B. Tank type water closets.
- C. Wall hung urinals.
- D. Lavatories.
- E. Sinks.
- F. Under-lavatory pipe supply covers.
- G. Laundry sinks.

1.02 REFERENCE STANDARDS

- A. ADA Standards - 2010 ADA Standards for Accessible Design 2010.
- B. ASME A112.18.1 - Plumbing Supply Fittings 2018, with Errata.
- C. ASME A112.18.9 - Protectors/Insulators for Exposed Waste and Supplies on Accessible Fixtures 2011 (Reaffirmed 2022).
- D. ASME A112.19.1 - Enamelled Cast Iron and Enamelled Steel Plumbing Fixtures 2018.
- E. ASME A112.19.2 - Ceramic Plumbing Fixtures 2018, with Errata.
- F. ASME A112.19.4M - Porcelain Enameled Formed Steel Plumbing Fixtures 1994 (Reaffirmed 2009).
- G. ASME A112.19.5 - Flush Valves and Spuds for Water Closets, Urinals, and Tanks 2022.
- H. ASSE 1070 - Performance Requirements for Water Temperature Limiting Devices 2020.
- I. ASTM C1822 - Standard Specification for Insulating Covers on Accessible Lavatory Piping 2021.
- J. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2023b.
- K. IAPMO Z124 - Plastic Plumbing Fixtures 2022.
- L. ICC A117.1 - Accessible and Usable Buildings and Facilities 2017.
- M. NSF 61 - Drinking Water System Components - Health Effects 2022, with Errata.
- N. NSF 372 - Drinking Water System Components - Lead Content 2022.
- O. UL (DIR) - Online Certifications Directory Current Edition.

1.03 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide catalog illustrations of fixtures, sizes, rough-in dimensions, utility sizes, trim, and finishes.
- C. Manufacturer's Instructions: Indicate installation methods and procedures.
- D. Maintenance Data: Include fixture trim exploded view and replacement parts lists.
- E. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Accept fixtures on site in factory packaging. Inspect for damage.
- B. Protect installed fixtures from damage by securing areas and by leaving factory packaging in place to protect fixtures and prevent use.

1.06 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Potable Water Systems: Provide plumbing fittings and faucets that comply with NSF 61 and NSF 372 for maximum lead content; label pipe and fittings.
- B. Water Efficiency: EPA WaterSense label is required for all water closets, urinals, lavatory faucets, and showerheads.

2.02 REGULATORY REQUIREMENTS

- A. Comply with applicable codes for installation of plumbing systems.
- B. Comply with UL (DIR) requirements.
- C. Perform work in accordance with local health department regulations.
- D. Provide certificate of compliance from Authority Having Jurisdiction indicating approval of installation.

2.03 FLUSH VALVE WATER CLOSETS (W1 & W1A)

- A. Water Closets: Vitreous china, ASME A112.19.2, wall hung, siphon jet flush action.
 - 1. Bowl: ASME A112.19.2; 15 Inches high with elongated rim.
 - 2. Flush Valve: Exposed (top spud).
 - 3. Flush Operation: Manual, oscillating handle.
 - 4. Handle Height: 44 inches or less.
 - 5. Inlet Size: 1-1/2 inches.
 - 6. Trapway Outlet: 4 inch.
 - 7. Color: White.
- B. Basis of Design _____
 - 1. Manufacturers:
 - a. American Standard, Inc; _____: www.americanstandard-us.com/#sle.
 - b. Substitutions: See Section 01 60 00 - Product Requirements.
- C. Flush Valves:
 - 1. Manufacturers:
 - a. Sloan Valve Company; _____: www.sloanvalve.com/#sle.
 - b. Substitutions: See Section 01 60 00 - Product Requirements.
 - 2. Manual Operated:
 - a. Type: ASME A112.18.1 or ASME A112.19.5; diaphragm type complete with vacuum breaker stops, and accessories.
 - b. Supplied Volume Capacity: 1.28 gal/flush.
 - 3. Exposed Type: Chrome plated, escutcheon, integral screwdriver stop.
- D. Seats:
 - 1. Solid white plastic, open front, extended back, self-sustaining hinge, brass bolts, without cover.

2.04 TANK TYPE WATER CLOSETS (W-2)

- A. Manufacturers:
 - 1. American Standard, Inc; _____: www.americanstandard-us.com/#sle.
 - 2. Substitutions: See Section 01 60 00 - Product Requirements.

- B. Bowl: ASME A112.19.2; floor mounted, siphon jet, vitreous china, 16.5 inches high, close-coupled closet combination with elongated rim, insulated vitreous china closet tank with fittings and lever flushing valve, bolt caps.
 - 1. Water Consumption: Maximum 1.28 gallons per flush.
- C. Seat: Solid white plastic, open front, extended back, less cover, complete with self-sustaining hinge.

2.05 WALL HUNG URINALS (U1 & U1A)

- A. Manufacturers:
 - 1. Mansfield.
 - 2. Substitutions: See Section 01 60 00 - Product Requirements.
- B. Urinals: Vitreous china, ASME A112.19.2, wall hung with side shields and concealed carrier.
 - 1. Flush Volume: 0.125 gallons, maximum.
 - 2. Flush Valve: Exposed (top spud).
 - 3. Flush Operation: Manual, oscillating handle.
 - 4. Trapway Outlet: Integral.
 - 5. Supply Size: 3/4 inch.
 - 6. Outlet Size: 1-1/2 inches.
 - 7. Basis of Design _____
- C. Flush Valves:
 - 1. Manufacturers:
 - a. Sloan Valve Company; _____: www.sloanvalve.com/#sle.
 - b. Substitutions: See Section 01 60 00 - Product Requirements.
 - 2. Manual Operated:
 - a. Type: ASME A112.18.1 or ASME A112.19.5; diaphragm type, complete with vacuum breaker stops, and accessories.
 - b. Supplied Volume Capacity: 0.125 gal/flush.
 - 3. Exposed Type: Chrome plated, escutcheon, integral screwdriver stop.
- D. Wall-Hung Urinal Carriers:
 - 1. Manufacturers:
 - a. Jay R. Smith MFG. Co; _____: www.jrsmith.com/#sle.
 - b. JOSAM Company; _____: www.josam.com/#sle.
 - c. Zurn Industries, Inc; _____: www.zurn.com/#sle.
 - d. Substitutions: See Section 01 60 00 - Product Requirements.
 - 2. ASME A112.6.1M; cast iron and steel frame with tubular legs, lugs for floor and wall attachment, threaded fixture studs for fixture hanger, bearing studs.

2.06 LAVATORIES (L1 & L1A)

- A. Cast Iron Wall Hung Basin: ASME A112.19.1; porcelain enamelled cast iron wall-hung lavatory, single hole, rectangular basin with splash lip, front overflow.
- B. Supply Faucet Manufacturers:
 - 1. Delta Faucets.
 - 2. Substitutions: See Section 01 60 00 - Product Requirements.
- C. Supply Faucet: ASME A112.18.1; chrome plated combination supply fitting with open grid strainer, water economy aerator with maximum flow of 0.5 gallon per minute (low-flow), indexed handles.
- D. Thermostatic Mixing Valve: Thermostatic mixing valve, ASSE 1070 listed, with combination stop, strainer, and check valves, and flexible stainless steel connectors.
- E. Accessories:
 - 1. Chrome plated 17 gauge, 0.0538 inch brass P-trap with clean-out plug and arm with escutcheon.

2. Flexible supplies.

2.07 SINKS - ADA (S3) SINGLE BOWL

- A. See Plumbing Schedule for Model Information
- B. Single Compartment Bowl: 18 guage type 304 stainless steel, self rimming and undercoated, with ledge back drilled for trim.
 1. Drain: 1-1/2 inch chromed brass drain.
 2. Drain: 3-1/2 inch crumb cup and tailpiece.

2.08 SINKS - (S2) DOUBLE BOWL

- A. See Plumbing Schedule for Model Information
- B. Double Compartment Bowl: 18 guage type 304 stainless steel, self rimming and undercoated, with ledge back drilled for trim.
- C. Drain: 1-1/2 inch chromed brass drain.
- D. Drain: 3-1/2 inch crumb cup and tailpiece.

2.09 UNDER-LAVATORY PIPE SUPPLY COVERS

- A. Manufacturers:
 1. Plumberex Specialty Products, Inc; _____: www.plumberex.com/#sle.
 2. Substitutions: See Section 01 60 00 - Product Requirements.
- B. Basis of Design: Plumberex Specialty Products, Inc; www.plumberex.com/#sle.
 1. Fusion Molded Under-Lavatory Insulators (Non-Sewn): Plumberex Handy-Shield Maxx.
- C. General:
 1. Insulate exposed drainage piping including hot, cold and tempered water supplies under lavatories or sinks per ADA Standards.
 2. Adhesives, sewing threads and two ply laminated materials are prohibited.
 3. Exterior Surfaces: Smooth nonabsorbent with no finger recessed indentations for easy cleaning.
 4. Construction: 1/8 inch PVC with antimicrobial, antifungal and UV resistant properties.
 - a. Provide one piece injected molded design with internal bridge at top of J-bend to prevent separating.
 - b. Comply with ASTM E84 for flame and smoke development.
 - c. Comply with ASTM C1822 Type I for covers on accessible lavatory piping.
 - d. Comply with ASME A112.18.9 for covers on accessible lavatory piping.
 - e. Comply with ICC A117.1.
 5. Color: High gloss white.
 6. Fasteners: Reusable, snap-locking fasteners with no sharp or abrasive external surfaces. No cable ties allowed.

2.10 LAUNDRY SINK (S1)

- A. Manufacturers:
 1. Fiat.
 2. Stern-Williams.
 3. Substitutions: See Section 01 60 00 - Product Requirements.
- B. See Plumbing Schedule for Model Information

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that walls and floor finishes are prepared and ready for installation of fixtures.
- B. Confirm that millwork is constructed with adequate provision for the installation of counter top lavatories and sinks.

3.02 PREPARATION

- A. Rough-in fixture piping connections in accordance with minimum sizes indicated in fixture rough-in schedule for particular fixtures.

3.03 INSTALLATION

- A. Install each fixture with trap, easily removable for servicing and cleaning.
- B. Provide chrome plated rigid or flexible supplies to fixtures with loose key stops, reducers, and escutcheons.
- C. Install components level and plumb.
- D. Install and secure fixtures in place with wall supports and bolts.
- E. Solidly attach water closets to floor with lag screws. Lead flashing is not intended hold fixture in place.

3.04 INTERFACE WITH WORK OF OTHER SECTIONS

- A. Review millwork shop drawings. Confirm location and size of fixtures and openings before rough-in and installation.

3.05 ADJUSTING

- A. Adjust stops or valves for intended water flow rate to fixtures without splashing, noise, or overflow.

3.06 CLEANING

- A. Clean plumbing fixtures and equipment.
- B. See Section 01 74 19 - Construction Waste Management and Disposal for additional requirements.

3.07 PROTECTION

- A. Protect installed products from damage due to subsequent construction operations.
- B. Do not permit use of fixtures by construction personnel.
- C. Repair or replace damaged products before Date of Substantial Completion.

END OF SECTION

This page intentionally left blank

SECTION 26 05 00
– COMMON WORK RESULTS FOR ELECTRICAL
PART 1 GENERAL

1.01 SUMMARY

- A. This Section includes the following:
1. References.
 2. Submittals.
 3. Quality Assurance.
 4. Coordination.
 5. Products.
 6. Substitutions.
 7. Protection of Equipment.
 8. Electrical Equipment Installation.
 9. Cutting and Patching.
 10. Field Quality Control.
 11. Cleaning and Protection.
 12. Water Damaged Equipment.
 13. Division of Work.
 14. Electrical Testing.
 15. Minor Electrical Demolition for Remodeling.
 16. Owner Training and Instruction.
- B. Work under Division 26 shall include providing all materials, labor, equipment, and services necessary for the proper completion of all electrical work as shown on the entire set of drawings and specifications. This shall also include, but not be limited to, the furnishing, handling, installation, and final connection of all required components.
- C. Drawings shall not be scaled. Refer to architectural and structural drawings for building construction and dimensions and to finish schedules on architectural drawings for material, finish, and construction method of walls, floor, and ceiling to ensure proper rough-in and installation of work. Verify dimensions in field.
- D. The entire set of specifications and drawings are complimentary and are to be taken together for a complete interpretation of the work. Unless otherwise modified by specific notation, it shall be understood that the indication and/or description of any item, in the drawings and/or specifications, carries with it the instruction to furnish and install the item and related accessories, whether or not this instruction is explicitly stated as part of the indication or description.
- E. No exclusions from or limitation in the symbols, diagrams, and language used in the drawings or specifications shall be interpreted as meaning that the appurtenances or accessories necessary to complete any required system, item or work are excluded or omitted.
- F. The work shall be installed in accordance with the diagrammatic intent expressed on the drawings. Details are intended to establish general feasibility. They do not supersede field coordination for the intended work.
- G. The use of words in the singular shall not be considered as a limit where other indications denote that more than one item is referred to. The use of descriptions of one area shall not be considered as limiting the description to that area.
- H. Anything mentioned in the specifications and not shown on the drawings, or shown in the drawings but not in the specifications will be interpreted as being in both
- I. Where drawings and/or specifications conflict, the more stringent shall govern. Discrepancies or omissions shall be reported to the Engineer for clarification prior to bid. Unless specifically clarified by addendum, the Contractor shall include the more stringent item and/or greater number in the bid.

- J. A licensed Electrical Contractor shall obtain and pay for all necessary permits, inspections, and fees. The Contractor shall obtain and complete any utility service request forms. The Contractor shall be required to notify the local Authority Having Jurisdiction, AHJ, to schedule required electrical inspections including the final inspection. Final pay application will not be approved until all inspections are complete and a certificate of occupancy has been issued.

1.02 REFERENCES

- A. Additional definitions and references may be found elsewhere in these Specifications and in the Plans. Where a specific document number is noted, the document numbers referenced in that document shall also be included.
- B. All work shall meet or exceed local codes, the National Electrical Safety Code (NESC), the Statewide Building Code, and the latest adopted edition of the National Electrical Code (NEC). Where provisions herein exceed current Code requirements, the Contractor shall provide the work as specified. Work shall conform to state and local codes, laws, ordinances, and rulings where applicable. Interpretation of the codes is left to the local AHJ. It is expected that the Contractor be familiar with the interpretations of the local AHJ. Where codes and the drawings and/or specifications conflict, the more stringent shall govern.

1.03 SUBMITTALS

- A. General: Follow the procedures specified in Section 01 33 00 - Submittal Procedures and in Section 01 60 00 - Product Requirements. Furnish product data, shop drawings, factory assembly drawings and field installation drawings as required for a complete description of all items of equipment. The following paragraphs are requirements in addition to those found in Sections 01 33 00 and 01 60 00.
- B. Submit product data when required by this and other sections of the Specifications in booklet form with separate sheets for each proposed product type, assembled in a logical order, with manufacturer's name, products, details, and accessories clearly indicated on each sheet. Where more than one item appears on a manufacturer sheet, indicate which item will be used. Do not include sheets which do not pertain to this Project. Separate items of different specification sections using a divider sheet clearly indicating the end of one section and the beginning of another.
- C. Call to the attention of the Engineer in writing plainly mark on shop drawings any deviations from the Contract Documents. Thoroughly review and correct each submission prior to submitting to the Engineer. Stamp each submission indicating the Contractor's review. Any submissions received by the Engineer which have not been thoroughly reviewed, corrected, and stamped by the Contractor shall be returned to the Contractor without review by the Engineer. Likewise, any submissions which contain obvious and excessive errors shall be returned to the Contractor. Such submissions shall be corrected by the Contractor and resubmitted in a timely manner to not delay the Project. Submissions shall include only equipment and devices as specified in the Contract Documents unless specific approval for a substitute product has been granted by the Engineer.
- D. Provide shop drawings to the Engineer for review on the following items, whenever these items are in the Project:
1. Panelboards and circuit breakers.
 2. Disconnect switches and fuses.
 3. Lighting fixtures.
 4. Light switches, receptacles, and cover plates.
 5. UL Fire Resistance Penetration Assemblies.
 6. Schedule of engraved labels for equipment.
- E. Record drawings: Provide one complete set of contract drawings in clean, undamaged condition indicating all significant changes from the work as shown. Use multiple pencil colors to aid in the distinction between the work of separate electrical systems. In general, record every substantive installation of electrical work which previously is either not shown, shown incompletely, or field modified.

1.04 QUALITY ASSURANCE

- A. Products and installation shall be in accordance with Specification Section 01400 Quality Requirements.
- B. The job site electrical supervisor or lead electricians working on this project must hold a valid State Electrical License or County Journeyman Electrician Card. Submit copies of licenses to the Owner's representative.
- C. The Contractor shall visit the site prior to bid and shall verify every aspect of the proposed work and existing field conditions which might affect the completion of the electrical work. Failure or neglect to thoroughly investigate the Contract Documents and/or the site shall not be sufficient cause for additional compensation to the Contractor.
- D. Electrical acceptance testing shall be performed by trained electricians. Technicians performing the electrical tests and inspections shall be experienced concerning the testing equipment and electrical and systems being evaluated. Technicians shall be capable of conducting the tests in a safe manner and with complete knowledge of the hazards involved. They must evaluate the test data and make a judgment on the serviceability of the specific equipment.
- E. Contiguous Work: If any part of the Contractor's work is dependent for its proper execution or for its subsequent efficiency or appearance on the character or conditions of contiguous work not executed by him, this Contractor shall examine and measure such contiguous work and report to the Engineer in writing any imperfections therein, or conditions that render it unsuitable for the reception of this work. Should the Contractor proceed without making such written report, he shall be held to have accepted such work and the existing conditions and he shall be responsible.
- F. The work shall be guaranteed against defective material, equipment, equipment design, and workmanship for a period of one year from the date of final acceptance. Upon written notice from the Architect/Engineer of a defect, all repairs shall be made promptly by and at the expense of the Electrical Contractor. Written manufacturers' and service warranties on major equipment and components shall be furnished to the Owner as part of request for project substantial completion.

1.05 COORDINATION

- A. Coordinate with the General Contractor scheduling, sequencing, movement, and positioning of large equipment into the building during construction.
- B. Coordinate penetrations in floors, walls, and ceilings with structural requirements. Coordinate electrical penetrations and their relationship to penetrations of other trades for an aesthetic and functional installation. Be aware of total allowable penetration areas in rated partitions.
- C. Damage, interference, and/or rework caused by inadequate coordination shall be rectified at no additional cost to the owner.
- D. Coordinate the electrical requirements of Owner-furnished equipment and equipment furnished by other trades requiring electrical power or control wiring.

PART 2 PRODUCTS

2.01 PRODUCTS

- A. Provide products as described in the Drawings and Specifications.
- B. Provide new materials, equipment, and electrical components that are listed and labeled. The terms "listed" and "labeled" shall be as defined in the National Electrical Code, Article 100. Listing and labeling of material and equipment shall be by third party agencies accredited by the State Building Code Council to label electrical and mechanical equipment. Where the terms "UL" or "Underwriters' Laboratories" are used, the intention is not to limit competition but to require listing and labeling by a third party acceptable to the Authority Having Jurisdiction.
- C. Materials and Manufacturers:

1. Equipment and materials installed under this contract shall be new and without blemish or defect.
2. Each major component of equipment shall have the manufacturer's name, address, model number and rating, on a plate securely affixed in a conspicuous place. The nameplate of a distributing agent will not be acceptable. The compliance label or other data that is die-stamped into the surface of the equipment shall be stamped in a location easily visible.
3. Note: Products manufactured by divisions, subsidiaries, or affiliates of listed companies shall not be considered as manufactured by the listed company and, therefore, shall not be accepted unless specifically approved prior to bid as indicated under Substitution of Specified Materials below.

2.02 SUBSTITUTIONS

- A. Substitution of Specified Materials:
1. Throughout the Drawings and Specifications, equipment and systems have been selected and are referenced by name, manufacturer, model number, etc. The use of names and catalog numbers does not indicate that the equipment specified is necessarily an "off-the-shelf" item. Variances may be due to requirement of desired finish, material, or other modifications. These references are not intended to limit competition and in most cases materials and methods of construction equivalent to that specified will be accepted provided approval of any substitute item is obtained from the Engineer in accordance with the procedures listed in Paragraphs 2, 3, and 4 below.
 2. Manufacturers and/or Contractors desiring to use substitutes for specified materials must furnish submittals to the Engineer for the proposed substitute a minimum of ten (10) calendar days prior to the Bid Date. Requests for substitution are limited to Prime Bidders or to Electrical Contractors who have purchased Bid Documents only. Submittals shall include manufacturer's data, test reports, performance data and certifications, samples and other information as required to permit determination by the Engineer whether the proposed substitute is equivalent to the specified standard. The decision of the Engineer as to the approval of any substitute item is final. All bidders will be notified by addendum of any approved substitutions.
 3. Substitutions shall have a working sample provided for review within 10 working days upon request from the design team.
 4. Approval as an equivalent substitute, either in these Specifications or added by addendum, does not relieve the Electrical Contractor and/or the vendor of the substitute item of the responsibility of providing equipment and materials that will perform as designated on the drawings or in the specifications for the manufacturer named as basis of design. In addition, the Contractor is completely responsible for any changes which result from the use of any item other than that named as basis of design, including but not limited to, changes to the electrical services, changes in dimensions, peripheral equipment which may be required, etc.

PART 3 EXECUTION

3.01 PROTECTION OF EQUIPMENT

- A. Electrical equipment shall be protected from construction debris and the weather, dripping or splashing water, at all times during shipment, storage, and construction. Follow the manufacturer's recommendations regarding storage, protection, and handling.
- B. Store electrical equipment indoors in a clean, dry space with uniform temperature to prevent condensation. Provide temporary heaters and/or other equipment as necessary to maintain uniform temperature. Protect from exposure to dirt, fumes, water, corrosive substances, and physical damage.

- C. Any electrical equipment that has been submerged (partially or fully), or has contacted water, shall be replaced at the expense of the Contractor without additional cost to the Owner.
Equipment that may be reconditioned in lieu of total replacement shall only include panelboard and load center enclosures. Reconditioning shall only be performed by trained factory service personnel and shall be performed at no additional cost to the Owner. The option to "recondition" instead of "replace" shall be under the direction of the Manufacturer only.
- D. Inspect all electrical equipment and materials prior to installation. Damaged materials shall not be installed. With Owner's consent, damaged materials may be replaced or repaired to new condition and certified by the manufacturer. Testing of damaged equipment in compliance with industry standards shall be performed at no additional cost to the Owner.
- E. Non-submerged equipment in flooded areas shall be inspected by qualified, factory-trained personnel to determine whether moisture has entered the enclosure. If any signs of moisture or damage exist, the equipment shall be replaced or reconditioned as described in the above paragraphs.
- F. All equipment replaced due to water damage shall be destroyed to prevent reuse.

3.02 ELECTRICAL EQUIPMENT INSTALLATION

- A. Install material and equipment in accordance with Code, the manufacturer's written instructions, and the listing of the product. NECA "Standard of Installation" may be used where it meets or exceeds the above.
- B. If mounting heights or other location criteria are not indicated, arrange and install components and equipment to provide the maximum possible headroom and clearance from work of other trades.
- C. Install wiring (concealed and exposed) and equipment level, plumb, and parallel and perpendicular to other building systems and components, unless otherwise indicated.
- D. Install all equipment in a manner to permit access to all surfaces. Maintain proper clearance to meet all safety and operating codes, particularly the NEC. Install to facilitate service, maintenance, and repair or replacement of components. Connect for ease of disconnecting with minimum interference with other installations.
- E. Give right-of-way to raceways and piping systems installed at a required slope.
- F. Coordinate the work of this Contract with other work to be performed under separate Contract with the Owner, where required for this Project.
- G. The Contractor shall do or have done by competent tradesmen all cutting and patching necessary for the installation of this work. No cutting in constructive parts of the building likely to impair its strength shall be done without the Architect/Engineer's written consent.
- H. All final connections between mechanical and electrical equipment shall be made using an 18" to 36" section of flexible metallic conduit. Use liquid-tight flexible metallic conduit for outdoors and wet or damp locations. The purpose is for vibration and noise isolation and to help facilitate equipment repairs when necessary.

3.03 CUTTING AND PATCHING

- A. Cut, channel, chase, and drill floors, walls, partitions, ceilings, and other surfaces required to permit electrical installations. Perform cutting by skilled mechanics of trades involved.
- B. Repair and refinish disturbed finish materials and other surfaces to match adjacent undisturbed surfaces. Install new fireproofing where existing fire-stopping has been disturbed. Repair and refinish materials and other surfaces by skilled mechanics of trades involved.
- C. Provide sleeves and sealing materials as described by the UL Fire Resistance Penetration Assembly for the method and materials used to penetrate the rated partition. Fire-stopping materials and installation requirements are found on the drawings and in the UL Fire Resistance Directory at <http://productspec.ul.com/index.php?type=firerated>.

3.04 FIELD QUALITY CONTROL

- A. All work shall be executed in a workmanlike manner and shall present a neat mechanical appearance when completed.
- B. Inspect installed components for damage and faulty work, including the following:
 - 1. Raceways.
 - 2. Building wire and connectors.
 - 3. Wiring devices and cover plates.
 - 4. Supporting devices for electrical components.
 - 5. Cutting and patching for electrical construction.
 - 6. Touchup painting.
- C. Use trained technicians to perform electrical acceptance testing on installed equipment, terminations, and conductors.

3.05 CLEANING AND PROTECTION

- A. On completion of installation, including, but not limited to, conduit, equipment, outlets, fittings, and devices, inspect exposed finish. Remove burrs, dirt, paint spots, and construction debris. Do not apply cleaning agents or petroleum-based agents, to the current-carrying parts of electrical equipment for the purpose of removing debris, residue, and other substances. Verify that all cleaning agents used do not cause deterioration of the non-metallic insulating and/or structural portions of the equipment. Do not use abrasives to clean current-carrying parts of the equipment.
- B. Protect equipment and installations and maintain conditions to ensure that coatings, finishes, and cabinets are without damage or deterioration at time of Substantial Completion. Any scratches on equipment shall be properly prepared, primed, and touched up using factory paint and the methods described by the Manufacturer.

3.06 DIVISION OF WORK (DIVISION 21/22/23/26)

- A. This section delineates the division of work between Divisions 21/22/23, Division 26, work of other Divisions and work of Owner's separate contractor. Specific work to be done under Division 26 is hereinafter listed or described. All other work necessary for the operation of the equipment of other Divisions shall be performed under those Divisions.
- B. All individual motor starters for mechanical equipment (fans, pumps, etc.) shall be furnished and installed by Division 21/22/23.
- C. Division 26 shall furnish and install equipment disconnecting means, unless noted in equipment schedules on the Drawings as being furnished by Division 21/22/23.
- D. Division 26 shall provide power wiring to a disconnecting means adjacent to Division 21/22/23 equipment. Division 26 shall provide line side terminations. Division 21/22/23 shall provide wiring from the load side termination point to final connection of the equipment in accordance with Division 26 Specifications.
- E. Equipment less than 110 volts, all relays, actuators, timers, seven-day clocks, alternators, pressure, vacuum, float, flow, pneumatic-electric, and electric-pneumatic switches, aquastats, freezestats, line and low voltage thermostats, thermals, remote selector switches, remote push-button stations, emergency break-glass stations, interlocking, disconnect switches beyond termination point, and other appurtenances associated with equipment under Division 21/22/23 shall be furnished, installed, and wired under Division 21/22/23.
- F. All wiring required for controls and instrumentation not indicated on the drawings shall be furnished and installed by Division 21/22/23.
- G. Hood exhaust fans shall be wired under Division 26 to the line side of the disconnect switch (or outlet if provided). A disconnect switch shall be provided under Division 26 if the fan is not provided with a built-in disconnect switch.
- H. The sequence of control for all equipment shall be as indicated on the Division 23 Drawings and specified in Division 23, HVAC Control System.

- I. Where electrical wiring is required by trades other than covered by Division 26, specifications for that section shall include the same wiring materials and methods as specified under Division 26. NO EXCEPTIONS.
- J. For kitchen equipment, Division 26 shall install wiring from a power source to a termination point, adjacent to the kitchen equipment. Division 26 shall provide the required termination for such equipment, be it receptacle or disconnect and whip.
- K. Where conduit and wire are used in other Sections/Divisions, those Sections/Divisions shall reference the wire and conduit specifications in Division 26.

3.07 ELECTRICAL TESTING

- A. Make or cause to be made all tests and adjustments and put all electrical power and signal systems and equipment into operation. Provide all instruments, labor, and materials for intermediate or final tests designated. Tests shall indicate full compliance with Manufacturer-recommended measurements and with the specifications and drawings. Tests should be by a trained and experienced independent third party which can function unbiased and independent of manufacturers, suppliers, and installers of the wiring and equipment.

3.08 WATER DAMAGED EQUIPMENT

- A. Electrical equipment exposed to water can be extremely hazardous if reenergized. Flood waters contain chemicals, sewage, oil, and other debris which affect the integrity of the equipment. In all cases of flooding, the manufacturer of each item shall be contacted to verify whether that component can be factory reconditioned. Otherwise, the item shall be replaced.
- B. Items which shall be replaced are the following: circuit breakers, fuses, switches, busway with mylar wrapped bars, components containing semiconductors and transistors, electronically controlled contactors and starters, overload relays, electronic trip units of power circuit breakers, dry-type transformers, control power transformers, liquid-filled transformers, cast-resin transformers, conduit fittings, outlet and junction boxes, wire listed for dry locations, arc-fault and ground fault circuit interrupters, surge protection devices, wiring devices (switches, receptacles, dimmers, etc.), luminaires, LED drivers, signaling systems, protection systems, and communications systems.

3.09 MINOR ELECTRICAL DEMOLITION FOR REMODELING

- A. Abandoned conduit/boxes shall have all electrical wiring removed completely and not just made "safe". Conduit/boxes shall be removed where practical without creating additional demolition/restitution work for other trades.
- B. Remove (or relocate, as applicable) electrical wiring in construction to be demolished.
- C. Maintain service to outlets in construction-to-remain.

END OF SECTION

This page intentionally left blank

SECTION 26 05 19
LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Single conductor building wire.
- B. Metal-clad cable.
- C. Wiring connectors.
- D. Electrical tape.
- E. Cable ties.

1.02 RELATED REQUIREMENTS

- A. Section 07 84 00 - Firestopping.
- B. Section 26 05 26 - Grounding and Bonding for Electrical Systems: Additional requirements for grounding conductors and grounding connectors.
- C. Section 26 05 53 - Identification for Electrical Systems: Identification products and requirements.

1.03 REFERENCE STANDARDS

- A. ASTM B3 - Standard Specification for Soft or Annealed Copper Wire 2013 (Reapproved 2018).
- B. ASTM B8 - Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft 2011 (Reapproved 2017).
- C. ASTM B33 - Standard Specification for Tin-Coated Soft or Annealed Copper Wire for Electrical Purposes 2010, with Editorial Revision (2020).
- D. ASTM B787/B787M - Standard Specification for 19 Wire Combination Unilay-Stranded Copper Conductors for Subsequent Insulation 2004 (Reapproved 2020).
- E. ASTM D3005 - Standard Specification for Low-Temperature Resistant Vinyl Chloride Plastic Pressure-Sensitive Electrical Insulating Tape 2017.
- F. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- G. NECA 120 - Standard for Installing Armored Cable (AC) and Type Metal-Clad (MC) Cable 2018.
- H. NEMA WC 70 - Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy 2021.
- I. NETA ATS - Standard For Acceptance Testing Specifications For Electrical Power Equipment And Systems 2021.
- J. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- K. UL 44 - Thermoset-Insulated Wires and Cables Current Edition, Including All Revisions.
- L. UL 83 - Thermoplastic-Insulated Wires and Cables Current Edition, Including All Revisions.
- M. UL 486A-486B - Wire Connectors Current Edition, Including All Revisions.
- N. UL 486C - Splicing Wire Connectors Current Edition, Including All Revisions.
- O. UL 486D - Sealed Wire Connector Systems Current Edition, Including All Revisions.
- P. UL 510 - Polyvinyl Chloride, Polyethylene, and Rubber Insulating Tape Current Edition, Including All Revisions.
- Q. UL 1569 - Metal-Clad Cables Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:

1. Coordinate sizes of raceways, boxes, and equipment enclosures installed under other sections with the actual conductors to be installed, including adjustments for conductor sizes increased for voltage drop.
2. Coordinate with electrical equipment installed under other sections to provide terminations suitable for use with the conductors to be installed.
3. Notify CPL Architects of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.05 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store conductors and cables in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.01 CONDUCTOR AND CABLE APPLICATIONS

- A. Do not use conductors and cables for applications other than as permitted by NFPA 70 and product listing.
- B. Provide single conductor building wire installed in suitable raceway unless otherwise indicated, permitted, or required.
- C. Nonmetallic-sheathed cable is not permitted.
- D. Underground feeder and branch-circuit cable is not permitted.
- E. Service entrance cable is not permitted.
- F. Armored cable is not permitted.

2.02 CONDUCTOR AND CABLE GENERAL REQUIREMENTS

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products listed, classified, and labeled as suitable for the purpose intended.
- C. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, etc. as required for a complete operating system.
- D. Comply with NEMA WC 70.
- E. Thermoplastic-Insulated Conductors and Cables: Listed and labeled as complying with UL 83.
- F. Thermoset-Insulated Conductors and Cables: Listed and labeled as complying with UL 44.
- G. Conductor Material:
 1. Provide copper conductors only. Aluminum conductors are not acceptable for this project. Conductor sizes indicated are based on copper.
 2. Copper Conductors: Soft drawn annealed, 98 percent conductivity, uncoated copper conductors complying with ASTM B3, ASTM B8, or ASTM B787/B787M unless otherwise indicated.
 3. Tinned Copper Conductors: Comply with ASTM B33.
- H. Conductor Color Coding:
 1. Color code conductors as indicated unless otherwise required by the authority having jurisdiction. Maintain consistent color coding throughout project.
 2. Color Coding Method: Integrally colored insulation.
 3. Color Code:
 - a. 208Y/120 V, 3 Phase, 4 Wire System:
 - 1) Phase A: Black.
 - 2) Phase B: Red.
 - 3) Phase C: Blue.
 - 4) Neutral/Grounded: White.

- b. Equipment Ground, All Systems: Green.

2.03 SINGLE CONDUCTOR BUILDING WIRE

- A. Description: Single conductor insulated wire.
- B. Conductor Stranding:
 - 1. Feeders and Branch Circuits:
 - a. Size 10 AWG and Smaller: Solid.
 - b. Size 8 AWG and Larger: Stranded.
- C. Insulation Voltage Rating: 600 V.
- D. Insulation:
 - 1. Copper Building Wire: Type THHN/THWN or THHN/THWN-2, except as indicated below.

2.04 METAL-CLAD CABLE

- A. Description: NFPA 70, Type MC cable listed and labeled as complying with UL 1569, and listed for use in classified firestop systems to be used.
- B. Conductor Stranding:
 - 1. Size 10 AWG and Smaller: Solid.
 - 2. Size 8 AWG and Larger: Stranded.
- C. Insulation Voltage Rating: 600 V.
- D. Insulation: Type THHN, THHN/THWN, or THHN/THWN-2.
- E. Grounding: Full-size integral equipment grounding conductor.
- F. Armor: Steel, interlocked tape.
- G. Provide PVC jacket applied over cable armor where indicated or required for environment of installed location.

2.05 WIRING CONNECTORS

- A. Description: Wiring connectors appropriate for the application, suitable for use with the conductors to be connected, and listed as complying with UL 486A-486B or UL 486C as applicable.
- B. Do not use insulation-piercing or insulation-displacement connectors designed for use with conductors without stripping insulation.
- C. Do not use push-in wire connectors as a substitute for twist-on insulated spring connectors.
- D. Twist-on Insulated Spring Connectors: Rated 600 V, 221 degrees F for standard applications and 302 degrees F for high temperature applications; pre-filled with sealant and listed as complying with UL 486D for damp and wet locations.

2.06 ACCESSORIES

- A. Electrical Tape:
 - 1. Vinyl Insulating Electrical Tape: Complying with ASTM D3005 and listed as complying with UL 510; minimum thickness of 7 mil; resistant to abrasion, corrosion, and sunlight; conformable for application down to 0 degrees F and suitable for continuous temperature environment up to 221 degrees F.
- B. Cable Ties: Material and tensile strength rating suitable for application.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that interior of building has been protected from weather.
- B. Verify that work likely to damage wire and cable has been completed.
- C. Verify that raceways, boxes, and equipment enclosures are installed and are properly sized to accommodate conductors and cables in accordance with NFPA 70.

- D. Verify that field measurements are as indicated.
- E. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

- A. Clean raceways thoroughly to remove foreign materials before installing conductors and cables.

3.03 INSTALLATION

- A. Circuiting Requirements:
 - 1. Unless dimensioned, circuit routing indicated is diagrammatic.
 - 2. When circuit destination is indicated without specific routing, determine exact routing required.
 - 3. Arrange circuiting to minimize splices.
 - 4. Maintain separation of Class 1, Class 2, and Class 3 remote-control, signaling, and power-limited circuits in accordance with NFPA 70.
 - 5. Common Neutrals: Unless otherwise indicated, sharing of neutral/grounded conductors among up to three single phase branch circuits of different phases installed in the same raceway is not permitted. Provide dedicated neutral/grounded conductor for each individual branch circuit.
- B. Install products in accordance with manufacturer's instructions.
- C. Perform work in accordance with NECA 1 (general workmanship).
- D. Install metal-clad cable (Type MC) in accordance with NECA 120.
- E. Installation in Raceway:
 - 1. Tape ends of conductors and cables to prevent infiltration of moisture and other contaminants.
 - 2. Pull all conductors and cables together into raceway at same time.
 - 3. Do not damage conductors and cables or exceed manufacturer's recommended maximum pulling tension and sidewall pressure.
 - 4. Use suitable wire pulling lubricant where necessary, except when lubricant is not recommended by the manufacturer.
- F. Paralleled Conductors: Install conductors of the same length and terminate in the same manner.
- G. Secure and support conductors and cables in accordance with NFPA 70 using suitable supports and methods approved by the authority having jurisdiction. Provide independent support from building structure. Do not provide support from raceways, piping, ductwork, or other systems.
- H. Terminate cables using suitable fittings.
 - 1. Metal-Clad Cable (Type MC):
 - a. Use listed fittings.
 - b. Cut cable armor only using specialized tools to prevent damaging conductors or insulation. Do not use hacksaw or wire cutters to cut armor.
- I. Install conductors with a minimum of 12 inches of slack at each outlet.
- J. Neatly train and bundle conductors inside boxes, wireways, panelboards and other equipment enclosures.
- K. Group or otherwise identify neutral/grounded conductors with associated ungrounded conductors inside enclosures in accordance with NFPA 70.
- L. Make wiring connections using specified wiring connectors.
 - 1. Make splices and taps only in accessible boxes. Do not pull splices into raceways or make splices in conduit bodies or wiring gutters.
 - 2. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors.
 - 3. Do not remove conductor strands to facilitate insertion into connector.

- 4. Clean contact surfaces on conductors and connectors to suitable remove corrosion, oxides, and other contaminates. Do not use wire brush on plated connector surfaces.
- M. Insulate splices and taps that are made with uninsulated connectors using methods suitable for the application, with insulation and mechanical strength at least equivalent to unspliced conductors.
- N. Insulate ends of spare conductors using vinyl insulating electrical tape.
- O. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 84 00.
- P. Unless specifically indicated to be excluded, provide final connections to all equipment and devices, including those furnished by others, as required for a complete operating system.

3.04 FIELD QUALITY CONTROL

- A. See Section 01 40 00 - Quality Requirements, for additional requirements.
- B. Inspect and test in accordance with NETA ATS, except Section 4.
- C. Perform inspections and tests listed in NETA ATS, Section 7.3.2. The insulation resistance test is required for all conductors. The resistance test for parallel conductors listed as optional is not required.
- D. Correct deficiencies and replace damaged or defective conductors and cables.

END OF SECTION

This page intentionally left blank

SECTION 26 05 26
GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Grounding and bonding requirements.
- B. Conductors for grounding and bonding.
- C. Connectors for grounding and bonding.

1.02 RELATED REQUIREMENTS

- A. Section 26 05 19 - Low-Voltage Electrical Power Conductors and Cables: Additional requirements for conductors for grounding and bonding, including conductor color coding.
- B. Section 26 05 53 - Identification for Electrical Systems: Identification products and requirements.

1.03 REFERENCE STANDARDS

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- B. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- C. UL 467 - Grounding and Bonding Equipment Current Edition, Including All Revisions.

1.04 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.

PART 2 PRODUCTS

2.01 GROUNDING AND BONDING REQUIREMENTS

- A. Do not use products for applications other than as permitted by NFPA 70 and product listing.
- B. Unless specifically indicated to be excluded, provide all required components, conductors, connectors, conduit, boxes, fittings, supports, accessories, etc. as necessary for a complete grounding and bonding system.
- C. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
- D. Bonding and Equipment Grounding:
 - 1. Provide bonding for equipment grounding conductors, equipment ground busses, metallic equipment enclosures, metallic raceways and boxes, device grounding terminals, and other normally non-current-carrying conductive materials enclosing electrical conductors/equipment or likely to become energized as indicated and in accordance with NFPA 70.
 - 2. Provide insulated equipment grounding conductor in each feeder and branch circuit raceway. Do not use raceways as sole equipment grounding conductor.
 - 3. Where circuit conductor sizes are increased for voltage drop, increase size of equipment grounding conductor proportionally in accordance with NFPA 70.
 - 4. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
 - 5. Terminate branch circuit equipment grounding conductors on solidly bonded equipment ground bus only. Do not terminate on neutral (grounded) or isolated/insulated ground bus.
 - 6. Provide bonding jumper across expansion or expansion/deflection fittings provided to accommodate conduit movement.
 - 7. Provide bonding for interior metal piping systems in accordance with NFPA 70. This includes, but is not limited to:
 - a. Metal gas piping.

2.02 GROUNDING AND BONDING COMPONENTS

- A. General Requirements:
 - 1. Provide products listed, classified, and labeled as suitable for the purpose intended.
 - 2. Provide products listed and labeled as complying with UL 467 where applicable.
- B. Conductors for Grounding and Bonding, in Addition to Requirements of Section 26 05 26:
 - 1. Use insulated copper conductors unless otherwise indicated.
 - a. Exceptions:
 - 1) Use bare copper conductors where installed underground in direct contact with earth.
 - 2) Use bare copper conductors where directly encased in concrete (not in raceway).
- C. Connectors for Grounding and Bonding:
 - 1. Description: Connectors appropriate for the application and suitable for the conductors and items to be connected; listed and labeled as complying with UL 467.
 - 2. Unless otherwise indicated, use mechanical connectors, compression connectors, or exothermic welded connections for accessible connections.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that work likely to damage grounding and bonding system components has been completed.
- B. Verify that field measurements are as indicated.
- C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Perform work in accordance with NECA 1 (general workmanship).
- C. Make grounding and bonding connections using specified connectors.
 - 1. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors. Do not remove conductor strands to facilitate insertion into connector.
 - 2. Remove nonconductive paint, enamel, or similar coating at threads, contact points, and contact surfaces.
 - 3. Exothermic Welds: Make connections using molds and weld material suitable for the items to be connected in accordance with manufacturer's recommendations.
 - 4. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
 - 5. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.
- D. Identify grounding and bonding system components in accordance with Section 26 05 53.

END OF SECTION

SECTION 26 05 29
HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Support and attachment requirements and components for equipment, conduit, cable, boxes, and other electrical work.

1.02 RELATED REQUIREMENTS

- A. Section 26 05 33.13 - Conduit for Electrical Systems: Additional support and attachment requirements for conduits.
- B. Section 26 05 33.16 - Boxes for Electrical Systems: Additional support and attachment requirements for boxes.
- C. Section 26 51 00 - Interior Lighting: Additional support and attachment requirements for interior luminaires.
- D. Section 26 56 00 - Exterior Lighting: Additional support and attachment requirements for exterior luminaires.

1.03 REFERENCE STANDARDS

- A. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products 2017.
- B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2023.
- C. ASTM B633 - Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel 2023.
- D. MFMA-4 - Metal Framing Standards Publication 2004.
- E. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- F. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate sizes and arrangement of supports and bases with actual equipment and components to be installed.
 - 2. Coordinate work to provide additional framing and materials required for installation.
 - 3. Coordinate compatibility of support and attachment components with mounting surfaces at installed locations.
 - 4. Coordinate arrangement of supports with ductwork, piping, equipment and other potential conflicts.
 - 5. Notify CPL Architects of conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
- B. Sequencing:
 - 1. Do not install products on or provide attachment to concrete surfaces until concrete has cured; see Section 03 30 00.

PART 2 PRODUCTS

2.01 SUPPORT AND ATTACHMENT COMPONENTS

- A. General Requirements:
 - 1. Comply with the following. Where requirements differ, comply with most stringent.
 - a. NFPA 70.
 - b. Requirements of authorities having jurisdiction.

2. Provide required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for complete installation of electrical work.
3. Provide products listed, classified, and labeled as suitable for purpose intended, where applicable.
4. Where support and attachment component types and sizes are not indicated, select in accordance with manufacturer's application criteria as required for load to be supported. Include consideration for vibration, equipment operation, and shock loads where applicable.
5. Do not use products for applications other than as permitted by NFPA 70 and product listing.
6. Do not use wire, chain, perforated pipe strap, or wood for permanent supports unless specifically indicated or permitted.
7. Steel Components: Use corrosion-resistant materials suitable for environment where installed.
 - a. Indoor Dry Locations: Use zinc-plated steel or approved equivalent unless otherwise indicated.
 - b. Outdoor and Damp or Wet Indoor Locations: Use galvanized steel, stainless steel, or approved equivalent unless otherwise indicated.
 - c. Zinc-Plated Steel: Electroplated in accordance with ASTM B633.
 - d. Galvanized Steel: Hot-dip galvanized after fabrication in accordance with ASTM A123/A123M or ASTM A153/A153M.
- B. Conduit and Cable Supports: Straps and clamps suitable for conduit or cable to be supported.
 1. Conduit Straps: One-hole or two-hole type; steel or malleable iron.
 2. Conduit Clamps: Bolted type unless otherwise indicated.
- C. Outlet Box Supports: Hangers and brackets suitable for boxes to be supported.
- D. Metal Channel/Strut Framing Systems:
 1. Description: Factory-fabricated, continuous-slot, metal channel/strut and associated fittings, accessories, and hardware required for field assembly of supports.
 2. Comply with MFMA-4.
- E. Hanger Rods: Threaded, zinc-plated steel unless otherwise indicated.
- F. Anchors and Fasteners:
 1. Unless otherwise indicated and where not otherwise restricted, use anchor and fastener types indicated for specified applications.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that mounting surfaces are ready to receive support and attachment components.
- C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install hangers and supports in accordance with NECA 1.
- C. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
- D. Unless specifically indicated or approved by CPL Architects, do not provide support from suspended ceiling support system or ceiling grid.
- E. Unless specifically indicated or approved by CPL Architects, do not provide support from roof deck.
- F. Do not penetrate or otherwise notch or cut structural members without approval of Structural Engineer.

G. Equipment Support and Attachment:

1. Use metal, fabricated supports or supports assembled from metal channel/strut to support equipment as required.
2. Use metal channel/strut secured to studs to support equipment surface mounted on hollow stud walls when wall strength is not sufficient to resist pull-out.
3. Use metal channel/strut to support surface-mounted equipment in wet or damp locations to provide space between equipment and mounting surface.
4. Securely fasten floor-mounted equipment. Do not install equipment such that it relies on its own weight for support.

H. Secure fasteners in accordance with manufacturer's recommended torque settings.

I. Remove temporary supports.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 40 00 - Quality Requirements for additional requirements.
- B. Inspect support and attachment components for damage and defects.
- C. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer. Replace components that exhibit signs of corrosion.
- D. Correct deficiencies and replace damaged or defective support and attachment components.

END OF SECTION

This page intentionally left blank

SECTION 26 05 33.13
CONDUIT FOR ELECTRICAL SYSTEMS
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Galvanized steel rigid metal conduit (RMC).
- B. Liquidtight flexible metal conduit (LFMC).
- C. Electrical metallic tubing (EMT).
- D. Conduit fittings.
- E. Accessories.

1.02 RELATED REQUIREMENTS

- A. Section 26 05 26 - Grounding and Bonding for Electrical Systems.
- B. Section 26 05 29 - Hangers and Supports for Electrical Systems.
- C. Section 26 05 33.16 - Boxes for Electrical Systems.

1.03 REFERENCE STANDARDS

- A. ANSI C80.1 - American National Standard for Electrical Rigid Steel Conduit (ERSC) 2020.
- B. ANSI C80.3 - American National Standard for Electrical Metallic Tubing -- Steel (EMT-S) 2020.
- C. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- D. NECA 101 - Standard for Installing Steel Conduits (Rigid, IMC, EMT) 2020.
- E. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable 2014.
- F. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- G. UL 6 - Electrical Rigid Metal Conduit-Steel Current Edition, Including All Revisions.
- H. UL 514B - Conduit, Tubing, and Cable Fittings Current Edition, Including All Revisions.

1.04 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

PART 2 PRODUCTS

2.01 CONDUIT APPLICATIONS

- A. Do not use conduit and associated fittings for applications other than as permitted by NFPA 70 and product listing.
- B. Unless otherwise indicated and where not otherwise restricted, use the conduit types indicated for the specified applications. Where more than one listed application applies, comply with the most restrictive requirements. Where conduit type for a particular application is not specified, use galvanized steel rigid metal conduit.
- C. Concealed Within Masonry Walls: Use galvanized steel rigid metal conduit or electrical metallic tubing (EMT).
- D. Concealed Within Hollow Stud Walls: Use galvanized steel rigid metal conduit, intermediate metal conduit (IMC), or electrical metallic tubing (EMT).
- E. Concealed Above Accessible Ceilings: Use galvanized steel rigid metal conduit or electrical metallic tubing (EMT).
- F. Interior, Damp or Wet Locations: Use galvanized steel rigid metal conduit.

- G. Exposed, Interior, Not Subject to Physical Damage: Use galvanized steel rigid metal conduit, intermediate metal conduit (IMC), or electrical metallic tubing (EMT).
- H. Exposed, Interior, Subject to Physical Damage: Use galvanized steel rigid metal conduit.

2.02 CONDUIT REQUIREMENTS

- A. Fittings for Grounding and Bonding: Also comply with Section 26 05 26.
- B. Provide all conduit, fittings, supports, and accessories required for a complete raceway system.
- C. Provide products listed, classified, and labeled as suitable for the purpose intended.
- D. Minimum Conduit Size, Unless Otherwise Indicated:
 - 1. Branch Circuits: 1/2 inch (16 mm) trade size.
- E. Where conduit size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

2.03 GALVANIZED STEEL RIGID METAL CONDUIT (RMC)

- A. Description: NFPA 70, Type RMC galvanized steel rigid metal conduit complying with ANSI C80.1 and listed and labeled as complying with UL 6.
- B. Fittings:
 - 1. Material: Use steel or malleable iron.
 - 2. Connectors and Couplings: Use threaded type fittings only. Threadless set screw and compression (gland) type fittings are not permitted.

2.04 LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC)

- A. Description: NFPA 70, Type LFMC polyvinyl chloride (PVC) jacketed steel flexible metal conduit listed and labeled as complying with UL 360.
- B. Fittings:
 - 1. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
 - 2. Material: Use steel or malleable iron.
 - a. Do not use die cast zinc fittings.

2.05 ELECTRICAL METALLIC TUBING (EMT)

- A. Description: NFPA 70, Type EMT steel electrical metallic tubing complying with ANSI C80.3 and listed and labeled as complying with UL 797.
- B. Fittings:
 - 1. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
 - 2. Material: Use steel or malleable iron.
 - a. Do not use die cast zinc fittings.
 - 3. Connectors and Couplings: Use compression (gland) type.
 - a. Do not use indenter type connectors and couplings.
 - b. Do not use set-screw type connectors and couplings.
 - 4. Damp or Wet Locations (where permitted): Use fittings listed for use in wet locations.

2.06 ACCESSORIES

- A. Corrosion Protection Tape: PVC-based, minimum thickness of 20 mil.
- B. Pull Strings: Use nylon cord with average breaking strength of not less than 200 pound-force.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that mounting surfaces are ready to receive conduits.
- C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Perform work in accordance with NECA 1 (general workmanship).
- C. Install galvanized steel rigid metal conduit (RMC) in accordance with NECA 101.
- D. Conduit Routing:
 - 1. Unless dimensioned, conduit routing indicated is diagrammatic.
 - 2. When conduit destination is indicated without specific routing, determine exact routing required.
 - 3. Conceal all conduits unless specifically indicated to be exposed.
 - 4. Unless otherwise approved, do not route conduits exposed:
 - a. Across floors.
 - b. Across roofs.
 - 5. Arrange conduit to maintain adequate headroom, clearances, and access.
 - 6. Arrange conduit to provide no more than the equivalent of four 90 degree bends between pull points.
 - 7. Route conduits above water and drain piping where possible.
 - 8. Maintain minimum clearance of 6 inches between conduits and piping for other systems.
- E. Conduit Support:
 - 1. Secure and support conduits in accordance with NFPA 70 and Section 26 05 29 using suitable supports and methods approved by the authority having jurisdiction.
 - 2. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
 - 3. Use conduit strap to support single surface-mounted conduit.
 - a. Use clamp back spacer with conduit strap for damp and wet locations to provide space between conduit and mounting surface.
- F. Connections and Terminations:
 - 1. Use suitable adapters where required to transition from one type of conduit to another.
 - 2. Provide drip loops for liquidtight flexible conduit connections to prevent drainage of liquid into connectors.
- G. Penetrations:
 - 1. Do not penetrate or otherwise notch or cut structural members, including footings and grade beams, without approval of Structural Engineer.
 - 2. Make penetrations perpendicular to surfaces unless otherwise indicated.
 - 3. Provide sleeves for penetrations as indicated or as required to facilitate installation. Set sleeves flush with exposed surfaces unless otherwise indicated or required.
 - 4. Conceal bends for conduit risers emerging above ground.
 - 5. Where conduits penetrate waterproof membrane, seal as required to maintain integrity of membrane.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 40 00 - Quality Requirements, for additional requirements.
- B. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer. Replace components that exhibit signs of corrosion.

3.04 CLEANING

- A. Clean interior of conduits to remove moisture and foreign matter.

3.05 PROTECTION

- A. Immediately after installation of conduit, use suitable manufactured plugs to provide protection from entry of moisture and foreign material and do not remove until ready for installation of conductors.

END OF SECTION

This page intentionally left blank

SECTION 26 05 33.16
BOXES FOR ELECTRICAL SYSTEMS
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Outlet and device boxes up to 100 cubic inches, including those used as junction and pull boxes.
- B. Cabinets and enclosures, including junction and pull boxes larger than 100 cubic inches.

1.02 RELATED REQUIREMENTS

- A. Section 08 31 00 - Access Doors and Panels: Panels for maintaining access to concealed boxes.
- B. Section 26 05 26 - Grounding and Bonding for Electrical Systems.
- C. Section 26 05 29 - Hangers and Supports for Electrical Systems.
- D. Section 26 05 33.13 - Conduit for Electrical Systems:
 - 1. Conduit bodies and other fittings.
- E. Section 26 27 26 - Wiring Devices:
 - 1. Wall plates.

1.03 REFERENCE STANDARDS

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- B. NECA 130 - Standard for Installing and Maintaining Wiring Devices 2016.
- C. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable 2014.
- D. NEMA OS 1 - Sheet-Steel Outlet Boxes, Device Boxes, Covers, and Box Supports 2013 (Reaffirmed 2020).
- E. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- F. UL 514A - Metallic Outlet Boxes Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the work with other trades to avoid placement of ductwork, piping, equipment, or other potential obstructions within the dedicated equipment spaces and working clearances for electrical equipment required by NFPA 70.
 - 2. Coordinate arrangement of electrical equipment with the dimensions and clearance requirements of the actual equipment to be installed.
 - 3. Coordinate minimum sizes of boxes with the actual installed arrangement of conductors, clamps, support fittings, and devices, calculated according to NFPA 70.
 - 4. Coordinate minimum sizes of pull boxes with the actual installed arrangement of connected conduits, calculated according to NFPA 70.
 - 5. Coordinate the placement of boxes with millwork, furniture, devices, equipment, etc. installed under other sections or by others.
 - 6. Coordinate the work with other trades to preserve insulation integrity.
 - 7. Coordinate the work with other trades to provide walls suitable for installation of flush-mounted boxes where indicated.
 - 8. Notify CPL Architects of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.05 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.

- B. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

PART 2 PRODUCTS

2.01 BOXES

- A. General Requirements:
1. Do not use boxes and associated accessories for applications other than as permitted by NFPA 70 and product listing.
 2. Provide all boxes, fittings, supports, and accessories required for a complete raceway system and to accommodate devices and equipment to be installed.
 3. Provide products listed, classified, and labeled as suitable for the purpose intended.
 4. Where box size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
 5. Provide grounding terminals within boxes where equipment grounding conductors terminate.
- B. Outlet and Device Boxes Up to 100 cubic inches, Including Those Used as Junction and Pull Boxes:
1. Use sheet-steel boxes for dry locations unless otherwise indicated or required.
 2. Use cast iron boxes or cast aluminum boxes for damp or wet locations unless otherwise indicated or required; furnish with compatible weatherproof gasketed covers.
 3. Use suitable concrete type boxes where flush-mounted in concrete.
 4. Use suitable masonry type boxes where flush-mounted in masonry walls.
 5. Use raised covers suitable for the type of wall construction and device configuration where required.
 6. Use shallow boxes where required by the type of wall construction.
 7. Do not use "through-wall" boxes designed for access from both sides of wall.
 8. Sheet-Steel Boxes: Comply with NEMA OS 1, and list and label as complying with UL 514A.
 9. Cast Metal Boxes: Comply with NEMA FB 1, and list and label as complying with UL 514A; furnish with threaded hubs.
 10. Boxes for Supporting Luminaires and Ceiling Fans: Listed as suitable for the type and weight of load to be supported; furnished with fixture stud to accommodate mounting of luminaire where required.
 11. Boxes for Ganged Devices: Use multigang boxes of single-piece construction. Do not use field-connected gangable boxes unless specifically indicated or permitted.
 12. Wall Plates: Comply with Section 26 27 26.
- C. Cabinets and Enclosures, Including Junction and Pull Boxes Larger Than 100 cubic inches:
1. Junction and Pull Boxes Larger Than 100 cubic inches:
 - a. Provide screw-cover or hinged-cover enclosures unless otherwise indicated.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that mounting surfaces are ready to receive boxes.
- C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install boxes in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards where mounting heights are not indicated.

- C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.
- D. Box Locations:
 - 1. Locate boxes to be accessible. Provide access panels in accordance with Section 08 31 00 as required where approved by the Architect.
 - 2. Unless dimensioned, box locations indicated are approximate.
 - 3. Locate boxes as required for devices installed under other sections or by others.
 - 4. Do not install flush-mounted boxes on opposite sides of walls back-to-back. Provide minimum 6 inches horizontal separation unless otherwise indicated.
- E. Box Supports:
 - 1. Secure and support boxes in accordance with NFPA 70 and Section 26 05 29 using suitable supports and methods approved by the authority having jurisdiction.
 - 2. Provide independent support from building structure except for cast metal boxes (other than boxes used for fixture support) supported by threaded conduit connections in accordance with NFPA 70. Do not provide support from piping, ductwork, or other systems.
- F. Install boxes plumb and level.
- G. Flush-Mounted Boxes:
 - 1. Install boxes in noncombustible materials such as concrete, tile, gypsum, plaster, etc. so that front edge of box or associated raised cover is not set back from finished surface more than 1/4 inch or does not project beyond finished surface.
 - 2. Install boxes in combustible materials such as wood so that front edge of box or associated raised cover is flush with finished surface.
 - 3. Repair rough openings around boxes in noncombustible materials such as concrete, tile, gypsum, plaster, etc. so that there are no gaps or open spaces greater than 1/8 inch at the edge of the box.
- H. Install boxes as required to preserve insulation integrity.
- I. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.
- J. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 84 00.
- K. Close unused box openings.
- L. Install blank wall plates on junction boxes and on outlet boxes with no devices or equipment installed or designated for future use.
- M. Provide grounding and bonding in accordance with Section 26 05 26.

3.03 CLEANING

- A. Clean interior of boxes to remove dirt, debris, plaster and other foreign material.

3.04 PROTECTION

- A. Immediately after installation, protect boxes from entry of moisture and foreign material until ready for installation of conductors.

END OF SECTION

This page intentionally left blank

SECTION 26 05 53
IDENTIFICATION FOR ELECTRICAL SYSTEMS
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Electrical identification requirements.
- B. Identification nameplates and labels.
- C. Wire and cable markers.
- D. Warning signs and labels.

1.02 RELATED REQUIREMENTS

- A. Section 26 05 19 - Low-Voltage Electrical Power Conductors and Cables: Color coding for power conductors and cables 600 V and less; vinyl color coding electrical tape.
- B. Section 26 05 73 - Power System Studies: Arc flash hazard warning labels.
- C. Section 26 27 26 - Wiring Devices - Lutron: Device and wallplate finishes; factory pre-marked wallplates.

1.03 REFERENCE STANDARDS

- A. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- B. UL 969 - Marking and Labeling Systems Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Verify final designations for equipment, systems, and components to be identified prior to fabrication of identification products.
- B. Sequencing:
 - 1. Do not conceal items to be identified, in locations such as above suspended ceilings, until identification products have been installed.
 - 2. Do not install identification products until final surface finishes and painting are complete.

1.05 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.

1.06 FIELD CONDITIONS

- A. Do not install adhesive products when ambient temperature is lower than recommended by manufacturer.

PART 2 PRODUCTS

2.01 IDENTIFICATION REQUIREMENTS

- A. Identification for Equipment:
 - 1. Use identification nameplate to identify each piece of electrical distribution and control equipment and associated sections, compartments, and components.
 - a. Panelboards:
 - 1) Identify power source and circuit number. Include location when not within sight of equipment.
 - 2) Use typewritten circuit directory to identify load(s) served for panelboards with a door. Identify spares and spaces using pencil.
 - 3) For power panelboards without a door, use identification nameplate to identify load(s) served for each branch device. Do not identify spares and spaces.
 - 2. Arc Flash Hazard Warning Labels: Comply with Section 26 05 73.
- B. Identification for Conductors and Cables:
 - 1. Color Coding for Power Conductors 600 V and Less: Comply with Section 26 05 19.

2. Use identification nameplate or identification label to identify color code for ungrounded and grounded power conductors inside door or enclosure at each piece of feeder or branch-circuit distribution equipment when premises has feeders or branch circuits served by more than one nominal voltage system.
 3. Use wire and cable markers to identify circuit number or other designation indicated for power, control, and instrumentation conductors and cables at the following locations:
 - a. At each source and load connection for the phase and neutral wires.
- C. Identification for Boxes:
1. Use identification labels or handwritten text using indelible marker to identify circuits enclosed.
- D. Identification for Devices:
1. Wiring Device and Wallplate Finishes: Comply with Section 26 27 26.
 2. Use identification label or engraved wallplate to identify serving branch circuit for all receptacles.
 3. Use identification label to identify receptacles protected by upstream GFI protection, where permitted.

2.02 IDENTIFICATION NAMEPLATES AND LABELS

- A. Identification Nameplates:
1. Materials:
 2. Mounting Holes for Mechanical Fasteners: Two, centered on sides for sizes up to 1 inch high; Four, located at corners for larger sizes.
- B. Identification Labels:
1. Materials: Use self-adhesive laminated plastic labels; UV, chemical, water, heat, and abrasion resistant.
 2. Text: Use factory pre-printed or machine-printed text. Do not use handwritten text unless otherwise indicated.

2.03 WIRE AND CABLE MARKERS

- A. Markers for Conductors and Cables: Use wrap-around self-adhesive vinyl cloth, wrap-around self-adhesive vinyl self-laminating, heat-shrink sleeve, plastic sleeve, plastic clip-on, or vinyl split sleeve type markers suitable for the conductor or cable to be identified.
- B. Markers for Conductor and Cable Bundles: Use plastic marker tags secured by nylon cable ties.
- C. Legend: Power source and circuit number or other designation indicated.
- D. Text: Use factory pre-printed or machine-printed text, all capitalized unless otherwise indicated.
- E. Minimum Text Height: 1/8 inch.
- F. Color: Black text on white background unless otherwise indicated.

2.04 WARNING SIGNS AND LABELS

- A. Comply with ANSI Z535.2 or ANSI Z535.4 as applicable.
- B. Warning Signs:
1. Materials:
 2. Minimum Size: 7 by 10 inches unless otherwise indicated.
- C. Warning Labels:
1. Materials: Use factory pre-printed or machine-printed self-adhesive polyester or self-adhesive vinyl labels; UV, chemical, water, heat, and abrasion resistant; produced using materials recognized to UL 969.
 2. Machine-Printed Labels: Use thermal transfer process printing machines and accessories recommended by label manufacturer.
 3. Minimum Size: 2 by 4 inches unless otherwise indicated.

PART 3 EXECUTION

3.01 PREPARATION

- A. Clean surfaces to receive adhesive products according to manufacturer's instructions.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install identification products to be plainly visible for examination, adjustment, servicing, and maintenance. Unless otherwise indicated, locate products as follows:
 - 1. Surface-Mounted Equipment: Enclosure front.
 - 2. Flush-Mounted Equipment: Inside of equipment door.
 - 3. Free-Standing Equipment: Enclosure front; also enclosure rear for equipment with rear access.
 - 4. Elevated Equipment: Legible from the floor or working platform.
 - 5. Branch Devices: Adjacent to device.
 - 6. Interior Components: Legible from the point of access.
 - 7. Boxes: Outside face of cover.
 - 8. Conductors and Cables: Legible from the point of access.
 - 9. Devices: Outside face of cover.
- C. Install identification products centered, level, and parallel with lines of item being identified.
- D. Secure nameplates to exterior surfaces of enclosures using stainless steel screws and to interior surfaces using self-adhesive backing or epoxy cement.
- E. Install self-adhesive labels and markers to achieve maximum adhesion, with no bubbles or wrinkles and edges properly sealed.
- F. Mark all handwritten text, where permitted, to be neat and legible.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 40 00 - Quality Requirements, for additional requirements.
- B. Replace self-adhesive labels and markers that exhibit bubbles, wrinkles, curling or other signs of improper adhesion.

END OF SECTION

This page intentionally left blank

SECTION 26 05 83
WIRING CONNECTIONS
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Electrical connections to equipment.

1.02 RELATED REQUIREMENTS

- A. Section 26 05 19 - Low-Voltage Electrical Power Conductors and Cables.
- B. Section 26 05 33.13 - Conduit for Electrical Systems.
- C. Section 26 05 33.16 - Boxes for Electrical Systems.
- D. Section 26 27 26 - Wiring Devices.
- E. Section 26 28 16.16 - Enclosed Switches.

1.03 REFERENCE STANDARDS

- A. NEMA WD 1 - General Color Requirements for Wiring Devices 1999 (Reaffirmed 2020).
- B. NEMA WD 6 - Wiring Devices - Dimensional Specifications 2021.
- C. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Sequencing:
 - 1. Install rough-in of electrical connections before installation of equipment is required.
 - 2. Make electrical connections before required start-up of equipment.

1.05 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Products: Listed, classified, and labeled as suitable for the purpose intended.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Cords and Caps: NEMA WD 6; match receptacle configuration at outlet provided for equipment.
 - 1. Colors: Comply with NEMA WD 1.
 - 2. Cord Construction: NFPA 70, Type SO, multiconductor flexible cord with identified equipment grounding conductor, suitable for use in damp locations.
 - 3. Size: Suitable for connected load of equipment, length of cord, and rating of branch circuit overcurrent protection.
- B. Disconnect Switches: As specified in Section 26 28 16.16 and in individual equipment sections.
- C. Wiring Devices: As specified in Section 26 27 26.
- D. Flexible Conduit: As specified in Section 26 05 33.13.
- E. Wire and Cable: As specified in Section 26 05 19.
- F. Boxes: As specified in Section 26 05 33.16.

2.02 EQUIPMENT CONNECTIONS

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that equipment is ready for electrical connection, wiring, and energization.

3.02 ELECTRICAL CONNECTIONS

- A. Make electrical connections in accordance with equipment manufacturer's instructions.

- B. Make conduit connections to equipment using flexible conduit. Use liquidtight flexible conduit with watertight connectors in damp or wet locations.
- C. Connect heat producing equipment using wire and cable with insulation suitable for temperatures encountered.
- D. Provide receptacle outlet to accommodate connection with attachment plug.
- E. Provide cord and cap where field-supplied attachment plug is required.
- F. Install suitable strain-relief clamps and fittings for cord connections at outlet boxes and equipment connection boxes.
- G. Install disconnect switches, controllers, control stations, and control devices to complete equipment wiring requirements.
- H. Install terminal block jumpers to complete equipment wiring requirements.
- I. Install interconnecting conduit and wiring between devices and equipment to complete equipment wiring requirements.

END OF SECTION

SECTION 26 24 16
PANELBOARDS
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Overcurrent protective devices for panelboards.

1.02 RELATED REQUIREMENTS

- A. Section 26 05 26 - Grounding and Bonding for Electrical Systems.
- B. Section 26 05 29 - Hangers and Supports for Electrical Systems.
- C. Section 26 05 53 - Identification for Electrical Systems: Identification products and requirements.

1.03 REFERENCE STANDARDS

- A. FS W-C-375 - Circuit Breakers, Molded Case; Branch Circuit and Service 2013e, with Amendment (2017).
- B. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- C. NECA 407 - Standard for Installing and Maintaining Panelboards 2015.
- D. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum) 2020.
- E. NEMA PB 1 - Panelboards 2011.
- F. NEMA PB 1.1 - General Instructions for Proper Installation, Operation and Maintenance of Panelboards Rated 600 Volts or Less 2013.
- G. NETA ATS - Standard For Acceptance Testing Specifications For Electrical Power Equipment And Systems 2021.
- H. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- I. UL 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations Current Edition, Including All Revisions.
- J. UL 50E - Enclosures for Electrical Equipment, Environmental Considerations Current Edition, Including All Revisions.
- K. UL 489 - Molded-Case Circuit Breakers, Molded-Case Switches and Circuit Breaker Enclosures Current Edition, Including All Revisions.
- L. UL 943 - Ground-Fault Circuit-Interrupters Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the work with other trades to avoid placement of ductwork, piping, equipment, or other potential obstructions within the dedicated equipment spaces and working clearances for electrical equipment required by NFPA 70.
 - 2. Coordinate arrangement of electrical equipment with the dimensions and clearance requirements of the actual equipment to be installed.
 - 3. Verify with manufacturer that conductor terminations are suitable for use with the conductors to be installed.
 - 4. Notify CPL Architects of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.05 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

PART 2 PRODUCTS

2.01 PANELBOARDS - GENERAL REQUIREMENTS

- A. Panels are existing; provide circuit breakers listed, classified, and labeled as suitable for the purpose intended.
- B. Unless otherwise indicated, provide products suitable for continuous operation under the following service conditions:
- C. Short Circuit Current Rating:
 - 1. Provide circuit breakers with listed short circuit current rating to match existing.
- D. Branch Overcurrent Protective Devices: Replaceable without disturbing adjacent devices.
- E. Conductor Terminations: Suitable for use with the conductors to be installed.
- F. Enclosures: Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E.

2.02 OVERCURRENT PROTECTIVE DEVICES

- A. Molded Case Circuit Breakers:
 - 1. Description: Quick-make, quick-break, over center toggle, trip-free, trip-indicating circuit breakers listed and labeled as complying with UL 489, and complying with FS W-C-375 where applicable; ratings, configurations, and features as indicated on the drawings.
 - 2. Interrupting Capacity:
 - a. Provide circuit breakers with interrupting capacity as required to provide the short circuit current rating indicated, but not less than:
 - 1) 10,000 rms symmetrical amperes at 240 VAC or 208 VAC.
 - b. Fully Rated Systems: Provide circuit breakers with interrupting capacity not less than the short circuit current rating indicated.
 - 3. Conductor Terminations:
 - a. Lug Material: Aluminum, suitable for terminating aluminum or copper conductors.
 - 4. Multi-Pole Circuit Breakers: Furnish with common trip for all poles.
 - 5. Provide the following circuit breaker types where indicated:
 - a. Ground Fault Circuit Interrupter (GFCI) Circuit Breakers: Listed as complying with UL 943, class A for protection of personnel.
 - 6. Do not use tandem circuit breakers.
 - 7. Do not use handle ties in lieu of multi-pole circuit breakers.

2.03 SOURCE QUALITY CONTROL

- A. See Section 01 40 00 - Quality Requirements, for additional requirements.
- B. Factory test panelboards according to NEMA PB 1.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that the ratings and configurations of the panelboards and associated components are consistent with the indicated requirements.
- C. Verify that mounting surfaces are ready to receive panelboards.
- D. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Perform work in accordance with NECA 1 (general workmanship).
- B. Install products in accordance with manufacturer's instructions.
- C. Install panelboards in accordance with NECA 407 and NEMA PB 1.1.
- D. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.

- E. Provide required support and attachment in accordance with Section 26 05 29.
- F. Install panelboards plumb.
- G. Provide grounding and bonding in accordance with Section 26 05 26.
- H. Install all field-installed branch devices, components, and accessories.
- I. Provide filler plates to cover unused spaces in panelboards.
- J. Identify panelboards in accordance with Section 26 05 53.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 40 00 - Quality Requirements, for additional requirements.
- B. Inspect and test in accordance with NETA ATS, except Section 4.
- C. Test GFCI circuit breakers to verify proper operation.
- D. Correct deficiencies and replace damaged or defective panelboards or associated components.

3.04 ADJUSTING

- A. Adjust tightness of mechanical and electrical connections to manufacturer's recommended torque settings.
- B. Adjust alignment of panelboard fronts.

3.05 CLEANING

- A. Clean dirt and debris from panelboard enclosures and components according to manufacturer's instructions.
- B. Repair scratched or marred exterior surfaces to match original factory finish.

END OF SECTION

This page intentionally left blank

SECTION 26 27 26
WIRING DEVICES
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Wall switches.
- B. Receptacles.
- C. Wall plates.

1.02 RELATED REQUIREMENTS

- A. Section 26 05 26 - Grounding and Bonding for Electrical Systems.
- B. Section 26 05 33.16 - Boxes for Electrical Systems.
- C. Section 26 05 83 - Wiring Connections: Cords and plugs for equipment.

1.03 REFERENCE STANDARDS

- A. FS W-C-596 - Connector, Electrical, Power, General Specification for 2014h, with Amendments (2017).
- B. FS W-S-896 - Switches, Toggle (Toggle and Lock), Flush Mounted (General Specification) 2014g, with Amendment (2017).
- C. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- D. NECA 130 - Standard for Installing and Maintaining Wiring Devices 2016.
- E. NEMA WD 1 - General Color Requirements for Wiring Devices 1999 (Reaffirmed 2020).
- F. NEMA WD 6 - Wiring Devices - Dimensional Specifications 2021.
- G. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- H. UL 20 - General-Use Snap Switches Current Edition, Including All Revisions.
- I. UL 498 - Attachment Plugs and Receptacles Current Edition, Including All Revisions.
- J. UL 514D - Cover Plates for Flush-Mounted Wiring Devices Current Edition, Including All Revisions.
- K. UL 943 - Ground-Fault Circuit-Interrupters Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the placement of outlet boxes with millwork, furniture, equipment, etc. installed under other sections or by others.
 - 2. Coordinate wiring device ratings and configurations with the electrical requirements of actual equipment to be installed.
 - 3. Coordinate the installation and preparation of uneven surfaces, such as split face block, to provide suitable surface for installation of wiring devices.
 - 4. Notify CPL Architects of any conflicts or deviations from Contract Documents to obtain direction prior to proceeding with work.
- B. Sequencing:
 - 1. Do not install wiring devices until final surface finishes and painting are complete.

1.05 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Products: Listed, classified, and labeled as suitable for the purpose intended.

PART 2 PRODUCTS

2.01 WIRING DEVICE APPLICATIONS

- A. Provide wiring devices suitable for intended use and with ratings adequate for load served.
- B. Provide GFCI protection for receptacles installed in kitchens.

2.02 WIRING DEVICE FINISHES

- A. Provide wiring device finishes as described below unless otherwise indicated.
- B. Wiring Devices, Unless Otherwise Indicated: White with white nylon wall plate.

2.03 WALL SWITCHES

- A. Wall Switches - General Requirements: AC only, quiet operating, general-use snap switches with silver alloy contacts, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 20 and where applicable, FS W-S-896; types as indicated on the drawings.
 - 1. Wiring Provisions: Terminal screws for side wiring and screw actuated binding clamp for back wiring with separate ground terminal screw.

2.04 RECEPTACLES

- A. Receptacles - General Requirements: Self-grounding, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 498, and where applicable, FS W-C-596; types as indicated on the drawings.
 - 1. Wiring Provisions: Terminal screws for side wiring or screw actuated binding clamp for back wiring with separate ground terminal screw.
- B. Convenience Receptacles:
 - 1. Standard Convenience Receptacles: Industrial specification grade, 20A, 125V, NEMA 5-20R; single or duplex as indicated on the drawings.
- C. GFCI Receptacles:
 - 1. GFCI Receptacles - General Requirements: Self-testing, with feed-through protection and light to indicate ground fault tripped condition and loss of protection; listed as complying with UL 943, class A.
 - 2. Standard GFCI Receptacles: Industrial specification grade, duplex, 20A, 125V, NEMA 5-20R, rectangular decorator style.

2.05 WALL PLATES

- A. Wall Plates: Comply with UL 514D.
 - 1. Configuration: One piece cover as required for quantity and types of corresponding wiring devices.
 - 2. Size: Standard; _____.
 - 3. Screws: Metal with slotted heads finished to match wall plate finish.
- B. Nylon Wall Plates: Smooth finish, high-impact thermoplastic.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate devices and conductors in accordance with NFPA 70.
- C. Verify that wall openings are neatly cut and will be completely covered by wall plates.
- D. Verify that final surface finishes are complete, including painting.
- E. Verify that branch circuit wiring installation is completed, tested, and ready for connection to wiring devices.
- F. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

3.03 INSTALLATION

- A. Perform work in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards unless otherwise indicated.
- B. Coordinate locations of outlet boxes provided under Section 26 05 33.16 as required for installation of wiring devices provided under this section.
- C. Install wiring devices in accordance with manufacturer's instructions.
- D. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.
- E. Where required, connect wiring devices using pigtails not less than 6 inches long. Do not connect more than one conductor to wiring device terminals.
- F. Connect wiring devices by wrapping conductor clockwise 3/4 turn around screw terminal and tightening to proper torque specified by the manufacturer. Where present, do not use push-in pressure terminals that do not rely on screw-actuated binding.
- G. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
- H. Install wiring devices plumb and level with mounting yoke held rigidly in place.
- I. Install wall switches with OFF position down.
- J. Install vertically mounted receptacles with grounding pole on top and horizontally mounted receptacles with grounding pole on left.
- K. Install wall plates to fit completely flush to wall with no gaps and rough opening completely covered without strain on wall plate. Repair or reinstall improperly installed outlet boxes or improperly sized rough openings. Do not use oversized wall plates in lieu of meeting this requirement.
- L. Install blank wall plates on junction boxes and on outlet boxes with no wiring devices installed or designated for future use.

3.04 FIELD QUALITY CONTROL

- A. See Section 01 40 00 - Quality Requirements, for additional requirements.
- B. Inspect each wiring device for damage and defects.
- C. Operate each wall switch, wall dimmer, and fan speed controller with circuit energized to verify proper operation.
- D. Test each receptacle to verify operation and proper polarity.
- E. Test each GFCI receptacle for proper tripping operation according to manufacturer's instructions.
- F. Correct wiring deficiencies and replace damaged or defective wiring devices.

3.05 ADJUSTING

- A. Adjust devices and wall plates to be flush and level.

3.06 CLEANING

- A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

END OF SECTION

This page intentionally left blank

SECTION 26 28 13
FUSES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fuses.

1.02 RELATED REQUIREMENTS

1.03 REFERENCE STANDARDS

- A. NEMA FU 1 - Low Voltage Cartridge Fuses 2012.
- B. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- C. UL 248-1 - Low-Voltage Fuses - Part 1: General Requirements Current Edition, Including All Revisions.
- D. UL 248-12 - Low-Voltage Fuses - Part 12: Class R Fuses Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate fuse clips furnished in equipment provided under other sections for compatibility with indicated fuses.
 - 2. Coordinate fuse requirements according to manufacturer's recommendations and nameplate data for actual equipment to be installed.
 - 3. Notify CPL Architects of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.05 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.

PART 2 PRODUCTS

2.01 APPLICATIONS

- A. Individual Motor Branch Circuits: Class RK1, time-delay.

2.02 FUSES

- A. Provide products listed, classified, and labeled as suitable for the purpose intended.
- B. Unless specifically indicated to be excluded, provide fuses for all fusible equipment as required for a complete operating system.
- C. Provide fuses of the same type, rating, and manufacturer within the same switch.
- D. Comply with UL 248-1.
- E. Unless otherwise indicated, provide cartridge type fuses complying with NEMA FU 1, Class and ratings as indicated.
- F. Voltage Rating: Suitable for circuit voltage.
- G. Class R Fuses: Comply with UL 248-12.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that fuse ratings are consistent with circuit voltage and manufacturer's recommendations and nameplate data for equipment.
- B. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Do not install fuses until circuits are ready to be energized.

- B. Install fuses with label oriented such that manufacturer, type, and size are easily read.

END OF SECTION

SECTION 26 28 16.16
ENCLOSED SWITCHES
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Enclosed safety switches.

1.02 RELATED REQUIREMENTS

- A. Section 26 05 26 - Grounding and Bonding for Electrical Systems.
- B. Section 26 05 29 - Hangers and Supports for Electrical Systems.
- C. Section 26 05 53 - Identification for Electrical Systems: Identification products and requirements.
- D. Section 26 28 13 - Fuses.

1.03 REFERENCE STANDARDS

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- B. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum) 2020.
- C. NEMA KS 1 - Heavy Duty Enclosed and Dead-Front Switches (600 Volts Maximum) 2013.
- D. NETA ATS - Standard For Acceptance Testing Specifications For Electrical Power Equipment And Systems 2021.
- E. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- F. UL 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations Current Edition, Including All Revisions.
- G. UL 50E - Enclosures for Electrical Equipment, Environmental Considerations Current Edition, Including All Revisions.
- H. UL 98 - Enclosed and Dead-Front Switches Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the work with other trades. Avoid placement of ductwork, piping, equipment, or other potential obstructions within the dedicated equipment spaces and within working clearances for electrical equipment required by NFPA 70.
 - 2. Coordinate arrangement of electrical equipment with the dimensions and clearance requirements of the actual equipment to be installed.
 - 3. Verify with manufacturer that conductor terminations are suitable for use with the conductors to be installed.
 - 4. Notify CPL Architects of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.05 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store in a clean, dry space. Maintain factory wrapping or provide an additional heavy canvas or heavy plastic cover to protect units from dirt, water, construction debris, and traffic.
- B. Handle carefully in accordance with manufacturer's written instructions to avoid damage to enclosed switch internal components, enclosure, and finish.

PART 2 PRODUCTS

2.01 ENCLOSED SAFETY SWITCHES

- A. Description: Quick-make, quick-break enclosed safety switches listed and labeled as complying with UL 98; heavy duty; ratings, configurations, and features as indicated on the drawings.
- B. Provide products listed, classified, and labeled as suitable for the purpose intended.
- C. Unless otherwise indicated, provide products suitable for continuous operation under the following service conditions:
 - 1. Altitude: Less than 6,600 feet.
 - 2. Ambient Temperature: Between -22 degrees F and 104 degrees F.
- D. Horsepower Rating: Suitable for connected load.
- E. Voltage Rating: Suitable for circuit voltage.
- F. Short Circuit Current Rating:
 - 1. Provide enclosed safety switches, when protected by the fuses or supply side overcurrent protective devices to be installed, with listed short circuit current rating of the existing panels..
- G. Provide with switch blade contact position that is visible when the cover is open.
- H. Conductor Terminations: Suitable for use with the conductors to be installed.
- I. Provide solidly bonded equipment ground bus in each enclosed safety switch, with a suitable lug for terminating each equipment grounding conductor.
- J. Enclosures: Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E.
 - 1. Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:
- K. Provide safety interlock to prevent opening the cover with the switch in the ON position with capability of overriding interlock for testing purposes.
- L. Heavy Duty Switches:
 - 1. Comply with NEMA KS 1.
 - 2. Conductor Terminations:
 - a. Lug Material: Aluminum, suitable for terminating aluminum or copper conductors.
 - 3. Provide externally operable handle with means for locking in the OFF position, capable of accepting three padlocks.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that the ratings of the enclosed switches are consistent with the indicated requirements.
- C. Verify that mounting surfaces are ready to receive enclosed safety switches.
- D. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Perform work in accordance with NECA 1 (general workmanship).
- C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.
- D. Provide required support and attachment in accordance with Section 26 05 29.
- E. Install enclosed switches plumb.

- F. Except where indicated to be mounted adjacent to the equipment they supply, mount enclosed switches such that the highest position of the operating handle does not exceed 79 inches above the floor or working platform.
- G. Provide grounding and bonding in accordance with Section 26 05 26.
- H. Provide fuses complying with Section 26 28 13 for fusible switches as indicated or as required by equipment manufacturer's recommendations.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 40 00 - Quality Requirements, for additional requirements.
- B. Inspect and test in accordance with NETA ATS, except Section 4.
- C. Perform inspections and tests listed in NETA ATS, Section 7.5.1.1.
- D. Correct deficiencies and replace damaged or defective enclosed safety switches or associated components.

3.04 CLEANING

- A. Clean dirt and debris from switch enclosures and components according to manufacturer's instructions.
- B. Repair scratched or marred exterior surfaces to match original factory finish.

END OF SECTION

This page intentionally left blank

SECTION 26 51 00
INTERIOR LIGHTING
PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Interior lighting fixtures.

1.02 RELATED REQUIREMENTS

- A. Section 26 05 29 - Hangers and Supports for Electrical Systems.
- B. Section 26 05 33.16 - Boxes for Electrical Systems.

1.03 REFERENCE STANDARDS

- A. IES LM-79 - Approved Method: Optical and Electrical Measurements of Solid-State Lighting Products 2019.
- B. IES LM-80 - Approved Method: Measuring Maintenance of Light Output Characteristics of Solid-State Light Sources 2021.
- C. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- D. NECA/IESNA 500 - Standard for Installing Indoor Lighting Systems 2006.
- E. NECA/IESNA 502 - Standard for Installing Industrial Lighting Systems 2006.
- F. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- G. UL 1598 - Luminaires Current Edition, Including All Revisions.
- H. UL 8750 - Light Emitting Diode (LED) Equipment for Use in Lighting Products Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the installation of interior and exterior luminaires with mounting surfaces installed under other sections or by others. Coordinate the work with placement of supports, anchors, etc. required for mounting. Coordinate compatibility of luminaires and associated trims with mounting surfaces at installed locations.
 - 2. Coordinate the placement of luminaires with structural members, ductwork, piping, equipment, diffusers, fire suppression system components, and other potential conflicts installed under other sections or by others.
 - 3. Notify CPL Architects of any conflicts or deviations from Contract Documents to obtain direction prior to proceeding with work.

1.05 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets including detailed information on luminaire construction, dimensions, ratings, finishes, mounting requirements, listings, service conditions, photometric performance, installed accessories, and ceiling compatibility; include model number nomenclature clearly marked with all proposed features.
 - 1. LED Luminaires:
 - a. Include estimated useful life, calculated based on IES LM-80 test data.

1.06 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.

1.07 DELIVERY, STORAGE, AND PROTECTION

- A. Receive, handle, and store products according to NECA/IESNA 500 (commercial lighting), NECA/IESNA 502 (industrial lighting), and manufacturer's written instructions.

- B. Keep products in original manufacturer's packaging and protect from damage until ready for installation.

1.08 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.
- B. Provide three year manufacturer warranty for LED luminaires, including drivers.

PART 2 PRODUCTS

2.01 LUMINAIRES

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products that are listed and labeled as complying with UL 1598, where applicable.
- C. Provide products listed, classified, and labeled as suitable for the purpose intended.
- D. Unless otherwise indicated, provide complete luminaires including lamp(s) and all sockets, ballasts, reflectors, lenses, housings and other components required to position, energize and protect the lamp and distribute the light.
- E. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, hardware, supports, trims, accessories, etc. as necessary for a complete operating system.
- F. Provide products suitable to withstand normal handling, installation, and service without any damage, distortion, corrosion, fading, discoloring, etc.
- G. LED Luminaires:
 - 1. Components: UL 8750 recognized or listed as applicable.
 - 2. Tested in accordance with IES LM-79 and IES LM-80.
 - 3. LED Estimated Useful Life: Minimum of 50,000 hours at 70 percent lumen maintenance, calculated based on IES LM-80 test data.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate conductors in accordance with NFPA 70.
- C. Verify that suitable support frames are installed where required.
- D. Verify that branch circuit wiring installation is completed, tested, and ready for connection to luminaires.
- E. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

3.03 INSTALLATION

- A. Coordinate locations of outlet boxes provided under Section 26 05 33.16 as required for installation of luminaires provided under this section.
- B. Perform work in accordance with NECA 1 (general workmanship).
- C. Install products in accordance with manufacturer's instructions.
- D. Install luminaires securely, in a neat and workmanlike manner, as specified in NECA 500 (commercial lighting) and NECA 502 (industrial lighting).
- E. Provide required support and attachment in accordance with Section 26 05 29.

- F. Install luminaires plumb and square and aligned with building lines and with adjacent luminaires.
- G. Install accessories furnished with each luminaire.
- H. Bond products and metal accessories to branch circuit equipment grounding conductor.
- I. Install lamps in each luminaire.

3.04 FIELD QUALITY CONTROL

- A. See Section 01 40 00 - Quality Requirements, for additional requirements.
- B. Inspect each product for damage and defects.
- C. Operate each luminaire after installation and connection to verify proper operation.
- D. Correct wiring deficiencies and repair or replace damaged or defective products. Repair or replace excessively noisy ballasts as determined by CPL Architects.

3.05 CLEANING

- A. Clean surfaces according to NECA 500 (commercial lighting), NECA 502 (industrial lighting), and manufacturer's instructions to remove dirt, fingerprints, paint, or other foreign material and restore finishes to match original factory finish.

3.06 PROTECTION

- A. Protect installed luminaires from subsequent construction operations.

END OF SECTION

This page intentionally left blank

SECTION 26 55 68

EXTERIOR ATHLETIC LIGHTING
Lighting System with LED Light Source

PART 1 – GENERAL

1.1 SUMMARY

- A. Work covered by this section of the specifications shall conform to the contract documents, engineering plans as well as state and local codes.
- B. The purpose of these specifications is to define the lighting system performance and design standards for Hunt High School using an LED Lighting source. The manufacturer / contractor shall supply lighting equipment to meet or exceed the standards set forth in these specifications.
- C. The sports lighting will be for the following venues:
 - 1. Football
 - 2. Track
- D. The primary goals of this sports lighting project are:
 - 1. **Guaranteed Light Levels:** Selection of appropriate light levels impact the safety of the players and the enjoyment of spectators. Therefore light levels are guaranteed to not drop below specified target values for a period of 25 years.
 - 2. **Enhanced playability:** System shall provide targeted light underneath the ball, optimizing visibility of the ball in play. Aerial lighting fixtures, mounted lower on the pole increase playability eliminating glare and shall not produce glare to the player or neighbors off-site. Fixtures shall be located approximately 15 foot above grade.
 - 3. **Environmental Light Control:** It is the primary goal of this project to minimize spill light to adjoining properties and glare to the players, spectators and neighbors.
 - 4. **Cost of Ownership:** In order to reduce the operating budget, the preferred lighting system shall be energy efficient and cost effective to operate. All maintenance costs shall be eliminated for the duration of the warranty.
 - 5. **Control and Monitoring:** To allow for optimized use of labor resources and avoid unneeded operation of the facility, customer requires a remote on/off control system for the lighting system. Fields should be proactively monitored to detect luminaire outages over a 25-year life cycle. All communication and monitoring costs for 25-year period shall be included in the bid.
- E. All lighting designs shall comply with City of Wilson unified development ordinance per chapter 10.3.4.

1.2 LIGHTING PERFORMANCE

- A. **Illumination Levels and Design Factors:** Playing surfaces shall be lit to an average target illumination level and uniformity as specified in the chart below. Lighting calculations shall be developed and field measurements taken on the grid spacing with the minimum number of grid points specified below. Appropriate light loss factors shall be applied and submitted for the basis of design. Average illumination level shall be measured in accordance with the IESNA LM-5-04 (IESNA Guide for Photometric Measurements of Area and Sports Lighting Installations). Illumination levels shall not to drop below desired target values in accordance to IES RP-6-15, Page 2, Maintained Average Illuminance and shall be guaranteed for the full warranty period.

Area of Lighting	Average Target Illumination Levels	Maximum to Minimum Uniformity Ratio	Grid Points	Grid Spacing
Football	50 footcandles	2.0:1	72	30' x 30'
Track	17 footcandles	12.0:1	43	30' x 30'

Home Bleachers	12 footcandles	6.0:1	68	10' x 10'
Visitor Bleachers	11 footcandles	2.5:1	24	10' x 10'

- B. Color: The lighting system shall have a minimum color temperature of 5700KK and a CRI of 75.
- C. Mounting Heights: To ensure proper aiming angles for reduced glare and to provide better playability, minimum mounting heights shall be as described below. Higher mounting heights may be required based on photometric report and ability to ensure the top of the field angle is a minimum of 10 degrees below horizontal.

# of Poles	Pole Designation	Pole Height
4 Poles	F1,F2,F3,F4	70'

1.3 ENVIRONMENTAL LIGHT CONTROL

- A. Light Control Luminaires: All luminaires shall utilize spill light and glare control devices including, but not limited to, internal shields, louvers and external shields. No symmetrical beam patterns are accepted.
- B. Lighting Ordinance: In accordance with City of Wilson lighting ordinance, maximum initial horizontal illumination at the property line shall not exceed 2 footcandles.
- C. Spill Scans: Spill scans must be submitted indicating the amount of horizontal and vertical footcandles along the specified lines. Light levels shall be taken at 30-foot intervals along the boundary line. Readings shall be taken with the meter orientation at both horizontal and aimed towards the most intense bank of lights. Illumination level shall be measured in accordance with the IESNA LM-5-04 after 1 hour warm up.
- D. The first page of a photometric report for all luminaire types proposed showing horizontal and vertical axial candle power shall be provided to demonstrate the capability of achieving the specified performance. Reports shall be certified by a qualified testing laboratory with a minimum of five years experience or by a manufacturer's laboratory with a current accreditation under the National Voluntary Laboratory Accreditation Program for Energy Efficient Lighting Products. A summary of the horizontal and vertical aiming angles for each luminaire shall be included with the photometric report.

1.4 Cost of Ownership

- A. Manufacturer shall submit a 25 year Cost of Ownership summary that includes energy consumption, anticipated maintenance costs, and control costs. All costs associated with faulty luminaire replacement - equipment rentals, removal and installation labor, and shipping - are to be included in the maintenance costs.

PART 2 – PRODUCT

2.2 SPORTS LIGHTING SYSTEM CONSTRUCTION

- A. Manufacturing Requirements: All components shall be designed and manufactured as a system. All luminaires, wire harnesses, drivers and other enclosures shall be factory assembled, aimed, wired and tested.
- B. Durability: All exposed components shall be constructed of corrosion resistant material and/or coated to help prevent corrosion. All exposed carbon steel shall be hot dip galvanized per ASTM A123. All exposed aluminum shall be powder coated with high performance polyester or anodized. All exterior reflective inserts shall be anodized, coated, and protected from direct environmental exposure to prevent reflective degradation or corrosion. All exposed hardware and fasteners shall be stainless steel, passivated and coated with aluminum-based thermosetting epoxy resin for protection against corrosion and stress corrosion cracking. Structural fasteners may be carbon steel and galvanized meeting ASTM A153 and ISO/EN 1461 (for hot dipped galvanizing), or ASTM B695 (for mechanical galvanizing). All wiring shall be enclosed within the cross-arms, pole, or electrical

components enclosure.

- C. System Description: Lighting system shall consist of the following:
1. Galvanized steel poles and cross-arm assembly. Alternate: Concrete pole with a minimum of 8,000 psi and installed with concrete backfill will be an acceptable alternative provided building code, wind speed and foundation designs per specifications are adhered to.
 2. Non-approved pole technology:
 - a. Square static cast concrete poles will not be accepted.
 - b. Direct bury steel poles which utilize the extended portion of the steel shaft for their foundation will not be accepted due to potential for internal and external corrosive reaction to the soils and long term performance concerns. No Steel below grade including inverted anchor bolt base will be accepted.
 3. Lighting systems shall use concrete foundations. See Section 2.4 for details.
 - a. For a foundation using a pre-stressed concrete base embedded in concrete backfill the concrete shall be air-entrained and have a minimum compressive design strength at 28 days of 3,000 PSI. 3,000 PSI concrete specified for early pole erection, actual required minimum allowable concrete strength is 1,000 PSI. All piers and concrete backfill must bear on and against firm undisturbed soil.
 - b. For anchor bolt foundations or foundations using a pre-stressed concrete base in a suspended pier or re-inforced pier design pole erection may occur after 7 days. Or after a concrete sample from the same batch achieves a certain strength.
 4. Manufacturer will supply all drivers and supporting electrical equipment
 - a. Remote drivers and supporting electrical equipment shall be mounted approximately 10 feet above grade in aluminum enclosures. The enclosures shall be touch-safe and include drivers and fusing with indicator lights on fuses to notify when a fuse is to be replaced for each luminaire. Disconnect per circuit for each pole structure will be located in the enclosure. Fixtures with drivers located more than approximately 10 feet above grade will not be accepted due to maintenance access issues.
 - b. Manufacturer shall provide surge protection at the pole equal to or greater than 40 kA for each line to ground (Common Mode) as recommended by IEEE C62.41.2_2002.
 5. Wire harness complete with an abrasion protection sleeve, strain relief and plug-in connections for fast, trouble-free installation.
 6. All luminaires, visors, and cross-arm assemblies shall withstand 150 mi/h winds and maintain luminaire aiming alignment.
 7. Control cabinet to provide remote on-off control and monitoring of the lighting system. See Section 2.3 for further details.
 8. Manufacturer shall provide lightning grounding as defined by NFPA 780 and be UL Listed per UL 96 and UL 96A.
 - a. Integrated grounding via concrete encased electrode grounding system.
 - b. If grounding is not integrated into the structure, the manufacturer shall supply grounding electrodes, copper down conductors, and exothermic weld kits. Electrodes and conductors shall be sized as required by NFPA 780. The grounding electrode shall be minimum size of 5/8 inch diameter and 8 feet long, with a minimum of 10 feet embedment. Grounding electrode shall be connected to the structure by a grounding electrode conductor with a minimum size of 2 AWG for poles with 75 feet mounting height or less, and 2/0 AWG for poles with more than 75 feet mounting height.
- D. Safety: All system components shall be UL listed for the appropriate application.

2.2 **ELECTRICAL**

- A. Electric Power Requirements for the Sports Lighting Equipment:
 - 1. Electric power: 480 Volt, 3 Phase
 - 2. Maximum total voltage drop: Voltage drop to the disconnect switch located on the poles shall not exceed three (3) percent of the rated voltage.
- B. Energy Consumption: The kW consumption for the field lighting system shall be 55kW.

2.3 **CONTROL**

- A. Instant On/Off Capabilities: System shall provide for instant on/off of luminaires.
- B. Lighting contactor cabinet(s) constructed of NEMA Type 4 aluminum, designed for easy installation with contactors, labeled to match field diagrams and electrical design. Manual off-on-auto selector switches shall be provided.
- C. Dimming: System shall provide for 3-stage dimming (high-medium-low). Dimming will be set via scheduling options (Website, app, phone, fax, email)
- D. Remote Lighting Control System: System shall allow owner and users with a security code to schedule on/off system operation via a web site, phone, fax or email up to ten years in advance. Manufacturer shall provide and maintain a two-way TCP/IP communication link. Trained staff shall be available 24/7 to provide scheduling support and assist with reporting needs.

The owner may assign various security levels to schedulers by function and/or fields. This function must be flexible to allow a range of privileges such as full scheduling capabilities for all fields to only having permission to execute "early off" commands by phone. Scheduling tool shall be capable of setting curfew limits.

Controller shall accept and store 7-day schedules, be protected against memory loss during power outages, and shall reboot once power is regained and execute any commands that would have occurred during outage.

- E. Remote Monitoring System: System shall monitor lighting performance and notify manufacturer if individual luminaire outage is detected so that appropriate maintenance can be scheduled. The controller shall determine switch position (manual or auto) and contactor status (open or closed).
- F. Management Tools: Manufacturer shall provide a web-based database and dashboard tool of actual field usage and provide reports by facility and user group. Dashboard shall also show current status of luminaire outages, control operation and service. Mobile application will be provided suitable for IOS, Android and Blackberry devices.

Hours of Usage: Manufacturer shall provide a means of tracking actual hours of usage for the field lighting system that is readily accessible to the owner.

- 1. Cumulative hours: shall be tracked to show the total hours used by the facility
 - 2. Report hours saved by using early off and push buttons by users.
- G. Communication Costs: Manufacturer shall include communication costs for operating the control and monitoring system for a period of 25 years.
- H. Communication with luminaire drivers: Control system shall interface with drivers in electrical components enclosures by means of powerline communication.

2.4 **STRUCTURAL PARAMETERS**

- A. Wind Loads: Wind loads shall be based on the 2018 International Building Code. Wind loads to be calculated using ASCE 7-16, an ultimate design wind speed of 120 and exposure category C.
- B. Pole Structural Design: The stress analysis and safety factor of the poles shall conform to 2013 AASHTO Standard Specification for Structural Supports for Highway Signs, Luminaires, and Traffic Signals (LTS-6).

- C. Foundation Design: The foundation design shall be based on soils that meet or exceed those of a Class 5 material as defined by 2018 IBC Table 1806.2.
- D. Foundation Drawings: Project specific foundation drawings stamped by a registered engineer in the state where the project is located are required. The foundation drawings must list the moment, shear (horizontal) force, and axial (vertical) force at ground level for each pole. These drawings must be submitted at time of bid to allow for accurate pricing.

PART 3 – EXECUTION

3.1 SOIL QUALITY CONTROL

- A. It shall be the Contractor's responsibility to notify the Owner if soil conditions exist other than those on which the foundation design is based, or if the soil cannot be readily excavated. Contractor may issue a change order request / estimate for the Owner's approval / payment for additional costs associated with:
 - 1. Providing engineered foundation embedment design by a registered engineer in the State of North Carolina for soils other than specified soil conditions.
 - 2. Additional materials required to achieve alternate foundation.
 - 3. Excavation and removal of materials other than normal soils, such as rock, caliche, etc.

3.2 DELIVERY TIMING

- A. Delivery Timing Equipment On-Site: The equipment must be on-site 6-8 from receipt of approved submittals and receipt of complete order information.

3.3 FIELD QUALITY CONTROL

- A. Illumination Measurements: Upon substantial completion of the project and in the presence of the Contractor, Project Engineer, Owner's Representative, and Manufacturer's Representative, illumination measurements shall be taken and verified. The illumination measurements shall be conducted in accordance with IESNA LM-5-04.
- B. Field Light Level Accountability
 - 1. Light levels are guaranteed not to fall below the target maintained light levels for the entire warranty period of 25 years. These levels will be specifically stated as "guaranteed" on the illumination summary provided by the manufacturer.
 - 2. The contractor/manufacturer will be held responsible for any and all changes needed to bring these fields back to compliance for light levels and uniformities. Contractor/Manufacturer will be held responsible for any damage to the fields during these repairs.
- C. Correcting Non-Conformance: If, in the opinion of the Owner or his appointed Representative, the actual performance levels including footcandles and uniformity ratios are not in conformance with the requirements of the performance specifications and submitted information, the Manufacturer shall be required to make adjustments to meet specifications and satisfy Owner.

3.4 WARRANTY AND GUARANTEE

- A. 25-Year Warranty: Each manufacturer shall supply a signed warranty covering the entire system for 25 years from the date of shipment. Warranty shall guarantee specified light levels. Manufacturer shall maintain specifically-funded financial reserves to assure fulfillment of the warranty for the full term. Warranty does not cover weather conditions events such as lightning or hail damage, improper installation, vandalism or abuse, unauthorized repairs or alterations, or product made by other manufacturers.
- B. Maintenance: Manufacturer shall monitor the performance of the lighting system, including on/off status, hours of usage and luminaire outage for 25 years from the date of equipment shipment. Parts and labor shall be covered such that individual luminaire outages will be repaired when the usage of

any field is materially impacted. Manufacturer is responsible for removal and replacement of failed luminaires, including all parts, labor, shipping, and equipment rental associated with maintenance. Owner agrees to check fuses in the event of a luminaire outage.

PART 4 – DESIGN APPROVAL

4.0 PRE-BID SUBMITTAL REQUIREMENTS (Non-Musco)

- A. Design Approval: The owner / engineer will review pre-bid submittals per section 4.0.B from all the manufacturers to ensure compliance to the specification 10 days prior to bid. If the design meets the design requirements of the specifications, a letter and/or addendum will be issued to the manufacturer indicating approval for the specific design submitted.
- B. Approved Product: Musco's Light-Structure System™ with TLC for LED™ is the approved product. All substitutions must provide a complete submittal package for approval as outlined in Submittal Information at the end of this section at least 10 days prior to bid. Special manufacturing to meet the standards of this specification may be required. An addendum will be issued prior to bid listing any other approved lighting manufacturers and designs.
- C. All listed manufacturers not pre-approved shall submit the information at the end of this section at least 10 days prior to bid. An addendum will be issued prior to bid; listing approved lighting manufacturers and the design method to be used.
- D. Bidders are required to bid only products that have been approved by this specification or addendum by the owner or owner's representative. Bids received that do not utilize an approved system/design, will be rejected.

**REQUIRED SUBMITTAL INFORMATION FOR ALL MANUFACTURERS
(NOT PRE-APPROVED) 10 DAYS PRIOR TO BID**

*All items listed below are mandatory, shall comply with the specification and be submitted according to pre-bid submittal requirements. Complete the Yes/No column to indicate compliance (Y) or noncompliance (N) for each item. **Submit checklist below with submittal.***

Yes/ No	Tab	Item	Description
	A	Letter/ Checklist	Listing of all information being submitted must be included on the table of contents. List the name of the manufacturer's local representative and his/her phone number. Signed submittal checklist to be included.
	B	Equipment Layout	Drawing(s) showing field layouts with pole locations
	C	On Field Lighting Design	Lighting design drawing(s) showing: <ul style="list-style-type: none"> a. Field Name, date, file number, prepared by b. Outline of field(s) being lighted, as well as pole locations referenced to the center of the field (x & y), Illuminance levels at grid spacing specified c. Pole height, number of fixtures per pole, horizontal and vertical aiming angles, as well as luminaire information including wattage, lumens and optics d. Height of light test meter above field surface. e. Summary table showing the number and spacing of grid points; average, minimum and maximum illuminance levels in foot candles (fc); uniformity including maximum to minimum ratio, coefficient of variance (CV), coefficient of utilization (CU) uniformity gradient; number of luminaires, total kilowatts, average tilt factor; light loss factor.
	D	Off Field Lighting Design	Lighting design drawing showing initial spill light levels along the boundary line (defined on bid drawings) in footcandles. Lighting design showing glare along the boundary line in candela. Light levels shall be taken at 30-foot intervals along the boundary line. Readings shall be taken with the meter orientation at both horizontal and aimed towards the most intense bank of lights.
	E	Photometric Report	Provide first page of photometric report for all luminaire types being proposed showing candela tabulations as defined by IESNA Publication LM-35-02. Photometric data shall be certified by laboratory with current National Voluntary Laboratory Accreditation Program or an independent testing facility with over 5 years experience.
	F	Performance Guarantee	Provide performance guarantee including a written commitment to undertake all corrections required to meet the performance requirements noted in these specifications at no expense to the owner. Light levels must be guaranteed to not fall below target levels for warranty period.
	G	Structural Calculations	Pole structural calculations and foundation design showing foundation shape, depth backfill requirements, rebar and anchor bolts (if required). Pole base reaction forces shall be shown on the foundation drawing along with soil bearing pressures. Design must be stamped by a structural engineer in the state of North Carolina, if required by owner.

	H	Control & Monitoring System	Manufacturer of the control and monitoring system shall provide written definition and schematics for automated control system to include monitoring They will also provide ten (10) references of customers currently using proposed system in the state of North Carolina.
	I	Electrical Distribution Plans	Manufacturer bidding an alternate product must include a revised electrical distribution plan including changes to service entrance, panels and wire sizing, signed by a licensed Electrical Engineer in the state of North Carolina.
	J	Warranty	Provide written warranty information including all terms and conditions. Provide ten (10) references of customers currently under specified warranty in the state of North Carolina.
	K	Project References	Manufacturer to provide a list of ten (10) projects where the technology and specific fixture proposed for this project has been installed in the state of North Carolina. Reference list will include project name, project city, installation date, and if requested, contact name and contact phone number.
	L	Product Information	Complete bill of material and current brochures/cut sheets for all product being provided.
	M	Delivery	Manufacturer shall supply an expected delivery timeframe from receipt of approved submittals and complete order information.
	N	Non-Compliance	Manufacturer shall list all items that do not comply with the specifications. If in full compliance, tab may be omitted.
	O	Electrical Distribution Plans	Document cost of ownership as defined in the specification. Identify energy costs for operating the luminaires. Maintenance cost for the system must be included. All costs should be based on 25 Years.

The information supplied herein shall be used for the purpose of complying with the specifications for Hunt High School. By signing below I agree that all requirements of the specifications have been met and that the manufacturer will be responsible for any future costs incurred to bring their equipment into compliance for all items not meeting specifications and not listed in the Non-Compliance section.

Manufacturer: _____ **Signature:** _____

Contact Name: _____ **Date:** ____ / ____ / ____

Contractor: _____ **Signature:** _____

END OF SECTION

SECTION 31 10 00
SITE CLEARING
PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

- A. This Section includes the following:
 - 1. Protecting existing trees and grass remain.
 - 2. Removing existing trees and grass as noted
 - 3. Clearing and grubbing.
 - 4. Stripping and stockpiling topsoil.
 - 5. Removing above- and below-grade site improvements.
 - 6. Disconnecting, capping or sealing, and abandoning site utilities in place removing site utilities.
 - 7. Temporary erosion and sedimentation control measures.
- B. Related Sections include the following:
 - 1. Division 01 Section "Temporary Facilities and Controls" for temporary construction and support facilities, and temporary erosion and sedimentation control procedures.
 - 2. Division 01 Section "Execution" for verifying utility locations and for recording field measurements.
 - 3. Division 31 Section "Earth Moving" for soil materials, excavating, backfilling, and site grading.
 - 4. Division 23 Section "Turf and Grasses" for finish grading including preparing and placing planting soil mixes and testing of topsoil material.

1.03 DEFINITIONS

- A. Topsoil: Natural or cultivated surface-soil layer containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 2 inches in diameter; and free of subsoil and weeds, roots, toxic materials, or other nonsoil materials.
- B. Tree Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction, and defined by the drip line of individual trees or the perimeter drip line of groups of trees, unless otherwise indicated.

1.04 QUALITY ASSURANCE

- A. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

1.05 PROJECT CONDITIONS

- A. Improvements on Adjoining Property: Authority for performing site clearing indicated on property adjoining Owner's property will be obtained by Owner before award of Contract.
- B. Utility Locator Service: Notify utility locator service for area where Project is located before site clearing.
- C. Do not commence site clearing operations until temporary erosion and sedimentation control measures are in place.

PART 2 - PRODUCTS

2.01 SOIL MATERIALS

- A. Satisfactory Soil Materials: Requirements for satisfactory soil materials are specified in Division 31 Section "Earth Moving."
 - 1. Obtain approved borrow soil materials off-site when satisfactory soil materials are not available on-site.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Protect and maintain benchmarks and survey control points from disturbance during construction.
- B. Locate and clearly flag trees and vegetation to remain or to be relocated.
- C. Protect existing site improvements to remain from damage during construction.
 - 1. Restore damaged improvements to their original condition, as acceptable to Owner.

3.02 TEMPORARY EROSION AND SEDIMENTATION CONTROL

- A. Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to sediment and erosion control Drawings.
- B. Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
- C. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

3.03 TREE PROTECTION

- A. Erect and maintain temporary fencing around tree protection zones before starting site clearing. Remove fence when construction is complete.
 - 1. Do not store construction materials, debris, or excavated material within fenced area.
 - 2. Do not permit vehicles, equipment, or foot traffic within fenced area.
 - 3. Maintain fenced area free of weeds and trash.
- B. Do not excavate within tree protection zones, unless otherwise indicated.
- C. Where excavation for new construction is required within tree protection zones, hand clear and excavate to minimize damage to root systems. Use narrow-tine spading forks, comb soil to expose roots, and cleanly cut roots as close to excavation as possible.
 - 1. Cover exposed roots with burlap and water regularly.
 - 2. Temporarily support and protect roots from damage until they are permanently redirected and covered with soil.
 - 3. Coat cut faces of roots more than 1-1/2 inches in diameter with an emulsified asphalt or other approved coating formulated for use on damaged plant tissues.
 - 4. Backfill with soil as soon as possible.
- D. Repair or replace trees and vegetation indicated to remain that are damaged by construction operations, in a manner approved by Engineer.
 - 1. Employ an arborist, licensed in jurisdiction where Project is located, to submit details of proposed repairs and to repair damage to trees and shrubs.
 - 2. Replace trees that cannot be repaired and restored to full-growth status, as determined by Engineer.

3.04 UTILITIES

- A. Owner will arrange for disconnecting and sealing indicated utilities that serve existing structures before site clearing, when requested by Contractor.

1. Verify that utilities have been disconnected and capped before proceeding with site clearing.
- B. Locate, identify, disconnect, and seal or cap off utilities indicated to be removed.
 1. Arrange with utility companies to shut off indicated utilities.
 2. Owner will arrange to shut off indicated utilities when requested by Contractor.
- C. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted and then only after arranging to provide temporary utility services according to requirements indicated:
- D. Excavate for and remove underground utilities indicated to be removed.

3.05 CLEARING AND GRUBBING

- A. Remove obstructions, trees, shrubs, grass, and other vegetation to permit installation of new construction.
 1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
 2. Cut minor roots and branches of trees indicated to remain in a clean and careful manner where such roots and branches obstruct installation of new construction.
 3. Grind stumps and remove roots, obstructions, and debris extending to a depth of 18 inches below exposed subgrade.
 4. Use only hand methods for grubbing within tree protection zone.
 5. Chip removed tree branches.
- B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.
 1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches, and compact each layer to a density equal to adjacent original ground.

3.06 TOPSOIL STRIPPING

- A. Remove sod and grass before stripping topsoil.
- B. Strip topsoil to whatever depths are encountered in a manner to prevent intermingling with underlying subsoil or other waste materials.
 1. Remove subsoil and nonsoil materials from topsoil, including trash, debris, weeds, roots, and other waste materials.
- C. Stockpile topsoil materials away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 1. Limit height of topsoil stockpiles to 72 inches.
 2. Do not stockpile topsoil within tree protection zones.
 3. Dispose of excess topsoil as specified for waste material disposal.
 4. Stockpile surplus topsoil to allow for respreading deeper topsoil.

3.07 SITE IMPROVEMENTS

- A. Remove existing above- and below-grade improvements as indicated and as necessary to facilitate new construction.
- B. Remove slabs, paving, curbs, gutters, and aggregate base as indicated.
 1. Unless existing full-depth joints coincide with line of demolition, neatly saw-cut length of existing pavement to remain before removing existing pavement. Saw-cut faces vertically.
 2. Paint cut ends of steel reinforcement in concrete to remain to prevent corrosion.

3.08 DISPOSAL

- A. Disposal: Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.

1. Separate recyclable materials produced during site clearing from other nonrecyclable materials. Store or stockpile without intermixing with other materials and transport them to recycling facilities.

END OF SECTION

SECTION 31 20 00
EARTH MOVING
PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

- A. Earth Moving: The extent of earth moving is indicated on the drawings. The work, in general, includes the following:
1. Preparation of subgrade for buildings, pavements, and other grade-supported construction.
 2. Controlling surface water and groundwater.
 3. Excavation.
 4. Fill and backfill placement and compaction.
 5. Installation of drains.
 6. Rough and finish grading.
 7. Furnishing Unit Prices for additional earthwork.
- B. Related Sections include the following:
1. Division 01 Section Construction Progress Documentation for recording preexcavation and earthwork progress.
 2. Division 01 Section "Temporary Facilities and Controls" for temporary controls, utilities, and support facilities.
 3. Division 31 Section "Site Clearing" for temporary erosion and sedimentation control measures, site stripping, grubbing, stripping and stockpiling topsoil, and removal of above- and below-grade improvements and utilities.
 4. Division 31 Section "Dewatering" for lowering and disposing of groundwater during construction.
 5. Division 32 Section "Turf and Grasses" for finish grading, including preparing and placing topsoil and planting soil.
- C. Excavation Definition: "Excavation" consists of removal of all material encountered to required subgrade elevations indicated and subsequent disposal of all materials removed.

1.03 DEFINITIONS

- A. Backfill: Soil material or controlled low-strength material used to fill an excavation.
- B. Excavation: Removal of all material encountered to required subgrade elevations indicated and subsequent disposal of all materials removed.
1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions, as directed by Owner. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
 2. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Owner. Unauthorized excavation, as well as remedial work directed by Engineer, shall be without additional compensation.
- C. Fill: Soil materials used to raise existing grades.
- D. Subgrade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials. Subgrade shall be free of any loose materials, organics, or other deleterious materials.
1. Stable Subgrade: Subgrade that is firm and unyielding during proof rolling operations.
 2. Unstable Subgrade: Subgrade that is rutting or pumping during proof rolling operations or is otherwise determined by the Geotechnical Engineer to be unfit for the placement of new

fill or support of grade-supported construction. This also includes excessively wet materials at subgrade elevations.

1.04 SUBMITTALS

- A. Product Data: For the following:
 - 1. Washed stone (No. 57)
 - 2. Graded aggregate base
 - 3. Filtration geotextile
 - 4. Type 1 geogrid
 - 5. Type 2 geogrid
- B. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated:
 - 1. Classification according to ASTM D 2487 of each on-site and borrow soil material proposed for fill and backfill.
 - 2. Laboratory compaction curve according to ASTM D 698 for each on-site and borrow soil material proposed for fill and backfill.

1.05 QUALITY ASSURANCE

- A. Inspections, Laboratory, and Field Testing Services:
 - 1. Geotechnical Engineer: The owner will engage a Geotechnical Engineer for soil inspections, laboratory testing, and field testing services for quality control testing during earthwork operations and foundation construction.
 - 2. Test classification and compaction of soils. Tests will be performed at the following locations and frequencies:
 - a. Expanded Building Limits: Perform one test per compacted lift, per 2,500 square feet but no less than one test per lift.
 - b. Pavement Areas: Perform one test per compacted lift, per 5,000 square feet but no less than one test per lift.
 - c. Utility Trenches: Perform one test per compacted lift, per 200 linear feet but no less than one test per lift.
 - d. Stormwater Management Facilities: Perform one test per compacted lift, per 5,000 square feet but no less than one test per lift.
 - e. Perform percent passing sieve No. 200 (ASTM D 1140), Atterberg Limits (ASTM D 4318), and organic content (ASTM D 2974) testing as required to verify the intent of the Subsurface Exploration Report in accordance with the respective ASTM Standards.
 - 3. Allow Geotechnical Engineer to inspect and test subgrade and each fill or backfill layer: Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.
 - 4. When subgrades, fills, or backfills are unstable or have not achieved degree of compaction specified, scarify and moisten or aerate, remove and replace, or otherwise stabilize the subgrade using an approved procedure.
- B. Correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.
- C. Additional testing performed to determine compliance of corrected work with specified requirements shall be at Contractor's expense.
- D. Preinstallation Conference:
 - 1. Before commencing earthwork or construction, meet with representatives of governing authorities, Owner, Architect/Engineer, Civil Engineer, Geotechnical Engineer, and other concerned entities. Review earthwork procedures and responsibilities including testing and inspection procedures and requirements. Notify participants at least 3 working days

prior to convening conference. Record discussions and agreements and furnish a copy to each participant.

- E. Codes and Standards: Perform excavation work in compliance with all applicable requirements of governing authorities having jurisdiction.
- F. Depth of Bearing Strata: It is to be understood that site soil conditions are variable across the site. The design of the footings is based on the assumed strata bearing capacity at the elevation shown on the drawings and as indicated in the General Notes. If the indicated depth of footing excavation is reached without developing the required strata bearing capacity, the Geotechnical Engineer will immediately advise the contractor for additional excavation to reach the required bearing elevation for each individual footing. Revisions will be paid for in accordance with the Contract condition relative to changes in the Work.

1.06 PROJECT CONDITIONS

- A. Site Information:
 - 1. The Contractor, by careful examination, shall inform himself as to the nature and location of the Work; the conformation of the ground, the nature of subsurface conditions; the locations of the groundwater table; the character, quality, and quantity of the materials to be encountered; the character of the equipment and facilities needed preliminary to and during the execution of the work; and all other matters which can be in any way affect the Work.
 - 2. The Contractor shall examine the site, available drawings, records of existing utilities and construction, record of test borings, and the subsurface exploration reports and the soil and rock samples to determine conditions under which the Work will be performed.
 - 3. Data on indicated subsurface conditions are not intended as representations or warranties of accuracy or continuity between soil borings. The Owner will not be held responsible for interpretations or conclusions drawn by the Contractor. Additional test borings and other exploratory operations may be made by the Contractor at no cost to the Owner.
- B. Utility Locator Service: Notify utility locator service for area where Project is located before beginning earth moving operations.
- C. Existing Utilities:
 - 1. Locate all existing underground utilizes in areas of work before proceeding. Provide adequate support and protection during earthwork operations of utilizes that are to remain in place. Demolish existing utilities as indicated and completely remove from the project site. Coordinate with utility companies, or governing entity, for proper shut-off of services for active lines.
 - 2. If any active utility not indicated in the drawings is encountered, notify the Engineer and protect from damage until instructions for proper disposition of the utility are given by the Engineer. Perform the requested work in compliance with the rules and regulations of authority having jurisdiction.
 - 3. Repair active utilities schedule to remain that are damaged by earthwork operations to the satisfaction of the utility owner at the Contractor's expense.
 - 4. If any inactive utility not indicated on the drawings is encountered, remove, plug, or cap as directed by the Engineer. Obtain any necessary data relative to proposed abandonment of existing utility service from authority having jurisdiction.
 - 5. Do not interrupt existing utilities serving facilities occupied and used by Owner or others, during occupied hours, except when permitted in writing by the Construction Manager and then only after acceptable temporary utility services have been provided. Provide minimum of 48-hour notice to Construction Manager, and receive written notice to proceed before interrupting any utility.
- D. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies to shut off services if lines are active.

PART 2 PRODUCTS

2.01 SOIL MATERIALS

- A. Satisfactory Soils: ASTM D 2487 Soil Classification Groups SM, SC, SW, SP, GM, and GC, or a combination of these group symbols. Open graded materials, such as Gravels (GW and GP), which contain void space in their mass shall not be used in structural fills unless properly encapsulated with filter fabric.
 - 1. Satisfactory materials shall be free of organic matter, debris, waste, frozen materials, vegetation, and other deleterious matter.
 - 2. Satisfactory materials shall be free of rock or gravel larger than 3 inches in the largest dimension.
 - 3. Satisfactory materials shall have a maximum liquid limit (LL) of 40, plasticity index (PI) of 15 and fines content (material passing sieve No. 200) of 35 percent. Soils with high plasticity index and liquid limit values may be blended with lower plasticity materials such that the plasticity index and liquid limit values of the combined material meet the required values.
- B. Unsatisfactory Soils: Materials which do not comply with the requirements for satisfactory materials are unsatisfactory.
 - 1. Unsatisfactory materials also include topsoil, organic materials (OH, OL), elastic Silt (MH), fat Clay (CH), man-made fills, trash, refuse, backfills from previous construction, and material classified as satisfactory materials which contains root and other organic matter or frozen material.
 - 2. Unsatisfactory soils also include satisfactory soils not maintained within 3 percent of optimum moisture content at time of compaction.
- C. Approved Fill Material: All soil materials used for the project shall be approved by the Geotechnical Engineer prior to hauling and placement. Soil materials used for fill or backfill shall be retested and reapproved each time the source or properties of the material changes

PART 3 EXECUTION

3.01 CLEARING AND GRUBBING

- A. Remove all existing trash, rubbish, debris, trees, roots, stumps, underbrush, shrubs, plants, and other vegetation from within the mass earthwork limits.

3.02 PREPARATION

- A. Survey Work, Grades, and Elevations:
 - 1. Survey Work: Lay out site features after clearing but before excavation. Record actual measurements centerline location, deviation from specified tolerances, and all other pertinent data as required.
 - 2. Grades and Elevations: Finished grades indicated by spot elevations and normal contour line elevations denote finished top surface elevations. Report conflicts, errors and inconsistencies in grades and elevations to the Engineer for resolution. Do not proceed with the work in questionable areas until conflicts are resolved by the Engineer.
 - 3. Maintain all benchmarks and other reference points.
 - 4. Set required lines and levels as required to accurately perform the excavation work.
- B. Protection of Work:
 - 1. Protect the subgrade during construction by sealing off with a smooth drum roller prior to prolonged delay such as the end of the work week or before a forecasted storm. Scarify the smooth surface before placing the next lift.
 - 2. Protect any existing structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth moving operations.
 - 3. Protect and maintain erosion and sedimentation controls during earth moving operations.

4. Protect subgrades soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.
5. Do not commence earth moving operations until temporary erosion and sedimentation control measures in place.
6. Do not commence earth moving operations until plant protection measures are in place.
7. The following practices are prohibited within protection zones:
 - a. Storage of construction materials, debris, or excavated material.
 - b. Parking vehicles or equipment.
 - c. Erection of sheds or structures.
 - d. Impoundment of water.
 - e. Excavation or other digging unless otherwise indicated.
 - f. Attachment of signs or wrapping materials around trees or plants unless otherwise indicated.
8. Do not direct vehicle or equipment exhaust towards protection zones.
9. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.

3.03 DEWATERING

- A. Excavations should be kept dry at all times by means of cofferdams, trenches, sumps, pumps, and whatever equipment or arrangements are required.
- B. Prevent surface water and subsurface or groundwater from flowing into excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.
- C. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation and/or subsurface seepage.
- D. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Establish and maintain temporary drainage ditches and other diversions outside excavation limits to convey rain water and water removed from excavation as temporary drainage ditches. Do not use excavated trenches as temporary drainage ditches.

3.04 EXCAVATION, GENERAL

- A. Materials to be excavated will be classified as earth. All excavation shall extend to the depths of the form and size required for the installation of the work as indicated on the Drawings. When excavations have reached the required depths, the Geotechnical Engineer shall make an inspection of the conditions.
- B. Materials that in the opinion of the Geotechnical Engineer are not suitable for fill, any surplus earth, and rock shall be removed from the site and legally disposed of off-site.
- C. The bottom of excavations shall be leveled off and graded to receive new compacted fill or other construction materials.
- D. Excavations made below the elevations shown or specified, unless authorized, shall be filled and compacted as hereinafter specified, at no additional cost.

3.05 EXCAVATION FOR STRUCTURES, PAVEMENTS AND OTHER GRADE SUPPORTED CONSTRUCTION

- A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.
- B. Subgrades shall be approved by the Geotechnical Engineer before proceeding with fill placement or installation of any structures or grade-supported construction materials.
- C. The top 12 inches of subgrade resulting from excavation shall be free of unsuitable material (fill, organics, debris, etc.) as judged by the Geotechnical Engineer.

- D. Cut areas shall be excavated and graded to subgrade elevation per the Contract Drawings. The subgrade should be proof rolled with approved construction equipment having a minimum axle load of 10 tons. Do not proof roll wet or saturated subgrades. Any soft or wet areas, areas exhibiting rutting, pumping or areas that are otherwise unstable, as deemed by the Geotechnical Engineer, shall be repaired.

3.06 EXCAVATION FOR UTILITY TRENCHES

- A. Trenches for underground piping, where necessary, shall be excavated to the required depth and bell holes shall be provided where necessary to insure uniform bearing. Trench excavation lines shall provide sufficient clearance for proper execution of underground work.
- B. Trenches shall be by open cut from the surface. No tunneling will be allowed. Irregularities at bottom of trench, or where excavation is below required depth, shall be refilled to required grade with compacted soil.
- C. Where trenches are in wet or soft ground that in the opinion of the Geotechnical Engineer is unsuitable for supporting the pipe, concrete cradles or approved equivalent, shall be installed as directed by the Engineer.
- D. Where necessary and per OSHA standards, the sides of trenches and excavations shall be properly sloped or supported by adequate sheeting and bracing to insure proper construction and safety of the workers. The Contractor will be held responsible for the sufficiency of sheeting and bracing and for all damages to property or injury to persons resulting from improper quality, strength, placing, maintaining and removing of same.
- E. Backfill trenches with suitable fill. Scarify sides of excavation to facilitate bonding of soil. Do not backfill trenches until tests and inspections have been made and backfilling is authorized by Geotechnical Engineer or other authorized Owner's representative. Use care in backfilling to avoid damage or displacement of pipe system.
- F. Immediately after piping has been installed, tested, inspected, and accepted, piping shall be filled around with special care to solidly fill voids without causing injury to piping. Up to 2 feet above, 4-inch layers shall be hand filled. For remainder of trench, 12-inch layers shall be filled in. Each layer shall be tamped before placing next layer. No stones larger than 2 inches in diameter shall be allowed in fill up to 2 feet above pipe and no stones larger than 4 inches in diameter shall be allowed in fill above. Backfill shall be in such a manner so as to prevent future settlement.
- G. Existing utility lines to be retained that are shown on the drawings or the locations of which are made known to the Contractor prior to excavation operations, shall be protected from damage during excavation and backfilling, and if damaged, shall be repaired by the Contractor, at own expense.
- H. As backfilling proceeds, all sheeting and shoring shall be removed in such a manner as to prevent the sides of the excavation from caving in or cracking. No backfilling of utility lines shall be done until any testing and inspection of the system or portion of the system has been completed and accepted.
- I. Unless otherwise shown or specified, make trenches for piping and utilities not less than 16 inches no more than 24 inches wider than the outside width of the piping or utilities. Accurately grade bottoms of trenches with bell holes scooped out to provide uniform bearing and support of pipe and utilities on undisturbed soil throughout its entire length, except where other means of supporting pipe are indicated.

3.07 PLACING AND BACKFILL

- A. General: Place fill or backfill on subgrades free of mud, frost, snow, or ice. It is to be understood that some selective reconnaissance and excavation will be required to obtain fill material.
- B. Place fill and backfill soil materials in layers not more than 8 inches loose depth for material compacted by heavy self-propelled compaction equipment.

- C. Place fill and backfill soil materials in layers not more than 4 inches loose depth for material compacted by portable, hand operated compaction equipment.
- D. Ground surface preparation:
 - 1. Remove vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to fill placement. Plow, strip, or break-up slope surfaces steeper than 1 vertical to 4 horizontal so that fill material will bond with existing surface.
 - 2. Proof roll the exposed subgrades with approved construction equipment having a minimum axle load of 10 tons. Do not proof roll wet or saturated subgrades. Any soft or wet areas, areas exhibiting rutting, pumping or areas that are otherwise unstable, as deemed by the Geotechnical Engineer, shall be repaired.
- E. Grading:
 - 1. General: Uniformly grade areas within limits of grading under this section, including adjacent transition areas. Smooth finished surface within specified tolerances, compact with uniform levels or slopes between points where elevations are indicated, or between such points and existing grades.
 - 2. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within plus or minus 1 inch.
 - 3. Compaction: After grading, compact subgrade surfaces to the depth and indicated percentage of maximum or relative density for each area classification. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.

3.08 COMPACTION

- A. General: Control all soil compaction during construction, providing minimum percentage of density specified for each area classification indicated below. Place backfill and fill materials in layers not more than 8.0 inches in loose depth for material compacted by heavy compaction equipment, and not more than 3.0 inches in loose depth for material compacted by hand-operated compaction equipment.
- B. Density Requirements: Compact soil materials to not less than 95 percent of the maximum dry unit weight according to ASTM D 698. Within the top 24 inches of finished soil subgrade elevations beneath foundations, slabs-on-grade, and pavements, compact structural fill to at least 98 percent of its maximum dry density.
- C. Moisture Control:
 - 1. Where subgrade or layer of soil material must be moisture conditioned before compaction, apply water as needed.
 - 2. Remove and replace, or scarify and air dry, soil material that is too wet to compact to specified unit weight.
 - 3. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by mechanical or chemical methods.

3.09 DRAINS

- A. Construct subsurface drainage during grading operations at locations and dimensions shown on the approved drawings.

3.10 GRADING

- A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
 - 1. Provide a smooth transition between adjacent existing grades and new grades.
 - 2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
- B. Site Grading: Slope grades to direct water away from buildings and to prevent ponding.

3.11 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified independent geotechnical engineering testing agency to perform field quality-control testing.
- B. The Geotechnical Engineer shall review all laboratory test results and submit reports specified in this Section. Geotechnical Engineer will also observe, in the field, all earthwork related operations.
- C. The Geotechnical Engineer will interpret the tests, state in each report whether or not the test specimens comply with all requirements of the Contract Documents and note any deviations therefrom.
- D. The Geotechnical Engineer will identify when and where samples are to be obtained. Contractor shall collect samples and forward them to the Testing Laboratory for testing. As necessary, the Geotechnical Engineer will submit the following laboratory test reports on each type of borrow and fill material:
 - 1. Percent passing sieve No. 200 – ASTM D 1140.
 - 2. Atterberg Limits – ASTM D 4318.
 - 3. Standard Moisture-Density Relationship – ASTM D 698.
- E. The Geotechnical Engineer will determine the conformance of material to be used for fills.
- F. Field Testing of Fill Areas: Prepared fill lifts will be tested and approved by the Geotechnical Engineer before construction of any further work thereon. Inspection and test of subgrades and fill layers will be taken as follows:
 - 1. For each compacted fill layer, make a minimum of 2 field density tests for every lift. Perform field density tests in accordance with ASTM D 1556, D 6938 or D 2937. Each lift shall meet the compaction requirement of Part 3.8 of this Section.
- G. Footing Subgrades: Geotechnical Engineer shall inspect bearing surfaces and monitor proof rolling operations at foundation subgrade locations.
- H. Contractor shall cooperate with Geotechnical Engineer in the performance of the required tests and inspections.
- I. When testing agency reports that subgrades, fills, or backfills are unstable or have not achieved degree of compaction specified, scarify and moisten or aerate, remove and replace, or otherwise stabilize the subgrades using an approved procedure. Additional compaction and testing shall be at the expense of the Contractor.

3.12 MAINTENANCE

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades in eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions. Scarify surface, reshape, and compact to required density prior to further construction.
- C. Where settling is measurable or observable at excavated areas, add backfill material and compact. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.13 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Transport surplus satisfactory soil to designated storage areas on Owner's property. Stockpile or spread soil as directed by Contractor. Remove waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off Owner's property.

END OF SECTION

SECTION 31 23 19
DEWATERING
PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

- A. Section includes construction dewatering.
- B. Related Sections:
 - 1. Division 01 Section Construction Progress Documentation for recording preexisting conditions and dewatering system progress.
 - 2. Division 31 Section "Earth Moving" for excavating, backfilling, site grading, and for site utilities.
 - 3. Division 33 Section "Subdrainage" for permanent dam embankment drainage.

1.03 PERFORMANCE REQUIREMENTS

- A. Dewatering Performance: Design, furnish, install, test, operate, monitor, and maintain dewatering system of sufficient scope, size, and capacity to control hydrostatic pressures and to lower, control, remove, and dispose of ground water and permit excavation and construction to proceed on dry, stable subgrades.
 - 1. Delegated Design: Design dewatering system, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
 - 2. Continuously monitor and maintain dewatering operations to ensure erosion control, stability of excavations and constructed slopes, that excavation does not flood, and that damage to subgrades and permanent structures is prevented.
 - 3. Prevent surface water from entering excavations by grading, dikes, or other means.
 - 4. Accomplish dewatering without damaging existing buildings, structures, and site improvements adjacent to excavation.
 - 5. Remove dewatering system when no longer required for construction.

1.04 QUALITY ASSURANCE

- A. Preinstallation Conference: Conduct conference at Project site.
 - 1. Review methods and procedures related to dewatering including, but not limited to, the following:
 - a. Inspection and discussion of condition of site to be dewatered including coordination with temporary erosion control measures and temporary controls and protections.
 - b. Geotechnical report.
 - c. Proposed site clearing and excavations.

1.05 PROJECT CONDITIONS

- A. Project-Site Information: A geotechnical report has been prepared for this Project and is available for information only. The opinions expressed in this report are those of geotechnical engineer and represent interpretations of subsoil conditions, tests, and results of analyses conducted by geotechnical engineer. Owner will not be responsible for interpretations or conclusions drawn from this data.
 - 1. Make additional test borings and conduct other exploratory operations necessary for dewatering.
 - 2. The geotechnical report is included in the bid documents

- B. Survey Work: Engage a qualified land surveyor or professional engineer to survey adjacent structures and site improvements, establishing exact elevations at fixed points to act as benchmarks. Clearly identify benchmarks and record existing elevations.
 - 1. During dewatering, regularly resurvey benchmarks, maintaining an accurate log of surveyed elevations for comparison with original elevations. Promptly notify Engineer if changes in elevations occur or if any damage is evident in adjacent construction.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by dewatering operations.
 - 1. Prevent surface water and subsurface or ground water from entering excavations, from ponding on prepared subgrades, and from flooding site and surrounding area.
 - 2. Protect subgrades and foundation soils from softening and damage by rain or water accumulation.
- B. Install dewatering system to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.
- C. Provide temporary grading to facilitate dewatering and control of surface water.
- D. Monitor dewatering systems continuously.
- E. Promptly repair damages to adjacent facilities caused by dewatering.
- F. Protect and maintain temporary erosion and sedimentation controls, which are specified in Division 01 Section "Temporary Facilities and Controls Division 31 Section Site Clearing during dewatering operations.

3.02 INSTALLATION

- A. Contractor shall furnish, install, operate, and maintain any pumping equipment, etc. needed for removal of water from various parts of the stormwater facility.
- B. Contractor shall coordinate with Geotechnical Engineer as needed.

3.03 FIELD QUALITY CONTROL

- A. Provide continual observation to ensure that subsurface soils are not being removed by the dewatering operation.

END OF SECTION

SECTION 31 25 00
EROSION CONTROL
PART 1 GENERAL

1.01 INTENT

- A. The main concern associated with erosion on a construction site is the movement of soil off the site and its impact on water quality. It is the Owner's intent that the Contractor install and maintain sufficient erosion control practices to retain sediment within the boundaries of the site in addition to complying with regulatory authorities having jurisdiction and local erosion and sedimentation control laws and ordinances. All erosion control methods and devices used shall conform to the latest requirements imposed by federal, state and local authorities. The Contractor shall be responsible for repair of any damage caused and shall be financially responsible for any penalties imposed.
- B. If an erosion control drawing has been included in the drawings prepared by the landscape architect/engineer, it shall be the Contractor's responsibility to review the drawing prior to implementation. If an erosion control drawing is not included in the project documents, the Contractor shall submit, for approval, a proposed sequence of operations and a compatible method of preventing erosion.

1.02 SUMMARY

- A. Work under this section shall include but not be limited to, installation and maintenance of both temporary and permanent soil erosion control measures, slope protection and stabilization measures, protection of all surface water and property both on and off site. This work shall include all labor, materials, and equipment necessary to meet all applicable requirements and as specified in the contract documents.

1.03 REFERENCE STANDARDS

- A. All applicable standards and requirements of all regulatory authorities having jurisdiction, including local soil conservation agencies

1.04 QUALITY ASSURANCE

- A. Soil erosion and sediment control measures shall be implemented in accordance with the requirements and procedures outlined in this specification, contract drawings and documents, the state standards or guidelines for soil erosion and sediment control, and all regulatory authorities having jurisdiction. Where conflict between requirements exist, the more restrictive rules shall govern.
- B. The Contractor shall provide all temporary control measures shown on the drawings, or as directed by the Owner, Owner's representative, or soil conservation district for the duration of the contract. Erosion control drawings are intended to be a guide to address the stages of work shown. Additional erosion control measures not specified on the drawings may be necessary and shall be implemented to address intermediary stages of work and any conditions that may develop during construction at no cost to the Owner.
- C. Temporary control provisions shall be coordinated with permanent erosion control features to the extent practical to assure economical, effective and continuous erosion control throughout the construction and post-construction period.
- D. Soil erosion and sediment control measures shall at all times be satisfactory to the Owner's Representative. Owner's Representative will inform the Contractor of unsatisfactory construction procedures and operations if observed. If the unsatisfactory construction procedures and operations are not responded to and corrected within 48 hours, the Owner's Representative may suspend the performance of any or all other construction until the unsatisfactory condition has been corrected. Such suspension shall not be the basis of any claim by the Contractor for additional compensation nor for an extension of time to complete the

work. Any complaints, fines, etc. relating to ineffective erosion control, shall be the sole responsibility of the Contractor.

- E. The Contractor shall inspect all soil erosion and sediment control measures at least at the beginning and end of each day to ascertain that all devices are functioning properly during construction. Maintenance of all soil erosion and sediment control measures on the project site shall be the responsibility of the Contractor until the project is 100% complete, and until the permanent soil erosion controls are established and in proper working condition.
- F. The Contractor shall protect adjacent properties and watercourses from soil erosion and sediment damage throughout construction.

1.05 SEQUENCE OF CONSTRUCTION

- A. The approved construction sequence, as permitted/approved shall be adhered to during the execution of work under this section. All soil erosion and sediment control measures shall be installed in accordance with the phasing sequence shown on the contract documents.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Contractor shall provide all materials necessary to perform the work.

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

- A. The Contractor shall comply with and implement the Erosion and Sedimentation Control Plans provided in the contract documents.
- B. Review the soil erosion and sediment control drawings as they apply to current site conditions. Any deviation from the drawings must be submitted for approval to the owner/landscape architect in writing at least 72 hours prior to commencing that work.
- C. All soil sediment and erosion control devices shall be in place prior to any earthwork construction, in their proper sequence, and maintained until permanent protection is established.
- D. The limit of the area of any earthwork operations in progress shall be commensurate with the Contractor's capability and progress in keeping the finished grading, mulching, seeding and other such permanent control measures current and in accordance with the accepted schedule for construction phasing. Should seasonal limitations make such coordination unrealistic, as determined by the Owner's Representative, temporary erosion control measures shall be provided immediately by the Contractor at no expense to the Owner.
- E. Temporary erosion control measures shall be used to correct conditions which develop during construction that are needed prior to installation of permanent control features, or that are temporarily needed to control erosion that develops during normal construction practices, but are not associated with permanent control features on the project.
- F. The Contractor shall incorporate all permanent erosion control features into the project at the earliest practical time to minimize the need for temporary controls.
- G. A temporary construction entrance pad shall be installed and maintained at any point where construction vehicles enter a public right-of-way, street or parking area. The pad shall be used to eliminate mud from the construction area onto public right-of-way. The pad shall be constructed as shown on the drawings. Any mud or debris tracked on streets shall be cleaned up immediately.
- H. Any disturbed or stockpiled areas that will be left exposed more than 14 days, and not subject to construction traffic, shall immediately receive a temporary seeding. Mulch/straw shall be used if the season prevents the establishment of a temporary cover. Disturbed areas shall be limed and fertilized prior to temporary seeding.

- I. Permanent vegetation shall be established as specified on all exposed areas within 14 days after final grading, unless otherwise directed by the Owner and permitted by appropriate regulations. Mulch as necessary for seed protection and establishment. Lime and fertilize seedbed prior to permanent seeding.
- J. Cut slopes shall be permanently seeded and mulched as the excavation proceeds to the extent considered desirable and practical. Slopes that erode easily shall be temporarily seeded and mulched.
- K. All storm drainage outlets must be stabilized, as specified, before the discharge points become operational. Equip all inlets with inlet protection immediately upon construction.
- L. Discharge from de-watering operations for the excavated areas shall not be directed to surface waters without first properly removing the suspended sediment through filtration and/or settlement. The Contractor shall obtain any required permits associated with dewatering activities.
- M. The quantity of silt fence to be installed will be affected by the actual conditions that occur during the construction of the project. Silt fence shall be installed at locations shown on the drawings and any additional locations necessary for proper erosion control. The Contractor shall maintain the silt fence until the project is accepted and shall remove and dispose of the silt fence and silt accumulations.
- N. Soil erosion and sediment control shall include but not be limited to the approved measures. The Contractor shall be responsible for providing all additional measures that may be necessary to accomplish the intent of the drawings.
- O. Comply with all other requirements of authorities having jurisdiction.

END OF SECTION

This page intentionally left blank

SECTION 32 12 16.36
ATHLETIC TRACK ASPHALT PAVING
PART 1 - GENERAL

1.01 SCOPE

- A. If asphalt is needed on the project the track contractor to approve all asphalt specifications and materials prior to construction and to confirm that the asphalt specification and materials meets all manufacture requirements for the synthetic turf surface.

1.02 SUMMARY

- A. The extremely strict tolerances for gradients and flatness, which are stipulated by the Sport Federations or Associations for the synthetic surfaces, mean that the construction of adequate asphalt and base is of supreme importance. Tolerances are required to be met not only by the newly completed facility, but also over its life, which might be two or three times the expected life of the synthetic surface.
- B. The contractor must review the ASBA guidelines for asphalt track surfacing and confirm that the proposed asphalt surface meets and/or exceed the ASBA guidelines.
https://sportsbuilders.org/page/asphalt_guidelines
- C. The asphalt and existing base should be designed/and or confirmed to be able meet the following criteria:
 - 1. It should be capable of supporting and transmitting to the existing ground the loads of all vehicles, machines and materials to be used in the construction, without causing deformation of the site, or exceeding the ground-bearing capacity.
 - 2. It should be capable of supporting and transmitting the loads on the synthetic surface from athletes and maintenance equipment, without permanent deformation of the asphalt or base.
 - 3. It should be sufficiently flexible to provide protection to the synthetic surface from the effects of sub-soil movement and frost heave.
 - 4. No Recycle Asphalt (RAP) in the surface course unless specifically allowed by the Synthetic Track Surfacing Manufacturer.
 - a. A signed letter is required from the Synthetic Track Surfacing Manufacturer if RAP is to be allowed. Percent RAP must be identified in the letter.

1.03 REFERENCES

- A. North Carolina State Department of Transportation Standard Specifications
- B. Standard Specifications for Highway Materials and Methods of Sampling and Testing, American Association of State Highway and Transportation Officials (AASHTO)
- C. American Society of Testing Materials (ASTM)
- D. American Sports Builder Association (ASBA)

1.04 SUBMITTALS

- A. Complete asphalt material submittal is required to confirm all asphalt components meets NCDOT specifications and ASBA Guidelines at a minimum
 - 1. Material/Pavement Course - **No Recycle Asphalt (RAP) Allowed unless specifically allowed by the Synthetic Track Surfacing Manufacturer – Written letter is required from the manufacturer.**
 - 2. Binder Course
 - 3. Course Aggregate
 - 4. Fine Aggregate
 - 5. Name and Address of all suppliers
 - 6. All applicable certificates to be signed by material producer and contractor certifying that each item meets and/or exceeds the specifications and that the proposed asphalt meets ASBA Guidelines.

PART 2 PRODUCTS AND MATERIALS

2.01 HOT MIX ASPHALT

- A. Hot mix asphalt for surface courses shall consist of coarse and fine aggregates and mineral filler plant-mixed with bitumen binder.
- B. All hot mix asphalt shall be in accordance with applicable provisions of North Carolina State Department of Transportation "Standard Specifications for Road and Bridge Asphalt Construction," except herein as modified.
- C. The hot mix asphalt shall be plant-mixed and bituminous material for mixture shall be AC-1, 85-100 penetration grade or 60 – 70 penetration grade where required in warm climates. The asphaltic cement (AC-1) content shall be 4.0% - 6.0% (by weight) of the total composite mixture.
- D. Course aggregate (material retained on the 4.75mm sieve) shall be sound, angular crushed stone or grave (shale is not recommended).
- E. Fine aggregate (material passing the 4,75mm sieve and retained on the #200 (0.075mm) sieve) shall be sand, stone sand and stone screening class B quality or better and gradation FA-3.
- F. Mineral filler (Material passing the #200 (0.075mm) sieve) shall be dry limestone or dust.
- G. The aggregate shall have the following maximum limits of detrimental substances:

Soft fragments, AASHO Ti 89	2.00%
Coal and lignite, AASHO Ti 13	0.25%
Clay lumps, GHD 1	0.25%
Flat or elongated pieces (greater than five times the average thickness)	10.00%
Sulfur content computed as sulfide sulfur, ASTM E30	0.01%
Other local detrimental Substances	2.00%

- H. The gradation of the composite aggregate for the Asphalt Binder Course shall conform to or near the following:

Sieve	Total Passing	%
3/4"	100	
1/2"	90 – 100	
3/8"	80	
#4	45 – 70	
#8	25 – 55	
#30	(19)	
#50	5 – 20 (12)	
#100	5 – 16 (6.5)	
#200	2 – 9 (3)	

Note: The aggregate grain should be as close to the figures in brackets for the maximum density to the asphalt mixture.

- I. The gradation of the composite aggregate for the Asphalt Top Coat shall conform to or near the following:

Sieve	Total Passing	%
-------	------------------	---

1/2"	100
3/8"	90 – 100
#4	60 – 90 (70)
#8	35 – 65 (49)
#30	(22)
#50	6 – 25 (14)
#100	(8)
#200	2 – 10 (3)

Note: The aggregate grain should be as close to the figures in brackets to give maximum density to the asphalt mixture. A majority of the minus 200 material should consist of mineral filler. The increase in the amount of mineral filler has, in many instances, increased the toughness of the asphalt. This can be accomplished by using a resultant mineral aggregate having a minus 200 contents of about 7% - 8%.

- J. The asphalt "Binder Course" and "Top Coat" mixtures are the type IV mixes recommended by the Asphalt Institute. Asphaltic concrete mixtures may differ from the above provided specification, meet or exceed the present specifications. The synthetic surfacing contractor must be informed about proposed changes/deviations to the present specification. Determination of the job mix formula shall be based on attaining a mix having Marshall Stability (ASTM D1559, 75 blows each Side) of 750 lbs. or greater.
- K. Samples of the job mix from the asphalt plant shall be laboratory tested for Marshall Stability. A compacted specimen shall be retained for density (ASTM D2726) comparison with core samples from the installed pavement.
- L. No Recycle Asphalt Product is allowed in the surface course, unless approved by the track surfacing manufacturer.

2.02 PRIME COATS AND TACK COATS

- A. The primer for application on asphalt surfaces (tack coat) shall be RC-1.

PART 3 - EXECUTION

3.01 HOT MIX ASPHALT PAVEMENT

- A. Mixing of hot mix asphalt should be undertaken in a mixing plant capable of effectively drying and heating the aggregate to the specified temperature, accurately proportioning and uniformly mixing coarse and fine aggregate, filler and binder to meet the specified requirements at all times. In general, batch-mixing plants are preferable to drum mixing plants, because of their greater capability to fine-tune the aggregate gradation.

For all types of mixing facilities:

1. Cold aggregates must be handled and stored in a manner that avoids contamination and minimizes degradation and segregation.
2. Filler shall be stored and handled in a separate system from that which handles aggregate
3. The bitumen storage and handling shall be arranged so that contamination of the bitumen by flushing liquids or other materials cannot occur.
4. The bitumen storage tanks shall be capable of holding at least sufficient bitumen for one day's production.
5. Heating of bitumen shall be accomplished by steam coils, electricity or other means that will allow no direct flame to come into contact with the heating tank.
6. Discharge from the plant shall be so arranged as to minimize segregation.
7. Asphalt, which has been stored for more than twenty-four hours or produced at temperatures not in accordance with those specified, shall not be used.
8. The mix shall leave the mixing facility at a temperature between 285°F (140°C) and 325°F (163°C).

- B. The hot mix asphalt must be kept clean during hauling and covered if necessary during transit with canvas or other material that will retain the desired pavement temperatures. The mixtures must not be hauled in such a manner that segregation of the ingredients takes place or that a crust is formed on the surface, or that mixture will crumble or flatten out when dumped. Trucks that transport the mixture must have metal beds, and the beds must be clean, smooth and free of holes. Before loading, the truck bed is coated with a thin film of a release agent (oil or soap solution) that assists in preventing fresh hot mix asphalt from sticking to the surface of the bed. After the bed is coated, any excess release agent must be drained from the bed.
- C. The hot mix asphalt shall be spread with a self-propelled machine spreader having a floating screed assembly controlling the elevation of the strike-off. The use of road graders or towed spreaders will not be allowed. Means shall be provided to heat the screed uniformly over its full width. The screed shall be equipped with automatic screed controls to adjust automatically to place a uniform mat of desired thickness, grade and shape.
- D. Typical members of the paving crew should be: paving superintendent, paver operator, dump person, two screed people, and two people to lute and take care of joints and mat repairs. Co-ordination of the entire crew with the paving superintendent and screed people is essential to achieve all the desired goals.
- E. Self-propelled rollers are required as compaction equipment. Towed-type rollers should not be used. Hand-held or vibrating plate compactors can be used in small, inaccessible areas. Steel-wheeled non-vibrating rollers shall have a mass of 10 tons (9 metric tons). Steel wheeled vibrating rollers shall have a mass of 5 tons (4.5 metric tons). Pneumatic tired multi-wheeled rollers shall not be used.
- F. The hot mix asphalt shall be placed with a minimum delay after delivery. On no account shall hot mix asphalt be reheated.
- G. The day's work shall be organized so that each layer spread covers the full width of the pavement.
- H. Hot mix asphalt shall be spread to a depth consistent with the specified compacted thickness. Each layer shall be completed to a surface parallel to the finished surface of the pavement and at a depth below it equal to the compacted thickness of the subsequent layer or layers specified.
- I. Hot mix asphalt shall not be placed during rain, or when the air temperature in the shade and away from artificial heat is 40°F (5°C) or less, or while the surface is wet or when the pavement temperature does not comply with the table below.

Pavement surface temperature in shade	Minimum Laying Temperatures Binder Course	Minimum Laying Temperatures Top Coat
40°F – 50°F (5°C – 10°C)	302°F (150°C)	293°F (145°C)
50°F – 60°F (10°C – 15°C)	293°F (145°C)	284°F (140°C)
60°F - 77°F (15°C - 25°C)	284°F (140°C)	275°F (135°C)
Over 77°F (Over 25°C)	275°F (135°C)	266°F (130°C)

- J. Maximum laying temperature of the mixture shall be 325°F (163°C)
- K. The temperature of the mix shall be measured in the truck just prior to discharging into the paver hopper. A suitable stem type thermometer shall be used. The stem shall be inserted into the mix to a depth of approximately 8" (200mm) at a location at least 12" (300mm) from the side of the truck body. An average of at least two readings shall be adopted as the temperature of the mix.
- L. There are three acceptable types of sensing devices used with the automatic screed control system:
 - 1. The Wand Sensor
 - 2. The Ultra Sonic Sensor
 - 3. The Laser Sensor

- M. The grade reference used with the above listed sensing devices can be either a fixed string-line tied between graded iron pins or on an existing surface, a previously placed surface, a curb line, etc. A string-line can be erected that will include roll down factors for true grade. The roll down is estimated to be about 25% of the un-compacted mat thickness. To calculate the exact position of the string-line, a survey crew is used to determine the existing grade at approximate intervals of 9 meters (30 feet). The existing grade is subtracted from the theoretical grade for calculation of lift thickness. A roll down factor of 25% of this thickness is added for the string-line grade. Once the string-line is erected, intermediate points of support may be placed under the string-line, especially on curves or in sudden changes of grade. Graded iron pins and intermediate supports should be placed so that they will not interfere with the travel of the machine spreader, but close enough to each other and to the path of the machine spreader that they can hold the string in a convenient position to be reached by the electronic sensors and by a short straight edge placed on the newly laid pavement to visual check on its level.
- N. The reference system that is best for the job depends on the existing pavement surface on which the mat is to be placed. If the surface on which the mat is to be placed has an appropriate longitudinal grade, so that the finished pavement is expected to have a constant thickness, then the surface on which the mat has to be placed, an adjoining existing surface, a previously placed surface, a curb line, etc. can be used as the reference system, since a constant roll down is expected. If the longitudinal grade is erratic, so that the finished pavement is expected to have a variable thickness, a string-line should be used as the reference system, to take in account the variable roll down.
- O. To maintain proper transverse grade, automatic screed controls use:
1. A dual sensing systems on both sides of the paver, using two grade references, one on each side of the paver or
 2. A single sensing system on a single side of the paver, using a single grade reference on a single side of the paver, in association with an automatic slope control system: in using the transverse slope control, no specific roll down factors can be applied to grade calculations for slope transfer.
- The Control System that is best for the job depends on the existing pavement surface on which the mat is to be placed. Dual Grade Control System is preferable if the surface on which the mat has to be placed has an unsatisfactory transverse grade. Single Grade Control System transfers the roll-down factors of the grade control side to the opposite side as equal factors, which may or may not be equal. Single Grade Control System is acceptable in situations where the surface on which the mat is to be placed has an appropriate transverse grade.
- P. The area to be surfaced with hot mix asphalt shall be cleared of all foreign or loose material with power blowers, power brooms or hand brooms.
- Q. Asphalt surfaces shall be primed prior to the installation of the binder course and topcoat. Prime asphalt surfaces at the rate of 0.05 gallons per square yard. Sprayers shall be capable of spraying the tack coat uniformly through jets in a spray bar at the desired rate of application. Each sprayer shall be fitted with a hand lance. Tack Coat shall be applied, not less than thirty (30) minutes nor more than two (2) hours before asphaltic concrete is placed. When spraying the tack coat, shields shall be used and all necessary precautions taken to protect curbs, gutters, channels, adjoining structures, surfaces and grassed areas. Any pools of tack coat, which may form in small depressions or surface irregularities, shall be brushed out over the adjacent area with brooms or rubber squeegees before the emulsion breaks. In dusty conditions, every precaution shall be taken to prevent freshly coated surfaces from being contaminated by dust or other foreign material.
- R. Uniformity of operations is essential in hot mix asphalt paving. Uniform, continuous operation of the paver produces the highest quality pavement. Paving too fast can result in the paver stopping frequently to wait for trucks to bring more mix. The smoothness of the pavement will suffer when the paver stops and starts up again. The paver speed should be matched to the quantity of HMA being delivered to the project to provide a uniform paver speed. The paver must be continuously supplied with enough mix, and at the same time, trucks should not have to wait a long time to discharge their loads into the paver hopper.

- S. Starting blocks equal to 1.25 times the thickness of the un-compacted mat are required to set the thickness and to null the screed. By using starting blocks the grade can be very close at the beginning of the operation.
- T. Blocks equal to 25% of the un-compacted thickness are used to start from a joint. The 25% additional thickness allows for proper roll-down or compaction while maintaining proper grade. Extended screeds will require multiple shims for each extension area.
- U. The screed must be initially heated at the start of each new paving operation. If not, the mix will tear and the texture will look open and coarse, as if the mix were too cold.
- V. If the mat being placed is uniform and satisfactory in texture, and the thickness is correct, no screed adjustments are required. But when adjustments are required, they should be made in small increments. Time should be allowed between the adjustments to permit the paver screed to complete reaction to the adjustments sequentially.
- W. The minimum un-compacted thickness of a hot mix asphalt course is equal to 1.25 times its minimum compacted thickness, which is equal to three times the nominal maximum size aggregate. When the mat falls below this thickness, it pulls, tears, cools rapidly and generally will not be able to achieve the proper density and pavement smoothness.
- X. There are places on many projects where spreading with a paver is either impractical or impossible. In these cases, hand spreading may be required. Placing and spreading by hand should be done very carefully and the material distributed uniformly so there will be no segregation of the mix. When the HMA is dumped in piles, it should be placed upon arrival on steel dump sheets outside the area in which it is to be spread and shall then be immediately laid to the required depth. The material should be deposited from the shovels into small piles and spread with lutes. In the spreading process, all material should be thoroughly loosened and evenly distributed. Any part of the mix that has formed into lumps and does not break down easily should be discarded. After the material has been placed and before rolling starts, the surface should be checked with templates or straightedges and all irregularities corrected.
- Y. Asphaltic concrete shall be spread in such a manner as to minimize the number of transverse and longitudinal joints in the pavement.
- Z. Transverse joints shall be constructed where the spreading operation is stopped for longer than 20 minutes. Transverse joints in adjoining spreader runs shall be offset by not less than 8 feet (2.44m). Transverse joints shall be offset from layer to layer by not less than 8 feet (2.44m). Transverse joints shall be constructed at right angles to the direction of spreading and be cut to a straight vertical face for the full depth of the layer.
- AA. When the construction is ready to stop for the end of the day or for a period longer than 20 minutes, the following procedure is used to form a suitable transverse joint:
 - 1. When the paver is placing the last load, it is shifted into low gear as it approaches the location of the proposed joint.
 - 2. As the hopper empties and the amount of material in the screed chamber decreases below normal operating level, the paver is stopped.
 - 3. The screed is raised and the paver moved out of the way.
 - 4. The mix is then removed from the end of the mat to form a clean, vertical edge.
 - 5. Heavy wrapping paper is placed on the existing surface along the edge of the joint.
 - 6. New material is finally placed on top of the paper and used to form a ramp, from the new surface to the existing surface.
- BB. When construction is ready to resume, the following procedure is used to form a suitable transverse joint:
 - 1. The ramp of material is removed along with the board or paper.
 - 2. A straightedge is used to check the longitudinal grade of the mat. Because the paver was running out of material as it laid the last few feet of mat, it is possible that those last few feet taper slightly from the specified level of the mat. If this is the case, a new transverse edge must be cut behind the point where the taper begins.
 - 3. The vertical face of the mat is tack-coated.
 - 4. The paver is backed up to the edge of the mat and the screed rested on the mat surface.

5. The screed is heated while it rests on the mat. This provides some heat to the material at the edge of the mat.
 6. The heated screed is raised and shims as thick as the difference between the compacted and the un-compacted mat (approximately 25% of the compacted thickness) are positioned under its ends.
 7. The truck with the first load of HMA is backed carefully to the hopper. During discharge of the mix from the truck bed to the paver, it is essential that the truck not bump the paver and cause it to move.
 8. The paver starts forward in a low gear.
 9. Once the paver has moved away, excess asphalt is cleaned off the surface of the mat and the smoothness of the joint is checked with a straightedge.
 10. If the joint is satisfactory, a 6" (150mm) width of the fresh mix is rolled transversely and the joint checked for smoothness. If the joint is satisfactory, transverse rolling is continued in 6" to 12" (150 to 300mm.) increments until the entire width of the roller is on the new HMA. If straight edging shows an uneven joint, the surface of the new mat must be scarified while still warm and workable. Scarification is done with the fine side of the lute. Excess material can then be removed or additional material added, and the joint rolled. During rolling, lumber should be placed along the edges of the mat to prevent the roller from driving off and distorting the longitudinal edge.
- CC. Longitudinal joints shall be offset from layer to layer by not less than 6" (150mm). Longitudinal joints shall be parallel to the centerline of the pavement. Alignment of the mat is dependent on the accuracy of the guideline provided for the paver operator and his alertness in following it. Attention to this detail is vital to the construction of a satisfactory longitudinal joint, since only a straight edge can be properly matched to make the joint
- DD. Hot joints are formed by two pavers operating in echelon. The screed of the rear paver is set to match the grade or thickness of the unrolled edge of the first mat placed. The advantages of a hot joint are that the two mats are automatically matched in thickness; the density on both sides of the joint is uniform because both sides are compacted together, and the hot mats form a solid bond. The disadvantage is that traffic cannot move in one of the lanes while the other is being paved. Both lanes are blocked simultaneously.
- EE. In building a cold joint, one lane is placed and compacted. At a later time, after the HMA in the first lane has cooled, the companion lane is placed against it and compacted. Special precautions must be followed to ensure a joint of good quality.
- FF. The following procedure is used to form a suitable longitudinal joint:
1. The exposed edge of the first lane shall be formed while hot to a straight line with a dense face, which shall lie between vertical and 45° to the vertical for the full depth of the layer.
 2. The unsupported longitudinal edges of spread material should be side tamped to raise the level of the asphaltic concrete slightly to secure maximum edge compaction from subsequent rolling.
 3. While placing the companion lane, the paver screed should be set to overlap the first mat by 1" to 2" (25 to 50 mm).
 4. The elevation of the screed above the surface of the first mat should be equal to the amount of roll-down expected during compaction of the new mat.
 5. The coarse aggregate in the material overlapping the cold joint should be carefully removed and wasted. This leaves only the finer portion of the mixture to be pressed into the compacted lane at the time the joint is rolled.
- GG. The placing of hot mix asphalt against abutting structures such as curbs, gutter manhole or adjoining pavement shall be carried out in the same manner as for longitudinal and transverse joints. Any spaces left unfilled between the spreader run and abutting edges shall be filled with sufficient material to the proper height prior to compaction.
- HH. After the paving mixture has been properly spread; it shall be thoroughly and uniformly compressed by rolling with power rollers.
- II. Hot mix asphalt shall be compacted uniformly to the standard specified as soon as it will support rollers without undue displacement. All rolling shall be completed while the mix is at a temperature above 185°F (85°C)

- JJ. The sub-soil shall be rolled and compacted by a roller to a minimum density at ninety-five percent (95%) as determined by the Modified Proctor Test (AASHTO T99).
- KK. Testing required to validate or control the mix supplied is the Paving Contractor's responsibility and will be included in the bid cost for providing these HMA items. Daily maximum theoretical specific gravity (Gmm) values must be made available to the Contractor's density technician for verifying in-place density within four hours of start of production. Asphalt content, gradation, and bulk specific gravity (Gmb) testing shall be performed on the first day of installation for each product used, then done a minimum of once every 400 tons of HMA supplied or every third day for low tonnages that when added together successively do not equal 400 tons. Acceptable average measures are made by use of a correlated nuclear density gauge, a correlated Pavement Quality Indicator or Pave Tracker (non-nuclear) or by cutting (4) cores per lift, per day and testing per AASHTO T-166, Method C. Additional testing shall be performed on any given day once 400 tons of asphalt is placed on that day.
- The average sub-lot (daily or 400 tons; whichever is less) in-place density measure for surface course mixtures shall be 94.0% of Gmm with no value less than 92.5% of Gmm. Base and leveling installation of asphalt shall meet local DOT specifications for in-place density measures or average of 92.0% of Gmm, whichever is greater. Surface course longitudinal joints shall be measured directly upon the joint, centered upon by core or density gauge, and shall meet the mat density requirements. Base and leveling course longitudinal joint density measures shall achieve between 95% - 102% of maximum achievable individually, with an average of 98% on any given day.
- Process Control testing shall be in accordance with state standards for frequency and methods where the work being performed is done with a minimum of testing meeting the above QC requirements. Process Control Voids and minus #200 gradation shall target mix design with no test outside plus / minus 1.0% and VMA shall target the asphalt mix design value or greater, with no test value less than minimum allowed minus 0.3%.
- Print outs of ingredients used shall be supplied for each run of asphalt; data logger Or computer screen shot. Print outs shall be supplied daily with the final load of asphalt ticket.
- LL. The exact number of passes of a roller that will be required to obtain adequate density will be determined on a test strip using a nuclear density gauge to measure the density of the mat after each pass, until maximum achievable density is indicated by the test results. The rolling pattern used on the test strip should be the same that will be used on the remainder of the job. The number of rollers and/or the rate of production will be adjusted accordingly.
- MM. The speed of rollers at all times shall be slow enough to avoid displacement of the mix and shall not be greater than 3 mph (5 km/h).
- NN. Steel wheel rollers shall be operated with minimum wetting of rollers.
- OO. The driving roll shall be nearer the spreader.
- PP. Vibratory mechanisms shall be disengaged before stopping or reversing direction.
- QQ. Rollers shall not remain stationary on asphaltic concrete while it is still warm. Roller wheels shall be kept free from any buildup.
- RR. The roller shall pass over the unprotected end of the freshly laid mixture only when a transverse joint has to be made.
- SS. Initial (breakdown) rolling shall be performed with a static steel-wheeled roller. Transverse joints shall be rolled first, then the longitudinal joint and the outside edge. Breakdown rolling shall continue longitudinally, commencing on the lower side and proceeding to the higher side of the spreader run. The roller shall overhang the unsupported edges of the run by about 4-inch (100mm). Each longitudinal pass shall overlap the previous pass by about 4-inch (100mm) and adjacent passes of the roller shall be of different lengths.
- TT. Secondary rolling to obtain required density before the mixture cools to 1850F (850C) shall be performed as soon as possible after initial rolling and shall be performed with a static or a vibratory steel wheeled roller. Rolling shall be carried out longitudinally commencing on the lower side and proceeding to the higher side of the spreader run. Each roller pass shall overlap the previous pass and adjacent passes shall be of different lengths.

- UU. Final rolling for the improvement of the surface while the mixture is still warm enough to permit removal of any roller marks shall be performed with static steel wheeled roller.
- VV. When paving in echelon, the edge of the run common to adjacent spreaders shall be left unrolled for a width of 8 inch (200mm) until the longitudinal joint has been constructed. This strip shall be rolled together with the edge of the adjacent spreader run. Rolling shall commence before the temperature of the material along the edge of the first spreader run has fallen below 95 0C (203 0F).

3.02 ACCEPTANCE OF PAVING WORK – REMEDY WORK

- A. Each successive layer shall not be commenced until the underlying layer has been approved following inspection and/or testing.
- B. Acceptance of paving work as far as compaction and stability specifications is concerned will be based on tests to be performed on core samples taken from each layer shortly after application. Test results shall be submitted to synthetic surfacing contractor.
- C. Should a section of the work be not acceptable on the basis of inadequate compaction and/or the mixture became loose and broken, mixed with dirt or in any way defective, it shall be removed and replaced with fresh mixture which shall be immediately compacted to conform with the surrounding area.
- D. Areas of one (1) square inch or more showing excess of bitumen shall be removed and replaced.
- E. On completion of placement and compaction, pavement courses shall comply with the tolerances itemized in the following table.

Item	Characteristic	Tolerance
Top Coat	Level	+2mm/-2mm from design levels
	Thickness	+5mm/-0mm from design levels
	Flatness	3mm maximum departure from a 3m straight-edge in all directions
Binder Course	Level	+4mm/-4mm from design levels
	Thickness	+5mm/-0mm from design levels
	Flatness	4mm maximum departure from a 3m straight-edge in all directions

- F. Surface shape of each layer of pavement shall be such that water cannot accumulate at any point and the surface shall free drain to drainage channels.
- G. The whole surface of each layer of pavement should be checked for levels by a local surveyor, and for flatness with a 10 foot straightedge in all directions; the surface shall also be flooded and inspected for ponding, "bird baths", ridges, etc. After testing, all high and low areas shall be marked on the leveling course surface.
- H. Low areas shall be remedied by cutting out the course to full depth (or to a minimum depth of 3/4" – 1" (20 - 25 mm)) and replacing with the correct hot mixture. The repaired area shall be thoroughly compacted to the specified tolerance. First the area must be fully tack coated. No filling by using sand mix shall be allowed. Sand asphalt lacks sufficient internal strength. No tar emulsions such as "jet shield" or similar products shall be applied to the surface. Nor shall any other type of asphalt or tar leveling or sealing product (hot or cold) be coated on the surface. Under specific conditions and with synthetic surfacing contractor's prior approval, a polyurethane underlayment material as recommended by the manufacturer can be used for correcting small low areas. Extensive use of Polyurethane underlayment is no substitute for proper installation and leveling of the asphalt. The depth of the underlayment layer must be limited to 1/4" (6 mm) or less.

- I. High areas shall be remedied by cutting out the course to full depth (or to a minimum depth of 3/4" – 1" (20 - 25 mm)) and replacing with the correct hot mixture. The repaired area shall be thoroughly compacted to the specified tolerance. In some cases it is practical to repair high areas and ridges by heating with a "hot iron" or a butane torch and scraping them off. These areas must be rolled smooth afterwards.

3.03 CURING OF HOT MIX ASPHALT INSTALLATIONS

- A. The asphalt-leveling course will have to cure a minimum of twenty-eight (28) days prior to installation of the synthetic surface in order to allow the escape of surface volatiles, oils. Etc.

3.04 DISCLAIMER

- A. The above recommendations are provided for general guidance only. The responsibility for warranties and/or performance guarantees for the proper preparation of the asphalt and stone base rest with the asphalt manufacturer and/or the asphalt sub-contractor in the event of base failure and not with the synthetic surfacing contractor. The General Contractor, Architect, and/or Asphalt Sub-Contractor will be notified by the synthetic surfacing contractor of any evident defects or installation conditions, which could result in unsatisfactory performance. The responsibility for remedying defective work rests with the General Contractor and/or the Asphalt Sub-Contractor. The synthetic surfacing contractor must be provided with the respective tests results in advance of visiting the project site if relevant commentary is expected. The Owner can obtain written confirmation from the synthetic surfacing contractor, based on site observations and test results supplied by the contractor that the bituminous concrete pavement appears satisfactorily finished and adequately cured to permit the installation to begin. (Written confirmation from synthetic surfacing contractor of satisfactory completed and adequately cured asphalt pavement can be obtained by the Owner, based on synthetic surfacing contractor's site observations, and test results supplied by the contractor) The synthetic surfacing contractor will not be held responsible for any delays past expected substantial completion dates, caused by the incorrect installation of the asphalt and/or stone base. As such, no liquidated damages and or penalties will be imposed on upon the synthetic surfacing contractor. Any subsequent visits to re-inspect the corrected asphalt and or stone base will be at the Sub-Contractor's, General Contractor's or Owner's expense.

END OF SECTION

SECTION 32 12 18
STONE BASE COURSE
PART 1 - GENERAL

1.01 DESCRIPTION

- A. Work included: Provide crushed stone base (with prime) constructed on the compacted subgrade where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.
- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
 - 2. Section 02513 - Asphaltic Concrete Paving.

1.02 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

1.03 SUBMITTALS

- A. Comply with pertinent provisions of Section 01340.
- B. Certificates, signed by materials producer, stating that materials meet the specified requirements.

1.04 PRODUCT HANDLING

- A. Comply with pertinent provisions of Section 01640.

PART 2 - PRODUCTS

2.01 COARSE AGGREGATE

- A. Furnish a coarse aggregate (retained on No. 4 sieve) consisting of hard, durable particles of stone, reasonably free from soft, thin, elongated or laminated pieces and deleterious substances.
- B. Furnish aggregate with an abrasion loss of less than 65% as measured by the Los Angeles Abrasion Test.

2.02 FINE AGGREGATE

- A. Furnish a fine aggregate consisting of material produced by stone crushing operations.
- B. Liquid limit shall not exceed 25 and the plasticity index shall not exceed 6 when tested in accordance with AASHTO T-89 and T-90, respectively.

2.03 COMPOSITE MIXTURE

- A. Produce in one crushing operation or by blending the fine and coarse aggregate in proper proportions.
- B. After the materials have been mixed, laid down, and initial compaction operations begun, the composite mixture shall conform to the following:

Sieve Designation	Percent by Weight Passing
2"	100
1-1/2"	95-100
1"	70-100
1/2"	48-75
No. 4	30-50
No. 30	11-30

No. 200	0-12
Liquid Limit	25 max.
Plasticity Index	6 max.

2.04 PRIME ASPHALT

- A. Use prime complying with requirements of South Carolina Department of Transportation Standard Specifications for Highway Construction subsections 305.4.6 Application of Prime Coat and Subsection 401.4.18 Application of Prime or Tack Coat, latest revisions and supplements.
- B. Provide prime coat from a supplier listed on the most recent edition of SCDOT Qualified Product List 38.

PART 3 - EXECUTION

3.01 PREPARATION OF SUBGRADE

- A. Proofroll all areas to receive crushed stone paving.
 - 1. Make not less than three passes over the full area, using a 35 to 50 ton rubber tired roller.
- B. Remove all soft, unstable or unsuitable material that will not compact readily.
 - 1. Remove to full depth of unsuitable material, or to a depth of 30", whichever is less.
 - 2. Replace with satisfactory materials.
- C. Fill all holes, ruts or depressions which develop in the subgrade with approved on-site material, bringing subgrade to indicated line and grades.
- D. Compact subgrade using suitable construction procedures to provide not less than 95% Standard Proctor Maximum Dry Density.
- E. Seal roll the subgrade surface with a steel wheel roller, sealing the surface against excessive water infiltration.

3.02 PLACING AND MIXING OF PAVING MATERIAL

- A. Place aggregates using spreader boxes or other approved spreaders uniformly on one operation.
- B. Take care to avoid segregation of the fine from the coarse aggregate during handling, spreading or shaping operations.
- C. Mix, while at proper moisture, with motor grader or other equipment and maintain to required section and grade until thoroughly compacted.

3.03 ROLLING AND COMPACTING

- A. Perform using 3-wheel steel wheel roller weighing not less than 10 tons, tandem roller weighing at least 8 tons, or other rollers approved by the Engineer.
- B. Start rolling at edges and proceed toward the center, continue rolling until aggregates are firmly keyed or set.
- C. When initial compaction is completed, should voids remain, place fine aggregates on the surface in an amount only sufficient to fill the voids.
- D. Broom, wet and roll until coarse aggregate is set, bonded and thoroughly compacted for full width and depth.

3.04 ALLOWABLE TOLERANCES

- A. Thickness tolerance: Provide the compacted thicknesses shown on the Drawings within a tolerance of minus 1/2".
 - 1. 1. Depth measurements will be made by digging through the base at intervals no closer than 250', nor greater than 500' apart.
 - 2. 2. Where thickness is less than depth specified minus 1/2", it shall be corrected as directed by the Engineer.

- B. Smoothness tolerance: Provide the lines and grades shown on the Drawings within a tolerance of 3/8" in 10', parallel to the center line of the roadway nor more than 1/2" from a template conforming to the cross sections shown on the plans.
- C. Deviations: Correct by removing materials, replacing with new materials, and reworking or recompacting as required.

3.05 PLACING PRIME COAT

- A. Allow base course to season sufficiently to permit uniform penetration.
- B. Do not apply to wet surfaces or when the temperature is below 60°F in the shade and falling, or below 55°F in the shade and rising.
- C. Clean surfaces of all dust, dirt, clay, etc. using mechanical brooms, etc.
- D. Apply prime material, using pneumatic mounted distributors, at a rate of 0.25 to 0.30 gallon per square yard.
- E. Permit no traffic on primed surfaces until bituminous material has penetrated and dried sufficiently that it does not pick up under traffic.

3.06 MEASUREMENT AND PAYMENT

- A. No separate measurement or direct payment will be made for this work and all costs for same shall be included in the price bid for the work to which it pertains.

END OF SECTION

This page intentionally left blank

SECTION 32 13 13
CONCRETE PAVING
PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Driveways.
 - 2. Roadways.
 - 3. Parking lots.
 - 4. Curbs and gutters.
 - 5. Sidewalks

1.02 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples: For each exposed product and for each color and texture specified.
- C. Other Action Submittals:
 - 1. Design Mixtures: For each concrete paving mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1.03 QUALITY ASSURANCE

- A. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
- B. ACI Publications: Comply with ACI 301 (ACI 301M) unless otherwise indicated.

PART 2 PRODUCTS

2.01 STEEL REINFORCEMENT

- A. Plain-Steel Welded Wire Reinforcement: ASTM A 185/A 185M, fabricated from as-drawn steel wire into flat sheets.
- B. Deformed-Steel Welded Wire Reinforcement: ASTM A 497/A 497M, flat sheet.
- C. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420); deformed.
- D. Plain-Steel Wire: ASTM A 82/A 82M, as drawn.
- E. Deformed-Steel Wire: ASTM A 496/A 496M.
- F. Dowel Bars: ASTM A 615/A 615M, Grade 60 (Grade 420) plain-steel bars [; zinc coated (galvanized) after fabrication according to ASTM A 767/A 767M, Class I coating]. Cut bars true to length with ends square and free of burrs.
- G. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete specified.

2.02 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of same type, brand, and source throughout Project:
 - 1. Portland Cement: ASTM C 150, portland cement
 - a. Fly Ash: ASTM C 618
 - b. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.
 - 2. Blended Hydraulic Cement: ASTM C 595,
- B. Normal-Weight Aggregates: ASTM C 33,

- C. Water: Potable and complying with ASTM C 94/C 94M.
- D. Air-Entraining Admixture: ASTM C 260.
- E. Chemical Admixtures: Admixtures certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material.
- F. Color Pigment: ASTM C 979, synthetic mineral-oxide pigments or colored water-reducing admixtures; color stable,[free of carbon black,] nonfading, and resistant to lime and other alkalis.

2.03 CURING MATERIALS

- A. Absorptive Cover: AASHTO M 182, [Class 3, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. (305 g/sq. m) dry] [or] [cotton mats].
- B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- C. Water: Potable.
- D. Evaporation Retarder: Waterborne, monomolecular, film forming, manufactured for application to fresh concrete.
- E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.
- F. White, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 2, Class B, dissipating.

2.04 RELATED MATERIALS

- A. Joint Fillers: [ASTM D 1751, asphalt-saturated cellulosic fiber] [or] [ASTM D 1752, cork or self-expanding cork] in preformed strips.
- B. Slip-Resistive Aggregate Finish: Factory-graded, packaged, rustproof, nonglazing, abrasive aggregate of fused aluminum-oxide granules or crushed emery aggregate containing not less than 50 percent aluminum oxide and not less than 20 percent ferric oxide; unaffected by freezing, moisture, and cleaning materials.

2.05 CONCRETE MIXTURES

- A. Prepare design mixtures, proportioned according to ACI 301 (ACI 301M), with the following properties:
 - 1. Compressive Strength (28 Days): 4000 psi
 - 2. Maximum Water-Cementitious Materials Ratio at Point of Placement: .50
 - 3. Slump Limit: 4 inches
 - 4. Air Content: 4-1/2percent plus or minus 1.5 percent.
- B. Chemical Admixtures: Use admixtures according to manufacturer's written instructions.
- C. Synthetic Fiber: Uniformly disperse in concrete mixture at manufacturer's recommended rate, but not less than 1.0 lb/cu. yd.
- D. Color Pigment: Add color pigment to concrete mixture according to manufacturer's written instructions.

2.06 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M[and ASTM C 1116/C 1116M]. Furnish batch certificates for each batch discharged and used in the Work.

PART 3 EXECUTION

3.01 EXAMINATION AND PREPARATION

- A. Proof-roll prepared subbase surface below to identify soft pockets and areas of excess yielding.
- B. Remove loose material from compacted subbase surface immediately before placing concrete.

3.02 EDGE FORMS AND SCREED CONSTRUCTION

- A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.
- B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.03 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

3.04 JOINTS

- A. General: Form construction, isolation, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless otherwise indicated.
- B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.
- C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, other fixed objects, and where indicated.
- D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, to match jointing of existing adjacent concrete paving:
- E. Edging: After initial floating, tool edges of paving, gutters, curbs, and joints in concrete with an edging tool to a 1/4-inch radius. Repeat tooling of edges after applying surface finishes. Eliminate edging-tool marks on concrete surfaces.

3.05 CONCRETE PLACEMENT

- A. Moisten subbase to provide a uniform dampened condition at time concrete is placed.
- B. Comply with ACI 301 (ACI 301M) requirements for measuring, mixing, transporting, placing, and consolidating concrete.
- C. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
- D. Screed paving surface with a straightedge and strike off.
- E. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.

3.06 FLOAT FINISHING

- A. General: Do not add water to concrete surfaces during finishing operations.
- B. Float Finish: Begin the second floating operation when bleed-water sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.

1. Medium-to-Coarse-Textured Broom Finish: Provide a coarse finish by striating float-finished concrete surface 1/16 to 1/8 inch deep with a stiff-bristled broom, perpendicular to line of traffic.
- C. Slip-Resistive Aggregate Finish: Before final floating, spread slip-resistive aggregate finish on paving surface according to manufacturer's written instructions.
 1. Cure concrete with curing compound recommended by slip-resistive aggregate manufacturer. Apply curing compound immediately after final finishing.
 2. After curing, lightly work surface with a steel wire brush or abrasive stone and water to expose nonslip aggregate.

3.07 CONCRETE PROTECTION AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
- B. Comply with ACI 306.1 for cold-weather protection.
- C. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete but before float finishing.
- D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.
- E. Curing Methods: Cure concrete by [moisture curing] [moisture-retaining-cover curing] [curing compound] [or] [a combination of these].

3.08 PAVING TOLERANCES

- A. Comply with tolerances in ACI 117 and as follows:
 1. Elevation: 3/4 inch (19 mm).
 2. Thickness: Plus 3/8 inch (10 mm), minus 1/4 inch (6 mm).
 3. Surface: Gap below 10-foot- (3-m-) long, unlevelled straightedge not to exceed 1/2 inch (13 mm).
 4. Joint Spacing: 3 inches (75 mm).
 5. Contraction Joint Depth: Plus 1/4 inch (6 mm), no minus.
 6. Joint Width: Plus 1/8 inch (3 mm), no minus.

3.09 REPAIRS AND PROTECTION

- A. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Architect.
- B. Protect concrete paving from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.
- C. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION

SECTION 32 13 73
PAVEMENT JOINT SEALANTS
PART 1 - GENERAL

1.01 SUMMARY

- A. This Section includes the following:
 - 1. Expansion and contraction joints within cement concrete pavement.
 - 2. Joints between cement concrete and asphalt pavement.

1.02 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples: For each type and color of joint sealant required.
- C. Product certification and test reports.
- D. Compatibility and Adhesion Test Reports: From sealant manufacturer.

1.03 QUALITY ASSURANCE

- A. Preconstruction Compatibility and Adhesion Testing: Submit samples of materials that will contact or affect joint sealants to joint-sealant manufacturers for testing according to AASHTO M153 for Type I,II, or III; or be a bituminuous type that meets AASHTO M213 to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products listed in other Part 32 articles.
- B. Products: Subject to compliance with requirements, provide one of the products listed in other Part 32 articles.

2.02 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backing materials, 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.
 - 1. Primers: Product 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. Colors of Exposed Joint Sealants: As indicated by manufacturer's designations and coordination with architect.

2.03 COLD-APPLIED JOINT SEALANTS

- A. Type NS Silicone Sealant for Concrete: Single-component, low-modulus, neutral-curing, nonsag silicone sealant complying with ASTM D 5893 for Type NS.
 - 1. Available Products:
 - a. Crafcoc Inc.; RoadSaver Silicone.
 - b. Dow Corning Corporation; 888.
 - c. SCDOT approved equal
- B. Type SL Silicone Sealant for Concrete and Asphalt: Single-component, low-modulus, neutral-curing, self-leveling silicone sealant complying with ASTM D 5893 for Type SL.
 - 1. Available Products:
 - a. Crafcoc Inc.; RoadSaver Silicone SL.

- b. Dow Corning Corporation; 890-SL.
- c. SCDOT approved equal.

2.04 HOT-APPLIED JOINT SEALANTS

- A. Sealant for Concrete and Asphalt: Single-component formulation complying with ASTM D 6690.
 - 1. Available Products:
 - a. Koch Materials Company; Product No. 9005.
 - b. Koch Materials Company; Product No. 9030.
 - c. Meadows, W. R., Inc.; Sealtight Hi-Spec.
 - d. SCDOT approved equal.

2.05 JOINT-SEALANT BACKER MATERIALS

- A. General: Provide joint-sealant backer materials that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by joint-sealant manufacturer based on field experience and laboratory testing.
- B. Type L – A closed-cell expanded polyethylene foam backer rod. Use in roadway and bridge joints with Type NS silicone only.
- C. Type M – A closed-cell polyolefin foam backer rod which has closed-cell skin over an open-cell core. Use in roadway and bridge joints with both silicon sealant types
- D. Backer Rods for Cold-Applied Sealants: ASTM D 1622, 2lbs/cf minimum; ASTM D 1623 25 psi minimum; ASTM C 509 0.5% by volume maximum.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions.
- B. Joint Priming: Prime joint substrates where indicated or where recommended in writing by joint-sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience.
- C. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- D. Install backer materials to support sealants during application and at position required to produce optimum sealant movement capability. Do not leave gaps between ends of backer materials. Do not stretch, twist, puncture, or tear backer materials. Remove absorbent backer materials that have become wet before sealant application and replace them with dry materials.
- E. Install sealants at the same time backings are installed to completely fill recesses provided for each joint configuration and to produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
- G. Clean off excess sealants or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved by manufacturers of joint sealants and of products in which joints occur.

END OF SECTION

SECTION 32 18 23.39
TRACK & FIELD QUALITY CONTROL
PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. General provisions of Contract, including General and Supplementary Conditions and other Division-1 Specifications Sections, apply to this Section.

1.02 SUMMARY

- A. This section covers all labor and materials required to provide survey and certification of key construction elements of the final track & field facility. The GC is responsible for completing all survey work.

1.03 CODES AND STANDARDS

- A. Codes and standards follow the current guidelines set forth by World Athletics (WA), the National Collegiate Athletic Association (NCAA) and National Federation of State High School Associations (NFHS). Where discrepancies are noted between these various governing bodies, the rules of the NFHS shall be enforced.

1.04 ABBREVIATIONS

- A. WA = World Athletics (formerly IAAF)
- B. NCAA = National Collegiate Athletic Association
- C. NFHS = National Federation of State High School Associations
- D. T&F = Track & Field
- E. SS = Synthetic Surface
- F. SSC = Synthetic Surfacing Contractor
- G. SSM = Synthetic Surfacing Manufacturer
- H. GC = General Contractor
- I. PC = Point of Curvature

1.05 RELATED SECTIONS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section. The following Sections are specifically related to this Section:
 - 1. 116833.43 Track and Field Equipment
 - 2. 321823.39 Track and Field Quality Control
 - 3. 321823.40 Track & Field Synthetic Surface
 - 4. 321823.41 Track and Field Line Markings
 - 5. 321823.42 Track and Field Event Materials

1.06 SUBMITTALS

- A. The following information must be submitted by the GC, this is the industry standard or typical order of construction:
 - 1. The GC MUST identify (mark on the survey submittal) all areas out of tolerance with the Bid Documents.
 - 2. The GC MUST identify the elevations, the slope percentage, (mark on the survey submittal with slope arrows with % of slope) all slopes (lateral, radial and in the direction of running & throwing), as identified in these Bid Documents.
 - 3. Athletes run counterclockwise around the oval and all elevations are in relation to this direction.
 - 4. Immediately after installation of new precast channel drain or concrete curb at the inside of lane 1 and before the installation of the outside or infield concrete curbs:

- a. Survey the new precast channel drain or concrete curb location with elevations at:
 - 1) 1 point at each point-of-curvature (PC) plus 1 point every 25m along the turns and 1 point in the middle of each straight
 - 2) The right-hand edge of the concrete surrounding the precast channel or concrete curb (in the direction of running which is counterclockwise)
 - 3) If the concrete is notched or held down & lower than the precast channel, then two elevations are required at the bottom & top of the notch
5. After installation of the outside and infield border curbs:
 - a. At the outside concrete curb, survey the left-hand edge with elevations at:
 - 1) Perpendicular to the elevation points taken at the precast channel drain or concrete curb, listed above in Submittals, 4., a., 1)
 - 2) All sprint chute corners; identify cross slope perpendicular to channel drain or concrete curb & in the direction of running slope
 - 3) If the concrete curb is notched or held down, then two elevations are required at the bottom & top of the notch
 - b. At the infield concrete curbs that are parallel to channel drain or concrete curb, survey the right-hand edge of the infield curb, with elevations at:
 - 1) Perpendicular to the elevation points taken at the precast channel drain, listed above in Submittals, 4., a., 1).
 - 2) If the concrete curb is notched or held down, then two elevations are required at the bottom & top of the notch
 - c. At the straight portion of the concrete curb in the D-area (D-area is inside the turn of the track oval & looks like the capital letter D), take 3 elevations equally spaced along the straight concrete curb that align with the elevations at the channel drain on the turn and provide a radial slope arrow with percentage
 - d. Elevations at the 8 corners of the high jump area, every 15' in a grid pattern
 - e. Provide verification that the 400 meter oval fits between the installed channel drain and outside concrete curb with the specified radius and number of running lanes, prior to installing T&F asphalt subbase
6. After installation of all field events:
 - a. Survey all embedded field events with elevations as follows:
 - 1) 4 corners of all long/triple jump sand pits (at the nearest edge of sand)
 - 2) 4 corners of all long/triple jump take-off board trays
 - 3) 4 corners of all pole vault boxes (at the top flange) and the nearest edge of surrounding concrete (concrete should be 1/2" lower than vault box)
 - 4) 4 corners of all throwing pads and 1 spot elevation in the center of the circle
 - 5) At all corners of the larger concrete pad that goes around item (4), at the discus
 - b. Survey all field events with dimensions to determine:
 - 1) The take-off boards are centered on the sand pit
 - 2) The take-off boards are parallel to the nearest edge of the sand pit
 - 3) The take-off boards (the foul line, not the metal tray) are the correct distance from the sand pit
 - 4) The long axis of the pole vault box is parallel to the runway lines and all vault boxes are aligned with each other or as designed
7. After installation of the Shot Put Landing Area:
 - a. Provide spot elevations, along both sides, at the beginning, middle and end of the concrete or timber border
 - b. Provide spot elevations at the ends and middle of the concrete border at the end of the landing area (the arc)
 - c. Provide spot elevations at the top of the rock dust, along the 34.92° sector lines and down the center of the landing area, aligned with the spot elevations in item a above
8. After Installation of the Discus Landing Area:

- a. Provide spot elevations at the top of grade, along the 34.92° sector lines and down the center of the landing area, at the beginning, middle and end of sector lines and align all spot elevations
- b. End of sector is 189'-3" from the edge of the throwing circle
- c. Provide spot elevations every 25' on center in a grid, inside the throwing sector
9. After installation of the asphalt or concrete subbase:
 - a. Survey the asphalt with elevations at the inside edge of Lane 1, inside edge of Lane 5 and outside edge of outside lane at:
 - 1) All spot elevations to align with elevations listed above in Submittals, 4., a., 1)
 - 2) All sprint chute corners and at the 110 meter & 100 meter start lines, provide lateral slope and slope in the direction of running
 - b. Provide verification that the 400 meter oval with all running lanes will fit on the installed subbase
10. After installation of all raised objects or their sleeve, i.e. fence posts, net posts, pedestals, etc.:
 - a. Survey the installation and verify the raised object is at least 1 meter (3' 3-3/8") away from any track & field event area, i.e. safe zone

1.07 QUALITY CONTROL

- A. Slopes & tolerances as per the NFHS Rule Book
 1. Track Oval
 - a. Maximum lateral inclination of the oval 2:100 or 2% (outside to inside running lane)
 - b. Maximum downward inclination in the direction of running 1:1000 or 0.1%
 - c. The inside edge of lane one should be at the same elevation all the way around oval
 - d. When feasible, it is recommended that there be at least a 1 meter obstacle-free zone on the inside and on the outside of the track oval
 2. Shot Put & Discus
 - a. Maximum downward inclination from the throwing area to the landing area 1:1000 or 0.1%; Slight up-hill throwing is allowed, but should not be discernable by the athlete
 - b. Circles shall be level
 - c. Throwing sector shall be 34.92°
 2. Javelin, if present
 - a. Maximum lateral inclination of the Javelin runway is NOT stated, so assume it shall not exceed 2:100 or 2% (similar to the other runways)
 - b. Maximum overall downward inclination, measured over the last 20m of the runway, in the direction of running & throwing is 1:1000 or 0.1%
 3. High Jump
 - a. Maximum downward inclination in the approach shall not exceed 1:100 or 1%
 - b. Hard and unyielding surfaces, such as but not limited to concrete, wood, or asphalt, that extend out from beneath the sides and back of the high jump landing pad shall be padded with a minimum of 2 inch dense foam or other suitable material (T&F synthetic surfacing)
 4. Pole Vault, Long & Triple Jump
 - a. Maximum lateral inclination of the runway shall not exceed 2:100 or 2%
 - b. Maximum downward inclination in the direction of running & jumping shall not exceed 1:1000 or 0.1%
 - c. Pole Vault area: Hard and unyielding surfaces, such as but not limited to concrete, wood, or asphalt, around the landing pad, or between the planting box and the landing system, shall be padded or cushioned with a minimum of 2 inch dense foam or other suitable material (T&F synthetic surfacing)
 - d. Pole vault boxes must be installed level
 5. Design Notes
 - a. Install the steeplechase water jump pit level, if present

- b. The inside edge of lane one should be at the same elevation all the way around oval
- c. The T&F Synthetic Surfacing Contractor & industry standards require no high or low spots to exceed $\frac{1}{8}$ " under a 10' straight edge in all directions.

PART 2 - PRODUCTS – NONE

PART 3 - EXECUTION - NONE

END OF SECTION

SECTION 32 18 23.40
TRACK & FIELD SYNTHETIC SURFACE
PART 1 GENERAL

1.01 SUMMARY

- A. This section covers all labor and materials required to install a first-class track & field surface. The SSC is responsible for installing:
1. All T&F SS labor & materials.
 2. All T&F line markings and certification.

1.02 CODES AND STANDARDS

- A. Codes and standards follow the current guidelines set forth by the World Athletics, the National Collegiate Athletic Association and National Federation of State High School Associations. Where discrepancies are noted between these various governing bodies, the rules of the NFHS shall be enforced.

1.03 ABBREVIATIONS

- A. WA = World Athletics (formerly IAAF)
B. NCAA = National Collegiate Athletic Association
C. NFHS = National Federation of State High School Associations
D. T&F = Track & Field
E. SS = Synthetic Surface
F. SSC = Synthetic Surfacing Contractor
G. SSM = Synthetic Surfacing Manufacturer
H. GC = General Contractor
I. SBR = Styrene Butadiene Rubber
J. EPDM = Ethylene Propylene Diene Monomer
K. UV = Ultra-Violet
L. PU = Polyurethane
M. MDI = Methylene Diphenyl Isocyanate
N. TDI = Toluene Diisocyanate Isocyanate
O. RAP = Reclaimed Asphalt Pavement

1.04 RELATED WORK

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section. The following Sections are specifically related to this Section:
1. 116833.43 Track and Field Equipment
 2. 321823.39 Track and Field Quality Control
 3. 321823.40 Track & Field Synthetic Surface
 4. 321823.41 Track and Field Line Markings
 5. 321823.42 Track and Field Event Materials

1.05 SUBMITTALS

- A. The following information must be submitted by the SSC prior to installation.
1. On-site Project Forman/Manager/Superintendent Qualifications:
 - a. This person will be on-site during all SS operations.
 - b. Once the installation of the SS begins, no substitution of this person is allowed.
 - c. This person must have completed a minimum of 5 facilities which are certified to

meet NCAA rules & regulations in the past 3 years utilizing the product specified in these specifications.

2. WA certificate and full laboratory report for the specified T&F SS product. This product must be listed on current WA website, Certified Track Surfacing Products.
 3. Standard printed specifications of the SS system that is being installed and notify the Design Team of any deviations between this technical specification and the SSC specification.
 4. Installation process and requirements for subbase (stone, asphalt and concrete) and any conditions that may limit the SS installation or affect quality of installation.
 5. Temperature/climatic conditions limiting quality of installation.
 6. Standard specification and application for recommended subbase primers, crack filler, patching and leveling material.
 7. Two product samples (one for the Owner & one for the Design Team), a minimum of 6" x 6" in size, the same color, same texture, same thickness, etc. of the SS being installed. This must be a representative sample of the product. This sample must be submitted and approved by the Owner & Design Team, prior to installation. During installation of the SS or at completion of the project this sample may be used as a comparison to judge the quality of the installed product. Separate SS samples are required for each color being installed.
 8. Material safety data sheets on all individual components of the product being installed.
 9. Provide a letter stating the SSC reviewed and accept the concrete and asphalt specification, if included in the project. Prior to installing the SS, the SSC must accept the installation of the concrete and asphalt as acceptable to receive the SS.
 10. Provide a letter from the SSM approving the SSC as a certified/acceptable installer of their SS.
 11. Written notice and acceptance that all embedded track equipment is installed as per the Contract Documents and as per the rules of the sport.
- B. The following information shall be submitted after completion of the specified work:
1. SSC's and SSM's standard Warranty, for installation and material respectively, noting any exceptions to the Warranty information included in this Specification Section.
 2. Provide a "Care and Maintenance" manual for the Owner's use in maintaining the SS.
 3. From a licensed surveyor or registered engineer, a letter stating all new line marking and elevations conform to the rules and regulations of the NFHS.

1.06 QUALITY ASSURANCE

- A. The SSC shall coordinate, ensure and provided all necessary information to the other sub-contractors that are working on the site. For example:
1. The use of curing agents in concrete.
 2. Slopes & tolerances for subbase, concrete curbs and precast channel drains.
 3. No vehicles allowed on the asphalt wearing layer.
 4. No RAP in the wearing course of asphalt.
 5. Etc.
- B. SSC must ensure all existing or finished products by all contractors are properly protected throughout the construction of this facility. For example:
1. The asphalt contractor must take great care NOT to damage the installed concrete curbs & precast channel drains when milling or rolling the aggregate & asphalt, if included in this project.
 2. The installed junction boxes/ComBoxes are NOT damaged by adjacent construction, if included in this project.
 3. The existing synthetic turf or natural grass infield is NOT damaged by adjacent construction.
 4. Etc.

- C. Prior to installation, or during installation or at completion of installation of the SS, if the Owner has any question or doubt about the quality or formulation of the material, the SSC shall have the product tested. If the product meets these specifications, then the Owner shall pay for the cost of the testing; if the product does not meet these specifications or the SSM's specifications, then the SSC shall pay for the testing. Any material failing to meet specifications will be replaced with new material at the SSC's expense.
- D. Slopes & Tolerances as listed below or as per the current the NFHS rule book:
1. Track Oval
 - a. Maximum lateral inclination of the oval 2:100 or 2% (outside to inside running lane)
 - b. Maximum downward inclination in the direction of running 1:1000 or 0.1%
 - c. When feasible, it is recommended that there be an obstacle-free zone on the inside and on the outside of the track at least 1 meter in width
 2. Throwing Events (Shot Put, Discus & Javelin)
 - a. Maximum downward inclination of the runway is not stated, assume 1:1000 or 0.1%
 - b. Maximum downward inclination from the throwing area to the landing area 1:100 or 1%
 - c. Circles shall be level
 - d. Throwing sector shall be 34.92 degrees (Acceptable range 34.78° to 35.05° degrees is allowed)
 3. High Jump
 - a. Maximum downward inclination in the approach 1:100 or 1%
 4. Pole Vault
 - a. Maximum lateral inclination of the runway 2:100 or 2%
 - b. Maximum downward inclination in the direction of running & jumping 1:1000 or 0.1%
 - c. Calculate the slope by comparing the elevation at the start of the runway to the elevation at the zero line; intermediate measurements are not considered.
 5. Long & Triple Jump
 - a. Maximum lateral inclination of the runway 2:100 or 2%
 - b. Maximum downward inclination in the direction of running & jumping 1:1000 or 0.1%
 - c. Calculate the slope by comparing the elevation at the start of the runway to the elevation at the take-off board; intermediate measurements are not considered.
 6. Depressions or bumps cannot exceed 1/8" under a 10' straight edge.

1.07 SPECIAL PROJECT CONDITIONS

- A. The SSC will provide a project manager / superintendent / crew chief on-site daily through the completion of the SSC's portion of the contract.
- B. This on-site person shall remain on-site through the completion of the project. Substitution of this person is not permitted.
- C. The SSC must provide a technician that will serve as a consultant to the Owner & Design Team during the Asphalt Paving, first reviewing the asphalt specification, accepting the specification as correct, and then, providing daily review and guidance of the construction of the Asphalt Paving which will directly affect the tolerances and longevity of the SS installation, if asphalt paving is included in the project.
- D. Prior to installing any concrete, the SSC must verify if any curing compounds or agents or patching materials are allowed or acceptable.

1.08 SPECIFIC SCOPE OF WORK

- A. The SSC shall verify all horizontal dimensions and vertical elevations prior to performing any work, as well as the following items below:
 1. The new 400-meter oval and all line markings will accurately fit onto the new subbase on the track oval, the chutes, runways and high jump area.

2. The slopes, tolerances and elevations meet the required tolerances of these specifications and the rules of the NFHS.
3. No bird baths or areas exceed the allowable limits as specified.
- B. The SSC shall provide all labor, materials and equipment to perform the following work as designated in these specifications:
 1. The installation of all SS materials and line markings.
 2. Provide technical assistance and approve the Asphalt Paving or Concrete base work as required in the specifications.
 3. Review and approve installation of all T&F event inground equipment before any SS is installed as specified and shown on the project drawings.
 4. Brush, blow, clean, wash down, etc. all areas to receive SS, as often as necessary during the installation of the SS.
 5. Install removable SS plugs in all pole vault boxes.
 6. Install SS on top of all inground junction/ComBoxes boxes and sand pit covers, as needed.
 7. Repair all damaged areas, clean-up all glue, and remove excess SS, primers and similar products. All trim cuts shall be neat and clean; on all curves & straights the trim-out shall follow the adjoining object for accuracy and neatness, i.e., concrete curb or painted line, etc.

1.09 WARRANTY/GUARANTEE

- A. Warranty period to be five years on the new SS.
- B. Warranty shall cover all labor and materials to remove and dispose of existing materials and replace with new material, including labor, during the warranty period.
- C. Warranties / Guarantees specified in this section shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and are in addition to and run concurrent with other warranties/guarantees made by the GC under requirements of the Contract Documents.
- D. The following are inclusive of the term "Track & Field Synthetic Surface" for provisions of the guarantee:
 1. All slopes & tolerances as required in this specification.
 2. SS product as specified and represented by the SSC and SSM.
 3. All materials and products specified.
 4. All line markings installed in accordance with the Contract Documents and the rules of the sport.
- E. SSC Guarantee: Provide in writing a "Full System Guarantee" agreement. The President/Principal(s) of both the SSC and the SSM (if different) shall sign this document and it shall include the following:
 1. All work executed under this section will be free from defects of material and workmanship for the specified period from date of Substantial Completion/Acceptance of the Owner.
 2. Any defects will be remedied on written notice at no additional cost to the Owner.
 3. The warranty shall not be prorated.
 4. All material shall be guaranteed to the extent that the surfacing:
 - a. Has been manufactured, applied and will perform in accordance with these specifications, the SSC and SSM specifications and industry standards.
 - b. Will hold fast and/or adhere to the primer, asphalt, concrete, edging, filler, patches or overlay materials.
 - c. Is Ultra-Violet resistant, will not bubble, blister, fade, crack, or wear excessively during the warranty period.
 5. One replacement of high stress areas or Owner designated areas during the warranty period at no cost to the Owner; High stress areas are estimated at 150 square yards.

6. One restriping of the T&F Line Markings during the warranty period at no cost to the Owner.
- F. The SSC shall, in the presence of the Owner, inspect the SS each year until the end of the warranty period, or at any time requested by the Owner. Any defects in workmanship or materials (at no fault of the Owner) shall be repaired at the expense of the SSC to the satisfaction of the Owner.
- G. The Warranty does not cover any defect, failure, damage caused by or connected with abuse, neglect, deliberate acts, acts of God, casualty or loads exceeding the SSC's "Care and Maintenance" manual.

PART 2 PRODUCTS

2.01 TRACK & FIELD SYNTHETIC SURFACE

- A. The T&F SS shall be as per the SSM's specifications and utilizing the same materials as the WA certified product, plus the following requirements and where discrepancies exist, they shall be brought to the attention of the Owner & Design Team prior to Bidding and Installation.
- B. The following SSC and their SS product are approved for bidding.
 1. Sealed (Impermeable) base mat with structural spray wearing layer.
 2. Rekortan, Drew Shoaf, cell 336-596-3233.
 - a. Spurtan BSS
 3. Beynon Sports Surfaces, Kenny Smith cell 336-848-9112.
 - a. BSS 200
 4. GeoSurfaces, Danny Williamson cell 828-399-1519.
 - a. Stobitan SSC
- C. Colors
 1. SSC to provide their standard brick red color, no accent colors at the 4x100m relay exchange zones.
- D. Materials:
 1. All materials must be approved by the SSM & SSC and must be compatible with each other. All materials must meet the SSM's standard specifications, brochures and website information plus these specifications.
 2. Primer:
 - a. SSC approved PU primer for asphalt, concrete and T&F SS.
 3. SBR Rubber:
 - a. The rubber granules are recycled SBR rubber, cleaned, processed and chopped. Granules containing any trace of fiber or steel are unacceptable.
 - b. Rubber shall be graded to 1-4mm in size with less than 4% dust.
 4. EPDM Granules:
 - a. The colored, virgin synthetic rubber granules must be EPDM granules containing a minimum of 20% EPDM.
 - b. The granules should be 0.5mm to 1.5mm in size.
 - c. Color must be the SSM's standard red.
 5. Polyurethane Binder:
 - a. The single component, 100% polyurethane and moisture cured.
 - b. The binding agent is based on MDI/TDI; TDI shall be less than 0.5%.
 - c. The binder must have no solvents and no extenders (plasticizer).
 6. Polyurethane Sealer
 - a. The two component, pigmented PU coating shall contain no solvents, TDI or heavy metals
 7. Polyurethane Structural Spray
 - a. The water based, single component, 100% solids, pigmented PU spray coating must be mixed with the same color EPDM granules.

8. All layers of PU Sealer, EPDM granules and PU Structural Spray must match in color.
9. The same components and materials utilized in the SSC's WA approved product must be used in this installation.

PART 3 EXECUTION

3.01 INSPECTION AND ACCEPTANCE

- A. Examine all surfaces and contiguous elements to receive work of this section and correct, as part of the Work of this Contract, any defects affecting installation.
- B. Commencement of work will be construed as complete acceptability of surfaces and contiguous elements.

3.02 INSTALLATION REQUIREMENTS

- A. The following installation requirements must be met by the SSC:
 1. Installation by SSC approved project manager/superintendent, applicators and technicians. Local laborers may be hired for non-technical work, only.
 2. Upon arrival, the SSC shall have the subbase clean and free of dirt, oil, grease or any other residue. Once the SSC begins installation, it is the SSC's responsibility to clean the areas to receive the SS.
 3. Apply SS in dry weather when pavement and atmospheric temperatures are 50 degrees or above and are anticipated to remain above 50 degrees for 24 hours after SS installation.

3.03 INSTALLATION

- A. Sealed (Impermeable) Base Mat with Structural Spray Layers
 1. The SSC shall only install the PU system after the subbase has been checked for moisture content, excess moisture can affect the quality of installation and longevity. No PU shall be installed if rain or inclement weather is imminent.
 2. Each SSC must bid and install their WA approved product at the WA approved thickness.
 3. Primer:
 - a. Install the primer to ensure the PU adheres to the subbase and each layer adheres to the previously installed layer, as needed.
 - b. This primer may be spray applied or rolled applied.
 - c. All products must be installed on the primer within 24 hours.
 4. Base Layer:
 - a. The SBR granules & PU binder are mixed in a mechanical mixer.
 - b. The material is paved in place using a heated mechanical screed paver, specifically designed for this type of work, at a depth of 11-12mm thick or as per WA thickness.
 - c. The Binder should be a minimum of 20% by weight.
 5. Seal Coat
 - a. The Sealer is applied by squeegee or notched trowel to the top of the paved in place mat, until the black base mat is impermeable.
 6. Structural Spray Coats:
 - a. Minimum of two spray applications, the second spray layer must be in the opposite direction of the first spray layer for uniform & non-streaking coverage.
 - b. Total spray applications shall be a minimum of 3.1lbs/sy.
 7. All installation methods & practices must meet industry standards and meet the standard installation methods as identified in the SSC's specifications, brochures and website.

3.04 TIMING, LIMITATIONS, AND CONDITIONS AFFECTING INSTALLATION

- A. Weather and Climate: If in the opinion of the SSC or the Owner, weather and climatic conditions are having or will have an adverse effect on installation; work shall be delayed until the adverse condition has passed.

- B. Adjacent and Concurrent Construction: Installation shall not take place until the completion of the adjacent or concurrent construction operations which generate dust, airborne abrasives, or any other by-product that, in the opinion of the Owner or SSC, would be harmful to the SS material. Under specific direction of the Owner, the SSC may be allowed to cover the track material with an approved covering if such harmful construction operations must occur after the SS material has been installed.

END OF SECTION

This page intentionally left blank

SECTION 32 18 23.41
TRACK & FIELD LINE MARKINGS
PART 1 GENERAL

1.01 SUMMARY

- A. This section covers all labor and materials required to install the T&F line markings. The SSC is responsible for the layout and installation of all painted line markings and their certification.

1.02 CODES AND STANDARDS

- A. Codes and standards follow the current guidelines set forth by the World Athletics, the National Collegiate Athletic Association and National Federation of State High School Associations. Where discrepancies are noted between these various governing bodies, the rules of the NFHS shall be enforced.

1.03 ABBREVIATIONS

- A. WA = World Athletics (formerly IAAF)
- B. IAAF = International Association of Athletics Federations
- C. NCAA = National Collegiate Athletic Association
- D. NFHS = National Federation of State High School Associations
- E. T&F = Track & Field
- F. SS = Synthetic Surface
- G. SSC = Synthetic Surfacing Contractor
- H. GC = General Contractor
- I. UV = Ultra-Violet

1.04 RELATED WORK

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section. The following Sections are specifically related to this Section:
 - 1. 116833.43 Track and Field Equipment
 - 2. 321823.39 Track and Field Quality Control
 - 3. 321823.40 Track & Field Synthetic Surface
 - 4. 321823.41 Track and Field Line Markings
 - 5. 321823.42 Track and Field Event Materials

1.05 SUBMITTALS

- A. The following information must be submitted by the SSC and approved by the Owner prior to installation.
 - 1. The submittal must verify the new line markings will meet the rules of the NFHS and the 400m oval's line markings will fit properly on the T&F synthetic surface.
 - 2. A drawing and list depicting the colors of all line markings and labels of the events. Also, all symbols and markings clearly identified, illustrated, and their colors stated. The recommended NFHS colors shall be used.
 - 3. *Review and submit this specification, as a submittal, plus any modifications.*
 - 4. Installation process and requirements for line markings and any conditions that may limit the installation or affect quality of installation.
 - 5. Material safety data sheets on all products, as necessary.
- B. The following information shall be submitted at the completion of the specified work.
 - 1. Upon completion of all line markings, the SSC shall submit to the Owner five diagram/drawing depicting and identifying all line markings: 1) a key to the color codes, 2) a chart for all symbols, and 3) labels for all events.

2. From a licensed surveyor or a registered engineer, a letter stating all new line markings and elevations conform to the rules and regulations of the NFHS.

PART 2 PRODUCTS

2.01 PAINT

- A. The paint must be approved by the SSC and/or SSM.
- B. Temporary reference markings must be removed at the completion of the project or within the following 14 days; i.e. chalk.
- C. Paint shall be UV stable.

PART 3 EXECUTION

3.01 SUMMARY

- A. General line markings of the 400 meter T&F events shall be spray applied, using only paint, primers and finishes supplied and guaranteed by the SSC & SSM.
- B. No line markings shall be installed if the weather conditions are not proper, i.e., too windy, cold, wet or blowing dust, blowing dirt, etc.
- C. All line markings must be reviewed and verified with the Owner & Design Team prior to installation.
- D. The line striper must NOT make any changes to the approved line marking submittal without the written approval from the Owner & Design Team.
- E. The SSC must verify the 400 meter oval will accurately fit on the new T&F synthetic surface, prior to resurfacing the existing surface.
- F. One restriping of the T&F Line Markings during the warranty period, at no cost to the Owner.

3.02 LINE MARKINGS

- A. Paint – all markings to receive sufficient paint to fully cover the SS, no SS shall be visible under the installed paint. All paint shall be crisp with clean edges, no excessive overspray from working too fast or in excessive wind.
- B. Track Oval
 1. The measure line is not painted.
 2. Oval is 400.001 meters.
 3. Track oval will NOT utilize a regulation curb, 20 cm rule is utilized.
 4. Radius to the measure line shall be determined by the SSC.
 5. Lane lines are measured right hand side to right hand side, in the direction of running.
- C. Painted Line Precedence
 1. Lane lines to take precedence over other markings.
 2. Numbers and letters to be broken at all lane lines.
 3. Waterfall starting lines take precedence over straight starting lines and waterfall lines should be painted first.
 4. Straight starting lines to taper at waterfall starting lines and maintain a 1/2" unpainted gap.
- D. Straightaway Chute Extensions
 1. Lines to be solid, not dashed.
 2. Break chute extension lines 2" either side of track oval lines.
- E. Assembly Lines – not to be painted.
- F. 55 Meters and 55 Meter Hurdles
 1. Both directions on the home straight
 2. Event label
 - a. 55
 - b. Approximately 3" high

- c. The color is white
 - d. Located in the outside lane and is above/past the starting line
 - 3. Color of the starting line is white
 - 4. Hurdle tic marks
 - a. Boys are Green
 - b. Girls are Orange
 - c. Hurdle tic marks are small triangles and pointing in the direction of running
 - d. Two tic marks per lane with each tic mark adjacent to the lane line
- G. 100 Meters
 - 1. Both directions on home straight
 - 2. Event label
 - a. 100
 - b. Approximately 3" high
 - c. The color is white
 - d. Located in the outside lane and is above/past the starting line
 - 3. Color of starting line is white
- H. 100 Meter Hurdles
 - 1. Both directions on home straight
 - 2. Event label
 - a. 100
 - b. Approximately 3" high
 - c. The color is white
 - d. Located in the outside lane and is above/past the starting line
 - 3. Color of the starting line is white
 - 4. The hurdle tic marks are yellow
 - a. Hurdle tic marks are small triangles and pointing in the direction of running
 - b. Two tic marks per lane with each tic mark adjacent to the lane line
- I. 110 Meter Hurdles
 - 1. Both directions on home straight
 - 2. Event label
 - a. 110
 - b. Approximately 3" high
 - c. The color is white
 - d. Located in the outside lane and is above/past the starting line
 - 3. Color of the starting line is white
 - 4. The hurdle tic marks are blue
 - a. Hurdle tic marks are small triangles and pointing in the direction of running
 - b. Two tic marks per lane with each tic mark adjacent to the lane line
- J. 200 Meters
 - 1. All in lanes
 - 2. Both turns (normal & reverse)
 - 3. Event label
 - a. 200
 - b. Approximately 3" high
 - c. The color of the label to be white
 - d. Located in lane 2 and is above/past the starting line
 - 4. Color of the main starting line is white and the reverse starting line is black
- K. 400 Meters

1. All in lanes
 2. Event label
 - a. 400
 - b. Approximately 3" high
 - c. The color is white
 - d. Located in lane 2 and is above/past the starting line
 3. Color of the starting line is white
- L. 300 Meter Hurdles
1. All in lanes
 2. Event label
 - a. 400
 - b. Approximately 3" high
 - c. The color is white
 - d. Located in lane 2 and is above/past the starting line
 3. Color of the starting line is white
 4. The hurdle tic marks are red
 - a. Hurdle tic marks are small triangles and pointing in the direction of running
- M. 800 Meters
1. Waterfall start and one turn stagger
 2. Event label
 - a. 800
 - b. Approximately 3" high
 - c. The color is white
 - d. The 1 turn stagger start line label is in lane 2, the waterfall start line label is in the outside lane, and the labels are above/past the start line
 3. Color of the 1 turn stagger start line is white with a green insert, 2" by approx. 16" green insert centered
 4. The color of the waterfall start line is white
- N. 1600 Meters
1. Waterfall start
 2. Event label
 - a. 1600
 - b. Approximately 3" high
 - c. The color is white
 - d. Located in the outside lane and is above/past the start line
 3. Color of the start line is white
- O. 1-mile Run
1. Waterfall start
 2. Event label
 - a. Mile
 - b. Approximately 3" high
 - c. The color is white
 - d. Located in the outside lane and is above/past the start line
 3. Paint three 1" wide by 3" long tic mark on the infield side of lane 1
 - a. Tic marks are for ¼ mile, ½ mile and ¾ mile splits, no labels
 4. Color of the start line is white
- P. 3200 Meters
1. Waterfall start
 2. Event label

- a. 3200
 - b. Approximately 3" high
 3. The color is white
 4. Located in the outside lane and is above/past the start line
 5. Color of the start line is white
- Q. 4 x 100 Meter Relay
1. All in lanes or 2 turn stagger
 2. Event label
 - a. 4x100
 - b. Approximately 3" high
 - c. The color is white
 - d. Located in lane 2 and is above/past the start line
 3. Color of the start line is white, same starting line as the 2 turn staggered starting line for the 400 meters
 4. The relay exchange zone markers are yellow
 - a. Exchange zone markings are approximately 36" wide by 36" tall triangles, triangles point into the 30 meter long exchange zone and the zone markings are included in the 30 meter long exchange zone
 5. 10m from the end of the relay exchange zone is a 2" by 16" white line, centered in the lane, for the 3rd exchange (1st exchange uses the 300m start lines and the 2nd exchange uses the 200 meter start lines)
- R. 4 x 200m Meter Relay
1. All in lanes or 4 turn stagger
 2. Event label
 - a. 4x200
 - b. Approximately 3" high
 - c. The color is white
 - d. Located in lane 2 and is above/past the start line
 3. Color of the start line is white with a red insert, 2" by 16" red insert centered
 4. The relay exchange zone markers are red
 - a. Exchange zone markings are approximately 36" wide by 36" tall triangles, triangles point into the 30 meter long exchange zone and the zone markings are included in the 30 meter long exchange zone
 5. 10m from the end of the relay exchange zone mark is a 2" by 16" white line, centered in the lane, for 1st exchange only (the 2nd exchange uses the 400m start lines and 3rd exchange uses the 200 meter start lines)
- S. 4 x 400 Meter Relay
1. 3 turn stagger
 2. Event label
 - a. 4x400
 - b. Approximately 3" high
 - c. The color is white
 - d. Located in lane 2 and is above/past the start line
 3. Color of the start line is white with a blue insert, 2" by 16" blue insert centered
 4. The relay exchange zone markers are blue
 - a. Exchange zone markings are approximately 36" wide by 36" tall triangles, triangles point into the 20 meter long exchange zone and the zone markings are included in the 20 meter long exchange zone
 - b. The first exchange of the baton shall use the staggered triangles
 - c. The second and third exchange of the baton shall use triangles in a straight line, 10

meters before the finish line; and the end of this exchange zone shall use the painted triangle in lane one (same as used in the first exchange) and triangles in lanes two thru five are in a straight line 10 meters past the finish line and parallel to the finish line or paint a straight line in lieu of the triangles

- T. 4 x 800 Meter Relay
 - 1. Water Fall Start and 1 Turn Stagger
 - 2. Event label
 - a. 4x800
 - b. Approximately 3" high
 - c. The color is white
 - d. Located in lane 2 and is above/past the start line
 - 3. Color of the start line is white with a green insert, 2" by 16" green insert centered (use same start line as the 800 meter run)
- U. Break Lines
 - 1. One turn break line on the back straight is a solid line, curved and the color is green; painted from the outside lane to the inside of lane two
 - 2. Provide 2" by 4" green tic marks, every 4 meters, on lane five's inside lane line from the box alley start to the break line (both turns); these tic marks will indicate the location of the 15cm tall cones
- V. Finish Lines
 - 1. Locations:
 - a. Common finish line is 10 meters before the point of curvature (PC) on the home straight
 - b. Reverse finish line is 10 meters before the PC on home straight for 100m & 110m
 - c. Reverse 200 meter finish line located at the PC, at the end of the back straight
 - 2. 2" wide and white in color
 - 3. The intersection of all finish lines with the lane lines shall be alternating black marks as per the current NCAA Rule Book
 - 4. No lean lines are to be provided
- W. Staggered Alleys
 - 1. Provide one 1 turn staggered alley start line and the color is white for the staggered start lines
 - a. Normal 1 turn stagger in turn 1, label painted as – 1 Turn Alley
 - b. Staggered alley start line painted in lane 5 thru outside lane
 - 2. Provide one 1 turn staggered alley start line for 1-mile Run and the color is white for the staggered start lines
 - a. Normal 1 turn stagger in turn 1, label painted as – 1-mile Alley
 - b. Staggered alley start line painted in lane 5 thru outside lane
- X. Long/Triple Jump
 - 1. Runway lines
 - a. 2" wide lines
 - b. White in color
 - c. 48" wide runways (inside edge to inside edge of line)
 - 2. Take-off Lines
 - a. Three 8" by 48" white painted lines per sand pit, total of 6 painted line
 - b. Each takeoff line to be labeled adjacent to the painted line: 8', 24' & 32' (approx. 3" high)
- Y. Pole Vault
 - 1. Runway lines
 - a. 2" wide lines

- b. White in color
- c. 48" wide runways (inside edge to inside edge of line)
- d. Terminate runway lines at zero line
- 2. Zero line
 - a. 1/2" wide line and 24' long centered on back edge of box (not flange); should extend a minimum of 1 foot past the standards
 - b. White in color
- 3. NCAA Marks (as per the current NCAA Rule Book)
 - a. Provide 36" long by 2" wide white line in the center of the runway at 12' from the zero line (back of vault box)
 - b. Provide 12" long by 2" wide white lines in the center of the runway at 9', 10', 11', 13', 14' and 15' feet from the back of the plant box
 - c. Labels not to be painted
- Z. High Jump
 - 1. No painted lines are required for this event.
- AA. Shot Put
 - 1. Dividing lines
 - a. 2" wide lines, outside the circle
 - b. White in color
 - c. Extend 2.46' (75cm) from outer edge of throw circle
 - d. The 2" line is painted toward the top half of the circle, in the direction of throwing and not in the circle
 - 2. Sector lines (34.92 degrees)
 - a. 2" wide white lines
 - b. White in color
 - c. Outside the recessed or flush throwing circle and from outer edge of throw circle to the end of concrete pad
 - d. Install 2" wide sector tic marks at the end of the landing area on the face of the curb, if one is present
- BB. Discus
 - 1. Dividing lines
 - a. 2" wide lines, outside the circle
 - b. White in color
 - c. Extend 2.46' (75cm) from outer edge of throw circle
 - d. The 2" line is painted toward the top half of the circle, in the direction of throwing and not in the circle
 - 2. Sector lines (34.92 degrees)
 - a. 2" wide white lines
 - b. White in color
 - c. Outside the recessed or flush throwing circle and from outer edge of throw circle to the end of concrete pad
- CC. Lane Numbers
 - 1. The numbers are a block style, approximately 24" to 30" high and the numbers will NOT have a color shadow
 - 2. The color of the numbers will be white
 - 3. Paint the following numbers:
 - a. There is 1 set of numbers 1-2 feet before the common finish line, facing the athletes
 - b. There is 1 set of numbers in turn one, 1 foot above/past the 400M staggered start lines
 - c. There is 1 set of numbers in turn two, 1 foot above/past the 200M staggered start lines

- d. There is 1 set of numbers at the end of turn one or the beginning of the back straight, 1 foot above or past the 300M staggered start lines
- e. Paint a set of numbers at the very end of each chute (1 foot from the end/edge of SS), in the chute & not in the oval lanes, if possible

DD. Letters & Logos

- 1. The SSC shall provide the words 'Hunt Warriors' in one location, TBD, using the SSC's standard fonts and paint colors
 - a. Size of font should be 24" to 30" tall.

END OF SECTION

SECTION 32 18 23.42
TRACK & FIELD EVENT MATERIALS
PART 1 GENERAL

1.01 SUMMARY

- A. This section covers all labor and materials required to install high quality track & field event special materials. The GC is responsible for installing:
 - 1. Sand for the long and triple jump sand pits, sand may be re-used from existing sand pits, if it is in good condition, not contaminated and meets this specification.
 - 2. Decomposed granite rock dust (or similar material) in the shot put landing area, material may be re-used from existing landing area, if it is in good condition, not contaminated and meets this specification.

1.02 CODES AND STANDARDS

- A. Codes and standards follow the current guidelines set forth by World Athletics (formerly IAAF), the National Collegiate Athletic Association and National Federation of State High School Associations. Where discrepancies are noted between these various governing bodies, the rules of the NFHS shall be enforced.

1.03 ABBREVIATIONS

- A. WA = World Athletics
- B. IAAF = International Association of Athletics Federations
- C. NCAA = National Collegiate Athletic Association
- D. NFHS = National Federation of State High School Associations
- E. T&F = Track & Field
- F. SS = Synthetic Surface
- G. SSC = Synthetic Surfacing Contractor
- H. GC = General Contractor

1.04 RELATED WORK

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section. The following Sections are specifically related to this Section:
 - 1. 116833.43 Track and Field Equipment
 - 2. 321823.39 Track and Field Quality Control
 - 3. 321823.40 Track & Field Synthetic Surface
 - 4. 321823.41 Track and Field Line Markings
 - 5. 321823.42 Track and Field Event Materials

1.05 SUBMITTALS

- A. The following information must be submitted by the GC prior to installation.
 - 1. Installation process and requirements for the special materials and any conditions that may limit the installation or affect quality of installation.
 - 2. Material safety data sheets on all products, as necessary.
 - 3. GC to supply Design Team with a one-half gallon sample of product for visual inspection and testing.

1.06 QUALITY ASSURANCE

- A. The physical make-up of these products varies across the country; therefore, the GC shall use his best efforts to supply the Design Team with a product that best meets the specifications listed below.

PART 2 PRODUCTS

2.01 SAND FOR LONG & TRIPLE JUMP SAND PITS

- A. All sand for the long/triple jumps sand pits shall follow the specifications outlined by the United States Golf Association (USGA) guidelines for Bunker Sand.
- B. SSC may wish to contact the local golf course or country club and the green superintendent should be able to tell you where to find this high-quality sand.
- C. Sand shall be white in color (as white as possible for that region of the country), free of trash, organic matter, clay, silt, rocks, etc.
- D. The sand shall be washed and sized to meet the USGA Bunker Sand or as a sample the below requirements.
- E. Particle size and distribution:
 - 1. Total sand content shall be $\geq 95\%$
 - 2. Total combined silt and clay content shall be $\leq 5\%$
 - 3. Screen Number 10 (2.0mm): $< 3\%$ Retained
 - 4. Screen Number 18 (1.0mm): $< 10\%$ Retained
 - 5. Screen Number 35 (0.5mm) and Screen Number 60 (0.25mm): $> 60\%$ Combined Retained
 - 6. Screen Number 100 (0.15mm): $< 20\%$ Retained (recommend $< 25\%$ Retained)
 - 7. Screen Number 270 (0.05mm): $< 5\%$ Retained
- F. Particle Sphericity & Angularity:
 - 1. Medium sphericity
 - 2. Sub-angular to sub-rounded
- G. Infiltration Rate:
 - 1. Water permeability or infiltration rate shall be > 20 inches/hour
- H. Penetrometer Value:
 - 1. Penetrometer value shall be $> 1.8\text{kg/cm}^3$

2.02 ROCK DUST

- A. The shot-put landing area shall consist of a Decomposed Granite (DG) or similar hard & durable material.
- B. The DG material must be firmly compacted, yet porous to allow vertical drainage.
- C. The material shall be compacted to at least ninety (90%) percent of Standard AASHTO Density with discing, watering, and rolling as necessary.
- D. All material aggregate larger than one-quarter inch in diameter that comes to the surface during discing shall be removed prior to compacting operations.
- E. The color should be gray or similar.
- F. The material shall be sized as follows:
 - 1. Screen Number 3/8 – 100% Passing
 - 2. Screen Number 4 – 100% Passing
 - 3. Screen Number 8 – 86% Passing
 - 4. Screen Number 16 – 65% Passing
 - 5. Screen Number 30 – 45% Passing
 - 6. Screen Number 50 – 35% Passing
 - 7. Screen Number 100 – 25% Passing
 - 8. Screen Number 200 – 15% Passing

PART 3 EXECUTION

3.01 INSPECTION AND ACCEPTANCE

- A. Examine all surfaces and contiguous elements to receive work of this section and correct, as part of the Work of this Contract, any defects affecting installation.

- B. Commencement of work will be construed as complete acceptability of surfaces and contiguous elements.

3.02 INSTALLATION REQUIREMENTS

- A. The following installation requirements must be met by the GC:
1. These materials should be one of the last items installed on the facility to maintain the physical properties. Keep newly installed materials clean and free from debris.
 2. Do not install these materials until drain pipes are installed and connected to system.
 3. Upon completion of installation, test materials to demonstrate satisfactory operation acceptable to Owner. The GC shall clean or replace unsuitable or contaminated materials.

END OF SECTION

This page intentionally left blank

SECTION 32 31 13
CHAIN LINK FENCING AND GATES (BLACK PVC)
PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

- A. Section Includes:
 - 1. Vinyl Chain-link fences and gates – Black Vinyl PVCE
- B. Related Sections:
 - 1. Concrete Paving

1.03 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Chain-link fence shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated according to ASCE/SEI 7:
 - 1. Minimum Post Size: Determine according to ASTM F 1043 for framework up to 6 feet high, and post spacing not to exceed 10 feet.
 - 2. Minimum Post Size and Maximum Spacing: Determine according to CLFMI WLG 2445, based on mesh size and pattern specified and on the following:
 - a. Wind Loads: 105 mph.
 - b. Exposure Category: B.
 - c. Fence Height: Varies
 - d. Material Group: IA, ASTM F 1043, Schedule 40 steel pipe or stronger if warranted to meet wind load requirements. Contractor to verify prior pipe material prior to bid and installation.
- B. Fence posts, footers and fabric not structurally designed for wind/privacy screen applications. Any wind/privacy screens installed after construction will be at the owner's discretion and risk.
- C. Fence system shall meet all applicable ASTM standards. Including but not limited to
 - 1. F 668 - Specification for Poly (Vinyl Chloride)/(PVC) - Coated Steel Chain Link Fabric
 - 2. F 567 - Practice for Installation of Chain Link Fence
 - 3. F 669 - Specification for Strength Requirements of Metal Posts and Rails for Industrial Chain Link Fence
 - 4. F 900 - Specification for Industrial and Commercial Swing Gates
 - 5. F 934 - Standard Colors for Polymer-Coated Chain Link Fence Materials
 - 6. F 1083 - Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures
 - 7. F 1234 - Specification for Protective Coatings in Steel Framework for Fences

1.04 SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components, and finishes for chain-link fences and gates.
 - 1. Fence, rails, and fittings.
 - 2. Chain-link fabric, reinforcements, and attachments.
- B. Samples for Initial Selection: For components with factory-applied color finishes.
- C. Product Certificates: For each type of chain-link fence from manufacturer.
- D. Product Test Reports: For framing strength, according to ASTM F 1043.
- E. Field quality-control reports.
- F. Operation and Maintenance Data: For the following to include in emergency, operation, and maintenance manuals:
 - 1. Polymer finishes.

- G. Warranty: Sample of special warranty.
- H. Other Informational Submittals:
 - 1. Record drawings.

1.05 QUALITY ASSURANCE

- A. In general, conform to standards of the CHAIN LINK FENCE MANUFACTURERS INSTITUTE (CLFMI). Manufacturer:
- B. Company specializing in commercial quality chain link fencing with five years' experience.
- C. Installer: Company specializing in commercial quality chain link fence installation with three years' experience and approved by manufacturer.

1.06 PROJECT CONDITIONS

- A. Field Measurements: Verify layout information for chain-link fences and gates shown on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.

1.07 WARRANTY

- A. All material and workmanship shall be warranted for a period of one (1) year after final acceptance.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements.
- B. The types of fencing required for the project are as indicated below, subject to detailed material requirements which follow.
 - 1. All fencing materials shall be black in color.
 - 2. All material shall be new, and products of recognized reputable manufacturers. Used, re-rolled or re-galvanized materials are not acceptable.
 - 3. Like items of materials provided hereinafter shall be the end products of one manufacturer in order to achieve standardization for appearance, maintenance, and replacement.
 - 4. Fencing Fabric Wire shall conform to the following:
 - a. Fabric shall be premium grade helically wound and woven steel core wire in accordance with ASTM F668 for Class 2B poly vinyl chloride (PVC) fabric, fused and bonded. Color to be black.
 - b. Material specifics shall be as follows:

	Core (inches)	Wire (uncoated) (gauge)	Wire Breakload (lbf)	Mesh Size
Fence Fabric	0.148	9	1290	2"

- c. All fencing is to be knuckle – knuckle (no barbs top or bottom)
- 5. Powder coated framework shall be steel pipe high strength – Type II: Cold formed and welded steel pipe complying with ASTM F1043, Group IC, with minimum yield strength of 50,000 psi (344 MPa), sizes as indicated. Protective coating per ASTM F 1043, external coating Type B, zinc with organic overcoat, 0.9 oz/S.F. (275 g/m²) minimum zinc coating with chromate conversion coating and verifiable polymer film. Internal coating Type B, minimum 0.9 oz/S.F. (275 g/m²) zinc or Type D, zinc pigmented, 81% nominal coating, minimum 3 mils (0.08 mm) thick. Color to be black.
- 6. Schedule of pipes sizes shall be as follows:

Application	Height (feet)	Outside Dimensions (inches)	Wall Thickness (inches)	Weight (lbs/foot)
-------------	------------------	--------------------------------	----------------------------	----------------------

Terminal/Corner Posts	ALL	4.00	0.160	6.56
Line Posts	Less than 6'	1.900	0.120	2.28
	6'-8'	2.875	0.160	4.64
Rails and Braces	(all heights)	1.660	0.111	1.84

7. Post tops shall be provided with secured post caps that fit tightly and cannot be removed by hand.
8. Top rails shall have lengths no less than eighteen feet (18'-0") and shall be fitted with minimum six inches (6") long outside sleeved or internally swaged couplings for connecting the lengths into a continuous run.
9. Provide top rail with pass-through fittings at line posts and rail end cups and brace bancs at terminal or gate posts.
10. Middle and Bottom Rails shall be properly secured to line posts with steel boulevard clamps and to terminal, corner, gate or pull posts with rail end cups and brace bands.
 - a. Where the chain link fence is in line with the Protective Ball netting, special boulevard clips shall be used to allow for the field side of the ball net post and the chain link fence post to be flush with each other. This means the posts will not be lined up center to center, but rather will be offset from each other to have a flush fabric condition on the field side.
11. Brace Rails shall be provided for each terminal post with fabric height of six feet or more. Extend brace to each adjacent post at approximate mid-height of fabric and secure with rail end cups and brace bands.
12. Fence fittings and accessories shall be fabricated of steel or cast iron and shall conform to minimum requirements of ASTM F-626, and as below. Following fabrication and galvanizing, all fence fittings shall receive a 10 to 14 mil thick fusion bonded vinyl coating to match fabric color. With the exception of field painting for nuts and bolts, no painted fittings will be accepted.
 - a. Where the chain link fence is in line with the Athletic Ball Netting, special boulevard clips shall be used to allow for the field side of the ball net post and the chain link fence post to be flush with each other. This means the posts will not be lined up center to center, but rather will be offset from each other (see Project Drawings and Details).
 - b. Stretcher Bars shall not be less than three sixteenth's (3/16") of an inch by three quarter's of an inch (3/4") and not less than 2 inches shorter than the nominal height of the fabric with which they are to be used. One stretcher bar shall be provided for each end and gate post, and two for each corner and pull post.
 - c. Fabric connectors shall be provided in sufficient number for attaching the fabric to all line posts at intervals not exceeding twelve inches (12"); and not exceeding twelve inches (12") when attaching fabric to top or bottom rail. Connectors shall be galvanized with a min. 0.8 oz/S.F. coating of zinc.
 - d. Unless designated otherwise on the details, tie wires shall be fabricated from rolled 9-gauge wire stock which has been cut to required lengths for hand-twisted connections at the site. Color to be black.
 - e. Tension Bands shall be provided in sufficient number for attaching the fabric and stretcher bars to all terminal posts at intervals not exceeding twelve inches (12"). Tension bands shall have a minimum thickness after galvanizing of 0.078 inch; and minimum width of three quarters of an inch (3/4") for posts four inches (4") O.D. or less; and 0.108 inch thickness by seven eighths of an inch (7/8") for posts larger than four inches (4") O.D. Brace bands shall be formed from flat or beveled steel and shall have a minimum thickness of 0.108 inch after galvanizing; and a minimum width of three quarters of an inch (3/4"). Attachment bolts shall be five sixteenths of an inch (5/16") by one and one quarter of an inch (1 1/4") galvanized carriage bolts with nuts, ASTM A-307, Grade A.

- f. Other hardware required shall be fabricated from steel, and galvanized in accordance with ASTM A123 and/or ASTM A153.
- g. All threaded bolts are to be turned away from secured areas, especially field of play

C. Chain Link Swing Gates:

- 1. All gates to be heavy duty commercial grade.
- 2. Fabricate chain link swing gates in accordance with ASTM F 900 using galvanizing two inch (2") steel tubular members weighing 2.60 lb/ft. Fusion or stainless steel welded connections forming rigid one-piece unit. Frames shall be thermally fused after fabrication with minimum 10 mils per ASTM 1043. Coating before fabrication will not be allowed.
- 3. Chain link fabric for gates shall match fabric for fencing.
- 4. Gate posts shall be steel pipe – type II finished to match fence posts:

Double Leaf Gates	Post Size (inches)	Weight (lb/ft.)
8'-12' wide	4.00	5.79

Gate fabric height up to and including 6ft.

Gate Leaf Width	Outside Diameter
Up to 10 ft.	2.875 in.

Gate Leaf Width	Outside Diameter
Diameter Up to 6 ft.	2.875 in.
Over 6 ft. to 12 ft.	4.000 in.

- 5. Gate hinges shall be heavy-duty offset type. Install gate with 90 degree malleable heavy duty hinges. Hinges shall have large bearing surfaces for clamping in position. The hinges shall not twist or turn under the action of the gate. The gates shall be capable of being opened and closed easily by the person.
- 6. All gates should open outward away from the field of play.
- 7. All gates shall be equipped with a positive closure latch and padlock fitting.
- 8. Drop Rods are not allowed. All Post openings must be securely capped with rounded post caps. Black PVC Galvanized chains shall be welded to the larger drive gate closure points in lieu of drop rods and latches.
- 9. Lockable latches are required on all walk and double gates.
- 10. All threaded bolts are to be turned away from secured areas, especially field of play.

2.02 CAST-IN-PLACE CONCRETE

- A. Materials: Portland cement complying with ASTM C 150, Type I aggregates complying with ASTM C 33, and potable water for ready-mixed concrete complying with ASTM C 94/C 94M. Measure, batch, and mix Project-site-mixed concrete according to ASTM C 94/C 94M.
 - 1. Concrete Mixes: Normal-weight concrete with not less than 3000-psi compressive strength (28 days), 3-inch slump, and 1-inch maximum size aggregate.
- B. Materials: Dry-packaged concrete mix complying with ASTM C 387 for normal-weight concrete mixed with potable water according to manufacturer's written instructions.

2.03 SHOP DRAWINGS

- A. Contractor to provide full shop drawings and specifications for approval of all fencing, gates and components.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for a verified survey of property lines and legal boundaries, site clearing, earthwork, pavement work, and other conditions affecting performance of the Work.

1. Do not begin installation before final grading is completed unless otherwise permitted by owner's representative.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 500 feet or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.

3.03 INSTALLATION, GENERAL

- A. Install chain-link fencing to comply with ASTM F 567 and more stringent requirements indicated.
 1. Install fencing on established project boundary lines inside property line as shown on Drawings.

3.04 CHAIN-LINK FENCE INSTALLATION

- A. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacings indicated, in firm, undisturbed soil.
- B. Post Setting: Set posts in concrete at indicated spacing into firm, undisturbed soil.
 1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.
 2. Where the chain link fence is inline with the Athletic Ball Netting, special boulevard clips shall be used to allow for the field side of the ballnet post and the chain link fence post to be flush with each other. This means the posts will not be lined up center to center, but rather will be offset from each other. (see Project Drawings and Details).
 3. Concrete Fill: Place concrete around posts to dimensions indicated and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.
 - a. Exposed Concrete: Extend 2 inches above grade; shape and smooth to shed water.
 - b. Concealed Concrete: Top 2 inches below grade to allow covering with surface material.
 - c. Posts Set into Concrete in Sleeves: Use steel pipe sleeves preset and anchored into concrete for installing posts. After posts have been inserted into sleeves, fill annular space between post and sleeve with non-shrink, nonmetallic grout, mixed and placed to comply with anchoring material manufacturer's written instructions, and finished sloped to drain water away from post.
 - d. Posts Set into Voids in Concrete: Form or core drill holes not less than 5 inches deep and 3/4 inch larger than OD of post. Clean holes of loose material, insert posts, and fill annular space between post and concrete with non-shrink, nonmetallic grout, mixed and placed to comply with anchoring material manufacturer's written instructions, and finished sloped to drain water away from post.
 4. Mechanically Driven Posts: Drive into soil to depth of 30 inches. Protect post top to prevent distortion.
- C. Terminal Posts: Locate terminal end, corner, and gate posts per ASTM F 567 and terminal pull posts at changes in horizontal or vertical alignment of 30 degrees or more.
- D. Line Posts: Space line posts uniformly on center per detail.
- E. Post Bracing and Intermediate Rails: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Diagonally brace terminal posts to adjacent line posts with truss rods and turnbuckles. Install braces at end and gate posts and at both sides of corner and pull posts.
- F. Locate horizontal braces at mid-height of fabric on fences with top rail and at two-third
- G. fabric height on fences without top rail. Install so posts are plumb when diagonal rod is under proper tension.
- H. Top Rail: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Run rail continuously through line post caps, bending to radius for curved runs and

terminating into rail end attached to posts or post caps fabricated to receive rail at terminal posts. Provide expansion couplings as recommended in writing by fencing manufacturer.

- I. Intermediate and Bottom Rails: Install and secure to posts with fittings.
- J. Chain-Link Fabric: Apply fabric to outside of enclosing framework. Leave 2 inches between finish grade or surface and bottom selvage unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.
- K. Tension or Stretcher Bars: Thread through fabric and secure to end, corner, pull, and gate posts with tension bands spaced not more than 15 inches o.c.
- L. Tie Wires: Use wire of proper length to firmly secure fabric to line posts and rails. Attach wire at one end to chain-link fabric, wrap wire around post a minimum of 180 degrees, and attach other end to chain-link fabric per ASTM F 626. Bend ends of wire to minimize hazard to individuals and clothing.
- M. Maximum Spacing: Tie fabric to line posts at 12 inches o.c. and to braces 24 inches o.c.
- N. Fasteners: Install nuts for tension bands and carriage bolts on the side of the fence opposite the fabric side.

3.05 GATE INSTALLATION

- A. Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach fabric as for fencing per manufacturer requirements. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation and lubricate where necessary.

3.06 ADJUSTING

- A. Gates: Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding. Lubricate hardware and other moving parts.

END OF SECTION

SECTION 32 92 00
SODS AND GRASSES
PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

- A. Section Includes:
 - 1. Seeding.
 - 2. Sodding.
 - 3. Hydroseeding.
- B. Related Sections:
 - 1. Division 31 Section "Site Clearing" for topsoil stripping and stockpiling.
 - 2. Division 31 Section "Earth Moving" for excavation, filling and backfilling, and rough grading.

1.03 DEFINITIONS

- A. Finish Grade: Elevation of finished surface of sod rootzone or top layer of soil for seeded areas.
- B. Manufactured Topsoil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.
- C. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.
- D. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. These include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.
- E. Planting Soil: Standardized topsoil; existing, native surface topsoil; existing, in-place surface soil; imported topsoil; or manufactured topsoil that is modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.
- F. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or top surface of a fill or backfill before planting soil is placed.
- G. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.
- H. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil, but in disturbed areas such as urban environments, the surface soil can be subsoil.

1.04 REFERENCES

- A. Comply with applicable requirements for the following standards. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.
 - 1. American Society for Testing and Materials (ASTM)
 - a. C 136 Sieve Analysis of Fine and Course Aggregates
 - b. D 422 Particle-Size Analysis of Soils
 - c. E 11 Wire-Cloth Sieves for Testing Purposes

1.05 SUBMITTALS

- A. Product Data: For each type of product indicated.

1. Pesticides and Herbicides: Include product label and manufacturer's application instructions specific to this Project.
- B. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture stating the botanical and common name, percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.
 1. Certification of each seed mixture for turfgrass sod and native seed mix. Include identification of source and name and telephone number of supplier.
- C. Qualification Data: For qualified landscape Installer.
- D. Product Certificates: For soil amendments and fertilizers from manufacturer.
- E. Material Test Reports: For standardized ASTM D 5268 topsoil existing native surface topsoil existing in-place surface soil and imported or manufactured topsoil.
- F. Maintenance Instructions: Recommended procedures to be established by Owner for maintenance of turf during a calendar year. Submit before expiration of required initial maintenance periods.

1.06 QUALITY ASSURANCE

- A. Installer Qualifications: A South Carolina Board of Landscape Contractors certified Landscape Contractor whose work has resulted in successful turn establishment. The Contractor's company and Field Supervisor must be Board certified.
 1. Experience: Five years minimum experience in turf installation.
 - a. Installer to show a minimum of 5 project examples and owner point of contacts for project similar in scope and quality completed in the last 5 years.
 2. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
 3. Maintenance Proximity: Not more than two hours' normal travel time from Installer's place of business to Project site.
 4. Pesticide Applicator: State licensed, commercial.
- B. Soil-Testing Laboratory Qualifications: An independent laboratory or university laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed. Tifton laboratory is required for testing of sports turf root zone.
- C. Soil Analysis: For each unamended soil type, furnish soil analysis and a written report by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; sodium absorption ratio; deleterious material; pH; and mineral and plant-nutrient content of the soil.
 1. Testing methods and written recommendations shall comply with USDA's Handbook No. 60.
 2. The soil-testing laboratory shall oversee soil sampling, with depth, location, and number of samples to be taken per instructions from Architect. A minimum of three representative samples shall be taken from varied locations for each soil to be used or amended for planting purposes.
 3. Report suitability of tested soil for turf growth.
 - a. Based on the test results, state recommendations for soil treatments and soil amendments to be incorporated. State recommendations in weight per 1000 sq. ft. or volume per cu. yd. for nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory planting soil suitable for healthy, viable plants.
 - b. Report presence of problem salts, minerals, or heavy metals, including aluminum, arsenic, barium, cadmium, chromium, cobalt, lead, lithium, and vanadium. If such

problem materials are present, provide additional recommendations for corrective action.

- D. Preinstallation Conference: Conduct conference at Project site.
- E. Provide appropriate treatment for fire ant infestation on plant material prior to shipment from nursery as required by the South Carolina Department of Agricultural and Consumer Services Guidelines.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws, as applicable.
- B. Sod: Harvest, deliver, store, and handle sod according to requirements in "Specifications for Turfgrass Sod Materials" and "Specifications for Turfgrass Sod Transplanting and Installation" in TPI's "Guideline Specifications to Turfgrass Sodding." Deliver sod in time for planting within 24 hours of harvesting. Protect sod from breakage and drying.
- C. Seed: Deliver seed in original, sealed, labeled, and undamaged containers
- D. Bulk Materials:
 - 1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
 - 2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
 - 3. Accompany each delivery of bulk fertilizers, lime, and soil amendments with appropriate certificates.

1.08 PROJECT CONDITIONS

- A. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of Substantial Completion.
 - 1. Spring Seed Planting: <Feb. - Apr 15>
 - 2. Fall Seed Planting: <Sept. – Feb>
 - 3. Sod Planting <March 15 – Oct 1.>
- B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

1.09 MAINTENANCE SERVICE

- A. Initial Turf Maintenance Service: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in Part 3. Begin maintenance immediately after each area is planted and continue until acceptable turf is established.
- B. Continuing Maintenance Proposal: From Installer to Owner, in the form of a standard yearly (or other period) maintenance agreement, starting on date initial maintenance service is concluded. State services, obligations, conditions, and terms for agreement period and for future renewal options.

PART 2 PRODUCTS

2.01 TURFGRASS SOD

- A. Turfgrass Sod: Certified, complying with "Specifications for Turfgrass Sod Materials" in TPI's "Guideline Specifications to Turfgrass Sodding." Furnish viable sod of uniform density, color, and texture, strongly rooted, and capable of vigorous growth and development when planted.
- B. Turfgrass Sod Species: 419 Bermudagrass or approved equal.

2.02 LAWN SEED

- A. Seed Mixture: Provide seed of grass species and varieties, proportions by weight and minimum percentages of purity, germination, and maximum percentage of weed seed. Reference Plans for Seed mixture. Below is the general seed recommendation by pound per acres. Substitution mixes may be submitted for review and approval.

March 1 - August 31

50#	Tall Fescue
10#	Centipede
25#	Bermudagrass (hulled)

September 1 - February 28

50#	Tall Fescue
10#	Centipede
35#	Bermudagrass (unhulled)

2.03 INORGANIC SOIL AMENDMENTS

- A. Lime: ASTM C 602, agricultural liming material containing a minimum of 80 percent calcium carbonate equivalent and as follows:
1. Class: T, with a minimum of 99 percent passing through No. 8 sieve and a minimum of 75 percent passing through No. 60 sieve.
 2. Class: O, with a minimum of 95 percent passing through No. 8 sieve and a minimum of 55 percent passing through No. 60 sieve.
 3. Provide lime in form of ground dolomitic limestone.
- B. Sulfur: Granular, biodegradable, containing a minimum of 90 percent sulfur, and with a minimum of 99 percent passing through No. 6 sieve and a maximum of 10 percent passing through No. 40 sieve.
- C. Iron Sulfate: Granulated ferrous sulfate containing a minimum of 20 percent iron and 10 percent sulfur.
- D. Aluminum Sulfate: Commercial grade, unadulterated.
- E. Perlite: Horticultural perlite, soil amendment grade.
- F. Agricultural Gypsum: Minimum 90 percent calcium sulfate, finely ground with 90 percent passing through No. 50 sieve.
- G. Sand: Clean, washed, natural or manufactured, and free of toxic materials.
- H. Diatomaceous Earth: Calcined, 90 percent silica, with approximately 140 percent water absorption capacity by weight.
- I. Zeolites: Mineral clinoptilolite with at least 60 percent water absorption by weight.

2.04 ORGANIC SOIL AMENDMENTS

- A. Compost: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through [1-inch] sieve; soluble salt content of 5 to 10 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:
1. Organic Matter Content: 50 to 60 percent of dry weight.
 2. Feedstock: Agricultural, food, or industrial residuals; biosolids; yard trimmings; or source-separated or compostable mixed solid waste

2.05 FERTILIZERS

- A. Bonemeal: Commercial, raw or steamed, finely ground; a minimum of 1 to 4 percent nitrogen and 10 to 20 percent phosphoric acid.
- B. Superphosphate: Commercial, phosphate mixture, soluble; a minimum of 20 percent available phosphoric acid.
- C. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:

1. Composition: 1 lb/1000 sq. ft. of actual nitrogen, 4 percent phosphorous, and 2 percent potassium, by weight.
 2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.
- D. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:
1. Composition: 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.
 2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

2.06 PLANTING SOILS

- A. Planting Soil: Existing, in-place surface soil. Verify suitability of existing surface soil to produce viable planting soil. Remove stones, roots, plants, sod, clods, clay lumps, pockets of coarse sand, concrete slurry, concrete layers or chunks, cement, plaster, building debris, and other extraneous materials harmful to plant growth. Verify suitability of native surface topsoil to produce viable planting soil. Clean soil of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful to plant growth. Mix soil amendments as necessary per Landscaper recommendations.

2.07 MULCHES

- A. Fiber Mulch: Biodegradable, dyed-wood, cellulose-fiber mulch; nontoxic and free of plant-growth or germination inhibitors; with a maximum moisture content of 15 percent and a pH range of 4.5 to 6.5.
- B. Nonasphaltic Tackifier: Colloidal tackifier recommended by fiber-mulch manufacturer for slurry application; nontoxic and free of plant-growth or germination inhibitors.
- C. Asphalt Emulsion: ASTM D 977, Grade SS-1; nontoxic and free of plant-growth or germination inhibitors.

2.08 PESTICIDES

- A. General: Pesticide, registered and approved by EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.
- B. Pre-Emergent Herbicide (Selective and Non-Selective): Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.
- C. Post-Emergent Herbicide (Selective and Non-Selective): Effective for controlling weed growth that has already germinated.

2.09 FIRE ANT TREATMENT/PREVENTION

- A. Bait Applications of AMDRO per acre or approved equal.
- B. Drench Applications of Orthene on each active hill or approved equal.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine areas to be planted for compliance with requirements and other conditions affecting performance.
1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
 2. Do not mix or place soils and soil amendments in frozen, wet, or muddy conditions.

3. Suspend soil spreading, grading, and tilling operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
 4. Uniformly moisten excessively dry soil that is not workable and which is too dusty.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Architect and replace with new planting soil.

3.02 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities, trees, shrubs, and plantings from damage caused by planting operations.
1. Protect grade stakes set by others until directed to remove them.
- B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

3.03 TURF AREA PREPARATION

- A. Limit turf subgrade preparation to areas to be planted.
- B. Newly Graded Subgrades: Loosen subgrade to a minimum depth of 6 inches to 8 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
1. Spread topsoil, apply soil amendments and fertilizer on surface, and thoroughly blend planting soil.
 - a. Delay mixing fertilizer with planting soil if planting will not proceed within a few days.
 - b. Mix lime with dry soil before mixing fertilizer.
- C. Unchanged Subgrades: If turf is to be planted in areas unaltered or undisturbed by excavating, grading, or surface-soil stripping operations, prepare surface soil as follows:
1. Remove existing grass, vegetation, and turf. Do not mix into surface soil.
 2. Loosen surface soil to a depth of at least 6 inches to 8 inches. Apply soil amendments and fertilizers according to planting soil mix proportions and mix thoroughly into top 4 inches to 6 inches of soil. Till soil to a homogeneous mixture of fine texture.
 - a. Apply fertilizer directly to surface soil before loosening.
 3. Remove stones larger than 1 inch in any dimension and sticks, roots, trash, and other extraneous matter.
 4. Legally dispose of waste material, including grass, vegetation, and turf, off Owner's property.
- D. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit finish grading to areas that can be planted in the immediate future.
- E. Moistened prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
- F. Before planting, obtain Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.04 SEEDING

- A. Sow seed with spreader or seeding machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.
1. Do not use wet seed or seed that is moldy or otherwise damaged.
 2. Do not seed against existing trees. Limit extent of seed to outside edge of planting saucer.

- B. Sow seed at a total rate indicated on plans.
- C. Rake seed lightly into top 1/8 inch of soil, roll lightly, and water with fine spray.
- D. Protect seeded areas with slopes exceeding 1:4 per erosion control plans.
- E. Protect seeded areas with erosion-control mats where shown on Drawings; install and anchor according to manufacturer's written instructions.
- F. Protect seeded areas with slopes not exceeding 1:6 by spreading straw mulch. Spread uniformly at a minimum rate of [2 tons/acre] to form a continuous blanket 1-1/2 inches in loose thickness over seeded areas. Spread by hand, blower, or other suitable equipment.
 - 1. Anchor straw mulch by crimping into soil with suitable mechanical equipment.
 - 2. Bond straw mulch by spraying with asphalt emulsion at a rate of 10 to 13 gal./1000 sq. ft. Take precautions to prevent damage or staining of structures or other plantings adjacent to mulched areas. Immediately clean damaged or stained areas.
- G. Protect seeded areas from hot, dry weather or drying winds by applying compost mulch peat mulch planting soil within 24 hours after completing seeding operations. Soak areas, scatter mulch uniformly to a thickness of 3/16 inch, and roll surface smooth.

3.05 HYDROSEEDING

- A. Hydroseeding: Mix specified seed, fertilizer, and fiber mulch in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application.
 - 1. Mix slurry with fiber-mulch manufacturer's recommended tackifier.
 - 2. Apply slurry uniformly to all areas to be seeded in a one-step process. Apply slurry at a rate so that mulch component is deposited at not less than 1500-lb/acre] dry weight, and seed component is deposited at not less than the specified seed-sowing rate.
 - 3. Apply slurry uniformly to all areas to be seeded in a two-step process. Apply first slurry coat at a rate so that mulch component is deposited at not less than 500-lb/acre dry weight, and seed component is deposited at not less than the specified seed-sowing rate. Apply slurry cover coat of fiber mulch (hydromulching) at a rate of [1000 lb/acre].

3.06 SODDING

- A. Lay sod within 24 hours of harvesting unless a suitable preservation method is accepted by Landscape Architect prior to delivery time. Do not lay sod if dormant or if ground is frozen or muddy.
- B. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod; do not stretch or overlap. Stagger sod strips or pads to offset joints in adjacent courses. Avoid damage to subgrade or sod during installation. Tamp and roll lightly to ensure contact with subgrade, eliminate air pockets, and form a smooth surface. Work sifted soil or fine sand into minor cracks between pieces of sod; remove excess to avoid smothering sod and adjacent grass.
- C. Saturate sod with fine water spray within two hours of planting. During first week after planting, water daily or more frequently as necessary to maintain moist soil to a minimum depth of 1-1/2 inches below sod.

3.07 TURF MAINTENANCE

- A. Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.
 - 1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence.
 - 2. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch and anchor as required to prevent displacement.

3. Apply treatments as required to keep turf and soil free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards.
- B. Watering: Install and maintain temporary piping, hoses, and turf-watering equipment to convey water from sources and to keep turf uniformly moist to a depth of 4 inches.
 1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
 2. Water turf with fine spray at a minimum rate of 1 inch per week unless rainfall precipitation is adequate.
- C. Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than 1/3 of grass height. Remove no more than 1/3 of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain the following grass height:
 1. Mow bermudagrass to a height of 1 inch
- D. If lawn or grass is established in the fall and maintenance is required to continue into the spring months, lawn and grass shall receive an application of lime and fertilizer in the spring. Lime and fertilizer shall be spread in a uniform layer over the entire lawn surface, at the following rates.
 1. Lime: 100 lb. / 1000 sq. ft.
 2. Fertilizer: 20 lb. / 1000 sq. ft.

3.08 SATISFACTORY TURF

- A. Turf installations shall meet the following criteria as determined by Architect:
 1. Satisfactory Seeded Turf: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. and bare spots not exceeding 5 by 5 inches.
 2. Satisfactory Sodded Turf: At end of maintenance period, a healthy, well-rooted, even-colored, viable turf has been established, free of weeds, open joints, bare areas, and surface irregularities.
- B. Use specified materials to reestablish turf that does not comply with requirements and continue maintenance until turf is satisfactory.

3.09 PESTICIDE APPLICATION

- A. Apply pesticides and other chemical products and biological control agents in accordance with requirements of authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.
- B. Post-Emergent Herbicides (Selective and Non-Selective): Apply only as necessary to treat already-germinated weeds and in accordance with manufacturer's written recommendations.

3.10 CLEANUP AND PROTECTION

- A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.
- B. Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of them off Owner's property.
- C. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established.
- D. Remove nondegradable erosion-control measures after grass establishment period.

3.11 MAINTENANCE SERVICE

- A. Turf Maintenance Service: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in "Turf Maintenance" Article. Begin maintenance immediately after each area is planted and continue until acceptable turf is established, but for not less than the following periods:
 - 1. Seeded Turf: 30 days from date of planting completion.
 - a. When initial maintenance period has not elapsed before end of planting season, or if turf is not fully established, continue maintenance during next planting season.
 - 2. Sodded Turf: 30 days from date of planting completion.

END OF SECTION

This page intentionally left blank

SECTION 33 05 00
COMMON WORK RESULTS FOR UTILITIES
PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

- A. This Section includes the following:
 - 1. Adjust list below to suit Project.
 - 2. Piping joining materials.
 - 3. Transition fittings.
 - 4. Grout.
 - 5. Flowable fill.
 - 6. Piping system common requirements.

1.03 DELIVERY, STORAGE, AND HANDLING

- A. Deliver pipes and tubes with factory-applied end caps. Maintain end caps through shipping, storage, and handling to prevent pipe end damage and to prevent entrance of dirt, debris, and moisture.
- B. Store plastic pipes protected from direct sunlight. Support to prevent sagging and bending.

1.04 COORDINATION

- A. Coordinate installation of required supporting devices and set sleeves in poured-in-place concrete and other structural components as they are constructed.
- B. Coordinate installation of identifying devices after completing covering and painting if devices are applied to surfaces.
- C. Coordinate size and location of concrete bases. Formwork, reinforcement, and concrete requirements are specified in Division 03.

PART 2 PRODUCTS

2.01 PIPING JOINING MATERIALS

- A. Flange Bolts and Nuts: ASME B18.2.1, carbon steel, unless otherwise indicated.
- B. Plastic, Pipe-Flange Gasket, Bolts, and Nuts: Type and material recommended by piping system manufacturer, unless otherwise indicated.

2.02 TRANSITION FITTINGS

- A. Transition Fittings, General: Same size as, and with pressure rating at least equal to and with ends compatible with, piping to be joined.

2.03 GROUT

- A. Description: ASTM C 1107, Grade B, nonshrink and nonmetallic, dry hydraulic-cement grout.
 - 1. Characteristics: Post hardening, volume adjusting, nonstaining, noncorrosive, nongaseous, and recommended for interior and exterior applications.
 - 2. Design Mix: 5000-psi, 28-day compressive strength.
 - 3. Packaging: Premixed and factory packaged.

2.04 FLOWABLE FILL

- A. Description: Low-strength-concrete, flowable-slurry mix.
 - 1. Cement: ASTM C 150, Type I, portland.
 - 2. Density: 115- to 145-lb/cu. ft..
 - 3. Aggregates: ASTM C 33, natural sand, fine and crushed gravel or stone, coarse.
 - 4. Retain subparagraph above or first two subparagraphs below.

5. Aggregates: ASTM C 33, natural sand, fine.
6. Admixture: ASTM C 618, fly-ash mineral.
7. Water: Comply with ASTM C 94/C 94M.
8. Strength: 100 to 200 psig at 28 days.

PART 3 EXECUTION

3.01 PIPING INSTALLATION

- A. Install piping according to the following requirements and Division 33 Sections specifying piping systems.
- B. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems. Install piping as indicated unless deviations to layout are approved by the Engineer.
- C. Install piping at indicated slopes.
- D. Install piping free of sags and bends.
- E. Install fittings for changes in direction and branch connections.

3.02 PIPING JOINT CONSTRUCTION

- A. Join pipe and fittings according to the following requirements and Division 33 Sections specifying piping systems.
- B. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.
- C. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:
 1. Apply appropriate tape or thread compound to external pipe threads unless dry seal threading is specified.
 2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged. Do not use pipe sections that have cracked or open welds.
- D. Grooved Joints: Assemble joints with grooved-end pipe coupling with coupling housing, gasket, lubricant, and bolts according to coupling and fitting manufacturer's written instructions.
- E. Plastic Nonpressure Piping Gasketed Joints: Join according to ASTM D 3212.

3.03 GROUTING

- A. Mix and install grout for equipment base bearing surfaces, pump and other equipment base plates, and anchors.
- B. Clean surfaces that will come into contact with grout.
- C. Provide forms as required for placement of grout.
- D. Avoid air entrapment during placement of grout.
- E. Cure placed grout.

END OF SECTION

SECTION 33 41 00
STORM UTILITY DRAINAGE PIPING
PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

- A. This Section includes gravity-flow, nonpressure storm drainage associated with the stormwater management facilities, with the following components:
 - 1. Special fittings for expansion and deflection.
 - 2. Precast concrete and Cast-in-place concrete structures.
- B. Related Sections include the following:
 - 1. Division 33 Section "Subdrainage" for installation of subdrainage piping of dam embankment.

1.03 PERFORMANCE REQUIREMENTS

- A. Gravity-Flow, Nonpressure, Drainage-Piping Pressure Rating: 10-foot head of water. Pipe joints shall be at least silttight, unless otherwise indicated.
- B. Pressure-Piping Pressure Rating: At least equal to system operating pressure but not less than 10 psi rated water tight joints.

1.04 SUBMITTALS

- A. Product Data: For the following:
 - 1. Special pipe fittings.
- B. Shop Drawings: For the following:
 - 1. Stormwater Structures: Include plans, elevations, sections, details, frames and covers, design calculations, and concrete design-mix report.
- C. Field quality-control test reports.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Protect pipe, pipe fittings, and seals from dirt and damage.
- B. Handle structures according to manufacturer's written rigging instructions.

1.06 PROJECT CONDITIONS

- A. Interruption of Existing Storm Drainage Service: Do not interrupt service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary service according to requirements indicated:
 - 1. Notify Owner no fewer than two days in advance of proposed interruption of service.
 - 2. Do not proceed with interruption of service without Owner's written permission.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
 - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.
 - 2. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

2.02 PIPING MATERIALS

- A. Refer to Part 3 "Piping Applications" Article for applications of pipe, fitting, and joining materials.

2.03 DUCTILE-IRON CULVERT PIPE AND FITTINGS

- A. Pipe: ASTM A 716, for push-on joints.
- B. Standard Fittings: AWWA C110, ductile or gray iron, for push-on joints.
- C. Compact Fittings: AWWA C153, for push-on joints.
- D. Gaskets: AWWA C111, rubber.

2.04 PVC PIPE AND FITTINGS

- A. PVC Pipe and Fittings: ASTM D 1785, Schedule 80 pipe, with plain ends for solvent-cemented joints with ASTM D 2467, Schedule 80, socket-type fittings.

2.05 CONCRETE PIPE AND FITTINGS

- A. Reinforced-Concrete Sewer Pipe and Fittings: ASTM C 76, with modified bell-and-spigot ends and confined O-ring gasketed joints with ASTM C 443, rubber gaskets. The pipe joints shall be Type R-4. The pipe shall be manufactured with no lift holes.
 - 1. Class III, Wall B.

2.06 CONCRETE

- A. General: Cast-in-place concrete according to ACI 318/318R, ACI 350R, and the following:
 - 1. Cement: ASTM C 150, Type II.
 - 2. Fine Aggregate: ASTM C 33, sand.
 - 3. Coarse Aggregate: ASTM C 33, crushed gravel.
 - 4. Water: Potable.
- B. Portland Cement Design Mix: 4000 psi minimum, with 0.45 maximum water-cementitious materials ratio.
 - 1. Reinforcement Fabric: ASTM A 185, steel, welded wire fabric, plain.
 - 2. Reinforcement Bars: ASTM A 615/A 615M, Grade 60, deformed steel.

2.07 STORMWATER STRUCTURES

- A. Cast-in-Place Concrete, Stormwater Structures: Construct of reinforced-concrete bottom, walls, and top; designed according to ASTM C 890 structural loading; of depth, shape, dimensions, and appurtenances indicated.
 - 1. Anti-Flotation Block: Can either be cast-in-place or precast
 - a. If cast-in-place prior to constructing, the contractor shall insure the weight of the entire riser structures meets minimum specifications provided on Drawings, and shall submit shop drawings to the Engineer for review denoting the following:
 - 1) Steel reinforcement
 - 2) Connection mechanism to join anti-flotation block with riser section.
 - b. If precast, the anti-flotation block shall be included as part of the precast riser shop drawing submittals to the Engineer for review. It shall meet minimum specifications provided on Drawings.
 - 2. Concrete Collar: Shall connect to riser structure and anti-flotation block to form a watertight connection between outlet barrel and riser structure. It shall meet minimum specifications provided on Drawings.
- B. Steps: Provide steps as shown on the Drawings in manholes, risers, transition cones, and transition top sections in accordance with SCDOT. Steps shall be spaced at 16" O.C.
- C. Emergency drawdown pipe shall be a M&H style 1820 eccentric valve or approved equal. This valve is in accordance with AWWA C-540 Sec 5.5, and shall be operable from top of outlet structure via a handwheel. Refer to valve specifications at the end of this section.

- D. Trash rack: Prior to ordering, the contractor shall submit trash rack shop drawings to the Engineer for review. A minimum 2 foot x 3 foot access hatch opening is required and shall be centered over access steps. Trash rack shall meet minimum specifications provided on Drawings.

2.08 PIPE OUTLETS

- A. Head Walls: Precast reinforced concrete in accordance with SCDOT.
- B. Spillway Filter: Refer to installation procedures specified in Division 33 Section "Subdrainage".
1. Stone to be fine aggregate, natural, or manufactured sand meeting the requirements of ASTM C33.
 2. Collector Pipe shall be smooth wall, schedule 80 PVC, 4-inch nominal diameter with minimum 0.25-inch diameter perforations.
 3. Cleanout and Outlet Pipes shall be smooth wall, schedule 80 PVC, 4-inch nominal diameter, solid.
 4. Provide elbows, connections, fittings, etc. for piping as required furnished by pipe manufacturer for type of pipe used.
- C. Energy Dissipaters: Refer to Drawings for shape and sizing; Design in accordance with NC Erosion and Sediment Control Planning and Design Manual.

PART 3 EXECUTION

3.01 EARTHWORK

- A. Excavation, trenching, and backfilling are specified in Division 31 Section "Earth Moving."

3.02 PIPING APPLICATIONS

- A. Gravity-Flow, Nonpressure Piping: Use the following pipe materials for each size range:
1. NPS 4 to NPS 6: Ductile-iron culvert pipe, ductile-iron standard or compact fittings, gaskets, and gasketed joints.
 2. NPS 4 and NPS 6: PVC pipe and fittings, gaskets, and gasketed joints.
 3. NPS 8 to NPS 12: Ductile-iron culvert pipe, ductile-iron standard or compact fittings, gaskets, and gasketed joints.
 4. NPS 18 to NPS 36: Reinforced-concrete pipe and fittings, gaskets, and gasketed joints.

3.03 PIPING INSTALLATION

- A. General Locations and Arrangements: Drawing plans and details indicate general location and arrangement of storm piping. Location and arrangement of piping layout take design considerations into account. Install piping as indicated, to extent practical. Where specific installation is not indicated, follow piping manufacturer's written instructions.
- B. Install piping beginning at low point, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements.
- C. Install proper size increasers, reducers, and couplings where different sizes or materials of pipes and fittings are connected. Reducing size of piping in direction of flow is prohibited.
- D. Install spillway filter and toe drain per direction of Geotechnical Engineer and Plans.
- E. Install gravity-flow, nonpressure drainage piping according to the following:
1. Install piping pitched down in direction of flow, at the specified slope as noted on Plans.
 2. Install piping with 12-inch minimum cover.
 3. Install piping below frost line.
 4. Install ductile-iron culvert piping according to ASTM A 716.
 5. Install ductile-iron and special fittings according to AWWA C600 or AWWA M41.
 6. Install PVC piping according to ASTM D 2321 and ASTM F 1668.

7. Install reinforced-concrete sewer piping according to ASTM C 1479 and ACPA's "Concrete Pipe Installation Manual."

3.04 PIPE JOINT CONSTRUCTION

- A. Where specific joint construction is not indicated, follow piping manufacturer's written instructions.
- B. Join gravity-flow, nonpressure drainage piping according to the following:
 1. Join ductile-iron culvert piping according to AWWA C600 for push-on joints.
 2. Join PVC piping according to ASTM D 2321 and ASTM D 3034 for elastomeric-seal joints or ASTM D 3034 for elastomeric gasket joints.
 3. Join reinforced-concrete sewer piping according to ACPA's "Concrete Pipe Installation Manual" for rubber-gasket joints.
 - a. Joints shall be wrapped with a double layer of non-woven geotextile fabric (Mirafi 180N or approved equivalent) in 2-foot wide strips centered on joints.
 4. Join dissimilar pipe materials with nonpressure-type flexible[or rigid] couplings.

3.05 STORMWATER OUTLET INSTALLATION

- A. Construct inlet head walls, as indicated.
- B. Install outlets that spill onto grade, with flared end sections that match pipe, where indicated.
- C. Construct energy dissipaters at outlets, as indicated.

3.06 CONCRETE PLACEMENT

- A. Place cast-in-place concrete according to ACI 318/318R.

3.07 FIELD QUALITY CONTROL

- A. Inspect interior of piping to determine whether line displacement or other damage has occurred. Inspect after approximately 24 inches of backfill is in place, and again at completion of Project.
 1. Defects requiring correction include the following:
 - a. Alignment: Less than full diameter of inside of pipe is visible between structures.
 - b. Crushed, broken, cracked, or otherwise damaged piping.
 - c. Infiltration: Water leakage into piping.
 - d. Exfiltration: Water leakage from or around piping.
 2. Replace defective piping using new materials, and repeat inspections until defects are within allowances specified.
 3. Reinspect and repeat procedure until results are satisfactory.

3.08 CLEANING

- A. Clean interior of piping of dirt and superfluous materials.

END OF SECTION



CPL ARCHITECTS & ENGINEERS

1111 HAYNES ST., SUITE 100

RALEIGH, NC 27604

(919) 833 - 6064 PH

(919) 833 - 6088 FAX